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International
Docomomo Conference
Valencia / Spain

Modern Design:
Social Commitment
& Quality of Life

Proceedings

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Modern Design: Social Commitment & Quality of Life

Editors

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17th International Docomomo Conference

6–9 September 2022

Universitat Politècnica de València, València · Spain

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Credits

Title

Modern Design.
Social Commitment and Quality of Life

Publisher

docomomo international
tirant lo blanch

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Design

Innovatext (Valencia)

Printing

ISBN 978-84-19286-59-8

Legal deposit V-1642-2022

Valencia, 2022

Indexed by SCOPUS

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Procedings of the 17th International docomomo Conference
6-9 September 2022
Universitat Politècnica de València, Valencia

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Introduction

Modern Design: Social Commitment and Quality of Life

Carmen Jordá

Maite Palomares¹

CHAIR OF THE 17TH INTERNATIONAL DOCOMOMO CONFERENCE

Docomomo International currently spans more than 60 countries over five continents. From its history, now highly regarded, it is worth highlighting its incessant activity in the field of research, analysis, and the selection and cataloguing of works of modern architecture, as well as its regular publications, exhibitions and conferences. This 17th International Docomomo Conference is entitled *Modern Design: Social Commitment and Quality of Life*, and is planned to coincide with holding of Valencia World Design Capital 2022, forming part of the latter's official program.

Modern design began when architects started to see their work as a comprehensive project that included the treatment of interior space, furniture and objects, in addition, in some cases, to a building's relationship with the environment. One of its main objectives was to meet the demands of a new society, providing advanced and functional solutions in order to regenerate environments. The influence of hygienism and its requirements, and users' comfort and convenience underlined the ergonomic nature of the end product.

From the connection established between modern design and industry, specialist companies emerged, based on the use of new materials and techniques that overturned traditional criteria. Today, many of those designs are still valid, appearing in our catalogues as cultural icons.

Although the *Modern Design: Social Commitment and Quality of Life* proposal is valid in itself, nowadays it is of even greater interest given that, curiously enough, improving the health conditions of living spaces has once again become an overriding social concern mainly as a result of the COVID 19 pandemic. As part of the post-pandemic recovery plan a New European Bauhaus project is being developed to mark the centenary of the Weimar Bauhaus School. One aim of this international project is to attempt to recover the essence of a pioneering school in the use of new techniques and resources, which gave us the representative elements of modern visual culture. New comfort requirements are being included to design a more sustainable, inclusive and better future for all, by seeking solutions to address the challenges posed by climate change. In the chapter on the European Avant-Gardes, included in the program of the 17th International Docomomo Conference, which we will present later on, great attention is paid to the designs of the renowned Bauhaus School and, among others, issues such as its leading figures, their contributions, and influences, as well as the strategies developed.

In 2022 the general incentive for design, as a tool to transform life through innovation and experience, focuses in particular on a collaborative spirit that can provide a sustainable and inclusive solution, affordable for all.

With the aim of highlighting the validity of modern 21st century strategies, but of course with new lines of action to reflect new concerns, the Conference analyses modern designs in all their aspects from a cross-sectional point of view. To do this and using a holistic approach, we have built a space for debate where the different disciplines that converge in modern design can be brought together, in order to come up with new forms of collective creation for tackling future ways of living.

The contributions in this volume of Conference Proceedings constitute a creative ensemble, with contributions from art and culture, science and technology, among others. These contributions discuss issues such as the role of technology in transforming interior space to provide comfort; the influence of the new way of life, free from conventions, in modelling modern architecture; style and the aesthetic and technical requirements of international architecture and its formal acceptance in a globalized world; other modern historiographies, with a more inclusive perspective, that rescue the contributions of pioneering designers; and the definition of modern public space and its current shortcomings, especially poignant in these post-Covid moments. All this is included to emphasize the social mission of architecture and the responsibility of architects towards the future.

The Proceedings includes 117 selected papers, grouped into 26 sessions, designed to respond to the eight areas on which the Conference programme is structured. Each of them sets a scene where the thematic content is analysed and assessed, logically taking into account all the developments of the Modern Movement.

The first concerns the **European Avant-Gardes** and reveals the strategies that were used to formally and spatially respond to a modern way of life by incorporating new developments in technology. Its radicalism and commitment to abstraction encouraged new solutions that reflected the mechanized world that they wished to achieve. Outstanding among these changes was the transformation of homes through the mechanization of domestic tasks and the extensive use of ingenious storage systems and transformable furniture.

This area also focuses on the educational project of the Bauhaus and its recognized high-quality models designed by architects, as well as numerous artists and craftsmen.

The next section is titled ***Post-war. International expansion*** and examines undoubtedly interesting design solutions for interior space, as far as architectural configuration and furniture are concerned. The technology used and the new materials that were then available and that had been tested during the war are also analysed.

Numerous items, now having become timeless models, illustrate the global expansion of modern design, despite geographical and cultural particularities.

The Latin American contribution draws attention to the rapid, free and highly creative interpretation of the Modern Movement by Latin American architects. Along with pilotis, garden roof, brise soleil as climate control, or the curtain wall, they incorporated and combined the art, crafts, local materials and native vegetation of the southern hemisphere. The result was hugely expressive and provided a distinct characteristic to their initial works. Later generations followed that path and introduced yet further distinguishing traits.

Female Pioneers and Modernists addresses the difficulties faced by female architects, regardless of their talent and despite the international winds of change, in professional tasks during the period the modern architecture era. This was not even possible at the progressive Bauhaus, where their works were published under the school's name. Against this background and working alone, their presence in history has been scarce. This area, then, is dedicated to studying their professional activity and their authorship of several subtle and at the same time functional designs, which for many years have generally been attributed to their husbands or their fellow students. The aim is to recover their place in the collective memory.

Iberia. Cultural Identity is a particular case that has been reflected in the Iberian branch of Docomomo and its great activity. In Spain, modernity was welcomed during the republican era, especially by GATEPAC, whose members incorporated furniture and design into their interior projects. The repercussions of the technical regression caused by the dictatorship meant that modern Spanish designs were implemented with necessarily artisanal solutions. In this context, versatile furniture designs and creations with laminated wood and ceramic materials, among others, are studied, as well as the interior design works of architects.

In Portugal², the modernist aesthetic began to be adopted in the 1930'S domestic architecture equipping hospitals and schools with functional design with metallic structure. From 1950 forward, within the affirmation of modernity, design gains expression in new commercial establishments. Following a new design practice and ethical awareness, where the Tea House in Leça from Álvaro Siza must be mentioned due the renovated vision of a global design, the first two Portuguese design exhibitions, held in 1971 and 1973 respectively, have an important significance in the development of modern design in Portugal including women for the first times, as it is the case of Carmo Valente ou Maria Carmo Matos.

In short, this area deals with the evolution of modern design in Portugal and Spain, studying both particularities and international influences in countries that suffered long periods of isolation as a result of dictatorships.

New materials and innovative technologies examines the new materials and their respective techniques that revolutionised construction, so providing more suitable conditions for modern life. At the same time, the then unknown pathologies of modern construction, produced by the unpredictable aging process of innovative and experimental solutions, are also studied here.

This study, moreover, includes the technical innovations that were employed in interior space, allowing double or triple height sections to house new ways of living with new hygienic, transparent and natural light environments.

Urban design and public space discusses how modern cities were designed and inhabited. Of great interest here is the new approach adopted for urban design and the open city model, with the residential role of the housing block attending to the value of the collective and the heliothermic premises of a healthy life policy. The contributions of CIAM Charter of Athens approach (1933) and the dissolution of the city, as well as the first criticisms and then the definitive rupture in favour of form, identity and the limit between public and private space are analysed.

In general, new proposals on urban form and public space received increasing attention and were implemented, if the form of paving, urban furniture and garden elements.

Landscapes and gardens is dedicated to the interpretation of the landscape component introduced early by Alvar Aalto. The studies focus both on readings that deal with residential areas surrounded by vegetation and on landscape solutions of the elements that were incorporated into architecture to address the health condition of modern life. These include numerous examples of roof gardens that were designed depending on the conditions of their respective latitudes. The contributions and various influences and experiments that opened up formal possibilities for new models are examined. This last section presents a panoramic view that covers a wide geographical scope and chronological period, and discusses the contributions made to landscape design in order to create comfortable environments, including both the scale of the projects and details of the elements employed.

Together, the eight sections provide a framework for analysing the contributions presented and a platform for raising awareness of modern designs and alternative approaches to update modern concepts and their relationship with the demands of contemporary architecture, such as inclusive theories, environmental concerns and the technology needed to ensure the success of the shift towards sustainability, as well as alternative educational models.

This last aspect links the educational innovations proposed at the Bauhaus and the Docomomo tradition of coming together at its Biennial Conferences for international workshops, in which architecture students and teachers and design schools participate. The role of education is paramount for the Docomomo Foundation in its role as guardian of modern architecture. It has, therefore, an International Scientific Committee on Education & Training that watches over the development of activities that allow this commitment to be carried out. In line with the theme of the Conference, the workshop, entitled *A Modern Utopia. Design as a tool for the Conservation and Reuse of Modern Heritage*, is to be held at the Universidad Laboral de Chestre (1967–69), a reference point for modern Spanish design built by F. Moreno Barberá

with materials exclusively manufactured for this work, where all the elements are characterized by their economy and strict functionality. Recently, the Getty Foundation in Los Angeles has recognized the interest of its Paraninfo (Assembly hall), providing the Polytechnic University of Valencia with a Grant Award from the Keeping It Modern program.

The aim of this workshop is to garner the knowledge and ideas of young students on the future possibilities of these infrastructures, through collaborative working. This presents both a challenge and an opportunity to seek appropriate designs and new uses that will allow it to be preserved, and to function in a manner consistent with its values as a heritage site.

Despite the multidisciplinary nature of design today, the leading role of past architects is undeniable, specifically in the period covered by the Modern Movement. Their achievements form part of our daily lives and several of their emblematic pieces are included and analysed in these Proceedings.

Acknowledgements

We wish to thank Ana Tostões for her collaboration in general and in particular in the Portugal section.

Notes

- 1 Patronato (Board of Trustees), Scientific Committee, publications (Registers) and UPV Professors..

Retracing and Reframing the Legacy of Modern Movement

Uta Pottgiesser

CHAIR DOCOMOMO INTERNATIONAL

The 17th International DOCOMOMO Conference in València —the World Design Capital of 2022— seeks the links between the spirit and values of Modern Movement and the wider design context under the title of *Modern Design: Social Commitment & Quality of Life*. The biennial international conference is hosted from at the School of Architecture of the Valencia Polytechnic University (UPV) 6 to 9 September 2022. The conference combines five keynote lectures, 26 thematic paper sessions with 130 academic and professional contributions, an international student workshop (31 August–4 September) and architectural tours in Valencia.

With the focus on social commitment & quality of life the conference emphasises the role of design in shaping and impacting our daily habits and our built and lived environment. Two years after the outbreak of the COVID-pandemic our lives are still not back to the speed and routines from before. And the current war in Ukraine in combination with climatic threats has further shaken our individual, social and political self-conceptions between global connectivity and local traditions. The fragility of current systems and societies requires all the more the redesign and creation of sustainable and qualitative living and working conditions worldwide: one of the main ambitions of Modern Movement in the early 20th century.

Ten years ago, the 12th International DOCOMOMO Conference 2012 took place in Espoo, Finland, then World Design Capital and explored the role of design under the theme of “Survival through Modern. From Coffee cup to Plan”. In his keynote Juhani Pallasmaa reflected on ‘Newness, Tradition and Identity’ and defined cultural identity as “a sense of rootedness and belonging in an irreplaceable ground of our very humanity”. (Conference Proceedings, 23). Since then —in only ten years— the challenges of and for change have drastically increased and make the proposed conference theme even more relevant. Taking equally into account the environmental, economic and societal challenges and the global scarcity of resources, a distinct development and selection of interventions is needed to preserve, rehabilitate, upgrade and reuse buildings, sites and neighbourhoods and interiors.

The contributions in these Conference Proceedings follow the eight major conference themes. Two themes reflect on how modern movement and modern design evolved in Europe and in other parts of the world (#01 THE EUROPEAN AVANT-GARDE - 2 sessions), #02 POST-WAR. INTERNATIONAL EXPANSION - 5 sessions) and #03 THE LATIN AMERICAN CONTRIBUTION - 4

sessions). For the first time puts a focus to the role of women in the field (#04 MODERN PIONEERING WOMEN – 4 sessions). And with regard to Valencia as World Design Capital the cultural identity of and in Iberia is discussed (#05 IBERIA. CULTURAL IDENTITY – 3 sessions). Less from a theoretical but from a practical perspective the three remaining themes (#06 NEW MATERIALS AND INNOVATIVE TECHNOLOGIES – 2 sessions, #07 URBAN DESIGN AND PUBLIC SPACE – 4 sessions and #08 LANDSCAPES AND GARDENS – 2 sessions) focus on best practices and are also witness of the aspirations to consider the building and its interior and exterior spaces as functional unit to be dealt with holistically.

Over its 33 years of existence DOCOMOMO International has laid the foundations of a distinct knowledge about tangible and intangible values of Modern Movement's legacy and suitable approaches to preservation and reuse, documented in the *DOCOMOMO Journal* (www.docomomojournal.com), the preservation technology Dossiers (<https://docomomo.com/dossiers-isc-t-2/>), several books and in increasingly in digital archives (<https://docomomo.com/digital-archives/>). In Europe and in many Western countries the recognition of this modern heritage has been established and cities like Valencia in urgent need of feasible concepts and efficient solutions to improve their building stock and public space in a future proof way. In other parts of the world the identification and documentation of Modern Movement's legacy is still pending or less developed, even though more threatened by rapid urbanisation and real estate developments. Both challenging fields need to be addressed by better knowledge distribution, FAIR Data and Open Educational Resources (OER) and finally by adapted educational programs. This is why education, digitisation and sustainability are in the focus of the closing roundtable of the 17th International DOCOMOMO Conference to discuss and present the Tokyo-València-Educational Charter.

Conference and workshop locations are both educational environments and will surely inspire and enrich the discussions during the conference. Schools and universities were cornerstones of Modern Movement by combining spatial and educational concepts. This is why the 9th DOCOMOMO International Student Workshop entitled *A Modern Utopia. Design as a Tool for the Conservation and Reuse of Modern Heritage* held at the Cheste Workers University (Universidad Laboral de Cheste) near València, requires a special mention. Again, a university campus serves as a case study and confronts us with the achievements of post-war modern concepts which see education as a common societal good that constitutes sustainable societies. Built from 1965–69 in very short time and designed by the architect Fernando Moreno Barberá the Cheste Complex hosted up to 5,000 boarding students, it is a splendid example of this belief.

Once more the student workshop allows to compare and further develop DOCOMOMO's educational aims and tools:

- to apply different tools for documentation, research and analysis and for communication towards different target groups,
- to raise awareness about qualities, particularities and values of Modern Architecture,
- to identify and evaluate significant aspects, elements and details as prerequisite for future design interventions,
- finally, to analyse and interpret the societal relevance of space and architecture to improve the quality of life.

DOCOMOMO International likes to express its gratitude to the City of València to support the 17th International DOCOMOMO Conference as the World Design Capital 2022 and wants further to congratulate the city on its ambitious and urgent 2030 Urban Strategy, which prioritises the urban regeneration of the post-war city in line with DOCOMOMO's mission. Further, DOCOMOMO International thanks all the institutions who made this conference, workshop and proceedings possible: the Architecture School of València Polytechnic University (ETSA/UPV) and the Cheste Workers University for generously hosting the conference and workshop. We also like to acknowledge the ambitious and continuous work of the Advisory Board and the Organising Committee to formulate and realize this challenging program, in particular the engagement of Carmen Jordá Such, Maite Palomares Figueres, Fernando Usó and Pasqual Herrero.

Special thanks go to the 17th International DOCOMOMO Conference Scientific Committee and the session chairs for the scientific work and active support in the assessment of the submitted abstracts and the presentation of the final papers. This includes to thank all the authors for sharing their knowledge in the proceedings and at the conference, and also all the contributors who helped and made it possible to present these proceedings at the conference.

On this occasion, we are truly thankful to the former DOCOMOMO International chair Ana Tostoes and the International secretariat with Zara Ferreira and Joana Coutinho for their huge efforts to bring the 17th International DOCOMOMO Conference to València and to organise the transition of DOCOMOMO International's headquarter from Lisbon to Delft so smoothly.

Finally, DOCOMOMO International is happy to welcome members of the 79 DOCOMOMO chapters and DOCOMOMO friends at the conference to further develop and disseminate the rich knowledge of our organisation to contribute to a sustainable built environment.

The Polytechnic University of Valencia in the 17th International Docomomo Conference

José E. Capilla Romá

RECTOR OF POLYTECHNIC UNIVERSITY OF VALENCIA

I am pleased to welcome both speakers and attendees to the 17th International Docomomo Conference at the Universidad Politécnica de Valencia (UPV).

In 2022, the UPV's School of Architecture has been chosen as the venue for this prestigious biennial conference, where renowned researchers from the five continents exchange the results of their studies on modern heritage.

Also in the year 2022 the city of Valencia has been designated World Design Capital, a project that recognizes the standard a city has achieved in the field of design. In its official programme, the 17th International Docomomo Conference has been included as one of the only two events related to architecture. It seems like a very opportune moment to get together at the UPV to discuss the main topic raised at this conference, Modern Design: Social Commitment and Quality of Life, something highly valued at our university.

The UPV is a leading institution that contributes to the task of training individuals by promoting their research and generating knowledge, based on quality, rigour and ethics. This strategy encourages the holding of international events, such as the 17th Docomomo International Conference, which constitutes a new meeting space to share ideas and position our innovative and creative spirit.

The UPV wishes to revert knowledge to society, becoming an active agent of change. In short, to collaborate in Docomomo International's mission of designing a better future is an initiative that provides great satisfaction to the entire university community.

17th International Docomomo Conference **In Valencia**

Joan Ribó i Canut

MAYOR OF VALENCIA

Like so many other cities, Valencia had great expectations for this year. Since 2020, however, the health crisis and current uncertainties have not made things easy. Nevertheless in 2022, prompted by the overriding need to make a recovery, and despite inflation, the energy crisis and recent armed conflict, we are determined to do the best we can in terms of improving our environment, the ultimate aim of which is to improve the quality of our citizens' lives and become a benchmark of urban living for so many people who come to visit us. Undoubtedly, Valencia, as World Design Capital has provided a huge stimulus to events related to design and architecture, and the 17th Docomomo International Conference is one of the most significant because of its scale and impact. This biennial international congress will be held in Valencia between September 6 and 9 and the wide range of conference papers presented bears witness to its importance: 130 from 17 countries, including Australia, Canada, South Africa, the United States, Chile, Brazil, Italy, Belgium, Poland, Bosnia-Herzegovina, Turkey, the Netherlands, France, Switzerland, Portugal, Slovenia and Spain. All in all, the number of conference attendees is estimated to be around 150 and, among the speakers are such prestigious names as Barry Bergdoll (New York), Joan Ockman (Philadelphia), Ana Tostões (Lisbon), Beatriz Colomina (New York), Zaida Muxí (Barcelona) and Iñaki Ábalos (Madrid).

Taking advantage of this meeting between professionals in architecture, design, furniture and product manufacturers, as well as students of the Universitat Politècnica de València undertaking their Bachelor Degrees in the Fundamentals of Architecture, or, with others from l'Escola d' Art i Superior de Disseny de València, their Degrees in Interior Architectural Design, the city is the first to benefit from this exchange of knowledge on modern heritage, involving building, landscape and public space. The eight themes proposed for this edition include debates as enlightening as the role played by women architects in the avant-garde, pioneers in so many designs that today form part of our collective legacy. Moreover, of course, prominence will also be given to the figure of modern Mediterranean architecture, of vernacular conception, which originated during the Republic and whose memory Valencia is in the process of recovering. Indeed, the recent rehabilitation and opening of several anti-aircraft shelters has received the recognition of Europa Nostra.

Finally, our first and foremost interest lies in innovating in the existing city through rehabilitation. València has been designated by the European

Commission as one of the top 150 municipalities in the European Union to form part of the “Climate Adaptation Mission” programme. In promoting resilience and sustainability, learning from those who built post-war cities with new technologies and typologies is essential. The Valencia 2030 Urban Strategy, in line with the Sustainable Development Goals, the Law on Architecture Quality and the Next Generation EU, prioritises the urban regeneration of the consolidated city, which also involves updating and disseminating its catalogue of protected buildings, such as the last one to be registered in Docomomo, the Escuelas San José of Cayetano Borso and Rafael Contel. Currently, we are now looking to save from oblivion two outstanding limited-rent housing units. Thus, the 17th Docomomo will leave a mark on Valencia that goes beyond heritage, which is usually understood as historical, by reaching out to the architecture of more recent times that also deserves our utmost respect.

Welcoming in the 17th International Docomomo Conference

Héctor Illueca Ballester

SECOND VICE PRESIDENT AND REGIONAL MINISTER FOR HOUSING
AND BIOCLIMATIC ARCHITECTURE. GENERALITAT VALENCIANA

To deal on a day-to-day basis with the housing policies that a complex, changing and diverse society like ours requires, we have to be fully aware of existing needs at all times, the means at our disposal to satisfy them, and the different opportunities that are open to us.

Every day, in the processes of decision-making we not only have to undertake the specific analyses that each proposal deserves, but also have to take into account their transcendental nature. We must reap the benefits of the most valuable aspects of our received historical heritage in order to be able to adapt to new ways of life, at all times seeking to come up with solutions that are at once innovative, functional and practical.

For this reason, hosting the 17th edition of the Docomomo International Conference in Valencia is an opportunity not to be missed. An event like this means getting closer to the forefront of international architecture and, at the same time, raising awareness of the work being undertaken in our country, our particularities and our circumstances, as well as taking advantage of the general debate to address the needs we are facing.

Within the framework of Valencia as the World Design Capital 2022, which we are hosting this year, this Conference highlights and delves deep into the relationship between architecture and design, and how the latter discipline has been a mainstay in global architectural development, providing unquestionable cultural precedents, from the treatment of interior spaces to the use of new techniques and new materials.

In these times of unprecedented climate emergency, health crises and the threat to the living conditions of much of the population, reflection on interior spaces in architecture is especially relevant and governments on all levels need to be very attentive to the resulting conclusions.

The Modern Movement in architecture, during the first half of the twentieth century, brought about a radical change in the composition of spaces, forms and aesthetic approaches. It was also a paradigm shift. The Modern Movement reflected an architecture designed for people in general, heedful of their social functions and aware of the era in which they lived.

We are now going through a time when it is entirely appropriate to continue to appraise this architectural current, to continue studying it, to delve deeper

into it, and to adapt it to our own times. Functionality as a basic premise of architectural language, the commitment to technological advances and the relationship with industrial production are characteristics of this movement, all of which are still essential to pursue.

I have no doubt that the better we know the how and why of the radical change that the Modern Movement brought about a century ago, the better the proposals will be for dealing with the set of problems we have today.

This 17th Docomomo International Conference focuses its work on various aspects, ranging from the pioneers of the movement to issues related to design, quality of life or new materials, and includes Latin American contributions and Iberian particularities. Without detracting from any of these points, I would like to highlight the chapter dedicated to women architects who were very important in the development of the movement.

The usual reference list of Modern Movement architects includes a long list of mostly male names. The books are full of references to Alvar Aalto, Ludwig Mies van der Rohe, Frank Lloyd Wright or Le Corbusier, but there were also many very prominent women without whom it is impossible to understand this new trend and understand the magnitude of its transformative force. Charlotte Perriand, Jane Drew, Lilly Reich, Aino Marsio Aalto, Marion Mahony Griffin and so many others are essential names to be reclaimed, worthy for the outstanding work they undertook.

The great value of the Docomomo initiative, which makes it so deserving of our recognition, is the enormous work that they have carried out on studying and documenting the architecture of the Modern Movement as part of our recent culture, and in raising awareness on the need to protect, care for and conserve it.

Docomomo's dedication to contextualizing past circumstances that gave rise to original initiatives, their development and future possibilities is, therefore, to be greatly appreciated.

The Docomomo project has been running for more than thirty years and its legacy is as admirable as the aim of its work. It is a legacy that will undoubtedly be expanded on in this meeting in Valencia, which we can all take pleasure in, learn and profit from.

Caring about our recent past

Iván Cabrera i Fausto

DIRECTOR OF THE HIGHER TECHNICAL SCHOOL OF ARCHITECTURE
OF THE POLYTECHNIC UNIVERSITY OF VALENCIA

Any modern and responsible society has the duty to document and preserve the artistic production of its time and of all those previous epochs on which its values and aspirations are based on. In the case of architecture, this duty is even more important, since this discipline and its output can be understood as the material embodiment of the relationships that human beings establish with their fellows and with the planet at the moment of its ideation and production.

Nowadays architecture is undergoing a significant evolution in which variables such as resilience, sustainability and inclusivity play a fundamental role. However, despite the remarkable changes that are being experienced, today's architects are still heavily indebted to the principles of Modernism, whose theoretical foundations and imaginary were established in the first half of the twentieth century. Such a circumstance is paradoxical if one considers that buildings and urban spaces built during the Modernist period have traditionally received little attention from those specialists devoted to heritage preservation and, consequently, are not especially valued by society in general, always more sensitive to the monuments of antiquity. Magnificent architectural projects have seen their good condition and preservation endangered simply because they were not considered old enough.

Fortunately, the fellows of the International Committee for Documentation and Conservation of Buildings, Sites and Neighbourhoods of the Modern Movement, better known by its acronym, DoCoMoMo, ensure that all Modernist architectural production receives proper attention. Their task is recognized worldwide, receiving the support of numerous governments and universities. In the case of the Iberian Peninsula, and more specifically in the Valencian territory, its members develop an important work of research, study and enhancement of that architectural heritage built from the 1920s to the 1960s, ensuring its proper preservation and the recognition of the citizenship that often still uses it.

For all these reasons, and on behalf of all of us who make up the academic community of the Higher Technical School of Architecture of the Polytechnic University of Valencia, I wish to express our utmost satisfaction for hosting the DoCoMoMo Biennial International Conference. Likewise, I would like to acknowledge the great work developed by Maite Palomares and Carmen Jordá in the organization of this great event. More than ever in the year when the city becomes the World Design Capital, I want to welcome you to this vibrant Mediterranean jewel and its always restless school of architecture.

World Design Capital Valencia 2022 **and Docomomo International**

Marisa Gallén

PRESIDENT OF THE VALENCIA WORLD DESIGN CAPITAL 2022

It is a privilege to be able to integrate the 17th International Docomomo Conference into the Valencia World Design Capital 2022 programme.

It is entirely appropriate to include the legacy of the Modern Movement in the context of the world design capital, as it was the architects of this movement who integrated the disciplines of design and architecture not only into their buildings, but also into their interior spaces and furnishings. Moreover, using new construction methods and technological advances, they provided innovative and functional solutions that were adapted to the social demands of their time, values that, today, with a new social sensitivity are being updated to provide appropriate responses to the challenges we face as a generation.

Hosting the most important architectural event on the Modern Movement in the world helps to raise critical awareness throughout Spanish society of the value of an architecture that, although far from the prevailing canons of beauty, has been at risk of disappearing. The archive of buildings that Docomomo has selected, documented and analysed is essential to preserve them from destruction and give them a new use adapted to the needs of our time.

Raising the public's awareness of their environment and architectural heritage is a hallmark of our culture and one of the main aims of the city of Valencia, as the capital of the region. Therefore, this year in which the entire city and its institutions are collaborating to make the capital a success, we are delighted that the Universitat Politècnica de València, through the School of Architecture, is joining in the project by hosting this congress. Welcome!

#01

The European
Avant-Garde

S01

The Avant-Gardes: a Laboratory for a New Way of Life

Maite Palomares Figueres

DEPARTAMENTO DE COMPOSICIÓN ARQUITECTÓNICA. UNIVERSITAT POLITÈCNICA DE VALÈNCIA

"If the intentions of the League of Nations are sincere, it is impossible to fit the new social organization into the straitjacket of traditional architecture."¹

In the above quote Hans Meyer was referring to a new social organization that embraced a more modern way of living, based on the ideal of a healthy, hygienic, practical, and outdoor way of life. This desire was not possible within the constraints of traditional architecture. Architecture and urban planning had to be redefined from the perspective of a universal and functional modernity. Bearing that in mind, the avant-garde set about extending its revolutionary thinking to all aspects of lifestyle and social conditions.

For this new lifestyle, the modern home had to be updated and conceived as a standard product of low-cost industrial elements, in line with the production planning of mass manufacturing. Sigfried Giedion linked the feminist movement with the rational household and claimed that mechanization would transform the household following a prior organization of the work process. Rationalizing the domestic context had an impact on all aspects of architecture, including, quite logically, significant changes to sanitary and service spaces. Elisa Koering explains how this functional ideology was introduced by Le Corbusier, Charlotte Perriand and Pierre Jeanneret in the houses of the late 1920s, where a great deal of thought went into designing a Taylorist and ergonomic kitchen that attended to the needs of the housewife. These changes had already been anticipated by authors such as the American Catherine Esther Beecher (1869) or the Austrian Margarete Lihotzky (1926).

In transforming the house, new structural systems and the introduction of new materials played an important role, allowing thinner walls and the presence of large glass surfaces, typical of a machine aesthetic. For Beatriz Colomina, even medical discourse and imaging technologies influenced the transparency of modern architecture:

"In the 20th century, the widespread use of X-rays made a new way of thinking about architecture possible. Modern buildings even began to resemble medical images, with transparent glass walls revealing the inner secrets of the structures."²

Lightness and transparency determined the modern universal language, giving prominence to internal space, now perceptible from the outside. These transparent elements revealed a transformed society, where intimacy was no longer a value to be cherished. However, the thermal weakness that characterized this new form of construction led to a dependence on technical systems –electricity, internal air conditioning systems...– that were essential to guarantee a comfortable life under the new architectural conditions. The paper presented by A. Bonora, K. Fabbri, G. Favaretto and M. Pretellisi, analyzes the design process, adopted in the Villa Tugendhat by the engineer Bacon for the heating system, which Mies van de Rohe introduced into the construction system with a fully integrated design, understanding that the technique could not be separated from the construction of the space, an idea that later on Reyner Banham would defend in his text "Architecture of the Well-Tempered Environment".

The new ideals were also implemented in the field of urban planning by adopting scientific methods and a zoned urban design. The result was the now well-known, so-called functional city, dedicated to housing, work and leisure linked by transport infrastructures. Under the social premises of a healthy housing policy, the idea was to create a sense of community in high-rise housing blocks, a non-class system" with sufficient lighting and ventilation for all. These hygienic conditions were provided through a rational layout of the buildings, with wide open and sunny spaces. The paper "Houses, Walk-ups or High-rise Apartment Blocks?" presented by Walter Gropius to the CIAM in Brussels (1930) explained the advantages of high-rise housing blocks through achieving higher density and greater space.

Jadwiga Urbanik and Edyta Naworska analyze the experiences of the FRG, between 1926 and 1931, where optimal layouts were defined, the sizes of the apartments standardized, functional floors designed and structural solutions optimized in order to reduce construction costs in Törten developments in Dessau (1927), Weissenhof in Stuttgart (1927), Spandau-Haselhorst in Berlin (1929), Dammerstock in Karlsruhe (1929), and WuWA in Wrocław (1929).

With the desire of making a clean break, avant-garde creators aspired to building a new culture by promoting a modern concept of art suited to the demands of the times. The didactic nature of the exhibitions was used by architects and artists to convey the message of progress to society. They were important for their content and for their buildings, which all contributed to enriching architectural culture.

This development in modern architecture was reflected in the universal exhibitions held in Paris. At the *International Exhibition of Modern Decorative and Industrial Arts* (1925), the most radical buildings, as we all know, were buildings such as the L'Esprit Nouveau pavilion and that of the USSR designed by V.

Melnikov. Nearby, in the modern garden of the Tourism Pavilion were the cubist forms of concrete trees designed by R. Mallet Stevens and J. and J. Martel, in front of which models wearing fabric coats designed by Sonia Delaunay posed.

At the *International Exhibition of Arts and Technology in Modern Life* (1937), the aesthetics of modern technology predominated in the pavilions of various countries. The Spanish pavilion, by the architects J.L. Sert and L. Lacasa put the new modern idea of beauty on display, in its architecture, content and significance.

The Pavilion of the Union of Modern Artists (UAM) is the title of C. Bauer's presentation, who also explains the ideological thinking of the group in the European context. Its members advocated progressive art in line with modern technology and issued a call to arms for to all who cared about the relationship between art and industry and the need to adapt the living environment to social conditions. At the UAM pavilion (1937), several collaborations with businesses were presented aimed at industrializing health equipment, or school furnishings. In the latter case, their design sought to reflect the new educational concepts concerning the physical, mental, and psychological health of children.

The Japan Pavilion was designed by Junzo Sakakura, a student of Le Corbusier who fused avant-garde international architecture with Japanese tradition, an innovative practice that was a forerunner of future positions of modern architecture. The particularities of Japanese architecture were also present in the work of A. Raymond, an American-Czech architect, who combined influences from Wright and Le Corbusier with those traditions. The author Y. Genda presents a paper on the Tetsuma Akaboshi House designed by A. Raymond in collaboration with his wife N. Pernessin, responsible for the interior design, decoration, furniture, and textile elements.

This final presentation also covers the conservation of modern architecture and is linked to the Sustainable Development Goal 11.4 that promotes "Redoubling efforts to protect and safeguard the cultural and natural heritage of the world". The conservation of modern heritage is necessary to transmit 20th century culture to future generations, and its cataloguing is essential for transmitting those values to society.

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2 Beatriz Colomina. *Arquitectura de rayos X*. Barcelona: Puente, 2021), 29.

Le Corbusier and the Standard Kitchen in the 1920s. From *Purism* to Taylorism

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As early as the 1910s, Charles-Édouard Jeanneret showed an interest in the kitchen, particularly in his projects for workers' housing, without expressing his opinion on how it should be designed. However, in the first half of the 1920s, he defined a standard fitted kitchen for his *Purist* villas. The definition of the standard cabinet (*casier standard*) shortly before 1925 reinforced this trend, although the kitchen was not the primary object of reflection and dissemination. In the second half of the 1920s and the discovery of domestic economists such as Paulette Bernège and Erna Meyer, as well as architects committed to the construction of a Taylorist kitchen, such as Margarete Lihotzky, he finally engaged in a powerful reflection on the definition of a Taylorist kitchen determined by the gestures and body of the housewife. In reaction to the proposals made by the Germans and the Dutch in Stuttgart in 1927, and with the help of Bernège, Charlotte Perriand and Pierre Jeanneret, he defined a new type of rational kitchen-laboratory in 1929, which was supposed to respond to standard needs (*besoins-types*). Now photographed and published, the kitchen became an object of propaganda and a decisive element in his theoretical demonstration for a scientific habitat. This article is part of my research on the Corbusian interior before the Second World War, in particular on the definition of his Taylorist interior. It is based on unpublished research carried out in various archives and on publications from the inter-war period. A new subject, highlighting forgotten figures (in particular the women), the Corbusian kitchen is nevertheless of fundamental importance for the history of modern architecture and allows us to show how the Corbusian interior evolved between the two world wars, based on the reflections of other major actors of modernity.

1. Introduction

During its travels and training, Charles-Édouard Jeanneret took note of kitchens and there is some evidence that he was not completely indifferent to this space, whose form and organisation underwent a transformation from the late nineteenth century. For instance, his acquisition of the publication *La Cuisine populaire de La Chaux-de-Fonds*¹, the (unfulfilled) project of writing a chapter on the kitchen in his future *Voyage d'Orient*², or a few notes and sketches in his notebooks and letters. Nevertheless, before the second half of the 1920s, there is no evidence of programmatic discourse on this utilitarian room. The publications of the 1910s never mention it, while the manifesto texts of the early 1920s, mainly published in *L'Esprit Nouveau*, focus on the living room, the dining room, the bedroom or the boudoir. Le Corbusier deconstructs the bourgeois spaces of representation in particular, and through them, a way

of living viewed as obsolete, even though certain nineteenth-century codes persisted in his own work.

However, his discourse and his research on a habitat free of the remnants of the past logically include a reform of the sanitary and service spaces, and therefore of the kitchen. One may even claim that these places embody the “spirit of truth”³ and Le Corbusier’s theory of a bare, “rectilinear and clear” house⁴ that is hygienic and functional.

Although very little documentation and almost no photographs exist regarding the kitchens he designed in the 1910s and early 1920s, they seem to be mainly based on popular models, with exceptions such as the Villa Schwob. In particular, the kitchens for his worker housing projects are integrated into a large common room in the peasant and working-class tradition.

2. Reforming habitat: the *Purist* standard kitchen as a domestic invariant

As the design of his “machine for living in”⁵ became increasingly accomplished, Le Corbusier defined at the beginning of the 1920’s a kitchen that he implemented –or tried to implement depending on the circumstances– in his *Purist* houses. This kitchen, which can be qualified as *Purist*, was based on a single model, with a few variations, which is nevertheless difficult to analyse because of a lack of sources or technical and historical studies on the subject. In short, one may cautiously state that this kitchen is generally located on the ground floor and opening onto a courtyard when possible. Often, but not always, Le Corbusier tries to place it near the dining room or the common room, although without creating a link, and when the pantry and/or the dining room are upstairs, he installs a dumbwaiter. The kitchen is often small, open to the outside thanks to a large window or skylight and lit by naked bulbs “hanging out of their sockets”⁶. This workroom, subject to the build-up of grease, odours and humidity, is ventilated by one or more air vents and, like the other wet rooms, oil-based paints are used. In keeping with the same concern for maintenance and hygiene, its walls are partially covered with white tiles, while the floor is covered with black or white industrial ceramic tiles. Finally, this separate kitchen –each room having to fulfil a specific function for order and harmony– is equipped, that is to say fitted with furniture to serve as a pantry or as storage for “implements”⁷, as in the avant-garde kitchens of several modern German and Dutch architects. From the Ker-Ka-Ré and Ozenfant houses onwards, and in the continuity of the traditional sideboard and fitted sideboards designed for the Jeanneret-Perret and Schwob Villas, Le Corbusier came up with a double-height unit (*meuble-immeuble*) in two parts, comprising high and low cupboards closed by panel doors (**Fig. 1**). The lower section is covered with a tiled worktop. In the Villa *Le Lac*, for example, the high cupboards rise to the ceiling, supported by “simple brackets”⁸ and metal columns, in keeping with the design of the

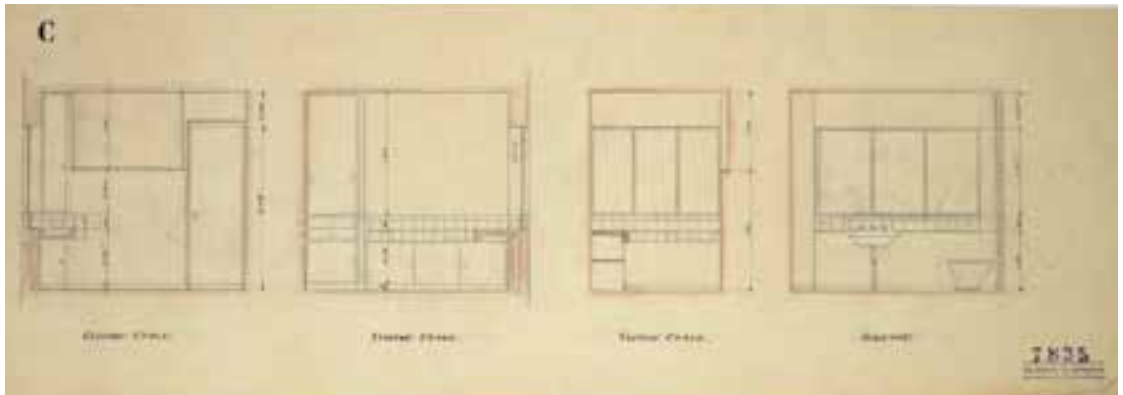


Figure 1. Le Corbusier, Pierre Jeanneret, Elevations kitchen, toilet, Maison-atelier Ozenfant (FLC 07835).

house itself. Le Corbusier combined this fitted furniture, which featured units sometimes several metres long, with storage or work components –shelves, a table-worktop against the wall, a cupboard under the sink–, items bought in shops –draining board, pan rack, brush holder, hooks, pegs–, sanitary equipment –sink, slop sink– as well as electric or gas appliances, such as a cooker or sometimes a hood. This was an equipped and hygienic kitchen, clearly adhering to a modern design.

These choices generated a specific aesthetic. Although the walls were probably painted in light *Purist* colours, as in working-class kitchens, simplicity prevailed. No decoration, no mouldings, no textiles: free of style, the ensemble was designed to serve the housewife (or the servant) and broke with the contemporary solutions advocated by French decorators, the “luxury” residing here in functionality and technical innovation. However, although it was designed to facilitate productivity and maintenance, this kitchen did not match the efficiency of other modernist kitchens, such as those designed by Gerrit Rietveld and Truus Schröder–Schröder or Benita Otte and Ernst Gebhardt’s in 1923 (Haus am Horn). Some *Purist* kitchen’s faults were obvious: a lack of fluid circulation due to its cramped size, the height of the cupboards or the absence of accessories to rationally organize items in the cupboards and drawers. All so many shortcomings that prompted some clients to propose solutions. For example, Lotti Raaf suggested, among other things, installing a Swedish sink, while Antonin Planeix encouraged the architects to be more rational and economical. Some clients criticise these kitchens, considered too small, impractical, badly heated⁹ and lacking in rational storage systems.

As early as 1923, it seems, Le Corbusier defined a theoretical kitchen model that was to incorporate all his *Purist* devices: a standard kitchen governed by rational and universal precepts. Although the furniture was made to measure and could vary in its materials or construction, it was designed as a series of standard pieces thanks to its more or less regular dimensions and its adaptation to its

function. Along with the bathroom, the kitchen was the ideal place to apply his theory of the standard object (*objet-type*), as almost all of its components were produced industrially: tiles, earthenware, appliances, machines, hardware, pots and pans, crockery and glassware. Like the “bowler hat”¹⁰, the bentwood seat, the bidet or the typewriter, they are the standard objects that give life to a perfect kitchen. Nevertheless, the architect does not produce any theoretical discourse regarding his model; in his *Manuel de l’habitation*, he merely mentions the ideal location of this room, without following his own rule: “If possible, place the kitchen under the roof, to avoid odours”¹¹.

3. The *casier standard*: for a universal and industrial kitchen

In the first half of the 1920s and slightly beyond, Le Corbusier seemed to be satisfied with this model. However, around 1924, he devised (along with Pierre Jeanneret) a general system of storage and spatial organisation, in keeping with his quest for universality and standardisation: a standard cabinet (*casier standard*). Theoretically designed for cheap mass production in wood or metal, it was intended for all programmes and all the rooms: “In the construction of the building, the architect is totally lacking in all the wood or sheet metal joinery that could enable him to equip kitchens, pantries, dining rooms and bedrooms with perfect rigour; I believe that a programme of capital importance lies therein for the construction of mass-produced units”¹².

The elimination of load-bearing walls, thanks to the use of concrete and the free plan, gave this furniture a crucial function in the Corbusian interior: a “moral framework”¹³. Replacing the double-height unit, this *casier* acted as

partition and storage unit for a saving of space and increased rationality since each standard “box” (*caisse*)¹⁴ had an interior organisation adapted to the room. The kitchen therefore undergoes formal and practical evolution towards a standardised industrial design, as conceived by Louis-Herman De Koninck in the late 1920s with his Cubex system.

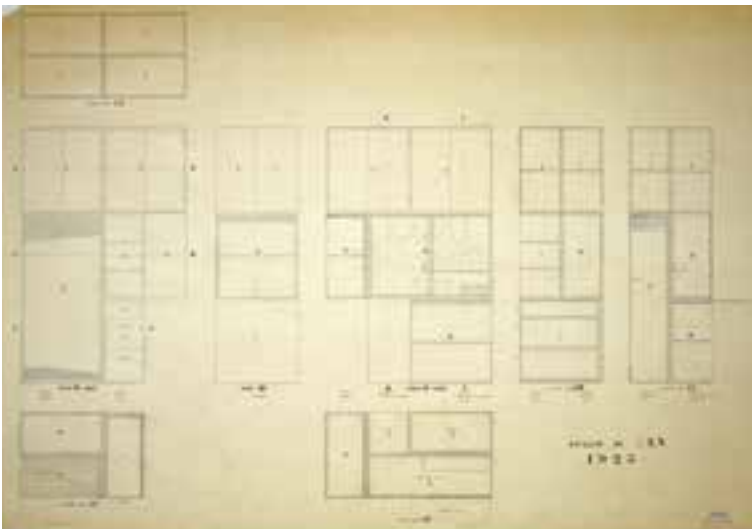


Figure 2. Le Corbusier, Pierre Jeanneret, Casiers standard, Pavillon de l’Esprit Nouveau, 1925 (FLC 29803).

Although the industrial project failed¹⁵ this new kitchen was demonstrated in the *L'Esprit Nouveau Pavillon* (1925), where it was partially enclosed by traditional partitions and wooden cabinets (**Fig. 2**). Without photographs and detailed drawings, however, it is impossible to know more about the design.

After 1925 and this partial setback, Le Corbusier seems to have retained the general principles of his *Purist* standard kitchen, upgrading certain aspects for improved functionality and easier maintenance. In this respect, the Villa Cook seems to mark a turning point, notably for the introduction of metal, the installation of numerous appliances or by extending the worktop of the double-height unit forward. In subsequent houses, the space was enlarged, grooves were dug between the walls and the floor, cabinet height seems to have been lowered, some swing doors were replaced with sliding doors¹⁶ – sometimes made of metal –, or a fitted table covered with a worktop placed perpendicularly to the window.

4. The taylorist kitchen

From the 1910s, Le Corbusier develops a Taylorist approach to construction and a scientific conception of the dwelling; he collected references for household appliances and accessories and wrote his *Manuel de l'habitation* for housewives. However, despite being integral to his thinking on housing reform, his *Purist* kitchen was never theorised, nor was it commented on, exhibited, photographed or published¹⁷.

After 1925, a change took place as he decided to photograph his kitchens –the first being that of the Villa Cook– before publishing them regularly from 1927. Then, from 1929 onwards, not only did he widely disseminate images of his kitchens –Villas Savoye or Stein de Monzie– he turned them into fully-fledged propaganda objects for his ideas, endowing them with a new status as a result.

This evolution is clearly linked to that of the object itself, in particular due to his discovery, in 1926, of women architects and domestic Taylorists¹⁸. In France, the ideas of the latter were disseminated in magazines which Le Corbusier read, as *Mon Bureau*, *L'Usine*, *Le Bureau* or *Mon chez moi*, directed by Paulette Bernège. These “household architects”¹⁹ focused on the organisation of housing, in particular the functional spaces, including the kitchen, where the principles of the scientific organisation of work defined by Frederick Taylor or the Gilbreth couple were applied. They set rules for housework to be managed efficiently, while avoiding duress, fatigue or the wasting of time or money. In their kitchen, waste, dark corners, “energy-sapping” distances²⁰, unnecessary objects and bulky furniture were banned. Airy, bright and comfortable, kitchens were to be equipped, if possible, with machines, standard tools and rational, sometimes mechanical, furniture. The housewife must be able to move around unhindered; her trained body now the yardstick and axis of kitchen design. To create the Taylorist kitchen, these professionals studied unit and worktop heights, and the movements of the woman. Stopwatches,

pedometers, diagrams and patterns were used to define a scientific kitchen model in which productivity and efficiency were as important as comfort.

Bernège's writings resonate strongly with those of Le Corbusier who was the ideal partner to carry out her reform. She therefore proposed a collaboration in 1926²¹, also motivated by an observation: the unfinished nature of his habitat, in particular his kitchen. The intermediary between Bernège and Le Corbusier was Henri Frugès, who regretted how cluttered and cramped the kitchens were in Pessac²². This observation –one of several criticisms– was shared by other clients such as Guiette and corroborated by Bernège, who criticised its storage for being non rational²³.

From 1926 onwards, the *Purist* kitchen underwent modifications (including those already mentioned) which can be attributed to this context. But it was the *Deutscher Werkbund* exhibition in Stuttgart in 1927 that prompted Le Corbusier to rethink his approach. This event exposed him to advanced models of rational housing, including Taylorist kitchens. Le Corbusier had received a copy of Erna Meyer's guidelines for kitchen design²⁴, and had visited Ernst May's houses in Frankfurt where he discovered the work of Margarete Lihotzky or Anton Brenner on what Bruno Taut called the "nerve centre of the dwelling"²⁵. Nonetheless, he did not seem to grasp what was at stake in Stuttgart. For his C2 House, Alfred Roth helped to define a new type of kitchen with a smooth black artificial stone worktop and metal sinks, in which a cupboard and very high built-in storage units replaced the *Purist* double-height unit. In the C1 House, however, the tiled worktop system seems to be retained. The Atelier did not propose rational kitchens. Moreover, they were not subject to any (Corbusian) commentary, photography or publication. Le Corbusier thus missed an opportunity to establish himself as an international avant-garde architect.

The disappointing experience in Stuttgart, the discovery of some women architects and domestic professionals, as well as his fruitful relationship with Bernège, had a strong impact on Le Corbusier. Charlotte Perriand's arrival in the Atelier at the end of 1927 must be seen in the light of this context: she was hired to carry out a domestic programme and to create a new type of kitchen, in addition to metal furniture. Nourished by the precepts exalted by Bernège and Meyer, she took on the unprecedented role of household architect-*ensemblière* and, with the Jeannerets, defined a typical Taylorist kitchen exhibited in 1929 (**Fig. 3**).

Although this *scientific* kitchen retained some features of the *purist* model, it marked a distinct rupture and realised the ideal Le Corbusier aspired of a kitchen equipped with standard cabinets, in this case made of metal. Especially, like the *ensemble* itself, it reflects the influence exerted by the domestic philosophers and even a collaboration with Bernège, as attested by the application of the main principles advocated by these specialists. Independent and small, this kitchen-laboratory is adapted to a woman's size and movements, connected to the living room by a serving hatch (a

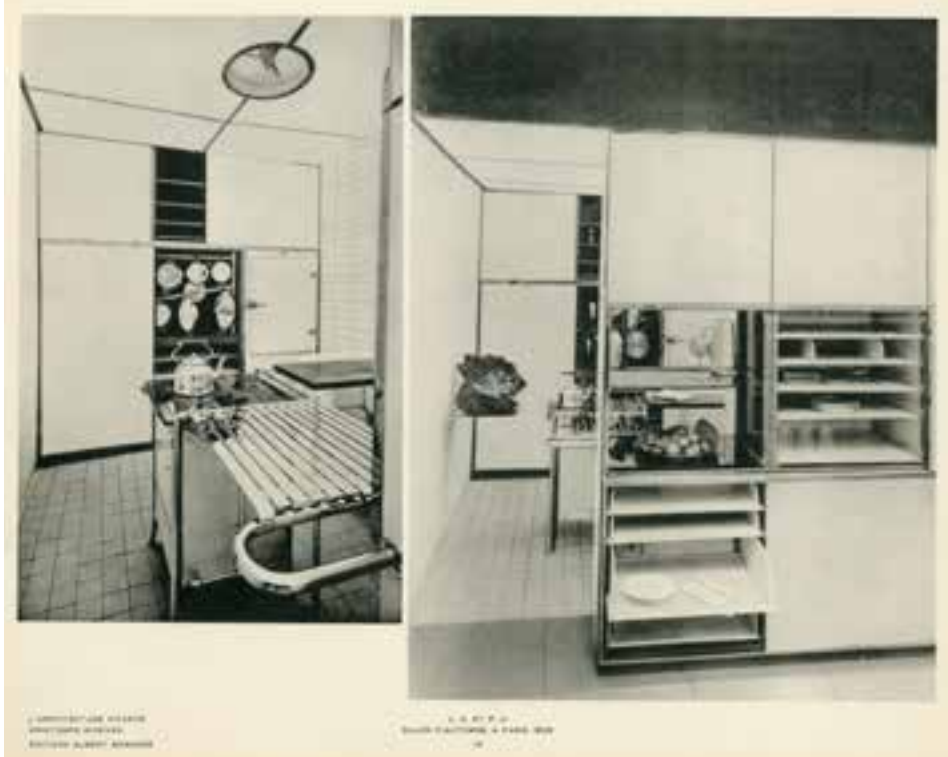


Figure 3. Le Corbusier, Pierre Jeanneret, Charlotte Perriand, Kitchen, Équipement intérieur d'une habitation, Salon d'Automne, 1929 (*L'Architecture Vivante, Printemps-Été 1930*).

system widely used in Stuttgart) and free of tight corners difficult to clean. Its cabinets are rationally composed and its surfaces easily washable; there are no “mouldings”, “cracks” or “grooves collecting dust, water or soap”²⁶, its colours are cheerful, its space is airy thanks to a mechanical ventilation system, its lighting is rational, its functions are apparently grouped together and its implements are arranged in a practical way. It thus clearly adheres to a Taylorist model.

However, certain choices are contrary to Taylorist rules –such as placing the stove in the centre, instead of the body-pivot of the housewife– and testify to the Atelier's desire to make a demonstration, even if it means sacrificing the simplicity of the Taylorist models. Some of its illogical features can be attributed to Le Corbusier's desire to showcase his research, such as on the neutralising wall.

Like all propaganda objects, this kitchen was exhibited, photographed and widely published on in magazines. Thus, for the first time, the architect made the kitchen a key component in his theoretical demonstration of the home. This trend was to become more pronounced in the 1930s and after the war, as evidenced the numerous drawings produced by the studio, or the architect's writings and photographs.

This reflection on the Taylorist model inspired a tangible but gentle reform of the Corbusian kitchen after 1929, making it a synthesis of the *purist* model and the Taylorist exhibition kitchen: a rational and inhabitable kitchen that we find, for example, in forms adapted on rue Nungesser et Coli, or later in his Unités d'habitation, such as the one in Marseille, whose design was determined by "...the 'hearth', the 'fire', that is to say the 'kitchen', which participates in domestic life and is at the very heart of domestic life according to the oldest folk or primitive (and French) traditions"²⁷.

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The Pavilion of the Union des Artistes Modernes (UAM) at the Paris International Exhibition in 1937: Art for All, by Everyone and in Everything

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The Union des Artistes Modernes (UAM) was created in 1929, by a group of committed French artists of various disciplines, who promoted the art of progress with modern technology. They proposed a new way of life, following the publication of a manifesto in 1934. Thanks to the arrival of the Front Populaire government, the UAM was invited to build a pavilion in the International Exhibition of Arts and Technology in Modern Life, held in Paris in 1937. The building, designed by Georges-Henri Pingusson with Frantz-Philippe Jourdain and André Louis, was a response to the desire for balance, logic and purity enshrined in the UAM manifesto, made of low-cost prefabricated elements. It implemented the synthesis of the arts (painting, sculpture, graphic arts, furniture, etc.), so cherished by the group. In the interior architecture gallery, social concern was apparent in the study of minimum space, by exploring retractable or multifunctional furniture. Art for all also took shape for the first time in the form of a bazaar, which consisted of grouping together objects usually on sale in shops but adapted by the artists in order to bring together everyday objects of quality at an affordable price. Finally, the UAM exhibited metal school furniture, the result of a collaboration with the Technical Office for the Use of Steel (OTUA) to demonstrate the potential of the material. For André Hermant, the 1937 pavilion was the conclusion of the first years of UAM's activities, which he described as having been an era of struggle. The presentation of the UAM in 1937 was a clear illustration of the group's ideological position in the European artistic context and their last event before the Second World War¹.

1. French artists committed to the art of progress

An ideology to be defended in the 1930s

The *Union des Artistes Modernes* (UAM) was created in France in 1929, following dissension within the *Société des Artistes Décorateurs* since the 1925 International Exhibition of Modern Decorative and Industrial Arts. A group of artists pushed for progressive art in line with modern technology. They called on all those who were concerned by the relationship between art and industry and the need to adapt the living environment to social conditions. The association sought to break down the barriers between artistic disciplines. The first executive committee was composed of Hélène Henry, René Herbst, Francis Jourdain, Robert Mallet-Stevens and Raymond Templier.

Although the first UAM event held in 1930 at the Pavillon de Marsan was well received by the press, criticism became increasingly virulent over the years. The difficult economic conditions of the 1930s and the scarcity of commissions for artists and architects led some to reject modern design in favour of craft. In response, in particular to Camille Mauclair's diatribe², the UAM drafted its first manifesto in 1934. The UAM members refuted accusations of foreign-inspired art. They turned the insulting descriptions such as "streamlined modern style", "clinical style" and "ugly nudism" in their favour by reaffirming the notions of balance, logic and purity. The manifesto also intended to put an end to the perpetual opposition of "playful art" and "useful art", and laid its foundations on the synthesis of the arts.

The election of the Popular Front Government: the opportunity to build a pavilion

In 1931, as representatives of the UAM, Robert Mallet-Stevens, René Herbst and Jean Fouquet were invited to participate in the official committee to study the prospect of an international exhibition in Paris in 1937. However, they were discouraged by the traditionalist direction of the exhibition, and feeling "lost (...) and always isolated in their opinions"³, they resigned the following year.

But the situation changed with the arrival of the left-wing government of the Popular Front in 1936, under the leadership of Léon Blum. Four years after having resigned, the UAM joined the various commissions again. A fraternity was established with other groups, such as the International Congress on Modern Architecture (CIAM) and Cultural Centres (Maisons de la Culture), for a reorganization of the International Exhibition and a turn towards progress, stimulated by the social conquests of the Popular Front. The group was supported by successive Ministers of National Education, including Jean Zay, who requested significant funding "because of the exceptional value of this group and the very large number of artists of all categories interested in its programme of action"⁴. The group, which had not presented an exhibition in its own name since 1933 for budgetary reasons, was given the opportunity for the first time to build a pavilion at a major international event.

2. Collaborative architecture in a streamlined modern style

The site was located on the banks of the Seine. The pavilion was designed by Georges-Henri Pingusson, secretary general of the UAM, in collaboration with young architects Frantz-Philippe Jourdain and André Louis. Widely glazed and completely raised up from the ground by pilings, the pavilion stretched for over 70 metres, offering a play of movement via long ramps. It was made up of three main volumes corresponding to the different exhibition spaces: a main hall housing a collective exhibition, topped by a reception centre "like a tent

next to the terrace"⁵; a large gallery for the interior architecture; a vestibule with a bookshop opening onto a small architecture gallery.

The pavilion was the embodiment of the values advocated in the 1934 manifesto: the preference for "simple, unadorned, pure, naked forms". Already used in Pingusson's previous buildings, notably the Latitude 43 hotel, naval vocabulary was widely employed. It was applied to the style (accentuation of the horizontal lines, smooth whiteness of the envelope), the volumes (the main body ends at its extremity like the prow of a boat, the stern attached to the quay like a pier) and the finishing elements (decking, canvas, ropes, etc.). But above all, a rational and economic technical conception was accentuated. The pavilion was built with a metal frame with minimal profiles, exposed and coloured bright red. It was covered with a recent and economical material, widely used in other 1937 pavilions: machined and dry-fitted fibre cement sheets. Attention was paid to the ironwork, and Jean Prouvé was involved in the creation of a delicate staircase in folded sheet metal.

The architecture of the pavilion was thus in keeping with a style widely used by the avant-garde in the inter-war period as a symbol of the machine aesthetic established by Le Corbusier and as a reference to the agreement between art and industry, "a myth that concentrates and sums up the ideology of the modern movement"⁶.

3. The synthesis of all the arts

The decision to entrust the construction of its pavilion to a group of architects demonstrated the UAM's desire to collaborate. This collaboration also materialised in the union of different disciplines within the architectural design itself. Indeed, in its manifesto, UAM placed the synthesis of the arts as its foundation, "to confuse the minor and the major arts, such is, in our opinion, the first task of the new aesthetic"⁷.

After only one previous attempt to introduce paintings in its interiors in 1935, the UAM incorporated a large mural into the design of the main hall in 1937 pavilion entitled "Accompanying Architecture"; it was created by Fernand Léger, Albert Gleizes and Léopold Survage.

Sculpture was also widely represented. In addition to the works exhibited inside, several commissions were carried out for the International Exhibition. They play an integral role in the pavilion's exterior appearance, with Jean Lambert-Rucki's polychrome sculpture and Miklos's bas-relief that were placed in the axis of the ramp on the riverbank and the main entrance to the quay, in order to guide the circulation of people. Allegorical statues in a rather academic style, also represented the values of the group: a stone statue of Descartes, author of *Discourse on the Method*, created by Jean Puiforcat, embodied reason, while a statue of Csaky suggested Art and Technology, the



Figure 1. Entrance square of the UAM pavilion, Paris, France, 1937.
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union advocated by the group and the general direction given to the International Exhibition.

The graphic arts had historically been very present within the UAM. In the pavilion, all the poster artist members participated: Jean Carlu, Paul Colin, Claude Lemeunier and Maximilien Vox, Cassandre, Charles Loupot, Charles Peignot and Bernard Francis. In addition to the poster exhibition, it was above all typography that was given a major role. Cassandre created a new typeface named *Peignot*, by mixing capitals and lower case letters. The typeface was present throughout the pavilion and was used more widely in many of the communication elements of the International Exhibition. The *Peignot* typeface was most spectacularly implemented on the manifesto wall, the result of collaboration between five graphic designers. Located in the entrance area, it was designed to be visible from a great distance. The letters UAM were repeated five times and coloured in vermilion, ochre and blue on a white background. It is in the arrangement of this main entrance plaza that the synthesis of the arts was most

accomplished. It demonstrated the diversity of the disciplines involved, but above all enabled the understanding of their full place in the architectural composition (Fig. 1).

4. Art for all

Minimum space and multifunctional furniture

In the interior architecture gallery designed by René Herbst, eight individual stands were presented. They each represented dwelling rooms: from simple living rooms to specific spaces, such as a cabin in a river house. Many of the presentations aimed to offer modern furniture at a lower price. Social concern was apparent in the study of minimum space, by exploring retractable or multifunctional furniture.

The most interesting presentation was by Francis Jourdain, who exhibited a typical dwelling for an intellectual or manual worker measuring 3.70 × 3.90 metres. This 'de-cluttering experiment' was one of his last interiors and illustrated his long experience in the field. Thanks to an ingenious system of folding furniture, every small space was put to good use and the combinations were endless. "All Francis Jourdain is in these surprises: three or four rooms

in one, ingenuity instead of clutter, order instead of clutter, luxury through order"⁸ (Fig. 2).

The bazaar: everyday objects of quality at an affordable price

With the same idea of offering art for all, Francis Jourdain also implemented in the pavilion the concept of the bazaar that he had been defending since 1925. It consisted of grouping together objects usually on sale in shops but modified by the artists in order to bring together everyday objects of quality at an affordable price.

One of the group's ambitions was also to consider their presentations "under the quasi-anonymity of a collective signature"⁹. As early as 1931, Pierre Chareau (supported by René Herbst and Jean Fouquet) demanded this, as it corresponded to his idea of the UAM: a grouping of ideas and not of interests. Le Corbusier, a member of the UAM, supported this idea of a bazaar with sales, and in 1935 he even had the ambition for a group presentation of this type between the UAM, the CIAM and Peintres et Sculpteurs Modernes (PSM).

It was in 1937 that the bazaar first took shape in the most important space of the UAM pavilion, the main hall. The mixture of all kinds of objects with the idea of a bazaar was not fully realised, since individual name boards still occupied an essential place. However, furniture and sculptures were displayed freely, while posters, objects, fabrics and valuables were hung on panels and in display cases (Fig. 3).

5. Collaboration with industrial companies

The long-standing desire for industrialisation

A collective study aimed at the industrialisation of sanitary equipment was presented in the UAM pavilion. It included the participation of René Herbst, Georges-Henri Pingusson, Jean Prouvé and Marcel Gascoin for washbasin and shower models, and the Martel brothers for a dressing table designed for a home without running water. Le Corbusier, Pierre



Figure 2. Francis Jourdain, typical dwelling for an intellectual or manual worker, UAM pavilion, Paris, France, 1937. © Published in *Art et Décoration*. Photographer unknown, all rights reserved.



Figure 3. The main hall housing the bazaar, UAM pavilion, Paris, France, 1937. © Published in *Art et Décoration*. Photographer unknown, all rights reserved.

Jeanneret and Charlotte Perriand exhibited a life-size model of a prefabricated sanitary cabin for the hotel industry, for which Jean Prouvé designed the folded sheet metal walls.

Engaging in long-term collaboration with industrialists was a long-standing desire of the members of the UAM. In 1934, Georges-Henri Pingusson, the movement's general secretary, proposed the creation of an organisation that would allow the development of everyday objects for the general public, and also their promotion. The project for a French Association of Creative Artists and Industrialists, made up of the Ministry of National Education, the National Office of Research and Invention, the UAM and the magazine *L'Architecture d'Aujourd'hui*, never saw the light of day. But the same year, a permanent commission was created in collaboration between the UAM and the Technical Office for the Use of Steel (OTUA) that gave rise to an acclaimed presentation in the pavilion.

New metal school furniture with OTUA

The collaboration between UAM and OTUA led to the creation of six ocean liner cabins, presented at the Salon d'Automne in 1934. Two years later, a commission for steel school furniture was created, which brought together steelworkers, members of the teaching profession and architects. In fact, in the mid-1930s, school architecture was being renewed with the construction of several innovative buildings, such as the open-air school in Suresnes by Eugène Beaudouin and Marcel Lods (1932–1933) and the school complex in Villejuif by André Lurçat (1932–1935). Architects and decorators joined forces with construction companies to propose school furniture in line with the new concepts of education, inspired by concerns for the physical, mental and psychological health of the child.

The studies developed from year to year, and were presented at the Salon d'Automne in 1936, at the Salon des Arts Ménagers in 1937, and then at the International Exhibition in 1937. The creations of Maurice Barret, René Cravoisier, René Herbst, Henri Meyer, Pierre Chareau, Marcel Gascoin and Paul-Albert Pocheron were exhibited in the UAM pavilion. They demonstrated that the material allowed for easy disinfection, was resilient, fire-proof and adjustable for better child posture (**Fig. 4**).

Beyond school furniture, metal was widely represented in the UAM pavilion: tubular sections of pieces of furniture, small hardware items, folded sheet metal finishing elements, etc. The use of rhodoid for garden furniture designed by Jacques André and Jean Prouvé, and the introduction of artificial materials in Hélène Henry's fabrics, also illustrated the use of new industrial materials.

6. Materialism or aestheticism, the stance of uam

The 1937 pavilion was the last collective event of the UAM before the war. For André Hermant, it was the conclusion to the first years of activities, which he

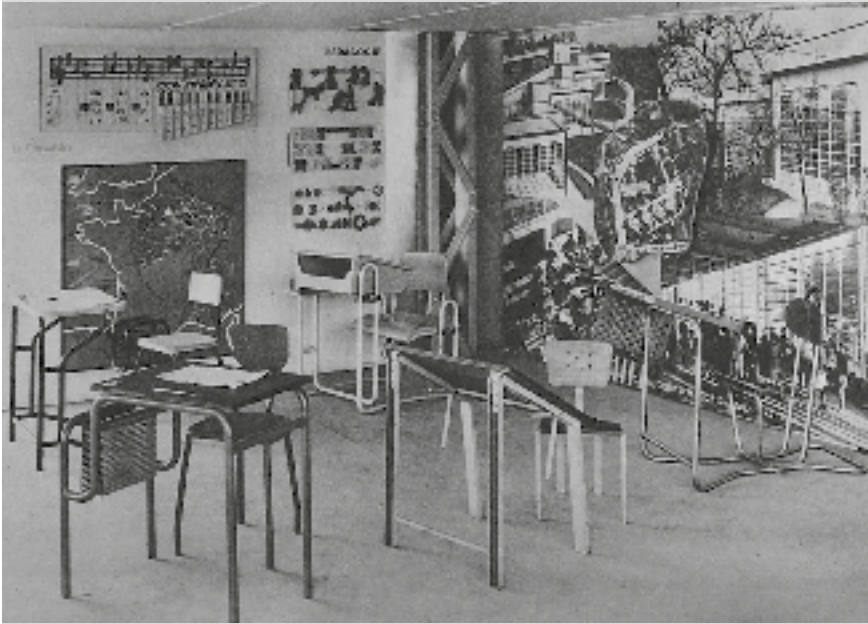


Figure 4. Metal school furniture section, UAM pavilion, Paris, France, 1937. © Published in *Acier*, n°1, 1938. Photographer Lacheroy, all rights reserved.

described as an era of struggle. Although the group held an exhibition in 1949, it never regained the same intensity and died out in 1958, to the benefit of the new association *Formes Utiles*.

In 1937, the UAM was able to create its own exhibition space for the first time, which enabled it to fully implement principles that were dear to it, such as the synthesis of the arts, but also to initiate a first presentation of a bazaar. However, even though they represented a concrete step towards industrialization, the objects and furniture remained prototypes or, at best, were made in very small series.

The difficulty of making mass production a reality seemed to lie both in the reluctance of industrialists and in the French public taste. The magazine *Décor d'Aujourd'hui* considered that the UAM had "imprisoned itself in a system" and that its members had become "slaves to the form they have imposed on themselves"¹⁰. The magazine *Beaux-Arts* invoked the "tyranny of purity" and admitted that the slightly too logical perfection of their production gave them a "kind of sentimental reserve"¹¹.

On the other hand, some artists considered the UAM too decorative, like Raymond Fisher, who refused to join the group¹². For the German Julius Posener in 1932, "the UAM is composed almost entirely of formalists, of decorative artists"; according to the rational doctrine it proclaims, it was "a society of anti-puritans, of heretics"¹³. Already in 1928, Siegfried Giedion

criticized Robert Mallet-Stevens, president of the UAM, as a “hardened formalist”¹⁴. It is probably by comparing the output of the UAM with that of the Deutscher Werkbund that we can measure the group’s position on the international scene. UAM member Maurice Barret formalised it in this way: “[...] in my opinion, this obstinacy in wanting to solve problems from an economic and rational point of view marked the profound difference between our ‘aesthetic’ tendencies and those of our ‘materialist’ German colleagues”¹⁵.

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RFG and the Beginnings of Modern Living

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The aim of the text is to present the difficult beginnings of shaping a modern apartment on the basis of archival research and inquiries conducted in Berlin and Wrocław. Architects of European avant-garde of the interwar period insisted that rational planning must have scientific foundations. In Germany in the interwar period, the RFG had already been conducting such studies. The RFG (abbreviation standing for Reichsforschungsgesellschaft für Wirtschaftlichkeit in Bau- und Wohnungswesen – State Research Society for Cost Efficiency in Building and Housing) was a government agency established in 1926 to stimulate and finance research on rational planning and support model housing developments. The RFG was involved in the following model estates: Törten in Dessau (1927), Weissenhof in Stuttgart (1927), Spandau-Haselhorst in Berlin (1929), Dammerstock in Karlsruhe (1929), WuWA in Wrocław (1929). The RFG worked to define optimal layouts for new developments, standardize the sizes of apartments and outline the most functional floor plans. It strove to implement new building materials and technologies as well as structural solutions that would reduce construction costs. The results of work carried out by various committees of the Society were presented in special issues published by the RFG. Particularly noteworthy are those concerning apartment and kitchen plans. Marie-Elisabeth Lüders (the RFG member) appealed: "First the kitchen – then the facade!" Eventually the RFG developed guidelines defining the optimal standard size of the apartment in relation to the size of the family: 45 m², 57 m², 70 m². The RFG's activity also influenced a number of housing estates in Germany that were not under the organization's direct supervision. Although the State Research Society existed only for 5 years, its guidelines permanently changed housing architecture, also in the post-war period.

1. Introduction

Today we can clearly see that in the 20th century, especially in the interwar period, a revolution in architecture took place. Representatives of the younger generation of architects tried to accelerate the development of modern architecture in Europe. The new housing estates were to be the beginning of a completely new construction, unencumbered by tradition, which was to change people and their lives permanently.

The architects of the then European avant-garde claimed that strict scientific methods should be used to design rational housing. In 1926, to counter the housing shortage in Germany, the Reichstag passed a law to promote housing construction. To this end, a commission was set up to study new ways to rationalize and finance construction. In 1927, Marie-Elisabeth Lüders, a politician

in the Reichstag, requested a portion of the funds for experimental work. The request was approved, and the Reichstag committee was turned into a new association.

2. Establishment of the RFG

On December 14, 1926, the State Research Society for Cost Efficiency in Building and Housing (*Reichsforschungsgesellschaft für Wirtschaftlichkeit im Bau- und Wohnungswesen* – RFG) was founded in Germany, but registered on January 21, 1928, although the bylaws had already been established on September 10, 1927. The society was dissolved on June 5, 1931. The RFG was established to carry out and finance research on model housing development and to support its construction. Earlier, the program outlined by the RFG had been partially implemented by certain committees of the Reichstag¹. The RFG's organs were the members' assembly, the administrative council, the board of experts and the management board². There were 15 committees within the RFG³. The Society, based in Berlin, operated under the supervision of the Ministry of Labor (*Reichsarbeitsministerium*). The society was composed of architects, politicians, scientists, and representatives of the non-profit construction industry. In April 1928 the RFG had about 400 members⁴.

Particularly important were committees No. 3, 4, 6 which dealt with construction methods, building materials, building elements; size, forms and types of dwellings and houses; kitchens and housekeeping.

In April 1928, the first special issue, entitled *Keinstwohnungs-grundrisse*, was published, devoted to the formation of plans for small and medium-sized dwellings of approximately 28 m² to 48 m². **Fig 1.** It became a guide to designing proper house and apartment plans. The second special issue was about kitchens and was published in July 1928, that is, after Margarete Schütte-Lichotzky had designed the so-called Frankfurt kitchen in 1926, which became the model for subsequent developments. Marie-Elisabeth Lüders, proclaimed: "First the kitchen – then the facade!" **Fig. 2.**



Figure 1. Model apartments layouts developed by RFG. (*Keinstwohnungs-grundrisse*, RFG, Sonderheft 1, vol.1, April 1928, table 1,2.).



Subsequent issues dealt with estates completed under RFG auspices: Haselhorst in Berlin⁵ (1929, no. 3), Dammerstock in Karlsruhe (1929, no. 4), a settlement in Munich⁶ (1929, no. 5), Weissenhof in Stuttgart⁷ (1929, no. 6), Törten in Dessau⁸ (1929, no. 7).

Issue No. 6 concerning the Weissenhof estate was published two years after it had been completed, which gave the opportunity to point out the disadvantages of the proposed solutions. RFG carried out random inspections in the estate to check the comfort of buildings for their inhabitants.

Weissenhof

The model Werkbund Weissenhof estate and *Die Wohnung* exhibition show the difficult beginnings on the road to modernity. The objectives of the exhibition combined with the model housing estate were formulated in the manifesto and program of the whole undertaking, which was published in December 1926⁹. The document pointed out that the most important issue in housing construction was the problem of shaping the building plan, i.e. adjusting it to the housing needs of contemporary people. A dwelling should be comfortable and practical, with the smallest possible area.

Equally important was a change in the assumptions of construction – the use of new structures and materials. One of the main tasks of the exhibition was to try out already manufactured materials and constructions proposed by engineers. Attention was particularly drawn to the “dry” assembly of a building. This system made it possible to transfer work from the construction site to the factory. The condition of industrialization, it was emphasized, must be the typification and standardization of all building elements¹⁰.

Despite the fact that the housing estate was covered by the RFG, it did not escape the criticism of RFG experts. Negative voices were mainly concerned

with the flat roofs and the attitude of the developers towards housing and residents. Franz Hoffman-Johannisthal wrote: *These houses are already rejected by common sense people today, what about after 10 years (...)*¹¹. The first residents were almost exclusively academics¹².

From the report of Dr Grünbaum (RFG) after his visit from 9 to 14 July 1928, entitled *Who is the settlement built for?*, we learn that the Weissenhof buildings are not adapted for children, the author even mentions their hostile character towards children. There were also opinions among young women that they should avoid pregnancy as long as they lived on the Weissenhof¹³.

Even the works of the most prominent architects – Ludwig Mies van der Rohe, Le Corbusier and Walter Gropius – did not escape criticism either.

In a special issue of RFG concerning this housing estate, Franz Hoffman-Johannisthal in his report pointed out the problems with the partition walls used by Mies van der Rohe. They quickly became unsightly; moreover, the layered walls caused noise that could be heard on neighboring floors, which could be a nuisance to roommates¹⁴.

The most expensive and the furthest from the original task of designing housing for low and middle income people was the house by Le Corbusier and Pierre Jeanneret. A dangerous staircase was pointed out, from the landing of which it was easy to fall. For Corbusier, dividing rooms with full-height walls was a luxury. The designer used concrete walls only 1.6 m high, as a result of which fumes from dishes prepared in the kitchen and noise from other rooms could find their way into the main living room¹⁵. **Fig. 3.**

The plans of Walter Gropius's houses were found to be well thought out but uninspiring. One of them was definitely not suitable for a large family. According to RFG, the house was designed for a couple with one child; during research for the society's report, a family with eight children lived there. The



Figure 3. Le Corbusier and Pierre Jeanneret, semi detached house, Weissenhof Werkbund estate, Stuttgart, Germany, after the second renovation in 2003–2005, renovation design by Büro Architektur 109 – Arne Fentzloff and Mark Arnold. (photo J.Urbanik, 2018).

bedrooms were found to be far too small, with four children sleeping in the laundry room and the others in the pantry; only one toilet was provided in the building. Residents also complained about inefficient heating; gas-fired space heating proved to be decidedly unprofitable¹⁶.

A manifestation of opposition to the Weissenhof estate was the formation of the Block group in 1928, whose founder was Paul Schulze-Naumburg¹⁷. He believed that modern architecture had nothing in common with the German landscape, or the Nordic cultural circle.

After a few years, when *Neuses Bauen* was no longer an accepted architectural trend in Germany, the Weissenhof estate was called a "stain of disgrace". Nevertheless, it testified to two great transformations – the beginning of the use of industrial methods in construction and the premonition of a new way of life.

Törten

Walter Gropius (director of the Bauhaus and vice-president of the RFG) realized the Törten estate in Dessau, which was the first to receive RFG patronage.

The development, built in three stages, included 314 terraced houses ranging in size from 57 m² to 75 m².

RFG wanted to investigate the rational production of housing and the suitability of new building materials and industrial products. The construction

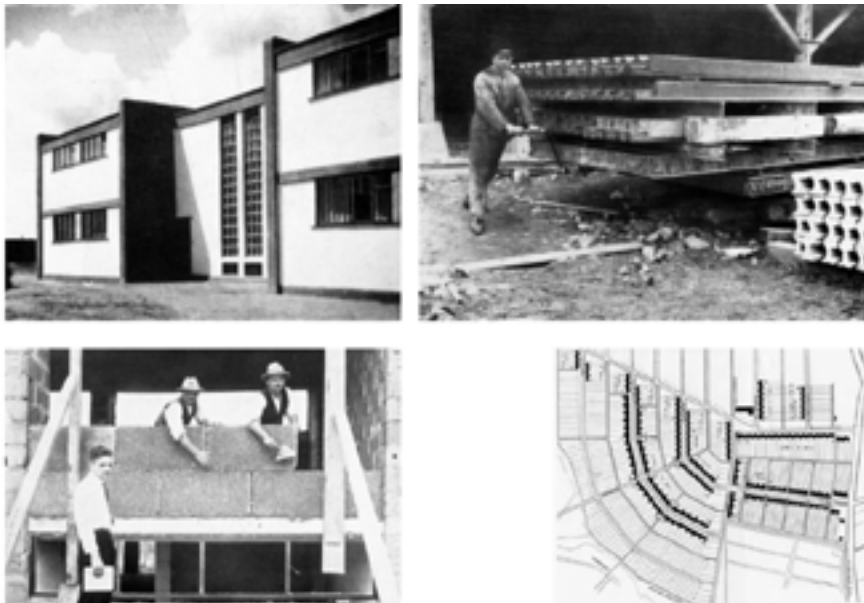


Figure 4. Walter Gropius, Törten housing estate, Dessau, Germany, 1926–1928. (Bericht über die Versuchssiedlung in Dessau, RFG, Sonderheft 7, vol.2, April 1929, pp. 5, 41, 84, 137).

site was organized like an industrial production line. Specialized work brigades built several houses simultaneously during one construction phase. **Fig. 4.**

The Bauhaus also advertised interior furnishings, but there was no demand for them.

Dammerstock

Walter Gropius's search for rational ways of building culminated in the realization of Dammerstock estate in Karlsruhe in 1929. It was a model experimental housing estate of the Werkbund, which was the result of a competition held in 1928. All presented works took into account the "linear layout" (*Zeilenbauweise* – parallel arrangement of rows of houses). This layout had undeniable advantages, despite its monotony and often inadequate adaptation to the lay of the land. However, it provided all residents with the same conditions for lighting for their apartments. The buildings were situated perpendicularly to the streets, which protected the apartments against the heavy traffic. This meant the elimination of both closed yards and "corridor streets"¹⁸.

The slogan "no room without sun" (*kein Raum ohne Sonne*) was to be taken into account in the design of the apartments.

The usable area of the apartments was to correspond to the areas established by the RFG and considered optimal (45 m², 57 m² and 70 m²) for a certain number of persons in a family.

The RFG guidelines also specified other dimensions, for example, the height of the rooms – 2.8 m, the size of the kitchen – 5 m² in a 45 m² apartment, but not less than 6 m² in apartments with a larger area, the living room (dining room) – 14 m² in the smallest apartment and 16 m² in other apartments. The area per bed was also specified, for example from 5 to 7 m² in the smallest dwelling

On the other hand, the settlement was met with harsh criticism. Walter Schwagenscheidt wrote *that it is not right to divide the surface like a tailor and call it urbanism*¹⁹. Because of the bare white surfaces, the estate was called "Jammerstock" (hill of misery, poverty, crying), instead of Dammerstock (twilight hill). Four years after the settlement opened, the local NSDAP organ called it "centrist construction Bolshevism". They were described as "the victory of reason and the failure of aesthetics"²⁰. Adolf Bene believed that the tenant was subjected to an aesthetic dictatorship, while another critic wrote of "mechanistic barracks tendencies"²¹.

Haselhorst

The competition for the RFG Spandau Haselhorst, announced in 1928, was precisely to study the features of the linear layout and sunlight of the apartments with an east–west orientation. The jury awarded the first prize to

Walter Gropius and engineer Stephan Fischer. The project provided for twelve-story gallery buildings containing 4,500 apartments for 17,000 people.

It was proposed to equip the housing estate with a full network of collective facilities. In each apartment building common kitchens, cold stores, mechanized laundries, children's rooms, clubs were designed. All this was to make it easier for a woman working outside the home to run the household and take care of children²².

This competition finally confirmed in 1929 that the linear layout was considered optimal, although there had been harbingers of such urban planning much earlier.

A difference of opinion emerged between Gropius and the RFG and Gewobag (the cooperative responsible for building the housing estate) regarding the height of the houses. Due to a lack of experience in the construction of high-rise residential houses, they opted for a lower development.

WuWA

In 1929 the Silesian section of the Werkbund organised the "Living and Work Space" (*Wohnung und Werkraum*) exhibition to present various types of affordable small- and medium-sized apartments, essential for alleviating the housing problem in Wrocław (former Breslau).

Although RFG took the project under its auspices, it did not support it financially. The architects designing the model houses, however, tried to follow the RFG guidelines.

New types of buildings, constructions, and materials were to be tested in the trying conditions of the idiosyncratic Silesian climate.

The architects addressed the needs of communal living in tenement houses and developed a number of "*Existenzminimum*" row houses.

Interior design and furnishings provided another focus point. The new living space required a new and innovative approach. The creed was to use well-designed, mass-produced furnishings²³ which were affordable and offered considerable flexibility in interior arrangement.

Representatives of the Housewives' Association (*Hausfrauenvereine*) from Wrocław took part in preparing the plans of the buildings and decorating the interiors. They wanted to avoid mistakes of the Weissenhof housing estate in Stuttgart. In addition to fully appreciating the good proposals, the union formulated seventeen demands regarding the drawbacks of new construction in a so-called Wish Card (*Negativer Wunschzettel*)²⁴.

The buildings' modern architecture and layouts seemed controversial, particularly to those with a more conservative outlook. They criticized the estate's architecture as uprooted from tradition and non-German²⁵.

3. Summary

In 1931, the Reich Ministry of Labor cut funding for the RFG. One reason was the high expectations, which were only partially met. The company was struggling with organizational problems, constant criticism from the professional world, and missed opportunities to convince large construction companies of its work. Added to this were the general financial difficulties of the crisis-ridden republic. In June 1931, the RFG was dissolved. Surely the reason why this organization was less visible was the growing importance of the National Socialists, who did not support the *Neues Bauen* style. It was succeeded by the Foundation for the Promotion of Building Research.

The activities of the RFG also influenced the shape of many German housing estates that were not under its supervision. Often they were co-created by architects, who regarded the RFG guidelines as right or were themselves members of this research organization and felt obliged to follow its program.

Although the Research Society existed for only 5 years, its guidelines permanently changed residential architecture, also in the post-war period. The novelty of housing estates built during the Weimar Republic in Germany is proven by the fact that the Berlin housing estates were entered in the UNESCO list and the Werkbund housing estates were awarded the European Heritage Label.

Architects, while trying their best to fit architecture to humans, also tried to fit humans to architecture. They created an abstract, idealized model of the dream user of the new architecture and perhaps that is why they failed.

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Localisation of Modern Architecture through the Antonin Raymond–Designed Former Tetsuma Akaboshi House

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To clarify the details of the localisation process of modern architecture, this study analyses the International Style architecture, “the former Tetsuma Akaboshi House,” designed by Antonin Raymond.

Antonin Raymond, a Czechoslovakian-born American architect, came to Japan in 1919 as an assistant to Frank Lloyd Wright to construct the Imperial Hotel. After setting up in Japan in 1921, he pursued his style in the 1930s, incorporating Japanese architectural styles and carpentry, while influenced by Frank Lloyd Wright, Auguste Perret, and Le Corbusier. He contributed to the development of modern architecture in Japan. Raymond attempted to catch up with the cutting edge of modern architecture by promoting fair-faced concrete in his designs. He also discussed the affinity between modern architecture and Japanese culture. He mentioned that the fusion of the two is the leading edge of modern architecture. For him, the localisation of modern architecture in Japan was a way to lead to the most advanced designs of modern architecture. In particular, his representative work, the former Tetsuma Akaboshi House, embodied this idea.

The house was completed in 1934 in the western suburbs of Tokyo as a large-scale RC residential building with a garden. The house has the characteristics of International Style architecture and the characteristics that make it conscious of the Japanese climate and culture. The house had an important position in the localisation and promotion of the International Style architecture. After completion, the house has been partially renovated and remodelled to suit the lifestyle of each era, but the basic plan remains unchanged. Although the owners and residents did not recognise its cultural asset value, the house has been preserved. The facts universalise its design.

1. Introduction

Background / Purpose / Target setting

In Japan, modern architecture recognises as an essential subject of cultural properties. However, many of them are in danger of disappearing. Thus, it is necessary to raise awareness of their cultural asset value further and understand the historical value through localisation. This study aims to clarify some aspects of the localisation of modern architecture, which is still being defined.

The subject is the international style architecture “the former Tetsuma Akaboshi House” designed by Antonin Raymond.

Antonin Raymond, a Czechoslovakian-born American architect, came to Japan in 1919 as an assistant to Frank Lloyd Wright to construct the Imperial Hotel. After setting up in Japan in 1921, he pursued his style in the 1930s, incorporating Japanese architectural styles and carpentry, while influenced by Frank Lloyd Wright, Auguste Perret, and Le Corbusier.

People who would later become great architects in Japan at his design office, including Kunio Maekawa, Junzo Yoshimura, and Masanori Sugiyama, were admitted. Therefore, focusing on Raymond's architecture is meaningful for localising modern architecture in Japan. In particular, the house, which was completed in 1934 at the early stage of Modernism and still exists, is even more important.

Method of research / Positioning

The research will be organised into the following three categories: 1) the position of the former Tetsuma Akaboshi House in the history of modern architecture, 2) the understanding of the awareness of localisation through Raymond's discourse on the house, and 3) the understanding of the actuality of the house.

About the existing research on the house, the books are mainly limited to the books written by Antonin Raymond himself and Hiroshi Misawa, a graduate of Raymond Architectural Design Office. In recent years, the author has clarified the process of conservation and succession of the house¹. However, the actual localisation situation of the house has not been clarified.



Figure 1. The area around the Tetsuma Akaboshi House (around 1945 / Created by the author based on *Sensai fukkou ki Toukyou 1 manbun no 1 tikei zu syuusei kichijouji shouwa 22 nen*, Kashiwa shobo, 1983)

2. Overview of the former tetsuma akaboshi house and the historical position

Overview of the former Tetsuma Akaboshi House

One of his representative works, the former Tetsuma Akaboshi House, was completed in 1934 in the western suburbs of Tokyo as a large-scale RC residential building with a garden. **(Fig.1)**

Masanori Sugiyama, Teizo Ono, Junzo Yoshimura and others were involved in the design of the house.

At the completion, the site area was about 7,000 square meters, and the total floor area was about 500 square meters.

The house was composed of an RC building for the family's living space and a wooden structure for the servants. The volumes were a combination of rectangular and cylindrical. The exterior walls of the RC building were made of cast concrete. It was 40 meters long in the east-west direction, with a "U" shaped rectangular building curved at 18 degrees to the south, and it had a cylindrical stairwell at the east end. The wooden structure attached to the north side was a one-story building with a single sloping roof. (Photo 1 & Photo 2)

The first floor consisted mainly of living spaces for the family, wife, and children and a water area. The living spaces were located on the south side of the corridor, and the function rooms were on the north side. The entrance, spiral staircase, and storehouse are placed at both ends, and the living room, dining room, and the Japanese-style room of 12 square meters are lined up next to the spiral staircase at the east end, followed by the western-style bedroom of the wife in the centre, and then the private rooms of the four children. On the north side of the house, the entrance, the inner entrance, the janitor's office, the reception room, the kitchen, and the bathroom are located across three patios (inner garden). On the second floor, the living space of the master, Tetsuma Akaboshi, occupied a large part of the space, with a spiral staircase and a storehouse at both ends as on the first floor. On the north side of the building is a long and narrow corridor with a staircase and a bathroom, and the first and second floors have a series of glass doors to emphasise the horizontal line. The rooftop consists of a pool, a balcony, and a



PHOTO 1. The former Tetsuma Akaboshi House (South side / around 1934 / Kazuo Matsuno ed., *Bi 1936 ver.*, Heibonsha, 1936)



PHOTO 2. The former Tetsuma Akaboshi House (South side / 2020 / © Yuta Genda)

water tank room. The balcony has a wall on the north side, and the view goes to the south side, where there is a garden. One can see the garden and Mt. Fuji from the rooftop. For the interior design, revolving steel glass doors and sliding windows were designed to create a large opening in the wall. Mrs Noemi Raymond designed the fixtures. Linen folding doors were frequently used as interior partitions. The folding doors were coloured brown or grey or designed with horizontal stripes depending on the location. Each room had its chair and fabric colour for furniture, and curtains and carpets were specially designed and woven for each room. (Fig.2)

A large garden was created on the south side of the RC building, with a green and bunkers for golf practice.

In general, the residence has the characteristics of International Style architecture.

Further, the house was transferred to Musashino City by its owner, Sisters of Notre Dame de Namur, in 2021.



Figure 2. Floor plans (At the time of completion / Created by the author based on Shinkenichiku, Shinkenichikusha, 1935, 162-163)

The historical position of the Former Tetsuma Akaboshi House

We use Terunobu Fujimori's book "Modern architecture of Japan <under Taisho and Showa Hen>."

Antonin Raymond was initially one of the architects of the Wright School who came with Frank Lloyd Wright. However, when late Expressionism, which Modernism influenced, flourished, one of the trend sources was the Raymond House (1924), which brought Japanese modern design to the forefront of the world. After that, the modern design's mainstream in Japan was the De Stijl school, which had the aesthetics of white and right angles. Raymond was strongly inspired by Le Corbusier, the leader of the French Purism, and designed significant works such as the Soviet Embassy (1929) and the Tokyo Golf Club (1930). The Bauhaus School, a change from the De Stijl school, further advanced abstraction and simplification under the geometry phase.

The Corbusier school, which gradually split off from the Bauhaus school and originated with Raymond who was awakened to the fair-faced concrete of Perret before Corbusier, had characteristics such as a Corbusier-like design with a sense of reality. After the Summer House (1933), which was designed by Raymond and known for the problem of the adaptation of Corbusier's Errazuriz House, Raymond's style suddenly became more Corbusier-like. He produced such masterpieces as the Morinosuke Kawasaki House (1934), the first house in Japan to use Corbusier's signature pilotis, and the former Tetsuma Akaboshi House (1934), which had significantly curved fair-faced concrete walls that Corbusier had not yet done. Since the Raymond House, his theme had been to show fair-faced concrete as a surface.

Raymond was aware of the flow of modern architecture in the West and aimed to be at the forefront of this trend. The completion of the former Tetsuma Akaboshi House was when localisation began to have meaning in modern architecture. Thus, the house has an important position in the history of modern architecture in Japan.

3. Raymond's discourse on the Former Tetsuma Akaboshi House

Discourse on the relationship between modern architecture and Japanese architecture

Raymond wrote that the basic principles which have been rediscovered as the goals of modern architecture are being embodied in Japanese architecture and civilisation³. He also wrote that the sources of Japan's appeal were the essence and principles that remained when everything was removed. Raymond realised that modern architecture was an unconsciously implemented architectural principle kept alive and protected in Japan and we were only consciously striving to recover the knowledge of these lost principles⁴. He then cited the logic of structure and planning based on functional and structural beauty, the creation of space through the mobility of openings and large apertures, simplicity leading to beautification, the reality of materials, and an intimate relationship with nature as common principles between modern architecture and Japanese architecture.

In other words, Raymond implicitly conveyed that he who understood Japanese architecture and culture could design modern architecture of the cutting edge and essence. It can be read as a similarity between the embodiment of Japanese architecture and culture, and cutting-edge contemporary architecture in his modern architecture.

Discourse on the former Tetsuma Akaboshi House

Next, we would like to grasp how the former Tetsuma Akaboshi House embodied Japanese culture through Raymond's discourse.

He referred to the client's desire to accommodate the lifestyle, such as kimonos, futons and Kura⁵. He also mentions his response to the Japanese climate and the Japanese culture⁶. On the other hand, an article mentioned the large openings created by setting back the pillars from the wall, which was realised by concrete technology.

From the above, it can be said that Raymond intended to design an architecture that responds to the culture and climate of Japan, using his understanding of these factors and concrete technology⁷.

4. Realisation of raymond's discourse on localisation in the Former Tetsuma Akaboshi House

Consciousness of Japanese Culture

The spatial configuration is solved by clearly distinguishing the functions of each area, such as separating the master from the family by floor, separating the entrance for guests, family members, and servants by an entrance, an inner entrance, and a kitchen door, separating the living space from the functional room by a corridor, separating the private area by floor steps and doors, and dividing the kitchen with both Japanese and Western equipment into a serving room and a kitchen by wall fixtures.

Traditional Japanese houses use many movable fittings and have a variable space. In the former Tetsuma Akaboshi house, it was possible to connect rooms by opening the folding doors and fusuma. Tetsuma Akaboshi, who had studied in the U.S.⁸, wanted to live in a Western yet Japanese style. For this reason, the house has a Japanese-style room and a Western-style room, and the height of the floor is adjusted so that the two rooms are at eye level. The furniture and fabrics were designed by Mrs Noemi Raymond in detail for each room, giving the space a colourful and modern look.

The house was located along Itsukaichi-Kaido Street, which was heavily travelled. A guardroom and a calligraphic room were also designed on the street side to observe intruders from the outside.

In this way, the living space was constructed with an awareness of Japanese culture, based on understanding each person's lifestyle and culture.

Responding to the Japanese climate

Summer in Japan is hot and humid. On the south side of the first floor, the round pillars are set back from the wall, and the large openings are realised using fittings that can be fully opened. On the north side, three patios were installed to bring in ventilation and light. This patio is located in front of the main room and provides ventilation in the north-south direction. In particular, the patio next to the entrance has a pure Japanese style stone washbasin and lantern, like a Tsubo-niwa garden (small Japanese garden).

On the other hand, winters in Japan are cold and humid, and heating systems and airtightness are essential. Thus, a central heating system was adopted with coal boilers running to radiators.

Also, earthquake resistance is essential in Japan. He adopted RC construction, which is highly resistant to earthquakes and fire, and worked hard to make it earthquake-resistant while creating a free plan.

5. The actuality of the Former Tetsuma Akaboshi House

Transformation of the former Tetsuma Akaboshi House (1945–2019)

In 1955, Sisters of Notre Dame de Namur acquired the property and buildings from relatives of Tetsuma Akahoshi. In 1961, a prefabricated building by a different designer was constructed on the roof of the RC building⁹. In 1979, a wooden house was demolished. A new worship building and a new training building designed by Fujiki Corporation were constructed¹⁰. By connecting both buildings with the corridor, the opening of the building frame on the primary building side was minimised. The training building was designed to be similar to the RC building in terms of exterior wall finishes, eaves, window frames, etc., and to have a sense of unity by matching the floor height. The layout and the building are designed to respect the existing building design and its relationship with the garden. The third floor was demolished and converted into a rooftop again.

The exterior walls were periodically repainted, details were continuously repaired, and equipment was updated every 15 to 20 years. The Tokyo Monastery had a daily routine of cleaning the building as part of their religious activities and living in it religiously¹¹. It is one of the factors that prevented the deterioration of the building.

Recent the former Tetsuma Akaboshi House (2019–)

The RC, worship, and training buildings still exist. The exterior walls of the RC building have been replaced with white paint. The sunshades on the exterior walls were removed or refurbished, leaving some of the structure intact. The almost sashes were replaced with aluminium instead of steel. Inside the building, movable partitions were replaced with fixed walls, Japanese-style rooms were converted into Western-style, and many rooms were changed. The water and electrical facilities have been renovated. The boiler was changed from coal to gas, but the original steel plate radiator is still used. The part of the south-facing balcony on the second floor was converted into a room. On the rooftop, a part of the roof has been temporarily installed.

The Japanese culture upon the completion was lost after the war, and renovations were made due to the lifestyle change. However, the logic of the structure and floor plan based on functional beauty and structural beauty, the

creation of space through the mobility of openings and large openings, the simplicity that leads to beautification, the reality of materials, and the intimate relationship with nature, which he considered necessary, were found to have remained.

6. Conclusion

Raymond attempted to catch up with the cutting edge of modern architecture by promoting fair-faced concrete in his designs. He also discussed the affinity between modern architecture and traditional Japanese architecture and Japanese culture and mentioned that their fusion is the leading edge of modern architecture. In other words, he believed that creating modern architecture that incorporates Japanese culture is the cutting edge of modern architecture. For him, the localisation of modern architecture in Japan was a way to lead to the most advanced designs of modern architecture. In particular, his representative work, the former Tetsuma Akaboshi House, embodied this idea.

Since then, the house has been partially renovated and remodelled to suit the lifestyle of each era, but the basic plan remains unchanged. Although the owners and residents did not recognise its cultural asset value, the house has been preserved. The facts universalise its design.

7. Acknowledgements

I am grateful to Raymond Architectural Design Office, Sister Aiko Watanabe of Sisters of Notre Dame de Namur, the Musashino-Keimei-Kai association members, and the representative Yuichi Takeuchi for their advice in the early stages of this study.

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Avant-garde installations. Mies and Bacon for the plant systems of Villa Tugendhat in Brno

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Starting from the second half of the 19th century, the mechanization processes manifestation developed in many fields: from agriculture to the invention of new objects of technical use, as well as in the house functional units, mainly kitchens and bathrooms. Among the innovations which helped make life easier and more comfortable, the air-conditioning – a technically and culturally American invention started in 1902 thanks to the ingenuity of Willis Haviland Carrier – is certainly noteworthy.

Less than thirty years later, engineer J.L. Bacon designed the central heating unit and ventilation system of Villa Tugendhat in Brno, iconic architecture of the 20th century by Ludwig Mies van der Rohe. The architect considered the plant systems of this house as a part of the building's design. In relation to this, Mies adopted an avant-garde approach in the management of the coexistence of architecture and installation of sophisticated systems. Especially, this building represents a valuable proof of the highly significant aspect of the dialogue between architect and plant engineer: it points out an approach not always practiced by many architects of the Modern Movement. Nevertheless, the key role of Bacon as heating engineer in Villa Tugendhat results neglected and almost never properly emphasized, despite the numerous monographs dedicated to this building and its author.

This paper highlights the correlation between Bacon's graphic works – drawn between 1929 and 1930 – and the solutions actually adopted in Villa Tugendhat, which show an integration between plant and construction that makes explicit the dialogue between Mies and Bacon for the building's design. Starting from this, the paper aims to analyse the air-conditioning solutions adopted in this architecture with reference to those proposed and employed in that period, allowing to understand if and how much the air-conditioning solutions applied in Villa Tugendhat were avant-garde for that time.

1. How HVAC systems influenced buildings' design after the 19th Century

Since prehistory, the external climatic conditions have always influenced the architectural evolution. Indeed, buildings – represented then by megalithic architecture – had the primary task of protecting men from adverse climatic

conditions. Since then, to reach that aim, which over the years translates also into an increasing search of comfort, meticulous attention was paid to the internal distribution of spaces, the building envelope (i.e. walls materials and thickness, windows, etc.), the exposure of buildings, etc. (i.e. according to reports from early modern treatises)¹. That because all these aspects directly affect the indoor conditions of a building.

Between the 19th and 20th century, this approach changed, because of the introduction of systems which allow to guarantee the same indoor conditions at the poles and the equator, regardless of environmental boundary conditions, thickness of walls, presence of glass surfaces, available materials, outdoor climate, or geographical location. In fact, without any doubt, the introduction of Heating, Ventilation and Air Conditioning (HVAC) systems is a crucial passage in the history of architecture.

From those years, architectural and systemic solutions are not always coordinated between them. Nevertheless, since then the HVAC systems are an integral part of architecture, they did and do guarantee the fruition and the conservation of buildings, and both are part of the debate of the disciplines dealing with the preservation of architecture.

Architecture life in the 20th century depend on technical systems: transport electricity, lighting and indoor climate control systems.

This paper focuses on the dialogue between architects – architecture and technical plants – and mechanical engineers in the buildings of the Modern Movement. It intends to investigate Villa Tugendhat in Brno and its technical systems to heating indoor climate, adopted by the engineer J.L. Bacon with the architect who committed him and designed that iconic building: Ludwig Mies van der Rohe. This building is a milestone example of how the integration between technical systems and building design can be a successful approach.

Moreover, the analysis of Villa Tugendhat allows to thoroughly investigate: about the relationship between the systems solutions in the United States and Germany during the period between the two World Wars; if the systems solutions adopted for Villa Tugendhat by Mies and Bacon can be considered avant-garde or standard solutions for the period; and about the relationship between modern architecture, indoor microclimate and thermal comfort control.

2. The plant systems of Villa Tugendhat in Brno

Designed from 1928 by Ludwig Mies van der Rohe and realised between 1929 and 1930, Villa Tugendhat in Brno is a 20th century iconic architecture that offers a significant evidence to explore the aspect of the plant installations in the Modern Movement works.

At Villa Tugendhat, particularly emblematic is the dialogue between the architect and the technical systems engineer, which is not taken for granted in the realisation of the Modern Movement architectures. Nevertheless, despite the numerous monographs devoted to this building and its author, the key role of the house's heating engineer, J.L. Bacon, seems to have been overlooked. It was instead fundamental to study the functioning of the building, whose plant systems constitute an architectural component in its own right. Comparing Mies's graphic drawings with those of Bacon drawn up between 1929 and 1930, and the solutions actually adopted, it is possible to observe a design path marked by an inseparable integration between heating and construction.

Villa Tugendhat is equipped with an air-conditioning, sanitary hot water and electrical system (planner of the latter is M. Singer). The air-conditioning system consists of a hydronic and aeraulic distribution network, designed and realised by the Bacon company based in Vienna and with factory in Brno.

The generator of the air-conditioning system included two coal-fired boilers, by Strebel, in cast-iron², which supplied the hydronic pipeline on the ceiling and in view in the level with the technical rooms to reach, through cavities in the wall thicknesses, the two upper floors.

The heating emission sub-system was of two types: radiators and tubulars. The first ones, which were cast-iron radiators of the Hahn type, were used for the rooms with limited cubage and smaller windows. The second ones, which were tubular profiles with a chrome or painted finishing, were placed in the larger rooms with wide transparent surfaces. Situated at the foot of the glazed walls, these latter devices allowed not only the heating of the rooms delimited by wide dispersing areas, but also to generate rising flows of hot air able to contrast the phenomenon of condensation (**Fig. 1-2**).

This hydronic heating forms a system which was already included in the manuals of the early 20th century, and constitutes a standard solution in Europe at that time, at least for prestigious buildings. The novelty of Villa Tugendhat lies instead in its aeraulic system.

The aeraulic system of the building was equipped with a masonry Air Handling Unit (AHU) which had heat exchangers connected to the boilers and treated the air through a precise path. An air-inlet was connected to a chamber with nozzles to humidify the incoming air; a steel panel with vertical sliding regulated the exchange of air with the adjacent mixing chamber; air was thus transferred to the filtering chamber which was equipped with a double filter, the first containing oil and the second wood shavings to eliminate the oily traces released by the previous device; a low-pressure radial ventilator then allowed the distribution of the air in the level of the building dedicated to the living area. A control panel allowed the quality and quantity of the injected air to be set manually.

The aeraulic duct net was connected to metal grilles. In the living room and study, a floor nozzle is located near the winter garden; while close to the dining

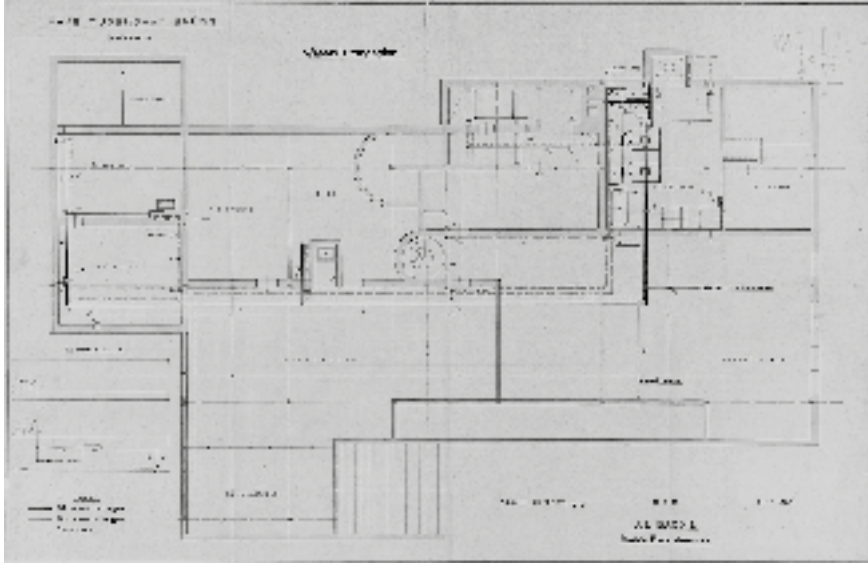


Figure 1. Ludwig Mies van der Rohe, Villa Tugendhat, Brno, Czech Republic, 1929, J.L. Bacon's design for the hydronic system. © Study and Documentation Centre, Villa Tugendhat (SDC-VT).



Figure 2. Ludwig Mies van der Rohe, Villa Tugendhat, Brno, Czech Republic, hydronic system devices. © Photo: Giulia Favaretto, 2017.

room, a wall nozzle is situated in the upper portion of the septum. A nozzle near the door leading into the living area allowed instead to suck in air and, within a recirculation system, to feed it back into the masonry AHU. Here, a vertically sliding steel panel regulated the transition from the extract air chamber to the mixing chamber. Thus, after the encounter with the incoming air, the flow resumed its path and was channelled back into the filter chamber.

The aeraulic duct system allowed rooms to be heated in winter and ventilated in summer, so it guaranteed a better indoor microclimate to satisfy inhabitants comfort by controlling the internal temperature and relative humidity (**Figg. 3-4**).

At the same time, the natural movement of air through nozzles and vertical chimneys allowed the service areas to be ventilated. Moreover, the transparent surfaces of the winter garden contributed to the control of the indoor microclimate as they were able to generate, perhaps not by design

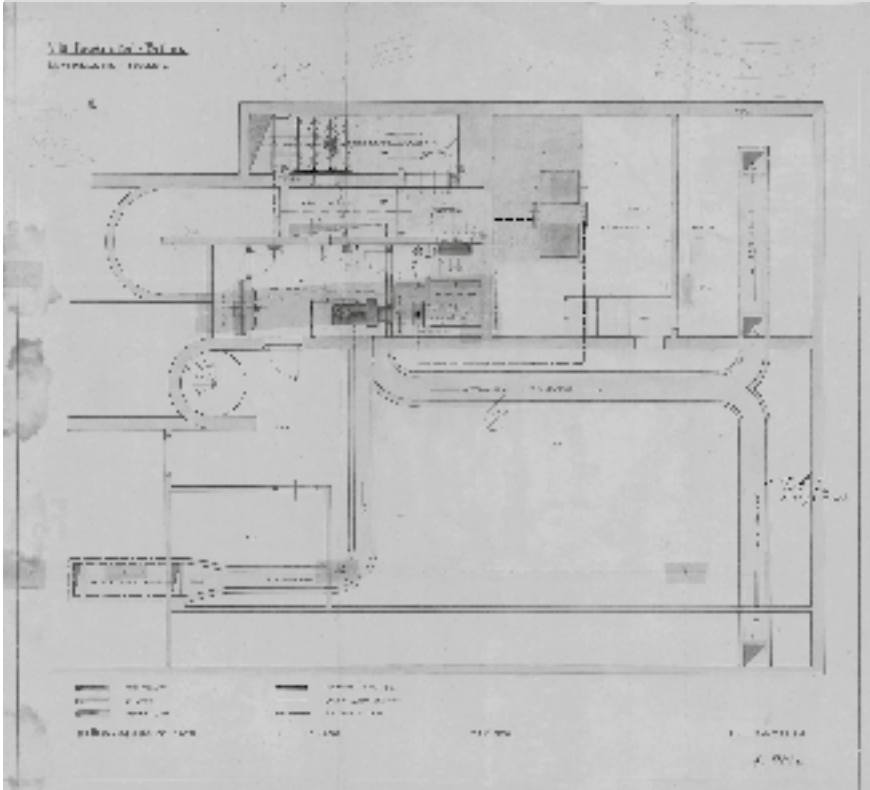


Figure 3. Ludwig Mies van der Rohe, Villa Tugendhat, Brno, Czech Republic, 1929, J.L. Bacon's design for the aeraulic system. © SDC-VT.



Figure 4. Ludwig Mies van der Rohe, Villa Tugendhat, Brno, Czech Republic, aeraulic system devices. © Photo: Giulia Favaretto, 2017.

intention, an air chamber useful in the winter season. In addition, the extensive curtains allowed the building's wide glazed walls to be screened if necessary.

Many of these heating systems components are now an integral part of the museum tour at Villa Tugendhat. As a matter of fact, after the restoration work, the boilers room and the masonry AHU became "technical monuments" documenting the original functioning of the building. At the same time, the introduction of new elements, such as those for boiler, was accompanied

by the reuse of existing ducts and terminals. The steel tank for collecting rainwater has also been preserved, while some elements, such as the sanitary fittings, constitute replicas reconstructed on the basis of archive documents, photographs and catalogues of the period.

Beyond the copies introduced by the intervention, the innovativeness of the plant conservation project lies in having placed at the centre of the process what, in other circumstances, is not infrequently and simplistically removed.

3. How to measure the Avant-Garde?

The birth of air-conditioning dates to 1902³: it was installed at the Buffalo Forge Company, Buffalo, N.Y., by Willis Haviland Carrier. The patent 'Apparatus for Treating Air' (patent no. 808897) is dated 2nd January 1906⁴, and in America, after fifteen years from that key data, the air-conditioning systems begin to be widely installed, not only in industrial or public buildings, but also in private buildings, as well as in buses and trains.

Indeed, after the pioneering attempt in 1902, Willis Carrier continued improving the systems, and invented psychrometry and related tools for the design and control of temperature and relative humidity. Carrier applied for the patent of 'Apparatus for Treating Air' in 1904 and, in the same year, he installed it at the La Crosse National Bank in Wisconsin⁵. The apparatus was used only to wash air in the ventilation system. One of the first applications of this system has been adopted for the industrial field, aimed to ensure specific microclimatic conditions of production plants.

We have to wait until 1913 for the installation of the first air-conditioning system for the dining room of Wisconsin Hotel, Milwaukee, by the Carrier Air Conditioning Company of America. Moreover, it has been installed in 1917 at the Empire Theatre, Montgomery Alabama, and in 1922 at the Grauman's Metropolitan Theatre, Los Angeles. Finally, in 1927 Willis Carrier installed the first home air-conditioning units for winter heating, humidifying and air cleaning for a residence in Newark, New Jersey⁶.

Villa Tugendhat has been realised around these years, and it was already equipped with an air-conditioning system: specifically, the 'Spray type central station apparatus and chemical dehumidifiers', which is the same type of air conditioning that has been installed in 1902 at the Buffalo Forge Company. The fact that the German architect, Mies van de Rohe, and Bacon were aware of such systems and able to replicate them is noteworthy element.

Comparing dates and considering the distance between the United States and Germany, both geographically and in terms of industrial development, how could them know about this plant innovation? And what is the reason for preferring the innovative, but risky, air system over the water heating systems, with boilers and radiators, already common and used in Germany?

A possible answer can be related to the cultural and professional context in which Mies lived in Berlin during the 1920s and 1930s, as suggested by Reyner Banham, who refers to the Ring: a professional association that included “Gropius, Mies van der Rohe, Bruno and Max Taut, Erich Mendelson, the Luckhardt brothers, Hans Scharoun, Hugo Harting, Hans Poelzig, Artur Korn, Richard Doecker, Otto Bartning, Hilberseimer, and others – the entire circle of Berlin’s modern architects, regardless of their stylistic orientations”⁷.

That group must have been aware of what was happening in industrial construction (and plant engineering) in the United States, and it is Banham himself who suggests a possible solution to the enigma by reporting on what happened in the Chicago Tribune competition in which some of the Ring’s German architects participated. In order to take part in the competition, Ludwig Hilberseimer studied the Larkin Building from an architectural, structural, and probably also plant engineering point of view.

Frank Lloyd Wright’s Larkin Administration Building is located in Buffalo, designed in 1903 and built between 1904 and 1906, and it is one of the first buildings with an ‘Apparatus for Treating Air’ (this is probably what Wright means by ‘air-conditioning system’).

*No one doubts that it was one of the earliest masterpieces of pioneering modern architecture, and if Wright had not designed anything thereafter he would still hold a prominent place among the fathers of twentieth-century design. [...] But like the hospital [Royal Victoria Hospital] it has a distinctly equivocal place in the environmental history of its time, for, as Wright himself put it: “The Larkin Administration Building was a simple hermetically sealed brick cliff (one of the first ‘air-conditioned’ buildings in the country) to keep the interior space free from the poisonous gases of smoke from the New York Central trains that puffed along beside it”. This is a strong claim; most historians have either passed it over as if unnoticed, or – what is worse – repeated it without the quotation marks which Wright knowingly put round the words ‘air-conditioned’ (on which more, below)*⁸.

By the end of the 1920s, in the United States, the Willis Carrier Company and the other air-conditioning industries had become expert giants in the sector, and applications were aimed at all plants, from factories to theatres, from offices to residences. The technological evolution of the various air treatment and control systems and the related devices will follow its own path of technological innovation in the second half of the 20th century, but its main components – central unit with fan, humidification/dehumidification system, heating/cooling coil and air ducting network, also present in Villa Tugendhat – remain unchanged. Therefore, Villa Tugendhat confirms itself as an iconic and avant-garde work also from the systems point of view.

Moreover, the history of Villa Tugendhat makes evident an approach that favours the dialogue between architect and installer: while entrusting Bacon with the design of the heating and air-conditioning systems of the building, Mies van der Rohe does not treat this aspect as a separate issue, detached

from the architectural project. On the one hand, in fact, the system designed for this architecture is not a solution composed of standardised elements, as it was probably possible in the United States in the same period, but it was built on site for that specific building, becoming an inseparable component. On the other hand, the solutions adopted show how the German architect was not extraneous to the study for the realisation of the system, to the point that it will be the same Atelier Mies van der Rohe in Berlin to sign the executive drawings for the ventilation grids of the air-conditioning system.

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Notes

- 1 Cfr. Marco Vitruvio Pollione, *I dieci libri dell'architettura*, Milano, Il Polifilo, 1567; Leon Battista Alberti, *De Re Aedificatoria*, voll. I–II, Milano, Il Polifilo, 1966; Andrea Palladio, *I quattro libri dell'architettura*, Milano, Hoepli, 1980; Pellegrino Pellegrini, *L'Architettura*, Milano, Il Polifilo, 1990; Giuseppe Valadier, *L'Architettura Pratica*, voll. I–V, Roma, Sapere 2000, 1992.
- 2 Another boiler was used for domestic hot water.
- 3 Cfr. Margaret Ingels, *Willis Haviland Carrier – Father of Air Conditioning*, Garden City, Country Life Press, 1952, 23.
- 4 Ibi, 128.
- 5 Ibi, 24.
- 6 Ibi, 139–148.
- 7 Reyner Banham, *Architettura della prima età della macchina*, Milano, Christian Marinotti, 2005, 320.
- 8 Reyner Banham, *The Architecture of the Well – Tempered Environment*, Chicago, The University of Chicago Press, 1984, 86.

S02

A Century of Revolutions and Revolutionists

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Architects, even the most revolutionary, have always needed a past to have something to distance themselves from.

Revolutionists, even architects, have always needed memory, to be sure not to retrace a revolution that had already failed in another time.

The twentieth century was a century of revolutions and revolutionists.

In architecture, the modernity of the twentieth century was born with the second industrial revolution and its social and aesthetic avant-garde was based on technology and new materials.

The rational objectivity of new technology, with the promise of infinite resources and new materials, opposed continuity, tradition and nature. It was the tool for a new architecture, able to realise a new *kunstwollen*, of which a deep sense of social responsibility was part.

Efficiency, functionality and rationality became the tools to correct the inequalities of the past and the errors of the first wild development of the industrial revolution and to give everyone functional homes, light, air and green spaces.

Actually the avant-gardist program never really came into effect (Magnago Lampugnani 2008), but the integration of technological knowledge and the arts, aimed to a unity exemplarily represented in the Bauhaus program, was the answer to the awareness of the modern world's growing complexity, that can no longer be managed without collaboration between disciplines.

Together with a new perception of the world, a new aesthetic was born, and if today we find the Van Nelle Factory or the Eiffel Tower beautiful – as Herman

Hertzberger said (2002, p. 42) – it is because our perception was gradually changed by the new ideas that these buildings expressed.

It was a permanent revolution, like the political ones that characterised the twentieth century, both proclaiming that Utopia was finally achievable, here and now.

Somehow, this is a very representative description of the last century, because “permanent” is something that lasts over time, associated with the idea of some stable availability, as well as the pure and simple dimension of duration and it is of course ontologically opposed to “revolution” as a sudden, radical, complete change. In “Back from Utopia” Hilde Heynen (2002, p. 383) argues that one of the most important lessons of modernity was the ability to criticise the *status quo* and the courage to imagine a better world and start building it. There is a very strong political message in the idea of architecture as democracy and essentiality and as a means of redistributing resources. That agenda made up of equality and quality of life still remains a reference, taken up in fact by many contemporary trends.

Today the revolution of the Modern belongs to the past. There is no longer any utopia out there.

The twentieth century saw the rise of the Modern Movement, its affirmation and its becoming just a style. And then its defeat, its contestation, the attempts to overcome it and the drama of managing its ruins. The same errors and inequalities from which it started have often been its very outcome.

In front of us there are no more avant-gardes, but archaeologies of the Modern, which are irreplaceable archives of memory and raise difficult questions of interpretation and conservation. For example, we have lost the belief that architecture and urban planning can solve social problems by themselves. Indeed, we have become aware that sometimes they are the very cause of those problems.

It would be a mistake, however, to reduce the legacy of the twentieth century to its conceptual achievements or its intangible values.

The physical presence, at the same time tactile and conceptual, of the architectures and landscapes of the modernity is essential and cannot be reduced to the mere preservation of the most iconic ones. John Ruskin said that architecture is the place of memory, a social memory that is more faithful than any text. We can live without her, but we can't remember without her. If an architecture disappears, what we lose is the possibility of renewing the stories of which it was an expression. There can therefore be no greater betrayal than thinking of resurrecting consciousness and knowledge by restoring an image. The world that produced the Esprit Nouveau Pavilion or the Bauhaus is as unreplicable as the one that informed the construction of Versailles. It is essential to be aware that our beloved modern monuments belong to a distant time in terms of culture, context and meaning. They belong to the past and this allows and obliges us to add and to keep the traces of the

time with its many scars, or we will have nothing to show by saying: "I come from there". These traces are not an eternal present, but rather a monument in the very etymological sense of warning, of remembrance. We have overcome – or at least we should – the fascination with the blank slate. We understand that Modernity can forget and has sharp tools to do so by erasing entire scenarios, but it can also remember.

At the same time, we cannot think of keeping everything from the century that has built more than all the others put together. A dilemma that troubles more and more the survival of the legacy of the modern architecture is precisely its quantitative and temporal expansion. The problem is obviously not that of selection or rankings of importance, which are meaningless because any new historiographical reconsideration would rightly call them into question, but that of developing the idea of sensitive and sensible changes, or better said: evolution.

For example, it is foolish to think that the achievements of modern architecture have no quality to communicate and, victims of the rapid obsolescence of their own century, are inadequate for the functions of contemporary life. The quality of these architectures simply disappears because they have become illegible by the incomprehension of their own inhabitants. Recognising with Gillo Dorfles a real wear of shapes and images, today's user is not so different from the user for whom they were carefully designed and made: "It is a mistake not to give the desired importance to some of the dominant factors in the current artistic situation such as: the rapidity of consumption, obsolescence (ageing) and the wear of forms and images, the symbolic value of these forms and, finally, the growing importance of kinetic stresses and in general of the 'sense of movement' in the determination of artistic forms and in the conditioning of human behaviour" (2009, p. 23).

Perhaps we would be surprised to discover that even today – in terms of physical, cultural and aesthetic performance – there are spaces for living that are more advanced than imagined; while the technological challenge has shifted to completely different fields: from the tangible materials to the intangible digital services.

Yet the commitment of the Modern towards change, new and transience, seems to have anticipated a fundamental teaching for our liquid society (Baumann, 2000), where change is a dominant and constitutive character. From the ability of the Modern to contaminate knowledge we draw on something essential for understanding this present day. Perhaps we don't really have a new Modern, even though we have a new society. Maybe we have never been modern, as Bruno Latour would tell us (1991), but for sure we have the capacity of memory to be revolutionary.

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(Un)folding the modernist interior of Belgian abstract painter Jozef Peeters.

The architectural vision beyond the studio flat (re)presented

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Jozef Peeters (1895–1960), a pioneer of abstract painting in Belgium, designed a remarkable interior of his flat in the social housing estate built by city architect Van Averbek. It served both as a studio and a family home for his two children and his sick wife, and it was a place where Peeters experimented with the spatial use of colour from the mid–twenties. Peeters was very familiar with the modern movement and De Stijl as he was the co-founder of the “Moderne Kunst” circle, which promoted the new developments in the arts of modern cultural life. The interior design resulted in a total work of art where walls merge into one another, including the furniture. Today, the studio preserves a physical legacy of Peeters’ theoretical wandering. But since the location is closed to the public, ways of conveying the spatial experience of the flat and its underlying concepts were sought.

This paper explains the process of unfolding the interiors of Peeters’ apartment with architecture master students by means of a literature study, site visits, analyses of the interior spaces and corresponding colours, the design of a scenography for an exhibition and finally the construction of various models. On the one hand, we did this by a painted model on large scale at eye level and in which the visitor can additionally look from the bottom up into the different interior spaces. On the other hand, we created an ensemble of painted wooden volumes envisioning the inverted rooms of the flat to be assembled like a children’s puzzle box to visualize the painter’s theory. The exhibited composition offered the visitors a two-fold embodied experience of the flat. New insights not yet existing in literature became visible through the act of (un) folding Peeters’ interior by space, object and body.

1. Introduction

Jozef Peeters (1895–1960) is now considered one of the greatest advocates of abstract painting in Belgium. Peeters was a versatile artist mainly active from the Great War until the mid–twenties. He was a painter, (graphic) designer, writer, editor of several magazines and also an organiser of exhibitions and international conferences. Modernist Belgian architects Huib Hoste and Eduard Van Steenberghe were members of Peeters’ “Moderne Kunst” circle, and foreign speakers were invited such as the Dutch architect J.J.P. Oud. At that time, Peeters was an ardent advocate of community art [1] in line with his

social concerns. About 1927, he visualised his theories in his family apartment, which also served as his studio, by means of the murals and furniture design. This interior is still intact thanks to Godelieve Peeters (1925–2009), who donated the apartment to the city of Antwerp for preservation. Since 1995, it is a protected monument in Flanders because of its unique total work of art. By extension, the building of the flat is part of approved heritage [2]. By reason of the studio flat was recently closed to the public.

An alternative to bring the wider public in contact with this unique apartment interior was the initiative to organize a scenographic design as part of the exhibition '*LIVING IN COLOUR. Common ground between visual arts and interior architecture*' (5–19 December 2019), a collaboration between the Royal Academy of Fine Arts and the Department of Interior Architecture of the University of Antwerp [3]. According to Beatriz Colomina, designers often use their own home to try out their ideas because it is a free place where they have *carte blanche* [4]. Peeters could not physically remodel the construction of his apartment. However, he asked the social housing company to remove all visible technical elements in order to prepare a white canvas. Consequently, he applied his drawing methodology on the interior walls, thus visually reconfiguring the physical boundaries present. Colomina also states that the exposition, as a medium, provides a public platform for designers to experiment with innovative forms of living [4]. Moreover, the succession of different voices from architects makes the experimental exhibition ultimately collective [4]. Illustrative is Mies van de Rohe's Barcelona Pavilion that was rebuilt according to OMA's reinterpretation as Casa Palestra (aka the Body Building House) at the Milan Triennale in 1986. It echoed the modernist principles on body culture at home through contemporary means (e.g. materiality). Also Thea Brejzek, scholar in spatial theory, discusses one of Mies' (re)productions. The Golf Club Project (2013) in Krefeld was presented as a temporary exhibition and event space by Flemish architects Robbrecht en Daem. Their 1:1 model demonstrates how multiple design statements from different periods can be simultaneously experienced in body and mind [5]. If experimental exhibition techniques lead to experimental dwellings [4], the question arises whether the reverse proposition can provide a framework for transposing the architectural qualities of Peeters' unique studio flat into an experimental scenography. Subsequent to this main question, we wonder in what way visitors can enjoy the unique colour experience as intended by the artist in his oeuvre? And how can we introduce the public to Peeters' underlying concepts and theories? Finally, can such exhibition design serve to spark debate among designers and other related disciplines?

In order to prepare a spatial experience of colour, we consulted the original documentation. Consequently, we did a literature study and on-site research for drawing the plans and model building. Finally, we looked for similar cases to compare Peeters' design methodology. The result is a scenographic design for which master students in architecture experimented with the display of the studio flat's coloured features in order to become part of a larger narrative

at our exhibition on the colour use in interiors and in art during the period 1925–1970.

2. The daily life in Peeters' modernist studio flat

Peeters and his wife Pelagia Pruym who taught at a public school, rented a corner apartment of a modern social housing block designed by city architect Emiel Van Averbek in 1921 [6]. This comfortable 4-bedroom apartment is located on the third floor and consists of a pleasant corner room overlooking the Scheldt river. In this flat, daughter Godelieve and son Maarten grew up under Peeters' strict supervision and education. The home education, the artist believed, would enable his children to develop their personalities. In the corner room was his studio where he received his colleagues and friends. Between 1927 and 1937, he steadily transformed the apartment by designing the furniture and painting the walls with large geometrical surfaces in specific colour palettes.

In two artistic representations, named *Compositie–Stemming* [Composition–Mood], made in 1956, Peeters painted his daily life [7]. These two emotional syntheses [6] show the apartment's interior by a composition in and with perspectives. While the bright coloured painting (**Fig. 1 left**) focuses on the relation between inside (private) and outside (public) space, the sepia coloured painting (**Fig. 2 right**) guides our gaze along the hall towards the illuminated studio with textile loom and the artist's work and the portrait of his wife on the painter's easel. The dark area on the left refers to the bedrooms and the daily act/tasks of 'making/folding beds'. The triptych in the bright



Figure 1. (left) Jozef Peeters, *Compositie–Stemming*, 1956, @ private collection. (right) Jozef Peeters, *Compositie–Stemming*, 1956, @ private collection.

coloured painting displays the view of the Scheldt river (left), the adjacent building with the curious neighbours peeking in (centre) and the naked woman Pelagia was jealous of (right) [8]. But in the middle Peeters is caught in the reflection of the black vase – a symbol of being bound to the apartment [6].

3. Analysis of the studio flat

Studies in art history and heritage preservation highlight the coloured layout of the apartment and conclude that the spatial colour composition leads to the perception of living in a painting (Buyle, Manderyck 1998, Verdonck, 2008). The colour palettes on the walls and ceiling indeed create different atmospheres, interacting with the furniture and light. Only the floor consists of a greenish grey linoleum. In fact, we observe that the grey shade is present everywhere in the flat murals, albeit in different variations. Art historian Rik Sauwen also noticed a diagonal line visually suggesting a mounting of grey surfaces [8]. This use refers to the water of the Scheldt river.

In the children's bedroom a soft pink and complementarian blueish grey are used. In the parental bedroom, the dark blue strings weaving with grey surface on the walls play with the golden yellow of the Finnish birch wooden furniture. In this composition, the sun daily enchants the room by casting its light on the wooden parts, reflecting the day and night cycle (**Fig. 3**). The atmosphere changes again because of the green and (golden) yellow shades in the drawing room. Bearing in mind the concept of living in a painting, we wanted to understand more about the conception of the surfaces. The parental bedroom colour plan in the apartment (**Fig. 2 left**) served as a key to understand how the murals were designed from an architectural point of view.

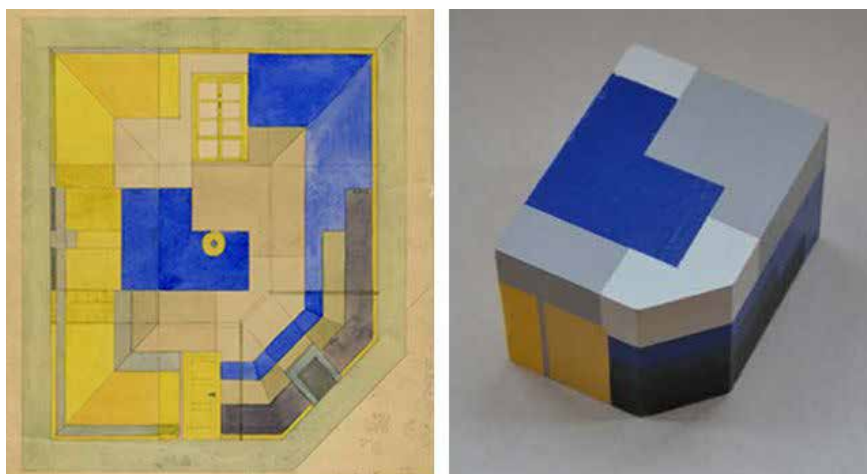


Figure 2. (left) Colour plan Jozef Peeters, no date. Collection City of Antwerp, Letterenhuis. (right) Detail of puzzle blocks representing Peeters' parental bedroom. @ University of Antwerp, Selin Geerinckx, 2019.

4. Understanding the spatial design as an object

In preparation of the exhibition, four architecture master students (UA) studied the spatial experience of the apartment on site. By comparing the student's technical plan with the Peeters' colour scheme, it became clear that Peeters' plan does not correspond with the drawing conventions in architecture. His method, known in descriptive geometry as a 'development surface' [9], consists of a representation of the ceiling and adjacent walls. The position of the door in relation to the mantelpiece and the window prescribes how to fold the plan – as these room features would be mirrored otherwise due a turn around its axis. This method creates a box showing the coloured surfaces on the outside of the volume (**Fig. 2 right**), instead of its print on the inside of the box which reflects the architectural practice of making a model. The result is the volume as an object, not a space. A similar drawing method was used by Theo van Doesburg in *Chambre des Fleur* in the Villa Noailles (1925), and later in his *Cine dancing* (1928) at L'Aubette [9]. This drawing technique reveals an interesting scenographic concept: the bodily perception of space as an object.



Figure 3. Parental bedroom with play of light. Collection City of Antwerp, Letterenhuis.

We argue that Peeters deployed a graphical projection method to prepare his paintings and everyday objects to eventually apply it in his three-dimensional domestic space. During the 1920s, Peeters abundantly applied geometry and the two-point perspective in his drawings, which corresponds with his theosophical belief, his admiration for Kandinsky's work and interest in Futurism. Our study of the design for a cupboard in the drawing room, revealed that Peeters started from the perspective drawing to compose the dimension of the object and front panel design. Although the perspective line is dominant in the vertical direction to create depth and distance, orchestrating the patterns between the bottom and the top of the object, the horizontal and the vertical axe balances the drawing. Yet, only the vertical axe mirrors the pattern and dimension of the object. We mark the use of the primary orthographic projections in first angle, (detailed) sections, patterns that clearly run over multiple surfaces, a use of orthogonal and diagonal lines,

the use of mirroring and the play of contrasts dark/light. The outcome is a drawing that radiates an air of (dis)harmony.

In a next step, the architecture students designed a model at scale 1:10 (**Fig. 4**) to allow the bodily encounter with the reconstructed colour patterns. Spectators could observe from two perspectives, one in a seated position where the visitor looks up into the model above his head, and another in a standing position around the model through the windows. In line with Peeters' domestic environment, the presentation model is also a piece of furniture that invited to sit and stand around it. Based on the findings of the relation between space and object, students additionally crafted a coloured children puzzle-box (**Fig. 2 right**). This toy for the mind, in memory of the children's play and the home schooling, allows visitors to compose the rooms with its murals into the right sequence. This provides a different perspective: perceiving the room as an object.

5. (Re)presentation of the apartment

Our exhibit allowed to display specific architectural qualities that Peeters created in his studio flat. Therefore we defined the elements that are essential in his design. The architectural analysis demonstrated that he clearly chose to experiment in his home to reconcile space and object in relation to the outside landscape and public life. It seems that this was a way to create a parallel universe in connection with its surroundings.

Peeters did so by means of the linear perspective to configure a composition of interweaving two-dimensional surfaces in specific range of colours turning into a three-dimensional space. On the one hand, Peeters was interested in the abstract expression of his own universe which he visualised in a set of coloured geometrical surfaces and furniture pieces, balancing between

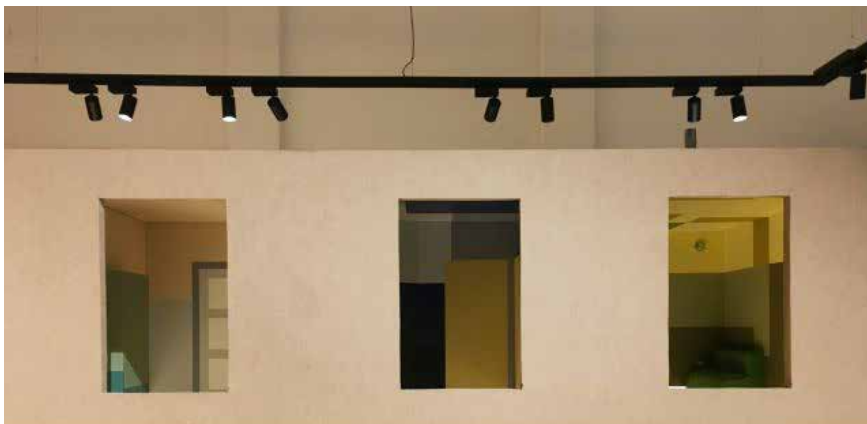


Figure 4. Detail of 1:10 scale model. @ University of Antwerp, Selin Geerinckx, 2019.

art and the applied arts (arts décoratifs). On the other hand, the artist was also trained in the Beaux–Arts tradition which valued the use of perspectival methods and (physical) composition.

For our (re)presentation of the apartment, the scale model was used as a vehicle to think about the spatial experience. Because of the insights we gained from studying Peeters' drawing methods, we found the model for the exhibition an appropriate answer as it is based on perspective views. The exploration of the perspective method during the Italian Renaissance was a catalyst for the development of the model [5]. This way of representation communicates and even materializes a concept, which eventually became common practice in the architectural discipline. Our choice to provide models at different scales is to make use of their dual character, as material object and as immaterial idea (theory).

When making the model, we gave priority to the perspective views in the apartment, above the reconstruction on the real scale. The scale is less relevant than the dimensional relationship [5]. A logic thought is that the larger the scale the more the experience with a full body can take place. However, in the use of the perspective method, which is applied by Peeters, the dimension of the model is less important as this method maintains the relationship between the body and mind through the eyes the spectator. Yet, heritage specialist Norbert Poulain once rightly stated that a sterile reconstruction of the apartment presented in a museum setting would lack the essential view on the Scheldt river [10]. Indeed, a scenography that includes the surrounding environment, contributes to experience the interior as intended. But even though a site visit is the most complete bodily experience, a location visit does not provide a materialization of the theory. Making all the models available on the site, for example, could be an added value. Conversely, a sensorial projection that illustrates nature and the public life would be an addition to the scale models.

6. The (un)folding of space, object and body

Our architectural study for the preparation of a scenography started from the analysis of Jozef Peeters' colour plan which revealed that our hands must fold the plan differently than current architectural conventions suggest. The result is a volume as an object instead of a (model) space. This unique folding finally led to a more in–depth research on the artist's oeuvre. We discovered that Peeters attached importance to a well–thought drawing method from the Italian renaissance and unusual model–making for a spatial design that establishes the relation between the human body and the painting. Peeters' plastic expression was abstract, but he applied principles of the decorative arts for the creation of domestic objects. He preferred the two–point perspective that he mirrored, copied and scaled creatively to establish a *trompe l'oeil*.

This two-dimensional drawing method enabled him to convert his art work into the third dimension. The interior walls and domestic furniture offered the artist a construction in stone and wood on which he painted the murals, thus bridging (applied) arts and architecture, for the daily switching between reality and personal imagination through body, object and space. The result is an auxiliary space/world which can be seen as a cosmopoiesis by visually dissolving the apartment's frame and turning it into an open *décor*.

The (re)presentation of the studio flat equally encompassed in its scenography the concept of the integration of space, object and body. The furniture model, a material object for the bodily experience of space, invites visitors besides standing looking in, to sit, to raise the head and to have a perspective look into the modelled interior. The puzzle blocks, as an immaterial object for the mind, consists of blocks of the inverted rooms. These objects can be manipulated by the visitors and give additional abstract insight in the design.

In sum, the three-dimensionality of the rooms serves as a performing model evoking an enlightening experience through colour and the perspective effect. Nowadays, our furniture model, puzzle blocks and images of the flat are displayed at the entrance hall of the Letterenhuis, the literary archive of Flanders which manages Peeters' apartment. As such, not only a wider public can get acquainted with the studio flat, but also researchers and designers can get inspired to unravel underlying layers of the apartment.

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Victor Servranckx (1897–1965): abstract art in an architectural setting

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The boundaries between painting, sculptural work, and architecture blurred during the era of modernism, when both architects and artists designed interiors, furniture, textiles, and artefacts in which colour was used as a catalyst and an architectural tool. The parallel fields of interest partly explain the attraction of many artists to the architectural environment. At the same time, architecture provided the possibility of realising artistic principles in social reality and thus integrating art into everyday life. Belgian avant-garde artist Victor Servranckx is renowned for his abstract geometric paintings and sculpture, but his experiments as a versatile designer and architect are less well documented and known. From the 1920's onwards, Servranckx shifted the boundary from the two-dimensional canvas to interior space, and he collaborated with architects of the first modern-movement generation whom he befriended. For this reason, he even ceased painting for one year, in 1925. The major objective of this article is to reflect upon and raise awareness of the interplay between the avant-garde artist and architect in the Belgian context, focussing on Victor Servranckx's remarkable dialog with like-minded architects concerning interior design challenges. The findings are based on a maximum synergy and complementarity between archival records and published literature of the epoch, and on-site material-technical observations.

1. Introduction

The Belgian avant-garde movements were mostly based on ideas originally introduced in France, the Netherlands, and Germany and shared the generally recurring principles within these movements. An exception to this was the penchant for new imagery, often in conjunction with abstraction, and the idea of community art or art as the shepherd of society. Eric Pil states in an overview of the Belgian avant-garde:

The originality of Belgian art production during the interwar period was not the creation of new plastic models but rather the personal processing of impulses, in synthesis and in 'non-orthodox variations on the dominant styles.' The respective impact of Cubism, Futurism, Expressionism and De Stijl is almost always present among the various artists, but with varying importance¹.

2. Mechanically produced wallpaper series at the factory Usines Peters–Lacroix

Viktor Servranckx (1897–1965) studied from 1913 to 1917 at the *Académie Royale des Beaux Arts et École des Arts Décoratifs* in Brussels, where he won the *Grand Prix* in recognition of his exceptional achievements². He started his

career in 1917 as a designer for the wallpaper factory *Usines Peters–Lacroix* (UPL) in Haren, near Brussels³. Besides Servranckx, the painters Renée Magritte (1898–1967) and Edgard Tytgat (1879–1957) also designed paper collections for UPL during the interwar period. Servranckx worked for the company until 1925, and it is striking how his wallpaper designs differed from his other artistic work during that period. This divergence may partly be explained by the strict protocol of UPL's Director Georges Lacroix, who invariably rejected wallpaper patterns that were too progressive or modern. In this context, decorative motives such as *les écureuils*, *les perroquets*, *les bateaux* and *la Ville* were created, in addition to numerous floral compositions⁴. Servranckx gained a positive experience from his work at UPL, where he both raised awareness of his abstract designs and learned to master colours and pigments: "If I gave a lot to this factory, the factory gave me even more. It gave me the means of controlling colour"⁵. He became intrigued by the machine and serial production in the company, as Pierre Bourgeois described:

*As a draughtsman, Servranckx was for a long time attached to an important art industry, a factory he loved. Mechanical life exalts him, and his style provides him with precepts. What a complex richness in the play of industrial elements! No doubt one should never imagine connecting rods or flywheels, but a mysterious and pure 'je ne sais quoi' can be extracted from the plastic or sentimental factors of modern civilisation. To discover this, Servranckx goes on the road*⁶.

3. Dialog between visual and applied arts

From 1922 onwards, Servranckx shifted his focus from the two-dimensional canvas to architectural space, and he even interrupted his painting for a year, in 1925, to focus on the latter. In the context of the blending and unification of the arts, architecture was seen by the abstract painters as the dominant art form, which automatically led painters to explore space and thereby increased their contact with society⁷. For a retrospective exhibition of Servranckx in the *Royal Museums of Fine Arts of Belgium* (1989), Erik Pil stated that for the defenders of *Plastique Pure* (*Zuivere Beelding*), a work of art was a rational, constructed unit, built up according to the principles of 'architectural' composition⁸. The similar arrangement recognised in painting and architecture partly explains the interest of many painters in the architectural environment. Moreover, working with architectural space offers the potential to associate art with everyday life. We must recall that Servranckx also was committed to the modernist ideology that disseminated from Paris through the magazine *L'Esprit Nouveau*, and he was a leading advocate of the synergy between visual and applied arts.

The innovative partnership with architect Huib Hoste

Servranckx and architect Huib Hoste (1881–1957) worked together on an interior design for doctor Reimond De Beir, a fervent lover of modern

architecture, painting, music, and literature. In their creation of a gentleman's room in the *Gudrun* villa for De Beir in Knokke (1922), furniture, walls, and doors formed a remarkable plastic whole. Hoste designed the furniture and Servranckx handled the papered wall concept, which he based on horizontal and vertical patterns and frames⁹. This striped wallpaper was probably one of his UPL creations, related to a preserved paper kept in the Fund Victor Servranckx. (Fig. 1) The ensemble was a prototype for the design of another gentleman's room, better known as the *bureau – fumoir – bibliothèque*, which they presented in 1925 at the *Exposition Internationale des Arts Décoratifs et Industriels Modernes* in Paris. This room accommodated a workplace with a library and a reception area in a decor of colourful walls, where furniture and industrial products such as radiators, fans, and typewriters were elegantly integrated into the overall concept. Even years later, Hoste praised the contribution of Servranckx:

Servranckx introduced a typical solution for exhibiting paintings: against one of the walls a movable screen was displayed to present a painting on one or two sides; a cupboard with a series of paintings of the same size was designed in such a way that they could be optionally exchanged on the screen. On the four walls of the room, wallpaper was applied to create a continuous, colourful abstract composition, which made the room extremely lively, immediately drawing attention and captivating the spectator¹⁰.



Figure 1. Left: Huib Hoste & Victor Servranckx, gentleman's room of the Gudrun villa (1922) in Knokke, Belgium. © CIVA, collection Victor Servranckx. Right: wallpaper by Servranckx. © University Archives KU Leuven, Fund Victor Servranckx.

The Exposition ensemble was produced by the Roeselare, Belgian-based company *nv Het Binnnehuis*, where architect Jozef De Bruycker (1891–1942) was designer and director. The project received a lot of attention in contemporary journals. For example, in a special issue devoted to the Belgian entries, *La Cité* praised the simplicity of the balanced and, above all, functional concept:

*Another characteristic of this interior is the banning of individualistic spirit. Mr. Hoste and Mr. Servranckx have succeeded in creating a functional and organic assembly in which each component corresponds so perfectly to the function it fulfils in the whole, that it seems impossible to remove any of these elements or to alter their form*¹¹.

In 1924, Hoste designed a new doctor's residence in Knokke for Reymond De Beir, which came to be known as the *Zwarthuis*. While Knokke residents reacted adversely to the completion of this striking building, the project received copious and laudatory attention in the national and international press¹². Servranckx designed the wall decoration for the living room, an abstract composition that can be seen on historical photographs. **(Fig 2, left)** The design was papered on the walls and clearly inspired by his painting *Opus 20 (Snaarinstrument)* from 1922, which provided the most important impulse towards the development of Servranckx's architectural pictorial representations.

The fascinating collaboration between architect and artist resulted in a mutual creative influence and was crucial for the further development of Hoste's colour schemes: he used similar geometric painted or papered compositions until the end of the 1930s. For example, in the living room of the Billiet house in Bruges (1927), Hoste applied about eleven opposing colours in a striking composition of rectangles, squares, stripes, circles, and quarter circles. The ceiling was incorporated in the whole, so the observer had the impression of being inside the composition. In this way, he was able to create a personal and all-encompassing experience, where the spatial limits and constructive aspects were manipulated by means of colour. Hoste's deconstructive polychrome design for the room elevated the daily life of its inhabitants into art. **(Fig. 2, right)** Regrettably, the colour scheme has been painted over, the furniture ended up in a private collection, and the house was neglected for many years. Since 2017, the monument has been thoroughly restored, and recently, the initial colour scheme of the living room also has been reconstructed based on architectural paint research¹³.

Servranckx's dialog with architect Jozef De Bruycker

The close collaboration between Servranckx and architect Jozef De Bruycker also resulted in remarkable interior environments. Among others, Servranckx was involved in 1932 with the interior layout of the *De Busscher–Declercq* house in Roeselare. For the floor covering of the living room and studio, he



Figure 2. Left: Huib Hoste & Victor Servranckx, living room of the De Beir house (1924) in Knokke, Belgium. © CIVA, collection Huib Hoste. Right: Huib Hoste, living room in the Billiet house (1927) in Bruges, Belgium. © Cedrick Verheest, collection Ann Verdonck.

proposed an abstract design, executed in an innovative flooring material, the so-called Marmoleum, which was launched in the 1930's by the Dutch factory *nv Nederlandsche Linoleumfabriek* in Krommenie. (Fig. 3) In this case, it was not the walls or ceiling that attracted attention, but rather the floor: Servranckx focussed on the representation of the floor by means of rectangles and circle fragments in both plain colours and marble effects. This floor design can be seen as a unique example of his *Plastique Pure*, where the painting is reduced to its elemental, two-dimensional essence. According to Servranckx, an architecturally constructive and monumental simplicity, based on geometric laws, was pursued in the spirit of a true decorative conception:

Our aesthetics is based on geometric laws, the static system of geometric space and the physiology of human sensations. Everything around us is form and colour; a loving and attentive eye discovers relationships and connections, often numerical relationships, which closely touch our inner system. It is to our inner system and not to the formal and coloured world around us that we must ask for the law of beauty. The work of art is the elaboration of a clearly characterised process, which our being has chosen and ordered¹⁴.

The floor in the living room, rediscovered under fitted carpet during preliminary research¹⁵, has recently been conserved and restored, exposing this rare and fascinating artwork.



Figure 3. Left: Jozef De Bruycker & Victor Servranckx, living room of the *De Busscher-Declercq* house (1932) in Roeselare, Belgium. © Ann Verdonck. Right: Victor Servranckx, floor design in the living room of the *De Busscher-Declercq* house. © Ann Verdonck.

The influences of both Hoste and Servranckx on the oeuvre of architect Jozef De Bruycker are also striking. Peter De Bruycker described his grandfather in his dissertation as follows: “as his interior art was an association of shapes and colours, he always had an up-to-date colour card from the Leipzig Messe at hand”¹⁶. The predilection for the quarter of a circle in Servranckx’s abstract paintings and sculptures (for example, sculpture *Opus 1 (Meisjesterorso)* from 1924) can be found in De Bruycker’s architecture, furniture, and carpets¹⁷.

Servranckx’s architectural concepts and designs

In an article *Victor Servranckx: mérnöki-architektúra (Belga)*, in the Hungarian magazine *M-aktivista* of 1925, Servranckx published a discourse on architectural engineering¹⁸. In it, he discussed the issue of architecture, which he argued must be approached from the electrical and mechanical requirements inherent to machinery. Servranckx questioned the housing situation, exploring when our homes finally will be understood as machines. Eventually, these machine-based, practical houses will also be the most beautiful. He also stressed that the aesthetic architectural approach would never lead to innovative buildings.

With the assistance of a competent engineer, Servranckx also realised a few architectural projects. A striking example of his architecture is the

Eloge de la Folie in Anderlecht, dating from 1925. This large corner building is a concrete structure, covered with a brick skin and accentuated with imposing concrete canopies. The design, with its iconic cylindrical bay windows and the rhythm of rounded chimneys, shows a great affinity with his paintings *Opus 45 (Het Paar)* and *Opus 46 (Tedere Constructie)*, both from 1923. The export warehouse with office and garage in Diegem along the Oude Haachtesesteenweg from 1926 evolves from an organic form language to striking cubism. This building is also known as the *Cubist house*¹⁹. The architecture is characterised by articulated white cubes attached to the main brick volume, creating a monumental and sculptural whole (**Fig. 4**). Servranckx probably designed his last houses in the 1930s. When analysing his architectural projects, the question arises whether Servranckx transgressed his own principles and designed buildings from an aesthetic architectural approach rather than from a fundamental mechanical precept.



Figure 4. Left: Victor Servranckx, The *Éloge de la Folie* project (1933) in Anderlecht, Belgium. © University Archives KU Leuven, fund Victor Servranckx. Right: Victor Servranckx, the *Cubist house* (1926) in Diegem, Belgium. © University Archives KU Leuven, fund Victor Servranckx.

4. Conclusion

This survey shows that the symbiosis between artist and architect can result in striking design concepts, a collaboration that evokes a mutual added value. Documenting and analysing Belgian avant-garde interiors, therefore, are essential for proper assessment of interwar architecture. As original concepts have been covered, painted over, or lost, research to recover the appearance of these absent works is of substantial importance: to offer an understanding and appreciation of the intended interior environment, to raise awareness regarding the artistic value of the initial design, and to clarify the way in which the occupants lived and worked in their artistic layout. Although only a few of Servranckx's settings have been preserved in situ, it is always a surprising experience when, for example, the abstract floor project in the *De Busscher–Declercq* house emerges from under layers of fitted carpet.

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Modernism for the Masses: the Case of Dublin's Social Housing

Eryk Rawicz–Lipinski

DOUGLAS–WALLACE ARCHITECTS, DUBLIN, IRELAND

By the 1930s the residential market in Dublin was dominated by speculative developers and the attempts for social housing provided by local authorities proved to be a costly and mostly failed experiment. Established housing typologies consisted of suburban cottages, leaving the city centre fall into progressively greater disrepair as the residents moved out to suburbs. Financial strain of the newly created Irish Free State, further deepened by the Civil War did not help in providing any meaningful publicly funded housing schemes.

In this political climate appeared Herbert Simms, newly appointed Dublin Corporation's Housing Architect. He was responsible for over 17 000 new dwellings during his 16-year tenure.

The official position of the architectural profession in Ireland was biased against any modernist ideas, and as a result nothing resembling the 'International Style' was built until 1931. Even then only handful of architects dared to do so. And yet, despite the objections – Herbert Simms managed to design a series of residential schemes influenced by contemporary apartments in the UK and echoing Dutch expressionism. These distinctive, modernist in form and function, 4-storey brick and concrete buildings became new paradigm for Dublin's social housing for the next 30 years. Over past 80 years the most successful from social perspective proved to be the schemes below 200 apartments, and one modest example (46 apartments) was subject to deeper analysis. Henrietta House represents a typical example of apartment block designed by Herbert Simms. The architectural language and construction methods were well established and tested in practice by the time works commenced on Henrietta House in 1937.

The detailed analysis of the building aimed to establish if the building designed and constructed as a new social housing type in 1930s is still a viable place for living in 21st century.

Findings of the study were presented as a range of possible solutions that could be implemented to the existing structure, being mindful of the historic qualities of the building and considering the principles of architectural conservation.

1. Social background

By the early 20th century housing conditions in Dublin were marked by the gradual exodus of the wealth from the city to suburbs. This slow, but constant process started at the beginning of 19th century and left the remaining residents of the inner city living in slums bearing limited resemblance of their former Georgian glory. By 1913 nearly a third of Dublin's population lived in tenements¹. Collapses of the buildings and subsequent death of inhabitants due to structural deficiencies resulted in a national debate around the issue of housing for the

working classes and slum clearance. Around the same time the ideas of a garden city and general suburbanisation were adopted both by the Dublin Corporation and private developers. This started a trend of building vast, low-rise, low-density estates at the fringes of the city. That middle-class ideal was forcibly imposed on the working-class citizens, given that the policymakers were predominantly of the middle-class themselves. As a result, Dublin Corporation's programme of slum clearance comprised of 'thinning out' of the city and relocating slum dwellers to the cottages in the suburbs, quite often against their will². The idea of just the provision of houses was deemed a sufficient solution of the housing crisis, but in long term this only deepened the social stratification of Dublin's population. The well-to-do lived in their leafy green suburbs, while working classes and rural immigrants moved to their uniform, anonymous estates. Those with the least of financial means were left in the inner city,

2. Housing architecture in the 1930s Dublin

Following the Irish independence from the United Kingdom (1921), and the subsequent Civil War (1922–23) the drive to re-build the Ireland's capital resulted in new architectural commissions. New edifices, however modern in their engineering, were deeply embedded in the Beaux-Arts and revivalist styles. This doesn't mean that the modern architecture was not known in Ireland. Foreign study trips for architects were organised, and architectural publications were available soon after their publication in English³, but the Beaux-Arts tradition was embedded so deeply into the architectural establishment, that even the relatively progressive architects publicly reacted to the contemporary avantgarde German architecture, that had



Figure 1. "Ballybough House, Thorncastle Street, Dublin, 1937–1939. Housing scheme containing 64 flats. Architect: Herbert George Simms." © Eryk Rawicz-Lipinski, 2022



Figure 2. "Pearse House, Hanover Street East, Dublin. Constructed by G. & T. Crampton for Dublin Corporation in 1934–1935. Architect: Herbert George Simms" held by Assoc. Prof. Joseph Brady. © Unknown, 1934. Digital content by Dr. Joseph Brady, published by UCD Library, University College Dublin

'run riot, not to say gone mad'⁴. This attitude was visible in the period press up to the mid-1930s. A good example of leading architectural trends and the social influence in Ireland at that time was the RIAI's Gold Medal for Architecture. The first recipient of this prestigious award in 1934 was a Neo-Romanesque church of St. Thomas⁵ in Dublin.

Modernism in Ireland eventually started to appear in the early 1930s, but the new forms were limited in public buildings to hospitals, schools, factories and cinemas. The design, with few exceptions, was often an austere classicism with Art Deco detailing. International style in residential architecture was confined to few enclaves of developer-built housing estates⁶, architect's own houses and few individual commissions for the wealthy clients. Corporation houses were built in traditional styles and methods, subject to prescribed government designs⁷, in the large batches of anonymous terraces devoid of any communal infrastructure, scattered in along the peripheries of Dublin.

In 80 years between 1850 and 1930, Dublin Corporation built only handful of apartment blocks with less than 1000 flats between them⁸. Such was the dislike for the flats, that they were deemed warehouses for the people, and only suitable for the bachelors without the families⁹. The reader of contemporary press was warned against the immoralities of the common stairwell of the flats and the mythical propertyless socialists¹⁰.

3. Dublin corporation's blocks of flats

Dublin Corporation in 1932 created a position of a Housing Architect to tackle the unresolved problem of dilapidating tenements and the worsening housing

problem. Appointed for this position was London-born and Liverpool-educated architect Herbert George Simms. His department immediately set to work on the biggest housing drive Dublin has seen so far.

Despite severe resistance against multi-storey residential buildings, Simms recognised the need for the high-density, modern housing in the inner city, where the occupiers are close to the workplace and all urban amenities like corner shops, markets, cinemas, and local pubs. He introduced the building typology not seen before in the city – a free standing multi-storey block of flats. In total, between 1932, and his untimely death in 1948, Simms was responsible for the design and construction of over 20 schemes built in 26 phases, totalling over 3500 apartments. His design principle of the 4-storey inner city blocks of flats prevailed until the late 1960s.

Schemes varied in size from 48 to 556 apartments and were built around the same principle. Each scheme consisted of a variation of a modular 4-storey block of flats, roughly around 12–30 balcony-access apartments each served by a single central stairwell. Every module had one public elevation clad in expressionist brick patterns, or decorative plaster fenestrated with windows and individual private balconies, but notably no doors. The public elevation was facing the street on the outer edge of the site, set back from the boundary fence by a narrow strip of landscaping of ambiguous designation¹¹. The opposite elevation facing the inner semi-private courtyard, contained the main entrance to the building and the access galleries. Semi-private elevations were plastered and painted. Each scheme was of a similar construction of cast in-situ reinforced concrete walls and floors. Most roofs were flat slabs¹² of reinforced concrete with projecting eaves covered with bituminous membrane. Original windows were steel-framed with the emphasis on horizontal subdivisions. Despite using similar construction and standardised layouts, each development is clearly distinguishable by using distinctive detailing and materials, especially on the street-facing elevations.

In certain buildings, ground floors facing main streets also incorporated retail units on ground floors¹³. It is worth noting the absence of the architecturally distinguished entrances to the inner courtyards, and subsequently the building entrances, other than narrow passages, or via gated gaps between the buildings. Central courtyards contained common amenities: pram enclosures, laundry hanging lines and playgrounds. These were badly needed by the inhabitants, as families were typically large with 10+ persons living in each apartment.

Flats are primarily of 2 and 3-bedroom types. Some schemes have also 4-bedroom flats, and in very limited circumstances, single bedrooms were approved by the Department of Local Government. Typical of the social building of the era is a lack of separate bathrooms. Bathtub was placed under a hinged worktop in the scullery/kitchen area. Only a WC was separately enclosed. Heating, and hot water were provided by the open fire fireplace in the living room¹⁴.



Figure 3. "Henrietta House, Block A, Henrietta Street, Dublin, 1937–1939. Housing scheme containing 48 flats. Architect: Herbert George Simms." © Eryk Rawicz–Lipinski, 2020

The design of Dublin's inner-city blocks of flats didn't appear from the vacuum. The distinctive brickwork bears strong visual resemblance to Michel de Klerk's or Piet Kramer's expressionist Amsterdam School of social housing, while the functional layouts and architectural features were more closely associated with London's and Liverpool's social housing developments of the 1920s and early 1930s¹⁵.

Since their completion, Simms' buildings were, and still are, in use as asocial housing, and over the years undergone some changes. Three of the largest schemes that were a social disaster right from their inception were demolished, and two were heavily re-built¹⁶. In the remaining schemes metal windows were replaced by uPVC, individual gas boilers were installed in each flat to provide heating and hot water and some insulation was installed on flat roofs. All remaining schemes are maintained to a similar standard.

4. Henrietta house

One of Herbert Simms' blocks of flats was chosen by the author as a subject of deeper analysis¹⁷. Henrietta House, completed in 1939 was a relatively modest scheme of 48 apartments in 2 blocks facing each other across a central courtyard. Each floor comprises of 6 apartments: (2 nos. of 2-room, 3 nos. of 3-room and one 4-room). Ground floor flats are accessed directly from the outside, while the rest are accessible from galleries. The centre of each inner elevation is dominated by the access staircore tower finished in smooth render. The Henrietta buildings are representative of Simms' design approach. Flat-roofed, reinforced concrete construction, with the public

elevations finished in two types of Irish-made bricks, laid in various bonds with string courses and enhanced with details. Henrietta House buildings replaced previous tenements¹⁸ in the area that was once in the 1700s Dublin's prime Georgian neighbourhood.

The study was approached in two ways:

1. Analysis of the building elements. Detailed survey and assessment of damages and deterioration of the materials.
2. Analysis of the fitness for purpose from the perspective of current building legislation, spanning from fire safety to thermal, acoustic, and environmental qualities.

Findings of the study were also submitted to the Conservation and Heritage Department of Dublin City Council for their consideration.

Existing building fabric does not show any significant levels of deterioration and is deemed structurally sufficient. There is localised damage to the render and the brickwork in several locations, but the pattern of deterioration suggests mechanical, rather than chemical or moisture-induced damage.

Biggest flaws preventing healthy and comfortable living for the residents are sub-standard ventilation resulting in moisture condensation and mould

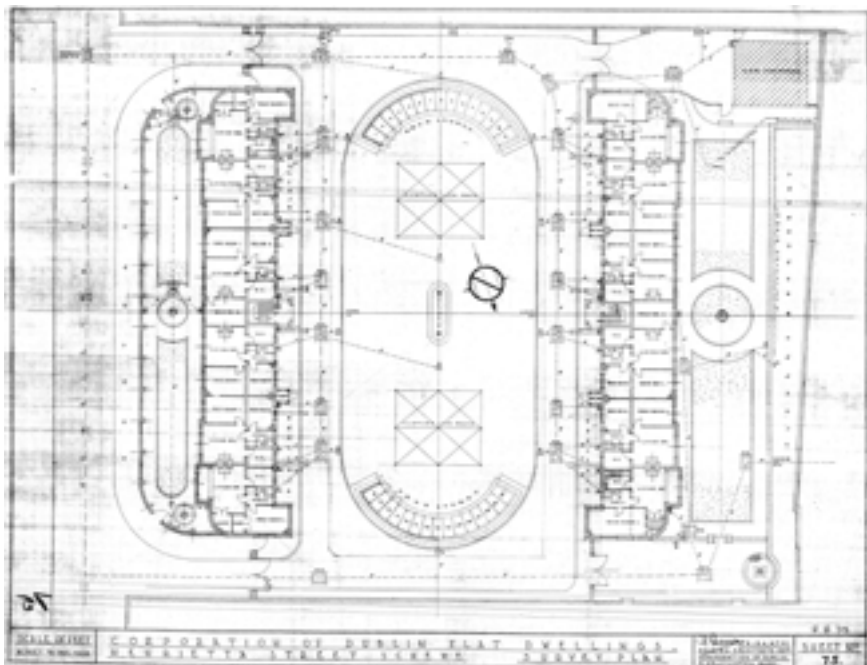


Figure 4. "Henrietta House site plan, Henrietta Street, Dublin, 1939. Architect: Herbert George Simms." © Unknown, 1939, Digital content by Archaeology, Conservation & Heritage, Planning & Economic Development Department, Dublin City Council.

growth. Separating walls and floors need acoustic upgrades. Thermal deficiencies of the building envelope are being addressed on an ongoing basis by the internal wall insulation¹⁹. Fire safety requires removal of the privately installed gates on the galleries. Studies addressing the lack of accessibility were undertaken by the Council and could be implemented with minor disturbance to the building's fabric.

The primary focus in prioritisation of any works and maintenance schedules should be aimed at the residents of the building. They spend most of the time in the building and are the most important in the upkeep and maintenance. For the residents to take good care of the built heritage they should understand and appreciate the building, once the main deficiencies are resolved. Currently Herbert Simms' buildings are getting recognition from the professionals and the Council, but there is a very little understanding, pride or even acceptance from the inhabitants to the point of neglect, or mindless vandalism. On the opposite end of the spectrum, individual decoration of the elevation, incompatible with the character of the building is persistent. Success of the adjacent Tenement Museum at no. 14 Henrietta Street involving people and memories of the place, proves that the educational programmes can bring a level of pride even to the residents of a less than grandeur mansions. A 'Simms 120' Conference held in Dublin in 2018 was a good start in propagating Simms' legacy, but since it was only aimed at the architectural professionals, excluded people interacting with the buildings daily. Several local cultural initiatives promoting understanding of the uniqueness of the scheme should be considered to promote the appreciation for the 1930s Dublin's modernist social housing by their inhabitants. They should include and be aimed the residents, while the principal shortcomings of the daily in these buildings are resolved providing contemporary living space.

5. Summary

The question of viability of Simms' apartment blocks and their future continuous use is particularly relevant amid recent voices of some of Dublin's councillors calling for their demolition²⁰. Their cultural and architectural importance is recognised by the authorities, and most of the 18 remaining Simms' blocks of flats are now designated protected structures. Any retrofit, and especially retrofit of a historical building is a challenging one, however the benefits of preserving the built heritage and environmental advantages of continuous use are difficult to overestimate. As a response to the calls for demolition and to prove that Simms' buildings can still provide comfortable accommodation, Dublin City Council in 2021 has completed a benchmark pilot scheme for retrofitting an apartment to contemporary standards in one of the schemes, and the results are promising. Two flats were merged into one apartment compliant with current design guidelines. Walls were internally insulated with lime and cork mix. Thermal and air comfort is achieved with mix of heat pump and automated moisture-controlled ventilation. While

the principles of architectural conservation were fully implemented, the net effect was 50% cost and only 10% of carbon emissions as compared to a new build²¹. This proved that it is financially feasible to refurbish existing landmark buildings, and ensure their continuity of use in 21st century, once the critical issues of the building fabric are addressed²².

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Notes

- 1 Out of 87,000 Dubliners living in slums 22,701 lived in the houses deemed unfit for habitation (McManus, 2002, pp. 31–32)
- 2 By 1938 400 of the 2000 families of the Crumlin estates returned to the familiar city slums (Rowley, 2019, p. 120)
- 3 Mainly thanks to actions of the Architectural Association of Ireland (Rothery, 1991, pp. 56–66)
- 4 (Butler, 1925, pp. 17–18)
- 5 Church was designed by Thomas Hicks, influential architect of many Neo-Classical buildings in Dublin (O'Toole, 2016)
- 6 The earliest examples of modernist residential architecture are from 1931– Wendon in Mobhi Road designed by Harold Greenwood (Róiste, 2016) and 16 semi-detached houses in Kincora Road designed by J.V. Downes (McManus, 2002, pp. 289–290)
- 7 The designs introduced in 1925 in the House Designs Prescribed by the Minister for Local Government under the Housing Act, 1924 were built, without any significant variations well into the 1950s (Rowley, 2019, pp. 62–63)
- 8 Many 2-storey duplex buildings with separate entrances were classified as 'flats' (McManus, 2002, p. Appendix)
- 9 (Anon., 1931, p. 126)
- 10 (McGrath, 1932, pp. 271–272)
- 11 Those narrow strips of land are not accessible for neither public of the residents and despite forming the strip of defensible space between public realm and the building were never utilised (Conroy, 1997, unpublished, pp. 168–169)
- 12 Except for three schemes – St. Aouden's House (1934), St. Joseph's Mansions (1939) and Mercer Street (1935)
- 13 St. Theresa's Gardens, Countess Markievicz House and Mary Aikenhead House.

- 14 Fireplace, as a vastly ineffective source of heating, was used in the council housing schemes until the late 1960s, despite being criticised by contemporary architects. (Moffet, 1947, p. 188)
- 15 Simms was on study trip to UK in 1926, and other Dublin housing (McManus, 2002, p. 190) officials undertook similar study trip to The Netherlands in 1925 (Rothery, 1991, pp. 149–150)
- 16 Fatima Mansions (389 flats) demolished in 2004, Newfoundland Street (150 flats) demolished in 1998, St. Theresa's Gardens (556 flats) demolished except for 3 blocks in 2016. St. Joseph's Mansions regeneration in 2002, St. Mary's Mansions regeneration in 2020.
- 17 This was the subject of author's Postgraduate Diploma in Conservation thesis (Rawicz–Lipinski, 2020, unpublished)
- 18 In 1911 there were 835 people living in 15 buildings.
- 19 However, more careful approach is needed in critical junctions to avoid thermal bridging.
- 20 Fortunately, the architectural establishment in Ireland opposed the demolition based on purely economic grounds. (Kelly, 2018)
- 21 Two existing flats in Balybough House were amalgamated to create one new apartment. Only lightweight partition walls were demolished. (Dublin City Architects, 2021)
- 22 As of April 2022 further upgrades are tendered and considered for upgrades by the Dublin City Council. (Lange & Carroll, 2022)

A Revolutionary Recipe for Housewives: the Cubex Kitchen

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STRATEGIC BASIC RESEARCH FILE NUMBER 1S69422N

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One hundred years ago kitchens were often limited to free-standing furniture and a stove in a living area. The interwar period, however, was a turning point as the kitchen gradually transformed into a rationally designed and carefully equipped separate space, with standardised functional elements. After the First World War, there was a desire for a new way of living in Europe, and the classical pre-war recipe for the kitchen made way for a revolutionary recipe with ingredients like Taylorism and standardisation. This design transformation can be attributed to both architects and so-called household experts.

This paper reflects on the way concepts of the rational kitchen came about in Europe and focuses on some key examples in the Belgian context, notably the renowned Cubex kitchen (ca. 1930) designed by architect Louis H. De Koninck (1896–1984). The findings are based on a complementary combination of archival records and primary written sources on the one hand, and on-site material-technical observations on the other hand. As several examples of these kitchens are still preserved, it is only through this physical experience that their scale, sight, installation and use can be adequately grasped. Some conserved Cubex kitchens provide insight in how they are still used in today's households. By understanding their context, key design concepts, and construction features, like materiality and finishing, an overview of this unique kitchen type is created.

1. Kitchen science

A hundred years ago, Belgian kitchens were mostly limited to free-standing furniture and a stove in a living area¹. The interwar period, however, was a turning point as the kitchen gradually transformed into a rationally designed and carefully equipped separate space, with standardised functional elements. According to German architect Ernst May (1886–1970), in *L'Habitation à Bon Marché*² in 1926, Taylorism forced interwar architects to meticulously follow 'the housewife'³ around in the kitchen while performing her daily tasks: *"The 'Taylorisation' of the household has led some architects to follow the housewife, stopwatch in hand, while she prepares the omelette, to demonstrate that this omelette can be made by walking 17 1/2 metres*

less⁴. Such motion studies proved that a logical, 'rational' kitchen allowed for more practical and easier household management, which was considered the duty of architects⁵. Not only architects were occupied with the design of rational kitchens, but also so-called household experts greatly influenced the development of scientific reflection concerning the kitchen. According to an article from 1936 in the Brussels architecture periodical *Bâtir*⁶, the United States of America was amongst the countries that can rightly be regarded as the pioneers of domestic 'civilisation'⁷. Indeed, the issue of efficient domestic management first started in the United States, and the shift towards a fundamental rationalisation of household work reached and influenced Europe only later. Some famous American 'influencers' were educators Catharine Beecher (1800–1878), Christine Frederick, and the engineering couple Frank (1868–1924) and Lilian Gilbreth (1878–1972). Their work greatly inspired architects, such as the scientific research of Catharine Beecher⁸ under the title *A treatise on domestic economy* (1841)⁹. This was received as a complete and useful guide for middle-class women, in which household tasks were approached scientifically and logically¹⁰. Christine Frederick developed organisational schemes for the kitchen based on her scientific motion studies. In 1913 she launched her book *The New Housekeeping: Efficiency Studies in Home Management*. Her second book, entitled *Household Engineering: Scientific Management in the Home*, reached Europe in 1920¹¹. It was translated, interpreted, and published four years later by German architect Bruno Taut (1880–1938), by the German expert on home economics Erna Meyer (1890–1975) in 1926, and then reached France in 1927¹².

Frank Gilbreth and his wife Lilian Moller – an engineer and psychologist – decided to apply the principles of Taylorism in their own home, resulting in the design of a 'model kitchen' by Lilian Moller Gilbreth. She was also the inventor of the pedal bin and the functional refrigerator door.

2. The launch of Cubex

Between 1918 and 1950, the international search for rational built-in kitchens following the principles of scientific management and efficiency for the home intensified and led to various experiments. Experimental kitchen models were often, depending on their intention, made public by architects via publications, conferences, exhibitions, etc. One such influential conference was the Third International Congress of Modern Architecture (CIAM III), held in the Brussels *Palais des Beaux-Arts* in 1930. Here, the prototype of the so-called Cubex kitchen – the Belgian contribution to rational kitchen design – was first shown, as part of the section on minimal housing (*'l'Habitation Minimum'*), designed by Louis Herman De Koninck (1896–1984) (**Fig. 1, right**).

As a modernist architect, De Koninck was interested in the industrialisation of housing, which is reflected by his modular kitchen system. Like the famous German Frankfurt kitchen designed by Margarete Schütte-Lihotzky (1897–

2000) in 1926, the Belgian prototype was rather small and rectangular, even if it was described by De Koninck as 'a spacious laboratory' in 'Situation de la cuisine' in the Brussels architecture periodical *La Maison* in 1945¹³. It differed from its German predecessor in that the furniture was not custom-made according to the space, but was composed of stacked, standardised elements, mostly cubes, with the standardised fixed dimensions of 60 centimetres in depth, width, and height, or multiples thereof, depending on the installation (**Fig. 1, left**)¹⁴.

Other stackable furniture systems designed by contemporaries, all had different sizes that were considered optimal by their makers. For example, the units by architect Huib Hoste (1881-1957) measured 75 times 75 centimetres, Albert Vanden Berghe (1906-1985) used 45 times 45 centimetres for his *ÉMCÉ* furniture, and the standardised furniture by Le Corbusier (1887-1965) measured 70 times 70 centimetres¹⁵. As every element of the Cubex prototype was specifically equipped for its premeditated purpose, like storage for pots and pans, cleaning utensils or drawers for the cutlery, every wooden element was also internally foreseen of functional hooks, shelves, etc. Then again, thanks to the flexibility of this kitchen system, a Cubex could be installed in any possible kitchen. But the rationalisation didn't end there, as with the new upcoming resources like electricity, gas, and running water, the Cubex kitchen presented at CIAM also integrated contemporary appliances such as a double sink, a refrigerator and a gas stove¹⁶. The manufacturer of the Cubex kitchens was the company Van de Ven. Over the production of the kitchen, the elements underwent several alterations, for aesthetic reasons or to make the production more efficient. Three different versions can be distinguished: two interwar versions and a third version of around the

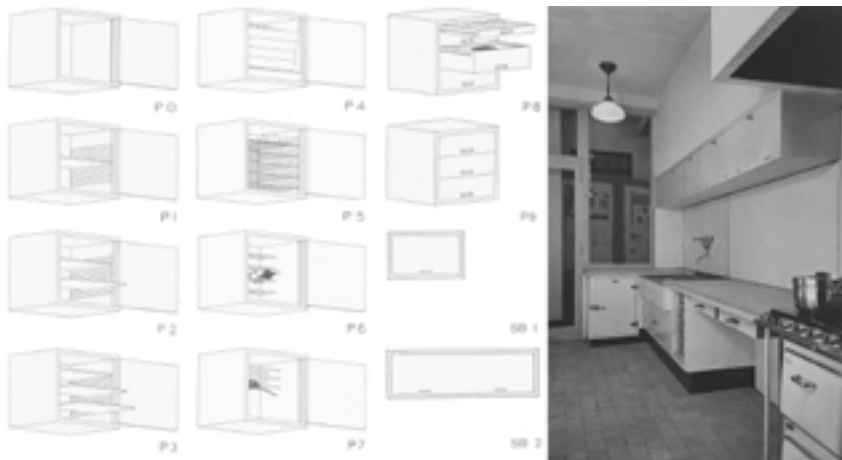


Figure 1. (Left) Various Cubex cabinets with their function and name. (Right) View on the prototype kitchen at CIAM III in Brussels in 1930. Published by De Koninck Louis Herman. "La cuisine standard industrialisée," *La Cité & Tekhne* IX, no. 9 (May 1931): 107, 113-118. © CIVA Collections Brussels, archive fund Louis Herman De Koninck.

1950s. The second version, from around 1935, differed from the prototype as described above, in its dimensioning and detailing. The 60 centimetres height of the primary Cubex elements were considered too low and were consequently altered to 75 centimetres¹⁷. Additionally, the massive wooden frame of each cabinet element was modified to a framework of posts and battens, finished with 4-millimetre thick plywood¹⁸. Finally, the semi-circular handles were now installed on every cabinet door or shelf, replacing the initial smaller round grips. For the post-war version, the framework was even more standardised to speed up the production process and facilitate the installation.

3. Preserving belgian heritage

The manufacturing of Cubex kitchens ended when the company Van de Ven went out of business in 1965¹⁹. However, this did not mean the end of Cubex. Even though the Cubex design goes back almost 100 years, research in the Heritage inventories of Flanders and Brussels²⁰, among others, shows that quite a number of these authentic kitchens are still extant today in interwar and post-war Belgian houses. It is important to document, raise awareness for and preserve this treasured heritage, which is an essential part of our Belgian design history. Convinced of the historical heritage value of these pioneering kitchens and their current remaining legacy, a few Belgian furniture companies, including Cubex, specialised in the preservation, restoration, and even the remaking of Cubex furniture according to De Koninck's initial design principles. The aim is to both adhere to the authenticity and specificity of a historic Cubex and to integrate nowadays design and comfort requirements. To achieve this, different options and paths can be taken depending on the specific case: (1) conservation of an existing kitchen, (2) renovation with the re-use of old Cubex furniture parts, and (3) integration of newly-manufactured Cubex components²¹. The guiding principle in the case of conservation and renovation should be a maximum preservation of the original interwar materials and techniques.

In some instances, this is quite a challenge. For example, in the case of the Gaverzicht villa in Waregem (**Fig. 2, left**), designed by architect Gentiel Van Eeckhoutte (1906–1963) in 1937–1939. The well-preserved kitchen with Cubex furniture has walls finished in Marbrite glass, a typical Belgian interwar product manufactured by the S.A. *Verreries de Fauquez*²². Some of this material is damaged and needs replacement but it is hard to find spare material today. Using a suited substitute like Bullseye glass or preserved Marbrite planes offers a possible solution²³.

A slightly more invasive example is the authentic Cubex kitchen in the listed De Buscher–Declercq house (1932) in Roeselare, designed by architect Jozef De Bruycker (1891–1942) (**Fig. 2, right**). The kitchen was in an exceptionally good condition when bought by the current owners, who carefully conserved



Figure 2. (Left) The Cubex kitchen in the Gaverzicht Villa in Waregem. © Margot Missoorten. (Right) The restored Cubex kitchen at the De Buscher-Declercq house in Roeselare, with an elevated countertop. © Oswald Pauwels.



Figure 3. (Left) Historical image of the authentic Cubex kitchen at the De Buscher-Declercq house. © Private collection of the current owners. (Right) The contemporary Cubex kitchen with an added kitchen island in new Cubex furniture. © Oswald Pauwels.

and combined it with 21st-century Cubex furniture pieces (**Fig. 3**). Before this intervention, the historical and physical condition of the kitchen was assessed. As the cabinets had been painted over, the historical paint research executed in 2015 by *Fenikx bv* determined the original colour scheme, which was

consequently reconstructed. The historical kitchen was almost completely intact and offered a lot of storage space, but some elements were altered and added to meet current comfort and ergonomic requirements. The countertop was elevated approximately ten centimetres by discretely adding adapted drawers. To integrate absent kitchen appliances, a central kitchen island in new Cubex pieces with an incorporated dishwasher was added. Another new Cubex element with a refrigerator was added in the adjacent dining room, as there was no space in the original rectangular kitchen of approximately three by five metres²⁴.

A last example of the integration of new Cubex furniture is the kitchen at the Berteaux house (1936–1937) in Brussels, designed by Louis H. De Koninck. The house was built for chemical engineer Raoul Berteaux and remained in family ownership until 2007 when it was sold to the current owners. When they purchased the house, some alterations were made to the kitchen as only a few original Cubex elements were preserved. The kitchen is equipped with three different kinds of Cubex furniture, now combined into one complete modern space (**Fig. 4**). The oldest cupboards date from when the house was built: they are original, second version Cubex kitchen parts. Secondly, in the



Figure 4. The Cubex kitchen at the Berteaux house in Brussels with the authentic off-white cabinets and the new 21st-century Cubex furniture in black. © Oswald Pauwels.

1950s, post-war Cubex cabinets were added according to Berteaux's family. Finally, to complete the kitchen and meet modern requirements, new 21st-century kitchen furniture was added, made by the actual Cubex company, of which the house owner is one of the business partners²⁵. The authentic cabinets are used as part of the kitchen storage, while the new kitchen elements form the countertop and kitchen island, and incorporate new kitchen appliances like a built-in refrigerator and oven. As in the De Buscher-Declercq house, the new cabinets are manufactured to ensure a higher countertop height. When discussing the combination of authentic and new furniture, it is important to create a visual distinction as both do not possess the same cultural heritage value. At the Berteaux house, this separation is made visible by painting the newly added furniture in black, whilst the original elements remain in their historical colour (off-white)²⁶. In the De Buscher-Declercq house too, the added Cubex elements were painted in a different colour.

4. Conclusion

The evolution of the practical rational kitchen, which laid the basis for contemporary kitchen designs, blossomed during the interwar period. Through the influence of American household experts on the scientification of domesticity, that later reached Europe, the kitchen's traditional recipe with non-integrated furniture was studied, tested, and compacted to a culinary revolutionised recipe with built-in standardised elements to optimise the comfort of 'housewives' who could afford such a kitchen. As demonstrated by the mentioned cases, Cubex kitchens are still extant, used, and newly manufactured. Despite some changes in ergonomics and kitchen appliances, the design has remained ageless. Like the Frankfurt kitchen, the slightly later Cubex kitchen design by De Koninck forms an important contribution to this international movement thanks to its modularity, flexibility, and the degree of standardisation, benefits which we still enjoy today.

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Notes

- 1 For examples, see a.o. Marjan Sterckx (ed.), *Crime Scenes. Interbelluminterieurs door de lens van de forensische fotografie* (Ghent: A&S Books, 2021).
- 2 *L'Habitation à Bon Marché*. *Revue mensuelle* (1921–1940).
- 3 The contemporary word 'housewife' should not be considered as one singular uniform group, as it included both working- and middle-class women who did the household after their jobs, and middle- and higher-class women that didn't have a profession.
- 4 "La 'taylorisation' du ménage a amené certains architectes à suivre, chronomètre en main, la ménagère pendant que celle-ci prépare l'omelette, pour démontrer que cette omelette peut être faite en parcourant 17 ½ m. en moins.", May Ernst, "La Cuisine = Salle Commune," *L'Habitation à Bon Marché*. *Revue mensuelle* 6, no. 9 (September 1926): 160.
- 5 Ernst, "La Cuisine = Salle Commune," 160.
- 6 Bâtir: *Revue Mensuelle Illustrée d'Architecture, d'Art et de Décoration* (1932–1940).
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- 17 De Koninck, "Situation de la cuisine," 127–130.
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- 20 "Inventaris van het Bouwkundig Erfgoed van het Brussel Hoofdstedelijk Gewest," *Erfgoed Brussel*, accessed November 6, 2020, <https://monument.heritage.brussels/>; "De inventaris van Het Onroerend Erfgoed (Vlaanderen)," *Onroerend Erfgoed Vlaanderen*, accessed November 6, 2020, <https://inventaris.onroerenderfgoed.be/>.
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- 22 Liesbeth Dekeyser, "Cimorné interwar decorative cement render: A historical and technical approach towards restoration guidelines," (PhD diss., Vrije Universiteit Brussel, 2015), 74.
- 23 Dekeyser, "Cimorné interwar decorative cement render: A historical and technical approach towards restoration guidelines," 320–324.
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#02

Post-war.

International
expansion

S03

The Visible and the Invisible

César Bargues Ballester

GETTY CONSERVATION INSTITUTE

*Architecture is not just a synthesis of visible elements; it is of necessity also a synthesis of invisible elements.*¹ Although classic histories emphasise aesthetic value, scholars and architects have elaborated on the character, which could be understood as a part of that invisible, in their writings to denote how material culture embodies social, cultural, and political traits. This idea is also prevalent in conservation. Public and private interiors are more than their discrete components, whether they are architectural devices, surface treatments, lighting, furnishings, or decorative arts. By exploring the invisible, interiors offer an opportunity to understand the motivations and struggles of their creators, their collaborations, as well as social relations and cultural practices, and how women and men occupy, use, and make their identities around space and time.

Both dimensions coalesce into a vast array of interiors produced during the post-war period. In the United States, many explored and exploited industrialised materials, technological innovation, mass production, and communication – think of Charles and Ray Eames. Others explored alternate models built on tradition and spirituality – think of George Nakashima, perhaps less well-known for his architectural work.

In recent decades, new scholarship has examined the complex relationships between class, race, gender, sexual identity, and material culture. An example of this scholarship linked with post-war interiors is the study of United States Gypsum Research Village (1952–1955). Its marketing literature depicting interiors and domestic life offers the substance for a critical analysis of the visual constructions of whiteness and racial segregation.² Colonialism, postcolonialism, and migration have also been recurrent topics; and captured by Docomomo through the Journal and papers in previous conferences.

This new body of knowledge has been contributing to inclusiveness and a much more complete understanding of the drivers moulding the visible and the invisible into spaces and places. It revises and enriches consolidated twentieth-century narratives from the Western world built through the lenses of capitalism,

technological progress, consumerism, comfort, and beauty, inviting us to see and experience interiors through an enhanced contemporary perspective.

These different approaches to the study of space and places underlie the five contributions of this session, which emphasise one or the other in their exploration of case studies geographically separated and emerging from different cultural contexts. The cases illustrate a period of adoption of modern design values through pluralisation, cross-pollination, international exchange and journeys of comings and goings, which were perceived after World War II with greater intensity by virtue of a significant architectural production in terms of quantity and scale.

In her paper, Sandra van der Merwe argues that the urban scale has the potential to amplify the contributions of otherwise fragile individual buildings as archives of the modern South African factory, which celebrates efficiency and production while also ingraining class, race and gender segregation in the workplace.

The publicity and photographic accounts surrounding the two houses designed for John Entenza provide Jose Parra-Martínez and his co-authors a base to explore both material and symbolic aspects linked to Entenza's public and private persona as a gay man in a repressive milieu.

Francisco Javier Saenz Guerra presents three buildings designed by architects Angelo Mangiarotti and Bruno Morassutti, with the participation of engineer Aldo Favini. He touches on the distinct experiences of both architects in the United States, their affinities and other influences and factors fundamental to understanding the works.

Giulia Marino examines how Jean Tschumi harmoniously harnessed colour to model the modern workspace in his *Mutuelle Vaudoise Accidents* administrative building (1951–1956) in Lausanne, an effort that is as much informed by North American experiences and colour scientific theories as by his role as an architect “who places the issues of composition at the centre of the project”.

The careful analysis of the interiors at *Mutuelle Vaudoise Accidents* has been absent in other conservation work. Interiors are sometimes temporary, endure continuous changes and are complex to understand, contributing to their marginalisation and impacting their perception of heritage.

In her paper, Roberta Grignolo reminds us of these and other issues. She proposes the notion of “genre”, common in other creative disciplines, as a tool to broaden the recognition and understanding of twentieth-century interiors. Through examples, she explores its validity in analysing and comparing interiors, identifying defining features and assessing their complex significance beyond formal or stylistic approaches.

Notes

- 1 Panayotis Tournikiotis. *The historiography of Modern Architecture*. (Cambridge: The MIT Press, 1999), 90
- 2 Dianne Harris. Architectural Photography and the U.S. Gypsum Research Village, 1952–1955, in *Race*

and *Modern Architecture. A Critical History from the Enlightenment to the Present*, eds. Irene Cheng, Charles L. Davis II, Mabel O. Wilson. (Pittsburgh: University of Pittsburgh Press, 2020), 218–238.

Made in Cape Town: Modernist Urban Factories of Observatory and Salt River

Sandra van der Merwe

DOCOMOMO SOUTH AFRICA, CAPE TOWN

A collection of modernist industrial buildings lines the main road through the southern suburbs of Observatory to Salt River, Cape Town, marking the 20th-century industrial growth of the city, especially within the garment industry. Constructed in two growth spurts before and after World War II, these factories complement and aim to outshine each other, as rival manufacturing companies established their brands by adopting avant-garde modern architectural identities.

Through case studies of the Rex Trueform and House of Monatic factories, this paper explores how these factories showcase the progressive approaches of the Modern Movement to function-driven design while also grappling with the workplace implications of South African segregated race and labour politics. It aims to show that this collection of buildings has enduring architectural quality and identity to accompany their present-day layered heritage significance.

1. Introduction

As you travel along the main road of the Cape Town suburb of Observatory towards the city centre, the geography shifts to reveal the lower slopes of Devils Peak and moments later, the first glimpses of Table Bay. The urban fabric also shifts at this point from the predominant suburban patterns to accommodate a different scale and character of development: for a short stretch through Observatory and Salt River, a collection of modern industrial buildings lines the sides of the main road.

Within this precinct, the modern industrial buildings banter with each other through their interfaces to the public realm and their context: their footprints stepping back and forth from the road edge, their street-facing facades curving convex or concave, with roof profiles undulating in wavelike swells and crests. In comparison, their predecessors and peers in nearby industrial pockets and neighbouring factories set back from the main roads are generally unassuming and straightforward industrial typologies.¹

Figure 1 describes the contributing built components of the grouping.² Over their lifespans, these Modernist factories have acted as landmarks and public personalities, as their architectural, spatial and industrial histories intertwined with the histories of the surrounding communities, workers' rights and the complexities of South African race and labour politics. As evidence of this, in 2019, the 1948 Rex Trueform Factory Complex was declared a Provincial Heritage Site based on its architectural and social significance.³

2. Location, location, location

By the mid-1930s, many lightweight industries in Cape Town outgrew their initial inner-city premises, causing industrial development to spread eastwards towards Salt River. The garment industry, in particular, experienced rapid growth after the First World War. Furthermore, after 1925, state-sanctioned trade-tariff protections facilitated a shift from importing finished clothing items towards manufacturing ready-made clothing locally, triggering the need for new premises for factories to expand their manufacturing capacity and promote their brands. Serendipitously, the Rochester brickfields



Figure 1. Map of buildings contributing to the grouping of modernist urban industrial buildings along Victoria Road, Observatory to Salt River, Cape Town. © Sandra van der Merwe.

on the slopes of Devils Peak above Victoria Road were nearing exhaustion, releasing cheap, well-located land for development: this newly available location offered the two most important location factors⁴ for the clothing industry: proximity and ease of access (by road and rail) to markets, and proximity to the desired labour profile, namely skilled White and Coloured labour from the surrounding suburbs. The latter was a critical consideration, as labour (how workers were defined and where they were permitted to reside in urban areas) was increasingly state-regulated and segregated. A third, unique location factor was visibility: their location on the “High Street” alongside civic institutions and retail would allow these companies to showcase their brands. These location factors along with the transition to increasingly automated manufacturing processes set the stage for developers to be receptive to a new kind of workspace, with new ideologies following international best practice: the Modernist urban factory.

3. A modernist foothold

In this context, the Rex Trueform factory established itself in 1938 as the prototypical Modernist factory in the Observatory–Salt River factory belt. It was followed shortly by the adjacent Cavalla Cigarette Factory and, at the Observatory end of the grouping, the Doves Funeral Parlour, a coffin factory and funeral parlour built adjacent to the recently opened Groote Schuur Hospital. These pre-World War II factories have in common that they are typically one or two storeys high, with large factory floor areas behind interface zones of grand receptions and showrooms that manage their “High Street” location.

Post World War II, the years 1946 to 1949 saw the rapid development of the Observatory–Salt River factory belt as the Salt River triangle and the section from Browning Road to Hares Road were infilled with new factories. By 1970 all available land parcels were occupied by industry, of which approximately half⁵ related to large-scale clothing or textile manufacture. They were a new generation of factories: multi-storeyed, with extensive glazing to allow for naturally lit factory floors, and floorplans that expressed the companies’ aspirations as model work environments.

The individual and collective successes of the factories contributed to the continued growth of the garment industry in Cape Town so that by 1960 the clothing and textile industries were the leading employers in Cape Town.⁶ The factories employed thousands of workers, mostly women of colour, many from the immediate communities.

Thanks to their prominent main road location, these buildings brought industry and the process of manufacture into the everyday public experience and imagination. For example, one observer⁷ recalls passing the Pepsi-Cola factory in a double-decker bus, ca. 1955, and seeing the machinery bottling fizzy drinks on the conveyer belt through the factory windows. The factories’

presence also activated the surrounding neighbourhoods, as thousands of workers moved to and from work daily, supporting secondary economies within the local communities. However, the apparent charm of the Cape Town cityscape belied its deeply uneven and racialized spatial imprints and the lived experiences of communities in Cape Town, on the receiving end of the state's intervention into the manufacturing industry.⁸ In the Salt River factories, these frictions found release in the rise of workers' movements and trade unions advocating against unfair conditions and apartheid. Ironically and cruelly, after 1994, South Africa's reintroduction to international trade saw the removal of protective trade tariffs which had bolstered local clothing manufacturing for so long, contributing to many factories closing down or relocating in the following decade.

4. Two case studies

The Rex Trueform Factories

Rex Trueform occupied several buildings on either side of Victoria Road over the factory's lifetime (**Fig 2**). In the 1938 factory, constructed for Judge Clothing Manufacturers, the building's public interface and staff utilities were organised in a tight L-shape around two storeys of open-plan floor space,



Figure 2. Policansky, Andrews and Niegeman, Turok, Rex Trueform factories on both sides of Victoria Road, Salt River, Cape Town, South Africa, 1938, 1948, 1963. ©Sandra van der Merwe, 2022.

with the main manufacturing floor lit by a saw-tooth roof. Contemporary publications praised the factory's rational layout and generous staff amenities and emphasized the elegant administrative offices and public sample room with its balcony facing onto Victoria Road.⁹ The Rex Trueform and adjacent Cavalla Cigarette factories were both designed by Cape Town architect Max Policansky, representing some of his earliest works. They set a prototype that evolved in Policansky's subsequent body of work: while recognising local and overseas inspiration, Policansky's approach was characterised by what Righini calls an "insistent functionalism", where a highly personalised vocabulary of softer, gently rounded forms was derived rationally from function and the exploitation of new technological capabilities.¹⁰

Therefore, it is peculiar that the facades of the original Rex Trueform appeared oddly playful and erratic in the placement of its fenestration. Perusing the original plans, the "strange logic", as Wolff¹¹ calls it, reveals itself: the varying number of windows correlates to varying space allocations for change rooms for "European women" and "European men" (equal allocations), "Non-European men" (a larger space) and "Non-European women" (double the allocation for "non-European men"). The configuration was indicative of the anticipated gender composition and racial segregation of the workforce: more women than men, with the labels "European" indicating white workers and "Non-European" indicating people of colour.

After a 1944 fire gutted the building, the factory was hastily rebuilt and extended to the main road, giving the factory its present-day roofline (**Fig.3**). The rebuilding included a complete reorganization and extension of the workers' facilities, including segregated cloakroom and canteen facilities and a clinic with a full-time doctor and industrial psychologist.¹² The company's



Figure 3. Policansky, Andrews and Niegeman, the earlier Rex Trueform garment factory comprising the Judge Clothing Factory and Cavalla Cigarette Factory, Salt River, Cape Town, South Africa, 1938–1945. ©Sandra van der Merwe, 2022.

social commitment to the welfare of the workers was seen to go hand in hand with increased production figures. It was thus increasingly prevalent that ideas around optimal functionality, productivity and labour (in terms of race, class and gender) became materialised and spatialized in the fabric of industrial buildings, and that Modernism and “modernizing” were the vehicles to do so. Thus, when the company expanded their factory to a new premises across Victoria Road in 1947, it was ready to combine all the lessons learnt thus far with international best practices relating to new forms of construction, industrial production and administration.¹³

The design of the new Rex Trueform factory by architects Andrews and Niegeman was driven by functionalism and prestige, establishing an imposing presence along Victoria Road. The six-storey concrete-framed manufacturing wing with floor-to-ceiling curtainwall fenestration and innovative sun screening was designed for uninterrupted floor space with maximised daylight hours. For example, the southwest façade comprised stunning zigzagged fenestration, with “heat-absorbing glass” in the sections facing the afternoon sun. The staff block was equally impressive, allocating entire floor levels to particular functions, for example, a kitchen and catering floor. This wing was configured for the efficient movement and separation of the thousand factory workers. While a grand public entrance was located off a forecourt onto Victoria Road, the staff entrance was off the side street. The workers would enter the factory through a low hall leading to generous duplicated staircases separating men and women, moving up towards their designated “Non-European” or “European” change rooms on the second and third floors, from where they would enter the manufacturing floors. In 1965, the factory was altered and extended with a new wing towards Victoria Road, compromising the clarity of the original factory’s design.

House of Monatic

In 1948, in competition with the Rex Trueform brand, M. Bertish & Co. (precursor to the House of Monatic) opened the doors of their new “Creative Centre” a few hundred meters away. Similar to the new Rex Trueform Factory, the company directors worked closely with the architects (again Andrews and Niegeman) and an industrial research consultant company to construct a model factory.¹⁴

The factory presented a departure from its pre-war neighbours, which were low-rise introverted buildings with managed street interfaces. In contrast, the new factory comprised two multi-storey freestanding wings raised on pilotis and connected with sky-bridges. The manufacturing wing was designed around a highly efficient vertical workflow, where raw materials were conveyed to the highest manufacturing floor and sent down chutes to be processed in successive stages on the floors below to arrive at the ground floor as finished goods. The narrow widths of the building footprints provided flexible floorplates uninterrupted by columns and ensured excellent

ventilation and daylight penetration. In particular, the east–west orientation of the manufacturing wing required climatic responses to be integrated into the design: after studying local climate sun diagrams to determine the time and angle of sunlight striking the building in all seasons, the architects designed cantilever shelves over the windows with “filter glass” and screens to keep the work areas cool and cast the manufacturing area in a soft, even green light.¹⁵

The services wing was configured in an unequal u-shape, divided vertically to separate women (long leg) and men (short leg), with each section served by separate staircases and bridges (a few meters apart) to the manufacturing floors. Cloakrooms and canteens for “European” and “Non-Europeans” workers were placed on alternate floors, with a surgery and state-of-the-art kitchen making up the rest of the floor space. A 1948 promotional article in the trade journal *The Buyer* notes magnanimously that “no difference has been made in the quality of the finish”¹⁶ of the spaces for Non-European workers. This configuration shows the bizarre application and spatialisation of South African segregation laws in a building otherwise driven by rational modernist functionalist considerations, as co-workers would mingle each time they crossed the connecting bridges to the manufacturing floors.

Both the Monatic and Rex Trueform factories illustrate the adoption of Modernism by big industry to distinguish themselves as progressive, productive and socially committed to the welfare of workers. However, today it cannot be overlooked that these factories at the same time acted expediently in yielding to political demands and pressures of the time in their spatialisation of labour along gender and racial lines. As Wolff points out about Rex Trueform: they “were experimenting with their power to modernise. They did so by using time, bodies and space as their main resources.”¹⁷ In the decades to follow the establishment of their flagship urban factories, both brands continued their growth to become leaders in the local and global garment industry. By 1963, the Rex Trueform Group claimed to be the biggest clothing organisation in the southern hemisphere and the sixth biggest clothing manufacturer in the world.¹⁸

5. Enduring identities

When the House of Monatic moved its operations to new premises in Epping two years ago, the original factory had been in continuous use for over seventy years. The move coincided with a proposal for the adaptive reuse of the existing buildings as student accommodation which retains the building envelope and block configuration, with ostensibly reversible alterations (**Fig.4**). In comparison, the Rex Trueform factories’ fates are varied. The 1948 building (the provincial heritage site) was restored and renovated in 2012, including careful consideration of critical design elements like the fenestration and glazing. Instead of a buzzing 2000 worker factory, it now has a quiet corporate life, its interior generally inaccessible to the public. The earlier Rex



Figure 4. Andrews and Niegeman, House of Monatic garment factory, Salt River, Cape Town, South Africa, 1948, 1965. In 2021, the factory was adapted as student housing for My Domain, by Jacobs Parker Architects. ©Sandra van der Merwe, 2022.

Trueform factory has been standing vacant for the last decade, however, in 2020 heritage authorities approved the demolition of a section of the Cavalla factory to permit a multi-storey office development. Other buildings within the Observatory–Salt River factory group have already faced similar development involving multi-storey development bulk added to the existing buildings. In addition, the favourable zoning rights of the area have led to new developments to crowd landmark factories and decrease their legibility as a grouping.

A perception exists that industrial buildings are robust and inherently receptive to change; however, at a building scale, the industrial heritage is often embodied in fragile experimental technologies (like the Rex Trueform zigzagging windows) or imprinted on architecturally ordinary elements (like staircases and canteens) so that they are easy to overlook or erase: for example, in both the Monatic and Rex Trueform factories, the worn treads of staircases are some of few remaining tangible reminders of the many workers that moved through the factories daily.¹⁹

In considering the Observatory–Salt River industrial buildings, this paper aims to show that, as a collective, these buildings represent a microcosm of industrial development's role in constructing a Modern Cape Town. The concentration of modernist buildings means that the imprints of their social–political context (subtle patterns which could be overlooked in individual buildings) are amplified to become more tangible and legible to audiences today. The particular circumstances of the urban development of this pocket give its industrial buildings an idiosyncrasy to differentiate it from other industrial development zones in the city, and their overtly designed public interfaces, which appear dynamic and playful, invite one to look beyond their

surface. Looking deeper, the factories illustrate the conflation of international modernist ideas and functionalism expression with South African segregation norms in driving the form of the buildings, to give them a strange logic and bizarre spatial duplications that tell the story of modern Cape Town.

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Notes

- 1 There are exemptions of more elaborate multi-storey factories along Queenspark and Brickfield Roads.
- 2 Figure 1 collates information from site visits and various sources, mainly www.artefacts.co.za, aerial photographs from 1926 to 1968, the City of Cape Town City Survey 1944–1966 (<https://citymaps.capetown.gov.za/EGISViewer/>) and various heritage statements Docomomo South Africa has commented on over the last ten years.
- 3 Province of the Western Cape Government Gazette 8045, 15 February 2019. There is another, related Provincial Heritage Site nearby, namely Community House, the 1980s headquarters to trade unions and activist civic organisations.
- 4 Whittingdale, "Development and location of industries," 106.
- 5 Whittingdale, "Development and location of industries," 108, plate X.
- 6 Bickford-Smith et al, *Cape Town in the twentieth century*, 156.
- 7 Stewart Harris, 2011, in an annotation of a photograph of the Pepsi-Cola factory from the album "More Salt River factories", <https://www.flickr.com/photos/myskygarden/6529731197>.
- 8 Dirk, "Western Cape as a place on the margin," 208.
- 9 "Distinctive Note in Factory Design," 12–13.
- 10 Righini, "Max Policansky," 45–46.
- 11 Wolff, *Unstitching Rex Trueform*, 23.
- 12 Rex Trueform Clothing, "A record of achievement", 11.
- 13 Rex Trueform Clothing, "A record of achievement," 25.
- 14 "Built for the Future," xvi.
- 15 "Built for the Future," xiii.
- 16 "Built for the Future," xix.
- 17 Wolff, Ilze. *Unstitching Rex Trueform*, 90.
- 18 Shorten, *Cape Town*, 220.
- 19 Abrahamse, "House of Monatic," 59.

California Interior Design and the Queer Eye: John Entenza's Two Case Study Houses

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This essay explores two iconic houses commissioned by *Arts & Architecture's* renowned editor John Entenza in Los Angeles. The first is the small structure built in 1938 by Harwell Hamilton Harris, a streamlined observation deck over the Santa Monica Canyon, which Entenza occupied until 1949, when he moved into his new Eames and Saarinen–designed Case Study House #9 in nearby Pacific Palisades. As a gay man grappling with the Great Depression fears of non–normative identities and the homophobic biases permeating the American postwar ethos, his homes cannot be fully explained without considering the anxieties of queer orientation that produced them. Although these houses empowered him, opening his private and public lives to liminal experiences, agencies, and performances within and beyond normative constraints, their visual and written narratives suggest a smokescreen for their programs, conveying mixed messages through concurrent tactics of covertness and revelation of their '*open secret*'. A comparison of the messages sent through the publications of these two projects shows an evolution in both the construction of Entenza's persona and his passing techniques, always associated with the way his domestic architectures negotiated the access of the public gaze. Whereas the first was presented as a home of an "utterly masculine" style, and Entenza's himself insisted on the cliché of the unrestricted freedom and simplicity of the young, heterosexual bachelor's life, in his second house, the emphasis on the exterior language shifted to the interior atmosphere immortalised by Julius Shulman. It was planned and furnished as a demonstration house, a set promoting both Entenza's status as an avant–garde design connoisseur and the desirability of a distinctly modern Southern California lifestyle, whose cultural prestige he contributed to fabricate while living multiple lives simultaneously, either as a closeted queer man or imbricated in dominant, normative definitions of domesticity and masculinity.

1. Introduction

The Great Depression ushered in a dreadful era of economic distress and cultural involution in the United States. Contrary to the social innovations of the preceding decade, queer people nationwide were compelled not only to perform closeted identities in public but also to remain invisible in the supposed safety of their homes. In such difficult times, unmarried men –

particularly those of a certain age – were seen as uneasy presences, their houses objects of neighbourhood suspicion. Under increasingly discriminatory legislation, which forced queer people to straddle multiple life-worlds simultaneously¹, home was converted into an ambivalent space for gathering and resistance, belonging and exclusion, affection, and distance.

This essay explores the case of the celebrated *Arts & Architecture* (A&A) editor and publisher John Entenza from the perspective of his performative use of domestic architecture and interior design, an activity inextricably linked to his personal struggle as a gay man living and succeeding in the highly homophobic milieu of American modernism. Rather than a static frame, domesticity “is open to multivalent meanings and experiences”². Historically, home has been – and still is – a permeable locus, revealing and concealing identities through a variety of constantly evolving technologies and media. As a “political arena”³, it has always negotiated between external pressures and individual aspirations. Thus, thanks to the power denoted by architecture’s materiality and the meanings connoted by its spatiality, during the late 30s and early 40s, Entenza was able to manufacture his public persona coping with the anxieties of his same-sex orientation but also allowing him to fit in and stand out beyond the limits of homosocial intimacy and public normativity.

By focusing on the two houses that John Entenza commissioned within less than a decade (1937–1945), the aim is to show how, in the quintessentially experimental pre-/post-war Californian cultural environment, architecture and design provided opportunities for the formation and coding of houses created for an extremely influential gay man who re-imaged and re-imagined the home from alternative and yet concurrently dominant values. The first house, built by Harwell Hamilton Harris, is a small house in Santa Monica (1937–38), where Entenza would conceive his iconic Case Study House (CSH) Program. He occupied this structure until 1949, when he moved to his new Charles Eames and Eero Saarinen-designed CSH#9 in nearby Pacific Palisades.

2. Two houses, two narratives

In 1932, attracted by the Hollywood industry, Entenza, then an aspiring playwright and cinema lover, settled in Los Angeles, where he worked for Metro-Goldwyn-Mayer until 1936. Film studios pioneered visual experimentation through idiosyncratic interpretations of recent architectural achievements on the screen⁴, which facilitated Entenza’s first exposure to languages of modern art and the design of stage sets.

He knew of his future architect through the publicity Harris’s houses received in *California Arts & Architecture* (CA&A). Harris and his wife, the critic Jean Murray Bang, who would help Entenza establish himself professionally⁵, were very close to several editorial networks, including this influential Los Angeles-based architecture magazine. In 1937, aware of the media’s fascination with the architect, Entenza commissioned Harris to build his first residence on the

small plot he owned in picturesque and gay-friendly Santa Monica Canyon. Entenza wanted a house to attract the attention of Hollywood cultural circles, which to him required an image of sheer modernism. On Entenza's insistence, Harris built it with an emphatically International Style vocabulary, which was an exception to the architect's idiosyncratic lexicon.

Harris drew on the lessons of his mentor Richard Neutra, from whom he had learned everything concerning publicity. This explains such features as the ironic references to the Josef von Sternberg House (1935) in the carport's corrugated steel fascia, which, particularly at night, acquired the intended character of a Hollywood film set (**Fig. 1**). The carport not only enabled the car's movement on a steep slope, but it was also an architectural gesture that tied the modernity of the house with that of the vehicle. Its crisp combination of the metallic shine, white surfaces and curving lines of Streamline Moderne showcased the space dedicated to Entenza's 1935 Ford⁶. The fact that this house was such a conspicuous exception to Harris's regionalist idiom indicates that he responded to Entenza's requirements from a primarily scenographic approach.

Due to financial reasons, the house was not entirely built in steel, but with wood framework, then plastered and whitewashed, which combined with its geometrical purity evoked the European avant-garde. While the *masculine* character of the exterior surfaces masked Entenza's private identity and projected his public persona, comfort and privacy prevailed inside the house. The façade's abstraction gave way, in the interior, to Harris's characteristic palette of natural colours and warm lighting, which created a domestic quality that challenged every stereotype of masculinity.



Figure 1. H. H. Harris, Entenza House, Santa Monica. Photo by Fred Dapprich (CA&A, May 1938).

The house, an impassable barrier to Entenza's neighbours, was designed to keep its owner's two distinct lives separate. Physically demarcated by their ground levels, platforms and walls and visually secured by design strategies (Fig. 2), architecture protected and empowered its inhabitant, providing Entenza with privileged viewpoints. Thus, the house can be analysed as a watchtower structure impenetrable to hostile scrutiny. As a safe observatory, it was articulated from the premise of seeing without being seen. Interestingly, the publicly repressed identity of the patron was spatialised through the gaze by means of a psychological-spatial apparatus of visual control, which must be understood in terms of power and the production of the subject itself⁷.

Perhaps Entenza demanded an indisputably "masculine and smart" house because he did not want to be associated with the *soft* version of modernism he found in the houses of Harris's previous clients, most of whom were women

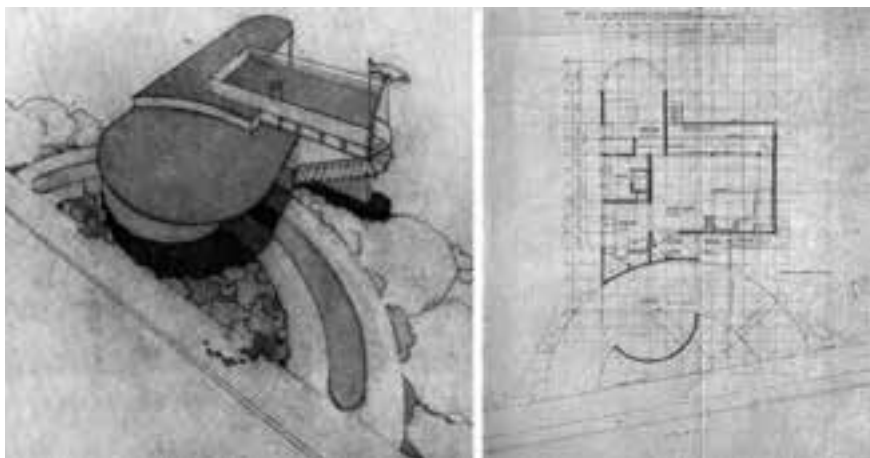


Figure 2. Harris, Entenza House in Santa Monica. Left: bird's eye perspective drawing, 1937. Right: floor plan, 1938 (Architecture and Design Collection, Art, Design & Architecture Museum, University of California, Santa Barbara).

living in wooden structures featuring low-pitched roofs. In July 1937, when CA&A introduced "this beach house for a bachelor playwright", the article emphatically affirmed, "so here it is, as smartly turned out as the season's new cars, and a man's house, every inch of it". Revealingly, the publicity of the house compared it to a new-style car as a status symbol of the upper-middle-class heterosexual bachelor⁸. Months later, when his residence was completed, CA&A insisted on the cliché of unrestricted masculinity, unfettered by domestic obligations, stating that the house was necessarily casual and "simple", as the life of a single man⁹. Considering Entenza's complex character and enigmatic existence, forged by multiple personal conflicts – such as his antisemitism and sexual orientation¹⁰ – nothing could be farther from the truth.

The second house, proposed as a CSH, is so well known that it hardly needs an introduction. It was part of the legendary housing venture sponsored by *Arts & Architecture* and built, along with the Eames House, as a model home demonstrating the possibilities of new construction technologies for the postwar era. The presentation of this steel home in the December 1950 issue of Entenza's magazine insisted on both the private and public nature of the editor's new residence¹¹. For this reason, the central spread devoted to CSH#8 and CSH#9 emphasised that "each house is so oriented that it has complete privacy within its own indoor-outdoor needs". Yet drawings and depictions of Entenza House recreated the literal and literary openness of the structure.

In this sense, Entenza's modernist home in Pacific Palisades reverses the protection and passing technologies of its predecessor in Santa Monica so radically that its commitment to total exposure reminds of Edgar Allan Poe's famous observation that the best way to hide something is to place it in plain sight. In this second case, not only were design strategies important for enacting protection from the immediate surroundings but, more importantly, in the space provided by architectural photography and the accounts fabricated by A&A, media was responsible for negotiating the access of the public gaze to the house's interior, which entailed finding ways to theatricalise that which was otherwise secret.

Comparing the messages about Entenza's first and second homes shows an evolution in the construction of his public persona, always associated with his domestic architecture. In December 1945, in an A&A piece announcing his new residence in Pacific Palisades, the hedonism and amateurism of youth had given way to the maturity of the recalcitrant bachelor who, already in his forties, presented himself as a refined man, a lover of modern design, a film buff and a gourmet cook, with a new house that would be the centre



Figure 3. Eames & Saarinen, Entenza House in Pacific Palisades. Left: drawing explaining the editor's interests and requirements for his CSH#9 (*Arts & Architecture*, December 1945). Right: plan of the built house (*Arts & Architecture*, July 1950).

of a desirable social and intellectual life (**Fig. 3**). Nevertheless, although his now consolidated reputation as an editor obliged him to turn his back on the isolation of his first house, Entenza would maintain a bastion of privacy at the very heart of the house: a small study where he could be alone “with matters and concerns of personal choosing”¹², a place for concentration and work. It had neither windows nor skylights; it was literally a dark room, around which orbited the other spaces and activities of the house (**Fig. 3**). Thus, this covert can be read as a closet – the metaphorical space “designed for the retention of secrets” that might place queer inhabitants “at constant risk of shameful revelation”¹³ – which becomes the centre of gravity in a house whose most public space, the living room, is controlled from the editor’s king-size bed (**Fig. 4**). Tellingly, whereas every nook and cranny were exhaustively documented and published in Entenza’s magazine – from the kitchen’s sink area to all bathroom fixtures – the editor’s studio was kept out of sight: the only space of the house that was neither photographed nor shown to the public. Again, both spatially and metaphorically, it would function as a closet within a closet that was neither strictly concealed nor revealed.



Figure 4. Left: Harris, Entenza House, view of the owner’s bedroom overlooking the canyon. Photo by Fred Dapprich (CA&A, May 1938). Right: Eames & Saarinen, CSH#9, view of Entenza’s bedroom from the living room. Photo by Julius Shulman (A&A, July 1950).

The abovementioned emphasis on the exterior language of Entenza’s first house, designed by Harris, shifted to the interior atmosphere of his second house. This is reflected in the very few images of the interior of the editor’s first house in Santa Monica compared to the fame the CSH#9’s indoor space achieved through Julius Shulman’s photography. It was planned and furnished as a demonstration house, a set to be visited, photographed, and disseminated by the print media. Shulman’s eye-catching photographs published in the July 1950 issue of A&A reveal a painstakingly orchestrated interior where all elements are put on display to promote both Entenza’s status as an avant-garde connoisseur and the desirability of his distinctly Southern California lifestyle.

However, despite his claim for a democratisation of modern taste, the editor's set resulted from the symbiosis between elitist consumer culture and *ad hoc* design. Entenza's alliance with modern furniture companies established a solid conceptual and visual connection of the trailblazing interiors he published in his magazine to the products it publicised.¹⁴ His genius for generating prestige for himself and his protégés was obviously associated with his talent to pick the best designers – like Alvin Lustig, Herbert Matter or the Eames – to arrange his exquisite settings, but also with his ability to use their creations as background for continuous performances of heterosexual integrity and influential masculine power.

Entenza's use of the modern interior to fashion visual and material culture is reminiscent of John Potvin's argument about Noël Coward's stage-set modernism. In the acclaimed interiors that Entenza and Coward created – respectively, home as a setting to publicise modernism and the representation of the modern home within the theatrical space – both, as arbiters of style, provided new ways for their generation to imagine domesticity. Ironically, their modern figurations rested on the ambivalent allure, yet the impenetrable “mask of glamour”, a term that had entered “into popular and visual vocabulary in the 1930s”,¹⁵ mainly due to Hollywood studios, to denote a captivating combination of elegance, strong character, and delicacy, but also the aura of mystery and the dangerous fascination of the untold inherent in periods of sexual and gender oppression.¹⁶

3. Conclusion

In the 1930s and 1940s, when queer subjectivities were forced to remain hidden, and same-sex orientation was primarily structured by “its distinctive public/private status, at once marginal and central, as *the open secret*”¹⁷, the untold could only be compensated and restored through continuous performative activity.¹⁸ Accordingly, as part of the political regime of simultaneous concealment and disclosure that dominates the topographies of closeted spaces, the ceaseless publicity surrounding these two houses was precisely the greatest guarantee of their privacy. The print media operated as another middle space between the public and the private spheres where the secret was hidden in plain sight, being so obvious and yet so opaque that messages could only be deciphered with the proper keys.

The analysis of both homes reveals the importance of domestic space to this mysterious man who, trying to protect his privacy zealously, was responsible for such iconic representations of California modernism. Correspondingly, his houses were reflections of a public man who managed to project himself through his close collaborators' creative work¹⁹. As Entenza's houses were first designed for the eyes of Los Angeles avant-garde circles, but eventually for the entire world, they functioned as a public screen, respectively so opaque and so transparent, that by means of different, almost opposing

strategies safeguarded his private life. They cannot be fully explained without considering the anxieties of queer orientation that produced them. Nonetheless, although these houses worked as masks for Entenza's identity, they also empowered him, opening his life to liminal experiences, agencies, and enactments within and beyond normative constraints. Therefore, Entenza's houses can be interpreted as spaces for public assertion and self-promotion disguising personal and personality conflicts. Thanks to the cushion provided by social status, he was able to negotiate privacy and intimacy through the possibilities offered by architecture, architectural photography and media.

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- 12 Ibidem: 44.
- 13 Christopher Breward, "'The Closet', *Queering the Interior*, 190.
- 14 Ioanna Theocharopoulou, "Architecture and Advertising: Terms of Exchange? Arts & Architecture, 1944–50", *Thresholds* no.18 (Spring 1999): 7.
- 15 John Potvin, *Bachelors of a Different Sort*, 213.
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- 17 Eve Kosofsky Sedgwick, *Epistemology of the Closet*, Berkeley & Los Angeles, University of California Press, 1990, 22.
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Angelo Mangiarotti And Bruno Morassutti: From The Many United States to The Many Italies

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Under the shadow of Ponti, Ernesto Rogers, and BBPR, in Milan, the city of Terragni, Gardella, and Albini, this paper discusses architects Angelo Mangiarotti and Bruno Morassutti and the validity of their thinking. It examines three works in Milan – the Church of Mater Misericordiae (1956–1958), the houses in Via Gavirate (1959–1962), and Via Quadronno (1960–1962) – designed over little less than six years of joint work, that also included the production of some design industrial pieces much more characteristic of Mangiarotti. The influence of these designs is evident in the later work of Magistretti, Sottsass, Zanuso, Castiglioni and many others.

The importance of civil engineers in Italy, evidenced by Pier Luigi Nervi, appears in the collaborations of Morassutti and Mangiarotti. Analysing these three works offers insight into the relationship between structure and enclosure as independent components and their tense dialogue with industrial and prefabricated finishes.

Partners in the studio, upon their return, we will see the North American influence on both and how complementary and different these North American views are, passed through the filter of Northern Italy. In Milan, the *Domus* and *Casabella* magazines reflect the editorial importance of the city on dates when architecture, design, the automobile industry, and a thriving industrial bourgeoisie ideologically at the forefront in the face of a more conservative Rome will decisively influence the young European architects.

In conclusion, in addition to the Milanese world and Mangiarotti, we will appreciate in Morassutti the initial weight of Wright and Scarpa. Perhaps industrialisation is closer to K. Wachsmann, in a conceptual review of the structure of thought in force today, in component architecture, cited by Philip Drew when speaking of Third Generation architects. That North American vision that once united them will also be the one that would separate them in their evolution.”

1. Introduction

At the end of the Second World War, the landscape confronted European architects with the need for reconstruction. Some of them decided to emigrate to the United States, a place of refuge for persecuted architects or those in danger before the start of this great war, such as Josep Lluís Sert, who had been disqualified from practising architecture after the Spanish Civil War.

This paper considers the work of two Italian architects, Angelo Mangiarotti (1921–2012) and Bruno Morassutti (1920–2008), who graduated in Milan and Venice respectively, and examines their trajectories, both primarily in Milan and the United States.

It is necessary to understand the importance of their country – Italy – and of the values present during an architect's training, particularly during the Interwar Period and in the immediate moments at the beginning of the Second World War. Morassutti considered his training at the *Università IUAV di Venezia*, highly theoretical, influenced by the ideas of Giuseppe Samonà, and particularly Carlo Scarpa, and felt he needed complementary applied practical experience. Thus, after three years of working with his brother, an engineer, he became interested in joining the best architecture studios as an assistant. Impressed by Fallingwater (1935–1939), he wrote to Frank Lloyd Wright, requesting admission to Wright's apprenticeship programme¹, and considered pursuing an education with Le Corbusier due to the Wright's delayed response. Shortly after arriving at Taliesin East in 1949², Morassutti accompanied Lodovico Barbiano di Belgiojoso on a visit to see Wright at Taliesin West, where Morassutti stayed until March 1950.

Upon returning to Italy in 1953, Morassutti joined BBPR, Belgiojoso's firm, where he met Mangiarotti. In Milan, Gio Ponti invited Morassutti to give a series of conferences in which he recounted his Wrightian experience.³

Ponti also supported Morassutti's and Mangiarotti's early works and ideas through his magazine *Domus*. By early 1953, *Domus* showcased the interior of an apartment designed by Mangiarotti, and in 1955, it highlighted the new furnishing work both architects had designed for Villa Schow (La Chaude Fonds, 1916–1917). Mangiarotti graduated from the Milan Polytechnic in 1948. Following an invitation from Max Bill, he taught at the Illinois Institute in Chicago from 1953 to 1954. His tenure there overlapped with those of with Mies van der Rohe and Konrad Wachsmann, and he met both Wright and Gropius.

Engineer Aldo Pio Favini (1916– 2013), also a student of the Roman Mario Ridolfi (1904–1984), was an essential figure in the friendship and early works of Mangiarotti and Morassutti.

In 1943, Favini was a teaching assistant at the Italian camp in the Lausanne Polytechnic. His time there coincided with Ernesto Nathan Rogers (1909–1969), Mangiarotti, and Vico Magistretti (1920–2006), among other students. He travelled to France in 1950 to meet Eugene Freyssinet (1879–1962), and he also met the engineer Bernard Laffaille (1900–1955), who held various reinforced concrete patents. In 1951, he patented a cable anchoring system for prestressed concrete known as the "Favini system".

Favini's Aquila Service Station (Sesto San Giovanni, Milan, 1949), attracted the attention of Morassutti and Mangiarotti. Let us remember the different, yet complementary, view of architects and engineers, expressed in this comment by Favini: "The architect E.N. Rogers, while admiring the structure, noted that the struts were placed on top of the rigid crossbar at the weakest point, corresponding to the circular recesses. There are no strong or weak points in the works, just statically flawless structures⁴."

In the same *Domus* magazine, where Morassutti commented on the 1950s SC Johnson Research Tower, Mangiarotti explains the transformation of a barn into a studio and residence for architects and artists⁵ while developing his course as a visiting professor. He comments that in that year of travel, he was able to work for five months at the Dorset Farm in Perrysburg, Ohio, a centre for industrial design chaired by Clare Jr. Hoffman. In a certain way, it is a clear inspiration for the later interventions at both the Baranzate's Church and the Genoa's Pavilion. Upon his return to Italy, Mangiarotti built numerous warehouses and barns, as can be seen in his biography.

2. Church of Mater Misericordiae, Baranzate, 1956–1958

Let us collect a few words from the Genoese Renzo Piano (1937), disciple. Consider the following quote from Genoese Renzo Piano (1937), who on one occasion collaborated unsuccessfully with Mangiarotti:

"Architecture is a very complex craft. It is art, but also a trade, it has a technical and social aspect. Building is something magical. The fundamental thing is that you build a roof for the human being. And that's not just technical work, it has to do with desires, with poetry. That's why it's so complicated."⁶

Images of the Church of Mater Misericordiae suggest a temple of light with an almost Japanese atmosphere. One can see an antecedent in the Romanelli tomb (Udine, 1955–1956) by Scarpa and Morassutti.⁷ The tomb is an open box of 5.20 by 3.25 meters and is 2.29 meters high. Its roof slab, separated from the vertical enclosure, is held by four metal posts at the walls' midpoints.

Mater Misericordiae was funded by a Catholic relative of Morassutti. The church, more of a Doric temple at first, needed no bell tower. One might think this was inspired by Wright, whose Unitarian Meeting House (Madison, 1947–1949) was constructed during Morassutti's time at Taliesin. Regarding his Unitarian Meeting House, Wright said:

"The unitarians believe in the unity of all things. Well, so I tried to build a building that would express this idea of supreme unity. As you can see, the plant is triangular. The roof is also triangular and from that triangulation (aspiration) comes that expression of veneration, without the need for a bell tower".⁸

However, it is more likely that financial constraints postponed the construction of the bell tower until 1984, a project that involved Morassutti with Favini and Pier.

When we see the structure that will support the roof at the church in Baranzate, admired by Piano, we still do not know that it will be a temple (**Fig. 1, 2**). The building sits on a stylobate with an off-centre staircase reminiscent of Mies' work and an imposing cross. The facade is divided into five parts and it has no distinguishable door. The single-aisle nave measures 14 meters by 28 meters and 10 meters high. It has a central axis and is elevated on a stylobate,



Figure 1. Angelo Mangiarotti and Bruno Morassutti, with Aldo Favini. Church of Mater Misericordiae, Baranzate (1956–1958). View of roof structure during the renovation works. 2013.

or podium, almost two meters above ground level. It evokes the sense that a Christian group seized a Doric temple and marked it as their own.

Reflecting on how this roof becomes a church through the construction of the enclosure, one can recall the canvas roof at Taliesin West, where Morassutti worked. This gives us clues for the church in Baranzate and.

Recalling the famous 1945 photograph of two Taliesin companions covering an opening with canvas, one can imagine young Morassutti interposing a canvas-like sheet between two panes of glass in Baranzate.

Mangiarotti had previously drawn a more Miesian

sketch. Wright would not sign it. Perhaps Morassutti would not either. It is a difficult symbiosis, joining Mies and Wright, and these Italians were on this adventure, supported by Carlo Scarpa, Bruno Zevi, and, as counterweights, Ernesto Nathan Rogers and BBPR. Favini and the patents world were especially relevant. Morassutti and Mangiarotti did not find a solution for their enclosure on the market, but neither did they patent their own.

The religious precinct is surrounded by a concrete wall embedded with large stones. In a way, it resembles the walls of Taliesin West, although in this case it has a more *naïf touch*, one could say.

Initially, one accessed the nave through the crypt. The outdoor grand staircase was used only on special occasions. The faithful had to follow a ceremonial rite by entering through the baptistery, located in the crypt area. This sombre space opens abruptly into the luminous nave, an experience well captured in Casali's photos. After the service, they would leave the church through the door in the nave, in a direction contrary to the arrival.

The architects used 90-by-270-centimetre glass panels containing white polyethylene sheets, and a clear glass "baseboard" separates the white box of the building enclosure from the ground. Four 8-metre reinforced concrete



Figure 2. Angelo Mangiarotti and Bruno Morassutti, with Aldo Favini. Church of Mater Misericordiae, Baranzate (1956–1958). Close up view of roof structure. 2013.

pillars support two transversal beams of cast-in-situ reinforced concrete, which are crossed by six x-shaped longitudinal beams of prestressed concrete.

Mangiarotti also designed, now without his partner Morassutti, the Pavilion for the Fiera del Mare (1963, demolished 2000) in Genoa, home of Renzo Piano. The pavilion, coloured Ferrari-red – the colour of the period, Domus colour – unlike the white temple of Baranzate, was now supported by four frustoconical steel pillars. One might imagine that Renzo Piano revisited the forms of Baranzate and the Genoa Sea Pavilion in his design for the Beyeler Foundation (Riehen, Switzerland 1992–1997).

3. Residential building in via Gavirate, Milan, 1959–1962

Favini participated in the design of all three buildings – a church and two residences – addressed in this paper.

This small housing development on Via Gavirate, a cooperative of state officials, takes the form of three small cylinders, each supported by a mushroom-shaped pillar, and is indicative of more hybrid aspects in collaboration between the three designers. The pillar's fungi-like capitals appear to evoke Wright's Johnson Wax Building (1936–1939), which Morassutti visited and commented on for years after his return to Italy⁹.

The facade is built with floor-to-ceiling opaque and triple-glazed transparent panels, the placement of which depends on the interior spaces' use. These forms were inspired primarily by Wright's Usonian houses and secondarily by Miesian architecture. At the top is a small terrace-garden for the neighbours (**Fig.3**).

In the interior, partitioning with panels was proposed so that it could be freely modified since there were no pillars other than those in the central core, which resemble a Wrightian slab supported by a mushroom column. Previously, Morassutti and Mangiarotti experimented with a similar idea at the Vía Fezzan residences (Milan, 1958). However, there they worked with square shapes, its structure inspired perhaps by the pin-wheel plan described by H.R. Hitchcock. While well-planned, here they did not collaborate with Favini.

Richard Neutra liked these houses on Via Gavirate so much that he always visited them during his travels to Milan.¹⁰



Figure 3. Angelo Mangiarotti and Bruno Morassutti, with Aldo Favini. Residential Building in Via Gavtare, Milan (1959–1962). Exterior view. 2007.

4. Residential building in via Quadronno, Milan, 1960–1962

Working with urban voids that were left behind by the war and faced a square garden, the architects proposed two residential blocks, placing the smaller of the two on the corner (**Fig. 4**). If the design of one of his first plywood chairs impressed Alvar Aalto, in plan, this location evokes similar feelings as to Railli Pietila's Tampere Church (1959–1962).

This apartment building is where Morassutti has had his own studio all his life, and its spatial distribution is worthy of study. It features a large curtain wall with a wood-like appearance, and its dark colour resembles a noble filing cabinet. They are spatial distributions, atmospheres and subtleties that would interest Coderch and Gardella, Albini and Ponti.

On the ground floor, towards the side of the park, there is a geometric spatial layout creating a free broken line, delimited at the bottom by a straight line of cabinets, a large wall of furniture. This separates the space from the rear facade, with orthogonal distribution, symmetrical in the two apartments divided by the stair and elevator core. In a certain way, ideas of Wright's slab evolution and the pillars are separated from the façade, leaving a central spine and some concrete pillars absorbed into the free floor that overlooks the park.

The facade is expressed through both steel and glass panels, installed in a way that allows them to be exchanged as the building and the use or needs of its residents evolve. This idea of reversibility and assembly flexibility bears a resemblance to the craftsmanship of Taliesin Fellowship apprentices, interpreted by the Milanese industrial world.



Figure 4. Angelo Mangiarotti and Bruno Morassutti, with Aldo Favini. Residential Building in Via Quadronno, Milan (1960–1962). Exterior view. 2014.

Like their industrial buildings, their residential buildings evoke elements of the industrial bourgeoisie of Northern Italy, Milan, which expresses a recognizable regional identity. An example can be an iron warehouse built in Padua (1960–1961) for Morassutti's brother, Paolo Morassutti, with large aluminium sliding doors and prestressed reinforced concrete structure by Favini. The sheet-metal roof includes some hexagonal elements, which contribute to its stiffness. A second example is a prefabricated industrial pavilion in Padua (1956–1957), without Favini's participation, which was designed in such a way that, instead of welding, it used screws so that it could be dismantled and moved from place to place. In addition, made with conventional profiles, it was extendable in all directions.

5. Conclusions

Unlike Mies's use of steel, we see a couple of young architects working with the possibilities of concrete. And it

seems, in this collaboration, at the beginning of the ideas of the Church as a Glass House, luminous ideas of Taliesin, of the concepts of Wright's Unitarian Churches, intermingled with aspects of the Japanese world through the lens of Scarpa. This same Japan gives keys to Mies and Wright, different views of the same concept. Perhaps Mies is better understood by travelling to Japan, perhaps Mies being closer to Japan, or Scarpa, than Wright. That is why Mangiarotti is very successful in Japan, with several Japanese students working in his studio, eventually even opening an office there. Morassutti went on to have Italian and English collaborators, linked to a Milanese technology closer to a sensitivity between Jean Prouve and James Stirling as new references. This can be seen in his proposal for the IBM building in Novedrate (Como).

Comparatively, the Milanese Mangiarotti remained profoundly Milanese, while Morassutti was more Venetian, more Palladian, and thus relatively more involved in the nature of materials and Wright's Prairie style understanding of nature and garden. Therefore, the description of a Wrightian Palladio from Milan leads one to Morassutti. Meanwhile Miesian, more closely linked to the Ulm school, to Max Bill and Tomas Maldonado, and profoundly Milanese describes Mangiarotti.

In his independent career Mangiarotti acquired more relevance, and his work continues to be disseminated, mainly through the *Domus* magazine. Mangiarotti's more extroverted and dynamic personality thus provided him with a greater impact than that of the more intimate and quieter Morassutti. Their professional careers, therefore, reverberated differently.

Mangiarotti went on to carry out more experimental buildings, such as the Snaidero Headquarters (1978) or the houses in Monza (1972), as well as numerous industrial designs such as the Saffo and Lesbo Lamps (1966), Cub industrialized wall systems (1967), and In-Out (1968). For the company Snaidero, he designed the Cruscotto kitchen, included in the permanent collection of the MOMA.

In a certain way, one can see a transition towards an architecture of steel and industrialization in Mangiarotti's Genoa Pavilion more clearly than in Morassutti's work. Let us insist on that air of English technology, with a Milanese flavour as we can see in Morassutti's later buildings, the Longarone Factory (1965 with A. Powers) and the Training Center for IBM (Novedrate, 1970–1974).

Mangiarotti's legacy is less influenced by Wright and Scarpa. Paradoxically, the things that are touched with the hand, the nature of the materials, and delicate nuance, speak more to the perceptive nature of the Catholic Morassutti. The intangible will remain for the agnostic Mangiarotti, even if it is tableware or a lamp. A Close Beauty in Bruno Morassutti and an Unattainable Beauty in Angelo Mangiarotti. Wright and Mies, Dionysus and Apollo.

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Notes

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- 3 During his stay in the US, he created more than 400 slides that he generously showed in Italy. Finally, he lent them to Carlo Scarpa (1906–1978), who used the slides intensively in lectures, not recovering them until Scarpa's death.
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Beyond the *Synthèse des Arts*. The Behaviorism of Jean Tschumi's Postwar Interiors

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His work in the interwar period taught us that the Swiss architect Jean Tschumi (1904–1962) was a master of architectural composition. In the United States, the architect discovered a new approach to the design of office buildings, where aesthetic criteria intersected with those of user comfort. The idea of simple *ergonomics* was definitively surpassed by a method that claimed to be scientific. It is, above all, a question of *psychological atmosphere*: the space, its colours and lights condition the behaviour and intellectual disposition of users. Colour thus becomes a fundamental factor, which Tschumi experiments with for the first time in his 1950s project for the new headquarters of the *Mutuelle Vaudoise Accidents (MVA)*, an insurance company in Lausanne.

For the MVA project, Tschumi researched the seminal studies of Ralph M. Evans and the theories of *chromopsychogenesis* of Jean-René Blin to identify a palette of “functional colours”. Light or dark, shiny or matt, plain or textured, enhanced by lighting devices skilfully integrated into the architecture, the colours are arranged according to the principle of *contrast*, to obtain a “state of light tension in which a healthy person should always feel, whether at rest or at work”. However, everything is controlled in such a way as to respect the general harmony of the interiors. Then will come the integrated works of art and the furniture, which also plays a fundamental role in the overall polychromy. The *Synthèse des arts* is at its height.

Based on largely unpublished archival documentation, as well as on the stratigraphic studies conducted in the phase prior to the restoration of the MVA building –now a historical monument–, this contribution seeks to highlight the theoretical significance of Jean Tschumi's building in the context of the 1950s, identifying the qualities that guide its future restoration.

1. Introduction

Like many insurance companies, the *Mutuelle Vaudoise Accidents* in Lausanne (henceforth MVA) developed massively after 1945. Founded in 1895, it benefited from the favourable economic climate of the 1950s, after its activities had been interrupted during the Second World War. The number of policyholders multiplied and, with it, the number of insurance premiums collected. In this phase of momentum, the idea of building a new representative headquarters was born. The commercial objectives were obvious: the aim was not only to convey the image of a solid company in terms of capital, but also to show that it was anchored in a contemporary society that was undergoing radical change. The old headquarters, an eclectic building designed by the architect René Bonnard in 1930, was no longer adequate.

The Swiss architect Jean Tschumi (1904–1962) is at work. He had won the competition in December 1951 with a beautiful ensemble formed by two volumes arranged in an open angle in a site with numerous landscape assets. His reputation –particularly in interior decoration at the time– and his mastery of new construction techniques and open-mindedness made him the ideal individual to carry out a project that was intended to be a “model of functional architecture”¹.

The notions of user comfort and company efficiency were at the heart of the considerations that led, in June 1956, to the inauguration of the new MVA headquarters, called *Le Cèdre* in recognition of the beautiful trees on the site. The colour scheme of the interiors, which is inseparable from the integration of some remarkable artistic interventions, also becomes crucial here, including its use as a tool for defining a favourable working atmosphere (**Fig. 1**). Marking a paradigm shift in his subsequent production, punctuated by some

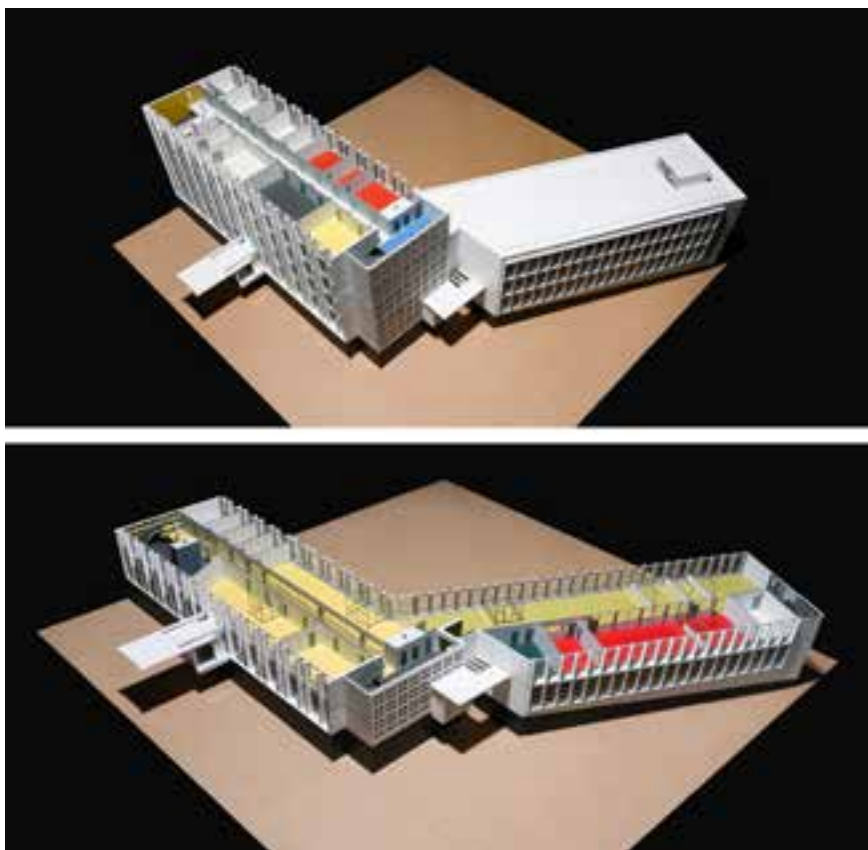


Figure 1. Jean Tschumi, Mutuelle Vaudoise Accidents Headquarters, Lausanne, Switzerland, 1951–1956. The 1:50 scale model used by the architect to define the interior polychromy was reproduced during the preliminary studies for the restoration © TSAM–EPFL, ph. Alain Herzog.

masterpieces of 20th century architecture, such as the Nestlé headquarters in Vevey (1956–1959), or the World Health Organization headquarters in Geneva (1960–1966), Tschumi's building is a true *œuvre d'art total*. It was hailed by the international press as a landmark achievement, "one of the most qualified in Switzerland"², embodying the principles of international administrative architecture.

2. Learning from the USA?

Apart from a few adjustments in the interior distribution, the essential choices of the project were made in the summer of 1952, including the materialization of the facades, a three-dimensional grid in reinforced concrete with a white cement base and light in fill panels in glass and aluminium. Everything seemed to be ready to start the execution phase, the plans having been approved by the company's board of directors, who were seduced by Jean Tschumi's project. The engineers had initiated the structural calculations and the calls for tender for the companies were about to be issued.

When everything seemed to announce a rapid opening of the site, an unexpected event altered the development of the project. Solicited by one of the members of its board of directors, the MVA was interested in "working methods and architectural achievements that correspond to them in the United States"³ and decided to organise a study trip to New York and Hartford. The company's delegation and Jean Tschumi visited a series of recent achievements destined to become milestones in the history of 20th-century architecture, from Lever House (Skidmore, Owens and Merrill, 1953) to the headquarters of the United Nations (Wallace Harrison et alii, 1952). In addition to the admiration for a technical culture that exhibits its gleaming glass and aluminium facades, another aspect struck the MVA delegation and its architect: comfort, then defined as "the set of means which, by making life and particularly life at work more pleasant and easier, contribute to productivity"⁴. The North American building is thus regarded as a model for workspaces, which goes far beyond the issues of flexible interior distribution, ensured by movable partition units to guarantee optimal comfort conditions, which also means a favourable psychological climate. A temperate climate provided by air conditioning; constant light thanks to translucent light ceilings; favourable acoustics thanks to finishes selected from the palette of new synthetic materials: the atmosphere of the office space is fascinating. The lessons learned in the USA have significant impact on the future development of the project, starting with the elimination and replacement of all interior masonry walls by light, removable and transparent partitions, as well as the integration of new-generation heated ceilings (Frenger system), which allow for a very flexible arrangement of the office spaces.

The strategy for the materialisation of interiors will also change completely. The notion of atmosphere is at the heart of this process. It is a question of

establishing a coherent range of colours and textures, thanks to a choice of materials that also ensure increased performance in terms of comfort. "Overall harmony"⁵, as Tschumi says, is a top priority, through control of the aesthetics of the components, their materials, textures, as well as –and this is fundamental– their colour. The general polychromy plays a crucial role in the perception of the interior's spatiality and the architecture itself. Jean Tschumi has taken charge of this. He was assisted by Guido Cocchi, "a young architect with communicative enthusiasm"⁶, who began to study the colour scheme as early as February 1955.

3. Interior polychromy

Did Tschumi research the psychological and physiological effects of colour, as researched by Ralph M. Evans since the 1940s? What is far more likely is that the Swiss architect was aware of the work of E. Saffre⁷ and Maurice Dérivé, a French chemical engineer, head of the *Centre d'éclairagisme of the Compagnie des Lampes Mazda* and, above all, Secretary General of the *Centre d'information sur la Couleur*, a committee set up to raise awareness among architects of the influence of light⁸. The words of Dérivé and Saffre sum up a brand-new posture that asserted itself in the second post-war period and emphasised the importance of environmental factors and atmosphere. They put forward the notion of "functional colour, a useful, effective colour, which is not applied in some places out of whim, but which plays a definite, logical, intentional role in the workplace"⁹. The idea of simple "ergonomics" is thus definitively surpassed by an approach intended to be scientific, shared by physiologists and psychologists and by engineers and physicists. There is agreement that colour is a fundamental factor in the atmosphere, capable of conditioning the behaviour and intellectual disposition of workers, as much as their performance.

At the MVA, therefore, the aim is to establish, also by means of light and colour, "a harmonious atmosphere [...] conducive to work with a *joie de vivre*"¹⁰. On the one hand, this is achieved by choosing a well-considered palette, which refers to research into the physiological and psychological effects of colour on man –Jean-René Blin's "chromopsychogenesis" tells us, for example, that yellow is "spiritual, cheerful, dynamic, stimulating for the eye, calming for the mind", while green is the colour of "calm, rest, balance and can have a restful, soothing effect"¹¹. On the other hand, it is a question of strategies for associating the different colours according to an overall harmony. And this is where the expertise of Tschumi, who trained in France as an *ensemblier* (interior designer) with Edgar Brand, becomes crucial.

Between scientific theory... and architectural composition

Tschumi and his client had learned in the United States about the importance of the theme of polychromy in administrative architecture, observing in

particular that “in the large premises, the colours are very light and, in contrast, violent tones are applied to the side of the walls, near the lifts and toilets”¹². This is broadly the strategy adopted at the *Cèdre*, where the idea of contrast guides the design of the colour scheme. The similarity of this approach with that of Gio Ponti at the Pirelli skyscraper in Milan (1956–1960) is striking. Tschumi shares with the Milanese architect some scepticism about the strict application of research into the psychology of colour, an approach that is put forward as being eminently “scientific” but which for him, trained at the *Beaux-Arts*, remains somewhat questionable.

Tschumi is indeed somewhat dubious, “fearing the exaggeration of certain theories” which, although fascinating on a scientific level, would not find “definitive confirmation in practice”¹³. He advocates a more “instinctive” but controlled approach, in other words, one that is consistent with his personal approach as an architect, who places the issues of composition at the centre of the project process.

Thus, the objective of the colour scheme for the office floors is to “create a calm atmosphere in the work rooms, but ‘awaken’ in the corridors, cloakrooms, lifts and toilets with more violent colours, in order to maintain, through this play of contrasts, that state of light tension in which a healthy person should always feel, both at rest and at work”¹⁴. On this basis, Tschumi and Cocchi explain the project approach they adopted for the interior polychromy: “The problem to be solved went far beyond the two-dimensional problem of a simple painter’s canvas. Thus, [...] the colours chosen for the floors were always based on the walls. This is unusual: too often, floors are treated for their own sake, and then the rest is left to be dealt with as best we can! Playing on these two horizontal and vertical planes, [we found] colours that enhance each other”¹⁵.

A sophisticated colour scheme

Everything is played out in three dimensions, and the architects had an imposing 1:50 scale model built to test the options chosen. With the help of this gigantic dismountable “doll’s house”, the palette of floors and walls studied to create a harmonious atmosphere is defined. A range of yellows, greys and mauves form the background against which the brighter colours, the more vibrant accents, play.

Yellow, which is present in various shades –from light yellow to ochre– is especially designed as a base colour, on which the other shades in cooler tones or with stronger accents are then composed. In the main building, which houses the insurance company’s administration, yellow is used, for example, for the flooring of the work areas in Plastofloor vinyl sheets. In the central hallway, which is already punctuated by the asymmetrical structure made of hammered concrete, everything is done to avoid the corridor effect, starting with the colour, a violet shade for the wall to the south and a strong

grey opposite, highlighted by the strong blue doors that give rhythm to the space. The asymmetrical design is further enhanced by the artificial light: a high-voltage fluorescent tube lighting system that runs along the south wall and is carefully studied in terms of its intensity and light spectrum, coming as close as possible to daylight. Finally, we should mention the use of natural light at the ends where the stairwells are located, coloured in very dark tones: the anthracite grey steps stand out from the back wall painted in a bright ochre colour, lit by screens of the most beautiful effect. From the central hallway, warm and very bright light can be seen on both sides, reflected on the dark and shiny floors. Despite the extensive development of the corridor, monotony is banished.

As for the offices in the wing, it is here that we find more obvious references to the theories of the physiological and psychological effects of colour (**fig. 2**). The reconstruction of the original interior colour scheme that preceded the restoration of the building, which is currently underway¹⁶, shows this clearly: the floors, which in most cases have been converted into open-plan offices, show clear differentiation in the colour scheme according to different levels. Yellow remains the dominant colour for the offices on the ground floor, where mainly administrative tasks are carried out, or even "intellectual work [which would be] facilitated by the general yellow colour which is exciting"¹⁷. On the other hand, the strategy changes completely on the upper floors as the functions vary. Any activity involving noisy equipment, such as punch card machines, is characterised by a light green colour, a 'balancing' shade



Figure 2. Jean Tschumi, MVA, 1951–1956. Offices on the 2nd floor of the wing © MVA archives, 1956.

that relieves the negative effects of machine noise. For any task of repetitive nature, such as filing and archiving, a penetrating red is chosen.

4. Colour, furniture, art: total control

Tschumi uses colour to pursue what he considers to be a key notion, that of the "chromatic unity" of interiors. The furniture also plays a fundamental role in the overall polychromy through a clever mix of furniture designed by Tschumi and some iconic pieces of contemporary design whose textiles are retained in the overall palette, such as Harry Bertoia's armchairs for Knoll International. The choice of furniture is made considering the general colour scheme: metal furniture on the first floor, where the colour scheme is in cooler tones; wooden furniture on the second floor, matching the warm tones of the flooring (**fig. 3**).

The integration of the works of art follows the same principle, which is remarkable. For example, Tschumi plans two large 3 x 3 metre paintings on the south wall of the first and second floors of the wings. They are integrated works of art, literally and figuratively. It is not simply a matter of adding artistic interventions *a posteriori* and instrumentally. They must be in dialogue with the architecture and not a simple decoration. In other words, "a certain aesthetic, a certain science of form and colour, must therefore respond to certain architectural rules or methods"¹⁸. Two works were



Figure 3. Jean Tschumi, MVA, 1951–1956. Management offices in the main building © MVA archives, ph. Maurice Vuillemin, 1956.

selected in the 1956 competition by the jury chaired by André Bloc, director of the magazine *L'Architecture d'aujourd'hui*: “Rivage II” by Jaques Berger (1902–1977) and “Rythmes dans la couleur” by Carlo Baratelli (1926–2017). After the competition, Tschumi supervised the design and execution of the paintings, giving clear –even terse– instructions on the composition and even more so on the colours to be used. “Your composition will be taken up. The overseas blues that do not correspond at all to the atmosphere of the building will be modified”¹⁹, the architect wrote, for example, to Jaques Berger, emphasising that he was “asked to review his blues that were not in the range of the building”²⁰, and especially on the first floor. In the same vein, the green–blue shapes in the centre of the composition of Berger’s *Rivage II* painting are highlighted, with the aim of reinforcing the relationship with the lime–green floor and, in general, the “decoration whose cold tones are in keeping with the metal furniture”²¹. In August 1957, the artist “completed the choice of his colour harmonies” according to the architect’s firm instructions. The “static composition finally responds perfectly to the main lines of the architecture”²², through “vivid and warm colours, where ‘lightenings’ lighten the density of the flat tones”²³, Tschumi is satisfied. The *Synthèse des arts* is at its height (**fig. 4**). It is a masterpiece, whose forthcoming restoration aims to revive the values that have been somewhat lost over the years.



Figure 4. Jean Tschumi, MVA, 1951–1956. The main hall has a bas-relief by the artist Bernard Schorderet (1918–2011). The architect is the author of the furniture set, the colouring of which, in shades of yellow, contributes to the general polychromy © MVA archives, 1958.

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Conserving Postwar Public Interiors: the Notion of “Genre” (*Gattung*) as an Operational Tool

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The postwar period witnessed the construction of several “public buildings” – i.e., buildings open to the public. These contributed to expanding modern design values worldwide and to forging the identities of new generations. Despite their contribution to our quality of life, postwar public interiors (offices, schools, cinemas, libraries, department stores, hotels, airports, etc.) are currently considered primarily for their functional value and often not perceived as heritage.

The poor appraisal of postwar interior space is exacerbated by the general difficulty in assessing the value of interiors: they are a complex resource because they bear physical and aesthetical values, as well as cultural and symbolic ones. Moreover, their perception is inevitably loaded with a subjective dimension.

The paper offers a framework and a sound starting point for the value assessment and conservation of postwar public interiors based on the category of “genre” (in German *Gattung*). In the realm of architecture, genre refers not only to the function of a building (thus transcending the concepts of type and typology) but also to its “character”, i.e. the cultural, social, and figurative universe that is associated with a “family of buildings” (buildings for reception, for education, for health, etc.). Genre thus allows to hold together the functional–aesthetical and the socio–cultural dimensions of architecture. Through a series of case studies, the text illustrates how the category of genre can be used to mitigate the subjective dimension of every value assessment process, in particular when it comes to interiors. The notion of genre provides relevant, reasonably objective, and shared criteria for assessment and action. It is a guarantee against arbitrariness and a valuable tool to understand what a building means for the global history of culture and why it belongs to the heritage of humanity.

1. Which values for 20th–century interiors?

“Constructing” Modern Public Interiors as Heritage

According to an inspiring definition by Bruno Zevi, interior space is first and foremost “the environment, the scene where our lives unfold.”¹ The places where we study, work, spend our free time, etc. are mostly interiors. Among them, public interiors of the 20th century – in their incredible variety: schools, theatres, airports, places of worship, etc. – are predominant and therefore represent a constitutive part of our identity.

Nevertheless, modern interior space still does not benefit from a systematic approach when it comes to conservation. In order to defend interiors, we must understand them and assess their values. This is a key operation in the process of “heritage making” – described by French sociologist Nathalie

Heinich² – which every architect working on existing buildings should consider as an integral part of his design process.

Modern Interiors as Complex Evidence

For an architect working on existing buildings, value assessment “naturally” springs from the history of architecture. 20th-century historiography deals with architects, their biographies and works, the cultural and political context in which the latter were created, architectural debates, crossed-influences between national architectural cultures, etc. It thus allows the architect in charge of the conservation of a given interior to situate it within a familiar and certainly relevant reference framework.

However, the point of view of architectural history is not fully comprehensive: what we appreciate today first and foremost as an aesthetic achievement, immediately refers to other dimensions, and this is especially true when it comes to interiors.

For instance, some factors, although not directly linked to architecture, can significantly influence architectural expression through their technical evolution. Just think of the impact of artificial lighting and its technical developments on the design of commercial spaces (Fig. 1).

Furthermore, the design of interiors calls for a much wider range of specialised disciplines than that of a square or a street. Modern interiors testify to the collaboration between architects and various specialists: structural engineers, systems specialists, lighting engineers, acoustical engineers, furniture designers and manufacturers, etc. These specialised disciplines are often the drivers of architectural innovation.



Figure 1. Alfred Messel, Wertheim Warehouse, Berlin, 1896–1906. Eric Mendelsohn, Schocken Department Store, Stuttgart, 1926. In barely twenty years, thanks to the development of artificial lighting, the extensive glazed surfaces of the early 20th-century department stores were replaced by smaller horizontal openings. © Platz, Gustav Adolf. *Wohnräume der Gegenwart*. Berlin: Propyläen-Verlag, 1933; *Moderne Bauformen*, November 1930, XI.

Lastly, modern interiors also concern physical and psychological well-being, rituals and social representations, as well as related meanings, values and affectivity, and thus the culture of living and sociology and, more generally, cultural anthropology.

For all these reasons, 20th-century interiors embody values that transcend the boundaries of the history of interior architecture. They represent complex evidence which also concerns social and cultural history, political institutions, medical and scientific knowledge, everyday life, etc.

Modern Interiors as Vulnerable Heritage

Nonetheless, modern interior space is challenging to conserve for a number of reasons: first of all, because it is the interface between architecture and user and therefore undergoes continuous transformation; secondly because we still lack a sufficiently shared and homogeneous history of 20th-century interior architecture, and thus it is not easy to define which values should be protected; thirdly, because of the very nature of interior space, which carries physical values as well as cultural and symbolic meanings. The latter is not univocal and objective, but depends on the observers' perspective, imbued with "personal experience" and filtered by specific cultures.

Thus, in order to define the value of a given interior space it is necessary to produce a far-reaching cultural discourse, which can shed light on what is shared or shareable about that specific interior based on reasonably objective criteria. The concept of "genre" appears particularly appropriate for such a purpose.³

2. "Genre" as a key to the interior

The Category of "Genre"

The category of "genre" – in German *Gattung* – derives from literature, painting and sculpture, but it is not popular among scholars.⁴ Indeed, the existence of genres tends to be overshadowed and is rarely used to describe works. However, whether we like it or not, the concept of genre is deeply embedded in perception processes: mental categories, classification traditions and cognitive frameworks pre-form our appreciation and contribute to define the status of a given work through criteria that transcend individual freedom.

The category of genre thus offers evaluation criteria that, if not objective, are nevertheless reasonably objective and shared. It, therefore, appears to be a particularly effective tool to address 20th-century interiors, a field lacking a shared overall vision that can encompass the richness and variety of interior dimensions and where a formal, stylistic, and subjective interpretation often prevails.

Genres in Architecture

Applied to architecture, the category of genre groups together buildings belonging to the same functional, dimensional and symbolic sphere.

In certain cultures, the concept of genre can be confused with that of typology. Yet, the term has a broader meaning: it refers not only to the function of a building (hotel, restaurant, theatre, factory, etc.), but also to its “character”, in other words to the cultural, social and imaginary universes that are related to a “family of buildings”.

For example, theatres, concert halls, auditoriums, dance halls, cinemas, etc., in their functional and typological diversity, all belong to the genre of “buildings for entertainment”, which share the quest for pleasure, escape and culture. Testifying to models of leisure and culture which have now disappeared, interiors for the performing arts are the result of several intertwined histories: the history of society (they concern the self-representation of social classes), the history of entertainment, the history of lighting (the transition from gas to electric light revolutionised the make-up and posture of theatre actors), the history of sound diffusion devices (from live instrumental backing, to special cameras which record dialogues and stage noises, to stereophony with the introduction of Dolby Stereo, etc.), the history of projection devices (from the traditional screen to Cinerama, Cinemascope and 3D), the history of film, of air conditioning systems, of fire safety systems, etc. The evolution of genres and sub-genres is thus influenced by the development of related technical devices, by the evolution of society, by local city regulations, etc.

When we think of a building in terms of conservation, all these aspects become values to conserve; they must be assessed and disseminated, otherwise whole levels of meaning will be lost. Let us thus consider how the notion of genre can help us in practical terms.

3. Genres as a basis...

From an operational point of view, thinking in terms of genres can be a useful approach when considering the conservation of interiors. This is true for several reasons.

... To Identify Invariants and Define Relevant Assessment Criteria

First of all, thinking “by genres” reveals the invariants of each genre – i.e., its constant, ever-present features – and provides homogeneous and objective pertinence criteria of that specific genre (dimensional, functional, distributive, symbolic aspects, etc.) which help analyse its internal spaces, identify typological differences and measure the greater or lesser adherence to the above criteria.

Nurseries, kindergardens, primary schools, middle schools, high schools, colleges and university buildings are different typologies, each tailored to the age and psycho–pedagogical needs of their users, but they are all part of the broader family of “buildings for education”, which address one same question: how can architecture improve students’ learning and socialisation?

Thus, proceeding from the small to the large scale, in education buildings one should first consider the size and shape of the typical classroom: rectangular (more “traditional”), square (praised by Alfred Roth in his successful trilingual volume *Das Neue Schulhaus*⁵), heptagonal (recommended by Hans Scharoun because it allowed different desk layouts), or other shapes (Fig. 2). One should then consider the sources of ventilation and of natural and/or artificial light (distinct or combined, as in the case of bilateral lighting and ventilation, a typical requirement for postwar schools; located on the lateral and/or back walls, on the ceilings, or a combination of these), the internal articulation of the classroom (with or without spaces for group and/or individual work), the kind



Figure 2. Arne Jacobsen, Munkegård School, Gentofte, 1952–57. Dolf Schnebli, Ginnasio, Locarno, 1959–64. Orthogonal classroom circulation vs. classrooms clustered around a central recreational space.
© *Bauen + Wohnen*, 1957, n. 2; *Das Werk*, 1966, n. 8.

of partitions (fixed or movable), the blackboard position (on the short or long side of the classroom, or in the centre, so it also provides separation like in the Riva San Vitale Primary School, by Galfetti, Ruchat and Trümpy, 1962–65), the layout of the services (coupled with vertical circulation elements such as stairs, or integrated in each classroom), the corridors and connections (outdoor, indoor, uncovered or covered), the classroom circulation layout (arranged orthogonally along the corridors, as in Arne Jacobsen’s Munkegård School, 1952–57; clustered around a central space which also serves as a covered recreation area, as in Dolf Schnebli’s Ex Ginnasio in Locarno, 1959–64; etc.), and finally the articulation on one or more levels. Often in multi–storey schools, the classrooms for the older pupils were arranged on the upper levels: in the Geschwister Scholl High School in Lünen (1956–62), Hans Scharoun placed the classrooms for the older girls on the first floor to express their feeling of being “superior to girls from the middle or lower classes.”⁶

By setting these criteria down on paper, the architect in charge of conserving a building for education can immediately understand which factors characterise it and shouldn't be underestimated when it comes to its restoration.

... To Decide Which Specimens to Preserve and Why

A genre approach also makes it possible, on the basis of the criteria mentioned above, to compare a given interior space with others of the same genre, to identify the buildings that best represent – more completely – the genre under examination (because several or all of the criteria relevant to that genre are present); to outline “families of buildings” within a given genre; to determine which buildings require an extension or transformation of that genre, because they introduce a new criterion; to point out which buildings represent borderline cases, because they depart from the basic criteria; and therefore to decide which exemplars of a given genre should be conserved, explaining precisely the reasons for such choice and which are the features to be preserved, with a view to handing down to posterity a heritage that is reasonably representative of the recent past.

Consider, for example, the genre of exhibition buildings, which led 20th–century architects and curators to reflect on what features museums should comprise to guarantee the best appreciation of artwork.

In early museums, works of art were usually hung on every wall, from floor to ceiling, but at the end of the 19th century, the idea of arranging artworks according to schools and chronological sequences became popular. New museums were built to house collections and were organised as sequences of rooms planned in close relation to their contents. Instead, temporary exhibition halls were conceived as neutral and flexible spaces, to guarantee maximum freedom in the artworks' presentation and meet the wishes of appointed curators. Over time, however, museums became more neutral, often taking on the characteristics of exhibition spaces: the ground floor of Mies van der Rohe's Nationalgalerie in Berlin (1965–68) is a single space of over 2600 m² without pillars and is a “mature” example in the evolution of the genre of exhibition buildings.

Some projects played a key role in the evolution of museums from spaces tailored for a specific collection to flexible empty boxes.

At the time of its construction, the Kunstmuseum Basel, designed by Christ and Bonatz (1931–36), was criticised as a “conservative palace”, so at first glance, it wouldn't seem to represent a significant specimen in museum history. Quite unexpectedly, a recent study⁷ carried out in view of technical and museographic adaptations has proved the opposite. The troubled genesis of the museum complex, with the lively debates accompanying the subsequent competitions (1928), played a key role in the evolution of the genre, precisely because it revealed the different conceptions underlying

museum design at the end of the 1920s, illustrating pros and cons of each in a surprisingly explicit way.

Rudolf Christ and Paul Bonatz's built project comprised a sequence of spaces tailored to the collection of the city of Basel, separated by fixed walls following traditional art–historical subdivisions. It was criticised as being the “usual system of halls and cabinets with lantern skylights”.⁸

Yet for this same competition Hans Schmidt developed an unconventional project entitled “Sie bauen – wir hängen” (They build – we hang). Instead of showrooms and cabinets, it offered large, free interior spaces, which could be divided at will by means of movable partitions. The project radically overturned the traditional display approach, offering curators total freedom in plan and section (the shed–covered halls provided diffuse natural light). The jury was not convinced – the conventional model seemed more suitable for Basel's art collection than a hall designed for dynamic processes (**Fig. 3**) – but from then on, also thanks to Schmidt's unbuilt project, the idea of the museum as an undifferentiated space made its way, soon becoming the main typology. The model inspired by maximum flexibility persisted until the 2000s, when Jean Nouvel's project for the Paris Musée du Quai Branly (2006), with its scenographic interior layout tailored for the Arts Primitifs collection, revived the qualities of the “traditional” typology.

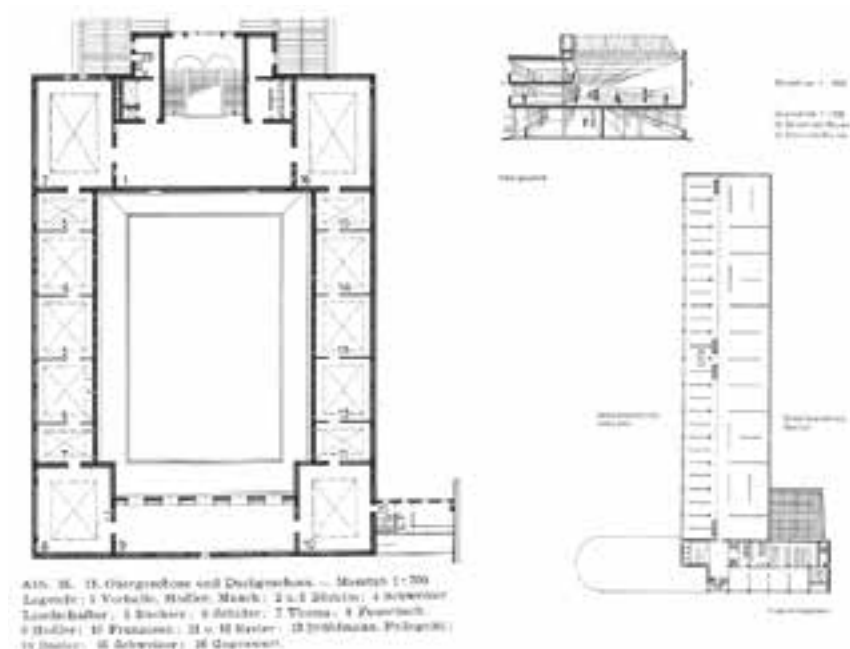


Figure 3. Rudolf Christ and Paul Bonatz, Kunstmuseum, Basel, 1931–36. Hans Schmidt, Unbuilt proposal for the Kunstmuseum, 1928. Main floor layout. © Schweizerische Bauzeitung, 30 Januar 1937.

At the end of the 1920s the victory of Bonatz and Christ's project for Basel was considered a *débâcle* for the modernists and a missed opportunity; today, considering the evolution of exhibition buildings, we recognise the Kunstmuseum interiors as a legacy to be preserved. We appreciate them not only for their elegance and measured monumentality, but also because they embody one of the last exemplars of "traditional" art museums.

Today, converting the Kunstmuseum into a series of neutral and flexible rooms would contradict the very essence of Christ and Bonatz's project. History by genres thus makes it possible to overcome appreciations influenced by preconceptions, and to point out precisely the reasons that call for the transmission of a given building to future generations.

... To Overcome a Purely Visual and Partial Evaluation

Finally, genre constitutes an antidote to a merely formal and stylistic assessment: it allows to overcome a vision that is mainly linked to the history of architecture and to include the contribution of "other" histories and points of view, which are hardly integrated in preliminary conservation research, but which were nevertheless crucial in defining the original project.

The Paris Orly Sud Terminal, designed by Henri Vicariot (1957–61), certainly lacks the striking "bird-in-flight" effect Saarinen obtained with the bold concrete structure of his TWA Terminal in New York (1959–62). Nevertheless, Orly is both an exemplar of 20th-century functional architecture and key evidence in the history of air transport buildings (Fig. 4). Conceived to become the first European airport by traffic capacity, its design was based on a dual strategy of technical efficiency and functional variety. From the technical point of view, the Terminal's linear volume parallel to the runway reduced to barely 300m the distance travelled by passengers from car to aircraft. The cross-section was also designed to optimize flows by radically separating passengers and baggage on different levels. From a functional point of view, by offering a rich variety of urban services – cinema, hotel, shops, cafés, restaurants, nursery, chapel and clinic – Orly gained the label of "première Aéroville d'Europe". Lastly, it also bears witness to the postwar

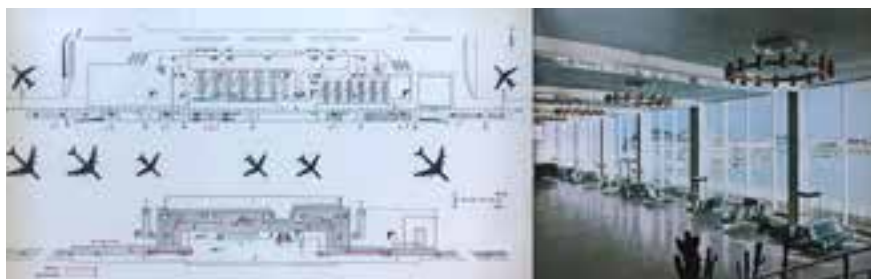


Figure 4. Henri Vicariot, Orly Sud Terminal, Paris, 1957–61. First and ground floor plans illustrating the optimisation of passengers and baggage flows. Interior hall towards the car park. © *Edilizia Moderna*, 1962, n.76.

enthusiasm for aviation described in Gilbert Becaud's "Dimanche à Orly" song (1963), which depicts the airport as one of the privileged places for Parisian families' Sunday outings. Recognizing this comprehensive set of values – technical, cultural, and social besides architectural ones – was the first step toward raising awareness of the airport's heritage significance and defining a conservation strategy. By identifying a scale of conservation priorities for the different interior spaces, the architects Briolle and Repiquet (2000–02) envisaged the preservation of the main features of the emblematic terminal halls, while allowing more extensive transformation in the functional spaces related to logistics and security control.⁹

In the name of the invariants and criteria that the category of genre points out, it represents a valuable tool to decide in a reasonably objective way what and how to conserve. Genre can thus work as a safeguard against decisions based primarily on formal considerations.

4. Conclusion

Studies in the realm of history of culture are rarely integrated into the perspectives of architects, architectural historians and those who deal with conservation. Genre, with the range of symbolic, cultural and social meanings it carries, represents a valuable key to describing and understanding an interior space in the richness of its factual and cultural values. It allows us to point out the complex and interconnected histories of a building, so that we no longer speak only in terms of the application of cold rationalism or of a close functional adherence – criteria appreciated only by certain architectural élites – but we grasp first of all the human events that took place in a given building – events that catch the interest also of users and non-specialists.

Notes

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- 8 "Das Kunstmuseum Basel", *Das Neue Frankfurt*, n. 3, 1929, p. 117.
- 9 Unfortunately, recent decision-makers have not understood the conservation strategy: newly added furnishings and functions are making Orly's original architectural features disappear once again.

S04

"Found" in Translation: **Modern Episodes around the World**

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This session will show a small sample of how modern architecture was in different countries after the second world war.

Lejla Kreševljaković presents a Community Centre in Konjic, designed when modern architecture became a dominant orientation in the building production of socialist Yugoslavia after the Soviets left the country.

Sanja Matijević Barčot analyses the PRIMA department store and its socio-political meaning in Croatia, part of Yugoslavia at the time. The paper explores how it adapted to the local conditions during the 1950s.

Emre Dedekarginoğlu and Deniz Can present the Cinnah 19 apartment block, built in Ankara, in 1958. The work was an example of the collective and cooperative housing projects in Turkey post-war when rapid urbanization created a considerable housing shortage in big cities.

Patricia Noormahomed presents three case studies: The Standard Totta Bank, the headquarters of the Instituto de Crédito de Moçambique, and the Banco Nacional Ultramarino for the Mozambican capital. Starting from the previous understanding that modern architecture in Mozambique is characterized by the integration of different artistic expressions, she examines how this quality appears in interior projects.

Through analysis of four exhibitions – The house of the Future, Robin Hood Gardens: Re-visions, A Clockwork Jerusalem, and Robin Hood Gardens: A Ruin in Reverse – Verónica Rosero Añazco observes how the Smithson's work is a source of research on the contemporary dwelling.

Francesca Castanò and Elena Pozzi explore post-war bathroom transformations using the Casa do Futuro, sponsored by the Monsanto Company in 1955, as a representative case study.

Modernist Design Values in the Architecture of the Socialist Community Centre in Konjic

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The peculiarity of Yugoslavia in comparison with the countries of the Eastern bloc was its separation from the Soviets in 1948. This was crucial for the concentration of the Yugoslavian military industry in the central part of the country, in the mountainous part of central Bosnia and Herzegovina immediately after 1948. For this reason, a large military industrial plant and Tito's bunker were built in Konjic. In 1957, the town received a Community Centre. The project was signed by the Slovenian military architect Josip Jože Osojnik. Modern Movement and its values became a dominant orientation in the architectural production of socialist Yugoslavia after the departure with the Soviets. Modernist design values were not just applied in a specific geographic location, but in a particular political and social context, where individualism and privacy were subordinated to collectivism. The aim of the paper is to explore the applied modernist design values in the architecture of the socialist Community Centre in Konjic.

1. Introduction

Socialist Yugoslavia was created in 1943 during WWII. The Soviet Union had a dominant influence on the political orientation and formation of the state. Yugoslavia left the Eastern bloc in 1948 and chose its own model of political and social relations. The previous socialist statist system, which highlighted the interests of the state and in which the state had the greatest powers, was replaced by the autonomy of the workers. Thus, based on socialism, the Yugoslavian model of self-governing socialism was established, whereby sought the government to be "given back" to the workers.

Ever since the Socialist Yugoslavia was founded, there had been a systematic approach to culture. Culture was recognised as an important factor in the development of the society, but also as a priority field for the propagation of communist ideology. To turn ideas into reality, the medium was important. In this sense, before the massive use of radio and television, space was a medium that needed to be popularized. The construction of co-operative and community centres was an integral part of the infrastructure. There was a plan to build 4000 co-operative houses, community, and cultural centres throughout Yugoslavia.¹

The cultural policy of Yugoslavia developed first under the influence of the Soviets and subsequently on the models of West-European countries. It was basically the same² based on the democratisation of culture³. In that sense,

the construction of community centres at the local community level was a precondition for the transfer of cultural programmes from the centre to the periphery. Thus, community centres were built after WWII and throughout the entire socialist period.

The reconstruction and construction of Yugoslavia immediately after WWII, including culture and art, were strongly influenced by Soviet social realism. The exit from the pro-Soviet communist regime meant a major shift in all areas, including artistic and architectural creation. The International Style present in Yugoslavian architecture between the two world wars revived in the 1950s.⁴ It took place precisely at the historic time of modernisation of the society and the intensive development of the economy and industry. It was an accurate expression of progress, of a movement free from traditionalism, of industrial and technological development. Significantly, the Modern Movement was consistent with the aspirations of the Yugoslavian autonomous self-governing socialist society. Such artistic expression was also an important element of foreign policy, highlighting Yugoslavia's diversity with respect to the rest of the Eastern bloc and its affiliation with the developed countries.⁵

2. Modernist design values in the architecture of the socialist community centre in Konjic

Bosnia and Hercegovina was a socialist republic of Yugoslavia situated in the very centre of the country. After 1948, for fear of a Soviet attack, Yugoslavian authorities concentrated the military industry to Bosnia for strategic, political, and military reasons.⁶ In the small town of Konjic, on the Neretva River, among the mountains in the heart of Yugoslavia, a military munitions industry "Igman" began operating in 1950. The construction of Tito's bunker started in 1953, also in Konjic.⁷ The construction of the bunker was conducted with the utmost secrecy. Together with the industry, workers' institutions, community centres, universities for workers, public libraries, etc., were built.⁸ It is assumed that Konjic received a representative community centre in 1957, to cover the real reason for the initial presence of the construction industry (**Fig. 1**).

The army played a significant role in reconstructing and building the country in the post-war years. Many architects also served as reserve officers of the Yugoslavian People's Army, which is exactly the case of the author of the Community Centre in Konjic. Josip Jože Osojnik was Slovenian. Not much is known about his life. He was born in the 1920s, and, in 1947, he worked as a member of a project team with Edvard Ravnikar,⁹ on a tender for the Slovenian Parliament building.¹⁰ In the history of Yugoslavian architecture, he is known as one of the authors of the Belgrade Military Medical Academy (1973–1981). He spent his entire career designing buildings for military purposes throughout Yugoslavia.



Figure 1. Josip Jože Osojnik, The Community Centre, Konjic, Bosnia and Herzegovina, 1957, photo. © Anida Krečo, 2018.

The modernist design values in the architecture of the socialist Community Centre in Konjic are explored through the shape of the building, its layout, interior design, and community values.

Shape as a spatial–functional feature

On the examples of socialist community centres, the shape is clearly read as a spatial and a functional feature. The spatial organization of the contents of community centres is directly reflected in the shape of the buildings, because of the functionalist approach to architecture and the conceptualization of space. Interior spaces follow the typical functional pattern for this type of the building. Community centres are typically shaped in the form of Latin letters I, T, L, U, Z, H, and O,¹¹ which derive from one another by adding spatial contents. The main hall with an auditorium is always set up in the middle of the layout. Public spaces of the Community Centre in Konjic are set up in front of the main hall on the left, while offices and service premises are located behind the stage on the right. Thus, the building has the shape of the letter “Z”, as the direct result of the modernist approach to architecture, which is essentially abstract functionalists (**Fig. 2**).

Modernist open plan of a socialist community centre – an open centre for a socialist community

The Community Centre in Konjic is a separate building located between the historic Ottoman part and the socialist part of Konjic. It is situated on the left



Figure 2. Josip Jože Osojnik, The Community Centre, Konjic, Bosnia and Herzegovina, 1957, Open and semi-open spaces with pedestrian entrances. © Lejla Kreševljaković, 2022.

bank of the Neretva River, beside the bridge and along the main road connecting Bosnia and Herzegovina. Although large, especially in relation to the historical Ottoman urban matrix, the building does not dominate in its volume and scale. With an exceptional sense of ambience, the architect made contact between the building and the sloping terrain, gradually changing the spatial content.

Modernist design values were not applied only in a particular geographic location, but rather in a specific political and social context where individualism and private life were subordinated to collectivism. The open plan, as one of the postulates of modernity, was created here too with an innovative constructive skeletal system. However, the open plan was also developed to ensure that the facility was fully accessible from outside the community. All public facilities are accessible from the pedestrian road which, following the terrain, gently climbs around the building.

It is also specific because no one enters the building directly from the open space. Each time it was realized through covered open, semi-open spaces. Open spaces and covered terraces, with internal spaces make a unique whole. The traditional Mediterranean architecture of individual houses has plenty of open spaces and nurture a culture of outdoor living. The Community Centre in Konjic is therefore a traditional Mediterranean house with a modernist open plan built for the socialist community. It is an open centre for a socialist community.

On the ground floor there is a restaurant with a terrace, just as the summer kitchen was on the ground floor of the traditional houses. The entrance to the main hall is situated on the next level, as traditionally was the entrance to the guest room. Then the terrace, resembling a porch with a beautiful view of the Neretva, opening access to a small hall and a library. The next level contains an open stage with an auditorium that is approached, like the front yard, located between the building and the street (Fig. 2).

The author's design in this case is, on one hand, rational, abstract, and mathematically accurate. On the other hand, the design is subtle towards the environment and deeply rooted in the Mediterranean culture and the traditional way of life of the local people.¹²

Total design

More attention is paid to the interior compared to the rest of the mass construction of community centres in that period. This is noticeable with the usage of materials and design (**Fig. 3**). The use of stone for floor and wall coverings is remarkable. All representative floor and ceiling surfaces in the entrance lobbies and within the lobbies were specially designed. Particular attention has been paid to the ceiling illumination. Architect Jože Osojnik designed all the interior elements, including the furnishings. The Community Centre in Konjic, as one of the first examples of Total design in Bosnia and Herzegovina.



Figure 3. Josip Jože Osojnik, The Community Centre, Konjic, Bosnia and Herzegovina, 1957, photo of the main hall with the auditorium. © Anida Krečo, 2018.

Modernist socialist community values

Inadequacies of technological development after WWII were sought to be overcome by collective work, by constructing infrastructure through youth labour actions. “We build a railway – the railway builds us”, was the slogan of the time. The idea of a classless society depended upon the ideas of collectivism and egalitarianism. In that period, the youth work actions did not just include the construction of major infrastructure, such as railways and others. They were also part of daily life on a local level. Almost all the community centres were built with a lot of enthusiasm thanks to labour actions of the local population.¹³ Socialist community centres were the result of both types of processes, top–down and bottom–up.¹⁴

Community centres had an exceptional role within the community in which they were built given the: communist ideas within which they were created; educational, cultural, entertainment, sporting and leisure activities organized within the community centres; and the construction process that involved direct participation of citizens.

Josip Broz Tito has visited the Community Centre on several occasions (**Fig. 4**). The Community Centre in Konjic was a venue for events of significance to the city, the centre of the social and cultural life of the local people.



Figure 4. Josip Jože Osojnik, The Community Centre, Konjic, Bosnia and Herzegovina, 1957, photo of Tito in front of the Community Centre in Konjic. © Native Museum Konjic, 1962

The proclamation of the independent state of Bosnia and Herzegovina in 1992 marked the end of the socialist period. It started a war which lasted until 1995. That was followed by the transition from socialism to liberal capitalism. Changes in the community were also reflected in the spaces where the former socialist community lived, like the centre in Konjic. The society has changed and, therefore, practices have changed too. It settles in new spaces of entertainment and recreation inherent to the new everyday life.

The Community Centre has been left in oblivion and decay for years. Recently, certain steps have been taken to preserve it. In 2017, the building was listed as a national monument,¹⁵ as one of a few buildings of the 20th century in Bosnia and Herzegovina that has been protected.

3. Conclusion

The aesthetic dimension of the Community Centre in Konjic is indeed a bearer of meaning. Its form, as abstract as it is, is decoded in the context of the real world, as Calquhoun¹⁶ claimed. The Modern Movement flourished in the post-war socialist Yugoslavian society. It preserved the link with the context and architectural tradition and took an active part in building a progressive and modern socialist industrial society. It created a mutual connection between modernist values and socialist community values. The example of the socialist Community Centre in Konjic is therefore another testament to the range of the spectrum in which modernist design values were interpreted and applied after WWII.

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Notes

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- 2 On the similarity of approach to cultural policy in Western European and Eastern bloc countries see Kenny Cupers, "The Cultural Center: Architecture as Cultural Policy in Postwar Europe," *Journal of the Society of Architectural Historians* 74, no. 4 (December 2015): 464–484.
- 3 The democratisation of culture, or decentralization of culture, is an activity whereby cultural achievements transfer the capital to as many other cities and places as possible, initiated under the central State administration. At the same time, possibilities of receiving these cultural contents are created. See Karl Mannheim, *Essays on the Sociology of Culture* (New York: Routledge, first published 1956).
- 4 The carriers of Modernism in Yugoslavia prior to WWII were artists and architects educated and trained in Ljubljana, Prague, and Vienna. They were frequently identified with the bourgeoisie, marginalized after WWII. Consequently, educated members of the Communist Party were given assignments across the country in most cases. The most eminent Bosnian architects studied abroad before WWII: Dušan Smiljanić, Mate Bajlon, Jahiel Finci, Juraj Neidhardt, Muhamed Kadić and Reuf Kadić. AN
- 5 See Martino Stierli and Vladimir Kulić, *Toward a Concrete Utopia: Architecture in Yugoslavia, 1948–1980* (New York: MoMa Publications, 2018). See also Ivan Štraus, *Arhitektura Jugoslavije 1945.–1990. / Architecture of Yugoslavia 1945–1990* (Sarajevo: Fondacija za razvoj održivog dizajna, 2013).
- 6 The following industries have developed: "Igman" in Konjic, "Bratstvo" in Travnik, "Slobodan Princip Seljo" in Vitez, "Pobjeda" in Goražde, "Slavko Rodić" in Bugojno, "Soko" in Mostar, "Famos" in Hrasnica, "Zrak" and "Orao" in Sarajevo. See Husnija Kamberović, *Prema modernom društvu: Bosna i Hercegovina od 1945. do 1953. Godine* (Tešanj: Centar za kulturu i obrazovanje, 2000).
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- 8 See Srdan Milošević, "Yugoslav Society 1918–1991: from the stagnation to the revolution," In *Yugoslavia from a historical perspective*, ed. Latinka Perović et al (Beograd: Helsinki odbor za ljudska prava u Srbiji, 2017) 336–338.
- 9 Edvard Ravnikar was one of the most important Yugoslavian architects. He graduated in Vienna from Jozef Plečnik and worked at Le Corbusier in 1939. See Martino Stierli and Vladimir Kulić, *Toward a Concrete Utopia: Architecture in Yugoslavia, 1948–1980* (New York: MoMa Publications, 2018).
- 10 Nika Grabar, "Arhitektura parlamenta po načrtih Vinka Glanza," accessed February 1, 2022, https://fotogalerija.dz-rs.si/datoteke/Publikacije/Raziskovalni_projekti/Grabar___Nika_-_2012.pdf.
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- 12 Architects Dušan Grabrijan and Juraj Neidhardt were researching the connection between traditional Bosnian architecture and modern architectural values since 1930s. The findings were published in their book "Architecture of Bosnia and the Way to Modernity". The book was published in 1957, at the same time as the construction of Osojnik's community centre in Konjic was finished. See Dušan Grabrijan and Juraj Neidhardt, *Arhitektura Bosne i put u savremeno / Architecture of Bosnia and the Way to Modernity* (Ljubljana: Državna založba Slovenije, 1957).
- 13 See Ivan Rogić and Andrija Mutnjaković, *Centri kulture, domovi kulture i društveni domovi u SR Hrvatskoj* (Zagreb: Zavod za kulturu Hrvatske, 1984).
- 14 See Lejla Kreševljaković, doctoral dissertation, *Zaštita graditeljskog naslijeđa socijalističkog perioda Bosne i Hercegovine kroz proces aktivne zaštite društvenih domova* (Sarajevo: Arhitektonski fakultet Univerziteta u Sarajevu, 2021).
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The bathroom in *The House of the Future* from 1955, discovering a new quality of life

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MINISTRY OF CULTURE

The “bath”, from the Latin “*balneum*”, acquires since ancient times the meaning of therapeutic and spiritual rite. The health aspect and that related to he-donism, to the celebration of the cult of the body prevailed over the hygienic one; the public and social dimension prevailed over the intimate and private one. The domestic dimension is a conquest of the contemporary age, when the bathroom began to be understood as the place where services had to satisfy hygienic and comfort needs. During the Twentieth century the bathroom was reinterpreted as the most intimate, functional, technological, smart space in the home. The centuries-old history of the bathroom foreshadows a development towards new solutions that transform it into the centre of the domestic project, as a unique and irreplaceable space for relaxation and the psycho-physical well-being.

This paper aims to explore the changes in the bathroom in the post-war period when suggestions for aerodynamic lines, coming from America, were reflected in domestic activities, radically changing social habits. The massive spread of electrical appliances transformed bathroom into a place full of switches, taps and buttons. Design culture interpreted change in lifestyles by inventing a new equipped domestic space involving new relationships between people and innovative auxiliary objects and insights that offered consumers great hope for the future. The *House of the Future* sponsored by Monsanto Company in 1955 demonstrate the world would never be the same again, and the bathroom showed this more than other rooms in the traditional home.

1. Introduction

The technological progress of the 1900s, as well as its unprecedented inventive fecundity also in terms of design, reinvented the bathroom and its use, expanding and fixing its position within the house. Although traditional rites and historical habits would survive also the 20th century, a new civilization *Clean and Decent*, quoting Lawrence Wright, integrated the bathroom in its life¹.

Originally the bathroom had no fixed scheme. Its European model was quite large and it featured also furniture, wallpaper and heavy curtains. In this initial *Age of mechanization*, occurred between late 1800s and 1920s, the United States of America was the leading nation in the definition of practicality and rationalization of space². Chicago's skyscrapers and hygienic systems

progressed simultaneously, with the appearance of the early versions of the "compact bathroom"³.

In the rest of the world, and before establishing itself as a real place, this futuristic environment imposed itself pervasively with standards and models nourishing a wide collective imagery⁴. Mediated through the apartments described in books or films, the western-style bathroom introduced the condition of modernity associated with notions of hygiene and comfort. Yet actually there were many differences between a technological and idealized bathroom and the one in use. Evoking the opportunity to improve people's daily life, *new bathroom* announced social change through the reassuring image of progress and modernization conformed to global ambitions. Starting from then, the individual well-being was considered as essential part of communitarian life, and hygiene and cleanliness were associated with the level of comfort, social status and educational background of citizens⁵.

2. Clean and cool

In the second half of the 1900s the sanitary appliances became items for the masses and were made accessible to all; their production, however, even if rapid and increasingly more efficient, didn't develop in a predetermined and univocal way. In the late 1930s bathroom items were limited and standardized, and only in the next two decades they showed a remarkable impulse of inventiveness, especially in the US where industrialization spread faster than elsewhere. In 1927, the Society of American producers of detergents and glycerin founded the *Cleanliness Institute* to promote bathroom products⁶.

Clean became a synonym of *Cool*; the achievement of comfortable intimacy in bathroom affected people's sense of smell, enhanced by better washing items⁷. In addition, toilet paper became a widespread industrial product too, firstly sold in the form of rolls and then of perforated sheets. Moreover, natural or artificial ventilation involved the deodorization of the room, and the normalization of the space on a human scale allowed total corporeal freedom⁸.

In general, design studies developed solutions to make sanitary appliances more performant, yet the gap between social classes remained and a large part of the population still lived in houses without services: bathroom was the most apparent example of this. An article appeared in 1934 in the *Architectural record*, reporting a survey involving 64 American cities, revealed that, despite the achievements of American hydraulics, 5% of dwellings had no running water, 13.5% had no private indoors water closets, 20.2% had neither bathtubs nor showers⁹.

Until then, bathroom had been a luxury item; this was due to the high cost of manufacturing, purchasing and installing the equipment. The solution was the integrally prefabricated bathroom; compact, light and easily installed in



Figure 1. Monsanto Company, Plastics Home of the Future, Disneyland, Orange County, California, USA, 1958, Photo courtesy Orange County Archives, from the Linda Peach Warner Collection, Wikimedia Common, 2014.

all types of houses, it ensured optimal hygienic conditions, an example being the solutions designed by Richard Buckminster Fuller in 1937¹⁰. However, the idea of a highly mechanised space for strictly physiological functions was not widely adopted and the bathroom was on its way to becoming the new environment to be completely rethought for the home of the future¹¹. In this new stage, the makers of sanitary appliances, furniture and electrical devices started to experiment reciprocal innovative solutions demanded by the necessity to integrate various pieces according to dimensional and aesthetic interpretations. Bathroom was now seen as the room appointed to produce beauty, essences and vanity reflected in mirrors, decorations and personalized planning¹². Until a few years before, the ideal bathroom had been a compact, total-white environment with nickel-plated taps and minimized furniture; now it was going to become a spacious place rich in colors and featuring a clear female connotation¹³. The industrial sector encouraged designers to create new products meant to feed the sphere of desires rather than that of actual needs. The 'American dream' was taking off, and so were the winding lines and alluring images promoted by the professional developers of streamline aesthetics¹⁴. The smooth surface of new products made them easier to make, clean and use. Through their sketches of handles, tools, cases, coordinated series of sanitary appliances, hairdryers, electrical shavers, toothpaste and detergents, designers could influence both the physical and psychological spheres of consumers.

3. The house of the future

In the 1950s, new trends of winding streamline were reflected in housewives' activities and radically changed the domestic environment. The massive diffusion of household appliances and the imagery related to it turned bathroom into a place full of switches, knobs, mixers and buttons. The project culture interpreted the changing lifestyles inventing a newly equipped domestic space involving new relations between people and innovative auxiliary objects and intuitions, which offered consumers high hopes for the future¹⁵. Not reality but its *mise en scène*, not things but their image.

The House of the Future was the prototype of the house sponsored by Monsanto Company in 1955 to demonstrate the versatility of the newly invented plastic materials. Designed by architects Richard Hamilton and Marvin Goody and opened in 1957 at Disneyland's *Tomorrowland* in California, it was a futuristic home displayed for the visitors to the theme park; it was also shown on TV to announce a new life made easier thanks to smart domestic items.

The bathroom featured adjustable washbasins that could be lowered to let children use them more comfortably, electric shavers and toothbrushes and even a telephone with a monitor to communicate with the external world without leaving the intimacy of the place¹⁶.

Another homonymous *House of the Future* was designed by architects Alison and Peter Smithson, for the *Daily Mail Ideal Home Exhibition*, held in London in 1956; it appeared more as a new manifesto than as a serially reproducible model. "It was not a prototype. It was like the design for the masque, like theater" – said Peter Smithson himself in an interview¹⁷.

The house was made of plastic and concrete, and the surrounding garden made the interior spaces naturally bright. Large and totally transparent windows let anyone see naked actors moving around in the bathroom, showing an intimate environment for personal hygiene but at the same time a nudity exhibition too. The house could be also observed from a higher platform, so that visitors could appreciate the audacious solutions of that unique place as well as the plasticity of the furniture and the clothes specially designed by Cuthbert Collingwood Tinling, a famous Teddy Fashion designer from Wimbledon. The Smithsons' project was also meant to be environmentally friendly; it featured a water collection system and monitors for controlling the internal temperature, the heating, the refrigeration and the quality of the air.

Environmental requirements were going to play a leading part in the house of the future, such as "each dwelling's right to unbreathed air" caustically mentioned by Alison Smithson¹⁸. Just like running water in the previous decades, now it was clean air to be considered as an essential asset.

The project culture, the arts and the media were under a new kind of pressure determined by the explication of elements previously left in the background but now gaining full consistency. The emergent symbiosis with the invisible

led to a new sort of phenomenology linked to atmosphere, air, gas, fumes and vapor, as Duchamp had anticipated in 1919 in his work *Air de Paris*.

In fact, in the late 1800s, technology had already produced instruments to control the quality of the air; in the early 1900s, then, when macro-climatology acquired public status, it became clear that private micro-climates would allow modern apartments to be artificial hearths not only through the right exposition to the sun but even more by installing heating, ventilation and refrigeration systems¹⁹. Thanks to aeries and several other electrical devices, it was now possible to control domestic temperatures. The independent housing cell was able to develop minimal conditions of autonomy, both architectural and sanitary, essential to have the possibility to live on one's own; the apartment was equipped with all the instruments necessary to the dweller's circadian cycle, including sleep, rest, meals and body care. The bathroom was its wet side, with the typical stations for daily rites of evacuation, washing, drying, cosmetic practice and dressing²⁰.

The so-called *air-design* was in charge of prefiguring the new environment, irradiated, gaseous, hydrated, sublimated by the many mirrors²¹.

4. Conclusion

In domestic hierarchy, both in reality and imagery, the bathroom becomes a primary environment. The dweller gives up any predefinition of spaces and prefers to see furniture and functions as transient and combined; still they cannot do without the bathroom, which keeps its character of "interior within the interior"²². Even more than the space in itself, intimate and ajar, specific attention is paid to bodies and behaviors²³.

In less than fifty years, the conditioned and controlled body, obsessively measured in its vital space, has disappeared, and so have the rites related to its care²⁴.

In just a few decades, the body, once exhibited because of its seducing and symbolic power, has left the field of abstract perception and imagery to join that of visible cognition. This with several consequences announcing the increasing capability of managing, planning, modulating and reshaping thanks to people's expressive actions, moods and psychology. These premises explicitly lead to radically creative forms of habitability without any residual bond, transforming the habitat into some incorporating hypermodern installation²⁵.

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From the “House of the Future” to the “Ruin in Reverse”. Four Exhibitions about (and by) Alison & Peter Smithson

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Alison and Peter Smithson intellectual and design processes have provoked contemporary discourses that have been manifested through a series of exhibitions that put on the roundtable the possibility of articulating new ideas about housing. The exhibitions “The House of the Future” (1956), “Robin Hood Gardens: Re-visions” (2009), “A Clockwork Jerusalem” (2014) and “Robin Hood Gardens: A Ruin in Reverse” (2018) denote how their work is a source of research towards the reinvention of “the art of inhabiting” and the importance of criticising through exhibiting. In the core of the discussion is the social housing project “Robin Hood Gardens”, whose analysis aims to: 1) Overcome real estate and mass media pressure, 2) Consider transformation and preservation as a sustainable alternative, and 3) Set free Modern Architecture post-war housing from its stigmata. The outcome: establish new discourses about contemporary dwelling.

1. Introduction. Exhibition 1: “the House of the Future”, 1956

In 1956 Alison and Peter Smithson presented the exhibition “The House of the Future” sponsored by the *Daily Mail*, as a result of their research and speculations carried out during the 1950s on the possibilities of the new consumers’ technology, prefabrication, and constructive standardization. It had a utopian status: a dream house, a camouflaged house: “A house

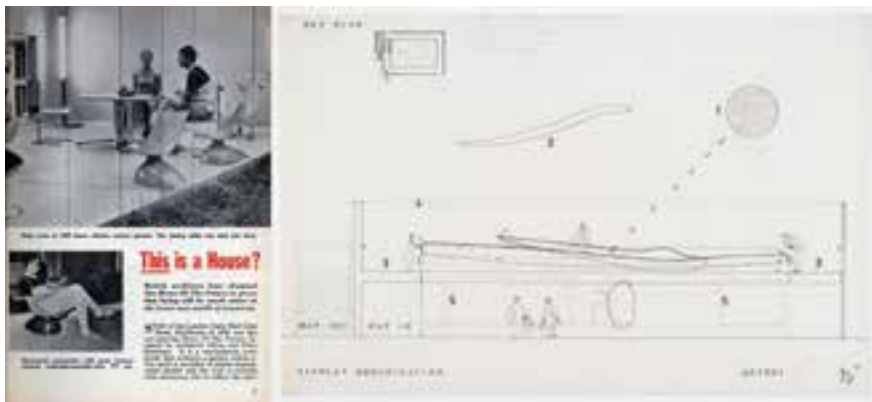


Figure 1. Left: “The House of the Future”, *Mechanix Illustrated*. Source: shorturl.at/xJLV4. Right: Plan and section showing circulation of exhibition viewers. Source: shorturl.at/lmoN2

that disappears? Or a theatrical stage in which the fantasies of the future would be examined by an ever-curious, ever-observing audience?"¹. With its windowless *façade* and its forbidden access, it was simultaneously an exhibition house and an exhibitionist house, intentionally designed as a distant object. Looking at it implied peering through the openings. They pretend to "show the future", 1981, twenty-five years after the exhibition. Several journalists called it "The 1984 House" in allusion to George Orwell's novel written in 1949: "a cross between a Roman villa, a South American courtyard, and George Orwell's 1984 but without the element of nightmare".²

This pavilion has been analysed as a 20th century architectural production heritage, as a tool for understanding society state and the cultural absorption of the environment, and as a work that extended the strategies of L'Esprit Nouveau pavilion (Le Corbusier, 1925). For the Smithsons, it was part of his constant search for the ideal house, a space that one can make it its own without altering anything, within the limits of trends and mass media pressure.

Their works had a poetic focus on daily life linked with spatial exploration, construction technique, the expressiveness of materials and functionality. As inhabitants of their houses and as attentive observers of society, they looked for the "signs of occupancy" of middle economy inhabitants as an evidence and source of wonder, inspiration, and energy.

The provocative air of the "House of the Future" was intended to show an alternative to the conventional suburban house, a proposal that reflects about and responds to basic human needs, and the "art of living", a reminder of other values and pleasures. Its process was framed by a post-war context, an awareness of the unsustainability of everyday life. Dwelling, its patterns of use and appropriation were part of a larger whole, considering that modern and technocratic approaches to post-war reconstruction, aimed at perfecting the national welfare state, had ignored the need to make society a community.

Witnessing scarcity in post-war reconstruction in Britain, forced by circumstances, they took advantage of the few available means. This approach was called "as found", a conceptual contribution in the face of renovation interventions that aimed to revitalise the most ordinary and humblest of things. Simultaneously, American consumerism seemed seductive and exotic to them, so, as part of the Independent Group, they treated their images with a great deal of worship through the celebration of Pop culture, seeking inspiration in the 'use and throw away' object, becoming representatives of the Pop Art movement. The "the art of living" concept was later added to the "excess" concept based on a reflection on the things accumulated in a house that require a large storage space.

"The House of the Future" and the search for the ideal house didn't represent an idyllic place; it was a battlefield, a place of contestation of social and cultural values of the spectacle and consumerism society. If in the 1950s they were remote perspectives, nowadays they are part of our reality.

2. Contemporary debates. Exhibition 2: “Robin Hood gardens: re–visions”, 2009

In 2008 the Robin Hood Gardens collective housing project by Alison and Peter Smithson (1972) faced the threat of demolition, becoming a controversial case of preservation. The local government announced its demolition as part of an urban regeneration plan called “Blackwall Reach Regeneration Project”. Consequently, The Twentieth Century Society (TCS), an organization that fights for the preservation of outstanding 20th century architecture, gave way to an intensive campaign to save the project. The initial request for listing was rejected by the Minister for Heritage, on the advice of English Heritage. The TCS requested a review and initiated a collection of information and of supporting signatures. Despite the arguments, in May 2009 its demolition was ratified. RHG was judged against a set of norms represented by an “ideal” construction instead of a critical definition, without the interests of the market involved, demonstrating that the cataloguing of certain post-war buildings has a strong political influence in decision making.

The TCS refused to give up and in June 2009, at the Royal Institute of British Architects RIBA, launched “Robin Hood Gardens: Re–visions”, an exhibition that vindicated the project through extensive material and a renewed proposals for intervention by University of Greenwich students. The exhibition was based on the housing and multi-scale lessons that the Smithsons sowed, aware that housing is part of a complex system. The spatial configuration therefore responded to values, ways of living and occupying the territory, so they experimented with prototypes dealing with the problems of suburbanization, accompanied by proposals to group series of individual units into larger urban units. Within the CIAM speech, and in subsequent years during Team 10 meetings, they argued that new cities and housing programs should be adapted to their ecological and cultural context. Although these ideas were



Figure 2. Left: “Robin Hood Gardens Re–visions” book cover. Right: Jame Walker’s project for the renovation of RHG tutored by Ed Frith, University of Greenwich. Source: shorturl.at/fwYHJ

somehow rudimentary at the time, they encouraged to rethink the city from its inhabitants.

The house as a cell of society and the recovery of the streets as meeting places gave way to the “streets in the air” and the “cluster”, ideas that were raised at CIAM X where urban planning had to consider the house–street–district–city categories. This categorization coincided with a trend in British planning at the time, which advocated greater integration of residential buildings in mixed–use complexes and separation of pedestrian traffic. They understood the street as the social meeting place to favour neighbourhoods, avoid sectorization and link blocks, a proposal that was applied in the Golden Lane collective housing project. Although it wasn’t materialised, it explained the idea of extending the analysis of housing in a sequence of scales; the first step for the RHG realization.

The demolition controversy is aligned with similar reflections in the 1956 exhibition: the consumption culture in relation to architecture, without deliberating on the social and environmental consequences, as well as community relations and place appropriation.

3. Utopia vs dystopia. Exhibition 3: “A Clockwork Jerusalem”, 2014

The First World War – the beginning of modern globalization – serves as a starting point for the range of narratives. The transition to what seems like a universal architectural language is a more complex process than we typically recognize, involving significant encounters between cultures, technical inventions, and im



Figure 3. “A Clockwork Jerusalem” exhibition dossier cover. British Pavilion for the Venice Biennale 2014.
Source: the-dots.com, t.ly/Fm7v

perceptible ways of remaining “national”. In a time of ubiquitous google research and the flattening of cultural memory, it is crucial for the future of architecture to resurrect and expose these narratives.³

In 2014, the Venice Biennale highlighted the First World War as a “zero moment” that has influenced the spatial conformation of architecture and the city of modern globalization. In this scenario, the British pavilion presented “A Clockwork Jerusalem” in honour of William Blake’s poem “Jerusalem” and Anthony Burgess’s book *A Clockwork Orange*, a dystopia adapted later by Stanley Kubrick. Through a giant mound of earth (“The Mound”) they referenced, among other things, old burial mounds from the rubble of the demolished neighbourhoods, like the central space of RHG. The Mound represented a provocation, a kind of ending, a construction site, the place where things can begin. Symbolically, it was an “anti-architecture” proposal: a state, either before or after architecture, with destabilizing qualities. Surrounding the mound, a panoramic image told the story of British Modernity, referring to its visual and architectural culture such as Archigram or the Smithsons.

“A Clockwork Orange” reference showed the negative media connotation of modern social housing complexes, when Kubrick, through Thamesmead social housing project (1960) in East London, showed the stigma that has accompanied to modern architecture: “The urban landscapes (...) are typical of the large esplanades and transition spaces that surround the beehive buildings that have become, since the 1950s, the prototypical and devirtualised image of the “housing units” of the Modern Movement.”⁴ However, “A Clockwork Jerusalem” showed cases in which modernisation and modernity have been part of the British popular imagination in a positive way anchored in public works with the participation of professionals from civil society as well as the contributions of New Brutalism, despite its short life apogee before the regime of the market economy became the common “denominator” 5.

At the same biennale, the “Modernity: Promise or Menace” pavilion showed how France not only absorbed modernity but also inspired it, providing great state-promoted modernity social housing projects with their respective expectations, promises and threats. “Happy heterotopias or places of reclusion?” It was a question that didn’t seek answers; it sought to reflect on an intermediate space between naive utopia and categorical dystopia, undermining complex social aspects like migration and phenomena such as the displacement of the middle class towards suburban single-family houses.

Great Britain experienced a wave of immigration in the 1970s due to the Bangladesh Liberation War against Pakistan, with a significant group settling in London, mainly in Tower Hamlets District. Canary Wharf, separated by the light rail line is notorious. The state and quality of public infrastructure and buildings has meant that foreign communities are somewhat isolated culturally and socially with problems that seem to have a common root in

the British–Muslim identity with respect to gender inequality and religious particularities, the division of classes and the segmentation of productive activities. Nevertheless, the general impression of RHG residents, according to a study by the TCS, was surprisingly positive. Symptoms of “failure” such as vandalism belonged to a distant past, while gradually, it became a “cult object” and a space rich in opportunities.

Therefore, the situation must be observed as a complex corpus and not only from the architectural aspect, also biased, as English Heritage did. The demolition of the RHG showed a kind of “cold war” in relation to the conflicts between Europe and the Middle East, a parallel to the age of modernity where “architectural, military and mass culture are intimately interwoven in the way that defined that historical moment”⁶. In the contemporary battleground of political interests, urban warfare and real estate, RHG was finally demolished in 2017.

4. Contemporary learnings. Exhibition 4. “Robin Hood Gardens: a ruin in reverse”, 2018.

Supported by the 2018 Venice Biennale, the Victoria & Albert Museum moved to the *Sale d’Armi A, Arsenale* a ruins fragment of the project acquired during its demolition. This portion, currently part of the permanent exhibition of the V&A, allowed visitors to walk a ‘street in the sky’. Complementarily, the Korean artist Do Ho Suh presented an audio–visual installation that explored RHG under demolition. The work questioned the meaning of home, travelling through the corridors and through the building, revealing individual lives through domestic interiors, responding “to the indistinct limits between the psychic interior and the objective exterior, reflecting on these houses and their function within a physical structure...”⁷.



Figure 4. Left: Death and Afterlife of RHG. Source: shorturl.at/vwOQY. Right: A piece of the demolished RHG at V&A Pavilion, Venice Biennale. Source: shorturl.at/dkK38

As a whole, the exhibition was a critical manifesto that encouraged the debate on the demolition of RHG and the destruction of existing communities without alleviating the housing crisis. It raised questions about the future of social housing, looking back to the original ideals of the Smithsons and how these can inspire the future of social housing. "How can we see what is preventing us from creating affordable housing for everyone in our society?" Here are three premises:

Overcome real estate and mass media pressure

Mass-production advertising is establishing our whole pattern of life – principles, morals, aims, aspirations, and standard of living. We must somehow get the measure of this intervention if we are to match its powerful and exciting impulses with our own⁸

Cultural analyses often see this as a negative utopia come true: a 'splendid new world' where the virtual and the real have become blurred to the point where they are almost indistinguishable. The everyday and its prose work as a critical moment under these terms, putting an end to the illusions and desires caused by the media industry.⁹

In Britain, popular opinion was influenced by a Thames Television program whose viewers voted in 1985 to demolish RHG and Ernő Goldfinger's Trellick Tower (1965) arguing that these were the worst London modern buildings. The public was apparently influenced by the gradual deterioration of a series of Modern Architecture projects as a result of its negative connotation and the absence of heritage cataloguing, a tool used to promote demolition.¹⁰

Media is a powerful tool. Since 2010, the Tower Hamlets Borough has been carrying out a bilingual periodical publication (English and Bengali), a strategy for communicating the residents the brand-new project and its "benefits". Through colourful glossy illustrations, residents weren't capable to notice that this implies an urban and social restructuring with the ghost of gentrification. In 2012, the year of London Olympics, they published the new project. This was not a coincidence. The media pressure exerted by the Olympic Games has collateral effects on urban structures with a particularly dark and little-known fact¹¹. For Richard Rogers, RHG was not only a great example of the best post war architecture which deserves to be preserved for future generations, but an example of affordable housing supply under intense pressure from the Olympics.¹²

A sustainable alternative

"Robin Hood Gardens: Re-visions" exhibition is based on the premise that the project history, regarding contemporary dwelling, is worth to be studied not only as a trace of the past, but as a potential lesson for a more sustainable future. Since architecture plays an important role in the global quest to reduce

carbon generation, its study shows that in terms of energy savings, demolition before the end of its useful life represented high carbon emissions as the necessary time had not elapsed for the relative cost of the structure to be outweighed by other costs, even with substantial energy reforms.¹³

Financially, the demolition of modern housing projects involves continue paying for investments in public housing (usually long-term financed), paying for temporary or permanent accommodation for rehousing, new long-term financing for replacement buildings, and, unless the old building is dramatically inefficient, there is no energy efficiency benefit. Although rehabilitation needs funding, it is both an architecturally and economically attractive challenge that would stimulate the construction of 'new' public social housing from refurbishment.

The regeneration plan preserved the central green mound. Before the demolition, between the central mound and the blocks, the orchards constituted a transition between the public and the private. In the last years they were managed by the "property guardians", a volunteers' group from *Dot Dot Dot* NGO that hosted them in a community housing nearby block. The space renamed as the Millennium Garden (alluding to the Olympic Village "Millennium Dome") retains qualities associated with flora and fauna that the years and the configuration of the original complex favoured. Restructuring was a sustainable, viable and profitable alternative. It was an opportunity to combat programmed and functional obsolescence, considering new social structures demands, as well as aesthetic (perceptive) obsolescence from energy efficiency strategies.

Free Modern Architecture from stigmas

The Smithsons criticised, without fundamentalisms, modern urbanism as "unidimensionally functional". Meanwhile, they formulated new ideas regarding the contemporary city, considering the actions of the "heroic period of modern architecture". They integrated the *Unité d'Habitation* as a reference beyond its stylistic valuing, its complexity as an art manifestation, whose genesis involves popular art stimuli and historic art as a pattern of social organization, social reform, and technical revolution.¹⁴

Likewise, they implanted new notions of place and territory juxtaposed to the "inhabiting machine" with intellectual independence in relation to the real estate market. Their relationship with Team 10 was the basis to question the large scale, technocratic and abstract nature of architecture, advocating both the importance of community and the perspective of a continuous process of transformation of the human habitat. They understood that architecture could awaken an awareness in its inhabitants about the sun, nature, and the search for an image linked to collective design necessities and dynamics. It is worth returning to the debate that "Modernity: Promise or Menace" proposed:

reflecting on an intermediate space between naive utopia and categorical dystopia: a heterotopia.

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- 9 Van den Heuvel & Risselada, *De la Casa del Futuro a la casa de hoy*, 13.
- 10 Trellick Tower raised its value in the housing market thanks to the advantage of being listed.
- 11 That's the case of the 1936 Olympics where the Nazis 'cleaned' the city of homeless people and slums, or the Olympics in Mexico City, Athens and Barcelona that involved evictions and urban renovations. Davis, *Planeta de Ciudades Miseria*, 145.
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An Experimental Solution for Modernist Residential Architecture: Cinnah 19 Apartment Block

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The post-war rapid urbanization and continuous waves of migration thereof towards urban areas brought a need to re-evaluate the residential needs and solutions worldwide. To overcome the housing shortage, apartment block solutions were started to be offered. Pioneered by Le Corbusier's Unité d'Habitation, which focused on communal living for all the inhabitants to shop, play, live, and come together in a vertical building block, was rendered as a periodic Modernist model for many residential solutions in different countries. The influence of the Modernist Movement and architects were also effective in Turkish architecture during '50s. Post-war rapid urbanization in Turkey also created a housing shortage in greater cities therefore collective and cooperative housing projects, strongly influenced by Unité d'Habitation were planned. An important example for '50s residential architecture that carries traces of Unité d'Habitation is Cinnah 19 apartment block, which reflects the modernist approach of the period with its structural, formal, and spatial characteristics. Built in 1958 in capital city Ankara by architect Nejat Ersin, Cinnah 19 represented a modern living culture that is evident in the bilateral relations it created among private and common spaces, interior and exterior, and the functional and structural elements it utilized. The period it belongs was when Turkish architectural culture began to address the defining paradox of modernism for the first time – namely, the conflict between a socially concerned view of housing as the central question of modern democracies and at the same time, an aesthetic preoccupation with the dwelling as a designed product to accommodate the "good life". As a result, this study will analyse the modernist residential lifestyle defined/presented by the architectural style and formal structure, spatial traits/characteristics of the Cinnah 19 apartment by addressing the potential it brought to modern architecture in Ankara and Turkey in the 1950s.

1. Introduction

Architecture and its relationship with its context have always been informed by the societal changes surrounding its production¹. Early twentieth century saw radical changes in technology, science, and politics as well as two world wars which brought radical sociological and political outcomes. These conditions also affected architecture as a profession. The Modernist

Movement, promoted by architects like Walter Gropius, Ludwig Mies Van der Rohe, and Le Corbusier and based on "a revolutionary aesthetical canon and a scientific doctrine emerged in Europe in between two world wars"², rejected historical references in architecture on behalf of an approach that emphasizes function as a generator of form and space with the help modern materials. In his pioneering work *Vers Une Architecture*, Le Corbusier offered five principles that form the basis for modern architecture: "1) *Buildings should be raised up on columns*, 2) *There should be no internal load-bearing walls allowing a planning freedom*, 3) *External walls should be non-load bearing*, 4) *Windows should be in long strips*, 5) *The roof should be flat and used as a garden*"³.

Modernism positioned architecture as a socially progressive means to improve society as modernist architects sought to respond to post-war residential needs and housing shortage. *Unité d'Habitation*, a modernist residential housing design principle developed by Le Corbusier, became a periodic model that has stimulated a communal living based on his modernist principles. The unit offered apartments with different layouts and social areas (like shops, restaurant, garden terrace) together in a single *béton brut* block. The formal and functional characteristics of the unit lead to construction of similar buildings worldwide.

2. 20th century architectural approaches in turkey: nationalism and modernism

The arrival of modernism to Turkish capital Ankara occurred in the 1930s, in the form of a modernization and civilization project, which was conducted by state power. Modernist Movement was of symbolic and instrumental significance for early Republican Turkey, through which a modern, democratic, and secular nation was to be built on top of the totalitarian Ottoman past. After the 1910s and 1920s nationalist ideology and architectural approach (First National Architecture Movement), that aimed to create a local, Turkish architecture style, modern architecture emerged as a "concrete manifestation of high modernist vision" for a newly established nation⁴. The influence of the modernist architecture movement was carried through the German and Central European architects, who designed various public buildings and other architectural works in the capital of the Turkish Republic. More importantly, the new republic adopted modernism as a new and contemporary direction which represented itself and would be a tool for national culture to "reach the level of contemporary civilizations", as Mustafa Kemal Atatürk ordained. In this respect, future-oriented mentality of modernism was more compatible with the vision of a young republic therefore modernist architecture was greeted as the "New Architecture" (*Yeni Mimari*) for a new nation⁵⁶. In a broader sense, while European modernism arrived in the 1930s to Turkey, Early Republican Architecture was developed as a contract between modernist approach and the idea of national style and gave a unique character to the era's architectural work.

During World War II, nationalist ideas and styles became dominant in the Turkish architectural scene due to the rise of national values worldwide (Second National Architecture Movement). While Turkey did not join the war, the economic hardships due to war had impacted the import of building materials and publications from abroad. As this limitation ended after the war, architects of the period started to follow recent developments and technologies in the discipline. At the same time private initiatives started to emerge in the construction sector. Both occurrences led to the adoption of an international approach based on a rationalist turn. While the initial adoption of modernism in Turkish architectural agenda was carried out by the state in the first decades of the Republic, the 1950s brought a transformation in line with the liberal economic policies⁷⁸. In this period, Corbusian influence can be observed in the prism forms of the buildings, horizontal and vertical elements in the façades and modular façade layout which reflect the interior setup of the buildings. While Ankara was expanding towards the south and west corridor, which became the main arteries of the city, Cinnah Avenue became a prestige axis containing the modernist examples of the period.

The Modernist period of the 1950s expresses an important era for Turkey's cultural life, which appears as a transformation phase not only in architecture, but also in art and daily activities. After "more cautious modernism of the 1930s and more nationalistic period of 1940s"⁹, 1950s modernism points to a period that was greatly affected by European form of expression, life, and experience.

3. Cinnah 19 apartment block

Cinnah 19 is a single apartment block located on Cinnah Avenue, Çankaya, Ankara, which is designed by Turkish architect Nejat Ersin and constructed under Ersin's supervision between 1958 – 1960. Originally designed for a small cooperative of architects and engineers working in General Directorate of State Airports Authority of Turkey¹⁰, the apartment has "fifteen duplex and two normal units stacked in a horizontal prismatic block raised on pilotis, a roof terrace with a swimming pool and perforated façade screen that casts shade on the single-loaded exterior corridors"¹¹.

Design and Construction Process

"In my opinion, the subject of the architectural profession is neither building nor construction, nor this, nor that, but people"¹² (Fig.1).

Built on concrete frame structure with brick masonry system, Cinnah 19 hosts three storeys with duplex housing units, one storey with two normal housing units, a basement level, and a terrace storey. The architect Nejat Ersin asserted that he had wanted to design an apartment different from the other cooperative apartments, therefore he opted for duplex units¹³. Since the

apartment was meant to be a cooperative block, the main aim of the architect was to design all the duplex units the same and equal in terms of spatial formation with simplicity in mind (**Fig.2**).

As Ersin started working on the apartment in 1956, his research on architectural publications introduced him to then worldwide renown architects like Le Corbusier, Oscar Niemeyer, Lucio Costa, and Edward Durrell Stone. Le Corbusier's Unité d'Habitation became a prime example that influenced his design approach for Cinnah 19¹⁴. Like Unité, the apartment rises on pilotis from the ground level as a single prismatic unit, providing an area for a communal garden while respecting the topography and the northern façade represents housing units, long windows, and their balconies towards the Ankara scenery with distinct articulated forms. The southern façade envelops the entrance to the building and highlights the horizontal circulation corridor that ensures access to the houses with its dense surface articulations provided by the



Figure 1. Nejat Ersin, Cinnah 19 Apartment Block, Ankara, Turkey, 1960. © Mimarlar Derneği 1927, Nejat Ersin Arşivi



Figure 2. Nejat Ersin, Cinnah 19 Apartment Block, Perforated white rectangular grille on southern façade and circulation area © (Emre Dedekarginoğlu, Deniz Can)

composition of perforated white rectangular concrete grille, which were, as Ersin noted, a direct reference to Edward Durrell Stone¹⁵ and gives the building a characteristic and striking appearance. This longitudinal façade is completed with the relief that is located on top of the entrance fringe, which architect Ersin himself constructed by form slats (**Fig.3**).

Duplex units, by the plan order they represent, target a dynamic family type which compliments the changing lifestyle of urban population during 1950s with separating the private and general use areas inside the house¹⁶. The plans follow an axial order, respecting to their longitudinal orientation. General use areas are oriented towards the northern façade while service and private areas are facing the southern façade. The unit has balconies on both levels. The base level and the first level relate each other via the gallery space, therefore Cinnah 19 also differs from its contemporaries with the open plan it utilizes.

Nejat Ersin's earlier design experiences with different scale works (furniture design to residential and public buildings) were influential in the interrelated design of different elements of Cinnah 19 apartment with its tectonic and



Figure 3. Nejat Ersin, Cinnah 19 Apartment Block, Duplex unit plan schema © Nejat Ersin (plan schema redrawn by Emre Dedekarginoğlu, Deniz Can)

spatial details. While his design approach interlinks the lower scale details with the upper scale layout of the building, the design attitude of Cinnah 19 gained a holistic structure; each element referencing one another from mailboxes to building numbers, fireplaces to stair railings, mosaic wall claddings to entrance canopy.

The periodic conditions of 1950s Turkey caused problems during the construction of the building. The lack of availability or variety in materials and utilities, and economic restrictions led to alternative on-site solutions. Ersin mentioned that cement tiles (*karo-siman*) for the apartment had been designed and produced because of the scarcity in the building materials¹⁷¹⁸. Similarly due to the lack of plumbing fixtures; kitchen sinks and bathtubs were produced via marble. The grilles on the façades were produced in rectangular shapes for convenience. Ersin implied the hardship he had faced during the manufacture of the grille even in basic rectangular forms¹⁹..

Social Facilities

Roof terrace level (**Fig. 4**) is another important trait of Cinnah 19 which provides facilities like swimming pool, American bar, chimney, solarium areas, changing rooms and washrooms to the residents with a remarkable vista of Ankara. Ersin remarked that since all the landowners had been architects and engineers, he wanted to create a social place for residents to socialize and party and he especially elaborated on the swimming pool²⁰²¹. The pool was constructed 0.40 meters above the floor level, with 11 meters length and 4.5 meters width and 1 meter depth. With the same design manner, ground floor is assigned as a communal open space for the residents. In the early sketches of the building, it is seen that Ersin planned swimming pool to be located on the ground floor, but later it was re-visioned to the roof terrace level. The ground floor of the apartment forms a relation with the surrounding garden and provides a base for



Figure 4. Nejat Ersin, Cinnah 19 Apartment Block, Terrace view with pool and chimney © (Emre Dedekarginoğlu, Deniz Can)

interaction with the nature to its residents. These communal areas were direct depictions of the modern daily life Ersin mounted for the residents of Cinnah 19.

Unfortunately, the facilities both on terrace and garden have been out-of-use for a remarkable time, as the active usage period lasted only fifteen years due to the polio pandemic²². Since then, the apartment block has seen a serious transformation of house units turning to commercial offices and de-functioning the social areas. Today only half of these units are still being used for housing, and other has been re-purposed as art galleries, associations, and commercial offices²³.

4. Conclusion

Cinnah 19 Apartment Block was designed and constructed in a period, when international modernist approach has penetrated to the architecture scene in Turkey. Henceforth it has been one of the conspicuous modernist architecture examples in Ankara with its functionalistic approach, longitudinal and perforated façades, modular duplex housing units, roof terrace swimming pool and prepotent linear canopies. While the architect, Nejat Ersin was highly influenced by pioneering modernist architects of the period, the limited opportunities in both building materials and construction process led to creative design decisions, which gave the building it's unique characteristics. Design approaches used in Cinnah 19, such as modular housing units, terrace roof, communal areas on the roof along with a swimming pool, became the first example for residential buildings in Ankara, which depict a new modern lifestyle for the residents via its private and communal layout. The apartment block also promoted the use of open-type plan which presented more fluid and compact character in terms of housing design, which has been abandoned in current housing trends due to commercial concerns. The fact that the building was built as a cooperative for architects and engineers, and Ersin's involvement in every stage, from the preliminary design to the construction renders Cinnah 19 as a meticulously constructed architectural work.

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- 21 Architect Nejat Ersin lived in number 9 for over a decade, while Necdet Dağ, the assistant architect of Cinnah 19 lived in Number 11.
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- 23 The Architects Association 1927, which is the first independent association in architecture profession in Republic of Turkey, moved to Cinnah 19 building in 2013. Master Architect Nejat Ersin was one of the members of the association. In 2018 a collection of materials that carries the traces of Ersin's professional life were donated to the association by his family. Nejat Ersin Archive in Architects Association 1927 consists of hand drawn project sheets, project notes, photographs of his projects and daily life, and the materials he used. The archive could be accessed from association's website.

Exploring Modern Interiors in Mozambique

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Global dissemination of values of modern architecture after the end of the Second World War favoured the development in Mozambique of a modernist vocabulary based mainly on three common denominators: attention to climate, emphasis on formal plasticity, and integration with the different artistic expressions in a search for a total work of art.

While the first two issues have been discussed, from a greater to a lesser extent, in specialised literature, few studies have addressed the third point and those that have, have mainly focused on the outer expression. This paper seeks to overcome such a knowledge gap by considering interior design as a fundamental aspect of the dialogue that established the modern architecture of Mozambique with other forms of visual art. With this purpose, three interiors are presented: the projects for the Standard Totta Bank carried out by architect Pancho Guedes; the headquarters of the *Instituto de Crédito de Moçambique*, with an interior design drawn up by architect Carlos Veiga Pinto Camelo; and the subsidiary of the *Banco Nacional Ultramarino* for the Mozambican capital, whose architectural project was developed by José Gomes Bastos with the collaboration of several plastic artists.

The choice of these case studies is not accidental. All of them were commissioned by banks that found in interior design a way to consolidate their corporate image at that time. In this, spatial relationships were emphasised through the harmonious integration between various materials and artistic expressions: from marbles, wood, steel, and ceramic tiles; to furniture, lighting fixtures, typographies, mosaics, murals, paintings, and sculptures. An integration that demonstrates how the different arts actively participated in the creative process that led to the consolidation of modern architecture in Mozambique, not only in its outer expression, but also in its inner one.

1. A vocabulary between architecture and other visual arts

The global dissemination of values of modern architecture, particularly after the end of the Second World War, favoured the development of new and interesting processes of interpreting supposedly universal models in totally different geographies and cultures. Among them was Mozambique, where the development of a modern architectural vocabulary supported the accelerated process of growth and urban renewal that took place in this territory during the second half of the 20th century, under the Portuguese colonial regime.

Inspired by the lexicon of Latin American modernism and the work and ideas of Le Corbusier,¹ among others, this vocabulary was consolidated through three common denominators, obviously with its particular differences: attention to climate requirements, which allowed the conformation of a vast and creative repertoire of passive design solutions; emphasis on formal plasticity thanks to the technical and structural capacities of reinforced

concrete; and integration with the different visual arts, which enhanced both the formal exterior expression and the interior design.

While the first two issues have already been discussed, from a greater to a lesser extent, in specialised literature, this paper focuses on the third point: the search for an integration between the arts. This integration or pursuit for a total work of art, in connection with the concept of *Gesamtkunstwerk*, was already sought in the avant-garde movements of the early 20th century with De Stijl and Bauhaus being probably one of those who best materialised this quest. In Latin American modernism, contamination from the different visual arts to architecture was also a recurring theme, with the Brazilian and Mexican examples being some of the most representative ones.

In the case of Mozambique, this dialogue occurred in continuous intersection with the search for formal plasticity and climate integration, thus constituting one of the richest pillars in the consolidation of the modern architecture of the country. This dialogue already existed in traditional architecture, where graphic representation of abstract patterns or scenes of everyday life on the walls of houses was very common.² However, with the development of modern architecture, this integration took on a different character thanks to the active participation of the most diverse local artists in the creative process of the projects. These artists were in sync with contemporary artistic currents to which elements of the African imaginary were frequently added. Their contributions to the architectural design was the result of the close relationship they had with the architects of the moment. The friendship between painter Malangatana Ngwenya Valente³ (1936–2011) and architect Pancho Guedes (1925–2015) is already well known, with the latter becoming a patron of the first in the 1960s. Permanent collaborations also took place between plastic artists António Quadros⁴ (1924–1983) and Jorge Mealha⁵ (1934–2021) and the members of the architectural atelier A121, João José Tinoco (1924–1983), António Matos Veloso (1921–2014), and Octávio Rego Costa.⁶ It is also noteworthy the constant contribution of Jorge Garizo do Carmo⁷ (1927–1997) in the work of his brother, architect João Garizo do Carmo (1917–1974), and in those of other professionals in the sector.

Through these collaborations and many others, the vocabulary of modern architecture in Mozambique achieved its maximum richness. A richness that is reflected beyond the outer envelope on which most studies on the issue have focused. In interiors, it is also possible to find numerous and outstanding examples of this search for a total work of art. In particular, bank branches projects constitute, among the different architectural programs developed during this period, one of the clearest examples of this search.

At a time of rapid economic growth, driven by the new policies promoted by the *Estado Novo* regime, Portugal's colonial dictatorship, after the beginning of the anti-colonial wars,⁸ banking institutions became an important component of the expansion process of the colonial presence in Mozambique. New banks were created and new branches opened at an accelerated pace, making

these institutions look at interior design to consolidate their corporate image and add value to their buildings. Therefore, this paper explores three of these examples to demonstrate the importance of going beyond volumetric and façade analysis when studying the formal expression of Mozambique's modern architecture.

2. Forty-eight banks in blue and white

The first of these examples are the projects that the renowned architect Pancho Guedes carried out for the Standard Totta bank. This family of projects, which included forty-eight bank branches spread across the entire territory of Mozambique, were normally restricted to some renovations made to the interior spaces that the institution rented. As the spaces were all different, there was a need to unify their image with the bank's corporate image. For this, it was decided to use white marble countertops, dark, thick, and heavy hardwood front desks, and the same doors and light boxes.⁹

Based on these principles, the architect carried out in the 1960s the renovation of the main headquarters of the bank in the Mozambican capital, Maputo (formerly Lourenço Marques), a neoclassical building from the early 20th century. There, efforts were concentrated in the main access atrium, for which the architect carefully designed the lights, doors, and all kinds of furniture and later integrated them into the interiors of other agencies belonging to the same institution.¹⁰

However, it was with the use of extensive geometric murals made in the colours of the bank logo, blue and white, that the interior design of these spaces was completely unified. An admirer of Mexican mural painters, such as José Orozco or Diego Rivera, Pancho Guedes used, in many of his buildings, murals made of ceramic panels or local stones.¹¹ This was the result of his posture as an architect, an architect–artist with an enormous dedication to painting and sculpture that was continually mixed in his work in constant reciprocity between the different arts.¹² In fact, for him, “architecture, sculpture and painting are one language with an endless alphabet. Their words which they borrow from each other are ideas, dreams and gestures; lines, forras, colours, volumes and time”.¹³ And because of that, he claimed, in one of his most reproduced visual manifestos, “for architects the rights and liberties that painters and poets have held for so long”.¹⁴

This way of thinking was reflected in his extensive work in Mozambique, where plastic and artistic intervention contaminated the entire project process, being considered not only as a decorative element but as a form and expression of the architectural design. This is evident in the dimension and presence assumed by the murals inside the Standard Totta banks. Whether covering completely the wall of the atriums or the desk services and working areas, these murals adopted different geometries starting from the same family of patterns and, in some cases, deviating from it and becoming

more complex by incorporating elements of the local culture such as masks, weaving patterns, jewellery, etc.¹⁵ With this, the architect managed to achieve the goal of generating an image that would allow all users to identify the bank in any part of the Mozambican territory while creating interiors of unprecedented visual expression due to the combination of blue and white with the inventiveness of his patterns (**Fig. 1**).

3. A bank in brushed steel

In the case of the interior of the headquarters of the *Instituto de Crédito de Moçambique* (Credit Institute of Mozambique), located in present-day Maputo, the emphasis was given mainly to the design of the furniture and other functional elements such as lighting fixtures, litter bins, typesetting, etc. This was a meticulous project, in terms of detail, carried out by architect Carlos Veiga Pinto Camelo (1930–2020) in 1972.

The design principle adopted here was based on the idea of creating a unified language using brushed steel throughout all the elements. Therefore, this material was used on counters, railings, furniture, exterior canopy, signs, and some walls, combined with glass on windows and exterior doors, marble on the floor and other walls, and wood on crown mouldings and ceilings. The neutrality of these materials created the perfect setting for the red tones of the chairs whose design was made by the architect himself, taking the work of Le Corbusier and Bauhaus as a clear reference (**Fig. 2**).

The ceiling lamps and the sculpture in the hall, on the other hand, were designed by Jorge Mealha, in close collaboration with the architect, also in brushed steel as determined by the general guideline of the project.¹⁶ In this way, the image of the *Instituto de Crédito de Moçambique* was consolidated through a rich and consistent work in which each element was treated as a piece of art.

4. A bank or an art museum?

As the last case study, the subsidiary of the *Banco Nacional Ultramarino* (Overseas National Bank) for the Mozambican capital is itself a paradigmatic example. Its architectural project was determined by the need to create a building capable of symbolising the functional and institutional role played by the bank in the economic and ideological framework of the *Estado Novo*. With these requirements, the author, architect José Gomes Bastos (1914–1991), conceived between 1954 and 1964 a rational and monumental building in its exterior volume with an interior defined by the synthetic integration of various artistic works of the most representative visual artists of the time.

For the selection of the works, it was decided to give priority to locally based artists chosen by direct invitation of the architect or through a contest. This



Figure 1. Pancho Guedes, Murals designed for the Standard Totta bank, Mozambique © Guedes, *Pancho Guedes*, 70.



Figure 2. Carlos Veiga Pinto Camelo, Instituto de Crédito de Moçambique, Maputo, Mozambique, 1972, entrance hall. © Camelo, *Carlos Veiga Pinto Camelo*, 164–165.

allowed the building to be filled with the most varied artistic contributions. On the ground floor, a large marble mural by Francisco Relógio (1926–1997) filled the 80 m length of the northeast wall of the public service area while a 30 m² painting by Jorge Garizo do Carmo decorated the lateral tympanum of the dome that covered the service desk, and three bronze sculptures by Maria Manuela Madureira (b. 1930) were exposed on the main atrium. At the southeast top of the first floor, there was a large oil painting by José Freire. The second floor, where the administrative sector was located, was defined on its southeast wall by a decorative panel by Jorge Garizo do Carmo, while the monumental spiral staircase that connected the basement with this floor was framed by a 300 m² Byzantine-style Murano glass mosaic designed by Estrela Faria (1910–1976). On the third floor, one of the walls of the employee's association ballroom was enhanced by an oil panel by Malangatana Valente Ngwenya while the library displayed a painting by Bertina Lopes (1924–2012). Outside, the exterior wall of the main entrance was covered with a bas-relief polychromatic ceramic panel designed by Querubim Lapa (1925–2016). Other

artists who exhibited on the walls and rooms of the bank were Rolando Sá Nogueira (1921–2002), João Ayres (1921–2001), Dana Michahelles (1933–2002), Araújo Soares (1927–2007), João Paulo (1928–2012), José Pádua (1934–2016), among others.¹⁷

Through the superimposition of these works throughout the entire building, the subsidiary of the *Banco Nacional Ultramarino* in the capital of Mozambique became some sort of “museum” in which the integration of artistic works together with the use of very rich cladding materials such as marble and wood served to enhance the institutional character of the bank (**Fig. 3**). It is, therefore, the most paradigmatic example of the trend already observed in the previous cases: that of enriching and decorating bank buildings with pieces of modern art in the service of the colonial agenda of the *Estado Novo*.

5. Conclusions

Through the exploration carried out in this paper, it has been possible to verify how interior design was especially significant in the creative process that led to the consolidation of the vocabulary of modern architecture in Mozambique. In this, spatial relationships were determined by the search for a total work of art where various materials and artistic expressions were harmoniously integrated: from marbles, woods, steel, and ceramic tiles; to furniture, lighting fixtures, typographies, mosaics, murals, paintings, and sculptures.

Today, given the intense process of urban renewal that the country is witnessing, the enhancement of this idea of integration between the arts, which is not only a product of modern architecture as mentioned before, has special relevance for the affirmation of Mozambique’s urban identity. For this reason, this paper emerges as an appeal for historical and critical research in architecture to try to identify the paradigms of modern interior design as a new element to be taken into consideration when building a debate on the country’s cultural heritage.



Figure 3. José Gomes Basto, Banco Nacional Ultramarino, Maputo, Mozambique, 1964, entrance hall and public service area with the mural of Francisco Relógio and the glass mosaic of Estrela Faria. © <https://delagoabayworld.wordpress.com/2018/08/26/sobre-a-sede-do-banco-nacional-ultramarino-em-lourenco-marques-inaugurada-em-1964/>

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Notes

- 1 Ana Magalhães, "Modern Movement Migrations: Architecture in Angola and Mozambique (1948–1975)", *Athens Journal of Architecture*, 2018, 32.
- 2 Sandro Bruschi, Júlio Carrilho and Luis Lage, *Era uma vez uma palhota: História da casa moçambicana*, Maputo, Edições FAPF, 2005, 36.
- 3 Malangatana Ngwenya Valente was initially trained as a painter at *Núcleo de Arte*, a local artistic organization located in the Mozambican capital. In 1960 Pancho Guedes offered him a space in his house so that he could set up his atelier and encouraged him to make a journey of personal discovery through the interior of the country. In 1961 his first solo exhibition took place coming to be regarded as "one of the first African painters". Alda Costa, "Artistas de Moçambique. Olhando para si próprios e para o mundo", *Third Text Africa*, 2018, 29–30.
- 4 António Quadros, trained as a painter, settled in Mozambique in 1964 where he collaborated as a teacher at *Núcleo de Arte* in addition to dedicating himself to painting, poetry, theatre, and architectural drawing. "Antigos Estudantes Ilustres da Universidade do Porto – António Quadros", accessed on January 20, 2022, https://sigarra.up.pt/up/pt/web_base.gera_pagina?P_pagina=1005984
- 5 Jorge Mealha was trained as a visual artist at *Núcleo de Arte*, having initially dedicated himself to the areas of interior decoration, ceramics, and sculpture. "Lagos lamenta morte do escultor e ceramista Jorge Mealha", accessed on January 20, 2022, <https://www.sulinformacao.pt/2021/01/lagos-lamenta-morte-do-escultor-e-ceramista-jorge-mealha/>
- 6 Elisiário Miranda, *Liberdade e Ortodoxia: Infraestruturas de arquitetura moderna em Moçambique (1951–1964)*, Minho, Universidade do Minho, 2013, 84.
- 7 Jorge Garizo do Carmo was originally trained as an architect. However, his professional activity in Mozambique was marked by his work in the fields of decoration and plastic arts: ceramics, sculpture, painting, and graphic arts. Miranda, *Liberdade e Ortodoxia*, 89.
- 8 With the start of the anti-colonial war in Angola in 1961, and its subsequent extension to Guinea Bissau (1963) and Mozambique (1964), Portugal adopted a series of measures to strengthen its presence and influence over the colonial territories. Measures, such as the promotion of migration from the mainland, the opening of the "overseas territories" to foreign investment and the infrastructural modernization of colonial spaces, that led to a great economic growth, especially in Angola and Mozambique.
- 9 Pedro Guedes, *Pancho Guedes – Vitruvius Mozambicanus*, Lisboa, Museu Coleção Berardo, 2009, 233; Miguel Santiago, *Pancho Guedes: Metamorfoses espaciais*, Casal de Cambra, Caleidoscópio, 2009, 64–65.
- 10 Santiago, *Pancho Guedes*, 81.

- 11 Magalhães, "Modern Movement Migrations", 40.
- 12 Santiago, *Pancho Guedes*, 94.
- 13 Pancho Guedes, *Manifestos, Papers, Lectures, Publications*, Lisboa, Ordem dos Arquitectos, 2007, 74.
- 14 Guedes, *Manifestos, Papers, Lectures, Publications*, 146.
- 15 Guedes, *Pancho Guedes*, 233.
- 16 Carlos Veiga Camelo, *Carlos Veiga Pinto Camelo 1957–2002*, Águeda, Veiga Camelo Arquitectura Lda, 2003.
- 17 Miranda, *Liberdade e Ortodoxia*, 359–362.

Adopting models, constructing values: The case of PRIMA department store in Split, Croatia

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Sigfried Giedion considered the department store a merely utilitarian building type. According to him, the department store emerged as “a new building problem apparently governed solely by practical considerations.” This paper presents the case of the PRIMA department store in Split and provides insight into the post-war emergence and development of department store typology in Croatia, where due to the unique socio-political context and contrary to Giedion’s considerations, its utilitarian function was far surpassed. This paper analyses the architectural features and urban qualities of the PRIMA department store, as well as its socio-political meaning. By tracing the lineage of PRIMA’s design influences, the paper explores how this utilitarian ‘Western’ commercial typology was appropriated and adapted to the local conditions of the then-socialist society. Namely, the local post-war emergence of the department store building type was strongly linked to the set of political, social, and economic reforms implemented in Croatia (which was a part of Yugoslavia at the time) during the 1950s, which induced the shift from state socialism and a planned economy towards a self-governing and so-called “market” socialism. In this political shift, department stores gained an instrumental role. They were planned and financed as part of the public infrastructure, just like kindergartens, schools, hospitals, and sports facilities.

The PRIMA department store embodied all the modern trends in shopping architecture: fully glazed windows, lighting and air-conditioning technology, interior organization and display techniques, escalators, and the new treatment of the façade, but its design discourse and aspirations somewhat greatly from its Western model. The design of the PRIMA department store was unencumbered with the dictate of profitability of the commercial contents, which affected the design of commercial facilities elsewhere; it was defined by an awareness of the department store as a project of social significance.

1. Introduction: shopping à l’Yugoslavien

When the PRIMA department store ceremoniously opened in Split in November 1966, citizens flocked to marvel at it. According to the local newspapers, many representatives of the local political and cultural elites attended the opening ceremony and as many as 30.000 people visited PRIMA on the first weekend it was open for business. The sheer scale of interest required police intervention, as the saleswomen were afraid that shop windows would break due to overcrowding, and the weekend’s profits exceeded all expectations.¹

The amount of interest was no surprise considering that PRIMA was the first department store in Split and among the first ones built in Croatia (which was a part of Yugoslavia at the time) after the Second World War. Only four years later, in 1970, Croatia would have 13 department stores, and the number would rise to 60 a decade later.² Not long after, the eminent Croatian art historian Duško Kečkemet would comment: "I heard it proudly proclaimed at a municipal assembly that the department stores in our towns were as the temples and cathedrals of yore. Indeed, can any buildings other than the spacious, well-lit and lively department stores and supermarkets hold as many regular visitors, dictate the entire flow of pedestrian and vehicle traffic, stand out with respect to their position and dimensions, be frequented even when no shopping needs to be done, just for the pleasure of wandering, keeping warm and enjoying the fruits and achievements of the consumer society?"³ Kečkemet's words correspond to the image of any postwar Western society and there would be nothing unusual about them if Kečkemet was not writing about Yugoslavia, a socialist country, where – one would expect – the consumerist values springing from the desire to possess were contradictory to the ideological foundations of a socialist society.

Such a paradoxical relationship with consumerism was one of the many peculiarities of the Yugoslav political system, which was unique in comparison to those of other socialist Eastern Bloc countries. Namely, following his rift with Stalin in 1948, the Yugoslav president Tito initiated the transition of the Yugoslav society from Soviet-type state socialism to self-governing socialism, a unique, experimental version of socialism which the Yugoslav authorities believed to be more authentic and closer to the ideological tenets established by Marx. The development of this type of self-governing socialism entailed a multitude of socio-economic reforms aimed at opening up to the West and, among other things, creating a unique model of a socialist consumer society. As a significant aspect of the state measures which were bringing Yugoslavia's planned economy closer to a market one, citizens' consumption was politically and strategically encouraged. The reasons for this were, firstly, its economic aspect and role in the perpetuation of a market system based on production and consumption and, secondly, its social and political facet. Namely, as part of the new Yugoslav lifestyle, the comforts of consumerism and shopping contributed to the realization of the Program of the League of Communists of Yugoslavia, which, as of 1958, had proclaimed that "the happiness of the individual is the highest goal of socialism".⁴

In the 1960s, fostered by the skilful foreign affairs manoeuvring between the East and the West, the Yugoslav economy flourished and the standard of living increased, as well as the availability of certain products. However, there was a shortage of adequate places where the citizens could spend their money. The new architectural type of the department store was soon presented as the solution to this shortage. Unlike in the West, where these structures were primarily built by private enterprise, the network of department stores in

Yugoslavia was strategically planned, publicly funded, and treated as social infrastructure.

Designed by Antun Šatara, the PRIMA department store in Split is a point of reference that embodies all the political and social aspirations of the times, while, from an architectural standpoint, it is an example of a successful local adaptation of a modern international model.

2. Adopting models

The strengthening of Yugoslavia's ties with the West also enabled personal contacts between Croatian architects and the leading figures on the international architectural scene, which proved to be the most effective way of transferring architectural knowledge and ideas.⁵ One such contact was crucial to the realization of the PRIMA department store project. Namely, in 1957, PRIMA's architect Antun Šatara, then attending his final year of studies in Zagreb, got an internship in the Van der Broek and Bakema studio in Rotterdam. He pointed to this professional experience, as well as the experience of postwar Rotterdam, as the defining moment in the development of his career and especially significant for the PRIMA department store project.⁶ In 1961, after he returned from Rotterdam and began working for the Urban Development Bureau in Split, he was awarded the assignment of designing a department store and had to manage regardless of the fact that there was no adequate literature or existing projects in Yugoslavia to rely upon. He therefore drew inspiration from the commercial spaces which he had personally experienced in Rotterdam, primarily the Lijnbaan commercial centre designed by Van den Broek and Bakema, and the Bijenkorf department store designed by Marcel Breuer.

Lijnbaan shopping centre

The spatial context of the PRIMA project seems remarkably analogous to the one of Lijnbaan and Bijenkorf. Just like the Lijnbaan and the Bijenkorf had been a major part of the postwar reconstruction of the war-torn Rotterdam city centre, the Prima department store was built as part of the postwar expansion of Split's historical centre and became a crucial element of its revitalization and modernization.⁷ The original study of the expansion of the Split city centre was made in 1958 by architect Berislav Kalogjera, and Antun Šatara joined in developing the study in 1959. In keeping with the widely circulated concepts of The International Congresses of Modern Architecture (CIAM) and the International Union of Architects (IUA), Kalogjera developed his idea of the expansion of the city centre from the premise of pedestrian life. He designed a long pedestrian promenade stretching from one end of the city (the historical centre) to the other (the planned city limits). As the new pedestrian area was to be partly incorporated into the historical

tissue and bring about a change of function, scale and form, the intention behind its design was to retain a certain level of spontaneous improvisation of the historical core, which is why it was ultimately envisaged as a system of successive and interchanging open spaces and experiences.⁸ The final version of the plan of the expansion of the city centre, published in 1961, after Šatara had joined its development, reveals a conceptual shift to some motifs of the Lijnbaan: canopies appear, the higher structures setting back from the street line, while the lower ones occur on the inner core thus forming shaded passages and more intimate, human scale.⁹ (Fig. 1)

The original study divided the new centre into three parts – the cultural centre in the Theatre Square, followed by the business and commercial centre, and the administrative centre as the northern part. According to the study, the only planned department store, the one at the corner of the Theater Square, was supposed to mark the entrance into the commercial area.¹⁰ However, when the director of *Jadrantekstil*, the socialist commercial giant who had been looking for a representative sales venue, personally urged for the building of the department store, it was moved to an even more attractive location: it was transposed opposite the building of the national theater, to the location originally planned for a concert hall. In the further course of the construction of the promenade, even more structures were replaced with commercial ones, and as many as four department stores were eventually built instead of the planned one.

De Bijenkorf and the American department store type

"Essentially, a department store is a big empty box built around a central circulation core, with the walls closed to provide ample storage." Marcel Breuer, 1957¹¹
"This was where I first saw a department store. In our country, it was unimaginable that a department store might contain all that the Bijenkorf did. Clearly, I picked up everything I could from it and, as it happened, all that I saw there proved useful." Antun Šatara, architect of PRIMA, 2019¹²

The model of the "big empty box" described by Breuer first appeared in the United States in the 1930.¹³ Up until then, department stores were extravagantly designed, with characteristic glazed light courts surrounded by open galleries, with fenestrated façades, monumental staircases, large public entrances, luxurious materials and decorations.¹⁴ After the economic collapse of 1929, American investors were looking for a more affordable and commercially viable model. They found it in the closed-type department store with a fully artificially ventilated and illuminated interior. The windowless façades also had a practical purpose – the large wall surfaces could be used to display goods and protect them from discoloration caused by direct natural light.¹⁵

It is precisely this American type that Marcel Breuer had transposed to Rotterdam with the Bijenkorf department store,¹⁶ which, in turn, inspired the design work of Antun Šatara. All the key features of the type are present in

the PRIMA department store: the open plan with a centrally placed staircase and escalator, a fully artificially ventilated and air-conditioned interior, predominantly closed façades. The department store was also designed to



Figure 1. Berislav Kalogjera, The project for the expansion of the historical city centre, Split, Croatia, 1961.
Credits: State Archives in Split.

contain a cinema hall with the most sophisticated projection technology at the time. (Fig. 2)

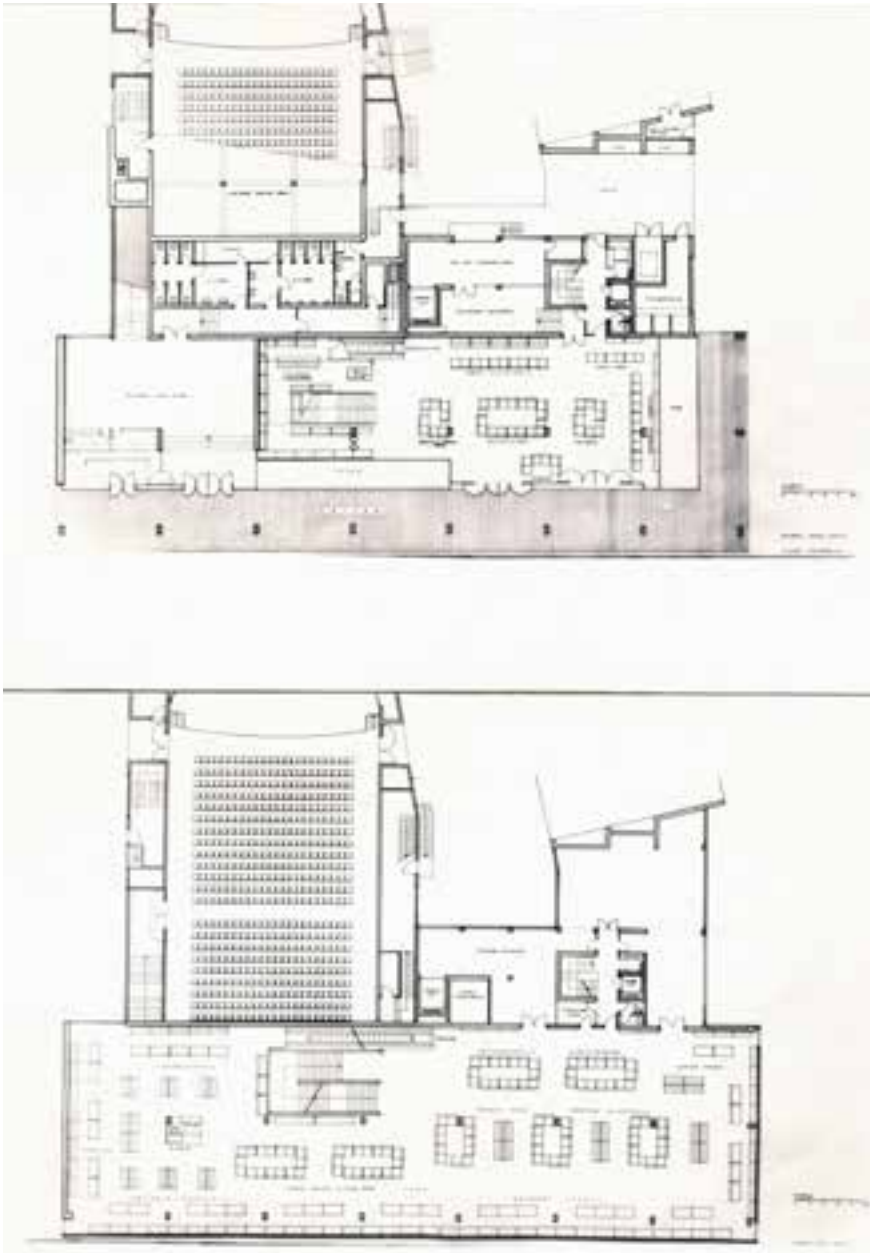


Figure 2. Antun Šatara, PRIMA department store, Split, Croatia, 1966, ground floor and the first floor plan. Credits: State Archives in Split.

Nevertheless, despite of the evident analogy, Šatara carefully adapted the design of the PRIMA to the characteristics of the location. For example, a direct parallel can be drawn between the two department stores with respect to the design of the ground floor. Just like the Bijenkorf, PRIMA's ground floor is fully glazed, recessed, with a shaded space in the front. However, apart from the fact that this design follows the urban-planning concept from the project of the expansion of the city centre, this shaded space also has an additional function. Namely, Šatara believed that, in the context of a sales venue and the tradition of the Mediterranean city life, this space should become an external extension of the department store, a place for contact with passers-by. Therefore, the shaded space in front of the entrance was envisaged and used for open-market sales. The specific features of the local adaptation of the adopted model are also reflected in the design of the façade. Just as in Rotterdam, the material used for the façade is stone. While in the case of the Bijenkorf the reasons for such a design decision are not entirely clear,¹⁷ in Split stone was part of the local building tradition, present *in situ* in the nearby structures and sourced from numerous local quarries. Moreover, unlike Breuer's design, in which the homogeneous treatment of the façade surfaces is applied to ensure that there is no single representative façade,¹⁸ in the case of the PRIMA, the façade facing the square is clearly emphasized as the representative one. Its monumental character and proportions correspond to the existing public and cultural buildings on the square, the church, and the national theatre. **(Fig. 3)** As opposed to the representative and distinct façade facing the square, the one facing the street is proportioned and adapted to



Figure 3. Antun Šatara, PRIMA department store, Split, Croatia, 1966, exterior view from the Theatre Square. Credits: Antun Šatara.

those of the adjacent buildings. Šatara's intention to treat the façade, not as a compact volume, but as a series of planes is evident, particularly in the design of the corner detail. (Fig. 4)



Figure 4. Antun Šatara, PRIMA department store, Split, Croatia, 1966. Credits: Antun Šatara.

Furthermore, even though the decision to construct a closed façade was quite consistently implemented, Šatara did not abandon the modernist doctrine of connecting the interior with the exterior. Apart from the glazed ground floor, this connection was also realized on the department store's top floor, which was intended for the sale of furniture and therefore, mostly used as a display area, without the inevitable shelves lining the walls. This floor was glazed using continuous windows across the entire story's facade, which served to establish a visual connection with the square. The design also provided for a bar on the top floor, with a beautiful view of the Theatre Square. The interior was designed with great care and attention. In cooperation with Šatara, the interior design was the work of Bernardo Bernardi, a prominent Croatian architect who was renowned for his sophisticated and highly aestheticized interior design of public buildings. For the PRIMA, Bernardi studiously planned the display of the sales items and designed a comprehensive equipment system for this purpose.

Still, the department store model with predominantly closed façade proved controversial for the local actors. The representatives of *Jadrantekstil*, the future management of the department store, opposed this solution rather

strongly. Unfamiliar as they were with the technology of modern department stores, they did not take well to the idea of artificial ventilation and air-conditioning, and even considered the escalators to be unnecessary. They called these amenities superfluous Western novelties that would needlessly drive up the cost of construction. The architect was, therefore, heavily pressured to change the design and even denounced for irresponsibly spending public funds, which was a very serious accusation from the political standpoint.¹⁹ Interestingly, the decision to use stone for the façade was also criticized, although it was in line with the local tradition, rather than a mere Western technological innovation. It was believed that modern materials, such as glass and steel, would have been better suited to the progressive spirit of the new commercial structure. However, Šatara did not cave under pressure. The investment was publicly funded and the representatives of *Jadrantekstil* were unable to exert their influence and have the design changed. Nevertheless, all the criticism subsided when the construction was completed and PRIMA department store opened to public, especially when in 1966, the architecture of PRIMA secured its author a prestigious professional award, the Republic *Borba* Award.

3. Concluding note

PRIMA department store demonstrates the transposition of an American department store type to socialist context of Yugoslavia and local context of Split. Bijenkorf department store, however, seems to have served as a mediatory object in this transposition. The fact that the Bijenkorf department store served as a model for PRIMA, albeit related to the personal history and experience of its designer Antun Šatara, seems not to be random at all. Among its main features, the aspect of its conspicuous monumentality, which Šatara has adopted in PRIMA, may be considered as crucial aspect in understanding how this Western typology was transplanted into a socialist context. Namely, it is precisely its monumentality and civic identity that amply embodied the political aspirations of the socialist reality – department store as a public building and representation of a successful Yugoslavian state. At the same time, PRIMA serves as an interesting showcase of the local adaptation of the international model. While striving to fit into the surrounding historical context, with its materials, proportions, spatial and dimensional relations to adjacent buildings, the PRIMA department store decisively demonstrates its authenticity.

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Notes

- 1 "Foto-žurnal s otvaranja prve robne kuće: Milicioneri čuvaju 'Primu,'" *Slobodna Dalmacija*, November 28, 1966.
- 2 Igor Duda, *U potrazi za blagostanjem: O povijesti dokolice i potrošačkog društva u Hrvatskoj 1950–ih i 1960–ih* (Zagreb: Srednja Europa, 2005).
- 3 Duško Kečkemet, *Borba za grad: Urbanističke, arhitektonske, spomeničke i ekološke teme starog i novog Splita* (Split: Društvo arhitekata Splita, 2002).
- 4 Igor Duda, "Jugoslavija u europskom društveno-gospodarskom kontekstu," in *Nikad im bolje nije bilo? Modernizacija svakodnevnog života u socijalističkoj Jugoslaviji*, ed. Ana Panić (Beograd: Muzej istorije Jugoslavije, 2014), 13–15.
- 5 Tamara Bjažić Klarin, "CIAM Networking—International Congress of Modern Architecture and Croatian Architects in the 1950s," *Život umjetnosti*, no. 99 (2016), 40–57.
- 6 Antun Šatara in discussion with the author, December 2019.
- 7 The idea of expanding the city centre originated from the awareness that the historical centre was too small to accommodate all the central functions of a socialist industrial metropolis.
- 8 Berislav Kalogjera, "Idejna studija gradskog centra," *URBS*, 1961, 9–32.
- 9 "There were many discussions with Kalogjera on how to create pedestrian areas that would be characteristic for the Mediterranean. Many of the Italian cities that I'd visited had these colonnades, rather long ones too, because, overall, life in the Mediterranean was lived a lot more on the streets than inside the houses, and the colonnade was a convenient area, as it provided shelter both from the sun and the rain, bad weather. In the modern sense, I found the spaces of Lijnbaan very inspiring, as the city had just been built and I had visited it often while working in Bakema's studio in Rotterdam." Antun Šatara in discussion with the author, December 2019.
- 10 In 1961, when Šatara was first commissioned for the design of a building on the location of the concert hall, the program provided for cinema, offices, and a small department store.
- 11 "Bijenkorf Project," *Time Magazine*, June 3, 1957:74.
- 12 Antun Šatara in discussion with the author, December 2019.
- 13 For an elaborate analysis of Marcel Breuer's approach to department store design and his Bijenkorf project in Rotterdam, see Evangelia Tsilika, "The Creation of Civic Identity in Postwar Corporate Architecture: Marcel Breuer's Bijenkorf in Rotterdam, 1953–1957," in *Shopping Towns Europe: Commercial Collectivity and the Architecture of the Shopping Centre, 1945–1975*, ed. Tom Avermaete and Janina Gosseye, 2017, 183–195.
- 14 Ibid., 184–185; Meredith L. Clausen, "The Department Store – Development of the Type," *Journal of Architectural Education* 39, no. 1 (1985), 20–29.
- 15 "The need for windows on the upper floors [...] was obviated with two new support systems: air conditioning and fluorescent lights. [...] Sunlight could discolour merchandise and open windows allowed in noise and dirt." Richard Longstreth, "Sears, Roebuck and the Remaking of the Department Store, 1924–42," *Journal of the Society of Architectural Historians* 65, no. 2 (2006): 238–279. See also Tsilika, "The Creation of Civic Identity in Postwar Corporate Architecture: Marcel Breuer's Bijenkorf in Rotterdam, 1953–1957," 184–185.
- 16 Tsilika, "The Creation of Civic Identity in Postwar Corporate Architecture: Marcel Breuer's Bijenkorf in Rotterdam, 1953–1957," 186–191.
- 17 According to Tsilika, the choice to use stone was due to this material's capacity to endow the building with a monumental character, which was in tune with the ambition to form a civic identity of a building. Tsilika, "The Creation of Civic Identity in Postwar Corporate Architecture: Marcel Breuer's Bijenkorf in Rotterdam, 1953–1957," 192.
- 18 Ibid., 191.
- 19 Mario Vidjak (Jadrantekstil) to Budimir Pervan (Urbanistički biro), *memorandum*, 20 December 1965.

S05

Evolution of the internationalisation of modern design: a look at the beginnings, its development and crisis

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The following collection of research papers provides a chronological sequence of the process of internationalisation that the Modern Movement underwent in the post–World War II period, as well as particular and little–publicised points of view and experiences, forming a simultaneously panoramic and fractal view of this globalising development.

Borrowing words from Kenneth Frampton¹, in many respects the International Style was little more than a convenient phrase denoting a cubistic mode of architecture which had spread throughout the developed world by the time of the Second World War. Its apparent homogeneity was –however– deceptive, since its stripped planar form was subtly inflected so as to respond to the different climatic and cultural conditions that this architecture was facing in its global expansion. Although it tended as a general rule towards the hypothetical flexibility of the free plan, preferring skeleton frame construction, as it was anticipated in the Le Corbusier’s white ideal villas of the late 1920s machine aesthetic of Purism. This predisposition became formalistic where specified conditions, be they climatic, cultural or economic, could not support the application of advanced light–weight technology.

Moreover, the constant formal cross–references between the architects of this period point to a variety of sources from which the supposed homogeneity of the International Style was initially derived. The paper “James Speyer’s Master’s Thesis: Studying Domestic Architecture under Mies”, by Zaida García–Requejo and Kristin Jones, takes up this diversity of influences on which the internationalisation of the Modern Movement relied from the outset, as well as the unquestionable leadership exercised by the masters in the initial phases of the expansion of Modernism. Through the reflections contained in the thesis “The Space Concept in Modern Domestic Architecture.” submitted

in September 1939 by James Speyer, Ludwig Mies van der Rohe's first graduate student in Chicago, the authors approach a critical architectural thinking of this initial period of the international expansion of the Modern Movement. The thesis deals with the analysis of three cases developed by three masters of modernity: Frank Lloyd Wright, Le Corbusier and his mentor, Ludwig Mies van der Rohe. James Speyer's conclusions, heavily nuanced by the influence of a Mies who had recently settled in the United States, reveal the feeling of a time of the emergence and dissemination of ideas.

After the Second World War, the need to rebuild a Europe severely affected by the disasters of the war would be the framework in which the consolidation of the internationalisation of a modernity based on more efficient and necessarily economic solutions would be achieved. The paper "Ettore Sottsass, architect", by Beatriz Martínez Lauwers, takes us back to this moment in which Italy, under the economic protection of the Marshall Plan, implemented a developmentalist policy around the 1950s that had its greatest exponent in the INA-Casa Plan massive construction of housing. Economic restrictions, adaptation to local building traditions or to pre-existences were combined with formal experimentation and the use of new materials, generating imaginative solutions of unquestionable interest in both architecture and design. The analysis of the youthful work that the architect Ettore Sottsass (well known for his later contributions to the world of design) developed for the INA-Casa Plan is very illustrative of this process of international consolidation of the Modern Movement.

The political, sociological and psychological consequences of the war also had an aesthetic impact on the evolution of modern design. The loss of unshakeable faith in the inevitably beneficent workings of machine-age civilization would leave its mark in the abandonment of the initial formal approaches of the modern movement, which began to move away from smooth, machine-wrought, planar surfaces, set within an articulated structural frame, towards an increasingly vernacular form. The Classical envelope of purist form was abandoned in favour of an architecture based on the expressive force of the tectonic element. This gave rise to the pragmatism of the Brutalist aesthetics that Team X was to champion and which was to have a decisive international impact in its assimilation of contradiction and confusion. By the late 1950s this revision of the International Style had expanded its influence globally, as the paper "Brutal Aesthetics Effects in Post-War Turkey: Experimental Interior Spaces" by Ozlem Balci-Ozturk underlines. The paper focuses on the particular development of Brutalism in Turkey, a Mediterranean country but with introverted structures due to cultural codes, analysing the design of spaces characterised precisely by this introverted character: the atrium and the courtyard.

At the beginning of the 1960s, modern architecture and design were beginning to show signs of exhaustion despite having managed to become hegemonic through, among other contributions, the wide repercussion of the postulates of the International Congresses of Modern Architecture. The paper "Housing in

the city: Is this the best we can do? Reflections on housing in the Architectural Forum during the post-war era", by Ignacio Urbistondo Alonso, culminates this journey by looking at the historical moment in which the death of the Modern Movement has been established, not without a certain lack of critical consensus. Through the analysis of United States publications from the mid-1960s, the work conveys the spirit of an era in which the sign of the times had sentenced an architecture that had achieved universality and faced the need to seek alternatives capable of dealing with the new social and architectural approaches.

Notes

- 1 Kenneth Frampton, "The International Style: Theme and variations 1925-65", in *Modern Architecture. A critical history*, (London: Thames and Hudson, 1980), 248.

Brutal Aesthetics Effects in Post–War Turkey: Experimental Interior Spaces

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Turkey was not a part of the Second World War. Due to its intercontinental location, it has been affected by post–war social, economic, and cultural transformations. One of these is the new architectural approaches. International Style, which was effective in Turkish Architecture in the 1950s, was replaced by the revisions of Modernism in parallel with the developments in the 1960s. In this period, which Goldhagen describes as an interregnum between an expiring modernism and dawning postmodernism, experimental designs emerged under the influence of Brutalism in Turkey. The absence of Turkish architectural examples in the publications on Brutalism in the world architectural literature constitutes the originality of this study. Turkey, which is a Mediterranean country and at the same time has an introverted structure due to cultural codes, has unique examples. The examples handled with the theme of introversion are divided into two groups as atrium and courtyard interior designs. Turkish History Association and Turkish Language Institution are involved in the study with two important atrium designs. Turkish History Association exhibits a Brutal aesthetic with the folded plate concrete construction on the atrium roof and the natural materials in the interior. Accordingly, the atrium of Turkish Language Institution has Brutalist influences through the coffered concrete ceiling, the shape of stairs, and the folded glass surface. Middle East Technical University Faculty of Architecture and Istanbul Market–Complex have different Brutalist interior experiences with their courtyards. The courtyard of the faculty provides experimental living spaces with the exhibition of structure, the using of raw materials, and works of Art Brut. Market–Complex has a Brutal aesthetic value with its raw concrete open courtyards and spiral vertical circulation elements. This study presents an intercontinental example of the expansion of global currents combined with cultural diversity. It also examines how Brutalist tendencies are interpreted in Turkey and expose experimental examples.

1. Introduction

Turkey was not a part of the Second World War, but it was affected by the social, economic, and cultural transformations that developed after the war due to its intercontinental position. One of the areas where this impact is felt most is the new architectural approaches. Mid–century modernism, called “pluralizing modernism” by Goldhagen, appears with different identities.¹ At this point, modernism develops a plural character around issues of regional, social and individual identity without a fundamental departure from the basic convictions of the Modern Movement.²

In the second half of the 20th century, similarly, in parallel with the political developments in Turkey, “democratization” began in the architectural environment and an atmospheric in which many styles could exist at the same time came to exist. In this period, Rationalism–Purism, Brutalism, and the search for independent forms, which originated in Europe due to external factors, were styles that came together.³ Brutalist examples in Turkey are influenced by Team X, L. Kahn and Japan.⁴

Turkey, which is a Mediterranean country and at the same time has an introverted structure due to cultural codes, has unique Brutalist examples in this context. The examples to be handled with the theme of introversion are divided into two groups as atrium and courtyard designs. The identical feature of the examined atriums and courtyards is that they have a permanent image in the memory. As Banham points out, all great architecture has been conceptual and has created an image.⁵ Material and structure in the atrium samples and image objects in the courtyard samples are the striking points of this impression. Other principles that Banham considers when describing Brutalism are the use of raw materials and the clear exhibition of structure.⁶ On the surfaces that make up the interior of the atrium and courtyard examples, the materials are used as they come from the source and the structural elements are clear exhibition.

Experimental interior examples handled within the scope of the study have an architectural understanding that is unique to Turkey as well as exhibiting the universal criteria of Brutalism. While the spatial formations took the point of departure from the traditional codes, the interior designs were shaped under the influence of Brutalist aesthetic principles and set an example for the localization of Brutalism. This study examines how Brutalist tendencies are interpreted in Turkey and aim to expose experimental examples that have not yet appeared in the relevant literature.

2. Experimental courtyard designs

Istanbul Market Complex

Designed by D. Tekeli, S. Sisa, and M. Hepgüler, the complex was built between 1960 and 1967. The complex⁷, which was placed on the module system, tended to a mass scheme consisting of pieced blocks while being placed among the small-scale historical texture.

Inspired by the understanding of the historical bazaar complex where tradesmen coexist, courtyards and a common area for users were formed in IMC. D. Tekeli states that there are an oriental modesty and avoiding show-off in their design.⁸ Along with this simplicity and introversion, traces of the culture of life can be seen in the courtyard in the Market Complex.

This urban search, which aims to integrate the complex with the scale and texture around it, is similar to the Smithsons shift of their interest from the Independent Group to Team X and with that from the artistic to the urban.⁹

The plan setup of IMC is “cluster”, which is one of the concepts that Team X has brought into the discussion (**Fig. 1**). Similar to “streets in the air”, another concept introduced by Team X, circulation is provided between streets at different elevations and a visual relationship is established in IMC.¹⁰ S. Sisa states that in their design approach, they emphasize what kind of effect the created spaces will have on the visitors, both from the outside and from the inside.¹¹ In this context, it provides different space experiences for the user with the atmosphere created especially in the interior space in the Market Complex.

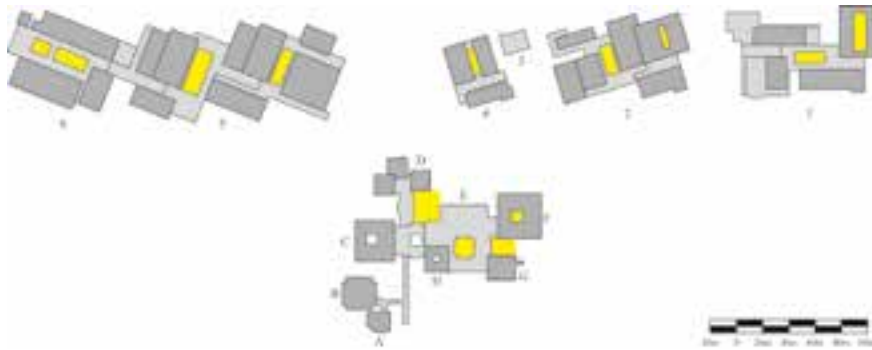


Figure 1. On the top: Doğan Tekeli, Sami Sisa and Metin Hepgüler, Market Complex, Istanbul, Turkey, plan topology and courtyards; at the bottom: Altuğ Çinici and Behruz Çinici, Faculty of Architecture, Ankara, Turkey, plan topology and courtyards. © Ozlem Balci–Ozturk.

The complex, consisting of six blocks, was designed with eight inner courtyards of different sizes. The structure is evident in the courtyards where the columns and beams are not hidden. The courtyards differ according to the form of the vertical circulation elements. These openly displayed staircases create an image value for the courtyards (**Fig. 2**). This situation is the result of a conscious approach. S. Sisa states in an interview that they try to put an image in each of their designs and that this image is formed by itself. According to him, the image is a phenomenon that increases the belonging that connects the user and the building.¹² In the courtyards where the raw materials are used, the spiral staircases are completely made of exposed concrete. Raw concrete and steel materials are used together in the balustrades of the floor halls facing the courtyards. Similarly, the surfaces of the floors facing the courtyard are raw concrete. Even though the concrete surfaces are painted, it is still possible to see the traces of wood mold.

There are many plastic works in the complex, which is a successful example of the post-war architecture-art dialogue.¹³ In the first design that came to life, plastic works of art, raw concrete furniture and landscape elements in the courtyards were the elements that strengthened the Brutalist effect. However, many of them have not survived to the present day. The marble fountain

belonging to Y. Görey in the courtyard of the second block is still standing today, but the lower platform of the statue was buried in the floor as a result of the elevation of the courtyard floor. The artist traced an architectural form in this work of Marmara marble. The raw concrete seating units in the first design of this courtyard and the square-shaped raw concrete flower pot are also exhibited like a sculpture. The elements that make up the courtyard are almost like parts of a whole, derived from the ground. Floor slabs and balustrades facing the courtyard increase the spatial effect with their exposed concrete surfaces.

Middle East Technical University Faculty of Architecture

The faculty building, the first of the Brutalist practices in Turkey, was designed by B. Çinici and A. Çinici. The Faculty of Architecture, which was started to be built in 1962, was completed in 1963 and became the first building of the campus to become operational.¹⁴ B. Çinici states that they look for inspiration in their own resources while designing¹⁵, and the design approaches at the faculty of architecture blended European rationalism with traditional codes in a modern way.¹⁶ According to E. Kortan, the effects of the Japanese school are clearly seen in the garden and furnishings of the building.¹⁷ The plan scheme of the faculty building, which develops horizontally and is created by articulating the courtyards, can be considered together with the “mat building” approaches of Aldo van Eyck and Team X. Each cluster is made up of interrelated small units, and each cluster is also linked to other clusters (**Fig. 1**).¹⁸

In the plan, spatial availability is provided with small or large inner and outer courtyards instead of corridors. There are four open courtyards to be discussed in the context of the study and two of them are semi-open and the other two are closed courtyards. Semi-open courtyards are public and can be accessed from outside the faculty, while closed courtyards only serve faculty units.

Closed inner courtyards allow the school, which is located in a large area, to integrate more with the green and receive more light, as well as allowing sculpture and plastic works and their exhibitions.¹⁹ The enclosed courtyard in the L block is the focal point of the mass diagram and clusters the exhibition hall and faculty rooms around it. The courtyard is organized in such a way that it can be used for exhibitions when necessary. There is pool plastic in the middle of the courtyard, which is 1 meter below the ground level and descended from the exhibition hall with two different stairs. The pool adds image value to the courtyard. Traces of wood mold can be seen on the exposed concrete walls surrounding the marble-paved square courtyard. The gargoyles on the walls are also exhibited by being transformed into sculptural objects in harmony with the building. The closed courtyard in the F block is surrounded by architectural studios and a green space arrangement has been made.



Figure 2. On the top: Doğan Tekeli, Sami Sisa and Metin Hepgüler, Market Complex, Istanbul, Turkey, February 2022, courtyard and spiral staircase; at the bottom: Altuğ Çinici and Behruz Çinici, Faculty of Architecture, Ankara, Turkey, February 2022, concrete benches and table. © Ozlem Balci-Ozturk.

The first of the semi-open courtyards is on the entrance axis and is located between blocks D and E. Located between the student studios, this courtyard features a natural stone water bowl, white concrete seating units, and brick wall elements that define the landscape. The water bowl has not survived. The second half-open courtyard is located between blocks G and F. This courtyard, which is directly connected to the canteen, is the most heavily used. Moving concrete stools and long concrete benches and tables that derive from the ground are the defining images of this courtyard (Fig. 2). The exposed concrete surfaces on the walls defining the courtyard increase the Brutalist effect. The gargoyles on the walls

and the water collection units below are also made of raw concrete and have turned into a viewing object and form a whole with the courtyard.

3. Experimental atrium designs

Turkish History Association

The Turkish History Association, which was built between 1951 and 1967, presented a successful solution to both the introversion of traditional design and the material and form of harmony with its environment.²⁰ Its architects, T. Cansever and E. Yener tried to organize the interior courtyard motif, which was known and used in Anatolia from Antiquity to the Ottomans, as a three-storey interior and to reconstruct the syntax of the regional and historical tradition (Fig. 3).²¹

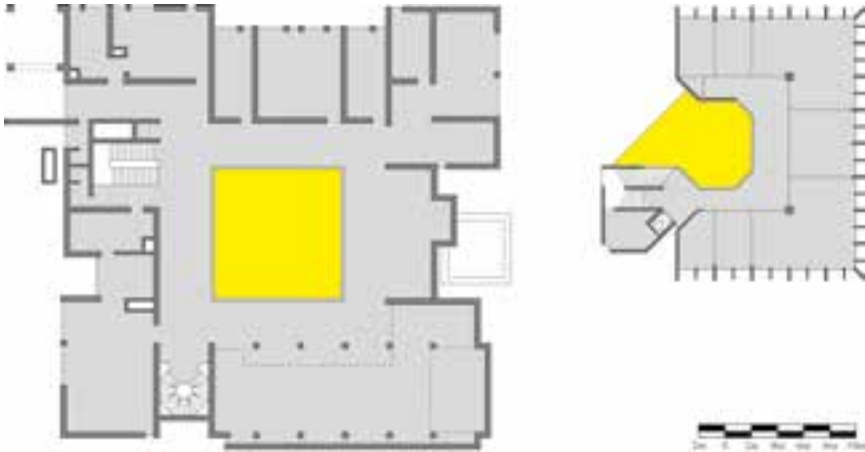


Figure 3. On the left: Turgut Cansever and Ertur Yener, Turkish History Association, Ankara, Turkey, plan topology atrium; on the right: Cengiz Bektaş, Turkish Language Institution, Ankara, Turkey, plan topology and atrium.
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The roof of the atrium consists of folded plate concrete and its structure is displayed. Although the plates, which were exposed when they were first formed, look painted today, traces of wood mold are still visible (**Fig. 4**). The design started with the idea of using raw concrete, construction finicalness was sought in Le Corbusier's Swiss Pavilion and Auguste Perret's structures, so N. Çakırhan worked on the concrete works of the building.²²



Figure 4. On the left: Turgut Cansever and Ertur Yener, Turkish History Association, Ankara, Turkey, February 2022, atrium; on the right: Cengiz Bektaş, Turkish Language Institution, Ankara, Turkey, February 2022, atrium.
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All floor halls face the atrium in the building, which has an inward spatial layout. There is a lattice cover on both sides of the atrium. These lattices, which are a metaphorical use of traditional façade elements, add an image value to the structure with the overhead lights scattered through the skylights.²³ In the atrium, stone, marble, wood, and concrete materials are fairly displayed using their raw form. The balustrades facing the middle hall have unique detail, combining wood and marble.

One surface of the middle hall, which has a very flexible setup in terms of ground-floor use, is limited to the conference room. When the velvet curtains separating the hall and the conference room are removed, the ground floor usage area expands and a holistic foyer is obtained for exhibitions. In addition, when the glass surface of the conference room is opened, integrity with the garden is provided. Unfortunately, today these dividers have been changed and converted into a fixed element.²⁴ Each space on the ground floor are art objects, and the statue of Atatürk by sculptor Josef Thorak and the marble altar are images that enrich the atrium.

There are wooden table and chair sets designed specifically for the building in the 1st and 2nd-floor halls. There are also wooden ottomans placed in a niche on the wall on these floors. The sofa on the 1st floor has been converted into a bank today. The site-specific wooden furniture is located in the library unit and meeting room and has survived well-preserved.

Turkish Language Institution

The Turkish Language Institution, the construction of which was completed between 1973–1978, has a monumental quality with its prismatic mass and the emphasis of the vertical concrete plates on the facade. The separation of the stairwell and the service nucleus from the main mass and obtaining a plastic impression of their own are successful examples of Brutalist aesthetics (**Fig. 3**)²⁵. The vertical circulation can be clearly noticed from the outside and is clearly displayed as a dominant character in the interior. The unity of expression in both the volume and the inner central space of the building gives the building a symbolic effect.²⁶

C. Bektaş includes the principle “structural openness and transparency” when talking about the principles of his architecture.²⁷ In the light of this principle, the institution-building clearly exhibits its structure and materials both externally and internally. Coffered concrete ceilings are the most important factor that makes the Brutalist emphasis in the interior. There are traces of mold on the concrete surfaces of beams, floors and walls. While the atrium creates image value with its clearly exposed structure and striking form, the stairs increase this value by continuing along the floors (**Fig. 4**). The atrium is lighted from one side by a full-length glass panel. The joinery of the office units is made of wood. In the halls of the office floors facing the atrium, the railings are also made of concrete and the handrails are wooden.

The foyer of the conference hall is reached by going down a ladder from the entrance hall on the ground floor. The doors of the conference hall, the cloakroom, and the handrails of the stairs leading down to the foyer are made of wood. Local wooden furniture is also located in the library unit, which is accessed from the ground floor. As in the Turkish History Association, there is a bust of Atatürk describing the atrium.

4. Conclusion

Brutalism in Turkey inspired many designs between the years 1960–1980. First of all, in these buildings, the principle of honesty in materials was given importance, followed by the clear exhibition of the structure and having an image value. Brutalism, which has spread on a global expansion, has made its place in Turkey simultaneously with the world examples. This is an important proof that the current is applied by assimilation without being “imported”. This assimilation combined with cultural codes and created examples of the local diversity of Brutalism. Within the scope of the study, this diversity was examined through interior spaces; experimental interior samples have been documented. The interiors under the titles of courtyard and atrium were interpreted through three principles of R. Banham and Brutal aesthetic principles were tried to be revealed through intercontinental geography.

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James Speyer's Master's Thesis: Studying Domestic Architecture under Mies

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James Speyer, Ludwig Mies van der Rohe's first graduate student in Chicago, submitted his thesis in September 1939, which was entitled "The Space Concept in Modern Domestic Architecture." This thesis is a rarity within the program, as it does not solve an architectural problem, but instead deals with a typological analysis. Speyer analyses three cases developed by three masters of Modernism, Frank Lloyd Wright, Le Corbusier and his mentor, Ludwig Mies van der Rohe. The premise of this paper is that the selection of examples built by each of them, the analysis, and the criticism done by Speyer under Mies's supervision can provide clues about Mies' own vision of these houses.

After finishing his studies, Speyer developed a reputed professional career, in which his unique approach to residential designs and renovations played a large part. Not only his study of housing, but also the influence of Mies's architecture and his own passion for art, are visible in some of Speyer's best-known projects, such as the Benjamin Rose House in Highland Park. This presentation seeks to deepen the study on James Speyer's impact on modern housing ideas and design by revealing for the first time the analysis of architectural space he carried out under Mies through the work of three masters of Modernism and connecting this space concept with his own architecture, thus demystifying and highlighting one of the key aspects of Mies's legacy at IIT.

1. Introduction

A. James Speyer was born in Pittsburgh in 1913 into a family passionate about painting and furniture.¹ Initially, he decided to study architecture in his hometown, graduating from Carnegie Institute of Technology in 1934. Dissatisfied with the Beaux-Art architecture program, however, he decided to spend most of the three following years in Europe where he attended both London's Chelsea Polytechnic and Sorbonne in Paris. Other important background in his approach to the Masters' modern architecture was his friendship with Edgar Kaufmann Jr., whose father commissioned Frank Lloyd Wright's design, and also with the Hungarian architect László Gabor, who was invited to the U.S. by the Kaufmanns to modernise the department store in Pittsburgh. These friendships made it possible for Speyer to connect with New York's Museum of Modern Art Director, Alfred H. Barr, Jr., and Curator of Architecture John McAndrew, and, through them, Walter Gropius, the founder of the Bauhaus who Ludwig Mies van der Rohe would succeed as last director

before emigrating to Chicago. Speyer applied for graduate work at Harvard where Gropius taught, but after being accepted, he decided instead to study under Mies, who had been appointed director of the Architecture Department of the Armour Institute of Technology in Chicago.²

Within the framework of the conference "Modern Design: Social Commitment & Quality of Life," specifically within the thematic area "Post-War. International Expansion," this communication explores the study on housing that James Speyer developed during his years as a graduate student in Chicago and the influence that this apprenticeship had on the architecture he developed after the War.

2. The space concept in modern domestic architecture

When Mies arrived at the Armour Institute, classes were held at the Art Institute and architectural training there was based on the Beaux-Arts. However, Mies and his former Bauhaus colleagues, Ludwig Hilberseimer and Walter Peterhans, together reformulated the undergraduate and graduate programs.³ Speyer described the difference between Mies' teachings and his previous experiences:

*The essential [sic] of Mies's curriculum was always from simple to complicated. You first learn how to use your tools, the pencil, pen, paintbrush, or the crayon, and then you learn how to draw, whether freehand or mechanically... Then you study construction...from simple construction to more complicated construction.*⁴

Speyer completed his graduate studies with the submission of his master thesis on September, 16th 1939, becoming the first student graduating in the Master of Architecture after Mies' arrival.⁵ The thesis, entitled "The Space Concept in Modern Domestic Architecture," does not solve an architectural problem but features a comparative analysis of housing projects of the three Masters of Modernism: Frank Lloyd Wright, Le Corbusier and Ludwig Mies van der Rohe.⁶

The thesis is signed by Walter Peterhans as a supervisor and by Mies as the Head of the Department (**Fig. 1**). The 36 written pages are divided into five chapters: an introduction on The Space Concept in Modern Domestic Architecture; then three chapters of analysis, each of them dedicated to a Master; and a final chapter of conclusions and comparison. The final comparison is illustrated by 7 exteriors and 3 interior images of selected works. In the introductory chapter, Speyer reviews the main construction materials and typologies of housing – from load-bearing walls in brick or stone and light wooden structures to new typologies in steel and concrete – putting them in relation to different ways of living and the relationship with the rural or urban environment. He highlights the importance of those who are able to imagine something new, as opposed to adhering to established conventions–



Figure 1. A. James Speyer, "The Space Concept in Modern Domestic Architecture", Armour Institute of Technology, 1939. © University Archives and Special Collections, Illinois Institute of Technology.

the reason he dedicates his study to the three mentioned masters– "each of these men has contributed enormously to the future progression of their common field. They differ, one from the other, in many points, but it will be seen that their goal is a common one."⁷

The first of the masters analysed is Wright. Speyer highlights the affinity of his architecture with the land. He admires the mastery of connecting one space with another and of these with the gardens using resources such as low ceilings, wide openings and partial walls. He considers Wright's approach to nature to be peculiar in that the views are filtered through architectural forms: "Nature enhances the building which, however, always remains sufficiently aloof to retain its dominance of the scene."⁸ This statement is supported by a description of how the parapets of the Kauffman House are distinguished from the irregular placement of the waterfall. This example also serves to emphasise the importance that roofs have in Wright's architecture:

*The roof, in fact, is of much less importance as a plastic member than as a means of playing with shade and light. Mr. Wright's use of light as a building element is of particular importance, and the roof treatment is one of the boldest manifestations of such an interest.*⁹

A comparison between Kaufmann and Robie Houses also serves to identify the difference in approach between a suburban and a country design. Speyer describes this difference saying that "in his suburban homes the pattern of light and shadow is arranged in usually quite an orderly, often symmetrical,

uncomplicated system; [meanwhile] in the country this system can become as irregular and informal as would be suggested by the terrain."¹⁰ This is the reason Speyer gives behind the precision of the plans and the carefully cut masonry units that make up Robie House. Speyer also highlights the fluidity of the interior space of the Robie House, one of the most outstanding characteristics of Wright's architecture according to Speyer, conceived not as a succession of closed rooms, but as a succession of interrelated volumes – of space.

The second master analysed is Le Corbusier. The first characteristic discussed is the different relationship between nature and architecture in Wright and Le Corbusier's works. Although affirming that the spaces are ordered in plan and they perfectly meet functional requirements, Speyer conceives Le Corbusier's architecture as *decorative*.¹¹ In this regard, although Le Corbusier is always viewed as an architect first, Speyer also identifies him as a painter and sculptor.

Speyer does not list what we know as "the five points of Le Corbusier's architecture," but he cites these features as the most distinctive of his architecture. Speyer identifies a break with tradition, first in that the building raised on stilts breaks the connection between the building and the earth, then that wide windows allow connections between inside and outside, and that the roof is reimagined with a new use as a garden. The best example that compiles all these characteristics, he claims, is the Villa Savoye, in France. This house, which also exemplifies Le Corbusier's mastery of reinforced concrete construction, conveys that "[his] art is not founded upon conventional doctrines of truth and nature. It is strictly a personal manifestation."¹²

The last and longest chapter before his conclusions is dedicated to Mies. Speyer highlights the lightness of his architecture, affirming that, of the three, Mies is the master who comes closest to eliminating the barriers between nature and man. He also states that the aesthetic principles in Mies's architecture do not change even as the materials of the projects do, from brick or concrete or steel. Also in Mies's architecture, Speyer finds the expression of the free and fluid space: "in his architecture the room gains a new significance. It is the element of a new conception; of a specifically spatial conception."¹³ Speyer also highlights the new definition of rooms with walls, which are now non-structural, and columns, which are not only important in terms of structure but also aesthetically. Even before projects such as Farnsworth House or Crown Hall were built, let alone conceived, Speyer had also identified proportion as a key feature of Mies's architecture, stating that "each article in a room has the same proportion to that room as each room has to the entire house, and as the house has to its garden and environment."¹⁴

In the case of Mies, the example that Speyer uses to demonstrate his statements is the so-called Court House, which was an architectural problem Mies used at the Bauhaus and at IIT.¹⁵ If Speyer identifies Le Corbusier as a master in the use of reinforced concrete, he considers Mies a master in the

use of steel. "He uses it in combination with other materials, but it is this metal alone, which enables him to achieve his results."¹⁶ This assertion made by Speyer in 1939 would be echoed by Mies years later and published in *Architectural Forum* concerning the Museum for a Small City.¹⁷

In the last chapter Speyer establishes a comparison between the three masters. He highlights the characteristics he considers most important of each architecture, illustrating them with interior and exterior views. First, he includes interior views of the living room of Frank Lloyd Wright's Martin House in Buffalo, to demonstrate a new opening up of rooms to the idea of free flowing interior space, which Speyer considers one of his greatest achievements; Le Corbusier's Row House, where the staircase and the balcony illustrate perfectly his sculptural forms; and a section of Mies van der Rohe's Pavilion in Barcelona that, although it is not a domestic architecture, is considered the perfect representation of his architectural principles where he clarifies the relationship between dividing walls and the steel frame structure, allowing the creation of a fluid space and the expression of a column's aesthetic qualities like material and texture (**Fig. 2**).

Secondly, exterior views further exemplify the difference between the three (**Fig. 3**). To highlight the sculptural effect in Le Corbusier's architecture, Speyer includes an exterior photo of two houses, at Garches and Poissy. Two exterior images are also used to express the mastery in creating an affinity between nature and architecture, Wright's home at Taliesin (East) and the Robie House. Although located in different environments, the two examples illustrate how "the house is scaled to man in height, to the land in breadth."¹⁸ In the case of Mies, apart from one exterior image of the Pavilion, Speyer uses images of the unbuilt brick and concrete country houses to make a connection between



Figure 2. Interior views of Wright's Martin House, Le Corbusier's Row House and Mies van der Rohe's Pavilion in Barcelona, in Speyer, "The Space Concept". © University Archives and Special Collections, Illinois Institute of Technology.



Figure 3. Exterior views of Wright's Robie House, Le Corbusier's House in Poissy and Mies van der Rohe's Pavilion in Barcelona, in Speyer, "The Space Concept". © University Archives and Special Collections, Illinois Institute of Technology.

Mies's and Wright's architecture in the way they connect, rather than separate, the building and the land, for example in the "low forms stretching so lavishly into the free surroundings of the buildings."¹⁹

Speyer's study is justified by its assertion of the importance of the arrangement of the spaces within a house, making use of modern means to answer the problems of practical and aesthetic human needs.²⁰ Although he states that none of the three masters should be emphasised above the other two – "Mies constantly bears this in mind," he says – Speyer finishes his report making what can be considered a strong statement in favour of Mies:

*Whereas Corbusier approaches architecture from the purely intellectual standpoint and Frank Lloyd Wright deplores intellectualism in architecture and claims that his buildings must be tied to, and derive from nature, the work of Mies van der Rohe reflects both attitudes.*²¹

3. James's Speyer contribution to domestic architecture

After graduating, Speyer served in the army from 1941 to 1946, returning to a teaching assignment as an assistant professor at IIT.²² During these years, the first of Mies's campus buildings had been completed, which, together with what he had already learned during his time as a student, greatly influenced his later professional activity. Also in 1946 he opened his own architectural office, recruiting IIT alumni, like George Danforth, William Dunlap, or Arthur Takeuchi, who similarly shared Mies's vision and principles. In Franz Schulze's words, it is possible to identify traces of his learnings under Mies in the first houses Speyer built in the Chicago suburbs and Pittsburgh.²³

Speyer's first major commission was the Harris House, built between 1947 and 1950 in Glencoe, Illinois. The final solution shows Mies's influences in the use of steel structure and brick and glass enclosures. It is possible also to identify subtle differences between the two, such as the red colour of the brick and the fact that structure was painted in white colour, and the autumnal palette of colours used in the furnishings of the house. Finally, despite the use of a curved element that houses the chimney, not common in Mies's American buildings, the connection between the Master's open plan and Speyer's arrangement for day spaces is evident.

The use of brick and glass enclosures, wide-flange steel elements, as well as the fluidity between spaces and their relationship with the exterior is also visible in his next project, the Sammet House, completed in 1952, and in the well-known Rose House, both built in Highland Park, Illinois. It is probably in the latest one that the triple influence of the masters analysed in his master thesis is best reflected (**Fig. 4**). The original unbuilt design included a two-story living room with mezzanine, where Franz Schulze finds a relationship with Le Corbusier's housing designs.²⁴ In the ultimate design, the day zone is conceived as one fluid space, being possible to separate the dining area

by a Ben Rose–designed curtain, rather than imposing walls. Finally, the central position occupied by the fireplace can be understood as reminiscent of Wright’s architecture. The freedom of the interior space as well as the connection with nature recalls both Wright’s and Mies’s housing. Speyer also used the strategy Mies had recently used in Plano: the house raised on pilotis separates it from the ground. On a snowy winter day, Mies’s Farnsworth House blends in with the snowy landscape that surrounds it; in autumn the brown colour palette blends Speyer’s Ben Rose House with the land on which it sits.

4. Conclusions

By analysing the graduate thesis of James Speyer on the different approaches in housing developed by the three masters of Modernism, we are now able to more clearly trace the origins of the visible reminiscences in Speyer’s work back to the collective development of a modern conception of space. The analysis suggests that characteristics of the three masters’ architecture which are found in housing projects built by Speyer in the early fifties, such as Wright’s relationship between architecture and the land, Le Corbusier’s sculptural interior and exterior, and Mies’s fluid interior space and the aesthetic qualities of structure, were not accidental, but consciously and thoughtfully pursued. Also from a broader perspective, the fact that Speyer’s thesis is signed by Mies as the Head of the Department, does suggest that his conclusions were, to at least some degree, agreeable to Mies and even could reflect some of the issues of greatest interest to the master and his pupil in looking toward the future. Finally, the analysis of Speyer’s architecture and its relationship with his master’s philosophy demonstrates the importance that

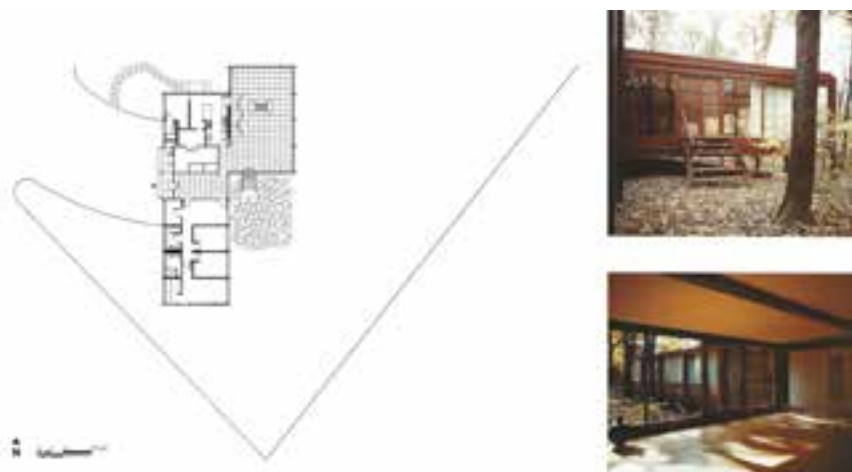


Figure 4. A. James Speyer, Mr. and Mrs. Ben Rose House, Highland Park, Chicago, United States, 1953, plan, exterior and interior views. © Harry Callahan in *A. James Speyer: Architect, Curator, Exhibition Designer*.

not only his built work but also Mies's teachings has had on future generations. The influence of these teachings can only be tested over the years, in the same way Speyer finishes his thesis saying that "their real contributions are not to be realised until some future date, when a retrospective view is possible."²⁵

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Notes

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- 3 Kristin Jones and Zaida Garcia Requejo, "Bauhäusler and the Second Chicago School of Architecture: Enduring Student Exercises", *The Plan Journal* 6, 1 (June 2021): 219–241.
- 4 Speyer, *Oral History*, 30.
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- 6 A James Speyer, "*The Space Concept in Modern Domestic Architecture*" (Master's Thesis, Armour Institute of Technology, 1939).
- 7 Speyer, "*The Space Concept*," 7.
- 8 Speyer, "*The Space Concept*," 10.
- 9 Speyer, "*The Space Concept*," 12.
- 10 Speyer, "*The Space Concept*," 13.
- 11 Speyer, "*The Space Concept*," 16.
- 12 Speyer, "*The Space Concept*," 20.
- 13 Speyer, "*The Space Concept*," 22.
- 14 Speyer, "*The Space Concept*," 23.
- 15 Although not identified explicitly, can be inferred.
- 16 Speyer, "*The Space Concept*," 26.
- 17 Ludwig Mies van der Rohe, "Museum for a Small City," *Architectural Forum* 78 (may 1943), 69–85.
- 18 Speyer, "*The Space Concept*," 34.
- 19 Speyer, "*The Space Concept*," 35.
- 20 Speyer, "*The Space Concept*," 5.
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Ettore Sottsass, architect

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Ettore Sottsass (14 September 1917, Innsbruck, Austria – 31 December 2007, Milan, Italy) is a renowned international design figure who acquired his fame in the 1980s through his work for the Memphis group (1981–1987) or the Sottsass Associati company (created in 1980). He also collaborated in industrial and product design for Italian firms such as Olivetti and Poltronova in the 1960s. In addition, he contributed to Radical Design, very much in vogue during that same decade and in later years. This period culminated with his prominent participation in the 1972 MOMA exhibition, Italy: The New Domestic Landscape. However, little is known about Ettore Sottsass' facet as an architect. His fame may have passed into posterity by defining him as a designer, artist, critic... etc, but Ettore Sottsass has always been and always will be an architect. By delving deeper into his career, we find a figure of great interest to study, whether it be for his architecture –centred around the human being and its way of inhabiting the world–, for his works influenced by the European, American and Latin American Modern Movement, or for the development of his philosophy on interior architecture. The communication studies the career of the architect through his –interior – architectural projects, focusing on the period after the Second World War. One of the least known and studied facets of Ettore Sottsass. We will discuss an architect whose work is fundamentally characterised by it having been designed by, and for, the user, as well as its evolution.

In short, the aim of the communication will be to go back to the architect's origins and study the events, experiences and first responses in order to understand the reasons and circumstances by which Ettore Sottsass became Ettore Sottsass.

1. Biographical Approach

In 1987 Ettore Sottsass introduced himself at the Metropolitan Museum of Art in New York as follows: *"Il mio nome è Ettore Sottsass. Sono nato in Austria, a Innsbruck, nel 1917. My mother was Austrian and my father Italian"*¹. The architect of Austro-Italian origin, better known for his artistic than for his architectural facets, received his formation at the Turin Polytechnic School of Architecture (1935–1939). He began his first professional activity alongside his father in the same city. During that time, they both became part of the Giuseppe Pagano group and collaborated to reconstruct a devastated country through the INA-Casa² projects, among others.

In the following years, once settled in Milan, he set up his first studio called "Studio" and began his collaboration with the *Triennale di Milano*. The 1950s saw the beginning of one of his most productive periods, not only at the architectural level, but also covering various areas from furniture design or industrial design with the Italian firms Poltronova or Olivetti. He also joined the world of publishing with his many publications in DOMUS magazine. In the

middle of that decade, he began his travels beyond the European continent, experiences that in the following years would lead the architect and his work to form part in the well-known radical architecture of the time. In the 1980s, Sottsass' best-known period today, founded Sottsass Associati (1980), with the subsequent birth of the popular Memphis group (1981).

In the last stage of his life, we find an Ettore more distant from creation and focused on architecture's philosophical and critical side, who will live out his last days in Milan in 2007.

2. La casa è un diritto

In 1945, we find a European continent in ruins with a devastated and starving population. After the brutal war, the countries of the old continent would begin to create alliances with each other. Governments should offer people job creation, provide social security and, in general, economic assistance to allow a rapid and as egalitarian recovery as possible. In addition, from the other side of the Atlantic, the United States would offer economic aid (Marshall Plan) to reconstruct the destroyed countries. Its objective was to halt the spread of communism and the search of new markets for the future. The country began to recover, more rapidly in the north than in the south, and reached its zenith between 1958 and 1963 during the period known as the *"Miracolo economico"*.

In 1949, with the help of the aforementioned Marshall Plan, the Italian Parliament passed the *"Provvedimenti per incrementare l'occupazione operaia, agevolando la costruzione di case per lavoratori"*, which was to form the basis of the INA-Casa Plan. The plan aimed to solve both the housing and unemployment problem on the peninsula.

Thus began fourteen years of massive reconstruction of a country which, as Paola di Biagi³ points out, would not only improve the living conditions of thousands of Italians, but would also provide an opportunity for experimentation and development of the architecture for the majority of Italian architects of the time. From those with a more established reputation to the youngest, who would have their first design experiences, as in the case of Sottsass. In 1945, the newly trained architect, together with his father, joined the group of architects led by Giuseppe Pagano, as mentioned above. They published a manifesto in the magazine *"Agorà"*, with a clear Corbusian intention, as Zanella⁴ notes, and in the same year they joined Bruno Zevi's association, L'APAO (*Associazione per l'Architettura Organica*). Zevi was one of the most representative figures of Italian Organic Architecture. These details are significant because they reflect one of the most representative characteristics of our architect, curiosity: *"Continuavo a cercare libri con informazioni su quello che succedeva o che era appena successo nel mondo, e nell'architettura, e nell'arte"*.

In this period, we find three Italian architectural trends: Neorealism, Neoliberty and Organic Architecture. Sottsass was nourished by all of them, and his first exercises were marked by multiple influences, as will be seen below.

From the late 1940s to the mid-1950s, Ettore Sottsass carried out a total of ten INA Casa projects throughout the Italian peninsula and Sardinia. Although the projects were highly conditioned, "*contaba il 'costo' a metro cubo e il numero delle stanze*"⁵, it is worth observing in detail the work of the young Sottsass in his early projects.

Foremost, the exhaustive study of the environment in which the project is designed is obvious. On the one hand, special attention to the landscape and the climatic conditions of the place will result in the uniqueness of each project. This feature, influenced by Organic Architecture, is translated, for example, in the Sardinian projects in the orientation of the facades of the building blocks to create air currents and combat solar incidence in summer. In *Villagio Operaio* 1948 project in Iglesias, which he designed with his father, it can be seen how the living and dining areas have large terraces that are open for many months of the year, creating an open-air day area where the boundary between inside and outside is blurred.

On the other hand, it is possible to observe the adaptation to the pre-existences and the autochthonous customs through the use of local materials and materials such as cement or reinforced concrete. One of the objectives of the INA-Casa plan, apart from the creation of housing, was the generation of employment. The construction of the projects was carried out entirely on-site, favouring the hiring of labour and rejecting prefabricated elements. Sottsass follows these guidelines when proposing the materiality of his works but goes a little further by reinterpreting or at least alluding to the architectural traditions of the place: "*L'ingresso, anch'esso semplice, ricorda volutamente certe arcaiche strutture monolitiche sarde, il loro statico peso, e la bellezza, che viene fuori da quel peso di pietra rozza e grossa*"⁶. The result between the reinterpretation of the vernacular architecture of the place, introducing elements of the local culture, together with the aesthetics of the International Style in details such as the absence of ornamentation on the façades or the use of *pilotis* freeing part of the ground floors, resulted in projects such as that of *Vignole* in 1952 or that of *Carloforte*, built between 1952 and 1953.

This respect for customs and traditions on the part of the architect, the special attention he paid to the study of the rituals of the inhabitants of the place, is reflected in gestures such as providing the communities with small vegetable gardens in the common green areas or in the proposal of several roads for different uses: for cars, pedestrians and even animals in those rural projects where these traditions were still the order of the day. It is worth noting, as Fusco tells us that the projects were conceived to recreate the atmosphere of a working-class neighbourhood or rural community. At the end the houses were occupied by the petty bourgeoisie or the proletarian elite rather than by those for whom they were originally intended.⁷

Secondly, it can be affirmed that one of the main themes of the designer was the search for privacy in communal life. Within these constructions in which there are numerous dwellings in a small space, the architect finds intimacy on

all scales. From the orientation of the buildings blocks on an urban scale, as in the projects for *Meina*, built between 1951 and 1953 and *Novara* in 1951, thus protecting the view from the outside, and at the same time breaking with the rigidity and 90° angles. This was a feature typical of most of the projects in the plan and common in rationalist architecture at the beginning of the century.

In this sense, the use of landscaping resources such as the projection of native trees in strategic or architectural locations, such as the provision of loggias that act as filters to the view and at the same time provide shade for the dwellings in the hot summers, is noteworthy. Likewise, the rule of always including a small terrace, or patio in the case of ground floor dwellings, which allows life outside, but with privacy, as can be seen, for example, in the *Gravellona Troce* project carried out between 1951 and 1952.

In the interior of the dwellings, he proposed an internal layout with two clearly differentiated areas: a daytime area where one could receive visitors and live together, separating it from a more intimate night-time area in which each room, despite its small size, had space for a bed, a built-in wardrobe and a small piece of furniture, thus creating a comfortable space of its own with everything essential. An excellent example of this is the plan of the INA-House project in *Codogno* in 1953.

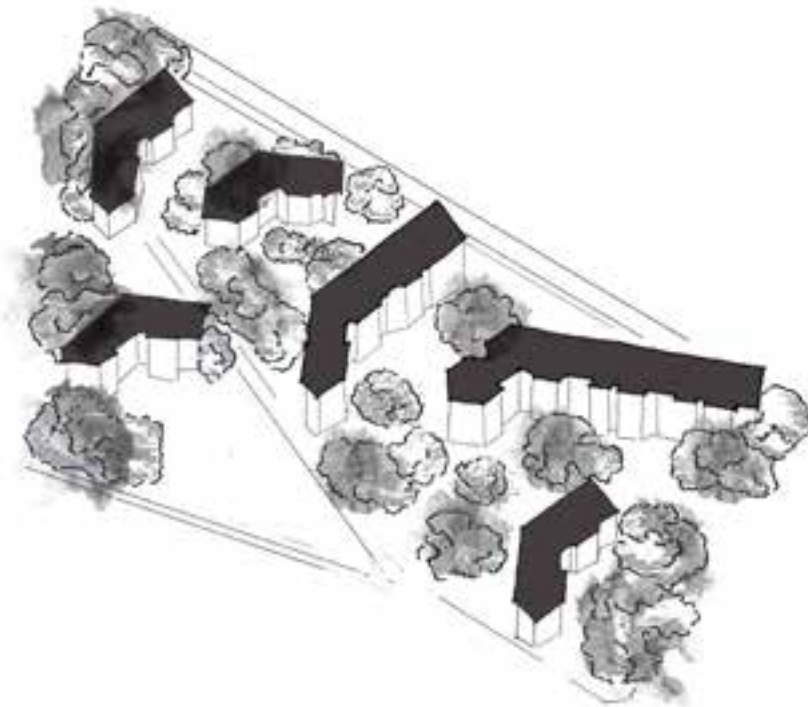


Figure 1. Ettore Sottsass' *Ina-Casa housing project*, Italy, 1950s. Urban and landscape general view.
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Thirdly and lastly, we see that the young Sottsass did not only focus on the construction of popular buildings. Since his beginnings, we can appreciate in his work an extraordinary sensitivity towards the inhabitant of the dwelling. Whether it is residential, commercial or office architecture, Ettore Sottsass's projects are emotionally charged architecture, as Boeri⁸ points out. This can be seen in fine details and features, such as in the *Meina* project. Here he distributes the different blocks of flats, creating a T and placing a large staircase in the centre of them as the main protagonist that connects them. As the architect himself tells us: *"È nato un edificio dove la vita all'aperto si svolge, diremmo, in compagnia, dove ciascuno vede gli altri salire e scendere le scale e dove ci si può salutare da un balcone all'altro così com'è nel costume italiano di salutarsi, di conoscersi, di trovarsi e di verdersi sempre."*⁹ This example brings to mind the resources of the great masters, such as that ramp and its iconic promenade, the star element in Le Corbusier's *Villa Savoye*. Another example that clearly shows this search to provoke feelings in the user is the creation of *"loggie filtranti"*¹⁰ from walls with ceramic elements that, apart from fulfilling their function, creates a play of light and shadow, projecting geometries on the walls. This resource can be found in projects such as *Arborea* and *Carloforte*, both built between 1952 and 1953.

4. Conclusions

*"You know why we became good at it? Because we added to all these things a political hope...you can call it ethical or political. In any case it declared loudly: let's remake the world"*¹¹. The architecture that developed in the post-war period, whatever its architectural current or building typology, was marked

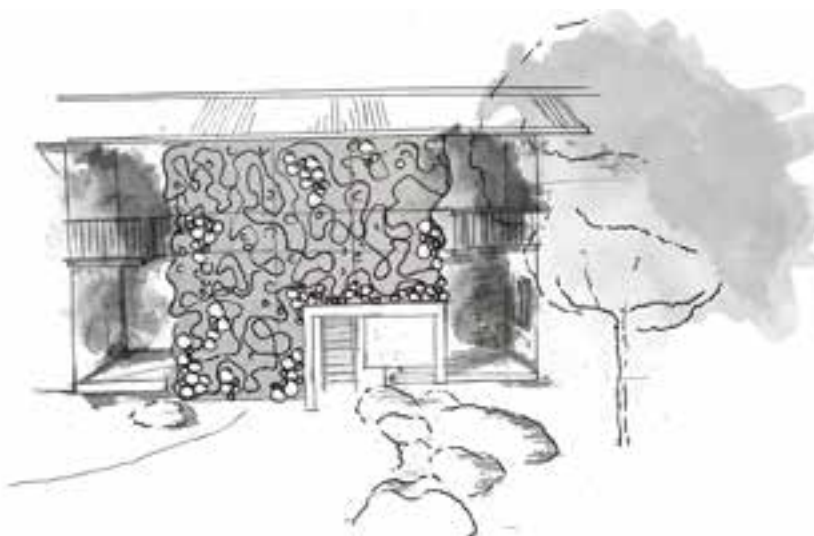


Figure 2. Ettore Sottsass' *Ina-Casa* housing project, Italy, 1950s. Front view. © Sketch by Beatriz Martinez Lauwers, 2022.

by an unbridled optimism and passion for life. It resulted in very interesting works and great advances. From his earliest work, the architect Ettore Sottsass showed a special attention to the human being and the activities that surround him/her. He established the domestic space as the main setting for his research. Although after this first stage the architect gradually moved away from what he referred to as *"architetture funzionali"*,¹² his first exercises would be marked by the influences of the great figures of 20th-century architecture and by the experience of the INA-Casa programme, which would form the basis of numerous future projects.

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Notes

- 1 Francesca Zanella, "Autobiografia e il mito di sé. L'archivio", From Catalogo ragionato dell'archivio 1922–1978 CSAC/ Università di Parma, Silvana Editoriale, 2017, 16.
- 2 Istituto Nazionale delle Assicurazioni (INA)
- 3 Paola di Biagi, professor of urban planning at the University of Trieste with publications such as "La grande ricostruzione. Il piano Ina- Casa e L'Italia degli anni cinquanta, Donzelli, 2001" among others.
- 4 Francesca Zanella, "Autobiografia e il mito di sé. L'archivio", From Catalogo ragionato dell'archivio 1922–1978 CSAC/ Università di Parma, Silvana Editoriale, 2017.
- 5 Ettore Sottsass, "Si ballava e ancora si sperava" From *Domus*. Vol. 4, 1955–1959, Sottsass, E. Fiell, E. Fiell, P. Spinelli, L. Taschen, 2006, 10–11.
- 6 Elisa Boeri, "L'esperienza Ina- Casa in Sardegna" From Catalogo ragionato dell'archivio 1922–1978 CSAC/ Università di Parma, Silvana Editoriale, 2017, 212–213.
- 7 Renato de Fusco, "Historia de la Arquitectura Contemporánea", Santa and Cole, Ed. 2005, 434.
- 8 Ibidem, 212–213.
- 9 Elisa Boeri, "Ina-Casa 1951–1953: l'esperienza piemontese" From Catalogo ragionato dell'archivio 1922–1978 CSAC/ Università di Parma, Silvana Editoriale, 2017, 208–209.
- 10 Elisa Boeri, "L'esperienza Ina- Casa in Sardegna" From Catalogo ragionato dell'archivio 1922–1978 CSAC/ Università di Parma, Silvana Editoriale, 2017, 212–213.
- 11 Giampero Bosoni, "Conversation with Ettore Sottsass", From *Il Modo Italiano. Italian Designs and Avant-garde in the 20th Century*, Milan, Skira Editore, 2006, 331–332.
- 12 Ettore Sottsass, "Scritto di Notte", Adelphi, 2010, 143.

Housing in the city: Is this the best we can do?

Reflections on housing in the Architectural Forum during the post-war era

Ignacio Urbistondo Alonso

PHD PROGRAMME. THEORY AND HISTORY OF ARCHITECTURE ETSAB-UPC

That housing is the basic building block of urban form, the architectural problem most crucial to the city's physical quality. This statement was the backbone of the argument of issue 123 of the American magazine *Architectural Forum* in 1965. It is stated along with two other points of view: housing as a product subject to free market law, and as the social tool needed to improve the lives of those most in need. The journal's editor sought to reconcile these three axioms over more than a hundred pages with arguments from disparate contributors.

CIAM postulates and urbanizations product of modern doctrine have been identified throughout history as the wrong answer. The famous death date of Modern Architecture proposed by Charles Jencks is caused by urban housing. But what other options were being considered at the time? Were those others the correct answers? Was architecture able to come up with an alternative that understood the complexity of the problem and its many edges?

This communication aims, through the analysis of some of these texts and the buildings they present, to try to understand what kind of answers were offered to the discipline from a magazine like *Architectural Forum*. Peter Blake, Sibyl-Moholy-Nagy and Charles Moore will defend housing projects in London, Barcelona and San Francisco respectively.

Special emphasis will be placed on the reasons that led *Architectural Forum* to change its editorial line. Until 1964 the owner of the magazine was Henry Luce, an entrepreneur also in charge of *Time* or *Fortune* magazines. In 1965, Peter Blake, the then editor-in-chief of the magazine, managed to get a non-profit organization, Urban American INC, as the new benefactor of the publication.

1. Housing and politics: an approach

Volume 123 of the North American magazine *Architectural Forum* presents an exceptional framework of analysis on the post-war American architectural context. The editorial that opens this number could not have a more illustrative title. "*Housing in the city: Is this the best we can do?*"¹.

Asking this interrogation expresses, on the contrary, an implicit criticism of urban housing being built at the time. Open question, with no answer yet in the decade.

Three starting points expressed by the magazine justify the relevance of the question. That housing is the basic building block of the urban form, the most crucial architectural problem for the physical quality of cities. In addition, that housing is a commodity, subject to the law of the free market. And in turn, that it is a social tool, used to improve the lives of those most in need.

Starting from these three affirmations raises opportune reflections that go beyond the strictly architectural and open the field of relations between the built house and its political and legal context. Not surprisingly, the first article in the magazine will be signed by Charles Abrams, a lawyer by training, forerunner of the *New York City Housing and Development Administration*, which operates to this day and guarantees the defense of affordable housing in the city. In his writing, he proposes nine measures on which any urban housing development should be based. Among its proposals, architectural, legal and governmental, already resonate some of the criticisms to the CIAM modern city. Preservation of existing housing, freedom to decide where to live, realistic slum upgrading planning, or a stronger public housing program. He assumed that the private market would continue to be the main housing builder, but that it had to take into account the urgent social need. It was then questioned how “to guide it, organize it, or control it if necessary”².

The conciliation of housing as a commercial product and its social use is still a central topic of debate. Modern democracies are still struggling to understand how to reconcile a rigid market like the housing one with such elastic demand and social needs. It is not intended here to resolve this situation, but to focus on those who were effectively responsible for the construction of American cities during the postwar period. As Abrams correctly assumes, the private market.

2. Architectural forum: a professional magazine

Architectural Forum (AF) was the best-selling architectural trade magazine in the US in the early 1960s, ahead of its main competitors *Architectural Review* and *Progressive Architecture*.

The golden age of architectural criticism would follow in the following years, intersecting the teachings of the structuralists and poststructuralists, Marxism, or Gestalt with the architectural reality of the twentieth century, and judging it. This critical intellectualism emanated from the universities, and knew how to proliferate in numerous magazines and publications. In the US, the said academicism manifested itself in magazines such as *Perspecta* (Yale University) or later *Oppositions* (Institute of Architecture and Urban Studies). AF was no stranger to this new critical current, but it seems that there was a clear distance between academic and commercial discourse.

On one side we would have the great leaders of architectural thought, and on the other, those who were really deciding on the physical quality of the built

American city: entrepreneurs, promoters, builders, and offices. That private market. Two graphs extracted from *Architectural Forum* perfectly explain this situation.

In September 1962, an attempt was made to compare the boom in housing construction that occurred before the crash of 1929 with the one that had been happening since 1945. The units of comparison were the billions invested and the thousands of units built. Since the end of the World War II, it increased steadily and far exceeded the first period (**Fig. 1**).

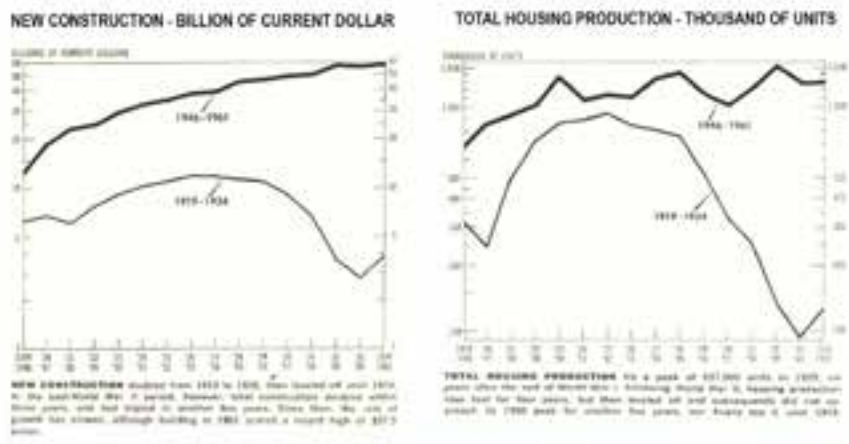


Figure 1. Graph comparing housing construction during the period 1919–1934 (thin line) with 1946–1961 (thick line). Source: Has the Building Boom reach a peak?, *Architectural Forum*, September, 1962, p.106.

If we add to this layer of information that provided by the April 1963 issue, we will understand who were the authors of such a constructive expansion. The 100 largest architectural firms, says the name of the list. Divided by groups, these are organized by the amount of money billed by these offices. In the first group, more than 70,000,000 dollars, with 21 members, obviously neither Mies Van der Rohe nor Walter Gropius nor Ero Sarinen nor Richard Neutra appears.

And what were the architectural messages that were reaching these offices, responsible for American cities? Outside university, the media and advertising were forged as the main transmitters of ideals. With *AF* being the best-selling architecture magazine, who was its main consumer type? We can see this interesting factor in the data extracted by Sarah Dreller of the Audit Bureau of Circulations in which she compares the magazine with its two main competitors: *Progressive Architecture* and *Architectural Record*. The potential audience was quite different. The percentage of subscribers who identified themselves as owners, executives or managers and who belonged to the categories of industry, commerce or institutions, was much higher in *Architectural Forum*.³ This difference disappears when subscribers from the fields of architecture

and design are taken into account. It is not difficult to find out what caused this. The corporation behind the publisher was Time Inc., owned by Henry Luce, an American tycoon who also directed other magazines such as *Fortune*, *Time* or *Life*. Henry sought to connect with the great American businessmen, and he succeeded.

3. Pruitt-Iggoe: from example to failure in a decade

So, what was the right solution for the magazine? Here is another of the points of importance that make the *Architectural Forum* study a fundamental tool for understanding the possibilities offered to the profession.

Interestingly, Pruitt-Iggoe, Minoru Yamasaki's project, was the example that the magazine took in the 1950s as the way forward. In a review titled *Slum Surgery in St Louis*, they outlined the benefits of the project. It is clear, when reading some of the lines of the report, that the main incentive that the editors of the magazine found in this new urbanization were its savings and efficiency in economic terms. The elevator stopping at one of every three floors, or the savings in front of the floor in the shape of a cross, were some of its strong points for the editors. Liberate a large area of the city, close to the center, inhabited mostly by slums, and relocate them in a much smaller area. It made it possible to "economically"⁴ recover all the land occupied by the so-called neighborhood, made up of resistant brick buildings built a century earlier. The cover photograph of the article, one of these houses, shows a genuine anonymous beauty that sadly disappeared.

In 1965, ten years after construction of the Pruitt-Iggoe was completed, the magazine's editorial described the project as a failure. *The case history of a failure*⁵. There were still seven years to go before the first demolition of one of the blocks would take place, and for the next one to be broadcast on television throughout the country. But the change in perspective was clear. That year, the residential complex of St Louis, after numerous budget cuts in its execution and hosting a 100% black population (compared to the 2/3 blacks and 1/3 whites that had been planned) was a true ethnic ghetto.

It seems that this change of opinion was in tune with the critical voices that emerged strongly from the urban sphere in the 1960s. Or not. For example, the September 1961 issue would have an article titled *Toward richer city streets*, by Jane Jacobs. It was a prelude to his book *Death and Life of Great Cities* (1961). After receiving numerous complaints, in a subsequent editorial, the magazine will make it clear that this vision of the city belongs strictly to its collaborator, and that it does not reflect the general ideals of the *Architectural Forum*. I imagine that the economic interests of the subscribers had nothing to do with the human wealth that the writer was trying to defend.

The differential event occurs between 1964 and 1965. Henry Luce decides that the magazine is no longer useful to him and will stop financing it. Peter

Blake, then editor-in-chief of the Architectural Forum, managed to get a non-profit organization, Urban American INC, to adopt the magazine in 1965 under his tutelage. This association, formed a few years earlier, intended to raise awareness in American society to achieve a better urban space. This change in perspective was also supported by US policy. After Kennedy's assassination, the term of Democrat Lyndon B. Johnson (1963–1969) was characterized by a strong social investment, with housing as one of its key points (at least in intentions) and important advances in the rights of the African-American society (Voting Rights Act of 1965).

4. The not so alternatives

The magazine commissioned some of its regular collaborators to defend a project considered a sample of good work and new possibilities. Of the seven participating authors, I will limit myself to commenting on the alternatives provided by three of them: Sibyl Moholy-Nagy, Peter Blake and Charles Moore. Both three will develop a critical attitude towards modern postulates during their career.

Peter Blake, chooses a public project from the London administration. Canada Estate is a development promoted by the LCC (London County Council) for the workers of the docks on the River Thames, an urban area near the center. Blake tries to make the reader understand the need for investment and good design in public housing. The project is based on a combination of individual buildings with three and four floors (two duplexes for each), with their corresponding rear garden, and two high-rise housing towers that mark the transition to the river.

English press criticised the crudeness of its materials and finishes. However, Peter Blake knows how to see in this expressiveness an intelligent use of a tight budget, which for him is far from American ingenuity. He also comments on the virtues of urban green spaces, with some equipment. But we see once again that, although the formal complexity of the proposal distances itself from the most orthodox guidelines of the International Style, its urban implantation suffers from disconnection with the pre-existing plot. Even favoring pedestrian access at ground level by using a model of single-family homes in combination with the towers, the rich and busy street advocated by Jane Jacobs continues to be denied. If we visit Canada State today we will discover that it has become a private-access community, a fence surrounds the entire perimeter of its urban space. Only residents can enter. This formal disconnection with the urban fabric that was planned has crystallized in a closed community that does not intend to let the street and the city enter its territory (**figure 2**).

The following proposal is defended by Charles Moore, a project in the city of San Francisco with curious similarities to the previous one. In this case the site is located between the port and the city center. Even though it was



Figure 2. Canada State, London. Architects: London City Council (LCC), Hubert Bennet, F.G. West. B&W Photographs: John Donat / Current Photograph: Google Maps. Source: "In London, a social ideal shape a distinguished urban setting". *Architectural Forum* Vo.123 (1965): 42–48.

a private development, the administration encouraged the organization of a competition due to the high interest in the area.

Moore exemplifies this richness and difficulty through a wonderful photographic report that explains the context to the reader. The old lighthouse surrounded by the highway on the dock, the picturesque wooden houses on Telegraph Hill or the already large towers that were beginning to appear in the financial district. For him, an architect especially concerned with the landscape, the proposal is an interesting attempt to respond to these multiple scales that exist in the surroundings. *Wurster Bernard & Emmons–DeMars & Reay* was the firm that won the competition. To adapt to these different scales, large housing towers are alternated with single-family houses on the lower floor, in the same way as the project described above in London. However, here the language between the low buildings and the towers look for the contrast. The houses, built of wood, seek to replicate the Bay Region style, typical of North Carolina. This traditional aesthetic, and the treatment of urban spaces as squares, try to generate a romantic setting for the pedestrian. This level, does not coincide with the street level, generating a parking lot at ground level for residents. On the perimeter, the façade space is given over to shops and a continuous portico of arcades that generates shade and widens the sidewalk space. Here the dwelling has also been separated from the street, and the public space between the houses on the upper level is

accessed via various stairs and platforms. It seems that this modern thought of the street as a source of noise and problems is still latent. Charles Moore doubts whether this elevated “stage” will ever house the same urbanity as the charming, ground-level neighborhoods it tries to emulate. Although he remains hopeful, and admits that it will be time and use that dictates sentence (fig. 3).



Figure 3. Golden Gateway Redevelopment, San Francisco. Architects: Wurster Bernard & Emmons–DeMars & Reay. B&W Photographs: George Kight / Current Photograph: Google Maps. Source: “In San Francisco, civic pride goeth before a disappointment”. *Architectural Forum* Vo.123 (1965): 58–63.

In contrast to Peter Blake’s review, Charles Moore does not provide any floor plans to explain the project. It assumes that its virtues have to do with its attention to the context, how it is experienced and its diversity of spaces. The photographs he uses are a clear example of this new perceptual sensibility for the place, which goes beyond the doctrines of Modern Architecture. Revisited today, the project may seem vulgar or ironic in its aesthetics, some would describe it as postmodern. And with a dubious and complicated accessibility when separated by levels. But in the context of the great American cities still dominated by the automobile, their arcades that protect shops, and their segregated public urban spaces on the top floor may be a haven of peace. I second Moore and assume that only the users and the direct experience of the place have an answer about its success.

Lastly, it is also worth commenting on the proposal defended by Sibyl Moholy–Nagy. In her case, the place will be defined as the city of Barcelona. And it is that intelligently on her part, to explain the projects of the Catalan office MBM (Martorell Bohigas Mackay) she makes the reader of his message

understand the importance of Cerdá's planning. After a correct explanation of its peculiarities and objectives, its defense of this historical legacy is clear. For Sibyl, this deep understanding of the context, respect for its heritage and intelligent design are the strengths of the MBM building located on Calle Navas de Tolosa. Of the housing proposals that appear throughout the magazine, this is undoubtedly the most urban one. Right on the corner of the block, it reinterprets the chamfer, manages to articulate it in a monumental and unified way, two buildings with independent entrances. The choice of materials, the degrees of privacy, the play of volumes on the façade and a ground floor of shops and workshops open to the street make the building part of the city and the city part of it (**fig.4**). As she will make clear in his book published in 1968, *Matrix of a Man*, it is the advantages and potential of the historic city that architecture has to recapture in order to overcome the errors of the simplistic and a-historical vision of modern architecture.



Figure 4. Navas de Tolosa Dwellings, Barcelona. Architects: MBM. Photographs: Francesc Català-Roca. Source: "In Barcelona, a modern tradition based on respect". *Architectural Forum* Vo.123 (1965): 52–57.

This last project seems to be the most interesting if it is questioned from the building's capacity to improve the urban quality of the city. However, given the possibilities it offers in the American context, it is difficult to reproduce. The other two projects allow us to understand much better what were the alternatives that were beginning to be considered and built in the face of large developments such as Pruitt-Igoe. In the same way as Robert Venturi gentle manifesto, the complexity that was being achieved was mainly formal. That other complexity, typical of cities, in which people with contradictory interests, actions and situations coexist, required solutions that possibly are not only in the hands of architects. The political guidelines that Charles Abram proposes at the beginning of the magazine are surely a good starting point. I sadly doubt that these new voices, which gave priority to human and not monetary values, would come to influence those offices that, as we have seen,

were largely responsible for the construction of the city. *Architectural Forum*, after its new stage started in 1965, would close definitively in 1974. The death of two important members of Urban American Inc would leave the magazine without its main flow of financing. His new ideals were not profitable in the face of the great public that supported the magazine in the times of Henry Luce.

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Notes

- 1 "Housing In the city: Is this the best we can do?", *Architectural Forum*, 128, 1965, 32.
- 2 Charles Abrams, "Housing policy: It must offer a way out of despair", *Architectural Forum* 128, 1965, 34.
- 3 Refers to the Fig 37. "Percentage of Commercial, Industrial & Institutional. 1945–70: subscribers self-identifying as "Company name, Owners & Corporate Executives, Managers.", Sarah Dreller, *Architectural Forum, 1932–64: A Time Inc. Experiment in American Architecture and Journalism* (Doctoral dissertation, University of Illinois at Chicago), p 265. (2015).
- 4 "Slum Surgery in St.Louis", *Architectural Forum*, April 1951 p.132.
- 5 James Bailey, "The Case history of a failure", *Architectural Forum*, December 1965, p. 22–25.

S06

Industrialization: **Processes and Products**

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Modern Movement was not only known for the promotion of new visions for architectural designs but also for the innovative use of building materials and construction technologies. Still, one cannot be discussed without the other and the four papers highlight the relationship between both, the theoretical concepts and visions and the practical implications of production and economy. Famous architects' research like the one of Candilis will be contextualized with works of less known architects and companies in other countries and dealing with other objects and typologies. All together the papers reveal the importance and power of design–industry collaboration–along the value–chain of conception, design and implementation–all of them necessary to turn visions into reality. The authors in this session describe the impact of industrialization and industrial products from different functional, cultural and socio–economic perspectives, showcasing examples from France, Angola, Czechoslovakia and Germany dating from 1950s to 1980s.

Under the title “Sea, Sun and Fun: Georges Candilis’ Researches on Leisure Units (1963–1979)” Catherine Blain and Laurent Duport discuss different projects that were aiming to fulfill the needs of the new “leisure society” by providing accommodation units for vacationists. These units are characterized through the “rational relation” between two “families” of elements: determined, permanent and universal (essentially constructive) and undetermined, constantly changing (function, interior–exterior relationship, aesthetic)”. The authors reveal the relations between those different concepts on urban and building level and related to natural and human environment.

In her paper Inês Lima Rodrigues investigates “The Role of Construction Companies in Modern Housing” in Late Colonial Angola exemplified by the footprint of the company Predial Económica Ultramarina (Precol) in the capital Luanda. The so–called “Precol neighbourhoods” are characterized by

“excellent construction techniques and architectural details” and at the same time promoting “futuristic and optimistic vision for urban living” as expression of architectural modernism. She explains how these privately commissioned projects contributed to the development of an “Architectural Grammar in housing” that is still used and attractive today.

Petr Vorlík reflects about the “Pitfalls of Late Modernism and Socialist Central Planning” in Czechoslovakia during the 1960s to the 1980s. He compares the aspirations of a young generation of architects inspired by the Western concepts of late modernism with the limited possibilities the building industry could provide. He, in particular, explains with many examples how “constant improvisation” turned these limits into the challenge looking to “loopholes in the rigid systems of prefabricated structures and façades” in order to break out of the box.

Julio Garnica finally sheds light on the evolution of post-WWII living standards and how USA took command in this process of implementing industrial products into European households. A unique exhibition started in 1952 in the American Marshall House in Berlin to convince the European citizens of the advantages of newly designed interiors and industrial objects for the modern home, promising “a better life” within a 1:1 model environment entitled “house without frontiers” in other European countries.

Though very different in their subjects all contributions approach the topic on a theoretical and historical level and showcase how industrialized processes contributed to unique architectural expressions and solutions in their respective contexts.

SEA, Sun and Fun: Georges Candilis’ researches on leisure units (1963–1979)

Catherine Blain

ÉCOLE NATIONALE SUPÉRIEURE D’ARCHITECTURE DE PARIS–BELLEVILLE

Laurent Duport

ÉCOLE NATIONALE SUPÉRIEURE D’ARCHITECTURE DE MONTPELLIER

Added in 2014 on the list of French Historical Monuments, the holiday village of Les Carrats, built by Georges Candilis along the Mediterranean coast (1966–1970), is widely recognized as a “timeless model” of the Modern Movement for its grid composition and architectural qualities. Furthermore, as underlined by our previous paper¹, this village is representative for a wide research on “leisure housing” developed by Candilis from 1963 within his planning mission of the Leucate–Barcarès “leisure unit”. Indeed, on the one hand, in order to meet the expectations of this development program intended for 70,000 to 120,000 summer vacationists, Candilis established urban principles to host different scales and types of accommodation. On the other hand, during his general coordination duty, he had the opportunity, alone or with other architects, to design and build several housing units as well as public or commercial facilities. Candilis summarized these experiments in the book *Researches on leisure architecture* (1972), by means of theoretical diagrams, views of construction models or achievements organized by scales and types (from horizontal combinations to urbanism). Thus, he raised the Leucate–Barcarès project to a theoretical level, as a case study for a new approach of the human environment, matching the needs of the contemporary “leisure society” (as defined by Joffre Dumazedier in *Vers une civilisation des loisirs*, 1962). Based on a new lecture of Candilis’ writing and archives (partially deficient), this paper aims to reveal this specific research and to assess its status in the architect’s work and within the Post–War historiography.

1. Introduction

As shown by Tom Avermaete, beyond its ambition to define new theoretical concepts (such as *stem* and *web*), the work of Candilis–Josic–Woods “emerges as an attempt to bring architectural knowledge in congruence with the everyday reality of urban culture”².

The roots of this attitude are, without any doubt, Candilis and Woods’ collaborations in Morocco with Michel Ecochard and ATBAT–Afrique (from 1951 to 1954), exploring the potential of the 8x8 grid to generate built combinations echoing the ancient medinas urban fabric while offering “new forms” of housing. In the Carrières centrales neighborhood, besides the horizontal development of patio houses, the Semiramis and Nid d’Abeille buildings demonstrated their “wish to adapt modern architecture to local cultures and

identities” while satisfying the essential comfort needs (light, space, hygiene, etc.)³ (Fig. 1).

Candilis–Josic–Woods’ approach is also linked to the Post–War CIAM debates, notably the discussion on the “habitat for the greatest number” held during the CIAM 9 (1953)⁴. Like many young architects attending this meeting, they believed that contemporary habitat should take into consideration two local “contingencies”: the “natural environment” (which “conditions the choice of architectural materials”) and the “social environment, affinities necessary for the foundation and the life of social groups”. They also adopted the concept of “evolutionary architecture”, based on the prior idea of a “constant and universal relationship between the *permanent* (climate/nature of the soil) and the *evolving* (human environment/built environment)”⁵. Therefore, as Woods wrote in 1961, they considered that their role as architects and urban planners was “to establish the optimum conditions in which the present becomes the future” – that is to say to establish an “organic *milieu*” in which “buildings appropriate to their function can exist, and to encourage a reaction between these buildings and their *milieu*”⁶.



Figure 1. Carrières centrales in Casablanca, Morocco, 1951–53. Service de l’urbanisme and Michel Ecochard, horizontal 8x8 grid: housing typology, site plan and partial aerial view. ATBAT–Afrique, Georges Candilis, Shadrach Woods, Sémiramis block: undated view. Sources: Tom Avermate, *Another Modern*: 140–141 (up) ; *Architecture d’Aujourd’hui* no. 60, 1955: 37 (down left) ; Maurice Besset, *New French Architecture*, Teufen, Arthur Niggli: 72 (down right).

From 1954 to 1960, Candilis–Josic–Woods had few opportunities to fulfill this wide ambition. But the team’s nomination in 1961 for the new town of Toulouse–Le–Mirail, followed in 1963 by Candilis’ appointment within the Languedoc–Roussillon urban planning agency, offered exciting case studies to explore the possibilities of implementing this “organic *milieu*”.

2. Building new environments

Throughout their first projects, Candilis–Josic–Woods established a register of conceptual tools, among which are the constructive grid, the symbolic figure of the “svastika” (usable at various scales) and the housing schemes of the patio house and the semi–duplex apartment. The quest for building flexibility, scalability or expandability also led to question the “rational relation” between two “families” of elements: *determined*, permanent and universal (essentially constructive) and *undetermined*, constantly changing (function, interior–exterior relationship, aesthetic)⁷.

In 1961, the competition for the new town of Toulouse–le–Mirail offered Candilis–Josic–Woods an opportunity to summarize their multi–scale researches. Facing the complex challenge of a new town program for 100,000 inhabitants, planned on the outskirts of Toulouse, they first defined an innovative concept: the “stem”, a linear “street space” raised at 4 meters above the natural ground, “urban framework [...] capable of adapting along the different stages of realization⁸”. Then, in the first “experimental zone of Bellefontaine”, they “applied three different grouping systems of housing complexes:

1. *Linear large blocks of various heights articulated at angles of 90° or 120°, centered around a vertical core of transportation (elevators, staircases).*
2. *Low–rise buildings articulated at a 90° angle, centered around a staircase;*
3. *Patio villas* ⁹.

Corresponding to “three different conditions of family life–styles and allowing the inhabitants a choice”¹⁰, these housing groups were built with concrete techniques, which allowed few internal transformations. However, the architects tried to give a flexibility of use to the interior spaces. The quest of an architecture that could “be transformed at any given time” and would offer “a great liberty for room occupation” is another construction system: the “light, transportable structures” planned along the linear “street space”, intended to inform “demountable constructions” (also called “containers”) for the yet “undefined, temporary urban activities”¹¹ (shops, schools, etc.) (Fig. 2).

The conceptual principles of Le Mirail will find an echo in Leucate–Barcarès. But for the leisure unit created along the wild Languedoc–Roussillon coast, the logic of implementation is reversed. Starting from the wider landscape, the objectives are indeed:

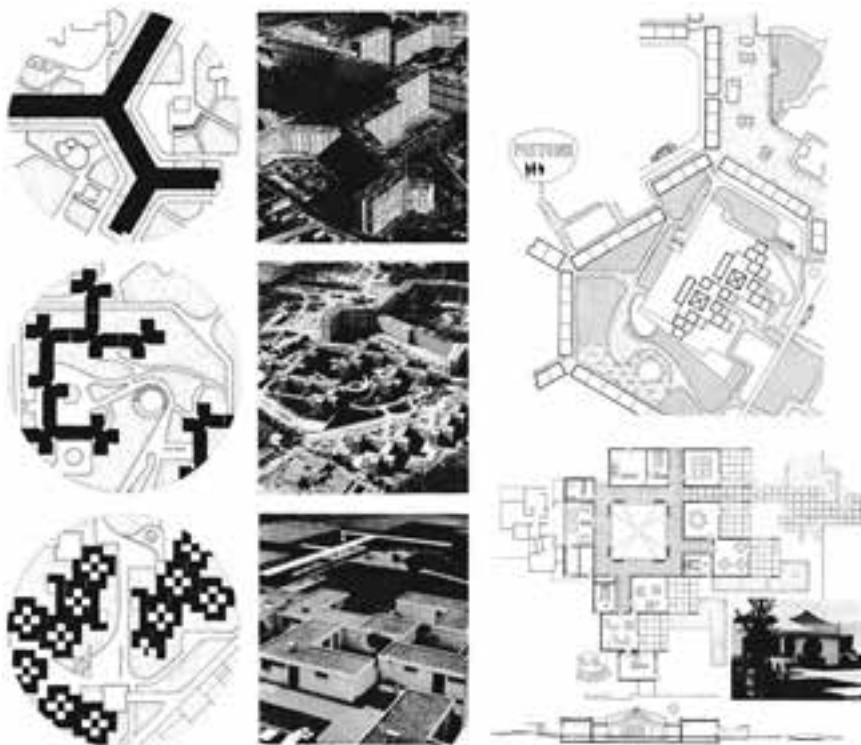


Figure 2. Candilis–Josic–Woods, Toulouse Le Mirail, 1961–65: grouping systems of Bellefontaine (left), first schools built with the dismantlable construction system (right). Source: *Toulouse–Le Mirail, Birth of a New Town*: 40, 68–69.

First to develop a site directed to sailing holidays [...], calling for the creation of harbors on the sea and the lake [...] with links between these two basis elements [...].

Second, to construct dwellings, hotels, villages, facilities, etc. [...], a new architecture dictated by simplicity, economy and climatic conditions (enclosed areas, patios for dwellings, gardens for groups of apartment–blocks, etc.).

Third, to create an element of basic architecture in the form of a urban linear center [...] descending by stages from lake to sea and bestriding the circulation ways for fast and local car traffic.¹²

3. Leisure housing combinations

During the first decades of implementation, the primary architecture of the site has proven its capacity to progressively host a wide range of housing and equipment projects. Candilis, alone or with other architects, designed and/or achieved nearly twenty of these projects – from social tourism villages or villas districts to private apartment buildings and facilities. He had

therefore the opportunity to demonstrate the “new architecture” he had in mind. (Fig. 03)

From an aesthetic point of view, his housing achievements are a result of a sleek and harmonious play on small concrete volumes, enhanced by pops of colors. From a design point of view, as synthetized in the book *Researches on leisure architecture* (1972), their grouping systems decline from a skillful game on the horizontal and vertical combination on a grid of three figures: patio houses, ribbon houses and puzzle houses. These figures were inspired by both the traditional Mediterranean typologies of villas or houses aligned along the narrow streets, opened to the exterior spaces and landscape. (Fig. 04)

In the footsteps of Le Mirail, a composition of patio houses was proposed for a private housing estate: the “Greek village” (1968–72 approx.). These houses, based on a 2 x 3m grid and grouped by four units following the svastika scheme,

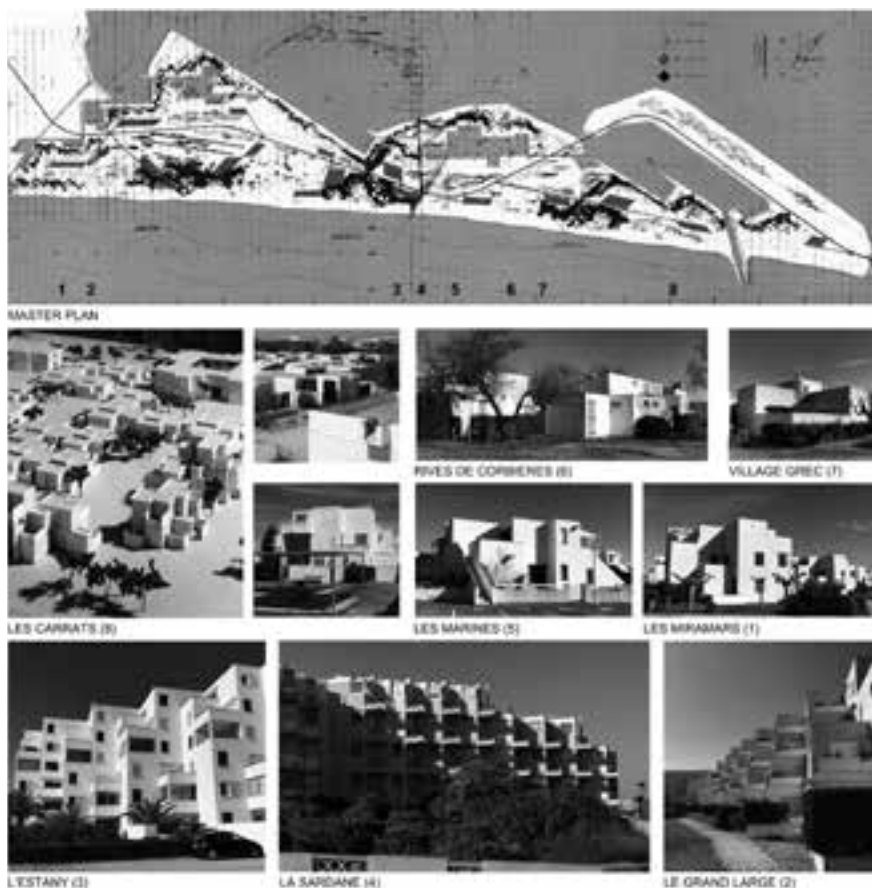


Figure 03. Master plan of 1965, views of various built projects. Sources: Candilis archives (Master plan & Carrats model view), photo report by Duport (2022).

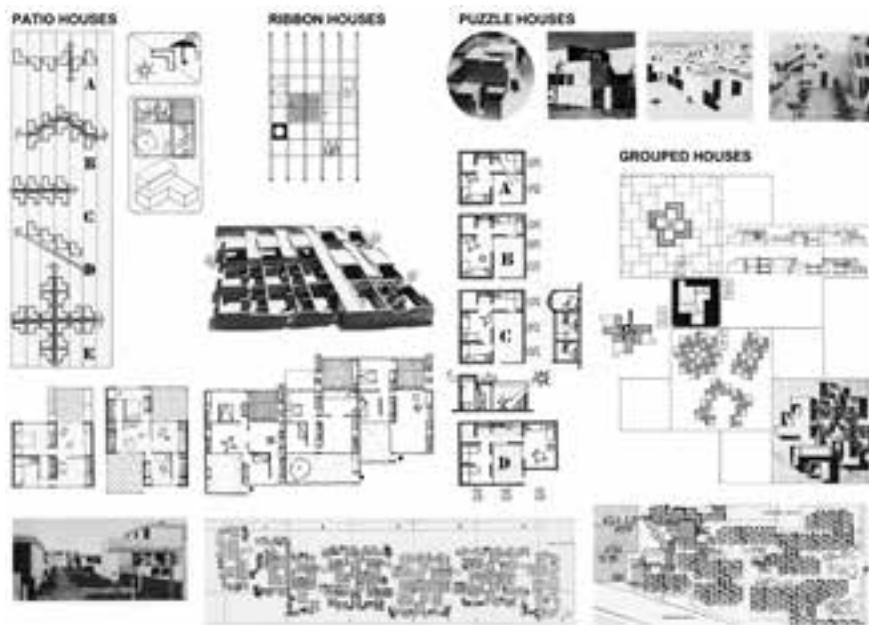


Figure 04. Housing figures: patio, ribbon, puzzle and grouped houses. Source: *Recherches sur l'architecture des loisirs*: various pages (edited by Blain, 2022).

are served by narrow alleys and paths. For the holiday village of the Touring-Club (1965–66), Candilis made an attempt with the figure of the ribbon house. Structured by a 3,50 x 2,40m grid and presented as “a continuous architectural structure formed of standard bungalows of two types, assembled to obtain essential variety¹³”, that project had no follow-up. The puzzle house figure was explored for the next social holiday village study, that led to achievement: Les Carrats (1966–72). Declined from the patio house and based on a 3,30m x 2,20m grid (which can be “reduced or enlarged according the needs”), the puzzle house allowed to create a “continuous and rational organization of volumes in which one dovetails into another¹⁴”. Like in the Greek village, some housing units were combined by four, around a central technical block. Others explored the various possibilities of transition between “dwellings at ground levels assembled in a horizontal direction and dwelling combined into vertical blocks¹⁵”.

The puzzle house figure was also used for two other social holiday villages, made up mostly of horizontal combinations: Rives des Corbières and Les Portes du Roussillon (with Maria Kandreviotis, 1967–72). Private owners also benefited from Candilis’ skills. While the svastika structured the low density housing estates of Les Marines and Les Miramars (1969–73), a first vertical combination was experienced with the Estany building (1968–72). In echo to Le Mirail, the project adopted on a 45° “system” to align the row of apartments on each floor, distributed by a central corridor. The same system generated Y or V compositions in larger programs like La Sardanne (1969–73) and Le Grand Large (1971–74).

4. Towards a new architecture

Most of Candilis' housing projects in Leucate–Barcarès were built with standard concrete or masonry units and bricks for the partitions. Thus, they offer no real innovation on that matter. But the real innovation concerned the way these constructions were implemented in the landscape and the relationships established between the housing units and the open private or public spaces. Freedom was the leading idea for the "architecture of leisure" wanted by Candilis in response to the needs of the emerging "leisure society"¹⁶. Besides dwellings, this architecture encompassed facilities for various activities (commercial, administrative, cultural and recreational). Like in Toulouse, the ambition was to host them in the "polyvalent primary structure" of two pedestrian linear centers, providing a great flexibility of use¹⁷. This idea will never get off the ground. But a few built projects showed the way.

The first built example was the service building of Les Carrats, a mat building made of a prefabricated concrete structure assembled like a "meccano"¹⁸. Candilis used that system for other constructions of different scales, like a school of navigation (1970–75) and a Harbor office pavilion (Capitainerie, 1975). He also developed with Anja Blomstedt another scale of constructive research, inspired by boat cabins: a futurist orange plastic module called the *Hexacube* (1968–75). That module, a cube of 2.5 meters of side (300 kg), is made of interchangeable prefabricated shells and hexagonal panels that can be easily assembled in two hours and offer freedom of combination and evolution. The prototype, was patented on October 22, 1971. Several experiments were made, among which a housing unit of two modules (living room/bedroom/dining room + facilities) and a "camping of the year 2000" of twenty modules.

A flashy *Hexacube* was positioned on the beach in front of Les Carrats' service building. For a while, with its restaurant, collective kitchen and bar, sometimes transformed at night in discotheque open to the beach, that building became the "fun palace" of the area. But shortly after, Candilis had the opportunity to build a real public entertainment building: The Kyklos, including restaurants, bars, nightclubs and shops (with Paul Gardia et Maurice Zavagno, 1968).

In the early 1970's, does all this represent, as hoped by Candilis, the beginning of "a new intellectual and social attitude, a new manner of thinking, of living ... a new culture"¹⁹? The commercial brochures are there to defend this hypothesis. (Fig. 05)

5. Conclusion

Our analysis has shown how much the theoretical project of Leucate–Barcarès leisure unit relies on a conceptual toolbox which has developed since the 1950s, as well as a generous utopia of new human environment (urban and natural). Within this mission, Candilis did not only put forward a careful planning approach taking into account geographical particularities²⁰ but also tried to define "a new architecture [...]" so that the new human environment may stay shape, in harmony with the wonderful elements of nature²¹.



Figure 05. The fun theory of the 70s. Source: Images from promotional materials, Candilis archives (edited by Blain, 2022).

While in new town of Le Mirail Candilis–Josic–Woods had to build rapidly a large quantity of dwellings on the same model, mostly large social housing buildings, at Leucate–Barcarès, Candilis was able to experiment a more open process, allowing for staggered implementation over time. He took part in it, building housing complexes that served as models on the field and as parts (or built examples) of a theoretical approach in his book of 1972.

Nowadays, some of the achievements published by Candilis in 1972 have gained a heritage recognition: Les Carrats (Historical Monuments List, 2014), Greek village, holiday villages of Rives des Corbières and Les Portes du Roussillon, apartment building L’Estany and La Sardagne (20th Century Heritage Label, 2012). That recognition guided our research and the consultation of Candilis archives in Paris, which contain a huge number of project files related to Leucate–Barcarès: up to 35 references, among which approximately 25 realizations. This recognition therefore seemed small in comparison to the magnitude of Candilis’ mission, which would merit an in–depth case study.

In the meantime, we could question the legacy of Candilis’ researches on leisure housing and, more generally, the resonance in this planning approach of Bakema’s idea of “building for an open society”²².

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Notes

- 1 See Blain and Duport, “From Leisure Housing to Modern Heritage: village of Les Carrats by Georges Candilis”, 2021.
- 2 Avermaete, *Another Modern: The Post–War Architecture and Urbanism of Candilis–Josic–Woods*, 384.
- 3 Eleb, “An alternative to functionalist Universalism: Ecochard, Candilis and ATBAT–Afrique”, 68.
- 4 See Ascoral, *CIAM 9, Aix–en–Provence (19–25 juillet 1953). Contribution à la Charte de l’Habitat*. Paris: Ed. de l’Architecture d’Aujourd’hui, 1953.
- 5 Idem.
- 6 Candilis, Josic, Woods, « Urbanisme », *Le Carré bleu* no. 3 (1961), 3.
- 7 Candilis « Proposition pour un habitat évolutif », *Le Carré bleu* no. 2 (1959), 4.
- 8 Josic, « A la recherche d’une structure urbaine », *Architecture d’Aujourd’hui* no. 101 (April–May 1962), 50.
- 9 Candilis, Josic, Woods, *Toulouse–Le Mirail. Birth of a New Town*, 40.
- 10 Ibid.
- 11 Ibid., 62.
- 12 Candilis, *Recherches sur l’architecture des loisirs*, 131.
- 13 « Village de vacances de l’unité Leucate–Barcarès », *Architecture d’Aujourd’hui* 131, April–May 1967, 17.
- 14 Candilis, *Recherches...*, 35.
- 15 Ibid., 59
- 16 Ibid., 12.
- 17 Ibid., 114
- 18 See Castellanos–Gómez and Domingo–Calabuig, “Meccano: the building game, the architecture of commerce”, 2015.
- 19 Candilis, *Recherches...*, op. cit., 11 (translation of the article about Les Carrats : Georges Candilis, « Vers une architecture du loisir », *Architecture d’Aujourd’hui* 131, April–May 1967: 15–17)
- 20 « Rapport de l’agence d’urbanisme pour l’aménagement touristique du littoral du Languedoc–Roussillon » (January 1964), in *Notes et études documentaires* no. 3326: *L’aménagement touristique du littoral Languedoc–Roussillon* (Paris, La Documentation Française, 13 octobre 1966): 53.
- 21 Candilis, *Recherches...*, 12.
- 22 As pointed out by Dirk Van den Heuvel, this idea “involves several relevant issues: the role of the government in relation to spatial planning, the relationship between architectural design and user, and the space for a collective and individual identity in the context of a democratized mass society” [“The Open Society”]

The Young Generation of Architects Faces the Pitfalls of Late Modernism and Socialist Central Planning

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The building industry in normalisation-era Czechoslovakia did not offer architects any great opportunities for exploring their ideas. The experimental 1960s, a short period of respite, ushered in all sorts of innovations, many of which became a part of everyday architectural work during 1970s, but the prioritisation of quantity over quality and the increasingly dire economic situation resulted in general shortages and limited room for creative work. The gap between what architects aspired to do under the influence of western late modernism, high-tech or postmodern concept, on the one hand, and what was realistically possible in the building industry, on the other, reached a critical point in the 1980s. Although there were a small number of buildings that because of the type of commission or the involvement of a prominent investor were accorded an individual approach and had an almost unlimited budget, political support and sometimes even supplies from abroad, in all other projects architects had to improvise extensively, at some risk and considerable effort. They looked for loopholes in the rigid systems of prefabricated structures and façades, modified standard components or used them in unusual places, embellished largely dull buildings with added features such as loggia, portals, and awnings, got the public and artists involved in plans and projects, persuaded manufacturers, colleagues, and research institutes to engage in experiments. The results that constant improvisation forced by circumstances produced deserves our attention. Although many of these buildings may have lost their freshness over time, the works of those architects who recast the difficulties of that time into challenges and extracted a unique style out of the work of improvisation continue to form a stratum of modern architectural history that cannot be overlooked.

1. General shortage as a starting point

Driven by visions of social progress, modernist attempts to shift boundaries, especially in the sphere of technology and related forms of expression, were often in principle well ahead of their time, or ahead of what was possible in a particular place. In such cases the only way to pursue a bold vision was to look for alternatives and to mine as much as possible from what little was available. In the conditions of the state-socialist economy, however, the frustrations of society and the sense of permanent shortage that resulted from having to search to find uses for what little was available gradually gave rise to a pervasive phenomenon and attitude towards life. Surprisingly, the practice of adapting and modifying what was available from the limited selection of socialist products did not entail resignation, and could instead give rise to unusual, edgy, and “naughty” compositions and unorthodox combinations.

2. Towards postmodernism and neo-functionalism

In the 1970s there had been some success with meeting the demand for mass production of modern light curtain walls. On contrary, immense inertia of the socialist central planning and building industry resulted that the biggest problems arose when an architect influenced by postmodernism tried to do just the traditional “simple window in a wall” or modernist ribbon windows, especially if it was in an unusual size or shape. If just several atypical windows were required, there was a possibility that a factory might produce them “on the side”, but only if the architect were tenacious enough to make this happen. If a large number were needed, however, the usual solution was for architects to connect rows of regular, individual windows in complex arrangements. This was the approach that Vítězslava Rothbauerová, for example, applied to the building of the Ministry of Interior Affairs based at the Southern City housing estate in Prague (with Ludmila Machová and Miroslav Mikula, 1981–1986, **Fig. 1a**) and Jan Bočan on his villa duplex in the Baba neighbourhood of Prague–Dejvice (with Zdeněk Rothbauer, 1977):

It was under the previous regime that I started working on the diplomatic neighbourhood in Troja and that involved these long and complicated processes that it would probably be hard for anyone to understand today... At that time, it was impossible to make, for instance, a French window. So, in the project we put them together using balcony doors. [note: for panel housing estates] Luckily, there was the Velvet revolution, and we were able to use plastic windows. When I was building the villa in Baba, I even assembled the glass wall out of small vent windows.¹

This method, which was used to achieve a “modular look”, was also determined the appearance of the remarkable geriatric complexes designed by Jan Líněk and Vlado Milunić (**Fig. 1b**):

Take, for instance, ‘the window, a basic style component’ ... These are subject of wild combinatory calculations, expressed as remarkable patterns on the facades. Windows of varied provenance are arranged in improvised ways into an animated system along with fragments of prefabricated building components, windowsills, gables, and inter-window panels, brickwork, and steel profiles. The basic elements are modern, the composition is functional. But the most important part, the improvisation, the anticipation of something discordant when complete, that is new.²

Jäkl profiles, hollow steel profiles with square or rectangular sections, originally produced for various lightweight utility structures and vehicles, also gradually played very important role as added decorative elements on façades of (slightly postmodern) architecture in the 1970s and 1980s.³ For example, applied to the converting a villa from the interwar period on Na Mrázovce street in Prague into a children’s health centre for the family members of Communist Party functionaries (Martin Rajniš, Luboš Jíra, Mikuláš Vavříň, Lev Lauermann, 1983–1987, **Fig. 1c**). Vlado Milunić described their use: “This kind of functionally executed envelope, finished with the requisite metal components



Figure 1. a) Vítězslava Rothbauerová, Ludmila Machová, Miroslav Mikula Ministry of Interior Affairs based at the Southern City housing estate in Prague, 1981–1986 © Credits (Personal archive of Vítězslava Rothbauerová); b) Jan Líněk, Vlado Milunić, Retirement home in Prague–Bohnice, 1975–1981 © Credits (photo Josef Moucha); c) Martin Rajniš, Luboš Jíra, Mikuláš Vavřín, Lev Lauermann, Villa on Na Mrázovce street in Prague, 1983–1987 © Credits (*Bydlení – město pro člověka*, Prague: 1987); d) Alena Šrámková, Jan Šrámek, ČKD administrative building in Prague, 1976–1983 © Credits (photo Josef Moucha)

and colourful design, gives the building a look that sets it apart from the anonymous appearance of the standardised prefabricated 'building kits'.⁴

In architecture with postmodernist aspirations the search for alternative solutions was a sheer necessity. The industrialised state–socialist building industry would accept nothing other than simple building components with a highly modern, abstract appearance in its selection of products. Often the result was a look that was formally very distinct and a priori sophisticated in its aims, but in its actual execution and used materials or details was rather banal. This was certainly not incompatible with an understanding of postmodernism that was playful and grounded in absurd hyperbole, and that in Czechoslovakia

sometimes wore the mild scent of seductive revolt. This type of unusual tension was put in the practice for instance by the monorail window-cleaning system used to maintain the façades of ČKD in Prague (Alena Šrámková, Jan Šrámek, 1976–1983, **Fig. 1d**), which formed a kind of crowning cornice at the top of this noble building. Or when for the House of the Czechoslovak Association of Scientific and Technical Societies in Prachatice (Miroslav Ilinčev, Orlin Ilinčev et al., 1984–1988) simple, openly displayed pendulous steel chains were used to drain off rainwater, instead of classic gutter pipes or interior installations. Several times, the role of a symbol – for example an absurdly oversized handrail – was played by sturdy pipes, the most famous example being the Transgas dispatch building and the building of the Ministry of Fuel and Energy in Prague–Vinohrady (Ivo Loos, Jindřich Malátek, Václav Aulický, Jiří Eisenreich, Jan Fišer etc., 1966–1978, demolished), where they also made a narrative allusion to gas mains.

Such absurd blending visuality was also successfully used on smaller-scale architecture. In the poetic pavilion he designed for Antonínův pramen (Anthony Spring) in Mariánské Lázně (1985–1986, **Fig. 2a**), architect Michal Brix combined his poetic wooden structures inspired by the “hybrid” baroque gothic of Jan Blažej Santini–Aichel and romantic spa architecture with stainless-steel pipes produced for the nuclear power plant programme. Paradoxically it was also the state bureaucracy that stoked the heightened creativity of using strange available material: “The leftover pipes could not be written off, they had to be used.”⁵ The transfer of standard elements to a new context also gave a distinctive appearance to the gazebo and benches built for Southwest City housing estate in Prague (1983–1986, **Fig. 2c** and **Fig. 2d**). Architect Jiří Mojžíš did everything involved with the gazebo’s creation, from designing it through to constructing it himself. He commented on the process of totally creative but conceptually sophisticated improvisation as follows:

I also made massive benches on a kind of Josip Plečnik theme in Stodůlky through the Visual Artists Fund. I bought myself a truck for this purpose... The seats of the benches are formed from railway sleepers, which I bought in Březnice, the back is made of poles meant for a hop field. I created formwork for the feet and cast them from concrete myself... And for something different, I made the gazebo’s roof frame from power line poles.⁶

The postmodern aspirations of the gazebo nicknamed Stodůlka [The Little Barn] influenced by Josip Plečnik, ancient columns and amplified also by the use of traditional materials miraculously emerged out of the ground in the middle of “the soulless environment of a housing estate”.

One of the most common transfers of this kind at the time were the rounded structures that were made using technology developed by Vítkovice Steel Works for agriculture and were originally intended for producing cylindrical silos. Karel Prager used “horizontal silo tower” in the roof extension of his family home in Prague–Braník (with Jan Louda, 1977–1982), and similar concept was also used by Petr Keil on the Pragoprojekt building in České Budějovice (1986–1988), the inspiration for which he took from a visit to the Země živitelka



Figure 2. a) Michal Brix, Pavillion of Anthony Spring in Mariánské Lázně, 1985–1986 © Credits (Personal archive of Michal Brix); b) Kurt Gebauer, Karel Nepraš, Gazebo at the Retirement Home in Prague–Malešice, 1986 © Credits (*Architektura ČSR* XLVII, 1988); c and d) Jiří Mojžíš, Gazebo and benches built for Southwest City housing estate in Prague, 1983–1986 © Credits (Personal archive of Jiří Mojžíš)

agricultural fair. Architectural theorist Rostislav Švácha recalls that as one of the most characteristic features of Czechoslovak postmodernism:

I was looking for those round roofs, too, because that's what distinguished the vital fresh architecture of the 1970s and 1980s from the official work... I'd even say that you can see when postmodernism ended. When architects in the late eighties and early nineties suddenly stopped making the round roofs. That was the end of postmodernism in the Czech lands.⁷

3. Homespun high-tech

Transfers and 'transpositions' formed the substance of the creative programme embraced by the LO-TECH Architectural Group (its very name indicates that this was a modest Czech alternative to the "Western-like" high-tech much admired at the time). In an interview for the magazine *Československý architekt* Tomáš Kulík said:

We select elements that are industrially produced in small series and used for other purposes, mostly in industry or agriculture. We thereby make it possible to bring together products that have never encountered each other before in life. And by uniting them in this way we create a new quality... The roof of a

*rail carriage, an ordinary pipe, a steelworks silo tower, fiberglass plates, steel frames from bridge engineering plants... We enjoy thinking about where to look for resources, and then selecting the products that a designed structure could be built with... There's one more advantage to this. The products that arrive at the construction site are finished and of good quality, and on site they only need to be put together.*⁸

Characteristic features of the LO–TECH group buildings were also modularity, technician details, intense colours and resistant enamel steel sheets, used for instance in Ski Resort in Harrachov (Jan Louda, Tomáš Kulík, Zbyšek Stýblo, Ivo Loos, Václav Mudra, 1980–1989, **Fig. 3a**) or for buildings and floating equipment of the man-made rowing canal in Račice (Tomáš Kulík, Jan Louda, Zbyšek Stýblo, 1977–1986, **Fig. 3b**), and the control room of the weir at Štvanice in Prague (Zbyšek Stýblo, Jan Louda, Tomáš Kulík, 1984–1987, **Fig. 3c**). Zbyšek Stýblo explained this approach: “We designed it as a design. Out of spite, and with a little luck. This kind of defiance helped us to survive in good mental health.”⁹

A very common form of transfers to reach fierce, technician, almost high-tech appearance was the use of available cladding in a different and more prestigious type of structure than the product was intended for. Feal Sidalvar, a relatively universal type of cladding that was produced in



Figure 3. a) Jan Louda, Tomáš Kulík, Zbyšek Stýblo, Ivo Loos, Václav Mudra, Ski Resort in Harrachov, 1980–1989 © Credits (Projekt XXXI, 1989); b) Tomáš Kulík, Jan Louda, Zbyšek Stýblo, Floating equipment of the man-made rowing canal, Račice, Czech Republic, 1977–1986 © Credits (Czech Architecture 1988–89, Prague: 1989, photo Jiří Skupien); c) Zbyšek Stýblo, Jan Louda, Tomáš Kulík, Control room of the weir at Štvanice in Prague, 1984–1987 © Credits (photo Josef Moucha); d) Eduard Schleger, Lukáš Liesler, Swimming pool, Tachov, Czech Republic, 1983–1992 © Credits (Personal archive of Eduard Schleger and Lukáš Liesler)

Czechoslovakia on licence, became quite popular in this sense and was used on wholly utility buildings, and also on public ones, such as on sports halls connected to Rožický Stadium in Prague (Petr Kutnar, Svatopluk Zeman, 1975–1978), or for Prior department store in Děčín (Jaromír Liška, 1984). Analogously, simple Copilit glass lamellas were used on façades of the Česká státní pojišťovna (Czech State Insurance Company) in Liberec (Jiří Suchomel, Karel Novotný, 1979–1983).

4. Breaking the box

The wide-ranging search for alternative solutions was very common for load-bearing structures as well. The “keystone” was mainly prefabricated reinforced-concrete frame developed as part of a process to industrialise the building industry in Czechoslovakia in the 1960s. With the onset of the normalisation era, the standardised systems that proved to be the most successful were MS-71, MS-OB, and Konstruktiva. Despite attempts at innovation until 1989, most public buildings in Czechoslovakia were built using these systems. Architects gradually learned to overcome the limitations of the relatively rigid frames they had to work with and managed to extract from them a great range of spatial and artistic designs.

The biggest challenge was probably the task of decomposing the primary cuboid that somehow naturally emerged out of a simple set of several recurrently used components (and understandably also from the enduring pressure for efficiency and attaining maximum capacity). A complicated approach to this was adopted for example by Petr Keil in the building of the District Road Authority in Jindřichův Hradec (1978–1982, **Fig. 4a**):

The District Road Authority was my first prefabricated building. I received this commission from Pragoprojekt, and the only possible technology was an MS-71 reinforced-concrete frame. I studied its properties and tried out every possible way in which it could be assembled. And it wasn't entirely easy to find the right option. I was imagining a cube with the corner hewed off. In the end a structural engineer friend of mine gave his blessing that it would work, even though everyone else said it wouldn't. I built a three-storey building on a square grid layout with a cascading stepped face.¹⁰

Similar solution employed husband-and-wife Olga and Jaroslav Drápal for Shopping centre in Tišnov (1981–1982, **Fig. 4b**). They used height distance intervals of 40 centimetres mentioned as a side note in the product catalogue for frame MS-OB to create contextualised public facilities in the historic heart of a small town. The slanted roofs of the complex, nicknamed “The Barns” by locals, reference the surrounding square and to the gable of the church. Many architects also adapted the somewhat unpopular prefabricated frames, combined them with other systems, such as on a residential complex in Ústí nad Labem (Miroslav Těšínský, Miroslav Johanovský, Jan Zeman, 1963–1987) described then as: “the technological cocktail”.¹¹



Figure 4. a) Petr Keil, The District Road Authority, Jindřichův Hradec, 1978–1982 © Credits (Personal archive of Petr Keil); b) Olga Drápalová, Jaroslav Drápal, Shopping centre, Tišnov, Czech Republic, 1981–1982 © Credits (Personal archive of Jaroslav Drápal); c) Emil Přikryl, Uran department store in Česká Lípa, 1975–1984 © Credits (photo Alexander Janovský); d) Alena Šrámková, Ladislav Lábus, Lužiny Shopping Centre at the Southwest City housing estate in Prague, 1977–1991

© Credits (Personal archive of Ladislav Lábus, photo Jiří Růžička)

A popular way of moderating the sober appearance of such a standard prefabricated structure was by using various types of facing on selected parts. For example, in the Uran department store in Česká Lípa (Emil Přikryl, 1975–1984, **Fig. 4c**) the standard MS-71 prefabricated frame. And its narratively weak prefabricated components were concealed beneath the massive cylindrical “columns” in the corners of the building and in the foyer of a vocational school in Benešov (Josef Pleskot, 1983–1989) they were hidden beneath “artisanal” brick facing and capitals. Nevertheless, others tried to artistically tap into distinctive compositional, modular tectonics and place prefabricated frames at the heart of their concept. A good illustration of this approach is provided, for instance, by the Lužiny Shopping Centre (Alena Šrámková, Ladislav Lábus, 1977–1991, **Fig. 4d**) and the Luka Shopping Centre (Tomáš Brix, Václav Králíček, Martin Kotík, 1977–1987) located in central parts of the Southwest City housing estate in Prague and acting as an austere visual anchor in the middle of this sprawling public space.

Probably the hardest challenge was to deal with new environmentally responsible and energy-saving design. Eduard Schleger and Lukáš Liesler, when created swimming pools of this type in Tachov (1983–1992, **Fig. 3d**), Břeclav (1983–1993), Varnsdorf (1985–1994), and Šumperk (1985–1993) – including non-orthogonal

volumes, insulated façades to the north, large glass openings up to the sunny south, and the first solar panels – inevitably had to resort to all of these methods, such as to modify the steel trusses that were originally intended for haylofts.

5. Importance of new bricolage

We could easily tag projects like these as a diverse collection of curiosities and architectural DIY. But if we look at the visual arts of that time, we can find a distinct similarity between these projects and the principle of bricolage. In a climate of shortage, and in which the battle with a rigid and technocratically managed building industry was lost from the start, artists saw beauty in seemingly ordinary things and technologies. They approached their work with a sense of wit and self-irony. These projects represent small personal victories, exceptions in a world of standard solutions and approaches foreordained from above. The official press often overlooked them, but below the surface for a group of (primarily young) architects this became the heart of their creative approach and an amusing challenge to reach new, fresh “style”.

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Acknowledgements

The text was written at the Faculty of Architecture, Czech Technical University in Prague, as the outcome of the project *Architecture in the 1980s in the Czech Republic* (DG18PO2OVV013) conducted under the NAKI II programme of the Ministry of Culture of the Czech Republic.

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- 1 Petr Vorlík, “Jan Bočan,” in *Šedesátá léta v architektuře očima pamětníků*, eds. Petr Ulrich, Petr Vorlík et al. (Prague: CTU, 2006), 178.
- 2 Jiří Ševčík, “Línek – Milunić alebo obnovená romantika funkcionalismu,” *Projekt* 27, no. 10 (1985): 42.
- 3 Lenka Kužvartová, Jäkl Profiles – Diversity in Lines, in *improvisation*, 117–121.
- 4 Vlado Milunić, “Širší souvislosti a zkušenosti z domovů důchodců v Bohnicích a Malešicích v Praze,” in *Architektonické řešení panelových budov* (Prague: ČSVTS, 1988), 68.
- 5 Vlado Milunić, “Širší souvislosti a zkušenosti z domovů důchodců v Bohnicích a Malešicích v Praze,” in *Architektonické řešení panelových budov* (Prague: ČSVTS, 1988), 68.
- 6 Jana Bukačová, Petr Vorlík, An Interview with Jiří Mojžíš, Prague–Nebošice, March 17, 2021.
- 7 “An interview conducted by Rostislav Švácha with Michal Sborwitz.” Filmed 2019, <https://cosa.tv/tag/michal-sborwitz/>.
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- 9 Petr Vorlík, “Zbyšek Stýblo,” in *rozhovory*, 177.
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The Role of Construction Companies in Modern Housing. Precol's Footprint in Late Colonial Angola

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This article reflects on Angola's modern heritage and discusses its relevance to housing research, bringing to light modern architectural projects in Sub-Saharan Africa that are little known internationally. During the Portuguese colonial period, mainly in the 1960s, Luanda was transformed into an urban laboratory of modern western architectural experimentation. In this process, the role of neighbourhood units from the city centre to the suburbs stands out, announcing a futuristic and optimistic vision for urban living. Beyond the formal expression this article also shows that Luso-Angolan architects achieved the original adaptation of modern architecture to the climate. The aim of this paper is to outline the footprint of private promoters in the construction and property development of modern dwellings in Luanda. An example is a footprint of Predial Económica Ultramarina (Precol), a company engaged in the construction and marketing of large housing complexes, such as the neighbourhood's units of Prenda (1963) and CTT (1968), part of urban plans of public promotion launched by the urbanisation of the city of Luanda. Did the private promoters act as mediators between private contacts and state administrations? Had they influenced the choice of construction techniques and the following architectural design? These neighbourhoods, mostly of modern affiliation, represent the transversality of the Modern Movement, born in Europe and applied by Portuguese architects in other countries. Inhabited by the colonial upper-middle class, the "Precol neighbourhoods" could adapt to new living after independence. Today, they show their resilience through excellent construction techniques and architectural details, harbouring various forms of occupation. By rescripting the historical narrative of architectural modernism, highlighting the specific construction elements or systems relevant to the architectural design of dwellings, other futures may emerge as possible for new stakeholders who are committed to strategies for the renewal of modern heritage.

1. Introduction

As an outcome of the Second World War, the Modern Movement had the assignment of building a *new society*, promoting *International Style*, looking forward to apply *standard* models in the construction of large housing estates. The future was envisaged as something better than the present, with the home being the architectural canvas through which comfort, domesticity and beauty were expressed.¹ With the epicentre in Europe, modern principles were implanted in Portugal and later projected in Angola. From the 1950s onwards, the collective housing block became a crucial element in Luanda's growth. Vertical density, modern urbanism and international architecture became

synonymous with collective housing; the site's surroundings were planned as part of a new narrative between building and landscape, as a symbolic and functional affirmation of utopian turning dreams into reality. While the 1950s can be seen to embody optimism, the 1960s represented maturity of design that conveys how modern housing built the modern Luanda.

Recent studies have recognised the relationship of modern production to colonialism,² in which Portugal undoubtedly played a representative role until 1975. It occurred later than in any other country in Europe and forced Portugal to redefine its relationship with its colonised territories over the time.³ The same military *coup d'état* that led to the end of the autocratic regime that ruled Portugal for over 48 years also marked the end of colonial occupation in Africa, leading to democracy and independence. During this period, architecture played a compelling part, taking two different architectural paths that do not oppose each other but are distinct on a formal and programmatic level. The official policy became more evident with the opening of the Colonial Urbanisation Office (GUC)⁴ in 1944 by the Ministry of Colonies Marcelo Caetano to homogenise the built landscape in the colonial territories according to the ideals of the *Estado Novo*.⁵ At the same time, as a result of the First National Congress of Architecture in Lisbon in 1948, a group of architects associated themselves with the modern principles proclaimed by CIAM. During their architectural education at the Schools of Fine Arts (Lisbon and Porto), a small group continued their studies through international training at institutions such as the Architectural Association in London or the *Institut d'Urbanisme de l'Université de Paris* and later travelled to the Portuguese African colonies. Modern architecture challenged the canonical architecture championed by the *Estado Novo*, besides their subordination to the official legislation of Oliveira Salazar's regime.

On the other hand, the economic pressure in the Metropolis led Portuguese construction companies to seek new markets outside the metropolis, and African territories had an enormous attraction. These construction companies became responsible for ensuring the modern housing boom in Angola and this activity was strongly supported by Oliveira Salazar's state policies, restraining international companies from operating in the colonial territories. The case of Luanda stands out with Fernão Simões de Carvalho, who, after specialised in urbanism at the prestigious *Institut d'Urbanisme de l'Université de Paris*, set off back to Angola. He became head of the Luanda Planning Office, where he promoted a partnership strategy with private companies. Among others, Predial Económica Ultramarina (Precol) engaged in the construction and marketing of large housing complexes, such as the Prenda neighbourhood (1963) or the CTT neighbourhood (1968). The residential blocks built in record time showed new forms of prefabrication and new construction systems in perfect symbiosis with the principles of modern architecture. Did Precol act as a mediator between private promoters and state administrations?

Furthermore, the influence of private enterprises allowed freedom of expression which was censored in Portugal, enabling original architecture

of lightness and simplicity. The economy of building systems, the ordered repetition of modular and sustainable solutions and the accuracy in execution created a high level of visual and formal consistency in the residential field in Luanda. A cross-reading between the architecture-construction-promotion of residential complexes in modern Luanda arises with a proposal to show the home at the core of the challenges involved.

2. From the neighbourhood units to the residential block: models of modern living in Luanda

The growing population in Luanda during the 1950s and onwards was revealed by the lack of effective responses to the housing shortage for most social classes, which was too serious about being ignored. The new legislation called for suburban areas and all public and private actors to respond to the housing crisis. From the 1960s onwards, Luanda was transformed into a huge urban-architectural laboratory in the experimentation of Western modernity, reflected in global visions of urban and territorial transformation.⁶

At that time, Fernão Simões de Carvalho, head of Luanda Planning Office, promoted a good relationship between the central road system and the city's key feature: the neighbourhood unit, announcing his futuristic vision of a "Luanda do Futuro".⁷ Faithful to the *Athens Charter* doctrine, the neighbourhood units were interpreted as city design elements, avoiding excessive zoning, well located and integrating different types of populations, establishing themselves as a growth model for the new areas of expansion of the city. Simões de Carvalho suggested exchanging municipal land in the centre to expand new residential areas in the suburbs by attributing construction to private companies, stressing the importance of applying modern theory to the dynamics of real estate construction.⁸ The aim was to encourage private developers to exchange building permits on small plots of municipal land with greater development potential in the suburbs, using the urban plans developed by the City Council.⁹

He used this strategy in the case of Neighbourhood Unit nº1 with "3,000,000 m² of land sold by the municipality",¹⁰ it became the most successful example in terms of construction among all proposed neighbourhood units in Luanda. Known as the Prenda neighbourhood, the urban plan was designed between 1961 and 1963 by Simões de Carvalho and co-author Luis Taquelim da Cruz as a sustainable urban settlement unit which was "self-sufficient, based on three basic principles: hierarchy, zonification and racial integration".¹¹ The housing proposal supported amenities that ensured services in proximity, intending to bring together different social classes and family diversity. In Sub-Saharan Africa, there are not many urban complexes like Prenda, which also gives it a unique heritage value (Fig. 1).

After the experience of Prenda, Simões de Carvalho with Lopo de Carvalho precipitated the growth of the city to the east with the CTT (Post Office,

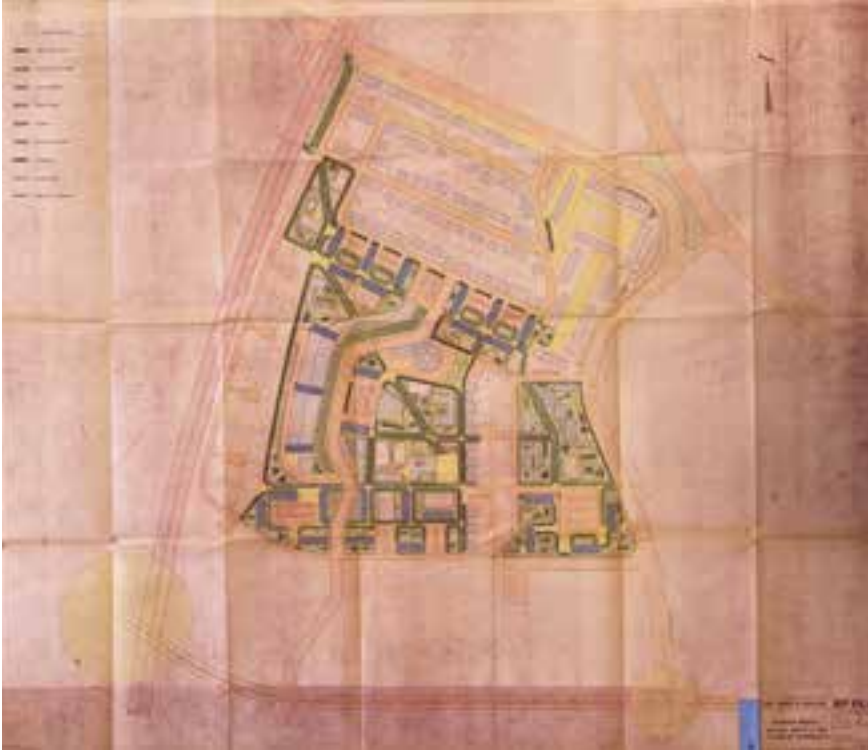


Figure 1. Simões de Carvalho, Alfredo Pereira, Pinto da Cunha, Prenda Neighbourhood Unit nº1, Luanda, Angola, 1963–1965
© Credits (Arquivo Histórico Ultramarino, Lisbon).

Telegraph and Telephones) neighbourhood in 1968. The urbanisation plan was structured around an internal traffic system for vehicles and pedestrians on a hierarchical circulation grid, articulated with three new residential areas adapted to the existing neighbourhood. Despite the clear approximation to the principles of the *Athens Charter*, the dominance of straight lines and linear blocks characteristic of the Modern Movement was replaced by a fluid public space with blocks of different orientations, defining a more organic vision of modern architecture. From this complex, only one residential block was built, which is, today, a lost building amongst the city mesh (**Fig. 2**).

Nevertheless, both neighbourhoods had a dispersed formalisation, the result of a lack of systematisation in the construction process as an urban place,¹² as they were never fully completed. It is interesting to add that it was thought of as a prototype of a new urban model to be applied in new expansion areas and put into practice in various locations around the city.¹³ In addition to the neighbourhood units, a new urban façade of modern filiation emerged from downtown to the city centre areas of the upper town. Architecture by name



Figure 2. Simões de Carvalho, Lopo de Carvalho, the CTT building, Luanda, Angola, 1968–1971. © Credits (Simões de Carvalho Archive).

architects or anonymous and modern architecture of excellent quality could be witnessed following the new avenues.

An Architectural Grammar

Carvalho shared his modern knowledge acquired from his experience at the Corbusier atelier (1956–1959) to emphasise the mastery of the housing module in the planning of residential units. The housing buildings constructed in Prenda neighbourhood resulted from a direct award of contract to the PRECOL construction company, which operated in Angola during the colonial period. Simões de Carvalho, with Fernando Augusto Pereira and José Pinto da Cunha, all architects from the urbanisation office, designed a housing project with a rational structure that allowed different environments. Each cluster had a central square for social interaction; the buildings were supported on pillars, among which the free space flowed, extensively, throughout the unit. The tectonic issue appears justified by using concrete treated “intentionally and as a deliberate technique, definitive in the process of expression and constructive truth”.¹⁴ The structure is actively involved in the composition of the façades, configured by the horizontal lines that balance the rhythm of the balconies, alternating the brise-soleils and windows. The architecture maintained a formal uniformity in the different sets, where the dilatation of the structural module (from 3.93 m in the smallest apartments (41.5 sq) up to 11.20 m in the largest typologies (121.7 sq) incorporates the main prefabricated elements in cast concrete with the same architectural logic. The plastic potential of concrete was explored in its apparent structure or as a standard element (**Fig. 3**).



Figure 3. Simões de Carvalho, Alfredo Pereira, Pinto da Cunha, Prenda Neighbourhood Unit nº1, Luanda, Angola, 1963–1965. Redrawing of the three types of collective housing (type A, B and D) © Credits (Inês Rodrigues, 2014).

The example of the Prenda's neighbourhood can be multiplied to show Luanda's history of shading devices, *brise-soleils*, screen balconies and other attempts to control the way the sun enters the building. Systems were developed by architectural (rather than mechanical) means to ensure that, as Victor Olgyay put it, "interception of the energy happens at the right place"¹⁵ when solar radiation is deflected at the façade before it enters the building. Modern Housing acted as a climate meter without air conditioning, producing excellent plastic expressiveness and structural audacity. We believe that for such success, the influence and know-how of the construction companies were essential, and without them, the "modern dream" would not have been possible.

3. The role of the large construction companies in Luanda, by Precol's Footprint

Although architects designed only a tiny proportion of the current building stock, there is a void about the work of large construction companies in a global context, actors who, by definition, strive for economies of scale and avoid expensive cost. Because of their interest in quantity rather than quality, construction firms have received little attention in architectural history, despite having played a crucial role in shaping the built environment around the world since the end of the Second World War. Large Portuguese firms

became political actors by building abroad, shaping the built environment in different geographic and political contexts. Attracting the participation of multidisciplinary professionals by combining design, construction, materials/ components, marketing and advertising,¹⁶ allowing command of the real estate market, would end up exerting a decisive influence on supply. In exceptional cases, partnerships with international companies would be called upon¹⁷ to be fruitful objects of a new strand of architectural research.

In Luanda, real estate development began with the owners of large plantations (mainly coffee), who bought large sites to purchase or exchange from the Luanda City Council, which subsequently hired a construction company to carry out the design and execution of the work.¹⁸ Another key factor was the creation of the horizontal property regime in Portugal under Decree-Law No. 40,333 (14/10/1955), which was applied with some minor changes in Angola under Order No. 15.984 (6/10/1956). From 1958 onwards, since the first advertisement carried out by Cofinca,²⁰ there was a boom in the sale of buildings under horizontal property ownership¹⁹ in Luanda.

Throughout the 1960s, the city overgrew, with a “Rhythm of urban progress that in some time will take it to a position of first importance among Atlantic city”.²¹ Among the large Portuguese construction companies that operated in Angola,²² in the vast amount of information available in local



Figure 4. Pinto dos Reis, Book building, Guilherme Capelo Street, Luanda, Angola © Credits (Inês Rodrigues, 2010).

periodicals of the time, the intense activity of private cooperatives in housing emerges. Most advertisements insist on the image of the perfect couple and the car to emphasise the dream home and the payment facilities to promote purchasing a “home of one’s own”. This aspiration was visible through housing advertisements, as for example when the O Lar do Namibe cooperative advertised “The most beautiful and functional housing building in Angola, a “Dream come true”,²³ about the building in Guilherme Capelo Street (Pinto dos Reis, 1974) (**Fig. 4**). The Book building, as it is known,

remains as an imposing landmark that combines housing with other social services. The vision of a better future was nurtured daily by a vast diversity of construction companies with the motto "Give reality to your dream... Solve your housing problem today".²⁴

Besides the isolated residential blocks, many of them by unknown authors, the main focus of promotion was on the announcement of the "new modern neighbourhoods", such as the Muceque Burity "for 5,000 people with all the amenities".²⁵ Indeed, the best examples are still the engaging promotion of the Predial Económica Ultramarina (Precol) in the construction and marketing of the Neighbourhood Unit N° 1. In 1968, the Prenda neighbourhood unit was publicised as a "public utility work" ²⁶ with private partnership; the sale of flats under horizontal property regime was advertised, created by the minister of overseas territory attributing the construction and promotion to Precol, under Law 2.007. Gradually the advertisements integrate the typologies with the drawing of the floor plan and respective areas, together with the sale price and monthly instalments. In 1971, the sale of the apartments was launched through the plans for five typologies, relaunching the excellent credit conditions and exemption from several taxes (Fig. 5).

The CTT neighbourhood became generally known as "Barrio Precol" due to the influence of the construction company that was responsible for the construction of the first single-family houses in the 1950s until the last, and only, built block of the urban plan designed by Carvalho (1968–1974). It can be seen that the industrialisation in the construction processes through the Modern Movement made it possible to define solutions for environmental

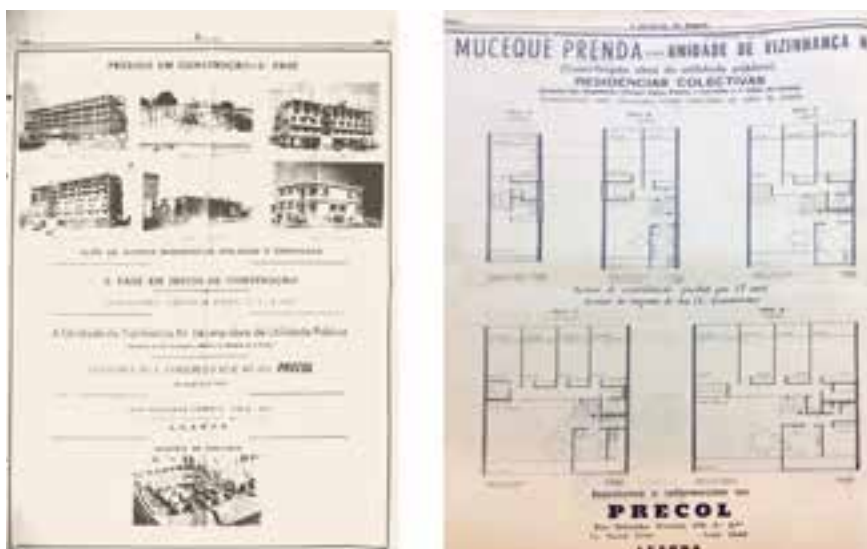


Figure 5. Neighbourhood Unit No. 1, Prenda, Luanda, Angola by Precol, (Comercio, 7-07-1968 and A Província de Angola 29-04-1971) © Credits (Inês Rodrigues; Maria Alice Correia).

comfort and sustainability in housing. These neighbourhoods and isolated modern buildings, symbols of architectural, technological and social aspirations, were trying to overcome the heavy historical colonial burden and, nowadays, have begun to be appreciated by users and authorities as an integral part of the current city. Combining design, maintenance or even rehabilitation questions, could new stakeholders be involved in the challenges and strategies to preserve modern collective houses?

4. Final notes

The neighbourhood units in Luanda, which can be understood as generalisable models, implicit in their urban–architectural proposal, are elements of analysis and rationality. Through the CTT project, Simões de Carvalho tried to reinforce the idea of the modern city that the Prenda neighbourhood heralded. A great diversity of typologies was intended for these new neighbourhoods. However, the CTT block would be the only one to be built, leaving a void in the city, progressively occupied by other post–colonial initiatives. The failure of the urban project left the block isolated from the new town that Simões de Carvalho was proposing for the Angolan capital in the final cycle of Portuguese colonialist urbanism.

However, the numerous publications in local newspapers of the time show that the processes of construction and promotion of the flats were quite successful. When these urban developments were placed on the market, their sales pitch focused above all on the attractiveness of location, ease of mobility and the pleasantness of the surroundings, emphasising the unique qualities of the neighbourhood's setting. As a result, these developments tended to be self–sufficient, with a range of commercial and leisure amenities offering significant advantages to homebuyers. These criteria would eventually give rise to modern architecture, sophisticated as the investment justified with a clear identity.

Private companies like Precol eventually defined new, more specific real estate models with comprehensively planned solutions, seeking an appropriate commercial insertion in the potential buyer market and creating marketing and sales strategies. The experience gained by repeating the process allowed for the optimisation of a type of product by a large real estate company that would eventually lead smaller developers and builders from other developers to replicate this same product. Furthermore, large construction companies have played, and continue to play, a significant role in the process and discourse of international 'development'. According to Simões de Carvalho's testimony, quality of the construction and engineering excellence are fundamental themes in understanding the value of this architecture executed at the end of the Portuguese colonial period.

The strategy defined in Luanda's City Council with the attribution of the construction of neighbourhoods to private companies, committed to the

production of profitable houses, challenged the canonical architecture championed by the Colonial Urbanisation Office (GUC), contributing to the definition of an Architectural Grammar in housing. Characterised by adventurous experiments in using new materials and techniques that accompany the creation and innovation of everyday living space, today, many of these complexes require mechanical and safety improvements, such as infrastructure, systems and lifts in compliance with current regulatory standards. Moreover, these buildings have often been intensively used and modified, corroborating their degradation. Without any maintenance for the last 50 years, this housing infrastructure's resilience is due to the rigour of the architectural design as per the demands of the tropical climate, showing a spatial and tectonic value that has allowed it to survive the test of time. The large quantities and high quality of these modern housing complexes and their ensuing worldwide dissemination make them a prime target for urban regeneration.

It is not a history of triumph over the elements or a particular architectural movement; instead, it identifies a new object of history and a new subject of design practice taking climate into consideration. Its interest lies in redefining the constructional methods to extend the architectural discourses on the changing climate patterns of the past and present. However, today's debate focuses mainly on how to keep these complexes alive and at the same time improve them according to contemporary standards of comfort. Would it be possible to reassert the original innovative and sustainable building systems by involving new stakeholders committed to the new energy challenges? Instead of discussing demolition, can the growing phenomenon of the valorisation of heritage capture new financing markets?

I end with more questions than initially, hoping this research will become fruitful and open the discussion of histories and possible futures: from climate management techniques to new contributions from students, architects, and researchers involving the know-how of large construction companies in the techno-cultural challenges of mitigation and adaptation to climate instability. Can we still be modern?

Acknowledgements

The author thanks the Chair's reviews for her valuable feedback and comments on this article and the researcher Maria Alice Correia who made it possible to access the Angolan periodical newspaper sources of the time.

This work was funded by FCT under Project No. PTDC/ARTDAQ/30594/2017 and CA18137.

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- 1 Tostões, "The Home at", 3
- 2 Lagae & Avermaete, *L'Afrique*, 5.
- 3 In 1951, the 1933 Constitution is amended, changing the Colonial Act, where terms such as "Empires" or "Colonies" are replaced by "Overseas" and "Provinces".
- 4 Cf. DECREE no. 34:173 Colonial Ministry created the Colonial Planning Office, based in Lisbon, a standard office to serve all colonies in Africa, and defined its attributions. *Diário do Governo*, I série, n. 269, 6 December 1944, 1167–1168. Cf: Milheiro, 2012:326.
- 5 *Estado Novo* is the name of the political, authoritarian, autocratic state regime that was in force in Portugal for 46 years without interruption, with freedom proclaimed with the Revolution of 25 April 1974. In 1975 the process of independence of the Portuguese African colonies began.
- 6 Rodrigues, "Modern Colonial...", 87.
- 7 Carvalho, "Luanda do Futuro", 27–29.
- 8 Nóbrega, "Ora se me dão licença", 9–20.
- 9 Correia, *O património...*, 147.
- 10 *A Província de Angola*, 15–2–1962
- 11 Data gathered in an interview with Fernão Simões de Carvalho, Queijas, 27/07/2011.
- 12 Rodrigues, "Cuando la vivienda colectiva" 147.
- 13 Milheiro, *Optimistic Suburbia?*, 215.
- 14 Rodrigues, "O Betão nú e o Lobito", 8.
- 15 Olgay, *Design with Climate*, 4.
- 16 In Portugal, as an example, the J. Pimenta firm, which in addition to the building materials yard, would set up its own design office (which would take responsibility for all projects) and a section for management of condominiums and rental apartments.
- 17 For example, MERCATOR, SARL called on LUSECA – Sociedade de Construções, SARL with know-how in the tunnel formwork construction system, developed in Sweden, for the promotion of the Alto da Barra Urbanisation, Fernando Silva, 1962–1979, Lisbon, Portugal.
- 18 Correia, *O património...*, 147.
- 19 The horizontal property regime provides the segregation of buildings (or groups of interconnected buildings) into different and independent units, resulting in a condominium structure where a distinct entity or individual can own each unit.
- 20 *A Província de Angola*, 16–06–1959.
- 21 *Diário da Manhã*, 1959
- 22 Mota & Companhia has been in business since 1946, and in Housing the following stand out among many others: Pastorinha, Precol, Construções Cofinca, or J. Pimenta, founded in 1956 and still in activity today.
- 23 *A Província de Angola*, 10–05–1967.
- 24 *A Província de Angola*, Sociedade Cooperativa "O Lar do Namibe", 1971.
- 25 *Ronda da Cidade*, 02–05–1959.
- 26 *A Província de Angola*, 29–04–1971.

1952, Berlin, “Wir bauen ein besseres Leben”: USA takes command

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In 1952, the United States presented the exhibition *Wir bauen ein besseres Leben* inside the American *Marshall Haus* in Berlin. The rectangular floor plan of the one-family house, consisting of a living/dining room, kitchen, two bedrooms, bathroom, laundry room, nursery and garden, is displayed for visitors, who walk through it from an elevated scaffolding. The exhibition is organised by the American architect Peter Harnden (1913–1971), who after the Second World War directed the Marshall Plan Information Office from Paris, as well as different US government units aimed at stimulating European production, facilitating international trade, increasing productivity and, of course, promoting the image of the United States in Europe in the midst of the Cold War. The aim of the exhibition is to promote the free movement of goods in Europe and between Europe and America by displaying a house built and furnished with products from up to nine countries: eight European countries and the United States. Arranged according to the plans of the German architect Fritz Bornemann and with the advice of the Museum of Modern Art (MoMA), the exhibition of furniture, selected according to modern taste, is accompanied by the performance of a “model family”: professional actors, who take it in turns to interpret the routines of a normal day, while a narrator from a circular pulpit describes the products, so that visitors become *voyeurs* of a whole universe of domestic and private consumption that provides, literally, “a better life”. A scenographic and optimistic, multicoloured and “democratic” approach that aims to demonstrate the advantages of choice and the possibilities of increased consumption. It is no coincidence that the exhibition is starting in Berlin: of the more than half a million visitors, 40 per cent come from the eastern part of the city, as the MSA (Mutual Security Agency), the organization promoting the exhibition, triumphantly proclaims. The *pax Americana* in Europe is built by declaring the Cold War.

In 1948 the art historian Sigfried Giedion (1888–1968) published in the USA the well-known book “Mechanization takes command”¹, a text written after the foundational and even better known “Space, Time and Architecture”², published in 1941, a few years earlier and also in the USA, considered one of the first *histories* of modern architecture. Giedion, born in Prague but of Swiss origin, trained in the shadow of Heinrich Wölfflin in Munich, secretary general of the CIAM since 1923, is certainly one of the first members of the European *intelligentsia* to realize the turn of events in the old continent during the first decades of the twentieth century, both the breakthrough irruption of the artistic avant-garde or the role of technology in architecture during the 1920s, and the generalized economic difficulties and the rise of political fascism during the 1930s. If in the early 1940s in “Space...” he aimed to “show the Split that exists in our time between thought and feeling”, at the end of the decade, in “Mechanization...” he tries to show this rupture “by investigating an important aspect of our life – mechanization”³. In effect, Giedion’s essay establishes an “anonymous history” – in his own words – of the process of the unstoppable mechanization of American society. To this end, instead of looking on the sublimated objet-type objects that characterize the purist

paintings of European artists – among others, those of Le Corbusier – Giedion focuses throughout the more than 700 hundred pages of his work on the everyday objects that accompany the life of any individual, from the moment he wakes up until the moment he goes to bed. To do so, he immerses himself in the catalogs of furniture, installations, household appliances, etc. produced during the last decades in North America, researching both in the official archives of the patent offices and in those of industries such as General Electric, Apex or Westinghouse, among others. If in Europe the machine was the metaphor of a better future – which culminated in the horror and destruction of World War II – Giedion discovers that in the USA the daily and anonymous use of products guarantees freedom, equality and democracy. In contrast to the childish machinism of avant-garde Europe, in contrast to European intellectual complication, the pragmatism of American advertising allows the historian to approach a world of practical, transformable, light, cheap, affordable and seemingly culture-free objects. An unexpected, surprising and unprecedented approach, especially for an art historian.

1. Marshall Plan Exhibitions

1948, as Giedion well knows, is not just an ordinary year. Since 1945, a series of events, first diplomatic and then political, have led to the outbreak of the Cold War. Only four days after the German army surrenders to the allies, on May 8, 1945, Churchill warns Truman that “An iron curtain has fallen across the Soviet front. We ignore everything that is going on behind it”⁴. During the Potsdam conference in July 1945, Presidents Truman, Stalin and Atlee can barely conceal their great differences. At the end of the following winter, on February 9, 1946, Stalin presents “A New Plan for Russia” and a few days later, on February 22, 1946, George Kennan writes the “Long Telegram”. The following month, Churchill – then officially out of politics – delivers in public his famous speech in the USA, the Westminster College of Fulton, in which he proclaims that “From Stettin in the Baltic, to Trieste, in the Adriatic, an iron curtain has fallen over the continent”. After the long and very hard winter of 1946–47, events accelerated. On March 12, Truman appears before Congress to request intervention in Greece and Turkey, with the aim of “helping the free peoples”. The Truman Doctrine was born and as is well known, on June 5, 1947, General George Marshall, then Secretary of State of the United States government, gave a lecture at Harvard University in which he announced a program aimed at resolving the economic crisis in which Europe had been plunged since the end of World War II, so that the “new world” would be able to save the “old world”. A few months later the United States Congress approved on April 3, 1948, the legislative text “Foreign Assistance Act of 1948”⁵ a “plan” for European reconstruction, officially known as the *European Recovery Program*, which included a set of low-interest loans, non-refundable aid and advantageous commercial agreements offered by the United States to Europe, through the *Economic Cooperation Administration (ECA)*, for a value of approximately 13 billion dollars. Coordinated through the *Organisation for European Economic Cooperation (O.E.E.C.)*, the European countries included in the Marshall Plan⁶, as the program would become popularly known, were to

reduce inflation, rebalance their balance of payments and regain economic independence by June 30, 1952.

With the aim of coordinating all the actions of the *ECA* on the ground, in 1948 the *United States Special Representative* in Europe (*USSRE*) set up its operations center in Paris, which included the *ECA'S Visual Information Unit*, a unit created in 1949 to initiate the dissemination of the Marshall Plan through all kinds of audiovisual productions, publications and exhibitions. The architect Peter G. Harnden (1913–1971)⁷, a US Army officer stationed in Europe during the final phase of the World War II, was chosen as “Chief of presentations Branch”⁸ to lead an international team of architects, illustrators and designers – among whom the young Italian architect Lanfranco Bombelli (1921–2008) soon became prominent – in charge of setting up the various exhibitions that would tour Europe in the following years, with the aim of promoting the Marshall Plan, stimulating European production, facilitating international trade and – last but not least – disseminating the image of the United States⁹.

In April 1950, in fact, the traveling exhibition “Europe builds”, promoted by the *OEEC*, started up, announcing the decisive role of the Marshall Plan in the reconstruction of Europe. The exhibition travels across Europe in four extendable trailer trucks carrying the contents of the exhibition, which are displayed in a large circular tent during the exhibition. Although the Marshall Plan came to an end in October 1951, the information program continued: the *ECA* became the *MSA* (*Mutual Security Agency*), and the Office of Information continued to be headed by the same Harnden team, so that the initial communication campaign became a stable and continuous propaganda program. Years later, Bombelli himself would admit: “In fact, propaganda, ... that's what we were doing. The government called it ‘information’,... but it was clear, it was propaganda”¹⁰. In February 1952, the exhibition “Caravan of peace” (**Fig. 1**), with the aim of spreading the origin and motives of the *North Atlantic Treaty Organization* (*NATO*), the Anglo–American military alliance and founding act of the Cold War. The main exhibition is also located in a circular tent, like a circus, supported by a metal structure that allows to raise in a few hours an immense tent, colored with flags, flanked by trailers that are transformed into secondary pavilions. Almost immediately afterwards, in April 1952, the “Train of Europe” starts, a former German military hospital train converted into an exhibition space in Munich, whose carriages detail the advantages of cooperation between European countries, the commercial and cultural connections between Europe and America, and the need to increase productivity; an exhibition on rails that receives five million visitors. “Productivity” is also the main theme of another series of rolling exhibitions that began at the Paris Motor Show in 1951 and in the Netherlands from 1952 onwards in two barges converted into exhibition space and an auditorium. Americanization takes command, by transforming military means of transport into mobile exhibits, whose adaptation makes it possible to display, from one city to another, large images on panels, graphs with statistics, three–dimensional illustrations, mobile models, multicolored flags... A clear and direct



Figure 1. Peter Harnden, "Caravan of peace" exhibition, 1952. Aerial view. © Fondo Harnden y Bombelli – AHCOAC.

photographic language, much more informative than subtle. From military uniform to civilian costume; from war to peace; as soon as possible and at full speed¹¹.

2. Wir bauen ein besseres leben

In this strategy of American propaganda and diffusion, the mounting of various "fixed" exhibitions, to be presented in the main European cities, became more and more important from those years onwards. Among them, always with Harnden at the head of the team, the early exhibition "Wir bauen ein besseres Leben" –literally: "Building a better life" – presented at the end of 1952 within the framework of the Berlin Industrial Fair¹², stands out significantly. It is an initiative that will also be presented during the following years in other cities in Germany (Stuttgart and Hannover), as well as in Austria, France and Italy, jointly promoted, in its different editions, by the *Organisation for European Economic Co-operation* (OEEC), the *Mutual Security Agency* (MSA) and the *United States Information Agency* (USIA).

This time it is no longer a "mobile" exhibition as in previous cases, but the mounting of an ambitious exhibition, which is arranged inside the *Marshall Haus* in Berlin, a building designed just two years earlier, in 1950, by the municipal architect Bruno Grimmek, Director at Senator of Building and

Housing, commissioned by HICOG (High Commissioner for Germany), located in the city's historic fair exhibition site in the Westend district of Charlottenburg–Wilmerdorf, which, under the name of Secretary of State Marshall, became the permanent American exhibition building in the German capital.

The 1952 exhibition presents a model house in the generous double-height central space of the building's main gallery, rectangular in plan and approximately 120 m² in area, consisting of eight rooms, including a living room, a dining room, double bedroom, a children's room, a bathroom, a kitchen, a laundry room and nursery... surrounded by a landscaped outdoor area (Fig. 2). This "dwelling model", arranged according to the plans of the German architect Fritz Bornemann – with whom the Harnden team collaborates openly and with absolute naturalness¹³ – presents a structure formed by "Innocenti" metallic tube elements, and interior divisions composed of modular elements of aluminum, glass or wood, fixed with the "Merobau" system.

More than exactly a "model house" (there's no entrance; distribution does not include corridors; and beyond the window openings there is no facade, ...) it is, in fact, a series of "model rooms", of variable dimensions (living 22 m², rooms 14 m², bathroom 9 m²), whose objective is to show, in a direct way, the advantages of the free circulation of products in Europe and between Europe and America, through the exhibition of a house built and equipped with elements, products, furniture in installations of up to nine countries: eight European countries, all of them included in the Marshall Plan (Germany, Austria, Denmark, France, England, Italy, Holland, Sweden) and the United States: "Industrial products [...] which, thanks to technology, increased productivity, economic cooperation and free enterprise are available in Western civilization"¹⁴.

With the advice of the Museum of Modern Art, the furniture selected is the result of the modern taste shared by the producing countries, as specified the article published in the Italian magazine *Domus*¹⁵ in 1954, when the show was exhibited in Milan: in the dining room the adjustable slats are made of American nylon; the lamps around the table are Italian and American; the crystal glass is German and the wooden bowl is Danish. *Domus* goes into many more details of the exhibition, such as the system of the dressing table, shown open and closed, or the layout of the bathroom with the arrangement of the different pieces and sanitary ware. The publication also shows, on the cover of the issue and on the inside pages, the surprising and optimistic use of color that presides over the rooms where the furniture, flooring, curtains, etc. present the primary tones usually used in the neoplastic avant-garde and the industrial experiences of the Bauhaus. Like the flags that waved happily in the tents, trains or boats of the previous mobile exhibitions across whole Europe. In full color and without frontiers. Outside the house, the program is complemented by the promise of a life in the open air: from the Volkswagen, the scooter or the bicycles parked by the

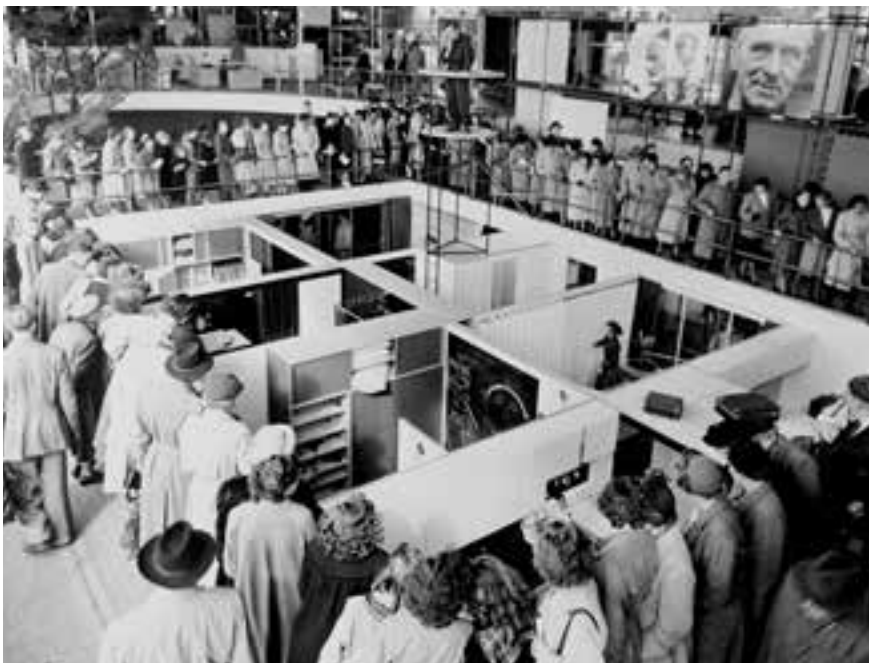


Figure 2. Peter Harnden, "Wir bauen ein besseres Leben" exhibition. Berlin, 1952. Bird's eye view. © Fondo Harnden y Bombelli – AHCOAC.

entrance to the outdoor chairs, hammocks, swings and benches, placed on vegetation and trees, arranged inside the exhibition building.

3. Theater for "win hearts and souls"

However, the highlight of the show is that, taking advantage of the almost seven meters of free height of the central space of the *Marshall Haus* building's main gallery, the model house is exhibited without any kind of cover, at the feet of the visitors of the exhibition, from a perimeter scaffolding located at the height of its hypothetical roof, which allows to walk from above the floor of the house, in elevated corridors of variable width (between 1.60 m and 2.80 m.). From this privileged vantage point it is possible to visually tour the continuous layout of the rooms of the house and observe the interior in all comfort, in a sort of large model reproduced on a scale of 1:1.

And not only that. In addition to being seen from above, it is an exhibition that is inhabited and in movement: shortly before opening the doors to the public, it was decided – Harnden? – to include in the exhibition the performance of a "model family": two couples and eight pairs of children, professional actors, who interpret in turns the routines of a normal day, while a narrator from a raised circular pulpit, located in the center of this house, describes the

different products and the advantages of the free circulation of products. In the open exhibition of this dwelling, designed to stimulate design, visitors thus become *voyeurs* of the movements of its occupants, immersed in a universe of domestic and private – if not infinite – consumption that provides them with “a better life”. (Fig. 3)

At the press conference prior to the inauguration, Harnden himself is misunderstood on this particular subject – the very theatrical representation of the message – and the following day the United Press accuses the State Department of promoting a “striptease”, assuming that the use of the shower would be literally described; an anecdote – who knows if, deep down, it is intentional – that causes a considerable stir and motivates a long series of official clarifications¹⁶. Beyond the anecdote, the show exhibits a very comfortable house that includes, of course, all kinds of aids such as refrigerator, dishwasher, television and air conditioning... The new post-war habitat is now a real machine “to” inhabit, far beyond the elitist metaphor of the *Lecorbusierian*’s misunderstood machinism. Experience, scenography and representation: the backdrop of the exhibition, like a stage set, is composed of a structure of banners on a tubular framework, in which didactic slogans are combined with giant photographs that portray the faces of anonymous citizens of all ages, as protagonists of that anonymous history that Giedion called for in his “Mecanization...”.

This new dwelling is complemented by a simultaneous exhibition of the domestic utensils that should be included in its interior, in order to provide a new sense of comfort. Thus, on the upper floor of the *Marshall Haus* – and in other locations in the spaces adjacent to the main exhibition – the domestic universe is displayed and shown in an absolutely didactic way: in the exhibition’s brochures (Fig. 3), the country of origin of each of the products is detailed, as well as the manufacturer, the price (calculated in the different currencies of each country) ... and even the number of working hours used in their production! Consumption is substantiated in fabrics, tableware, household appliances, which provide a habitat of well-being and facilitate life. The same refrigerators, irons, sewing machines, etc... that Giedion had unexpectedly collected in his essay.

Why does the exhibition start in Berlin? Certainly not by chance. It is not an innocent choice: of the more than half a million visitors, 40 percent come from the eastern part of the city, as the *MSA* triumphantly proclaims. The advantages of the free exchange of goods and increased productivity are thus underscored at the very edge of the iron curtain to which Churchill alluded in 1946. Housing designed to stimulate design, rightly so, and to promote better use of mass-production techniques. In German: “Wir bauen ein besseres Leben...”. Literally and exactly: “We are building a better life”. Like the one promised by the “Caravan of peace” that toured Europe in those same years. A *pax Americana* that in Europe is built, as we can see, by declaring the Cold War: in other locations the same exhibition, with practically the same contents, does not allude to a supposed better life, but in a much simpler and



Figure 3. Peter Harnden, "Wir bauen ein besseres Leben" exhibition. Berlin, 1952. Living, external view.
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more precise way – and one might think that under Harnden's language skills, and specially nuances – it is presented as a "Maison sans frontières" in Paris or a "Casa senza frontiere" in Milan and Rome... just simply a "House without frontiers"¹⁷. In the Europe of 1952, during the decisive period of Post-World War II, the United States exhibits a better life in a global housing, that shows the advantages of modern design, between social commitment and a political strategy determined to "win hearts and souls" by promoting the famous "American way of life". And also achieving the necessary "reintegration of thought and feeling", as Sigfried Giedion had claimed a few years earlier.



Figure 4. Peter Harnden, "Casa senza frontiere" exhibition's brochure. Milan, 1954. © Fondo Harnden y Bombelli – AHCOAC.

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S07

The global expansion (of modern architecture) in the post-war period, themes and variations of international style. An introduction to new contributions

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The international style is expressed in themes and variations in the interwar period, from the experiments of Schindler and Neutra in California in the 1920s to the moderate rationalism of the Swiss Häefli, Moser and Steiger, from Kysela in Prague to the tours de force of Lubetkin with Tecton in London in the 1930s. Sometimes ejected from conflict situations, modern language set out to conquer the world via universal exhibitions, such as Sert's pavilion in Paris in 1937, which contained Picasso's *Guernica*, among other works. The conflict became global, the total war, accelerating construction techniques as much as destruction, spreading reconstruction programs on a global scale that were massively modern.

Even countries sheltered from the world conflict, South America and Peru in particular, saw an expansion of modern culture in the capital Lima, "la moderna", which welcomed European architects and engineers from the 1930s and during the war years, such as Neutra, Sert and Wiener. This strong imprint was reflected in the adoption of urban planning regulations allowing the erection of vertical development buildings in its historic center, such as those of the German Paul Linder, the Italian Mario Bianco or the Swiss Theodor Cron in the 1950s, which were celebrated and popular before falling into a state of indifference that seriously devalued them.

For modernity to penetrate a country that was isolated, closed in on itself and frankly politically hostile to any opening up, as Portugal was in the middle of the last century, it had to be with the help of a new program, health care

buildings, hospitals. The question of hygiene imposed by the “healing machine” is not a matter of style; medicine is based on science and the treatment of disease, and are sanatoria not the first modern objects? Nevertheless, if the frank affirmation of a modern aesthetic models Alfredo Viana de Lima’s regional hospital in Bragança, clearly inspired by Le Corbusier, the use of slate cladding and careful polychromies balances a radically modern dimension with a rather vernacular vision. The Viana do Castelo hospital, known as Santa Luzia, will also be the object of a skilful composition by Choro Ramalho, a Wrightian megastructure open to the landscape, mixing brutalism, contextualism and refined rationalism. Celestino de Castro will propose triangular meshes for the Guimarães Hospital, a composition based on a fragmented plan allowing for greater intimacy and spatial flexibility, making extensive use of color and artworks to qualify the architecture. Later, and considering physical and psychological recovery and social reintegration as part of the healing process, the Alcoitão Physical Medicine and Rehabilitation Centre and the Calouste Gulbenkian Cerebral Palsy Rehabilitation Centre were built in the 1960s, organizing the medical spaces with great freedom and flexibility, integrating relations with the outside world and, in particular, the gardens into their general composition, completing a cycle of powerful architectural proposals adapted to the therapeutic processes.

The high-rise buildings in Lima, the hospitals in Portugal, the program of modernity also pass through school and university buildings, places of production and dissemination of knowledge, and in particular in Israel, a place of construction of a strong identity from the inter-war period and the reception of inhabitants from all over the world in successive waves. Erich Mendelsohn worked to develop the University in the 1930s as a cultural, intellectual and research center based on architectural modernity. It will be built in Jerusalem with the Givat Ram Campus (1954–1958) and The Israel Museum (1960–1965), on very different projects. The campus is a complex project and the result of the work of many architects, starting with the master plan presented in 1953, designed by the German-trained architects Richard Kaufman, Joseph Klarwein and Heinz Rau, in collaboration with the American landscape architect Lawrence Halprin. The principles of functionality and the use of affordable materials to create efficient buildings, but also the use of local stone imposed by the regulations, the recognition of climatic specificities and their consideration in the urban design and the use of constructive and architectural elements such as brise-soleils, glass panels, pilings, but also open spaces with trees, linear buildings, etc., are to be found in the design. The architects synthesized the contributions of the modern masters, Munio Weinraub and Alfred Mansfeld, who designed the remarkable Institute of Jewish Studies, the former having studied at the Bauhaus with Mies van der Rohe and Hannes Meyer and the latter at the Technische Hochschule in Berlin with Hans Poelzig and Heinrich Tessenow. Many of the buildings that make up the campus are milestones of modern architecture in Jerusalem, such as the synagogue, where the influence of Oscar Niemeyer can also be read, where one of its designers worked, or the library, similar to “a Villa Savoye

out of scale", which bears witness to the influence of Le Corbusier. Opposite the campus, the Israel Museum will be built in 1959 in an extraordinary landscape under the direction of architect Alfred Mansfeld, conceived as an "expanding" organism that will grow from its first stage completed in 1965 to the last intervention of James Carpenter delivered in 2010, which "illustrate the expansion of modern design values in construction, not only in the architectural form, but also in the relationships between the social organization and the structure of its spaces".

If the diffusion of modern architecture is done through the reception of people trained in European or North American avant-garde schools, as in Lima or Jerusalem, or through the diffusion of modern spatial and constructive ideas in medical-social programs, as in Portugal, In Japan, "metabolism" is a radical movement born in 1960 in Tokyo "in reaction both against the Corbusier modern and against the celebration of Japanese tradition crystallized in the imperial villa of Katsura", and develops with proposals for marine or aerial megastructures, of which very few will be built, except for the Nagakin Tower of Kurokawa in 1971, the destruction of which has lamentably begun these days. A key figure in this movement will be involved in a development that is unexpected, to say the least, of this frenetic futurism, Masato Otaka, who will pursue all its principles but in the service of Japanese agricultural cooperatives, in a utopian project that will mix social-political processes for democracy and farmer participation, constructive processes based on high quality concrete prefabrication in the construction of the buildings of the agricultural structures with permanent "megastructures" and adaptable interspaces, artistic processes in the treatment of materials and architectural surfaces, and processes covering the whole range of social activities from domestic spaces to the equipment and production places of the cooperatives. This utopian program developed over a period of fifteen years until 1977, and is certainly one of the most accomplished achievements of what 'metabolism' was able to develop as a constructivist and socially meaningful device.

The last theme dealt with in this session is not specifically about the expansion of the modern in post-war Yugoslavia, in Belgrade in particular, the new Belgrade to be precise. The Yugoslav federal capitals were modern, and this from the inter-war period, Zagreb under the impetus of Drago Ibler, Belgrade under that of Milan Zlokovic, Ljubljana under that of the most rebellious pupils of Plecnik. The reconstruction will develop a modern, functionalist and socialist architecture throughout the country, led by young, committed architects with great intellectual freedom. Under the leadership of Bogdan Bogdanovic, the cities of Novi Zagreb and Novi Beograd were developed, and in the midst of a vast housing stock, local community centers were built, multifunctional centers with facilities and programs that complemented the housing blocks: socio-cultural and commercial spaces (grocery shops), everyday services (post office, bank, craftsmen, etc.) for socio-political activities and office spaces for the community.) for socio-

political activities and office spaces for the local community, promoting participation and collaborative governance in these new neighborhoods. The study of their programming and life could allow their redevelopment today and the reactivation of their civic role.

I would like to thank the authors of the contributions I have just introduced for the quality of their work, Daniela Arnaut, Marilda Azulay Tapiero, Anica Dragutinovic, Javier Atoche Intili, Sumiko Ebara, which has made it possible to advance in the understanding of the reality and complexity of the international expansion (of modern architecture) in the post-war period on a planetary scale, of the variations and qualifications of the international style, themes which can be inserted into this movement described by Jean-Louis Cohen or Kenneth Frampton in their founding works.

Migration and the Architecture of the City. **Planning and Expansion of Modern Architecture** **in Israel**

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The present work addresses the expansion of modern architecture and its interaction with the migration phenomenon. This means approaching the subject-object dialectic as opposed to its disjunction.

A case study is the expansion of modern architecture in Israel. We are interested in planners and architects, but also in the inhabitants of cities such as Jerusalem, Tel-Aviv or Beersheva, facing successive waves of immigration and embodying society and life ideals into architecture. Furthermore, one of the main objectives of this architecture was to meet the needs of new ways of living in a new place.

An architecture that should be “not only functional”, but also “of time and of history” wrote Le Corbusier, 1937 at the *Habinyan* magazine (1934–1938), a publication created as an instrument for the implementation and advancement of modern architecture in the Middle East.

Following World War II, and even into the 21st century, architects of diverse origins, cultural environments and sensibilities, as well as different backgrounds, continued making a statement of modernity in response to the need for efficient systems, while expressing the willingness to relate to the heritage. History, societal needs and desires, the site, the climate or the terrain's configuration, as well as the culture and the conceptual force were decisive, as it also was the integration objective.

Such is the case of the Hebrew University – Givat Ram Campus (1954–1958) and The Israel Museum (1960–1965), both in Jerusalem. Examples in which, aside from specific geographical and cultural aspects, functional, technological or constructive elements, in addition to the symbolic ones, are added, expressing the commitment between the aspiration of a society and its architecture.

1. Architecture in israel (an approach)

In Israel, even before its establishment as a state and under the British Mandate (1920–1948), architecture was erected as the instrument determining the relationships between social organization and the structure of spaces in response to the housing needs of a large incoming migrant population arriving in continuous flows, of diverse origins and rapid growth. On the one hand, even improvised constructions were important just for the fact of existing; on the other, it was “as if modernity, rejected elsewhere, anti-urban, utopian, finally found, in *Eretz Israel*, its true land of welcome”, according to the *Akal Dictionary of Twentieth Century Architecture*.¹

In the cities, along with their planners and their architects, the role played by the people who, in successive migration waves, tried to transfer society

and life ideals into architecture, is also of interest. A large proportion of the population had been arriving in Palestine since 1882 mainly after the outbreak of major waves of anti-Jewish violence in Russia; others, coming mostly from Germany, arrived in the 1930s as a result of growing anti-Semitism and the spread of Nazism in Europe; among them, close to 200 architects and engineers.

Furthermore, World War II and the establishment of the State of Israel in 1948, gave a decisive impetus to immigration, now also from Arab countries.

Tel Aviv, founded in April 1909, was known as the “city of wonders” and “city of balconies” – balconies that extended the inner rooms towards the street symbolizing openness to the social life depicted on the street. Meanwhile, Jerusalem is a city steeped in history. Erich Mendelsohn, who moved his residence to Jerusalem in 1939, wrote about his work “For although plan and building follow the fundamental principles, i.e. the principles of Mediterranean tradition, the concrete realization of these principles must be in harmony with the spirit of our own epoch. The creative form only is permanent; all stylish imitation is dead from the outset”.²

Architecture that should be “not only functional”, but also “of time and of history” wrote Le Corbusier, 1937, at *Habinyan: A Magazine of Architecture and Town Planning* (1934–1938), a publication designed by a group of architects known as *Jug Adrijalim* (Circle of Architects), as an instrument for the implementation and advancement of modern architecture in the Middle East.

Arieh Sharon, founder of the group and chief architect of Berlin office of Hannes Meyer until then, of whom Nitza Metzger-Smuk pointed out that “he did not regard architecture as an aim in itself but as a means of ameliorating the urban quality of life and arriving at a new social order”,³ wrote that, “in a young, growing nation, the architect seeks to influence the evolution of the country, focusing his efforts on the basic problems: needs assessment, planning and construction, and does so under ever-changing economic and social conditions.”⁴

It was after the end of World War II, and mainly during the 1950s and 1960s, when the need to solve the housing and infrastructure problem became urgent, but also the need to address social integration. This was approached by promoting constructions mostly intended for education and health while providing, at once, hundreds of thousands of new housing units in order to deliver a prompt solution to a largely impoverished population. Emphasis was placed on functionality and the use of affordable materials, and attention was paid to the fusion with local culture. This was done by different means, one from the structuralism of modular architecture and another from the brutalist expressiveness, emphasizing the material nature of the buildings by using concrete, a widely available raw material. Both approaches were synthesized by Moshé Safdie in the Habitat exhibition of the 1967 Montreal Universal Exposition.

2. Two examples in Jerusalem

While Tel Aviv is also known as “The City White”, or Beersheva, capital of the Negev Desert, it is also referred to as “The Grey City” for its concrete buildings, in Jerusalem, an ordinance dating from the British Mandate requires that all buildings be constructed or faced with local stone, influencing the cityscape in such a way that, it could be considered that, here, the International style is a combined International and Jerusalem style.

In May 1958, *L'Architecture d'aujourd'hui* devoted a large part of its Issue 77 to “Constructions récentes en Israël”; as it was described, “Jerusalem is a city of stone [...] coming from the very hills where the city rises. It is this stone what has been chosen as a natural element of relationship, to converge the modern constructions with the old and contemporary aspects of Jerusalem and its surroundings”.

An example of it is the Edmond J. Safra Givat Ram Campus (1954–1958), one of the four campuses of the Hebrew University which, integrated by buildings by different architects, can be considered a Modern Movement museum itself. Opposite to it, topping one of three neighboring hills, is The Israel Museum (1965), an example of structuralism by Alfred Mansfeld and Dora Gad. It integrates the Billy Rose Sculpture Garden, by Isamu Noguchi, (1960–1965) and the Shrine of the Book (1965), by Fredrick Kiesler and Armand Batros, built to house the Dead Sea Scrolls discovered between 1946 and 1956. All of them works of architecture symbolizing and constituting a referent of Education, Culture and Memory of a society.

Just as in the past Erich Mendelsohn's Chaim Weizmann's house, in Rehovot, became a symbol. As he referred to it in 1935: “Important men [...] are waiting for the dignity of our people to finally come to expression in its architecture”.⁵ Thirty years later, Frederick J. Kiesler with reference to the Shrine, stated “The architecture would have to derive from content, a meaning, a belief for the visitors [...]. We could not attempt to conceive these structures except in humility of spirit and reverence for the buildings of the Middle Eastern past”.⁶

Edmond J. Safra Campus, Givat Ram

The first project for the Hebrew University, located on Mount Scopus, was originally developed by Patrick Geddes in 1919; an endeavor in which Erich Mendelsohn became involved between 1934 and 1939, approaching the University as a cultural, intellectual and research center.

After the outbreak of World War II, construction on the campus and scientific cooperation with European institutions came to a standstill. In January 1948, studies were interrupted until 1967, and Mount Scopus became a no man's land between the Israeli and Jordanian fronts. It was many years later, when the Campus' dilapidated buildings were restored and adapted to the new technologies under the direction of Ya'acov Rechter, reopening in 1981.

In the meantime, a new Campus was planned on Givat Ram, a hill northwest of the city, in a long and narrow piece of land of approximately 730,000 m2, with steep slopes on its east and west sides. The objective, set out in 1952, was “to build a modern University with a sufficiently large campus, with buildings set in beautifully arranged gardens and with all those amenities which are necessary for promoting students’ life on the campus”.⁷

L’Architecture d’Aujourd’hui placed the focus on the campus, a complex resulting from the work of many architects starting with the master plan presented in 1953, designed by German-trained architects Richard Kaufman, Joseph Klarwein and Heinz Rau, in collaboration with American landscape architect Lawrence Halprin. (Fig.1)

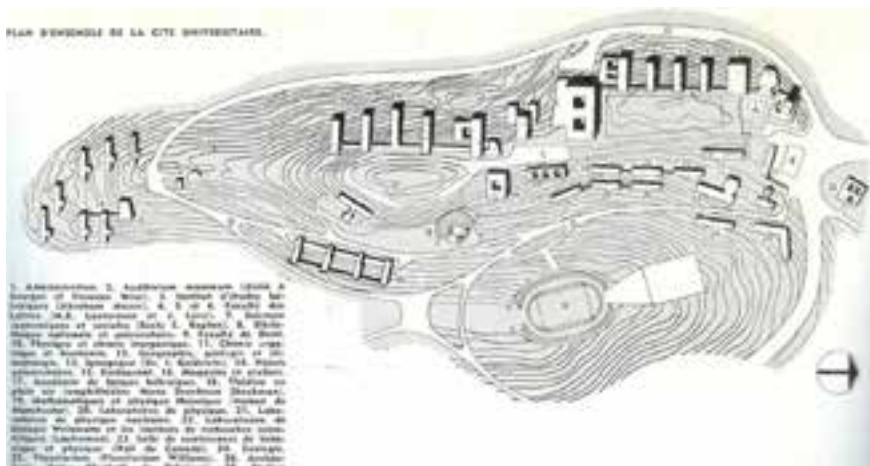


Figure 1. Campus of the Hebrew University of Jerusalem. Givat Ram, Israel (1954–1958), *L’Architecture d’Aujourd’hui*, May 1958, 70.

The terrain and climate were decisive in organizing the program for close to 13,000 students. The six areas into which the campus was divided were connected by a long promenade on the crest of the hill, covered walkways between the buildings providing protection from rain and sun, and rolling circulation around the hill. Modernity is present at all levels, both in the open spaces, courtyards and tree-lined squares, and in its linear buildings, their accesses and inner spaces, the *pilotis*, *pans vitrés* and *brise-soleils*. The University’s Technical Office supervised each project and carefully selected the materials in order to ensure uniformity in the complex.

The heart and “green lung” of the campus is an extensive area laid with grass, water, trees, bushes, plantations, furniture and sculptures. On its west side, buildings are arranged within the complex, seeking to communicate a sense of equality in the different fields of knowledge. Among them, the Institute of Jewish Studies, in the Abraham Mazer Building, designed by Munio Weinraub

and Alfred Mansfeld.⁸ Its configuration, between the modular, organizational and structural symmetry and the functional asymmetry around the hall, shows the confluence of two schools: while Weinraub was trained in the Bauhaus style as a student of Ludwig Mies van der Rohe and Hannes Meyer until he migrated to Palestine in 1934, Alfred Mansfeld did so at the Technische Hochschule in Berlin, where he was a student of Hans Poelzic and Heinrich Tessenow until his transfer in 1935, and later on at the *École Spéciale d'Architecture*, in Paris, as a student of Auguste Perret.

Other buildings seek landmarks on the campus, such as the Library, in the center, or the Israel Goldstein Synagogue at the southern end.

The synagogue, by Heinz Rau and David Reznik, was a milestone in local architecture as highlighted by *L'Architecture d'aujourd'hui*: “an interesting synthesis between contemporary architectural expression and an intelligent integration with the local conditions and landscape”. It is a modern building which is a metaphor and gives the impression of being suspended and, at the same time, rooted in the ground. Reznik, who had worked with Oscar Niemeyer in his native Brazil, recalled in 1976: “Before my eyes I saw a building on the crossroads, as a cover of one’s mood”.⁹ Conceived as a concrete dome resting on eight arches, it marks its position on the campus under the light

of Jerusalem. At the first floor above the entrance hall, the open-plan meeting space, designed for close to 100 people, is enveloped by the shell; however, its floor does not meet the dome structure: the floor slab, resting on *pilotis*, is independent and the synagogue’s inner space gets lighted from the ground in its contour between the slab and the shell.

(Fig. 2)

As far as the Library, saving the functional and physical requirements, Michael Levin referred to it as “a magnification – on a massive scale – of a private residence, Villa Savoye in Poissy-sur-Seine”. He continues: “In other words, this is a transformation of a private residence into a public building of national importance”.¹⁰ It is the result of the work of three teams of architects who, after the competition for its design, worked together;¹¹ of them, Ziva Armoni recalled that “As young architects who ‘breathed architecture,’ [...] we aspired to execute precisely the principles of the style of the period – the International



Figure 2. Heinz Rau, David Reznik. Israel Golstein Synagogue, Hebrew University of Jerusalem, Givat Ram, Israel. *L'Architecture d'Aujourd'hui*, May 1958, XCI.

Style, which was dominant in Europe – in our studies at the Technion. It was a style that called for building in accordance with the new, industrial means of production, alluded to the changes that would occur in the future in the building, and advocated giving this practical and aesthetic expression”.¹² (Fig. 3.)



Figure 3. Alexandroni/Yaski, Armoni/Hebron and Nadler/Powsner. National Library of Israel, Givat Ram, Jerusalem, Israel. 1960. (M. Azulay, 2019).

The building is designed as a cube supported by stilts; glass walls, as in the synagogue, close off the vestibule on the ground floor. The Shrine of the Book was thought of within it. Bartos was an architect from the Massachusetts Institute of Technology while Kiesler, educated at the Technological University and the Academy of Fine Arts Vienna, had moved to New York in 1926 after being part of the G group (Gestaltung) and, later, of the DeStijl group. Bartos and Kiesler traveled to Jerusalem in October 1957 and, after building a 1:1 scale double-parabolic dome that would emerge from the roof of the library and rejected it as a proposal, they decided to find a new site. During a later visit to Jerusalem in 1959, they decided that the Shrine would be built facing the campus, but being part of the new Israel Museum.

The Israel Museum. Jerusalem

In the late 1950s, Teddy Kollek, director general of the Prime Minister's Office at the time, began envisioning an encyclopedic museum in Jerusalem that would align with the great national museums in Western capitals. After raising a competition between ten invited architects in 1959, The Israel Museum was designed by Alfred Mansfeld, while Dora Gad was entrusted the interiors. It was planned as independent pavilions, juxtaposed or connected, according to a modular layout in the shape of a mesh.

Mansfeld outlined his idea in a first sketch of an analogy between the *Village near Jerusalem* and the perspective and plan of his museum proposal: a system in which the unit – a 120–square–foot square – could be built independently or in combination with other units. He was outlining a structuralist interpretation of the values of a hilltop city layout in which both buildings and open spaces could grow organically on the site. It was also proposed to reconcile structure, construction, space, growth and shape, while generating structure, building and city.

The cover of the modular unit, as an “umbrella” or inverted pyramid supported by a single central column with a hollow core, frees the enclosure from any load-bearing function and allows separating, apparently, as in the Givat Ram campus' Synagogue, the roof from the walls.



Figure 4. Al Mansfeld, Dora Gad. The Israel Museum, Jerusalem, Israel, 1964. Mother and Child II, Jacques Lipchitz, 1945, in the Billy Rose Art Garden, Isamu Noguchi, 1965. (M. Azulay, 2017).

The structure provides the rules and a framework to occupy, a place where to build and grow.¹³ Mansfeld explained the logic of his architecture and this, as a discourse created from a language. An architectural text of which the competition jury highlighted that “The integration with the nature of the landscape’s topography is extraordinary” and “The building offers a special flexibility, a gradual organic expansion of the various building parts, and yet it maintains a unified style and characteristics”.¹⁴

Among other qualities, The Israel Museum designed in this way allows it to host architectures and extensions, as Mansfeld himself or the latest intervention by James Carpenter, inaugurated in 2010, have shown. The museum also integrates others, such as the Billy Rose Sculpture Garden and the Shrine of the Book, inaugurated in April 1965. (Fig.4.)

3. By way of conclusion

Architecture establishes an important relationship with diversity and integration. In the 1940s, Kenneth Clark wrote about Tel Aviv, built on the dunes, that everything was fresh, neat and bustling with communal life; and Nitza Meetzger–Szmuk wrote, “If it is true that architecture mirrors society and embodies the spirit of a period, then indeed, Sir Kenneth’s characterization of Tel Aviv is entirely apt.”¹⁵

Throughout the 20th century, following World War II and already into the 21st century, architects of diverse origins, cultural environments and sensibilities, as well as different backgrounds, and personality, integrated in Israel the values of modern architecture with heritage and with the needs of an ever-growing society from different flows and origins. In the case studies, both from Jerusalem, the city, its geography, climate and inhabitants seem to be decisive, but also, in the words of Gilles Deleuze and Félix Guattari, the fact that the territory “implies the emergence of pure sensible qualities, sensibilia that they cease to be solely functional and become expressive features, making possible the transformation of functions”.¹⁶

Both The Israel Museum, one of the most important buildings in the history of Israeli architecture, and the Hebrew University of Jerusalem’s Givat Ram Campus, in addition to being powerful statements of modernity of transcendent significance for the integration of a society, along with its heritage and tradition, they illustrate the expansion of modern design values in construction, not only in the architectural form, but also in the relationships between social organization and the structure of its spaces.

In its dialectics, as Karel Kosik stated, the work lives by its continuous revival. “Its particularity lies in the fact that regardless of the time or the conditions under which those appear – and to which it also bears witness – the work is, or becomes, a constitutive dimension of the existence of humankind”.¹⁷

Notes

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- 4 Sharon, Ariele. “L’Architecture en Israël” in *L’Architecture d’Aujourd’hui*, 77, May 1958, 63.
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 - 15 Nitza Metzger-Szmuk 2004, 49.
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 - 17 Karel Kosik, *Dialéctica de lo concreto*, Barcelona, Grijalbo, 1967, 157.

Lima la moderna (1937–1969)

Expansion of modern culture and multi-storey buildings in Peru

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The participation of foreign intellectuals in the urban development of Peruvian cities, and specifically of Europeans in the introduction of new typologies of building in Lima, remains to this day one of the most incisive influences on local architects and engineers. This proposal aims to illustrate the expansion of modern culture in Peru and the spread of the multi-storey building typology in its capital from the perspective of historic relations between the Old and New Continents. The United States' Good Neighbor Policy (1933–1945) made use of these relations, facilitating contact between members of CIAM exiled in the American continent – many of them as a result of the Spanish Civil War and World War II – and Peruvian intellectuals trained in Western countries, a dynamic that continued throughout the 1900s. The proposal focuses on the study of the most active European designers in 1940s in Peru, among them Richard Neutra (1892–1970), Paul Lester Wiener (1895–1967) and Josep Lluís Sert (1902–1983). Their biographies document the transfer of European practices in the fields of urban planning and architecture to the local reality. The economic, political and cultural circumstances that underlay the design of multi-storey buildings in the Historic Centre of Lima are also touched upon, from the introduction of urban planning regulations and the adoption of the *Plan Piloto de Lima* to the presence of European-born architects in Peru who designed a significant number of these buildings, including Paul Linder (1897–1968), Mario Bianco (1903–1990) and Theodor Cron (1921–1964).

Cultural migrations, Josep Lluís Sert, Mario Bianco, multi-storey buildings, Plan Piloto de Lima, post-colonial studies

1. Introduction

The history of Latin America has been characterised by close cultural ties with the Western world since the dawn of the Modern era. In Peru, this condition has favoured the continuity of privileged relations with certain countries throughout the 1900s: economic exchanges with European countries in the first third of the century and political influence from United States of America from the Second World War onwards. Contrary to these changes, the presence of European intellectuals in the Andean country throughout the 20th century has been constant and has had repercussions on the urban–architectural evolution of Lima, facilitating the spread of new typologies as multi-storey buildings.

2. European cultural hegemony in Latin America

European intellectuals who emigrated to Peru in the 20th century were able to quickly establish themselves in society thanks to the relations cemented between America and Europe after the discovery of the former in 1492. Peruvian sociologist Aníbal Quijano points out that Europeans not only saw themselves as the civilised state of the human condition, but also imposed this historical perspective on the conquered territories. According to Quijano, the cultural hegemony established during colonial times is still present in the 20th century¹.

Argentine historian Ramón Gutiérrez identifies the European cultural transfers of the first third of the century and the growing North American presence since World War II as the main external references for Latin American architecture in the last century². It is particularly interesting to note that this shift of the hegemonic centre from Europe to the United States involved European intellectuals who emigrated to North and South America.

During the war, three factors facilitated cultural exchanges with Peru: the Good Neighbor Policy (1933–1945) adopted by the administration of Democrat Franklin D. Roosevelt; the presence in American continent of members of the *Congrès Internationaux d'Architecture Moderne* (CIAM); and the homecoming of Peruvian architects trained abroad as Fernando Belaúnde Terry³, a city deputy elected thanks to an electoral campaign based on the urban development of Lima (1945–1948).

The United States' objectives of promoting democracy and the potential benefits of this form of government, such as economic growth and social progress, were in line with the ideas of some of the architects who had emigrated to the US for economic or political reasons. These intellectuals then travelled to Latin America financed by the US State Department. Their local interlocutors in Peru were Belaúnde and other colleagues trained in North America and on the European continent who facilitated the dissemination of their message through the publication *El Arquitecto Peruano*, the *Sociedad de Ingenieros*, the *Sociedad de Arquitectos*, the 1946 urban legislation and the VI Pan–American Congress of Architects.

3. European architects and peruvian architecture

Pan–American cultural initiatives developed during the Roosevelt administration continued under Harry Truman. Simultaneous to the creation of the *Instituto de Urbanismo del Perú* (1944), the United States State Department financed visits and conferences by exiled European architects and urban planners, who illustrated to Peruvian government representatives, politicians and planners the working methods present in a democratic society such as the United States.

That was the case of the German-born architect Paul Lester Wiener⁴, a founding partner of the New York firm Town Planning Associates since 1941, together with the well-known Spanish town planner Josep Lluís Sert. Wiener met with Cordell Hull, Secretary of State of the United States, and received an offer to participate in a lecture series in the countries of the American southern hemisphere⁵.

Belaúnde, then a candidate for deputy of Lima, saw in Wiener an important personality for his political campaign, which focused on the urban development of the Peruvian capital. In December 1944, he coordinated that the central government invite Wiener to give a series of lectures in Lima, promoted by the *Instituto de Urbanismo*, the *Sociedad de Ingenieros*, the *Sociedad de Arquitectos* and publicised by *El Arquitecto Peruano*⁶.

Belaúnde and Wiener noted the rapid acceptance of territorial planning in Lima. Parallel to his communications with North American authorities, Wiener wrote to Richard Neutra⁷, a Viennese architect who moved to the United States in 1923 and became a naturalised citizen in 1929, informing him that the cultural climate in the Peruvian capital was favourable to the dissemination of CIAM's proposals⁸.

Neutra toured Latin America starting in August 1945. Financed by the US State Department, which coordinated the various activities in Peru, he gave a series of lectures on urban planning and contemporary architecture⁹. In a talk entitled *Metropolitan Future of a City with a Great Historical Heritage*, Neutra developed urbanistic ideas enunciated by the participants of CIAM and applied them to the historical context of Lima. As with Wiener, Neutra helped develop and supported Belaúnde's electoral proposals.

These collaborations were fundamental to the results of the electoral race. Appointed deputy for the *Frente Democrático Nacional* on 10 June 1945, Belaúnde played an important role in defining the legal and public financial framework for the development of the *Plan de Vivienda* proposed as part of his campaign. Through his role as a parliamentarian and as the son of the then-current Prime Minister, Rafael Belaúnde Diez-Canseco, his political work had a great impact on the development of Lima.

The 1946 urban legislation, implemented during the democratic government of President José Luis Bustamante y Rivero, dominated the planning of Peru's main cities in the second half of the 20th century¹⁰. Employing CIAM statements as a reference, Belaúnde adopted the model of the Functional City for the development of housing, work, leisure and urban infrastructure necessary for the transportation of inhabitants. Four laws were drafted, between 1946 and 1947, to encourage the participation of public and private actors: *Ley de Propiedad Horizontal*, *Ley de la Corporación Nacional de Vivienda*, *Ley de los Centros Climáticos de Esparcimiento* and *Ley de la Oficina Nacional de Planeamiento y Urbanismo* (ONPU)¹¹.

The work of ONPU, whose director was Luis Dorich, reflected the influence of the visits of European architects to Peru¹². The *Plan Piloto de Lima* (ONPU,



Figure 1. Arrival of Walter Gropius and Josep Lluís Sert in Lima, Matamoras Airport, Lima, 28 December 1953. From left to right: Héctor Velarde, Moncha Sert, Josep Lluís Sert, Paul Linder, Ise Gropius, Walter Gropius, Rafael Marquina, Gaspar Linder, Fernando Belaúnde Terry. © Fondo Documental Paul Linder, Archivo de Arquitectura, Pontificia Universidad Católica del Perú, 1953.

advised by Josep Lluís Sert and Ernesto Nathan Rogers, 1947–1949), was an application of the first phase of *Plan Regulador de la Gran Lima* that incorporated in its studies some of the conclusions previously reached by Town Planning Associates. *Plan Piloto* identified administrative activities for the historic city centre. From an architectural point of view, it facilitated the spread of the of multi-storey buildings, giving Lima's historic centre several landmarks that were published in Belaúnde's *El Arquitecto Peruano*, such as the *Edificio Guzmán Blanco* (Manuel Villarán, Lima, 1952)¹³.

It is interesting to note the curatorial synergy between Belaúnde and Henry–Russell Hitchcock, since both Peruvian multi-storey buildings featured – *Edificio Ostolaza* (Enrique Seoane Ros, Lima, 1952–1954) and *Edificio Radio El Sol* (Luis Miró Quesada, Lima, 1953–1954) – were reviewed in both the Peruvian magazine and the North American catalogue *Latin American Architecture since 1945*¹⁴ (1955). Following the experience of the New York exhibition *Early Modern Architecture: Chicago 1870–1910*¹⁵ (1933), in 1955 Hitchcock emphasised the spread of multi-storey buildings throughout Latin America. Towards the end of the exhibition catalogue Hitchcock presented a section called *Urban Facades*, a collage of such buildings constructed between 1945 and 1955 in major cities¹⁶.

The incorporation of the principles of the Modern Movement into the fields of urban planning and architecture in Peru did not depend exclusively on the relations established between local intellectuals and Europeans exiled in the United States (**Fig. 1**). The acceptance and integration of Functional City statements into local practice was also largely due to the presence of European professionals who moved to the Andean country and who contributed to various areas of the development of Peruvian architecture and town planning¹⁷: in the renewal of university teaching through German exile Paul Linder (1897–1968); the consolidation of territorial planning, as in the case of the Italian architect Mario Bianco (1903–1990); and the development of a regional architectural language by Swiss architect Theodor Cron (1921–1964).

The European architects' built work remains the most incisive influence on Peruvian architects. *Edificio Arnodi* (Paul Linder, Lima, 1950, **Fig. 2**), *Edificio de la Compañía de Seguros Peruano–Suiza* (Theodor Cron, Lima, 1952–1956, **Fig. 3**) and *Hotel Savoy* (Mario Bianco, Lima, 1954–1957, **Fig. 4**) were the pioneers of a large group of multi-storey buildings. Built in Lima in the second half of the 20th century, they represent the implementation of the economic–political project developed by the government and its advisors to reinforce the city's administrative role. A period of popularity and widespread recognition of their architectural qualities was followed by one of neglect, during which many of these buildings were either abandoned or demolished.

The lack of interest towards these buildings is related to the fact that they have not yet been fully invested with the values of memory and culture conferred on those



Figure 2. Paul Linder, Edificio Arnodi, Lima, Perú, 1950.
© Fondo Documental Paul Linder, Archivo de Arquitectura, Pontificia Universidad Católica del Perú, 1950.



Figure 3. Theodor Cron, Edificio de la Compañía de Seguros Peruano–Suiza, Lima, Perú, 1952–1956. © Javier Atoche Intili, 2018.



Figure 4. Mario Bianco, Hotel Savoy, Lima, Perú, 1954–1957.
© Javier Atoche Intili, 2018.

of previous eras. The proximity in time that characterises the architecture of the second half of the 20th century makes it hard to distinguish its dual temporality – the period in which the buildings were constructed and the present. The lack of knowledge of the artistic and historical aspects of these buildings, characteristics that serve as the basis for Cesare Brandi's theory of restoration¹⁸, makes them architectures that can be modified or demolished.

4. Multi-storey buildings as a cultural heritage

The destruction of a significant part of the architectural heritage of the 20th century occurred, until a few years ago, upon the total indifference of state protection bodies. In fact, none of the multi-storey buildings recognised by the Peruvian state with the *Premio Nacional de Fomento a la Cultura – Chavín*¹⁹ between 1949 and 1971 has been declared a historic monument by the competent authorities²⁰.

Awaiting new legislation that specifically provides for the conservation of these properties, inventory activities carried out in the last century have had a considerable impact on official institutions. As a result of the publication of the *Inventario del Patrimonio Monumental Inmueble de Lima – Valles de Chillón, Rímac y Lurín* (Universidad Nacional de Ingeniería, Ford Foundation, Lima 1986–1994), some examples of modern architecture were considered worthy of preservation²¹.

In recent years, researchers have begun to consult local architectural archives and specialised bibliographies. These activities have made it possible to rediscover authors and works that had otherwise been marginalized by official culture. An inventory of the Peruvian architectural heritage of the 20th century was undertaken by DoCoMoMo in 2014²².

The *Catálogo Arquitectura Movimiento Moderno Perú* has contributed to the awareness of the Ministry of Culture. In 2020, the latter recognised the former headquarters of the *Ministerio de Educación Pública* (Enrique Seoane Ros, 1951–1956) as *Monumento Integral del Patrimonio Cultural de la Nación*²³.

New research on the most representative architects of the last century is a fundamental step towards the recognition of their works and the enrichment

of Peru's tangible cultural heritage. Recognition of the economic, political and cultural circumstances that allowed the construction of multi-storey buildings in the Historic Centre of Lima in the 20th century have been illustrated in this essay as a first step towards the protection, conservation and enhancement of Peru's vast modern architectural heritage.

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Notes

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Post-war healthcare architecture in Portugal. From ordering bodies to the evasion of the Self

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In Portugal, healthcare structures were mainly built during the 20th century and still play a crucial role on providing medical assistance. However, this typology is not yet profoundly investigated. The absence of studies is probably justified by a typology that on one side seems strictly and hopelessly devoted to functional response and on the other side, because it reminds our ephemeral existence. Therefore, interventions and transformations take place without accurate knowledge and “under popular ignorance regarding MoMo”.

By considering, several post-war healthcare buildings in Portugal this paper aims to reveal a typology that found, within a set of demanding functional requirements, the formal architectural expression for the evasion of the *Self*. Examples where architecture merges the concrete structure and the plasticity and authenticity of materials enhanced by natural light and furniture design. Where “total design” answers a social problem addressing modern aesthetics towards body and soul cure and care processes.

From the national Portuguese healthcare assistance network, established a year after the end of WWII, to private initiatives, several examples illustrate humanized spatial conceptions conceived as unitary healing tools designed by some of the most prominent Portuguese architects. Namely, Bragança Hospital (1948–1973) designed by Alfredo Viana de Lima (1913–1991), or the hospitals designed by Raúl Chorão Ramalho (1914–2002) in Viana do Castelo (1970–1984), or in Beja (1955), and also the Guimarães Hospital by Celestino de Castro (1920–2007). Likewise Alcoitão Physical Rehabilitation Centre (1958–1966), designed by Formosinho Sanchez (1922–2004) together with Calouste Gulbenkian Cerebral Palsy Rehabilitation Centre (1965–1966) by Cândido Palma de Melo (1922–2003) being the first specialized buildings for medical rehabilitation and care in Portugal.

This investigation on post-war healthcare buildings in Portugal proposes to enhance specific geographical and cultural aspects through the diversity of the example of modern design values illustrating their worldwide expansion.

1. Healthcare architecture conceptions: from ordering bodies to an integrated entity of body, mind and social context

Categorizing illnesses and ordering bodies in space were the first steps to conquer hygienic conditions that consequently brought efficiency and generated new healthcare architectural forms by the end of the 18th century. Along history and until today, new conceptions of ordering translate new body conceptions and medical assistance paradigms design new typologies.

The dream of modernity merged “total sanitarieness and total technology”¹ where the element of “Air” was considered as a fundamental resource for

the existence of life, in which the quality of urban and hospital design, was assured by ventilation. For that reason healthcare buildings were, at their birth, designed as healthy “wind machines”.

Ventilation and sun light ², as tools for hygiene, become an obsession at the beginning of the 20th century generating pure volumes and aseptic surfaces shaped by new materials, as concrete, steel and glass, creating a new architectural expression. Through rationalization and standardization of construction elements, truthful democratic “machine à guérir” were built as monumental spaces. The “International Style” arrives to healthcare architecture where an abstract, repeatable and generic body was healed. The human body would be an abstract element for scientific research inhabiting rational spaces designed according to cure processes. In this context, several publications were important, such as the ones from Hermann Distel (1875–1945) and Ernst Kopp (1890–1962).³ The supremacy of medical processes generated a specialized model to the detriment of the therapeutic role that the design of the space could play, as it was considered by the end of the 18th century. Hospitals were now vertical typologies, as these allowed concentrated circulation and the centralization of common areas.

A new paradigm, founded on the desire to humanize architecture⁴, was evident after the II post-war period. The efficient compact vertical models now tended to decompose into various volumes, aiming, on the one hand, to maximize flexibility and adaptability to new needs, and on the other hand, to pursue the desired humanization of space. This turning point had major consequences for the design of healing spaces, as the idea of the body as an abstract element inhabiting a machine, was replaced by a global concept, one of physical, psychological and social unity. This concept was translated into a new definition of health set out in the constitution of the World Health Organization (WHO) in 1948. Once the hygienic conditions were assured and the organizational model guarantees efficiency of medical assistance, another level of patient care was considered. The individual’s specificity starts to be the focus of medical assistance and the body is seen as a place of perception and not as an abstract part of a “machine à guérir”. The characteristics of these facilities consisted of a base with a maximum of three floors, the podium, and a vertical volume for hospitalized patient.

The maximization of efficiency, flexibility and humanization of the models developed in the post-war period, led to systems in which the quality of the space was built based on recognising the different elements: the structural system, horizontal and vertical circulation and infrastructures, juggling to build a unitary and extensible system adaptable to new space design needs. These new buildings were comparable to the matrices for urban development, evoking an atmosphere far removed from the idea of disease, and recalled experiences of housing, commercial or cultural spaces.

We inherit and inhabit most of the healthcare buildings keeping its role on providing medical assistance.⁵ For these reasons, and since we face new

cultural transformations, to document healthcare buildings is a necessary action in order to promote accurate transformations.

2. The formal architectural expression for the evasion of the *Self* in Portugal

In the aftermath of World War II (1939–1945), 1948 heralded the creation of the World Health Organization (WHO), and the promulgation of the Universal Declaration of Human Rights. A new understanding of Man, as a complete being, simultaneously understood as an individual, was echoed in the construction of the healthcare assistance network in Portugal. Buildings pursued the 1st National Architecture Congress of 1948 debate and the knowledge, assembled by the Survey of Popular Architecture in Portugal started in 1955.⁶

It was in this context that Alfredo Viana de Lima (1913–1990) and Raul Chorão Ramalho (1914–2002) designed the preliminary projects for the Bragança and Beja hospitals (1947–1970) respectively⁷. These projects were promoted by the Hospital Construction Commission (1946–1971). In addition, the brutalist mega structure of Santa Luzia Hospital (1970–1984) in Viana do Castelo by Raul Chorão Ramalho together with Guimarães Hospital (1976–1992) by Celestino de Castro (1920–2007) demonstrates that a healthcare space can echoes the expression of a new *Self*. Likewise Alcoitão Physical Rehabilitation Centre (1958–1966), designed by Formosinho Sanchez (1922–2004) together with Calouste Gulbenkian Cerebral Palsy Rehabilitation Centre (1965–1966) by Cândido Palma de Melo (1922–2003), being the first specialized buildings for medical rehabilitation and care in Portugal, taking the challenge further by designing spaces for specific bodies with specific needs.

Combining modern aesthetic and regional references. Bragança Regional Hospital (1948–1970)

The innovative facility that Alfredo Viana de Lima designed, in 1948, for the Regional Hospital of Bragança, (**Fig. 1**) obeyed a simple organizational scheme, divided into three wings articulated orthogonally from a central nucleus. The two wings extending along the east–west axis, established a break in continuity, reducing the impact of the building's volume. In these two bodies the patient rooms and the solarium balcony – faced south, following strict rational criteria. In the transition between the “working” floors, directly involved with hospitalisation, and the ground floor, the architect used a set-back and shaded accessible technical floor to largely solve the issue of continuous infrastructure runs, as employed by Le Corbusier (1887–1965), in response to a wide variety of programmes.

Viana de Lima combined an affirmation of a modern aesthetic with regional references. The former, in a clear approximation to the Corbusian vocabulary,



Figure 1. Alfredo Viana de Lima (1913–1991), Bragança Regional Hospital, Portugal, 1948–1970. © AACSS, Ministry of Health.

was evident in the design of the inpatient volume with its bris soleil on the south façade punctuated by a chromatic vibration of blue and red surfaces, and in the sculptural chimney visible on the roof, while the latter was seen in the regionalist slate cladding used on the base and on the vertical stair towers at the ends of the inpatient block which combined with generous balconies that deconstruct the envelope of the volume. Viana de Lima created “comfort spaces”, specifically in the inpatient area using a curved blue masonry screens to form a kind of alcove, creating a sheltered environment.

Rational humanized grids. Santa Luzia Hospital (1970–1984) and Guimarães Hospital (1976–1992)

Chorão Ramalho developed a humanized approach to the more international trends of the modern movement, in which a highly sensitive approach is evident in contexts where landscape plays a significant role. His attention to context and site enabled an innovative synthesis to be made between rationalist thinking and organic feeling.⁸

Contemporaneous with the project he carried out for the Portuguese Embassy in Brasília (1973–1978), the Hospital of Viana do Castelo⁹ sited on the steep slopes of Santa Luzia, and therefore, called the Santa Luzia Hospital (**Fig. 2**), constituted a mega structure. The structural elements in exposed concrete sought to accentuate the horizontal lines that defined the various floors, countering the verticality of the ensemble, and thus mitigating the impact of

the volume on the city. It nested on the hillside, overlooking the urban centre, providing a magnificent view over the river Lima from the inpatient rooms, and thereby achieving the aim of deriving comfort from its relationship with the outside. It occupied an elongated plot of land, following the lines of the Lima river in an east–west direction, deployed on Wrightian platforms, due to the accentuated slope, in a modular plan of articulated and intercommunicating bodies.



Figure 2. Raúl Chorão Ramalho (1914–2002), Santa Luzia Hospital, Viana do Castelo, Portugal, 1970–1984. © Arquitectura, 4a série, n 125, ago. 1972, 61.

The main access to the building was at ground floor level via an entrance hall articulated by a series of courtyards that ensured a notable luminosity and generous spatial depth, and from which all user and staff circulation was distributed. The technical floor located between the entrance floor and the inpatient floors ensured that the demanding and growing needs of the hospital programme could be met. The structuring of the plan was based on the repetition of a constructional module and a space unit, that gave the building an overall order through a square grid. Brutalism and a purified rationalism were values tenaciously pushed to the limit in this work, in a synthesis of constructional control based on raw materials honestly exposed, valuing a poetic sense of great vigour and clean expression.¹⁰

The Guimarães Hospital project (1976–1992) (**Fig. 3**), was led by the architect Celestino de Castro (1920–2007), developed in the General Directorate of Hospital Construction (DGCH) with the collaboration of the architects Carlos Teixeira Mendes and Maria Margarida Rocha. Designed according to the compact model, with a podium consisting of a wide base and vertical volume, the use of a triangular structural mesh generated a diverse series of polygonal shapes that countered the inflexibility associated with hospital programmes.



Figure 3. Celestino de Castro (1913–1991), Guimarães Hospital, Guimarães, Portugal, 1976–1992. © AACSS, Ministry of Health.

In contrast to the usual design solution, with a rectangular plan for the inpatient services organized around a circulation axis with rooms on either side, Celestino de Castro introduced a fragmented plan that allowed the creation of cells with a greater degree of intimacy and spatial flexibility. This design avoided the sensation of endless corridors, and fostered a sense of discovery, stimulating the imagination.

In the articulation between the different volumes making up the base, green landscaped areas enhanced contact with the outside and made orientation within the space easier. The building's skeleton revealed itself in the form of the exposed concrete from which the sculptural vertical and horizontal circulation volumes were built, and that simultaneously delineated the interior spaces, from the entrance hall to the technical floor, the chapel interior, and the entrance spaces. The use of colour was also evident in the interior spaces, as was the inclusion of works of art, namely the ceramic tile panel by Júlio Resende (1917–2011) on the exterior. As in all hospitals, the inpatient body faced south, incorporating prefabricated concrete brise-soleil devices that broke up the rigidity of the vertical volume.

Humanized urban matrixes. Alcoitão Centre for Physical Medicine and Rehabilitation (1958–1966) and Calouste Gulbenkian Cerebral Palsy Rehabilitation Centre (1965–1970)

A group of innovative structures specialized in specific rehabilitation conditions were developed on the second half of the 20th century in Portugal. These structures responded to the definition of the health set out in the constitution of WHO, in 1948, and consequently to what was considered the “third phase” of medicine, that contemplates physical and psychological recovery and social reintegration to be part of the healing process.

The proposal of Sebastião Formosinho Sanchez (1922–2004) for the Alcoitão Centre for Physical Medicine and Rehabilitation (CMFRA) (1958–1966)¹¹ (**Fig. 4**), represented the first hospital building that, within the scope of modern Portuguese architecture, responded to a programme of physical rehabilitation.



Figure 4. Sebastião Formosinho Sanchez (1922–2004), Alcoitão Centre for Physical Medicine and Rehabilitation, Alcoitão, Portugal, 1958–1966. © Col. Estúdio Mário Novais, Calouste Gulbenkian Foundation – Art Library and Archives

CMFRA was designed as a symbiotic space between place, time and the user, physically manifested in a composition consisting of different interconnected volumes, where the inpatient block was balanced by a horizontal volume in which the diagnostic and therapeutic services were concentrated. It was defined in a clear relationship with the landscape, by its indoor–outdoor transparency, control of light, sculptural use of materials, and the incorporation of art. The inclusion of landscape architects Álvaro Ponce Dentinho (1924–2014) and António Facco Viana Barreto (1924–2012) in the project team revealed the importance of building design derived from an understanding and relationship with exterior space.

In a series of accentuated horizontal volumes prefabricated constructional elements that essentially formed the structural system were visible. This body was counterbalanced by the volume of the three-storey inpatient block with a modern terrace roof. In the boldly modelled appearance of the reinforced concrete and glass façades, in which architecture and structure are one, it is impossible to dissociate the constructional system from the formal choices that convey its essence. The system of horizontal volumes

facilitated circulation, promoted individual autonomy, and also enhanced a continual relationship with the exterior and with natural light. The circulation spaces were designed along the volumes' axes, seeking natural light wherever possible, through the design of skylights and the introduction of surfaces in glass brick, particularly in the inpatient volume.

The building results on various interconnected volumes, generating exterior open spaces and forming an urban matrix in which the possibility of transformation and evolution. Works of art are also included in the urban matrix, namely a sculpture by Martins Correia (1910–1999), in the courtyard adjacent to the entrance area, emphasising the interior–exterior relationship and transparency that its modern vocabulary made possible.

In the following decade, with the patronage of the newly-created Calouste Gulbenkian Foundation (1956) (**Fig. 5**), the programme for rehabilitation was extended with the creation of the Calouste Gulbenkian Cerebral Palsy Rehabilitation Centre (1965–1970) in Lisbon by Cândido Palma de Mello (1922–2003) with the collaboration of landscape architect Gonalo Ribeiro Telles (1922–2020) and sculptor Margarida Schimmel Pfenning.

As a treatment and education centre, Palma de Melo gave the rehabilitation centre a domestic scale, so that children thought of it as a place where you "are rehabilitated" and not where you "are treated". Consequently, the



Figure 5. Cândido Palma de Mello (1922–2003), Cerebral Palsy Rehabilitation Centre, Lisboa, Portugal, 1965–1970. © *Arquitectura. Planeamento, Design, Artes Plásticas*, n 116, jul.–ago. 1970, 144.

architectural design developed by Palma de Melo was based on a hexagonal structural grid that kept open the possibility of future enlargement.

Comprising a single floor, the interior was subdivided in such a way that the spaces were perceptible so patients and staff could easily orient themselves. Aware of the importance of nature in the therapeutic process, all treatment rooms and activities were designed to have a direct relationship to the garden and outdoor spaces. Each room had a corresponding grassed play area, protected by a wall. There were also small sitting spaces and gardens for occupational therapy in the central zone of the playground, designed in a continuation of the hexagonal grid. All the interior furniture and equipment was also designed by the architect, with the users' needs in mind.

The Calouste Gulbenkian Cerebral Palsy Rehabilitation Centre is still considered a reference nationally and internationally in terms of its spaces and functionality.

3. Modern values as therapy

As illustrated before Portuguese architects revealed their individual skills in the design of distinctive spaces standing between the authenticity of history and the avant-garde. Healthcare buildings express the paradigm of the humanization of architecture in the post-war framework and demonstrated that their design does not necessarily mean building a narrow interpretation of the functional programme.

Healthcare buildings represent a vast challenge for contemporary architecture. Incorporating the goal of "always being modern"¹², they demand a continuous effort to anticipate the future instigated by medical and technological advances.

Today, the digital transformation imposes a globalized culture in which the relationship between space and time is altered, and in which the relationship with the body is transformed.¹³ Healing spaces are part of this context, and their reinvention is sought by incorporating both these speeds so that architecture is able to ensure the future, through a timeless synthesis.

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Local Community Centre as Utilitarian, Governing and Social Space: The Case of New Belgrade CMZ

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The paper studies *local community centres* (Serbian: *centar mesne zajednice* – CMZ) of post-war mass housing neighbourhoods in New Belgrade. Those were designed and built in 1970s as multifunctional centres with facilities and programmes complementary to the housing blocks: socio-cultural, commercial (grocery stores), daily services (post office, bank, crafts, etc.) spaces for socio-political activities and office spaces for the local community. The local community centres significantly increased quality of life of the residents, liveability and socialisation in the neighbourhoods. Furthermore, one of the main aims of these spaces was to enable actual realisation of the self-management in local communities. This paper reflects on the ideological and theoretical basis for their conceptualisation, referring to Edvard Kardelj, one of the main ideologues of self-management and originator of the local community concept in Yugoslavia. Moreover, the paper investigates: how the local community centres were planned, designed and programmed, and how they were spatially integrated in the existing residential blocks; how their organisational and governing role has been neglected over time, and their main purpose altered; and what are potentials and socio-spatial capacities for their future reuse. Reaffirmation of local community centres as utilitarian, governing and social space is recognized as key for promoting participation and collaborative governance in New Belgrade blocks, as well as for improving social connections, solidarity and sense of belonging in these neighbourhoods. As such, the local community centres could be one of the main factors of revitalisation of the blocks, increasing vitality and improving quality of life of the residents. Furthermore, the local community centres could have a major role in unlocking the potential of institutions and individuals towards new effective urban governance structures, as well as institutionalising citizens' participation and bottom-up governance as direct democracy in the city today.

1. Introduction

The paper's subject matter is twofold: (1) It explores how the local community centres were conceptualised, designed and programmed, as well as how they were spatially integrated in the existing residential blocks in New Belgrade;

(2) It investigates dichotomies (both historically and nowadays) between its two main purposes (a) the community mission and (b) the consumption – and how these could meet, emphasizing the socio–spatial capacities of the centres for integrated reuse.

This study on local community centres in post–war mass housing neighbourhoods is of particular importance for integrated revitalization of these neighbourhoods. As a novel type of urban spaces that facilitated collective values and common interest, but also domestic services, they represent an important legacy of Yugoslav planning and have both a symbolic and practical role in initiating community–driven approaches and practices.

2. Conceptualisation and initial use of local community centres in new Belgrade

Local community centres (Serbian: *centar mesne zajednice* – CMZ) in New Belgrade blocks were designed and mainly built in 1970s as multifunctional centres with facilities and programmes complementary to the housing blocks: socio–cultural, commercial (grocery stores), daily services (post office, bank, crafts, etc.), spaces for socio–political activities and office spaces for the local community.

As Aleksic (1980) argues, “local community centres are emerging as coordinators of living in the blocks – in physical and social sense; they are a basis for solidarity and sense of belonging to the community”¹. The first CMZ in Yugoslavia was the one in Block 1 in New Belgrade, built in the period 1963–1967² (Fig. 1).



Figure 1. Uros Martinovic, CMZ in Block 1, New Belgrade. Photography source: Muzej grada Beograda, Zbirka za arhitekturu i urbanizam, Ur 13223. ["Belgrade City Museum, The collection for architecture and urbanism"]. Published with permission of the Belgrade City Museum.

Local Community Centre: Ideological and Theoretical Basis

The *local community* (Serbian: *mesna zajednica* – MZ) was – in socio-political sense – the main ideological instrument and official organisational mechanism for realisation of the self-management rights of residents in Yugoslavia.^{3,4}

As defined by Edvard Kardelj, one of the main ideologues of self-management and originator of the local community concept in Yugoslavia, *local community* has three main functions: (1) it is the main unit of urban plans, (2) it is a unit and model of self-management in a commune, (3) it represents extended material-technical basis for daily life of a family or individual.⁵ Spatially, the local community was the main territorial unit, and the local community centres were the focal points within them. The local community centres had a major role in implementation of utilitarian, but also social aspects and self-management in local communities, as indicated in the General Urban Plan of Belgrade from 1972.⁶ These socio-spatial concepts brought the questions of common interest, social commitment and engagement into the urban discourse and urban development.

Programming of Local Community Centres

The construction of local community centres was crucial for actual realisation of the idea of neighbourhood, and in particular in case of New Belgrade blocks. As New Belgrade blocks initially lacked facilities and programmes other than residential, the construction of local community centres was a "necessary intervention"⁷.

In 1975 the city of Belgrade adopted a program for construction of 37 local community centres (out of which 14 in New Belgrade) in the period 1975–1980. Detailed studies of the program, considering the number of residents, needs and existing capacities, were conducted (see **Table 1**).

Program of local community centres				
	S	M	L	XL
	3–4.000 residents	6–7.000 residents	8–10.000 residents	up to 16.000 residents
I. Social part	390 m ²	440 m ²	500 m ²	640 m ²
	3–4.000 residents	6–7.000 residents	8–10.000 residents	up to 16.000 residents
II. Supply and retail	950 m ²	1.190 m ²	1.440 m ²	1.440 m ²
III. Crafts and services	290 m ²	350 m ²	430 m ²	450 m ²

	S	M	L	XL
IV. Offices and administration	700 m ²	720 m ²	1.060 m ²	1.070 m ²
V. Restaurants	300 m ²	300 m ²	320 m ²	350 m ²
In total	2.630 m ²	3.000 m ²	3.770 m ²	3.850 m ²

Compiled: Direkcija, SO N. Beograd, Urb. Zavod, Inpros

Table 1. Program of local community centres: minimal area of each part. Table © Anica Dragutinovic, according to the original table published in: Mileta Radosavljevic, "Projektovanje i izgradnja centara mesnih zajednica u Beogradu", *Arhitektura Urbanizam* 85, 1980, 13–20. ["Designing and constructing the local community centres in Belgrade"]

The approach enabled simplified construction through typification and prefabrication. As Radosavljevic (1980) explains, the main functional parts of the typical CMZ were defined: (Object A) Offices and administrative spaces, post and bank; (Object B) Space for socio–political organisations, culture and other activities of the residents (youth clubs, elderly clubs, etc.); (Objects C1 and C2) Space for supermarkets and restaurants; (Object D) Space for crafts, services and retail.⁸ Accordingly, the typical layout followed (see Fig. 2).

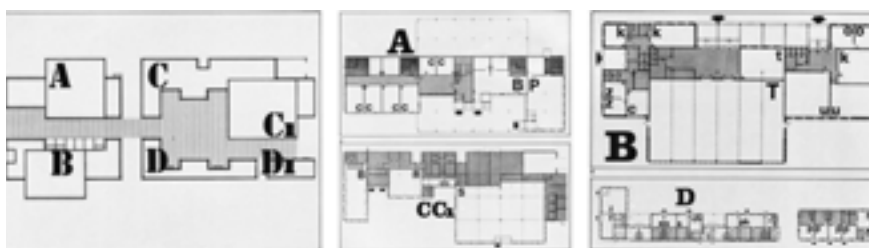


Figure 2. Layout of a typical CMZ and plans of its functional parts. Illustration source: Mileta Radosavljevic, "Projektovanje i izgradnja centara mesnih zajednica u Beogradu", *Arhitektura Urbanizam* 85, 1980, 13–20. ["Designing and constructing the local community centres in Belgrade"]

Spatial Integration: The Case of CMZ in Block 23

According to Aleksic (1980), the local community centre in Block 23 was "organically integrated in the residential block and its vital flows".⁹ It was positioned in the densest zone of the block (see Fig. 3) – "the zone of high frequencies and flows"¹⁰.

The composition of the four functional parts of the CMZ and the way they are spatially integrated in the existing tissue of the block defined it as "an attractive confluence, cumulative backbone and exchange place"¹¹.

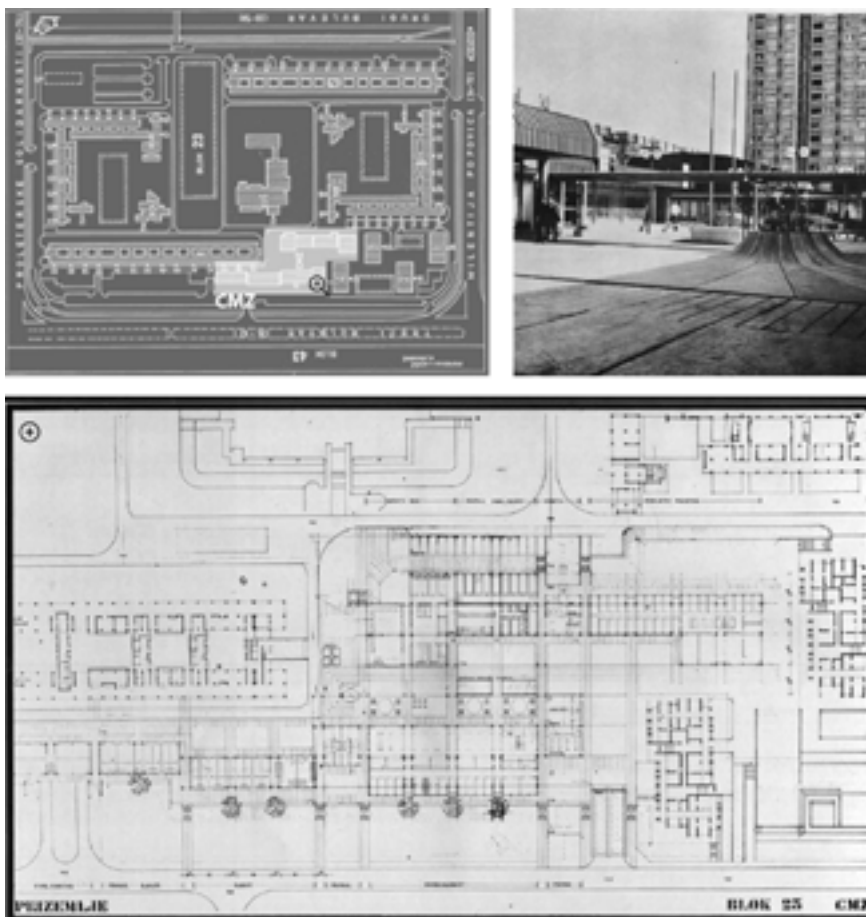


Figure 3. Position, photo and layout of CMZ in Block 23. Illustration © Anica Dragutinovic, according to the original images published in: Branko Aleksic, "Centar mesne zajednice u bloku 23 u Novom Beogradu", *Arhitektura Urbanizam* 85, 1980, 28–32. ["Local community centre in block 23 in New Belgrade"]

As Aleksic explains, it follows the flow in-between the four high-rises and merges with the porch of the linear building. In addition to this main longitudinal flow, there are several transverse flows – integrating it with the other parts and program of the block. As Martinovic (2020) argues, the local community centre in Block 23 was the first attempt to re-interpret the traditional city street in New Belgrade Central zone¹². It was not planned as an enclosed building but as a porous structure with many open spaces. As a generic structure, made of prefabricated modules, it reflected self-management in spatial planning¹³.

Table 2 shows sizes of each functional part in m² as it was implemented in the case of the local community centre in Block 23.

Local Community (MZ): "Milentije Popovic"

Location of Local Community Centre (CMZ): Block 23

Office/Architect: "Osnova", A. Stepanovic

Constructor: GRO "Ratko Mitrovic"

FUNCTIONAL PART:	OBJECT A (M2)	OBJECT B (M2)	OBJECT C1 (M2)	OBJECT C2 (M2)	OBJECT D (M2)	SUM (M2)
Size:	1.671,16 m ²	509,97 m ²	966,21 m ²	179,33 m ²	794,58 m ²	4.121,25 m ²

Table 2. CMZ in Block 23: area of each functional part. Table © Anica Dragutinovic, according to the original table published in: Mileta Radosavljevic, "Projektovanje i izgradnja centara mesnih zajednica u Beogradu", *Arhitektura Urbanizam* 85, 1980, 13–20. ["Designing and constructing the local community centres in Belgrade"]

3. CMZ: Community or commercial entity

The local community centres significantly increased quality of life of the residents, liveability and socialisation in the neighbourhoods. As a modern interpretation of the traditional city street¹⁴, or "modern bazar"¹⁵, they introduced consumerist dynamics dispersed within the inner space of the block. In addition to their utilitarian role, the local community centres were imagined as very important in socio-political sense. Already in the program for construction of 37 local community centres in the period 1975–1980, two groups of issues were defined as the main reasons for initiation of their construction: (1) the lack of retail, crafts and services, and (2) "the lack of technical conditions and insufficiency of space that would enable self-managing life of communities in new neighbourhoods"¹⁶. The construction of the centres was supposed to initiate interaction of neighbours and enable a socialist self-managing community. However, there were many deficiencies in realisation of the main ideas.

One of the main dilemmas, or rather critiques of the CMZs in Belgrade, expressed already in 1978 by Dimitrije Mladenovic was if the CMZ was eventually "a centre of consumption or a social space"¹⁷. A similar remark is made by Siupsinskas and Lankots (2019), writing about Lithuanian and Estonian mikrorayon centres. They argue that "the theoretical model of multistage domestic services, as well the ideological and communal mission of the centres, was quickly reworked into a type of space that embraced consumption and individual behaviour within the framework of collectivism"¹⁸. Martinovic (2020) argues that one of the reasons for the contested socio-political role of the CMZs was spatial scarcity reserved for the socio-political and cultural activities. In case of the CMZ in Block 23 Object B (dedicated to socio-political and cultural activities) occupied 509,97 m² – around 12% of the total area of the CMZ (see **Table 2**). And the average size of this functional

part for all CMZs in Belgrade was 110 m², while 30% of all CMZs had less than 100 m² reserved for this purpose, as indicated in the *Conception of socio-economic and spatial development and construction of Belgrade for the period 1976–1985* from 1977. As Martinovic (2020) explains, this document rated spatial conditions for work of socio-spatial organisations in local communities as very modest.¹⁹

The key goals, that were to be achieved with the construction of CMZs in Belgrade according to the General Urban Plan from 1972, such as talks about common interest of the residents, firstly, or sense of belonging, secondary, were under-researched.²⁰ Mladenovic (1978) refers to similar Centres in Netherlands from the same period, in particular the ones designed by Frank van Klingereren (e.g. *Karregat* in Eindhoven). The construction of an ‘imperfect centre’, as Klingereren described it, invited the community to bring in own ideas in defining functions and aims of the centre. As Mladenovic (1978) notes, their DIY conception invited for engaged community and their collective commitment. At the same time, Mladenovic is criticising typification of architecture of CMZs in Belgrade, and more important, standardisation of their program. Instead, he is arguing that CMZs should become “Agoras of our time”²¹. This statement emphasizes the under-developed role of the *open* (outdoor) common spaces within the centres – which remained under-developed until nowadays – both physically and functionally. As highlighted previously, the CMZ in Block 23 was built as a porose structure with many open spaces integrating vital flows of the neighbourhood. Although consumption – which further increased with commercialisation of the CMZs within post-socialist transformation – became the dominant program of the centres, the CMZs remain vital spaces in the blocks, spaces of socialisation and exchange. Open (outdoor) common spaces, although physically deteriorated and under-maintained, are nowadays overtaking the social role of the local community centres, absorbing informal program and exchange, and allowing for participatory practices (Fig. 4).

4. Discussion

The conceptualisation of the local community centres addressed some important issues for urban development and urban governance of the post-war neighbourhoods. Although being an unfinished socialist and modernist project – with the organisational and governing role of CMZs, in particular, being under-developed in practice – it had a major impact on the daily life of the residents and on the quality of life in these neighbourhoods in general. Reaffirmation of the local community centres, not only as utilitarian spaces and spaces of consumption, but also as governing and social spaces, is recognized as key for promoting participation and collaborative governance in New Belgrade blocks, as well as for improving social connections, solidarity and sense of belonging in these neighbourhoods. But how do consumerism



Figure 4. CMZ in Block 23, New Belgrade. Photography © Ivona Despotovic, Tamara Popovic, Zorana Jovic: Student Workshop, Belgrade, September 2020.

and community empowerment, as two main points of the CMZ concept, meet? An integrated perspective on production and consumption was in the core of the socialist idea of the local communities. The concept of *prosumers* is being re-discovered in recent urban studies. Thornham and Parry (2015) study this relation, and in particular in context of local community centres. They note that the local community centres are “emblematic of civic culture and community ‘empowerment’, through in particular a discourse of entrepreneurialism”²². A social enterprise model, applied in case of the Bread Houses Network, unites community-building, creativity and social entrepreneurship.²³ The local community centres in New Belgrade have a high-level potential to (re)affirm this idea of productive, proactive and creative communities and promote *integrated reuse*. Moreover, they have the socio-spatial capacity for promoting participation and bottom-up governance as direct democracy in the city, and thus, further empowerment of community, solidarity and sense of belonging. In this way, the local community centres, as condensed zones of common activities and proactive

engagement in local communities, can have a major impact by dispersing these socio-spatial practices into the blocks and eventually the whole city.

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Prefabrication, Art & Architecture, and Urbanism in Agricultural Cooperative Buildings by Masato Otaka

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Masato Otaka (1923–2010) was one of the leading architects in post-war Japan, recognised worldwide as a member of the Metabolism Group, which was formed during the World Design Conference in 1960.

This study aimed to clarify how Otaka tried to connect with society using Prefabrication, Art & Architecture, and Urbanism (PAU) through the architecture of Agricultural Cooperatives. Starting with the Kataoka Agricultural Cooperative, he worked on buildings for Mizusawa, Goshomi, Hanaizumi, Yamanouchi, Niihama, Nango, and Shizuoka Agricultural Cooperatives (Fig. 1). In addition, he established the Agricultural Cooperative Architecture Study Group in 1964 and undertook many initiatives with like-minded colleagues, including Hajime Yamana.

First, Otaka proclaimed that the mechanisation of site work and consequently, the reduction in site work due to factory production were essential for the building industry, which shares similarities with agriculture. However, prefabrication was a means to an end, and Otaka always aimed to achieve high quality and his architecture is a work of art. Furthermore, Otaka and Yamana did not view agricultural cooperatives as stand-alone buildings. Rather, they saw them as the community core. More importantly, they encouraged every member of the agricultural association to participate proactively in every project. The purpose of this enlightening activity was to foster each member's awareness of their rights and responsibilities. Thus, it can be said that Otaka, Yamana and his colleagues aimed to build a utopia through the construction of agricultural cooperative buildings.

1. Introduction

Masato Otaka (1923–2010)¹ is one of the most important Japanese architects of the post-war period. He has been recognised worldwide as a member of the Metabolism Group formed during the World Design Conference in 1960. Otaka's work, as seen in the Chiba Cultural Forest (a park area including a library and a cultural hall), Sakaide Artificial Land, and Hiroshima Motomachi high-rise housing, is not only limited to individual buildings but also has an urban dimension. Otaka was also involved in urban planning in Yokohama Minato Mirai area, Chiba Port area, and his hometown of Miharuru in Fukushima Prefecture.

As a student, Otaka read *Housing Economics* by Charles Gide, the theoretical leader of the consumer cooperative movement, and the works by Pyotr Kropotkin, an anarchist who wrote *Mutual Aid: A Factor of Evolution*. Starting

with the Kataoka Agricultural Cooperative, he built the offices of the Goshomi, Mizusawa, Hanaizumi, Yamanouchi, Niihama, Nango, and Shizuoka Agricultural Cooperatives (**Fig. 1**). In 1964, he and his friend Hajime Yamana founded the Agricultural Cooperative Architecture Research Group (Nokyo Kenchiku Kenkyukai) and worked with like-minded colleagues to develop it.



Figure 1. Agricultural Cooperatives' Buildings designed by Masato Otaka, © 1,2,6,7: Sumiko Ebara, 3: Exhibition Catalogue of National Archives of Modern Architecture, 2017, p. 22, 4: Google Street View, 5: Kenchiku, Feb. 1967, 6: Japan Architect, May 1971

This study aimed to reveal how Otaka, Yamana, and his colleagues tried to connect with society through the architecture of agricultural cooperatives and rethink the significance of the existing architecture of the agricultural cooperatives.

2. How to connect with society: three initial goals²

In 1960, the World Design Conference was held in Tokyo, and Otaka attended it as a member of the Metabolism Group. At the time, he was working for Kunio Maekawa Architects on the Tokyo Metropolitan Festival Hall, where the concrete structure and the hexagonal fly and eaves were almost finished. Otaka recalled that it was not only architecture but also the 'doctrine of modernity' that he learned from masters such as Le Corbusier, Gropius, and Mies van der Rohe. However, Jean Prouvé, Rafael Soriano, and Paul Rudolph, who were in Japan for the conference, pointed out that contemporary architecture in Japan is too heavily influenced by Le Corbusier.

Indeed, the modern space still contains several contradictions. The accelerated development of the mechanical industry has hindered communication and isolated people. Otaka decided to dissect the contradictions of modern society and create a new image of modern architecture. In March 1961, after the completion of the Tokyo Metropolitan Festival Hall, he resigned from Maekawa's firm and opened his own office. He set the following three goals:

- (1) To look at a city or a group of architecture from a social and practical point of view
- (2) To examine the possibility of the industrialization of architecture in modern society
- (3) To rethink architecture as both a simple household object and a work of art

Otaka aimed to restore the fundamentals of human nature while reorganizing the benefits of the mechanical world. However, this humanity was not the humanity of the people of antiquity or the Middle Ages, but rather the humanity appropriate to the modern man. Freedom and diversity are essential to modern society. The group form should be designed on the assumption that the part and the whole will continue to change. This was what Otaka saw as 'urbanism'.

In contrast, another doctrine of modernity was that of simplicity. It was based on a sense of responsibility to bring architecture to a wider public, and simplification was the key to spreading modern architecture throughout society. However, Otaka asks here whether industrialisation is synonymous with simplification. In his own words, 'I want to pull out the weeds of simplification from the fields of industrialization and plant a variety

of vegetables and grains'. For this reason, Otaka decided to explore the prefabrication possibilities.

Furthermore, he believed that artistry is covering the problems of industrialization and that it should be respected as an honest response to fundamental human aspirations. It is unique in that he did not see his work as an expression of his own artistry, but rather as an expression of the wishes of his clients and users. However, this artistry, should not be anti-social artistic supremacy. It should be an integral part of the creation of a good society and environment. He believed that 'no political or social achievement is human unless it is created and expressed artistically'.

In summary, Otaka began his practice aiming to discover problems that architecture had to solve in an urban and social context, rationalising the process of production and ultimately elevating his work to the status of Art or Architecture. Thus, he decided to place PAU (acronyms of Prefabrication, Art & Architecture, and Urbanism) in the title of the architectural drawings.

3. The encounter with agricultural cooperatives³

In November 1961, half a year after the opening of his office, Otaka was approached by his classmate from the Second Engineering Department of Tokyo Imperial University, Hajime Yamana, about the Kataoka Agricultural Cooperative. At the time, Yamana was working for the Agriculture and Forestry Central Trust (Norinchukin Bank). At this time, Yamana experienced the problems of rural life, realizing that the countryside was undergoing revolutionary changes since the beginning of history.

Before the Second World War, villages had the problem of excess population per area under cultivation. Agricultural cooperatives were set up as mutual aid organizations, but the village was an autonomous society, and strict discipline was necessary to maintain social stability. After the war, however, the government began to promote the development of second and third industries in the metropolitan areas, absorbing large numbers of people, especially young men, from the villages.

Yamana decided to work for the modernisation of the village at large. He approached Otaka as someone who would support and understand this task.

Yamana saw the decline in the population of the villages as a gift from nature. Although caused by external pressure, it showed the potential for land concentration, encouraging the introduction of machinery and saving labour. Otaka also thought that if a 'radiant village' could be realized, where people could cultivate the land and enjoy a civilised life, it would be a model of peaceful living, stop the chaotic development of the cities, and bring balance to the city and village life. In 1961, an act for the promotion of the merger of agricultural cooperatives was enacted. It was the perfect time to build a new office building to rationalise the organization and strengthen its financial base. Yamana and

Otaka visited various parts of Japan, to organise seminars for managers of agricultural cooperatives on the construction of office buildings. Yamana also wrote several articles explaining each step of the construction process. Traditionally in Japan, carpenters used to be responsible for the entire process, from planning to construction, but in modern times, the processes have been separated, and one has to pay an architect only for planning and supervision, which was not easy for common people to comprehend. It was therefore essential for Yamana and Otaka to be involved in these activities, even though it would have been quite difficult, almost impossible, for them to cover the whole of Japan. Finally, in 1964, Agriculture and Forestry Central Trust offered support, and the Agricultural Cooperative Architecture Research Group (Nokyo Kenchiku Kenkyukai) was established. Kyozo Okada and Akira Yamada joined them and began researching, consulting, and constructing agricultural cooperatives' office buildings.⁴ In other words, the group was itself a kind of cooperative society for the improvement of agricultural cooperative union's offices, set up by a group of architects with limited financial resources and backed by the Agriculture and Forestry Central Trust.

4. Pau in agricultural cooperative's offices

Prefabrication

Not only did Otaka try to mechanise the work on site, but also reduce the work on site itself and to prefabricate the building components in the factory. Building components produced in factories were generally superior in quality and efficiency when compared to the products made on site.

At the Kataoka Agricultural Cooperative, Otaka realized that the building industry itself was very primitive and had to be modernised. Through conscious adoption of prefabrication in the construction, Otaka was concerned with the modernisation of both architecture and agriculture.

In the Niihama and Yamanouchi Agricultural Cooperatives, megastructures and infill structures have been used to separate permanent and variable spaces. It could be said that this is a sort of realization of the metabolism theory.

At the Nango Agricultural Cooperative, 900-mm-square-grid planning was adopted for both floor and elevation, using only 900 mm x 1800 mm formwork, with no cutwork at all. This enabled the formwork to be reused, streamlining the site work and, consequentially, shortening the period of construction.

At the Shizuoka Agricultural Cooperative, pre-tensioned joist slabs were used for the low-rise block, and on-site reinforced concrete pillars and on-site manufactured pre-cast cross beams for the high-rise block (**Fig. 2**). The formwork was reused from a nearby construction site. Otaka had already employed pre-cast concrete in the Chiba Prefectural Library (1968) and the conference hall of the Tochigi Prefectural Government Building (1969),

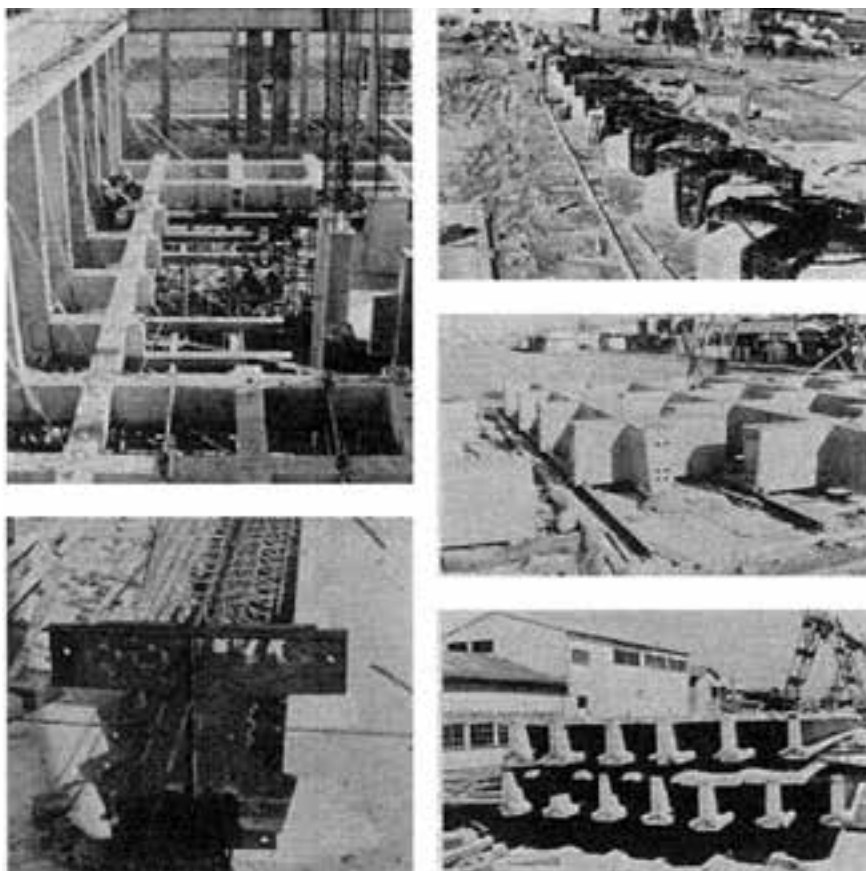


Figure 2. On site PC construction at Shizuoka Agricultural Cooperatives © Kenchiku Bunka, Feb. 1971.

but did not use on-site manufactured pre-cast components. At the time of the construction of the Shizuoka Agricultural Cooperative in 1970, efficient quality control of cement and aggregates became possible, and ready-mixed concrete was increasingly common. This enabled the on-site production of precast concrete components and solved the problem of transportation of precast concrete components. The combination of on-site reinforced concrete pillars and pre-cast components created a dynamic space.

Regarding the details of the building, at that time, there were few ready-made sashes. The architects and the engineers of the sash manufacturers worked together to develop new sash details. At the Hanaizumi Agricultural Cooperative, ready-made thin aluminium sashes supported by wooden mullions were used (**Fig. 3**). Furthermore, at the Yamanouchi Agricultural Cooperative, a sash detail has been developed, which combines aluminium extrusions with weathering steel mullions and can be used for all-installation of fix-glass windows, sliding doors, and flush panels (**Fig. 4**).

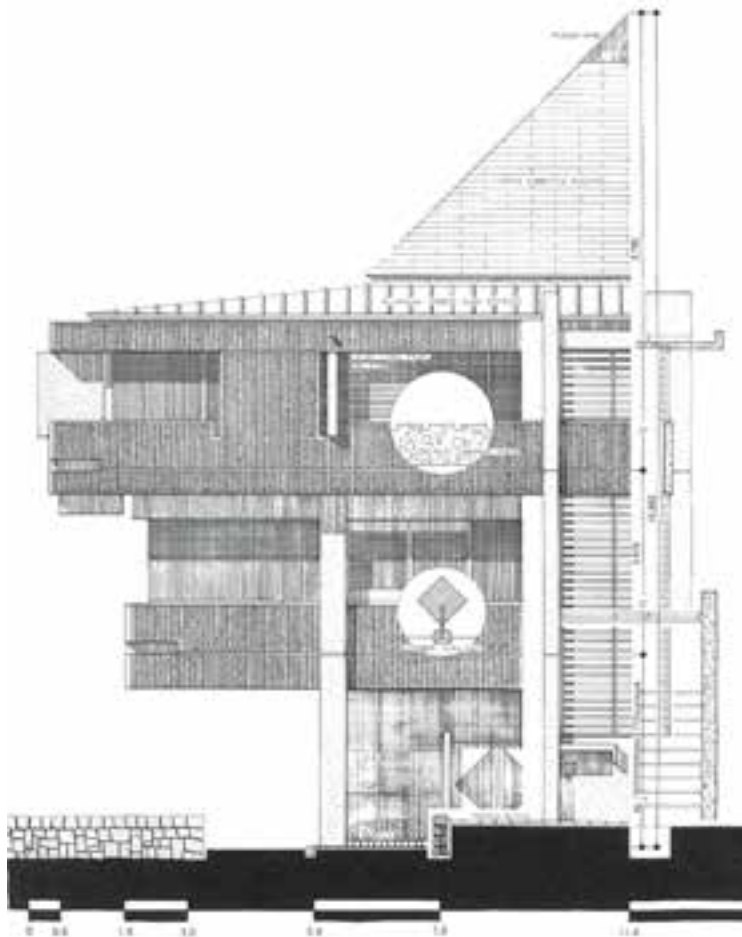


Figure 3. Detail of Hanaizumi Agricultural Cooperatives © Japan Architect, Nov. 1965.

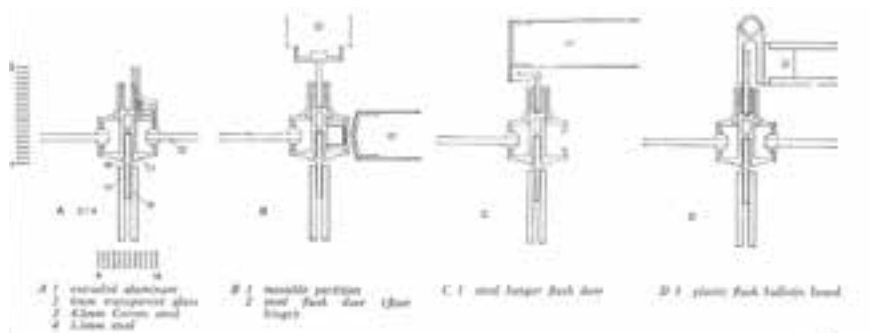


Figure 4. Sash Details of Yamanouchi Agricultural Cooperatives © Japan Architect, July 1967.

Art and Architecture

While rationalising the construction process, Otaka always aimed not only to reduce costs but also to achieve high quality befitting a work of art in his architecture.

At the Hanaizumi Agricultural Cooperative, four different finishes were applied: fine chipping with a bush hammer, rough chipping with a chisel between vertical joint bars placed at 20 mm intervals, very fine chipping with a single claw hammer, and raw concrete (**Fig. 3**).

At the Shizuoka Agricultural Cooperative, the finishing of each surface was decided by observing the actual light conditions. Sometimes the finish could be changed from raw concrete to fine chippings and vice versa. This was made possible by applying a chamfer strip to every corner before pouring concrete. This not only prevented damage to corners but also gave them a new expression. It should also be noted that the wages of craftsmen were lower at that time.

To make the building more monumental, Otaka employed curved lines at the Yamanouchi and Niihama Agricultural Cooperatives which stand in suburban area, in contrast to the simple lines employed at the Kataoka and Hanaizumi Agricultural Cooperatives which stand in rural area. The staircases at Yamanouchi and Niihama, were suspended and intended to act as sculptural eye-catchers.

Otaka thought the anti-socialistic artistry is detestable, it always struggled to elevate architecture to the work of art. If looked at carefully, its trace could be found everywhere.

Urbanism

Otaka and his colleagues regarded the office buildings of agricultural cooperatives as the nucleus of the community. At the Kataoka and Hanaizumi Agricultural Cooperatives, Otaka planned to surround the office buildings with shops, a post office, a village hall, a library, a clinic, a sports ground, warehouses, and livestock sheds. These plans were not realised, but at least, the meeting rooms were always kept out of the way of the office space and could be used for community events, even when the offices were closed. At the Hanaizumi Agricultural Cooperative, the large meeting room on the top floor appeared to be frequently used as a dance hall for young people, while at the Shizuoka Agricultural Cooperative, there was even a wedding hall, a photo studio, and an observatory.

Yamana also thought that the modernization of houses would be effective for the enlightenment of farmers. Two consecutive rooms in traditional Japanese houses were ceremonial spaces, not usually used, but left open for occasional events such as weddings and funerals. Yamana thought if this ceremonial space was placed in the office building of the agricultural cooperative, the

house would become a space intended purely for everyday life. The three new female members, Masako Hayashi, Yoko Nakahara, and Hatsue Yamada, were mainly engaged in housing projects.

Then, in the Shin-Yurigaoka District of Kanagawa Prefecture, there was a movement to develop a plan for an agricultural residence district. The Kakio Agricultural Cooperative's office building was designed by Akira Yamada and completed in 1966, and 23 residents from 18 houses designed by the Agricultural Cooperative Architecture Study Group, and Yamana who also moved to this area, became involved in this project. The plan was eventually approved by the local government, and the commencement ceremony was held on the 15th June 1977.

However, in the meantime, Yamana had set up a new incorporated association, the Community Planning Centre, in 1973, and by that time, Otaka had gradually withdrawn from the projects for the agricultural cooperatives. Otaka stated that, as he had found excellent colleagues and other architects who were joining the projects for agricultural cooperatives, he would like to tackle other difficult problems arising in urban areas.

It is supposed that he was gradually disappointed by the rural area, the mentality of local people, and the business policy of agricultural cooperatives. Agricultural cooperatives became more focused on financial services, and mergers continued incessantly. In 1961, the number of agricultural cooperatives was 13,300; in 2021, it was 585. The conditions of agriculture, rural areas, and agricultural cooperatives were harsh, and the changes were too drastic for architects to handle.

5. Conclusion: A hope to build a utopia with agricultural cooperatives

In the projects on Agricultural Cooperatives, Otaka, Yamana, and other members of the Agricultural Cooperative Architecture Research Group asked each member of Agricultural Cooperatives to participate in the decision-making process, rather than leaving it solely to the executives. There was an intention to promote democracy, enlighten farmers, and construct a utopia for modern people.

For example, at the Shizuoka Agricultural Cooperative, which has about 6,000 members, they asked for the participation of 1 in 10, which is 600 representatives. At the Kataoka Agricultural Cooperative, the members of the cooperative went to the riverside during their holiday to collect stones for the flooring of the entrance hall.

However, the Agricultural Cooperatives engaged in various activities, including farm guidance, marketing of farm products, supplies of production inputs, and credit and mutual insurance businesses. Among these activities, the financial business has grown remarkably. As the result of further rationalisation and mergers, some Agricultural Cooperative buildings designed by Otaka became

mere branches and were reconstructed, equipped only with automatic cash dispensers. Only three of the eight agricultural cooperatives designed by Otaka are still in existence. As Otaka stated in his later years,

*Unfortunately, agricultural cooperatives have forgotten their cooperative principles and have lost their power to engage with rural communities. It is a pity that the low level of consciousness of life and society among farmers and citizens has been crushed their seeds to this day.*⁵

However, considering the low levels of food self-sufficiency rates, the gravity of the apportionment, and so forth, it is obvious that there is an increasing need for a balance between urban and rural life. The buildings of the agricultural cooperatives, for which Otaka, Yamana, and the Agricultural Cooperative Architecture Study Group were commissioned, can be interpreted in a new way as centres for the community or castles for people who live in rural areas.

Notes

- 1 The main references on Masato Otaka include the following.
 - Minohara, K., Matsukuma, H., and Nakajima, N. *The Works of Otaka Masato*, Tokyo, X-Knowledge, 2014.
 - The Working Group for the Exhibition on Masato Otaka, *Uniting Architecture and Society—The Approach of Otaka Masato*, Tokyo, The National Archives of Modern Architecture, 2016.
- 2 Otaka, Masato. "After the Tokyo Metropolitan Festival Hall", *Shinkenchiku*, June 1961, 73–76.
- 3 For information on each Agricultural Cooperative Offices, see the following articles.
 - Otaka, Masato. "Kataoka Agricultural Cooperative Office", *Japan Architect*, April 1963, 39–46.
 - Otaka, Masato, and Onobayashi, Hiroki. "The Hanaizumi Cooperative Union Hall", *Japan Architect*, Nov. 1965, 13–30.
 - Otaka, Masato, and Hajime Yamana, "The Yamanouchi Agricultural Coop Union Hall", *Japan Architect*, July 1967, 50–64.
 - Otaka, Masato, and Onobayashi, Hiroki. "The Niihama Agricultural Coop Union Hall", *Japan Architect*, July 1967, 65–72.
 - Otaka, Masato, and Yamana, Hajime. "The Nango-Cho Agricultural Coop Union Building", *Japan Architect*, June 1969, 27–36.
 - Otaka, Masato, and Yamana, Hajime. "Shizuoka Agricultural Centre", *Japan Architect*, May 1971, 21–34.
- 4 Yamana, Hajime, "How to build an Agricultural Cooperative Office", *Nogyo Kyodo Kumiai Keiei Jitsumu*, Nov. 1964, 55–61.
- 5 Minohara, K., Matsukuma, and H., Nakajima, N. *The Works of Otaka Masato*, Tokyo, X-Knowledge, 2014, 309.

#03

**The latin American
contribution**

S08

Latin America Contributions and Influences

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To assess the artistic expressions of a territory as vast as Latin America is a challenge is difficult to overcome. However, as we delve into the actions and works of the Modern Movement in architecture, we understand that the wide range of architectural expressions not only derive from the geographical diversity of the various cultures that conform it, but I must be added that, for the most part, they have an important social component.

When the various vanguards that made up the Modern Movement started, they brought about a preponderant position in the subcontinent. Latin Americans had always a close relation with Europe, therefore it was easy for them to keep up to date with the first developments of the avant-garde, since it was not unusual for them to receive the main theoretical and graphic publications of the time.¹ It can be established that, for various reasons, Le Corbusier's ideas had initially a larger presence, both because of the students' widespread knowledge of French and the fact that some architects had studied in that country acquiring first-hand knowledge of his provocative precepts. Thus, we find that Lucio Costa and Affonso Eduardo Reidy were born in France, while some young students, like Carlos Raúl Villanueva and Mario Pani, graduated from the École des Beaux Arts in Paris. Some years later, architects such as Rogelio Salmona and Teodoro González de León also moved to Paris, in their case to work in the atelier of the "Swiss master".

Another important subject in the architecture of the heroic years, was the theoretical thoughts and texts of the new trends; the presence in university classrooms and the writings of these architects laid the foundations for a development that, although inspired by the texts of nineteenth-century theoreticians, finally achieved a local expression. Among others we can mention José Villagrán García and his *Teoría de la Arquitectura*,² Lucio Costa as head of the School of Fine Arts in Rio de Janeiro in 1930, or Carlos Raúl

Villanueva, founder of the School of Architecture of the Universidad Central de Venezuela in 1944.³

Much can be said about the quality and relevance of architecture in Latin America, which has been repeatedly referred to, either in relation to the work of a particular architect or in relation to the numerous distinctions they have obtained.⁴ Thus, it is possible to point out that this vast and rich territory has acquired international recognition with architectural works that are representative of diverse cultural currents and regions, with a plurality of concepts. However, it is surprising how, within this concert of ideas and forms, each country offers its own sonorities, in a kind of harmonious dissonance resulting from local traditions and environment; climate, materials, urbanisation, educational programmes, culture and economy, to name but a few, are the factors that differentiate the appearances and solutions. Similarly, the selection of architects and works in this session allows us to point out certain trends in both form and content. In addition, it is possible to observe how social commitment permeates most of the works, where the concern for a design suitable to the tropics has many echoes. It is indisputable that this is an area inhabited by talented and committed architects, both to their profession and to the times in which they live, with generous and creative projects, offering a wide range of solutions. The last presentations, deal with education and conservation of the Modern Movement, as a suitable consideration and exploration of the present situation in some areas of Latin America.

The verticalization in Rio de Janeiro is due to the attraction of the sea and the views, which makes the comparative analysis of four buildings carried out by Maria Cristina Nascentes Cabral of particular interest. The critical analysis of her case studies reveals a trend that will prevail in that urban area, making it interesting to keep up with her research on the buildings: Itahy, by Arnaldo Gladosch (1932); Jarau, by Firmino Saldanha (1936); Santo Antônio do Morro, by Marcelo and Milton Roberto (1937); and Tapir, by Jorge Machado Moreira (1939). It should be added that this is a group of important architects of Carioca modernity.

Carla Zollinger and Susana Olmos tackle the study of the Brazilian hospital architecture of Joao Filgueiras Lima, Lelé, in relation to the contemporary debate on spaces for wellbeing and health. The authors explore his designs and works, starting with the emblematic hospital of Brasília, in Taguatinga (1968); from this example evolves the connection with the Zarah Hospitals Network, for rehabilitation, emphasising the principles of modulation and flexibility, which seek to facilitate interior modifications or future expansions. In all cases, the design was guided by the comfort of the medical staff and the wellbeing of the patients.

The third speaker on Brazilian architecture, Fernando Diniz Moreira, analyses the work of Acácio Gil Borsoi, an architect who, from the city of Recife, has carried out various projects in the northeast of the country. He reviews the

Teresina Forum (1971) and the State Assembly (1983), both in the city of Teresina, capital of the state of Piauí. They are examples that highlight a design in keeping with the limited means in that state, the poorest in the country. The adaptation to complex climatic conditions is combined with the search for a monumentality that indicates the importance of the buildings, using exposed materials that form part of the structure as the guiding principle.

The two extremes of Latin America make up two presentations. From Mexico, Isaura González Gottdiener deals with the Netzahualcoyotl Concert Hall (1976–1982), the inaugural work of the University Cultural Centre of the Universidad Nacional Autónoma de México. The brutalist proposal of the architect, Arcadio Artiz Espriú, is based on a careful study of various precedents, in particular Hans Scharoun's Berlin Philharmonic, paying attention to isoptic and acoustics to achieve a renowned musical space that offers university academic members and students a space of solidarity and parity.

From Chile, Yasmín Crespo discusses the pedagogical experience of the School of Architecture of the Universidad Católica de Valparaíso, whose professors founded *La Ciudad Abierta*, in the area of Ritoque. The construction of this complex, starting in 1970, with the "Amereida" cooperative of teachers and students, achieved not only an academic stance with clear social intentions but also a singular architectural expression.

Finally, the overview on Latin America closes with the thorough analysis of Carolina Luna Marín and Néstor Llorca Vega, from Ecuador, of the late arrival of the Modern Movement in that country, and the difficult condition of its preservation.

Octavio Paz wrote a phrase which, despite having been repeated on numerous occasions, offers a valid argument for this session: "Architecture is the incorruptible witness of history because one cannot speak of a great building without recognising in it the witness of an era, its culture, its society, its intentions...". Indeed, in the presentations of this session, we find valuable examples both of the solution of specific problems and of the final plastic results, which are significant of the evolution of Latin American architecture. The main concern of this region's architects are in the areas of housing, health and education, always attentive to the aspects of urban insertion and the socio-cultural context. It is also important to note how the physical environment and climate are of particular significance, they conform an emphatic gesture to draw the attention of the high-tech world to some fundamental issues of the developing countries. It is possible to assert that the quality of Ibero-American architects and their work shows commitment, quality and originality that has crossed borders and has taught important lessons in other latitudes.

Notes

- 1 The most influential publications were, Le Corbusier's *Vers une architecture*, 1923, the *Manifesto*, 1919, of the Bauhaus signed by Walter Gropius, and some articles by Frank Lloyd Wright published in the *Architectural Review* from 1908 onwards.
- 2 José Villagrán García, *Teoría de la Arquitectura*, Mexico, INBA, 1963.
- 3 Carlos Raúl Villanueva's numerous writings can be found in *Caracas en tres tiempos*, Caracas, Comisión de Asuntos Culturales, 1966; and *Textos escogidos*, Caracas, FAU UCV, 1980.
- 4 In 1980 Luis Barragán won the second edition of the Pritzker Architecture Prize, considered the most prestigious award in that field, in 2000 it was Oscar Niemeyer's turn, while in 2006 the prize was awarded to Paulo Mendes da Rocha and in 2016 to Alejandro Aravena.

The Nezahualcóyotl Concert Hall **Brutalist Architecture Emerging** **From The Rock**

Isaura González Gottdiener

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The main objective of this paper is to analyze the design and construction process of the Nezahualcóyotl Concert Hall of the University Cultural Centre (CCU) of the National Autonomous University of Mexico (UNAM) inaugurated in 1976. This building triggered the third construction stage of the University City, being the main site of a series of buildings for the performing arts and cinema that holds a consolidated place in the cultural life of the UNAM and Mexico City.

To understand the time when the concert hall was built, is to look again from the present, where it enjoys a paramount place as one of the best venues for symphonic music in Latin America and in the world. It offers a different approach to that of the criticism of the second half of the twentieth century. Although the interior spatial qualities of the CCU enclosure were praised, the exterior appearance was judged and qualified as severe, cold, crushing. The purpose is to unveil the building from a theoretical framework that helps to understand what the work has to say. A team of Mexican architects and engineers led the design and construction, with some foreign assistance. The Nezahualcóyotl Concert Hall and the CCU buildings were completed between 1976 and 1980 exemplifying a dialogue with the landscape at a time Mexico City's growth became exponential. Morphologically its genealogy resides in German expressionism, as well as its philosophical conception. It is a building that evolves from inside out, an ultimate musical space where the university community and society have a democratic access to culture.

1. Historical background

The National Autonomous University of Mexico (UNAM) comprehends a variety of cultural and scientific institutions, as well as heritage assets, being one of them the University Cultural Centre (CCU). Built under Dean and M. D. Guillermo Soberón Acevedo (1973–1981), has become one of the main landmarks in terms of culture across the country. Its origins go back through the construction of a new venue for the Philharmonic Orchestra of the UNAM (OFUNAM): the Nezahualcóyotl Hall. This Project itself embodied a true shift as it relates to cultural spaces in the 1970s Mexico.

Years have gone since university authorities had the idea of developing a modern place for symphonic music, but labor disputes at the break of that decade put the project into hold. When expansion plans crystalized for the UNAM, the paramount complex was built and soon turning into a destination

both for the university community and citizens mainly living across the South of Mexico City.

The construction was performed entirely by UNAM ex alumni; only American Engineer and acoustics expert Christopher Jaffe was added to the team. Architectural project and the building management were held by the Building General Direction (DGO) under the responsibility of Engineer Francisco de Pablo. The Engineering Institute was in charge of the soil mechanics. Architect Orso Núñez Ruiz de Velasco was the Project Manager while Engineer Roberto Ruiz Vila occupied the site resident office.

Around this time, architect Arcadio Artís Espriú (1946–2018)¹ was in charge of several projects with the DGO, like the National School of Music and the National School of Plastic Arts, of which he was the main designer. Artís graduated from the National School of Architecture in 1971; he also studied violin at the National Conservatory and got training as a plastic artist. Architects Manuel *Chacho* Medina and Arturo Treviño were also added to the team.

It took only eleven months for the Hall to be completed, opening on December 30, 1976, with works by Héctor Quintanar, then OFUNAM Director, the composer Carlos Chávez and Ludwig van Beethoven. The Hall was named after Texcocan ruler and poet Nezahualcōyotl.

2. Territory for culture

The Pedregal, basaltic lava bedrock, formed through the eruption of Xitle volcano, roughly 2,000 years ago, had yielded to the human settlements precisely in the 1950s, along with the master plan of the University City and the residential developing called Pedregal de San Ángel. In early 70s, the territorial reserve of the University City was still intact to the south of the main campus. Nevertheless, a great amount of pressure came from the proliferation of popular housing and the very idea of locating government facilities in this area². In order to protect these grounds, the Dean Soberón destined a portion of this land to culture dissemination, decision that ultimately triggered the third phase of the University City itself.

It was the 1973 Rezoning Plan of the University City which outlined a 24–hectare plot, delimited by inner–street circuits with access from Insurgentes Avenue, and at the same time guarded by a car isolation–damping stripe. Urban and architectural solution proposed the lesser modifications to the geographical environment: scattering buildings between the rocky landscape and major interventions for parking lots and pathways, “an antagonistic will to what encouraged in general the architects of CU–52 [main campus]. The architects abandoned Le Corbusier’s geometry despite he was the most renowned master of the 1950s”³.

As a whole, the complex shows a flexible–organic ramified aspect, a cluster which responds to a social and political architecture⁴.

A hollow in the rock, which was used favoring the sightlines, determined the Hall location. Starting this point, the structure was drafted for the entire complex. The building is set slightly to the south of the centre of the plot, entrance facing Southwest towards the plaza where the three composition–axis concurs, tracing the paths between buildings. At Southeast emerges the Theatre Building, while the dance and chamber music halls, cinemas, and administrative facilities are set at Southwest. To the North, over 200 meters away, the National Library stands, as well as the National Newspaper Archive,



Figure 1. Aerial view of the University Cultural Centre (Centro Cultural Universitario) in 1986 where original layout of complex is shown. © Fondo Aerofotográfico Verticales, FAV_2879B_01_022_00028, Acervo Histórico Fundación Cultural ICA. Compañía Mexicana de Aerofoto, 1986.

the Centre for University Studies (today the Institute of Investigations on the University and Education), and the Historical University Archive. The Sculptural Space and the Promenade of Sculptures were added, two systems with routes of their own that follows the same principle than the architectural one: to respect the geographical features by adapting to them.

These places attracted six leading artists: Federico Silva, Helen Escobedo, Manuel Felguérez, Mathias Goeritz, Hersúa and Sebastián⁵.

3. In Search for a State of the Art Hall

1960's Mexico had not an exclusive venue for symphonic music. Concerts were performed at the main scenario of Fine Arts Palace, at the National Auditorium, and often in theatres and open forums. The University Symphonic Orchestra (OFUNAM) conducted by maestro Eduardo Mata, had had an important artistic growth, transforming into UNAM's Philharmonic Orchestra in 1972. Still, musicians were performing at several university auditoriums, the Carlos Lazo Theatre or even next to the Rectoría Tower. The orchestra gained such popularity that those spaces were increasingly insufficient. This was decisive to catalyze the construction of a new symphonic venue.

A number of concert halls were studied to develop the project, including the Amsterdam's Concertgebouw (built in 1888), the Orchestra Hall of Minnesota (1974), and the Grand Hall of the Philharmonic Orchestra of Berlin (1963). Maestro Mata decided that the latter, designed by Hans Scharoun, would be the one to look out for, since the venue set a landmark in concert halls by modifying the relative position between the audience and the musicians locating the orchestra at the centre of space, allowing to integrate the community. Nezahualcóyotl Hall was the first one in the American Continent to showcase this model.

A Total Musical Space: Architectural and Acoustics Synthesis

The stage is the cornerstone of the music hall design, no doubt. Spectators are arranged in relation to it, whilst the rest of the elements are born out of the needs of public and musicians. In this sense, concert spots are integrated by three great areas: the musical space, foyers and circulations, and accessory premises.

In order to comprehend the design and production process it was put into practice the methodology conceived by Doctor Carlos González Lobo (1939–2021), consisting of applying the geometry from the architectural composition. In this building, laws of physics and geometrical lines are intertwined to create an inner space emerging from a 240 m²–diamond shaped stage. Starting from this point 2,311 seats were distributed (now 2,177 since 2010 renewal) comprising different blocks and levels surrounding the orchestra



Figure 2. Arcadio Artís, Orso Núñez. Sala de Conciertos Nezahualcóyotl, Ciudad de México, CDMX, 1976. View of the main hall from the sideways balconies. The hanging acoustic ceiling can be appreciated. © Colección Armando Salas Portugal, ASP-CU-0369, Instituto de Investigaciones sobre la Universidad y la Educación, Archivo Histórico de la UNAM. Armando Salas Portugal, photographer, 1977.

with steep sightlines for the sound can reach the last row without electronic enhancement. The great hall is not rectangular nor circular, instead a polygonal nave measuring 58 meters long by 47 meters in its wider side.

Architectural and acoustic design was conceived as a whole. A breakthrough solution was to set a reverberation box beneath the stage, aimed to expand properly the vivacious and warm sound related to Mexican composers. Another distinctive feature is the acoustic ceiling made out of acrylic reflective surfaces in radial arrangement, hanging over the stage and front rows and the suspended ceiling, whose zenith stands 22 meters above. Every line in the hall comes together at the centre of this shape: visual openings, projection of the foyer axis, focus of the concentric drawing that organize the seats. The space is defined by a 60-centimeter surrounding concrete wall, and the ceiling, which was obtained by computer. Between this roof and the structural slab, radial steel beams creating the span are concealed forming a compressing ring.

Acoustic wood elements covering the walls, with fluted-zig-zag panels and balconies, featuring edged prisms, are part of the hall interior design, as well as the seats in blue and orange contrasting with the wood. Their ridges convey



Figure 3. Arcadio Artís, Orso Nuñez. Nezahualcóyotl Hall, Mexico City, CDMX, 1976. The Ultimate Musical Space. © Colección Armando Salas Portugal, ASP-CU-0357, Instituto de Investigaciones sobre la Universidad y la Educación, Archivo Histórico de la UNAM. Armando Salas Portugal, photographer, 1977.

the sound right into the ear pinna helping appreciate that architecture and acoustics form a huge musical instrument.

Transition Spaces and Accessory Premises

For what concerns to lobbies and aisles, they can be reached from the atrium. Once inside through the main entrance, the front wall painting shows *El sol prehispánico*, work by Mexican Gastón González César. Foyer, corridors, mezzanine and staircases have a visual continuity outwards the exterior.

Fluted concrete walls at the façade unfold thru the transition spaces. In every course the height variations and extended views bring variety to whole. Marble, concrete, wood, and glass, coat these spaces. Arriving the second level foyer, outside views get restrained. In contrast, a large horizontal window allows those who arrive late to peek a view on the inside and can participate visually of a concert.

Accessory premises – individual and general dressing rooms, instruments, and furniture storages, press room and offices – are located in the upper-basement and the lower basement, beneath the sideways balconies and



Figure 4. Arcadio Artís, Orso Nuñez, Nezahualcóyotl Concert Hall, Mexico City, CDMX, 1976. West view of Nezahualcóyotl Hall. © Colección Armando Salas Portugal, ASP-CU-0387, Instituto de Investigaciones sobre la Universidad y la Educación, Archivo Histórico de la UNAM. Armando Salas Portugal, photographer, 1977.

the chorus having independent entrances from the outer sidewalks, clearly separating the flows of spectators, musicians, employees, and administrative personnel. Of special mention is the auxiliary rehearsal room, where singers and musicians warm. In the other hand, services such as lavatories, wardrobes, and the box office, are under the main lobby, while cafeteria and other rest rooms are set in the mezzanine.

4. A Rational and Expressive Architecture

At Nezahualcóyotl Hall, tectonics is shown rational and expressive. Materials are humble, mainly selected to fulfill acoustic and comfort conditions, a quick execution and a minimum of maintenance, consequent features of the *brutalist* architecture whose materials go rough, and their constructive processes are pragmatic. One of the main features is the omnipresence of the fluted concrete elements, which was first used by Paul Rudolph in his Yale Art and Architecture Building (New Haven, Connecticut, 1958), also featured in the Housing Project of Caja de Pensiones Can Mercader in Badalona (Barcelona, 1973), where Arcadio Artís himself lived from 1973 to 1975. It was needed that the walls engaged a dialogue with the organic landscape of the

Pedregal, and at the same time, it was intended to avoid graffiti and vandalism by proposing this texture.

There were no limitations in terms of nearby boundaries: it was an open spot which allowed to do sculptural architecture. Regarding the formal outcome, Artís wrote:

"The Hall arises out of an uneven ground, the Pedregal, but its measurements minimize the topographic features, luckily benefiting the view of the buildings. And I say this was fortunate because it proposes the possibility of a historical reconciliation, for a great part of our country architecture fights for the right of being functional. In this case it is intended to be also appreciated, having dynamic views, and creating different and interesting points: in the outside, large chiaroscuros, and variable-angled cracked walls, presenting ever-changing perspectives; in the inside, the idea keeps on always looking for interesting points of view prolonging the perspective towards new spaces".

Arcadio Artís also refers that the building is born from inside out, and this exogenous shape finds its origins in the German expressionism. In this sense, we must remember that the second building of Goetheanum (Rudolf Steiner, 1929) was the first to use apparent concrete to shape the exterior forms as expressions of the interior. It is valid to look out for connections with Alvar Aalto's work too. For the Finnish architect, the shape and the materials have psychological and biological goals, while textures, colors, and porosity rates relates in different ways with man. These concepts are present in the Nezahualcóyotl Hall. Because of this, the shape of the building reflects Aalto's humanistic expressionism and rationalism, however its constructive solution is a rational synthesis responding to the reality of building industry in the 1970's Mexico.

This venue soon attracted the interest of main media that covered national and international architecture and construction, like *Arquitectura México* (1977), the *1977 Mexican Architecture Annuary* published by the Ministry of Public Education (SEP) and the Fine Arts Institute (INBA); and the magazine *Arquitecto* (October 1977). Its extraordinary acoustics were praised in *The New York Times* (Sept. 12, 1977), *Architectural Record* (January 1978); and *Obras* magazine (June 1979), among others. Nevertheless, massive volumes in the Hall and in the rest of the buildings of the University Cultural Centre (CCU) received harsh criticism being qualified as "severe and even solemn"⁷. Doctor Louise Noelle claims that these criticisms were due to the "love affair" architects had with Luis Barragán's work in the 1970s and 1980s, because its search for color and tradition were trending topics.⁸ Another plausible explanation for the rejection by some of the members of the guild is that the project was conducted by young university members instead of experienced great leading designers. Despite this context, the public appropriated of the venue rapidly.

5. The Nezahualcóyotl Hall and the CCU: Cultural University Heritage

The Nezahualcóyotl Concert Hall fostered a new way of attending to concerts in Mexico without social protocols, in a relaxed informal context where all the people are the same. Inside, the hall is now practically unchanged from the day of its opening. In 2010 a major renewal project had place, respecting the original specifications⁹. Taking part in these works, Arcadio Artís was in charge of the expansion project for dressing rooms and offices, a discrete structure added at the back of the main building.

In an architectural and urban sense, the CCU still holds the essence of the original layout. However, with the passing of time, the growth of trees planted back in the 1980s without a landscape design, as well as induced new buildings in the precinct have altered the rocky skyline, and therefore the dynamic views of the original buildings. Photographic shots from that time shows long gone perspectives. Now, Nezahualcóyotl Hall could be discovered like a cinematic sequence where backgrounds, textures, broken lines, cavities, lights and shadows, staircases, large windows, and doors appears. The only clean view that remains would be that from the plaza where main façade arises resoundingly for the spectator surrounded by the other buildings whose proportions let the visitors to become one with the space.

For over 40 years, Nezahualcóyotl Hall and the CCU have been considered a symbol of the democratic access for culture. They mean a shelter from the contemporary city, a cultural heritage to be preserved in the hands of the UNAM. There is no doubt that the Concert Hall is actually the jewel of the crown in the CCU, the first of its kind in the continent, and considered by far as one of the best ones for symphonic music in Latin America.

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Notes

1 Arcadio Artís Espriú (1946–2018). Of Catalan exiled parents, he studied violin at the National Conservatory and painting with Michel Baxte in Mexico and Francesc Espriú in Paris. In 1964, he met Orso Nuñez Ruiz de Velasco and Manuel Medina, with whom he would conceive the complex for

Nezahualcóyotl Hall and the CCU. In 1971, he married with Antonia Llorens and graduated. Between 1975 and 2000 participated as architectural designer in over 20 projects for the UNAM, almost all built. In its own professional practice, he planned hotels, residences, and apartment buildings. Master painter,

- sculptor, and designer created a huge catalogue of furniture and crafts.
- 2 Architect Manuel Chacho Medina recalled during an interview that in early 1970s, State Ministries wanted to deprive land out of the UNAM to build their buildings on Insurgentes Avenue. Interview with Manuel Chacho Medina, January 2021.
 - 3 Yáñez, Enrique. *Del funcionalismo al post-racionalismo. Ensayo sobre la Arquitectura Contemporánea en México*. México: Universidad Autónoma Metropolitana, Limusa, 1990. p. 122.
 - 4 Montaner, Josep Maria. *Sistemas arquitectónicos contemporáneos*. Barcelona, España: Gustavo Gili, 2017.
 - 5 The six leading artists invited to plan the Sculptural Space where teachers and researchers at the UNAM, been correlated through their works. They crafted abstract art in a Constructivist trend. They came from different generations with a span of 30 years between the younger and the oldest. Universidad Veracruzana. "El Espacio Escultórico. Session: September 20, 2020, <https://cdigital.uv.mx/bitstream/handle/123456789/877/1998106P173.pdf>
 - 6 Artís, Arcadio. (October 1977). Nezahualcóyotl Concert Hall. *Arquitecto*, (Year 2, No. 7), p. 10–15.
 - 7 Yáñez, Enrique. *Del funcionalismo al post-racionalismo. Ensayo sobre la Arquitectura Contemporánea en México*. México: Universidad Autónoma Metropolitana, Limusa, 1990. p. 122
 - 8 Interview with Doctor Louise Noelle, August 2021.
 - 9 Vargas, Ángel, "La Sala Nezahualcóyotl reabre con el mismo esplendor de 1976", *La Jornada* (Mexico City), April 10, 2010.

From fragmentation to the protection of the Heritage of the Modern Movement in Quito from 1940 to 1970

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The Modern Movement in Ecuador began in the 1940s (later than countries that were within the first radius of influence), due to the participants as the professional debut of national architects and the experimentation of foreigners. Sixto Durán Ballén and Jaime Dávalos are Ecuadorian architects, forerunners of the Modern Movement. On the other hand, there are architects from abroad who migrated to Ecuador, such as Guillermo Jones Odriozola, Gilberto Gatto Sobral, Karl Kohn, and Otto Glass Pick, among others. In Quito, there are three marked stages within the architecture of the Modern Movement, the first is the transition stage from Republican architecture to the implementation of Modern architecture. The second was the “boom” of the Modern Movement, although it was not fully implemented in Ecuador due to the idiosyncrasies of Ecuadorian society. Finally, there is the stage of the transition of the Modern Movement towards Contemporary architecture. Within the last stage, a greater change could be observed, especially in the material and in the construction system. Currently, the architecture of the Modern Movement in Quito is unprotected and undervalued, for which there have been great losses of the modern architectural heritage.

The first problem is that there is not a complete and reliable catalog of the works belonging to this period, so it is difficult to carry out any kind of action. In addition, there are no wide-ranging regulations that establish how to intervene, protect and maintain a work belonging to this architectural trend despite the importance of this time in our history.

These circumstances have caused the works to be underused, in a deteriorated state, abandoned, or partially occupied. In some cases, banal interventions have been carried out, generating a loss of architectural, historical, symbolic, and social values, among others. In the worst of cases, the total loss of the work has been generated due to its overthrow.

The research presents a study of the cataloging and management systems of buildings of historical value within the heritage of the Quito Modern Movement. A comparison with the instruments of the Docomomo and the current legislation of Quito. Showing management tools that make it possible to specifically evaluate the unique codes of the local Movement.

1. Introduction

In Quito, the context with which the arrival of the foreigner has gradually encountered has always been very powerful: geographically unusual, socially

permeable, and technologically simple. An instinctively adaptable population, which mediates coexistence with a rigid territory is malleable to visits, be they forced or chosen. Establishing cultural reconfiguration as a tactic of embracing conquest and dispersing it. This permanent condition of the city to adopt the new has germinated in all fields and since the s. XV has permanently observed Europe, in different ways and gradually at different cultures (deepening more and more towards the East), from which it has requested information, technology, and innovation.

In the 1940s the Modern Movement began to be implemented in Ecuador. From the influence of national architects such as Sixto Durán Ballén and Jaime Dávalos precursors of the Modern Movement and foreigners who migrated to Ecuador, such as Guillermo Jones Odriozola, Gilberto Gatto Sobral, Karl Kohn, Otto Glass Pick, among others.

In 1945, Guillermo Jones Odriozola, an Uruguayan architect, was in charge of carrying out the first Regulatory Plan for the city of Quito. Within this Plan, Jones Odriozola generated five centralities that organized the city. Based on these centers, the buildings of the Modern Movement in Quito were built in specific locations depending on their use.¹

During the 1940s there was economic stability until 1970, before the “oil boom”. The stability allowed the construction of multiple works, both housing, mixed-use, administrative, and financial, among others, which generated a boost to the growth of the Modern Movement in the city.

In Quito, there are three marked stages within the architecture of the Modern Movement, the first is the transition stage from Republican architecture to the implementation of Modern architecture. The second was the “boom” of the Modern Movement, although it was not fully implemented in Ecuador due to the idiosyncrasies of Ecuadorian society. Finally, there is the stage of the transition of the Modern Movement towards Contemporary architecture. Within the last stage, a greater change could be observed, especially in the material and in the construction system.

The way of working and designing buildings in Quito presented a methodological conflict with the nature of the purest Modern Movement. The most orthodox postulates of the Modern Movement can be summed up in a system of restrictions that organized the space from compositional values, volume proportions, structural requirements, or an aesthetic catalog. This controlled and rigorous way of using the compositional elements of space was not always in line with Quito’s procedures, which were experimental, less technological, and freer than European ones. However, this distancing between the original approach and the versioned one is not negative but rather different. The autonomy of this process generated in Quito a kind of active laboratory, in which local architects could allow themselves freedoms that were impossible elsewhere.

The buildings of the Modern Movement within Quito have been profoundly undervalued. Despite the importance of that time in Ecuadorian history, the buildings are in very poor condition or abandoned, in other cases, they have been modified losing their essence and in the worst case, it has been demolished or collapsed due to natural causes.

With the demolition of buildings come two problems: the first is the loss of significant architectural pieces with historical, cultural, or social value; the second is the exposure of the butts of the adjoining buildings, impoverishing the aesthetics of the place and negatively affecting the urban profile. In some cases, the demolished buildings in the Historic Centre of Quito were formed into squares, which generates a modification to the urban fabric of the place, which is the oldest in the city.²

2. The methodology for the construction of the files

Based on the approach to the detected problem, a methodology was developed to be able to generate the first approach to possible cataloging of the buildings of the Modern Movement in Quito. For this, we developed a survey fiches of the catalog and status of the most significant buildings, to later be able to apply it to various buildings and obtain the relevant values for their protection. (Fig. 1),

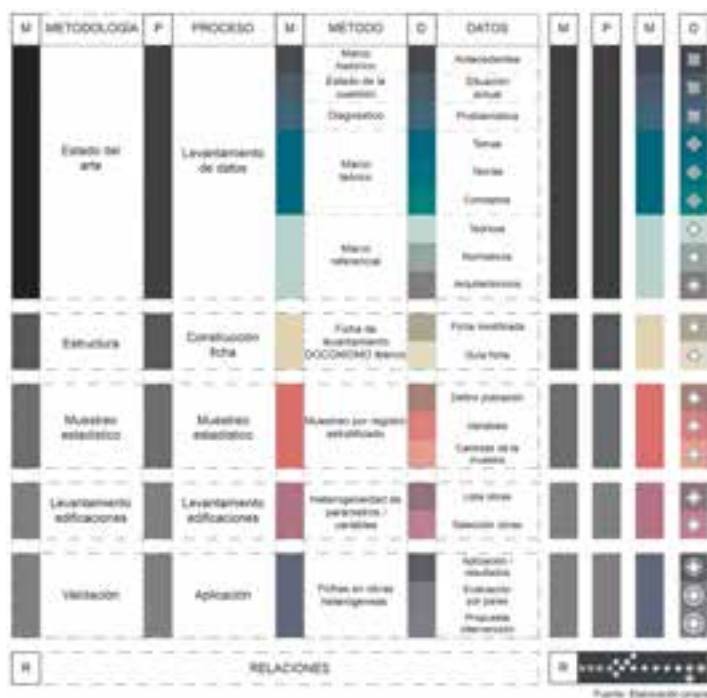


Figure 1.

In the first point, it was relevant to know the state of the art of the Modern Movement in Quito, where a survey of background data, the current situation, the problems, and the theoretical and referential framework was carried out. These were the pillars of the methodology to be able to have the knowledge and continue with its development.

In the second phase, the construction of the file was carried out, based on the Iberian Docomomo survey fiche. During the process, modifications had to be made to the original file to adjust it to the reality of the modern

architecture of the city, since due to the idiosyncrasies of society, the Modern Movement was not fully implemented in Ecuador. In some works, there is a mixture of construction systems, spatial organization, and ornamentation on the facades of different architectural styles. (Fig. 2)

In the image, you can see the comparison of the structure of the DOCOMOMO survey fiche and the structure proposed for the city of Quito. At first glance, it can be seen that it was necessary to increase some fields and modify others. In the first field, the degree of protection by the legislation of the work was modified. At this point, in addition to the information on the degree of protection, it was increased if the owner is from the state or private, the name if there is any previous inventory, and the reference. This information was relevant since it was wanted to analyze if the works belonging to the state are maintained in a better or worse way than the private ones. Additionally, if there is any previous inventory since in some cases previous cards have been applied but have had a poor result.

The second history point of the building and the third building description are kept on the DOCOMOMO card. The fourth evaluation point was one of the most relevant modifications so that it can be applied in Quito since apart from the 4 points proposed in the original file, the spatial distribution and intrinsic or symbolic values were increased.

The spatial distribution was a relevant point of analysis, since in the city due to this mixture of styles, a neo-colonial facade could be observed but with an internal spatial distribution with a linear central distribution of the Modern Movement. Or vice versa, a facade of the Modern Movement and internally the spatial distribution was neo-colonial, for example with central internal patios.

In the analysis of the materiality, an interesting fact was found about the permanence of the brick during different times and architectural styles. This material was used in neo-colonial, republican, and Modern Movement works,

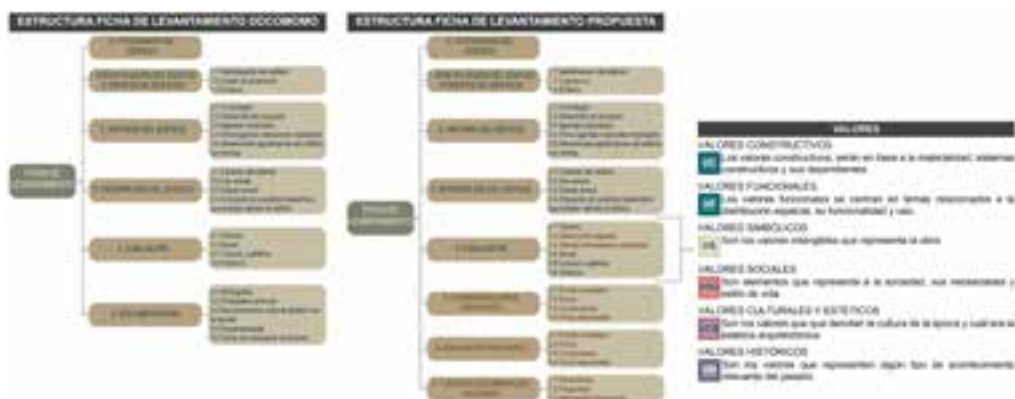


Figure 2.

the brick remained in each one of them only modifying its form of application or the design and distribution of the work.

Another point of importance is the intrinsic or symbolic values, the reason is that some buildings for society "do not have" architectural values or are not "pretty", but they are a landmark within the city. But by not meeting their social aesthetic standards, they do not take on the relevance that the building has.

In the fifth point, general considerations were established, such as the full name of the person who made the record, the date, conclusions, and the signature of the person in charge. Additionally, a sixth peer evaluation point was added so that the file is filled out objectively, preventing it from being subjective and from continuing to lose the value of the works. Lastly, there are the validated documentary sources, this point was added since currently, people add any type of information without verifying its source or in some cases, they simply add it due to the lack of information that exists in the country related to the subject.

In addition to the proposed file, a guide of the necessary information in each of the items was developed, since in some cases those in charge of applying the fiches, fill out at their discretion and not with the required information, generating a possible loss and deviation. of the information.

3. Data collection, sampling, and selection of case studies

After structuring the record, the method for statistical sampling was chosen, which was carried out through a stratified record. In this phase, there was one of the first problems, when noticing that there is no catalog of the buildings of the Modern Movement of Quito. To define the universal population, works were obtained from verified databases. Then the calculations were made to establish the amount of the sample and subsample.

The next phase was the survey of buildings, where the list of works was made with the variables of architect, year, and use. Based on the list, the buildings were selected for the application of the survey fiche. In the sample selection process, it was possible to observe the stages of the Modern Movement in the city and the role of international and national architects.

The first stage was in the 1940s, where there was a transition from the Neo-colonial and Republican to the Modern Movement, in this decade international architects predominated over national ones. In the 1950s it was the "heyday" of the Modern Movement, at this stage it can be seen that international architects still predominated over national ones, but with a smaller difference and there were collaborations between the two groups. Finally, there is the 1960s, is the transition from the Modern to the Contemporary Movement, where buildings with greater height began to be built, and new construction systems and materials were used. In this last phase, the collaborations

between the two groups continued, but the national architects predominated over the international ones. (Fig. 3),

Finally, the selection of the subsample was made by selecting works from the different decades, variable uses, and national and international architects. In this selection, a work that had already been overthrown was chosen to raise awareness about the loss of heritage works of the Modern Movement due to the lack of management and protection of it.

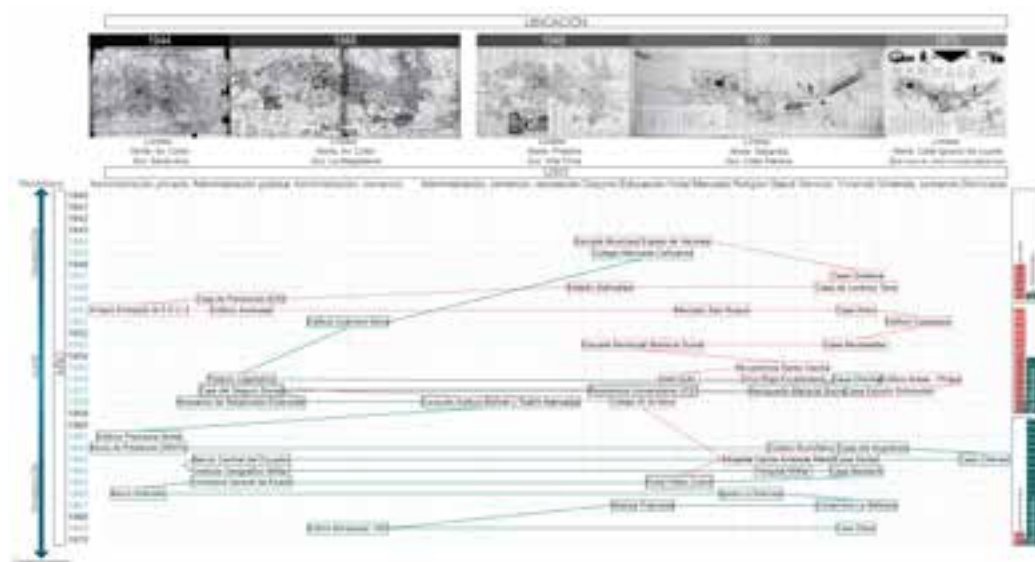


Figure 3.

The Chérrez House was designed by Arch. Oswaldo de la Torre in 1963, this house was an example of the Modern Movement in Quito, which won the Ornato Award in 1964. Unfortunately, in 2019, the work was overthrown without any cause since it was kept in perfect condition. Some organizations tried to intervene to prevent the overthrow, but since they did not have any support for protection, all efforts were in vain.³ Currently, the land is vacant, without any projection of a future project, which shows that it was simply an attack on the heritage of the city. This is one of the many examples that denote the devaluation and crisis of the heritage of modern architecture that the city of Quito currently faces.

The last phase of the methodology was the validation where the proposed survey fiches was applied, to the selected works of the subsample. With this, it was sought to establish the values of the buildings and in a possible intervention to seek the balance of maintaining the values and modifying those necessary to be able to generate an architectural rehabilitation that protects and supports

the adaptation of the work to the present, avoiding vain interventions that they simply generate an architectural loss for the city. (Fig. 4),

4. Conclusions

In Ecuador, there is a strong problem regarding the protection of the works of the Modern Movement, starting with a lack of cataloging of the works and a survey file. Additionally, due to the lack of knowledge about the heritage



Figure 4.

values of the time, the works are in deterioration, intervened without criteria, underutilized, abandoned, or in some cases have been overthrown, generating an irreparable loss. There is also no type of regulation or resolution that protects or establishes the requirements to be able to intervene in work with heritage values of the Modern Movement.

At the time of analyzing the functionality of the Iberian Docomomo file for Quito, it was observed that although the Modern Movement had a global reach, in Quito there were some modifications, for example, in materiality. The Modern Movement in Europe or the United States used reinforced concrete, while in Quito brick continued to be used, generating a new type of spatiality to that of the Republican or Neo-colonial. For this reason, it was necessary to generate some modifications to the Iberian Docomomo file, so that it would be functional within the desired context.

During the development of the file, there were some limitations due to the lack of information we have in the city. Some of these were the ranges of the years of the works, the exact dates of the works, the delimitations of the city, and the lack of a catalog of the works to know the universal population, among others. To select the population and later the sample of the works, it was necessary to take verified databases such as the architecture guides of Quito and the books "Miradas", since currently, the exact number of works is not available. of the Modern Movement in Quito. This can cause works of great value to be left out of the selection, due to a lack of knowledge. This demonstrates once again the devaluation that exists towards the heritage of the Modern Movement in Quito

Due to the characteristics of this non-linear construction of the speeches and buildings of the Modern Movement in the city, there was a long transition period of almost 40 years. This situation also facilitated stylistic and symbolic hybridization. Buildings with Andean, republican, or colonial aesthetics, but with modern spatiality, were common in the neighborhoods of new developments, this family of projects that are common in the case studied and therefore the cards, the values raised in them, accept the criteria of the Docomomo but they are contextualized for Quito.

This caused the discourse on the Modern Movement in Quito to be built retroactively in the 70s, writing the postulates as effects and not as causes. The buildings that are currently understood as references of the Movement were designed between the '50s and the '70s, but they are narrated from this discourse of the '70s, in which they supported the discourse of progress linked to the mobility of the car. The buildings sewed the long longitudinal roads of the city. The "10 de Agosto", the "6 de Diciembre", and the "12 de Octubre", the "Cristóbal Colón" or the "América" are avenues that were consolidated from the buildings that were implanted there and not the other way around, a kind of inverted Mass Plan through the buildings, which had an urban intention from the beginning.

This assertion of the adaptive capacity of the Modern Movement surely has several detractors. This style is usually associated with a rigidity that, from

my point of view, has used the Movement as the scapegoat for the failures of social housing, the enormous development of working-class neighborhoods, or the machinist urbanism that relied on the rationalization of the Movement as an efficiency tool that created anonymous neighborhoods and ghettos. It is clear that this transfer of scales between the tools used in buildings towards the urban created problems that still cannot be solved. But as far as architecture is concerned, these buildings have ductile spatial capabilities, in a transition from program to activity.

In these possible interventions of buildings from the middle of the last century, there is a normative complication in Quito. Having a strong heritage on the management and legislation of buildings of historical value, which are directed to those within the UNESCO Heritage declaration of 1978, all the interventions are read and evaluated from the nature of the Republican architecture that represents the heritage city landscape. From this view, the buildings of the M.M. were an opponent from the first moment and now they do not fit with affinity in the norms that allow the intervention. The Docomomo in Ecuador has a recent birth and an inbred nature that has been counterproductive to its possible impact on the government agencies that operate in the Heritage. Restoration, reuse, or intervention policies are not adapted to the nature of these buildings and the survey fiches themselves (which are the tools that allow the architectural value of a building to be evidenced) are oriented towards uniqueness and aesthetics rather than spatial codes.

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Vertical living, a modern way of living¹

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This paper's starting point is the analytical comparison of aspects of the first modern housing buildings in the south of Rio de Janeiro, namely projects by Firmino Saldanha, Jorge Machado Moreira, and MM Roberto, with the primary objective of understanding the formation of codes that shaped the first guidelines of modern housing in the city's metropolitan scope.

Within the scope of the architectural aspects that will be addressed: the relationship with the city through urban insertion, the flexible space, the interrelationship with the outside, and the participation of landscape and climate, the study proposes to compare three modern buildings with an Art Déco building by Arnaldo Gladosch.

Thus, this research hopes to achieve two main results: First, to understand how many modern architectural aspects already existed in Art Déco buildings. Additionally, to contribute to indicators of improved quality of life, highlighting aspects of modern multifamily housing that remain today as a reference point for spatial and tectonic quality in the city.

1. Reviewing Narratives from Marina Waisman's Latin American Perspective

According to Marina Waisman, the historical units, which allow for the configuration of a historical periodization for the European world, are established based on the notion of style. Periodization is defined from the development of a continuity line in which "architectural ideas are modified (...) until [they constitute] what is called a style".²

However, Latin American history reveals that, in these countries, there was no "coherent stylistic development"³ resulting from the continuity of architectural ideas. Instead, Latin American architecture was based on cross-cultural ideas that were brought in and were reinterpreted and transformed by local codes, constantly renewed rather than continued. For Waisman, the colonies' situation of political, economic and cultural dependence led to conditions in which material circumstances prevailed over those of thought, which is why the author emphasizes that socio-political conditions have more influence on the value of the types of buildings based on the programmatic demands of society rather than stylistic values.

According to Waisman, this hypothesis can be applied until the beginning of the 20th century, when the theoretical debate confronted positions of European currents with local ones that sought paths both for the formation of a local architectural culture and for nationalistic positions. The author argues

that, given the plurality of architectural tendencies in the 20th century, it is impossible to establish a stylistic periodization.

However, we can still observe that much of Latin American history was built on stylistic distinctions that are based on different tendencies, such as Neocolonial (Hispanic, Missiones, Brazilian, Portuguese, etc.), Art Déco (classicist, ethnic, rationalist, etc.) or modern architecture (Carioca School, Paulista School, Paulista Brutalism, etc.).

This work seeks to build bases for the development of other historical units that are not defined by the stylistic issue, but rather based on aspects intrinsic to architecture that demonstrate other approaches such as the relationship with the city, constructive, spatial, and functional aspects related to a new program, one that will transform the urban skyline of modern Latin American cities, vertical living buildings.

2. Verticalization in Rio de Janeiro

Verticalized apartment buildings shaped the landscape of the main Latin American cities in the first decades of the 20th century. The absence of seismic shocks that hindered vertical structures, the small lots, and the coastal strip squeezed between the sea and the mountains led to Rio de Janeiro's early verticalization compared to other Latin American cities.

Rio de Janeiro, Brazil, a Portuguese colonial city founded in 1565, consisted, until the end of the 19th century, of buildings with a maximum of 3 floors in narrow longitudinal lots perpendicular to the roads. For the opening of the imposing Avenida Central (1905), buildings of up to 7 floors were built, mostly for institutional or business purposes. Upper social classes inhabited single-family buildings of up to 2 floors, while the low-income populace occupied multifamily structures, often known as tenements. The first tall multifamily bourgeois building (since demolished) was erected in 1913 and had 6 floors.

Until the mid-1920s, the middle and high-income population wanted to live in houses in the city's upscale and already infrastructured neighbourhoods. This desire of the population changed gradually over the decades, driven by the land and real estate speculative process, and was reversed in the beginning of the second half of the 20th century, when living in tall buildings became a social aspiration.

From 1920 onwards, a process of replacing the old mansions and houses with apartment buildings quickly took place, and the Copacabana neighbourhood is the most remarkable example of this process. After the construction of the Copacabana Palace Hotel (1922), the construction of twelve-story buildings around it began, known in the 1930s as the "Babylon of the Skyscrapers"⁴. Initially, the buildings were Art Déco style, built according to a functionalist volumetric and spatial design, making use of the high technological

development of reinforced concrete, and exerted a mutual and contemporary influence amongst the first modern buildings.

According to Roberto Segre, the architects:

Firmino Saldanha and Jorge Machado Moreira defined the canons of modern residential buildings and their integration into a compact block structure: pillared ground floors; vertical service and hallway areas in the core of each building; a penthouse [that is] different from the other apartments; use of grilles and protective screens against harsh sunlight; horizontal openings; band ledges along the facade; and a clear separation between social and private quarters, both displaying wide windows with a great view of the outdoors.⁵

Some of these modern characteristics existed before in many Art Déco style buildings, and they are part of the new architectural culture, which remains a cross-cultural exchange, even in the 20th century, juxtaposing, simultaneously, that which was exposed by Marina Waisman and the styles narrative.

3. Case studies

For the present comparative critical analysis of built form, the following buildings were established as case studies (**figure 1**): Itahy (Arnaldo Gladosch, 1932); Jarau (Firmino Saldanha, 1936); Santo Antônio do Morro (Marcelo and Milton Roberto, 1937); and Tapir (Jorge Machado Moreira, 1939). These works from the 1930s were chosen since they were featured in city architecture



Figure 1. From left to right: Arnaldo Gladosch (AG), Itahy Building, Copacabana, Rio de Janeiro, 1932 ©Hemeroteca Digital/Biblioteca Nacional; Firmino Saldanha (FS), Jarau Building, Copacabana, Rio de Janeiro, 1936 © Denise Nunes collection; Marcelo and Milton Roberto (MMR), Santo Antônio do Morro Building, Centro, Rio de Janeiro, 1937 © Denise Nunes collection; Jorge Machado Moreira (JMM), Tapir Building, Flamengo, Rio de Janeiro, 1939 © Núcleo de Pesquisa e Documentação - NPD/FAUUFRRJ coll.

guides.⁶ In these publications, the Jarau and Tapir buildings are presented as the “first modern buildings”,⁷ in contrast to the Itahy building, which, designed a few years earlier, is included in the Art Déco guide.⁸ The choice was also made due to the historiographical recognition of the authors as precursors of modern architecture in Rio de Janeiro, except for Arnaldo Gladosch, whose modernity would only be recognized much later. Gladosch was the only architect among the selected case studies who was not a graduate of the National Beaux-Arts School in Rio.⁹

In a survey carried out by the main mass circulation vehicles in the 1930s, only the Itahy Building by Gladosch appears linked to advertisements for technological innovations at the time. Gladosch often appears linked to other buildings of his own and his name is generally considered a synonym of quality of the buildings and is also mentioned in advertising campaigns for building materials. The Jarau building by Firmino Saldanha is highlighted for its luxurious, magnificent, and modern apartments, indicating a new social and aesthetic standard. Firmino Saldanha is linked to the verticalization in Rio de Janeiro and apartment buildings, mainly due to the Roxy Building, which, at the time housed the Cine Roxy the largest concrete dome in the city. Marcelo and Milton Roberto appear only associated with the competition of the *Associação Brasileira de Imprensa* (1935), considered by historiography as the first modern building in the city. Jorge Machado Moreira is associated with his work in student representation bodies, as well as his participation in draft competitions, and is not yet mentioned as being part of the team that designed the Ministry of Education and Public Health (MESp) building in 1936.¹⁰

Inside the city, the block and the street

The Itahy and Jarau buildings are landmarks of Copacabana’s verticalization and are located a few blocks from the beach. The Tapir building is in Bairro do Flamengo, another area where the residential verticalization of the city took place at the time. These three were buildings intended for social strata of greater purchasing power than the Santo Antônio do Morro building in the city’s central area.

The implantation of the buildings (**figure 2**) follows the logic of the compacted block, with buildings situated right next to each other on the side and front borders. The exception can be seen in the Tapir building, which has a 15m clearance at the front to create a garden, whose landscaping was carried out by Roberto Burle Marx. The buildings are implanted as parallel structures to the existing grid, and the solar orientation is therefore related to the direction of the streets. While the Itahy, Jarau, and Tapir buildings are formed by a single prismatic volume, the Santo Antônio do Morro building is formed by four parallel bars connected by a fifth circulation volume, perpendicular to the others, an unusual volumetry in the city, but characteristic of the topological diversity of the Roberto Brothers, who built more than 20 multifamily buildings in Rio.¹¹

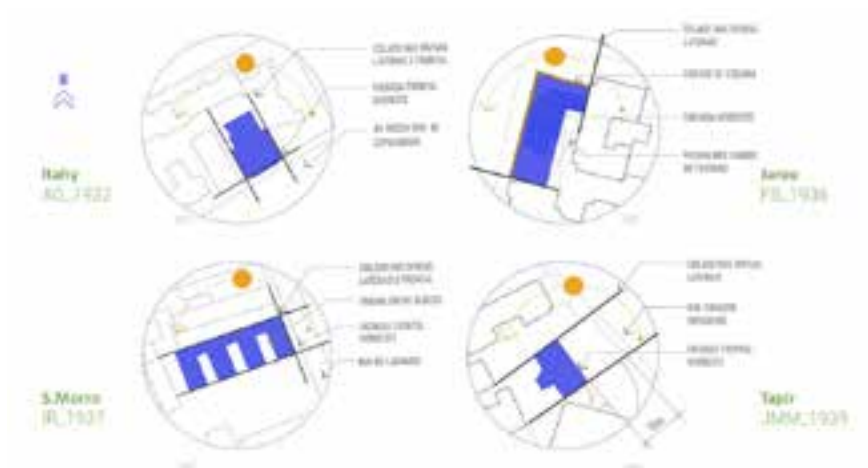


Figure 2. Itahy, Jarau, S. Antonio do Morro and Tapir buildings' implantation © Alice Lemme and Aline Bastos diagrams



Figure 3. Itahy, Jarau, S. Antonio do Morro and Tapir buildings' ground floor © Alice Lemme and Aline Bastos diagrams

The Tapir and Jarau buildings are supported by pillars and have a ground floor with a monofunctional open plan (pilotis) (**figure 3**). There is, therefore, a transition zone between the city and the private space. In both cases, the ground floor is currently barred along its entire perimeter. Access to Tapir is marked by a curvilinear marquee, while access to Jarau is around the corner. The Itahy and Santo Antônio do Morro buildings are on the ground and their ground floor is for commercial use. The access, in both, is marked by different material on the facade.

The spatiality, program, and functions articulations

In the Itahy, Jarau, and Tapir buildings, the sectorization is quite similar (**figure 4**). All three have only two apartments per floor, with two independent access points: service and social. The plan is divided into social, intimate and service areas, with access to the intimate area through the social area. The exception is the Santo Antônio do Morro building, where the intimate and social areas are in different levels, as these are duplex apartments.

Due to this sectorization, the Itahy, Jarau, and Tapir buildings also have similar circulation. The circulation core is located at the central point of the building in order to compact this function as much as possible. In the Itahy and Tapir buildings, the social and service circulations have fully segregated circuits with independent stairs and elevators, while in the Jarau building only the elevators are different, with stairs shared by both circuits. The Santo Antônio do Morro building is also an exception, with a vertical circulation core connected to the first block and extensive horizontal circulation for access to the apartments. Furthermore, there is no distinction between social and service circulation.

In the Itahy, Jarau, and Tapir buildings, the wet areas are close to the central core of vertical circulation, generating the rationalization of the structures. In the Santo Antônio do Morro building, the kitchen and bathroom are located on different floors of the duplex and are superimposed next to the apartment's internal stairs, allowing for a single column of facilities.

The facades

The facades are analysed based on the relationship between windows and walls, the shading elements, and the presence of balconies and verandas. In the Itahy building, windows and walls balance each other and reinforce verticality, a characteristic of tall buildings. In Jarau and Tapir, the relationship between windows and walls and the proportion of openings reinforces the horizontality or the projected stacking in an apartment building (**figure 5**).

The Itahy and Jarau buildings feature the Copacabana window, a prefabricated item most associated with Art Déco buildings, in addition to balconies as an element of shading and improvement of the front facade's thermal performance. In the Jarau building, in addition to that which was already mentioned, *cobogós*¹² are still used to partially protect the verandas. In the Santo Antônio do Morro and Tapir buildings, there is only the projection of small balconies or verandas, which cause a slight shading of the facade, but do not cause major changes in the thermal efficiency of the building.

All four buildings have balconies and verandas. The balconies in these buildings are elements that add value to the apartments and are connected to the social area. In the Itahy building, the balconies are 'dug' in relation to the main plan of the front facade, while in the Tapir and Santo Antônio do Morro buildings, the balconies are elements that jump out of the plan. In Jarau, both situations

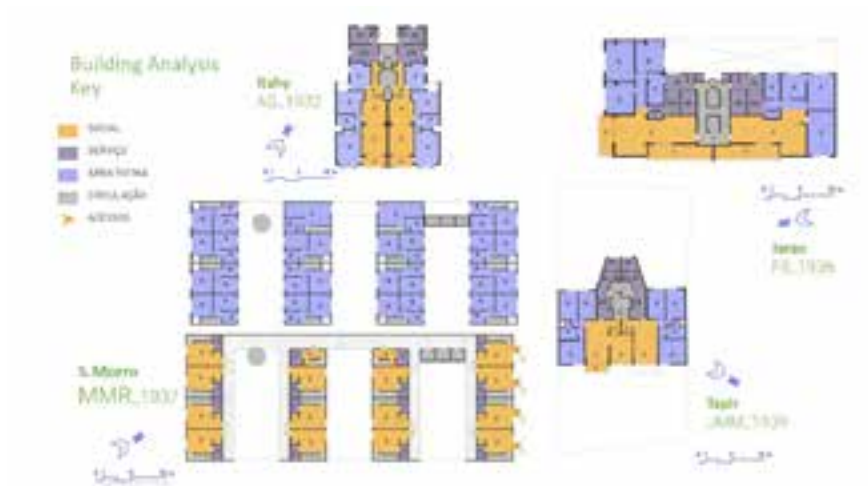


Figure 4. Itahy, Jarau, S. Antonio do Morro and Tapir buildings' sectors © Alice Lemme and Aline Bastos diagrams



Figure 5. Itahy, Jarau, S. Antonio do Morro and Tapir buildings' facades © Alice Lemme and Aline Bastos diagrams

can be observed. In the Tapir building, the floors exhibit intermittently mirrored plans, causing a 'zig-zag' of balconies on the front facade.¹³

4. Conclusions

It is still not possible to identify the reasons for the prominence of the Itahy building and its designer Arnaldo Gladosch in the mass media. Based on the criteria defined for the analysis of the buildings, more similarities than differences were found between them, contrary to what a merely stylistic

analysis presupposes. Roberto Segre pointed out many characteristics as the canons of modern residential buildings like: their integration into compact block structure; vertical service and hallway areas in the core of each building; horizontal openings; band ledges along the facade; and a clear separation between social and private quarters, both displaying wide windows with a great view of the outdoors.¹⁴ But all of these characteristics pointed out by Segre are still present in many Art Déco buildings. The modern buildings further add to these canons and introduced pillared ground floors (pilotis); grilles and protective screens to protect against harsh sunlight in a flexible space and abstract language. The band ledges along the facade were more present in modern structures than in Art Déco buildings.

The historical narrative built on the modernist movement (modern historiography) despised the existing ties of continuity with the styles of the past, including Art Déco. Currently, without the obligation to defend and justify that which is modern, we can observe the plots that shaped the architectural culture of that time. We can also observe the technical development that allowed these morphological and functional characteristics to be used for several decades, a fact that proves its effectiveness and architectural quality.

Notes

- 1 This paper is financially supported by the National Council of Scientific Researchers (CNPq); by the Carlos Chagas Filho Foundation for Research Support of the State of Rio de Janeiro (FAPERJ); and by (CAPES).
- 2 Marina. Waisman, *O interior da História. Historiografia arquitetônica para uso de Latinoamericanos*, São Paulo, Editora Perspectiva, 2013, 58.
- 3 Marina. Waisman, *O interior da História. Historiografia arquitetônica para uso de Latinoamericanos*, São Paulo, Editora Perspectiva, 2013, 59.
- 4 Roberto Segre, "Os caminhos da modernidade carioca (1930–1980)" In *Guia da Arquitetura Moderna no Rio de Janeiro*, edited by Jorge Czajkowski, 5–22. Rio de Janeiro: Editora Casa da Palavra/Centro de Arquitetura e Urbanismo/Prefeitura da Cidade do Rio de Janeiro, 2000.
- 5 Roberto Segre, "Os caminhos da modernidade carioca (1930–1980)", *Guia da Arquitetura Moderna no Rio de Janeiro*, edited by Jorge Czajkowski, Rio de Janeiro, Editora Casa da Palavra/Centro de Arquitetura e Urbanismo/Prefeitura da Cidade do Rio de Janeiro, 2000, 14.
- 6 Czajkowski, Jorge (Org.), *Guia da Arquitetura Moderna no Rio de Janeiro*. Rio de Janeiro: Editora Casa da Palavra/Centro de Arquitetura e Urbanismo/Prefeitura da Cidade do Rio de Janeiro, 2000. Alfredo Britto,
- 7 Roberto Segre, "Os caminhos da modernidade carioca (1930–1980)", *Guia da Arquitetura Moderna no Rio de Janeiro*, edited by Jorge Czajkowski, Rio de Janeiro, Editora Casa da Palavra/Centro de Arquitetura e Urbanismo/Prefeitura da Cidade do Rio de Janeiro, 2000, 5–22.
- 8 Czajkowski, Jorge (Org.), *Guia da arquitetura Art Déco no Rio de Janeiro*, Rio de Janeiro, Prefeitura da Cidade do Rio de Janeiro – Secretaria Municipal de Urbanismo (PCRJ–SMU), s/d.
- 9 Arnaldo Gladosch was a graduate in Civil Engineering in 1926, with a specialization course in Architecture and Urbanism at the Technische Hochschule, now Technical University of Dresden, Germany. See Ana Paula Canez, *Arnaldo Gladosch: o edifício e a metrópole*, PhD Thesis, Porto Alegre, Universidade Federal do Rio Grande do Sul, 2006.
- 10 The MESp Building was the symbol of modern Brazilian and international architecture at that time. It was designed by a team composed of Lucio Costa, Afonso Eduardo Reidy, Oscar Niemeyer, Carlos Leão, Jorge Machado Moreira and Ernani Vasconcelos with consultancy by Le Corbusier.
- 11 Sobre a obra dos MMM Roberto ver Luiz Felipe M. C. de Souza, *Irmãos Roberto, arquitetos*, Rio de Janeiro, Riobooks/FAPERJ, 2014.
- 12 Cobogó is a hollow element used in closed spaces, allowing for the entry of air and light.
- 13 Jorge Czajkowski, *Jorge Machado Moreira*. Rio de Janeiro, Centro de Arquitetura e Urbanismo do Rio de Janeiro, 1999. Denise Vianna Nunes, *Edifícios Residenciais de Firmino Saldanha*, MSc. Dissertation, Rio de Janeiro, Universidade Federal do Rio de Janeiro, 2009.
- 14 Roberto Segre, *op. cit.*

Modernism and its counter–narratives: methodological drifts and dawns in Latin America

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Pedagogical experiments played a crucial role in shaping architectural discourse and practice in the second half of the 20th century, particularly in Latin America and the Caribbean. Despite their insight into teaching methodologies, experiments such as ludic games, *travesías*, poetic infrastructures, participatory design, design–build, and other experimental approaches have been underexamined. How did these methodologies (the 1960s & 70s) challenge conventional teaching and learning? What was the continuing relevance of these pedagogies to ongoing artistic and pedagogical practice, and what is their legacy? In posing and responding to such questions, this paper draws connections between architecture, education, and territory, all of which are synthesized through a concept that might be called the spatial imaginary, which evokes not only the practical, technical issues of architecture and art but also epistemological issues and drastically altered notions of architectural and spatial experience. I examine counter–narratives of architectural pedagogy situated in Latin America: *La Ciudad Abierta* at Ritoque, Chile in the landscape of post–Modernity. Designed, built, and occupied by faculty and students at the Catholic University of Valparaíso's School of Architecture, the *Ciudad* exemplifies Modernist utopias of artists living working cooperatively. (Fig. 1) It operates as curricula, poems, acts, site–specific installations, and travelogues through the territories of South America in order to contour trans–national Latin American identities. The most significant position of thought present in this research is counter–narratives of architectural pedagogy as approaches to rethinking what architecture means in relation to various cultural undertakings, beyond the physicality of architectural objects and the necessities of programmatic content, entangled experience as an act of navigation making tours and detours and opening on different scenes of the teaching of architecture in Latin America. This research advances new conversations that traverse several fields, encompassing architectural education, Latin American studies, cultural and visual studies, history, and theory.

1. Poetics, lines, and *travesías*: experiments in architectural education

Among the sand dunes of the Pacific Ocean on the west coast of Chile, the building experiments by the architects and poets of the Open City propose a cultural reconfiguration. "This city of hope, built and inhabited by the faculty and students at the School of Architecture of the Catholic University of Valparaíso, is a unique poetic–architectural project that forms a base–camp for the many *travesías*, continental travels to unknown and unexplored sites where temporary works of architectural openness are built."¹ The Open City is thus an architectural undertaking that retraces the peripheral and uncharted



Figure 1. Hospedería del Errante – 034

<https://www.flickr.com/photos/archivo-escuela/3082475213/in/album-72157610665374025/>

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regions of South America. It is open in its form and time; no roads connect the buildings, and no master plan outlines the steps of its development.

Ane M. Pendleton–Julian visited Chile in 1987/1988. She unintentionally discovered the Open City in Ritoque, for her “a site of confluence between the physical space of Chile and a mental space that extends beyond regional boundaries in both time and space.”² The Open City is part of the work of the Institute for Architecture of the Catholic University of Valparaíso in which academic engagement is tied to the way of acting, doing, and making; fundamental is the power of the imagination. Thus, her book *The road that is not a road and the Open City, Ritoque, Chile* (1996) was “intended neither as a critical opinion nor a historical or theoretical analysis but rather as a sympathetic presentation of the work and its mental site along with some of its more provocative issues”³ Her writing is a conceptual poetic framework, an imaginary crossing thread by a *fil conducteur*. What holds it together is the *travesías* (crossing) reframing the experience of the South American continent. Language as the material of the *fil conducteur* stitches ideation with the written word. Poetry and Architecture as an enduring narrative: *travesías* as poetic infrastructures for a geography of encounters.

Pendleton–Julian’s book tells the story of a laboratory of thought and works where teaching takes place on–site and employs poetic methods to the design process, still in formation today. She discusses influences behind the Open City, particularly the working methods of French Surrealist poets (Baudelaire, Mallarmé, Rimbaud, Verlaine, Lautremont, Breton), possible

influence The Ulm School, the *Entretien*, and Le Corbusier's statement: Architecture "is connected to the poetic,"⁴ the inheritance of the Latin American landscape, the *phalènes* (poetic collective performances), and the *travesías* (crossings, wanderings) as the possibility of *building space*. The *travesías* are about reimagining forms of contact, an unfolding of atmosphere and emotions: mapping affect through the encounter. Here, thinking about the encounter as both being in touch with the territory via words (texts, poetry) and acts. Perhaps, establishing *travesías* as sensible narratives, an ephemeral site-seeing – site-feeling that contour landscape in place: rendering / translating space and feeling through contact – context. Pendleton–Julian's design research in its creative act has a reflective significance in its assertion "of the will to create, of the desire from which creation is constituted. [...] its first mental tool: language."⁵ A commitment to the poetry of Architecture, space, landscape, and a didactic culture.

***"Los viajes (travesías) nos enseñan (entre otras cosas) que las palabras son como extrañas a las cosas que nombran."*⁶**

What is a *travesía*? How is it imagined? In unpacking the layers of the construction, it is helpful to begin by noting that the image is inscribed in a



Figure 2. *Amereida* (1967) by Godofredo Iommi, Alberto Cruz, Fabio Cruz, Miguel Eyquem, Michel Deguy, Edison Simons. https://wiki.ead.pucv.cl/images/d/d6/Amereida_portada_web.jpg © Credits Archivo Histórico José Vial Armstrong, Pontificia Universidad Católica de Valparaíso.

spatial imaginary.⁷ An image of the *travesía* emerges from a process that makes grounds tangible. Embarking on an exploration across a contested terrain, the poetic infrastructures are actually "mediated" on the surface, and such encounters engage forms of imagination, wandering, and observation. Infrastructures mediate social systems that facilitate the current of ideas, matters, and people. They are composed of practices of traveling as a form of inquiry by which we understand the model of *travesías*. Alberto Cruz explains, "*Travesía inunda el continente y el mundo / andar cantando / juego de niños.*"⁸ The

first *travesía*, a self-proclaimed University delegation of the Valparaíso School of Architecture, embarked on a different sort of research into the live cartography of the South American continent.⁹ The *travesía de Amereida* was a geo-poetic trip undertaken in 1965 by a group of artists, architects, and philosophers. "It started in Tierra del Fuego in the southern tip of Chile between the Atlantic and Pacific Oceans and headed across the Pampas towards Santa Cruz de la Sierra in Bolivia, a city which the group declared the "poetic capital" of South America. The group traversed a continent to discover its largely uninhabited and mysterious regions: its "inner sea." The result was the *Amereida*, a foundational and collectively written poetic text published in 1967."¹⁰ (Fig. 2) In other words, the *travesía* intended to poetically find America through the very experience of the journey, finding in route a language of its own. The inverted map of the southern cone and the superimposition of the Southern Cross (Fig. 3) guided them along, echoing the drawing *América Invertida* by Uruguayan painter Joaquín Torres García in 1943 –which symbolized a larger call across the Southern Hemisphere for a rethinking of established geopolitical orientations. (Fig. 4) In this work, Joaquín Torres García visually overturned the South American continent to acclaim art rooted in local South American traditions. He describes it as such:

"I have said School of the South; because in reality, our north is the South. There should be no north for us, except in opposition to our South.

...From now on, the elongated tip of the South America will point insistently to the South, our north. Our compass as well; it will incline irremediably and forever toward the South, toward our pole. When ships, sail from here traveling north, they will be traveling down, not up as before. Because the north is now below...

This is a necessary rectification; so that now we know where we are."¹¹

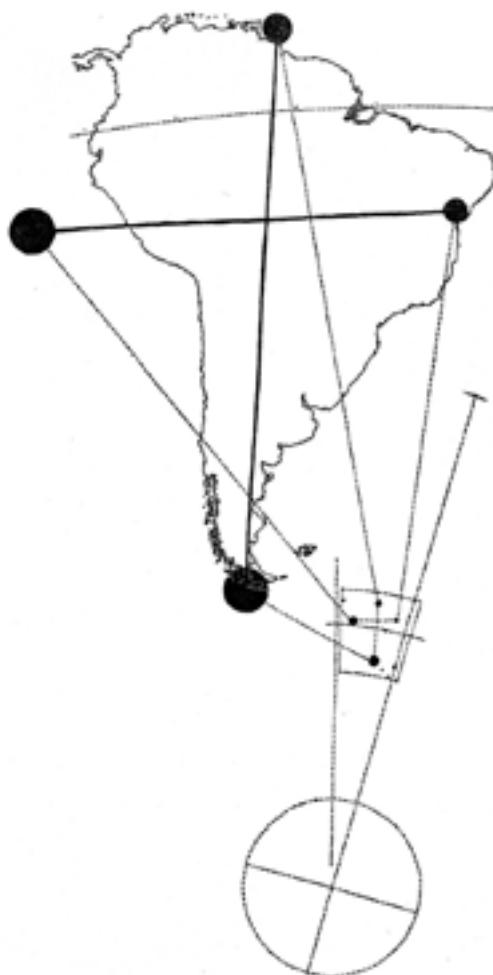


Figure 3. *Amereida* (1967) by Godofredo Iommi, Alberto Cruz, Fabio Cruz, Miguel Eyquem, Michel Deguy, Edison Simons. https://wiki.ead.pucv.cl/images/2/23/Amereida_04_web.jpg © Credits Archivo Histórico José Vial Armstrong, Pontificia Universidad Católica de Valparaíso.

In these words, Torres García declares a new geographical imagination by reframing the experience of the continent. The *Amereida* is a poem of longing and, more importantly, a poem of action in that it proposes the discovery of an authentic Latin American status specifically through poetic action.¹² Poetry was about the encounter. It became adventurous. The *travesía* revealed that the experience of the *Amereida* is an integral part of the territory. In its capacity as a poetic infrastructure, the *travesía* set up the exploration of the power and value of the natural continent and the 'lived' experience.



Figure 4. América Invertida (1943) by Joaquín Torres García.
(Creative commons)

To achieve this reading of the *travesía*, it is adequate to discuss Henri Lefebvre's delineation of infrastructure. According to Lefebvre (1974), "infrastructure is produced at different levels, from the merely technical to more complex forms of social production in which practices and imagination are in constant interaction."¹³ In *Plan of the present work* from his book *The Production of Space*, Henri Lefebvre discusses three concepts of the production of space, which explain three ways of thinking about space acting together to generate social space. The *Spatial practice* contains a "specific level of performance"¹⁴; an interpreting of space –that which is physical and experiential. Lefebvre considers the *Representations of Space* the "conceptualized space"¹⁵ of scientists, planners, and urbanists. If *Spatial practice* is *perceived space* (thought), then *Representations of Space* turn out to be actions (physical); a form of registration (maps, plans, etc.) that occasionally follows accumulated relations between objects and people; a cartography of encounters. Representational space communicates. "It embraces the loci of passion, of action of lived situations, and

thus immediately implies time"¹⁶ notes Lefebvre. It is a space of rediscovery, how a space is used and produced. In a way, then, what Lefebvre suggests is a space for inquiring and crossing. If the representational space is a place of overlays, it can be examined and contested. Then, the *travesía* investigates the boundaries between experience and intuitive discovery, provoking the interpretation of the space through words and language and then making a proposition about the construction of space, perhaps a *signo escultórico*. In his book *Objetos para transformar el mundo*, Alejandro Crispiani underscores

the importance of Claudio Girola's art works for the *travesías*. Particularly, what he called "*signo escultórico*." It was an object that pretended to be charged with a transformative sense and a new constitutive reality. In this manner, the *travesía* unites the *perceived* space of interpretation and the *representational* space of actions and transformation.

***"El 15 de junio de 1967 (fecha de la rebelión contra las autoridades de la UCV...) comenzó la transformación de la Universidad proclamando su necesaria re-organización; palabra y acción fueron un gesto. Abierto el camino, el paso as lento."*¹⁷**

Pendleton-Jullian's second heading of her book grounds the events surrounding the transformation of the University and the Open City's formation. In 1967, "a series of university reforms altered the organization of the largest Chilean universities. Larger political, academic, and agrarian reforms, enacted by the government of Eduardo Frei (in office 1964–1970), prompted the university changes. Students demanding universal access to education and participation in university decisions led the university movement. Taking advantage of recent land reforms, they purchased 275 hectares of land in the southern stretch of the beach of Ritoque and founded the Open City in 1971."¹⁸ A city that gives rise to the word. "The exploration of language was the medium chosen by the Valparaíso School to develop a creative inquiry into the 'lived' experience of the city's spaces. This exploration was pursued not only with regards to architecture's relation to the visual arts but also, more originally, in alliance with poetry's scrutiny of language."¹⁹ In his book, *Objetos para transformar el mundo*, Alejandro Crispiani studies Vicente Huidobro, a Chilean poet who tried to explore the visual dimension of his poems, creating the poem as an object both to be seen and feel. The School selected similar the proposition of poetry to develop an imaginative search of first-hand accounts and impressions, based on the idea that architecture cannot be learned in a classroom but must be experienced by wondering/crossing; the act, that is, becomes the generative element driving the School's building and design strategies. In this, the School rejected modern architecture's impulse to 'change the world,' turning instead to the 'change of life.' Indeed, "critics cite the poverty of architecture's semantic content, due to the abstractness and rootlessness of the language of Modernism, as the main reason for its demise,"²⁰ argues the architect Juhanni Pallasmaa. The School's pursuit is for the critical lines and the semantic ethos of architectural expression to trace more profound experiences than images arising from form. As Alejandro Crispiani notes, "*Mucho más que un método de enseñanza, La Escuela de Valparaíso desarrolló en su interior una forma de vida y una idea de arte. Una de sus metas centrales era, en la opinión de Fernando Pérez, generar "un arte que llegue a disolverse en ella transformándola en una experiencia mas honda y plena."*²¹ The School of Valparaíso chose the "*aquí y ahora*", to perceive existence based on collective work.

...poéticamente, habita el hombre esta tierra. –Hölderlin

The “poetic infrastructure” is an interpretation part of an editing process that occurs naturally within the imaginative process. In *The Politics and Poetics of Infrastructure*, Brian Larkin writes infrastructure’s “nature of being lies in the facts that they are things and also the relation between things.”²² According to Larkin, “what distinguishes infrastructures from technologies is that they are objects that create the grounds on which other objects operate, and when they do so, they operate as systems.”²³ They help structure imagination and enable narratives to build up. The practice of *travesías* emphasizes how infrastructures mediate exchange over distance, bringing different people, objects, and spaces into interaction and forming the base on which to operate social systems. Additionally, *travesía*’s process towards context is based on poetic interactions. Equally, Pendleton–Jullian writes, “words engaged in the activity of poetic image–making, operating parallel to or overlaid on virtual image–making, transfer this tension into the visual realm awakening the visual, and the physical, to their alchemical potentiality. Image replaces concept, and imagination replaces conceptualization. Conceptualization fractures meaning and choose from among the pieces while imagination unifies within the fluidity of the meaning.”²⁴ The *travesía* can create an interchange between the imaginary and the real. In the *travesía*’s logbook, the professors wrote that they walk the continent to uncover its parts and trace the invisible. In his essay *The Sense of Touch: From Tactility to Tactual Probing* Filip Matten notes, “bodily contact provides an opportunity to find out what lies beyond the visual, precisely because every act of touching is a mechanical event in which a body part acts upon another material object.”²⁵ *Travesías* is a way of working that removed the students from the drawing boards and lecture halls and bound them to an architecture of the senses. To understand architecture as the container or skin for the “countenance”²⁶ of space and gestures, notes Pendleton–Jullian. Perhaps, the *travesías* are a tool of intuitive analysis and a way of discovering the subject as well as the object.

“Comienza una nueva era de la historia con la epifanía de américa –un lugar misterioso donde se dieron todas las razas del mundo rendez–vous por la primera vez desde la división de la torre de babel.”²⁷

In 1965, the *Amereida* was written by Godofredo Iommi as an articulation of intentions and approaches. “As a poem that poses a critical set of questions about the Latin American heritage, it introduces a representation of the historical and cultural context of the New World,”²⁸ underscores Pendleton–Jullian. It is a poem that traces –by delineation maps actions. Many artists turned toward maps to inquire about established world orders and question national identities and the histories that endorse them. Driven by commerce and conquest, cartography was developed as an instrument of power and control. Early geographic representations portrayed the known world, but they also depicted what rested beyond the limits where imagination was given free rein, making maps closer to poetic and literary interpretations of

reality. "It was during the Renaissance and with the rise of scientific thought and encyclopedism in the eighteenth century that they increasingly became instruments of control and colonial expansion. Their growing precision and functionality can hardly be separated from their role in military and economic strategies. This explains why art, by intervening and redrawing their lines, has found a way of appropriating space, building bridges across closed borders to imagine alternative worlds."²⁹ Which images are we talking about, anyway? What is a map exactly? Maps are central to the power relations that dictate what is seen or unseen, present or absent. They are drawn from above in the Western tradition, plans with detachment. As a result, the map itself, independent of its uses, imposes a distance, a certain gaze with which to read territories though it mainly eliminates the people that inhabit them. As María E. Fernández notes, "what is left outside this way of measuring and recording our surroundings –by definition a geometric, gridded understanding –is not just other ways of conceiving the world, more authentic or more original; what is left out is the world itself."³⁰ What is excluded from maps is the notion of "place," of a specific space experienced by the body, informed by daily life but also by local and historical narratives. These reflections become evident in the cartographic representations of artists such as Horacio Zabala, Juan Downey, and Elias Adasme, among others. Their stitched, burnt, fictional, and reconfigured maps serve as reminders that our conception of space –in its geographical, political, and physical sense –resides in symbolic charts. By articulating alternative maps in which people play a key role in transforming landmasses, these artists critiqued the power structures that define global geopolitics. Horacio Zabala's map-works, for example, show certain areas burnt or marked out with ink to signal the repression and censorship experienced in the region. Juan Downey represents the South American Continent, a hand-drawn map that fosters a more unified, transnational Latin American Identity. Elias Adasme's "To Chile" developed artistic activism strategies and counter-narratives carried out through performance and intervention in public spaces. Together, the images trace a map of pain, represented by the artist's semi-nude body, standing straight up or hanging upside-down, next to the longitudinal map of Chile, used, in Adasme's words, "as a metaphor and in opposition to the space socially 'constructed' as: private-public – intimate." Further, as the landscape architect Martin Hogue notes, Land artists were primarily invested in these questions regarding when and how a place is defined: Richard Long and Robert Smithson together suggest that it was maybe enriching to think of a place as a site, the structure of action that shapes our experience of any environment. The site as a concept – a set of ideas and relationships, and in time a site as a process. This factor of open-endedness underlines the experience of the *travesía*. The white surface is no longer a neutral ground for a drawing. It is the drawn ground itself. In his book *Lines: A Brief History*, Tim Ingold argues that the ground, as we have seen, is matted from diverse materials. As traces of a moving body, "footprints are impressed in that ground. Footprints thus have a temporal existence, a duration, which is bound to the very dynamics of the

ground to which they belong: to the cycles of organic growth and decay, of the weather, and the seasons,"³¹ and to the wandering, as we take a "line for a walk."³²

***Amereida*: disperse words and empty maps.**

From a formal perspective, one of the most notable aspects of *Amereida* is the use of bareness: the arrangement of the words and the abstract outlines of the South American continent. The *Amereida* poem as it harbors visual perceptions of South America, the *travesías*, and the creative aspects of imagination, its reference to Stephané Mallermé's "blankness between words," and Vicente Huidobro "*creacionismo*." The blank space surrounding a word, typographical adaptations, and spatial composition in the page setting guidelines for the text. For most of the poem, the words are scattered in unplanned arrangements. The reader in *Amereida* is most likely familiar with the shape of South America; they can imagine it; the drawing in the poem is not meant to confirm that image but dissipate and confound it. These abstract drawings pave the way for a series of drawings of the Southern Cross constellation. As the group endeavors to craft a new type of cartography that is not obligated to present facts, they rely on these "recognizable-enough" renderings to guide the reader. The reader can notice a cross with dotted ends is superimposed over the continent in the *Amereida* map. The cross's vertical positioning and configuration suggest *Crux*, commonly known as the Southern Cross, a constellation of five stars prominent in the southern hemisphere. The Southern Cross was first initiated during the 1965 *travesía* and elaborated within the *Amereida* drawings, adding to this constellation's mythology. "The *travesía* uses the sky as its eyes and the reversing of the cross on the landscape as its map."³³ The continent is framed by four ideals: The Anchor (a reference to the Age of Exploration); Light (a reference to Western civilization); Origin (a reference to Columbus's arrival), and Adventure (the aspect of America's destiny that remains open). The way the drawings in *Amereida* are presented as empty canvases cannot be ignored: since each drawing occupies nearly an entire page, they can be easily printed and drawn upon; an open work. Here, we return to the topic of blankness. The authors of *Amereida* intentionally left negative white space throughout the poem; only lines travel the page.

Indeed, the recurring motif among these drawings is "the line," whether used to establish a border between the land and sea, shade the interior, or document the route of the *travesía* from 1965. The line becomes an abbreviated metaphor for these borders, shadings, and routes on the page. As a tool for abstraction, the line functions as a gesture, tracing imaginary space where, to cite Jacques Derrida, "to trace means 'to express,' 'to represent,' 'to recall,' 'to make present.'" However, since only routes have a physical presence, the line also implies a sense of corporeality, like a medium: different or distant places communicate between each other by means of a given

passageway or opening. Further, Ingold argues things and people are the sums of interconnected lines; to study “people and things is to study the lines they are made of.”³⁴ The line indicates a “path,” the act of Walking, the line that crosses the space, and the line as narrative structure. In the *travesía*, there is an element of wondering attached to a crossing. “One could perhaps compare wandering to drawing as the draughtsman traces a line with his pencil, so the wanderer walking along paces a line with his feet.”³⁵ Walking becomes an act of inscription, of writing in the original sense of drawing a sharp point over a surface.

Across the surface of the earth, what does the *Amereida* map do? To begin with, the *Amereida* map allows the poem’s authors to experiment with their perception of the continent as a space for traveling. The authors will design new interpretations of South America’s landscape through these abstract, nearly invisible maps. Every encounter taking place between a participant and their visual (multi-sensory) culture makes it possible to imagine a distinct unique starting point (map making, but also experimenting) employed to characterize a historical period or a geographical location.³⁶ Thus, they go beyond inverting the continent, as in the case of Torres-García, because the drawings are intimately connected to an act of traveling.

The *Amereida* maps as part of a more significant movement during this period of making alternative maps. For example, to the Situationist International and the *dérive*. In 1950s Paris, the Letterist and later the Situationist International revised traditional cartography through two key concepts: the *dérive*, the act of drifting through the city; and psychogeography, the study of the specific effects of the geographical environment on the emotions and behavior of individuals. As Mark Wigley argues, “the infamous *dérive* is itself a kind of drawing. The drifter, responding to the resonances between the hidden forces of the unconscious and the hidden forces of the city, draws a meandering line through the city.”³⁷ According to Guy Debord:

*The lessons drawn from dérives enable us to draw up the first surveys of the psychogeographical articulations of a modern city. [...] With the aid of old maps, aerial photographs and experimental dérives, one can draw up hitherto lacking maps of influences, maps whose inevitable imprecision at this early stage is no worse than that of the first navigational charts.*³⁸

Debord and Asger Jorn’s two maps of Paris –Guide psychogéographique de Paris (1956) and The Naked City (1957) –were new, imprecise “maps of influence” that thrived in disorienting the viewer. The Guide was conceived as a folding map to be distributed to tourists, inviting users to get lost. In the end, a map is, of course, an abstraction of the space it attempts to represent; it is impossible to include all the information of a single, selected space. Yet, Guide and The Naked City still served as guides, even if they were disorienting or proposing revolutionary paths. Does the *Amereida* map do the same? To begin with, in the tone of the Letterists and the Situationists, the School is

concerned with traveling to neglected areas in need of mapping. However, because they travel to non-urban areas, they have different issues than their French counterparts. Comparing the formal qualities between both sets of maps lets underscore an essential difference in scope: the Letterists and Situationists are neighborhood-oriented while the authors of *Amereida* are continental. Yet, the two projects propose a re-evaluation of space based on first-hand experience gained from wandering, a walking practice. Further, the maps from *Amereida* represent the Interior Sea and why it matters. The *travesía's* path is not destined as a guide but as proof of the journey.

After the 1965 *Travesía of Amereida*, faculty and students began to work with *travesías* with a lower case 't.' Students walking as a way of *thinking in movement*³⁹ in an expanded form. The *travesía* as a medium pushes other topics onto the architecture and territory agenda. All aspects of life now seemed ready for cultural interpretation, archeological "thick description,"⁴⁰ and "deep wandering" mediating performances, instances, images, installations, and texts. On that path, the value of the *travesías* lies in its affirmation to footprint self-reflective acts of thought. Consequently, the value of *The Road That is Not a Road and the Open City, Ritoque, Chile*, is that it functions as a parable drawing more of a willingness to experiment.

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- 27 “A new era of history [or, the story] begins with the epiphany of américa –a mysterious place where it is said that all the races of the world meet for the first time since the division of the tower of babel,” Godofredo Iommi, Amereida, 165.
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Curative landscapes: Healthcare and Social Architecture in Brazil

by João Filgueiras Lima, Lelé

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The concern of architect João Filgueiras Lima, Lelé, to create a curative habitat in all his projects stems from his intense participation in the construction of Brasília, together with Oscar Niemeyer, Lucio Costa and many other artists, technicians and specialists, among these healthcare experts. This experience was crucial for the later development of his work. This paper examines the architect's work through two exemplary works of healthcare architecture, the Taguatinga hospital and the Sarah Kubitschek hospital, Brasília, in which he applied prefabrication techniques.

One of the guiding concepts implemented by Filgueiras Lima, and present in the Brasília healthcare plan, was to establish a new model of a flexible and extensible hospital. This strategy enabled him to configure the hospital buildings as garden spaces open to natural resources, promoting temperature exchange and energy saving, as well as enhancing the use of free spaces for interaction and sociability. Filgueiras Lima developed a conceptual change in the architecture of hospital environments as he himself explained in his autobiographical book, which was entitled "Architecture: an experience in health care", since the design of health care buildings was central to his work. In his own words, he sought to make the healthcare buildings "more welcoming and less hermetic, integrating, wherever possible, outdoor garden spaces where patients could undergo outdoor therapies and enjoy healthy sunbathing".

The gardens were developed by Filgueiras Lima together with the architect and landscape designer Alda Rabello Cunha, his partner and wife, also a pioneer in the construction of Brasília. The paper brings a review of this fundamental collaboration in Filgueiras Lima's work, as well as brings into discussion the conservation of these remarkable works, exemplary in proposing the articulation with the landscape, opening their interiors to gardens as spaces for interaction, socialisation and cure.

1. Introduction

This paper examines the design strategies of architect João Filgueiras Lima, Lelé, and relates them to the contemporary debate on the creation of spaces for healing and health, bridging habitability, care, and regeneration, especially from the articulation with the landscape and its environmental component. The architecture of Filgueiras Lima is explored here through his works dedicated to health care built in Brasília, Brazil, as a focal point for interventions throughout the country. In them, the architect developed interior spaces together with gardens, as curative spaces, as well as climatic shelters.

Filgueiras Lima's comprehensive work makes him one of the key architects to understand Brazilian and Latin American architecture built at the end of the heroic period of modern architecture. Included in the architect's large-scale, eminently public oeuvre¹ are several projects for schools, universities, civic centres, urban regeneration projects, public services facilities and, among these, an impressive production of healthcare buildings.

In his career, the design of healthcare facilities was developed and experimented with over several years in a series of hospitals stemming from two projects that provided the experimental, conceptual and practical basis for the subsequent development of his work: the hospital of Taguatinga, built in Brasília (1968) and, as a turning point in his work, the hospital for the locomotor system diseases Sarah Kubitschek (1980), also in Brasília and first of a series that was consolidated from the following decade.

Working alongside Oscar Niemeyer at the beginning of his career in the construction of Brasília and chosen by the later to design the hospital in Taguatinga, Lelé innovated in the conception of health buildings. He introduced in these a concept for a more livable architecture, which in most cases was dissociated from hospital buildings: opening up their interiors to gardens as spaces for interaction, socialisation and cure.

The gardens were developed by Filgueiras Lima together with the architect and landscape designer Alda Rabello Cunha, also a pioneer in the construction of Brasília, and his wife for over 50 years. Rabello Cunha, as Lelé, worked in the public sector throughout her career and carried out several landscape projects for Filgueiras Lima, as well as for other architects, notably Oscar Niemeyer.

The present paper explores the topic with few acquaintances of the open and curative interiors designed by João Filgueiras Lima, Lelé, including the participation of Alda Rabello Cunha in the configuration of the landscapes. In the examined projects, the architect and landscape architect duo included the garden as a strategy for the collective use and appropriation of the constructed–natural spaces, aiming at the well–being and healing of the users in the designed buildings, especially in those dedicated to healthcare.

The aim is to discuss the strategies that combine architecture and urbanism as parts of the same work, which is characterized by building and transforming collective habitats for people, from spaces of care to the regeneration of inhabited environments. These strategies involve an inclusive understanding of architecture related to the landscape and the garden, as one of the main elements in the work of Filgueiras Lima. The garden as an element of care for the surroundings, as well as regeneration and socialisation, is also present in his large-scale action to sew a more habitable and accessible fabric for citizenship. In the hospitals conceived by Filgueiras Lima, the intermediate and collective spaces for healing, well–being and health also act as urban shelters that contribute to the cooling and decarbonisation, through bioclimatic

strategies of natural ventilation and lighting, with the creation of open spaces and vegetation in the interiors.

2. Brasília, social work and prefabrication

Method, techniques and working tools of the architect

João Filgueiras Lima, Lelé, explained, in the book in which he chronicled his experience as an architect, that his intense participation in Brasília's construction, which established the beginning of his career, was crucial to the later development of his work. His experience in Brasília brought him the possibility to work with modules and prefabrication for architecture and interventions in the city, improving and developing, during decades of work, the tools to accomplish these technical systems.² This experience also defined the origin of fundamental partnerships that João Filgueiras Lima, Lelé, established and fostered throughout his prolific and comprehensive work, with architects Oscar Niemeyer and Lucio Costa, with the artist Athos Bulcão, with the doctors Aloysio Campos da Paz and Carlos Ramos and, above all, although this fact has not been given due importance, with his partner, the architect Alda Rabello Cunha, whose relationship also began in Brasília.

In 1967, Lelé was invited by Oscar Niemeyer to design one of Brasília's first district hospitals. The hospital in Taguatinga, with 371 beds, presented an opportunity to give continuity to two basic foundations for his working method: the design of public facilities and prefabrication.

The project for the hospital was founded on the premise of modularity and extensibility. It was based on the flexibility of the spaces so that they could be expanded in the future. In the upper part of the site, blocks of one or two floors were built for outpatients, emergency, surgery and general services. In the lower part of the site, the staggered one to four-storey block was built for inpatients. In such a way that "the staggered solution proposed for the inpatient block made it possible to add each clinic separately in the future".³

This solution linked directly to the emblematic housing complex built by the architect Moshe Safdie the same year at Habitat 67 Expo in Montréal, proposing a complex housing structure for cities, based on the superposition of prefabricated modules. According to him, prefabrication could allow for arrangements of living spaces favouring a varied indoor-outdoor relationship, with raised gardens complementing the domestic spaces. The sense of Safdie's house-habitat was analogous to that of the hospital-habitat conceived by Filgueiras Lima. Both were designed to grow, through the addition of modules, and meet the demands of the population for housing and health care. Both were linked to solutions of modularity and extensibility previously thought of by the group of the Japanese Metabolists, in which

“as a reaction to Japan’s population structure in the associated problems of overcrowded cities, they designed megastructures capable of growth, which could be modified and adapted to prevailing requirements with plug-in units”.⁴

In Lelé’s hospital in Taguatinga (**Fig. 1**), each horizontal block, modulated and arranged in one or two floors, was designed for an extension in the horizontal direction with the possible extension of the blocks to both sides of the generous plot transformed into a garden. In turn, the vertical block with its staggered height was designed for an extension also in the vertical direction, and possible addition of new prefabricated modules that could, in the future, occupy the spaces left empty, according to the architect’s statement.



Figure 1. João Filgueiras Lima, Lelé, Taguatinga hospital, Brasília, Brazil 1968. © João Filgueiras Lima, Lelé, Archive / João Filgueiras Lima Lelé, Editora Blau, Instituto Bardi.

The modular approach aiming at the construction of capsule spaces – whether for health or housing – accessible to all people, present in the idea of the hospital in Taguatinga and in Habitat 67, broadened for a few more years the heroic ambitions of the architecture of the modern movement, translating into the notion that Reyner Banham defined as mega-structure,⁵ to think new possibilities of habitability in a broad sense. The Kisho Kurokawa design for Nakagin Capsule Tower, built in 1972, further pursued the notion of modularity and industrialisation of all the parts of a building, in this case a mixed-use, housing-workshop building, built from adding autonomous prefabricated capsules. Alongside Kiyonori Kikutake, Kurokawa was one of the co-founders of the Metabolists group formed in 1960.

However, one of the main aspects that link the work of Filgueiras Lima and the Japanese Metabolists group is the search for an organic-industrial system capable of associating architecture with its natural surroundings. New frameworks able to engage with nature in a metabolic sense, following the motto of Kisho Kurokawa, who demanded a “shift from the age of machines to the age of life”,⁶ when he noticed, in 1959, that the CIAM movement collapsed.

Like the Japanese architects in using prefabrication techniques for the “shift from the age of machines to the age of life”, Filgueiras Lima, based the guiding principles of his project not on a technicist thought, not in apology for the

machine, but in strategies for people, in care, in uses such as interaction, socialization and collectivization. In the partnership with Rabello Cunha, both achieved an association of architecture and garden, a garden or “landscape environment”, as they called it, as an extension of architecture, both usable and habitable (**Fig. 2**).



Figure 2. João Filgueiras Lima, Lelé, Taguatinga hospital, Brasília, Brazil 1968. © João Filgueiras Lima, Lelé, Archive / João Filgueiras Lima Lelé, Editora Blau, Instituto Bardi.

3. BUILDING A HUMANISED HABITAT

Filgueiras Lima sought to create, in the Taguatinga hospital, “areas destined for terrace–gardens that function as solariums of hospitalization”.⁷ The staggered spaces were designed to be occupied initially as garden roofs, allowing the creation of terrace–gardens and solariums on each floor”,⁸ as an extension of the hospitalization spaces (**Fig. 3**). The definition of the gardens on the terraces, as a place for sunbathing for the patients, contact with vegetation and natural elements, enhanced the care as well as the sociability among the inpatients. This principle of relating interior–exterior, natural and built for the well–being, gathering and care of people who use the building guided the definition of the entire project. Lelé materialised his criticism of the generalisation of the use of air–conditioning systems and artificial lighting as a rule for all hospital buildings. For him, this unwritten rule generated hospital environments that were “much more hermetic and, above all, more unpleasant and inhuman”.⁹

His architectural design, unlike the predominantly technological hospital approach, disconnected from its surroundings, which has been imposed,



Figure 3. João Filgueiras Lima, Lelé, Taguatinga hospital, Brasília, Brazil 1968. © João Filgueiras Lima, Lelé, Archive / João Filgueiras Lima Lelé, Editora Blau, Instituto Bardi.

was defined by strategies to enhance and encourage the hospital's areas of coexistence and public use by connecting indoor and outdoor spaces, establishing a relationship with the surrounding landscape through gardens incorporated into the project. In this sense, the bioclimatic definitions of the architectural scheme, zenithal lighting and natural ventilation, are complemented by definitions to enhance the use of garden spaces from the different areas of the hospital. In some cases, this involves a visual link between the large internal spaces and the surrounding garden, and in other cases, the project envisages the garden terraces as a complement to the inpatient areas. The architect also brought to the building an element that he would use in a recurrent manner in his architecture: the panels commissioned to the artist Athos Bulcão with geometric elements, in this case ceramic tiles, introducing colour inside the spaces of public use and reinforcing, through their scale as a public element, the indoor–outdoor link.

In the following decade, João Filgueiras Lima, Lelé, sought to apply the same system to construct ideally expandable buildings with prefabrication, when he was called upon to design the secretariats of the Bahia Administrative Centre. This gubernatorial civic centre was created *ex novo* based on an urban plan drawn up by Lucio Costa. In the new civic neighbourhood, located on the outskirts of the city of Salvador de Bahia, Lelé was in charge of designing the new buildings.

In the buildings for the secretariats of the Bahia Administrative Centre, the same strategies from Taguatinga have been tested. However, these experiments did not resolve the question of integrating the garden into the terraces designed to be landscaped. These would be changed, a decade later, in the project for the Sarah Kubitschek Hospital for locomotor system

diseases in Brasília, in which Lelé reapplied, with other strategies, the concept of the garden as a space for collectivisation, meeting and healing.

For the design of the Sarah Kubitschek hospital in Brasília, situated on a more compact site, the solution chosen was a tower of reinforced concrete. The resulting apparently brutalist slab contained, behind the large Vierendeel-type concrete beams on the façades, large gardens for the use of patients and users of the hospital. In the eight-storey building, the implementation of terraces with gardens on the floor slabs was conceived to generate an integration of all environments with green areas and solariums, so that the gardens are mixed with the various types of existing spaces, in a complementary relationship that results in a building-hospital-garden.

In this project, the architect Alda Rabello Cunha participated in the conception of the architectural design solution integrated with the gardens. Her responsibility for the landscaping of the hospital, was fundamental to the project, "conceived as a mass of vegetation, the gardens integrate logically and functionally with the various types of existing spaces. In the case of the infirmary terraces, the in-patients use these open-air garden areas as places for socialising and solariums for daily sunbathing".¹⁰ The gardens and the intermediate indoor-outdoor spaces play a central role in the design and in the patients' own healing therapy (Fig. 4),



Figure 4. João Filgueiras Lima, Lelé, Sarah Kubitschek hospital, Brasília, Brazil 1980, architectural design solution integrated with the gardens by architect Alda Rabello Cunha. © João Filgueiras Lima, Lelé, Archive / Arquitetura: Uma experiência na área de saúde, Romano Guerra / João Filgueiras Lima Lelé, Editora Blau, Instituto Bardi.

In the cross section of the Sarah Hospital in Brasília, the terraces open alternatively to the right and to the left, in the vertical arrangement of the building, generating hanging gardens that are interspersed between the large Vierendeel beams, that generate large-scale hollow elements in the façade. The architect designed these beams with the total height of an entire ceiling. This height made it possible to place, at the centre of the beams, circular faceted hollows, which are large openings through which the gardens insinuate themselves, between the vertical circulation towers, also made of reinforced concrete.

Just as the Taguatinga Hospital, completed in 1968, had a clear influence from the guidelines of the Japanese Metabolism movement, in the design of the Sarah Kubitschek Hospital, completed in 1980, one can see the impact that the visit to Finland, made in 1969 and after the first hospital design, had

produced on the architect. This visit, when he went to see at first hand the works of the architect Alvar Aalto, led to the incorporation of a fundamental premise in his hospital projects: to relate interior spaces and landscape. Lelé himself referred to Aalto's work as an "enormous contribution", which had a great impact on his architecture,¹¹ incorporating the aspects he had observed in Finnish architecture: the humanity, the detail from hospital architecture to wooden toys, consideration of the problem of climate, light, and garden.

After this experience, the design of the hospital–garden building by the duo Lelé and Alda Rabello Cunha allowed the constant presence of the mass of vegetation of the indoor–outdoor gardens to act as an essential part of the architecture, and part of the therapy for healing the patients. These two hospital projects are central to Lelé's work as they provided the basis for his later work.

4. Conclusion

The architectural design by João Filgueiras Lima, Lelé, for healthcare facilities was based on the first works, clearly inspired by Japanese metabolism, to create modular and flexible buildings that envisaged extensibility, such as the Taguatinga hospital in Brasília, ideally expandable through the principle of adding reinforced concrete modules. The concept of flexibility, as well as complementarity inside–outside, indoor–outdoor, was consolidated in the building considered brutalist of the first Sarah Kubitschek hospital in Brasília. Based on the creation of green spaces, natural lighting and thermal comfort and developed by the architect together with his partner, the landscape architect Alda Rabello Cunha.

In the Taguatinga hospital and the Sarah Kubitschek hospital in Brasília, the former a district hospital and the later dedicated to locomotor system diseases, Lelé developed conceptual and operational bases that guided all his subsequent work. The hospital and the equipment dedicated to health were conceived, more than as highly specialised centres and merely technological infrastructures, as architectures capable of replicating and enhancing the principles of habitability.

The current state of conservation of the two buildings is quite disparate. On the one hand, the district hospital in Taguatinga has undergone a series of transformations that have not taken Filgueiras Lima's project into account. On the other hand, the architect continued for many years to work on successive renovations and extensions of the Sarah Kubitschek Hospital in Brasília, together with his team of collaborators, including the architect Adriana Rabello Filgueiras Lima, Lelé's daughter. The conservation of the buildings in a way reflects the socio–economic differences between the areas in which they are located. The hospital in Taguatinga, situated in a peripheral area to Brasília's Plano Piloto and surrounded by a disadvantaged residential area, is made vulnerable by the lack of a conservation project. This can be seen especially

in the relationship between the building and its surroundings, where the land was occupied without planning, and by a series of extensions. As for the Sarah Hospital, located in the Plano Piloto hospital sector, the architect was involved in the successive transformations, guaranteeing the preservation of the hospital's fundamental design concept.

The intrinsic relationship between the strategies used by Filgueiras Lima on the building and urban scale, and the articulation with the landscape, are the most difficult aspects to preserve, given the speculative growth of urban areas in recent decades. This unprotected situation directly impacts on many exemplary works of modern architecture, the most current emblematic case being the destruction of Kisho Kurokawa's Nakagin Capsule Tower in Japan.

In this sense, the re-examination of the architecture of João Filgueiras Lima, Lelé, from a contemporary perspective, draws on a work that transcends time to discuss its exemplarity, shedding light on the need for its conservation. Through its review, we can identify the need to conserve these remarkable works, exemplary in proposing interrelated solutions in the articulation with the landscape and openness to the surroundings, in a ubiquitous relationship between interior and exterior spaces. The garden that permeates the architecture of Joao Filgueiras Lima, Lelé – emblematic in the hospital buildings examined – is a tool to achieve a better habitability of the architecture. It is also a powerful instrument to enhance interaction between people, promoting greater sociability and health, and between people and their surroundings, fostering the preservation and regeneration of sites.

Notes

- 1 Although the architect has also made several private works, residences and equipment, in his numerous accomplishments.
- 2 Interview with Chango Cordiviola, who collaborated with João Filgueiras Lima Lelé in the implementation of the Habitat Institute.
- 3 João Filgueiras Lima, Lelé. João Filgueiras Lima Lelé (Lisboa: Blau, 2020), 46.
- 4 Angeli Sachs (ed.). Nature Design. From Inspiration to Innovation (Baden: Museum für Gestaltung Zürich, Lars Müller, 2007).
- 5 Reyner Banham. Megastructure: urban futures of the recent past (London: Thames and Hudson, 1976).
- 6 Sachs, Nature Design.
- 7 João Filgueiras Lima Lelé, 46.
- 8 João Filgueiras Lima Lelé. Arquitetura: Uma experiência na área de saúde (São Paulo: Romano Guerra Editora, 2012), 71
- 9 Lelé, Uma experiência, 40.
- 10 Lelé, Uma experiência, 92–4.
- 11 André Marques, Lelé: Diálogos com Neutra e Prouvé (São Paulo: Romano Guerra Editora, 2020), p. 43.

Classical Tradition, Tectonics and Modern Architecture: Acacio Gil Borsoi's civic buildings in Northeastern Brazil in the 1970s

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In nations undergoing a rapid process of modernization and in need of symbols of national affirmation, such as Brazil, Mexico and Venezuela, the abstraction and universalism of modern architecture were able to reinterpret classical legacies and to create national symbols. The association of modern architecture and classical traditions had a crucial role in the consolidation of Brazilian modern identity. Brazilian architects profusely designed buildings for state related activities in the following decades, from the 1940s to the 1970s, which led them to confront a reinterpretation of classical values. This text focuses on two buildings by Acácio Gil Borsoi, an architect based in Recife and very active in North-eastern Brazil from the 1950s to the 1990s: The Teresina Forum (1971) and the State Assembly (1983), both in Teresina, the capital of Piauí, one of the poorest states in Brazil. It explores the outcome in the Acácio Gil Borsoi's architecture of two crucial issues in the architectural debate of the post war period: the search for a new monumentality and the appearance of a new tectonic sensibility resorting to the direct exposition of materials and structural elements.

1. Introduction

In its spread throughout the world from the late 1930s on, modern architecture met national and regional histories with their own logic and momentum. Those included nations undergoing a rapid process of modernization and in need of symbols of national affirmation, such as Brazil, Mexico and Venezuela. In these countries, modern abstraction and universalism was able to reinterpret classical legacies and to create national symbols, responding to Sigfried Giedion's appeal for an architecture able to express the organization of civic life without resorting to an exhausted historicism.

The association of modern architecture and classical traditions had a crucial role in the consolidation of Brazilian modern identity. Starting with the well-known case of the Ministry of Education and Public Health, in Rio de Janeiro, Brazilian architects profusely designed buildings for state related activities in the following decades, which led them to confront a reinterpretation of classical values.

These concerns are explored in two works by Acácio Gil Borsoi, an architect originally from Rio de Janeiro but based in Recife and working in the Northeastern region of Brazil: the Teresina Judicial Forum (1971) and the State of Piauí Assembly (1983), both in Teresina, the capital of Piauí. Through these

two buildings, the text aims to analyse the outcome of two crucial issues in the architectural debate of the post war period: the search for a new monumentality and the appearance of a new tectonic sensibility resorting to the direct exposition of materials and structural elements.

The first part of the paper analyses how these buildings incorporated concerns about monumentality and classical tradition, supported on the concepts by Vitruvius, and, more recently, the writings of Colin Rowe and Carlos Eduardo Comas, who revealed the subtle relationships between the classical language and modern architecture. The second part explains how these buildings acquire significance from their tectonic elements, showing how the clear exposure of parts and finishes, constructive honesty, and the disclosure of the construction process reveal the poetic dimension of a building and secure an ethical sense to architecture.

2. Borsoi and Piauí

Born in Rio de Janeiro, where he graduated in 1949 witnessing the blossoming of Brazilian modern architecture, Acacio Gil Borsoi migrated to Recife, in the Brazilian Northeast, two years later. He developed a fruitful career introducing modern architecture in that part of the Country in the 1950s and 1960s. In his numerous houses, he sought to reconcile his Carioca School background with local climate, cultural issues, and construction techniques. From the mid-1960s on, following general tendencies known as Brutalism, Borsoi sought to explore the elements of construction through the expressiveness of structures and surfaces of materials, in addition to the dramatic play of light using balconies, porches and sun protection elements.

From the 1970s onwards, he had the opportunity to design some public and institutional buildings in cities of northeast and central Brazil, such as Teresina, Fortaleza and Uberlândia, which he considered his favourite works. This paper focus on Borsoi's Teresina Judicial Forum (1971–1972) and the State of Piauí Assembly (1983–1986), both in Teresina, the capital of Piauí, one of the poorest states in Brazil. The buildings are located nearby an area of expansion on the shore of the River Poty, where the mostly flat lots were destined for institutional buildings. Although the State of Piauí has a dry and hot climate, the region of capital, crossed by two rivers, is rather humid.

Designed by Borsoi with the assistance of Gilson Gonçalves and Janete Costa, the **Forum**, is a cubic volume with 46 meters sides and almost 20 meters high, surrounded by a large gallery with robust floor-to-ceiling concrete pillars that also act as louvers protecting the entire building. In addition to the massive outer pillars, the building is supported by a concrete grid of 6 per 6 columns, but with only 31 columns, because some of them were eliminated to provide space to a monumental spiral stair and a large room for judgements, the main focus of the composition. In addition to the ground floor, there are three more levels with rooms for offices, meetings, lawyers and other auxiliary rooms, and

an underground level for legal services. The structure admits many layout changes in the plan, which were made through the years. Borsoi uses materials present in the place such as reinforced concrete, brick and stone. While the outer brises are made of exposed concrete made on site, the interior walls were made of local brick, marking a clear distinction between structure and wall (Fig. 1).



Figure 1. Acacio Gil Borsoi and team, Teresina Judicial Forum, Teresina, Brazil, 1971–1972. © Fernando Diniz Moreira, 2016.

The **Legislative Assembly of Piauí**, was designed between 1983 and 1984 and inaugurated in 1986, by Acácio Gil Borsoi, with the assistance of Janete Costa, Marco Antonio Borsoi and Rosa Aroucha. Different from Forum, located 180 m from the River facing a square, the Assembly was built only 60 m from the River. It is composed by three spaces: a vast open plaza facing the river and two connected volumes, the plenary and the administrative blocks.

The administrative block is strikingly horizontal long rectangle of 103 by 31 meters, located at the limit of the lot, in order to be the background of the composition. It has three levels. The ground floor contains services, a library, and a promenade to the first floor where the deputies' offices were located around an internal double-height plaza, while the third floor, originally a terrace overlooking the river and the internal plaza, was later occupied by more offices which blocked the light over the plaza. It is covered by a system

of ceramic vaults designed jointly with Ariel Valmaggia, an Eladio Dieste's pupil who worked in Brazil in the 1980s. The covering is supported by metallic pieces which articulated with the concrete pillars on the sides, provide lightness to the block and space liberated from structural constraints.

The Plenary building is a closed and compact cube with sides of 25 m, located in front of the administrative block. The ground floor houses a restaurant and a small plenary, while the double-height main plenary occupies the other two floors above.

The plenary and the administrative block were conceived as opposites which complement each other. While the plenary is a solid made of polished concrete, the administrative is fluid, open and shadowed by the large covering that extends three meters of the outer limits of the pillars. With heights varying between 12 to 15 meters it is a trapeze-like volume which contrasts with the horizontality of the slightly lower administrative block. The complex was conceived to be the "house of the people" with a space suitable for popular participation in the destiny of the community. (Fig. 2).



Figure 2. Acacio Gil Borsoi and team, State of Piauí Assembly, Teresina, Brazil, 1983–1986. © Fernando Diniz Moreira, 2011.

3. The Civic Dimension

According to José Luis Sert, Fernand Léger and Sigfried Giedion, in their manifesto *Nine Points on Monumentality*, published in 1943, monuments are fundamental expressions of human culture, landmarks that should survive the time in which they were built and serve as a link with the ancestors.¹ They materialize the demand of a given society's demand for symbols of their collective strength. Giedion continued to develop this theme in the article

The Need of a New Monumentality, published in the following year, where he pointed out that the great task of post-war architecture was the reconquest of monumentality. Public buildings, museums, theaters, and churches should go beyond the mere fulfilment of their functional requirements and should express civic and community character. Giedion posed fundamental questions for the architectural debate of the following decades: How could the universalist character of modern architecture ensure the symbolism required by public buildings? How to give materials such as concrete, glass and steel an immanent and noble character? How to fascinate and move the common man without appealing to banal and historicist forms and solutions? How to integrate murals, sculptures and other works of art in architecture into a new unity? How to design welcoming civic centers that represent the social and community development of society? In short, how to make a monumental architecture for the 20th century? Borsoi's public buildings in Teresina can contribute to find answers to these questions. Both buildings were the result of a desire to create symbols representing the developmental ideals of that moment. Despite of the fact that the country was under a dictatorship (which lasted from 1964 to 1985), it seems that local authorities and the architects worked hard to provide buildings which were to last and overcome this period.

The Forum is defined as a sizable cube supported by large brises-pillars that reach from the floor and almost touch the ceiling, giving rhythm to the facade. The body of the building itself, rooms and its services, recede and practically disappear in the shadows, thanks to the large terraces arranged around them to allow natural ventilation and permeability. The pillars open the building to its surrounding, creating a comfortable walk along the edges of the building, blending interior and exterior spaces, and creating the impression that the facade dissolves. In an interview, Borsoi said that he thought of a "building without doors and entries, as a huge tree built by men".²

Comprising two volumes interconnected by a walkway and surrounded by a large square, the Assembly seeks to provide adequate public space for popular meetings. Borsoi sought to create a large square, an "area (is) calm and free from urban turmoil, exclusively for pedestrians, will serve for a series of activities compatible with the powers established there".³ The rhythm of the colonnade, reminiscent of a Greek temple, forms the appropriate backdrop for this function. In the building of the offices of the deputies, the internal square configures a place of coexistence where they can meet with their voters. The message of truth and transparency necessary for the public building of such symbolism is also present in the materials – brick, the pebbles of the floor, the reinforced masonry on the ceiling and the concrete – always presented without coating.

The buildings of the Forum, the Assembly and the surrounding spaces should form an ample space for public encounter and debate, in the manner of an ancient Roman Forum. The intention of the clients and the architects was to create a civic center, where the legislative, executive and judiciary powers would be located, but the plan did not materialize. Years later, when hired

to design the Assembly on a plot of land close to the Forum, the architects again tried to make a connection between the volumes, but today the area is divided by different administrators and taken over by other buildings and parking spaces.

These conceptions were only possible thanks to Borsoi's training. The classical heritage came from his training at the National School of Fine Arts (ENBA) which was just transformed into the National Faculty of Architecture (FNA), but still maintained principles of the Beaux-Arts tradition. In addition, in the spaces where he used to in downtown Rio de Janeiro, he admired timeless principles of classical architecture, particularly in Cinelândia district and its surroundings.

According to Borsoi, when making these buildings, his prototype was the Parthenon, from where he learned the strength of the columns and the vitality of their implantation. Aware of Le Corbusier's maxim, "architecture is the masterful, correct and magnificent play of volumes brought together in light" and that "cubes, cones, spheres, cylinders, among other forms, are the great primary forms that light reveals well"⁴. Borsoi and his team used the basic shapes of geometry to fascinate the common man.

The designs of the two buildings were based on the Vitruvian principles of order, symmetry, rhythm, *decorum* and economy, according to Monteiro and Moreira⁵. In the Forum and in the Assembly, the brise-soleils and columns arranged on the facades play the same role as the orders in the buildings of antiquity, that is, to provide scale and meaning to the facade by representing the hierarchy of the internal spaces of the buildings. They are responsible for the strength of the building's image, which have well-marked rhythm on their facades. Throughout the history of architecture, the use of frames and modulations assisting architects in the design process has been a constant, thus avoiding arbitrariness. However, good architects were not intimidated by these rules, but took advantage of them to create new possibilities of expression.⁶

Although symmetry is understood today as an exact and inverted repetition with respect to an axis, it had another meaning until the mid-18th century. It was understood as a balance between the parts of a building around its axis. In these buildings, Borsoi proposed a richer and more complex understanding of symmetry, both in plans and facades. In the Forum, the square plan with 7x7 meters modules comprises two axes of symmetry, one horizontal and the other vertical, while the diagonals are reinforced by the direction of the pillars. Likewise, in the Assembly, the symmetry axis of the cabinet block is shifted to create the plenary (**Fig. 3**).

Finally, in relation to decorum, Borsoi responded to the desire to produce modern buildings that could communicate immanence, that could compose a civic center and that provided symbols to society.

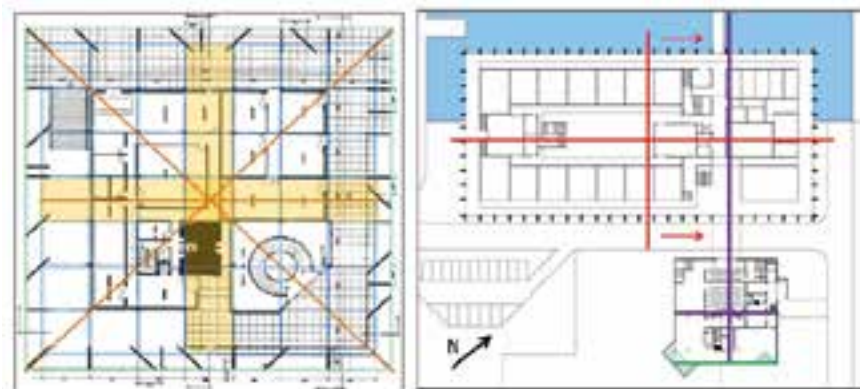


Figure 3. Acacio Gil Borsoi and team, Teresina Judicial Forum (1971–1972) and State of Piauí Assembly (1983–1986), Teresina, Brazil, plans © Borsoi Associations with edition by the author.

4. The Tectonic Dimension

In recent years, some critics and historians have drawn attention to the tectonic dimension as a means of expressing the poetics of construction.⁷ Considering a work from the point of view of tectonics, that is, through the expression of material textures, details and junctions, can provide a new look at Borsoi's work. The clear exposition of parts and finishings, constructive honesty, the use of uncoated materials and the evidence of the construction process started to be more present in his buildings, particularly in these examples from Piauí.

The trips he made to Europe and the United States between 1960 and 1963 made it possible to visit works by Alvar Aalto, James Stirling and Paul Rudolph, as well as the late works of Le Corbusier. These visits may have contributed to his new posture of exploring the possibilities of plastic expression of materials, particularly concrete and exposed brick, which began to have their tactile qualities valued in contrast to the universal character of surfaces in modern architecture.

One of the premises of good architecture is its proper relationship with the place. In the works in Piauí, this was achieved through the choice of materials and respect for the climate. Aiming at the economy, speed of construction and better adaptation to local conditions, Borsoi preferred materials and techniques existing in the place, due to the knowledge that the local workforce had of these, such as the local brick and rolled pebbles, very common material there, being used in constructions with different purposes.

At the Forum, pebbles were used in different ways, sometimes crushed and used as an aggregate in the concrete, giving a unique glossy texture to the surface, sometimes as a finishing of the floor, making it look like a continuity of the sidewalks of Teresina, demonstrating that the building must be accessible to everyone. If, on the one hand, Borsoi was keen to local materials, on the

other hand, he sought to obtain the desired expression and experimented with ways of treating the material differently from the usual one. For example, he developed details for brick door rails, given the quality of the local material.

Borsoi was an architect–craftsman who mastered the construction processes and understood the work in its entirety, because, according to him, “... architecture is a product of construction, not of design. The project is the means of arriving at the product”.⁸ He recognizes that the detail is not simply a part in relation to a greater whole, but can function as a generator of the whole, as Marco Frascari and Vittorio Gregotti once remarked. For example, at the Forum, unlike other projects from the 1960s by Borsoi, the brick appears as a secondary element, with the function of sealing the internal walls. However, the window bars are pieces made of precast concrete, but their dimensions are defined by the dimension of the unit of the brick used, to avoid cuts in the bricks. These grids are arranged in different ways according to the needs of each room.

In the Assembly, brick once again has a greater role with the use of vaults in reinforced masonry, developed in partnership with the Uruguayan Ariel Valmaggia, a disciple of Eladio Dieste who worked in Brazil during the 1980s. The Assembly used apparent materials treated in different ways, but in general, there is a greater refinement than in the Forum. The exposed concrete surfaces show the markings of the timber forms more smoothly. The brick has a more polished finish, more comfortable to the touch. The desire to touch the surfaces that we feel when entering these buildings is a constant, both in the spaces with a rougher finish, as well as in those with a more polished one, showing the architect’s concern in mastering this materiality, exploring its different textures and offering these sensations.

In the case of the Forum, whose predominant material is concrete, Aristóteles Cantalice offers us a keen observation of the levels of understanding the surfaces as we approach the building. Seen from a distance, the Forum’s heavy louvers cut the volume and contrast with the thin slabs diminished at their ends, creating a mesh of apparently uniform texture that contrasts with the shadows of the interior. As we approach, however, we begin to perceive the design of shapes, vertical and horizontal lines, printed on the louvers. When we get even closer, this uniformity disappears and we notice the veins and marks of the concrete moulding, the result of second–rate and/or reused boards roughly cut, all with the aim of achieving less uniform and rougher textures.⁹ There is an intense work of manipulation of the forms to obtain these surfaces, as we see nail marks, fixing screws, small holes let from the concrete moulds. The constructive elements do not have their functions masked, on the contrary, everything is demonstrated. Concrete remains the protagonist when we enter the building: the beams, pillars, railings that surround the windows, guardrails are made of concrete and keep their identities separate, but they are united by a notion of whole. For example, the connection between the brise–pillars with the covering beam is made through thin round steel pillars, which, receded 1,80 m from outer surface and painted red, can barely be seen

from outside, providing an impression of lightness and dematerialization of the façade. (Fig. 4).



Figure 4. Acacio Gil Borsoi and team, Teresina Judicial Forum (1971–1972) and State of Piauí Assembly (1983–1986), Teresina, Brazil, building details © Fernando Diniz Moreira, 2011, 2016.

Working as a conductor of an orchestra, Borsoi made possible great examples of integration between different professionals: interior designers (Janete Costa), landscape designers (Burle Marx at the Forum and Luiz Vieira at the Assembly), artists (Burle Marx's tapestry at the Forum and Marianne Perreti's sculpture at the Assembly), engineers (Ariel Valmaggia at the vaults of the Assembly) but we must not forget the contractors and builders (Lourival Parente), the artisans and the workers. Borsoi encouraged them to put into practice what they did best, to develop their skills in handling materials and detailing.

Despite the differences between the Forum and the Assembly, arising from the context, the availability of resources, and the treatment and handling of materials, there is a unity that permeates the two buildings. This unity resides in the adaptation of buildings to the place, in the use of a classical language, in the application and reinvention of local constructive knowledge, and in the recognition of the mastery of materials and techniques as a fundamental element for the definition of the final form. The Forum and the Assembly were the result of a desire to create symbols that represented the developmental ideals of the state government and an institution such as Justice.

Both buildings are facing challenges for their long-term conservation. It was clear that despite being built ten years apart, they should be part of a civic center representing the highest levels of the Judiciary and the Legislature. However, as they are managed by different entities, the space between them was closed and partially used as a parking lot, causing the intended civic square designed by Borsoi to not materialize. The gardens designed by Burle-Marx are under threat as there is no conservation policy.

Thanks to the durability and quality of the materials used, the Forum and the Assembly do not present serious problems of material decay, even being exposed ones, but the way in which the buildings have been used has raised concerns from the point of view of conservation.

At the Forum, the construction of an annex block about three meters from the building was momentarily suspended at the last minute, thanks to the effort of local architects with the support of Docomomo Brasil and Icomos Brasil. In the Assembly, the construction of small offices to house deputies hampered the lighting of the double-height internal covered plaza, one of the most interesting spaces of the building. It is an urgent task to consider these buildings as heritage complex and thus, made them objects of a conservation plan.

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S09

Modern Latin America: new cartographies and challenges

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Latin America undoubtedly plays a significant role in the current cartography of architecture, urbanism, landscape and design of the modern international heritage. On the one hand, it has contributed to the basis of international thinking on how the exploration of new forms and materials could improve people's lives. On the other hand, it has also accounted for the processes of adapting these new ideas of modernity to the social, geographical and technological realities of the region. These intersections between the global and the local have given rise to an identity that, far from being unique and homogeneous, its value lies precisely in its multiplicity and diversity.

Docomomo has given an account of the importance of Latin America in numerous papers presented at each of its international congresses, in the cases included in the Docomomo registers and in its publications. In 1995, Docomomo Journal dedicated its 13th issue to Latin America: Modern Movement Architecture in Latin America by Hugo Segawa, University City in Caracas, Venezuela by Alberto Sato, Antillean Rationalism in the Caribbean by Roberto Segre, The Brise-Soleil in Brazil by Anna Beatriz Galvao & Angela West Pedrao, The Modern Movement in Argentina by Mabel Margarita Scarone and The Vicissitudes of Modern Architecture in Mexico by Victor Jiménez. Other subsequent publications also took up the theme: Docomomo Journal 33 focused on The Modern Movement in the Caribbean Islands in 2005 and Docomomo Journal 43 on Brasilia in 2010.

Since the creation of Docomomo, considerable progress has been made in documenting buildings and sites, as well as in generating criteria for appropriate conservation. However, social and cultural changes, environmental demands and contemporary technological advances make it necessary to produce a permanent theoretical and instrumental update in order to value the modern legacy. Latin America is no exception.

One of the necessary changes in the modern study has to do with broadening the gaze towards all those contributions that until now have been on the margins of research, generally centred on iconic productions and recognised authors. Latin American cities have a large number of buildings that define the identity of the landscape and the urban memory of each community, but they are still not sufficiently valued. Popular architecture, mass housing complexes, industrial architecture, public infrastructure, among others.

The same is also true of the works of less well-known authors – architects, engineers, construction companies – who adopted the language and technology of modernity. And it is also worth mentioning the absence of women in the historiography of modern Latin American architecture. As examples of an incomplete list: Ítala Fulvia Villa, Delfina Gálvez Bunge and Alicia Cazzaniga in Argentina; Lota de Macedo Soraes, Carmen Portinho, Enedina Alves Marques, Lygia Fernandes and Lina Bo Bardi in Brazil; Luz Amoroch and Filomena Miller in Colombia; María Margarita Egaña and Ermina Odoardo in Cuba; Dora Riedel, Luz Sobrino, María Luisa Montecinos and Gabriela González in Chile; Ethel Arias Duarte and Guadalupe Ibarra Vásquez in Ecuador, Nadine Isaacs and Verma Wevlyn Panton in Jamaica; María Luisa Dehesa Gómez Farías, Clara Porset, Ruth Rivera Marín and María Stella Flores Barroeta in Mexico; Eliana Castro and Berta Zegarra Russo in Peru; Ehrentraut Schott in El Salvador, Julia Guarino and Gyptis Maisonnave Pagani in Uruguay.

Another issue associated with the revaluation of everyday heritage has to do with placing conservation and rehabilitation actions at the top of the agenda of urban planning policies. Latin America loses numerous testimonies of modernity every day through demolition or inappropriate interventions. In this sense, modern heritage is a physical and economic resource capable of boosting the development and reprogramming of cities, as well as activating social cohesion.

The four papers presented in this session offer an interesting overview of modern Latin American architecture on the two axes that give meaning to Docomomo: the need to document and to conserve.

Firstly, Isamar Anicia Herrera Piñuelas, Alfred Esteller Agustí and Adolfo Vigil de Insausti reflect on the contributions of the professionals of the Escuela Tapatía in Mexico through the work of Luis Barragán, Alejandro Zohn and Erich Coufal. They focus on analysing design intentions as the result of a complex climatic understanding of the environment linked to human comfort and well-being.

Secondly, Marta Silveira Peixoto and Carlos Eduardo Comas examine Brazilian modern houses in the 1960s as a gourmet “favelization”. They draw on the strategic selection of three case studies: The Casa Butantã (Paulo Mendes da Rocha, 1964–1966), the Casa Tomie Ohtake (Ruy Ohtake, 1966–1968) and the Casa Albertina Pederneiras (Rodrigo Lefèvre and Sergio Ferro, 1964). They explore unconventional concepts and solutions that expanded the criteria of traditional domestic design in terms of use, form and living in the house.

Thirdly, Josiane Patrícia Talamini, Joana Bastos Malheiro and Filipe Gonzáles address the issue of the preservation of modern Brazilian heritage from a sustainable perspective in the Mendes de Moraes housing complex (Pedregulho) designed by Eduardo Alfonso Reidy and Carmen Portinho. The theoretical and technical challenges of the rehabilitation of modern architecture are presented, as well as its potential to contribute to society and the residents of the building.

Finally, Nathalia Bichinho Correa Oliveira presents the case of Conjunto Habitacional Cerro Sur designed by Román Fresnedo Siri as part of the Housing Programme developed in Montevideo, Uruguay, from 1955. She analyses this building and its context through a study of archives and 3D modelling, showing the value of documentation for the understanding and valuation of modern heritage.

In turn, each of the papers addresses the theme of the conference, highlighting how modern Latin American design has had a profound social commitment to improving the quality of life of people from its time to the contemporary world.

The preservation of modern Brazilian heritage from the sustainability perspective: a case study on Pedregulho

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The studies and discussion about sustainable development started in the 1970s and intensified in the following decades with the publication of agendas prepared by the UN, in particular the Agenda 21 and the 2030 Agenda, which establish specific actions and goals for sustainable development. Within the Brazilian reality, the four general aspects associated with sustainable development can be achieved through a change in the way heritage preservation is understood. It is through the rehabilitation of a building that, for example, the following items can be achieved: the reduction of energy consumption and usage of natural resources by avoiding the need for new construction; the offer of housing through the adaptive reuse of heritage for residential uses or the offer of employment in the case of reuse for retail; the production of resources for its maintenance through commercial activities, among other possibilities. Therefore, the scope of this work is to promote the debate on the preservation of modern Brazilian heritage from the perspective of sustainability, consisting of four elements: environmental, economic, social and cultural. To this end, the intervention carried out in the Mendes de Moraes housing complex (Pedregulho), in Rio de Janeiro, will be presented as a case study, in order to corroborate the understanding and promote a new look at the field of preservation.

1. Introduction

In the final decades of the 20th century, studies and debates on sustainable development intensified. In the 1970s, the First United Nations Conference on Environment and Development took place, which resulted in the creation of the United Nations Environment Program. In the following decade, the Brundtland report defended, through the title “Our common future”, that sustainable development is development that meets the needs of the present without compromising the ability of future generations to satisfy their own needs. But it was in the 1990s that actions gained momentum through ECO–

92 – United Nations Conference on Environment and Development (UNCTAD), held in Rio de Janeiro, generating Agenda 21 as a product of this conference (Lima, 2009).

Since then, the UN (United Nations) understands that sustainable development consists of a tripod: environmental protection, social development and economic development. But, especially after the 2002 Johannesburg Conference, some authors began to consider aspects associated with culture as important as well. This has importance recognized by UNESCO (United Nations Organization for Development, Science and Culture) and is in line with the Universal Declaration on Cultural Diversity, of 2003 (Zenato & Meira, 2020), which reinforce the need to preserve cultural identity of the people. This new look at sustainable development reinforces the importance of heritage preservation, as it can promote this development through different strategies. In Agenda 2030, the UN (United Nations, n.d.) started to incorporate the four aspects for sustainable development and established seventeen general objectives to achieve it.

The preservation of built heritage contributes to sustainable development, going beyond the cultural aspect, although it is from this that the others can be made viable. It is through the rehabilitation of a building that, for example, the reduction of energy expenditure and consumption of natural resources can be achieved by avoiding the need for new construction; the offer of housing through the proposition of residential uses or the offer of employment for commercial uses; the production of resources for its maintenance through commercial activities, among other possibilities. In Brazil, the preservation of heritage goes through several challenges, among which the difficulty of recognition, reuse and conservation stands out. At the same time, the country's reality is marked by the housing deficit, lack of resources, degraded central areas of cities, poverty, violence, difficulty in accessing quality education and health, among others.

Although it is utopian to believe that these challenges can be overcome through the rehabilitation of historic buildings, it is possible to mitigate these problems through planned actions with aligned and common objectives between the areas of heritage preservation and sustainable development. Therefore, this work aims to analyze, through a case study, which aspects of sustainable development can be achieved through the rehabilitation of buildings of historical value. The rehabilitation, completed in 2015, at the Mendes de Moraes Housing Complex, popularly known as Pedregulho, in Rio de Janeiro, will be used as a case study. The choice of this study is justified by the presence of aspects related to sustainability still in its design and in its recent rehabilitation.

2. The Mendes de Moraes Housing Complex

The Prefeito Mendes de Moraes Housing Complex, popularly known as Pedregulho, was designed between 1946 and 1948 by the architect Affonso

Eduardo Reidy, with very important contributions from the engineer Carmen Portinho, at the time director of the Department of Popular Housing. According to Nascimento (2016, p. 375), the proposal to build the complex was intended to offer housing for low-wage employees of the city hall of Rio de Janeiro, linking the project with the social housing proposal developed by technicians from the Department of Popular Housing (DHP), whose premise was “to combat the growing and alarming housing problems of the federal capital, where slums and precarious housing grew in statistics and in the news of the daily press” (Nascimento, 2016, p. 375)

Lauro Cavalcanti reports that, for Reidy, “the problem of housing was intrinsically linked to that of transportation: in large metropolises, the cost and time spent commuting to and from work is enormous.” (Cavalcanti, 2013, p. 257). Bonduki (2017, p. 147) also highlights other aspects such as “the relationship between social housing, modernization, popular education and the transformation of society”, reinforcing Portinho and Reidy’s belief in the role that architecture had in promoting social well-being. . Such concerns were reflected in the architectural program proposed by Reidy for the complex, consisting of: school, market, laundry, health clinic, residential blocks with duplex apartments, swimming pool with changing rooms, gymnasium, sports court, large gardens with playground, club and day care center. (Nascimento, 2016, p. 378), defining the autonomous neighbourhood unit, defended by Portinho.

In the implantation, the buildings destined to the collective equipment and services are located in the center of the lot, an area with more regular topography and with easy access for the residents, who could move around on foot. The residential blocks are located in the southeastern portion of the lot, marked by an irregular topography, overcome by the implantation of buildings on pilotis and, especially in the case of Block A, with the adoption of the main access by the third floor, at street level, the which also allowed the construction of a greater number of floors. The proposal also provided that the circulation of vehicles would occur only on the perimeter of the lot, leaving the central areas destined for the circulation of people, gardens and spaces for permanence and leisure.

Of all the buildings that make up the complex, the most striking is certainly Block A: a curvilinear blade, two hundred and sixty meters long, which outlines the plot of the land and takes advantage of it to take advantage of the winds and guarantee the possibility of seven floors without the need for an elevator. This meandering block, intended for housing, it has its access through two walkways at street level, where the common spaces of the block are located: social service, kindergarten and children’s theater. The block houses two hundred and seventy-two apartments, with the two lower floors containing smaller apartments with an integrated bedroom and living room, and the four upper floors comprising two series of duplex apartments ranging from one to four bedrooms (Bruna, 2015, p. 164).

From the point of view of its constructive aspects, Reidy's proposal remained aligned with the principles of the Modern Movement: reinforced concrete, glass, solar protection elements (cobogós and brises), ceramic panels (synthesis of the arts), primary and warm colors applied in part of the internal areas of common use. The frames were in wood and aluminum. The choice of materials and the good design solutions used were a reason for criticism of the project from the population and members of public bodies who believed that it was a very high cost to be allocated to social housing (Nascimento, 2017, p. 145).

In addition to the challenges related to its construction, with delays and parts of the project not built, the problems associated with its use were also of great weight. Such conflicts were added, over the years, to the problems of maintenance and changes in the use of some buildings, aggravated by the property regime, since the residents did not own the apartments, thus resulting in the lack of definition and consequent disregard for care. necessary (Nascimento, 2016, pp. 398–405).

The legal protection of the building took place, at the municipal level, in 1986, after successive attempts at protection. Emergency works were carried out in the 2000s and, in 2004, restoration works began, interrupted five years later, and resumed in 2010. These works were completed in 2015 (Nascimento, 2016, pp. 405–415, 2017). The interventions carried out considered the daily demands of users and the rehabilitation of structures, such as: predicting points for installing air-conditioning devices, improving energy and water installations, replacing frames to improve the sealing on days of hotter temperatures. low floors, repairing the guardrail on the middle floor, removing clotheslines and television antennas from the facades, among other aspects listed by Nascimento (2016, pp. 421–434).

3. The goals for sustainable development and the gravel assembly

From the perspective of reducing environmental impact, the preservation and reuse of existing buildings has, throughout history, been a sustainable strategy since, by reusing existing structures, it reduced the need to extract from nature the materials needed to a new building or using materials from nearby buildings for new buildings (loot). However, it is important to emphasize that sustainable development goes far beyond reducing environmental impact, and must consider the social, economic and cultural aspects associated with human actions. These issues were considered when the UN (United Nations) defined the Sustainable Development Goals, present in the 2030 Agenda, where these values are met (United Nations, n.d.).

The construction industry is one of those that generates the most environmental impact in its production chain. If we consider that many of the new constructions could be avoided if there was a greater culture of reuse of buildings, especially in Brazil, the impact generated would certainly be

reduced. The lack of a culture of reuse has caused the loss or abandonment of historic buildings, the emptying of historic centers, the demolition of existing buildings for the construction of new ones, their destination almost exclusively for cultural uses, among other problems that reinforce the devaluation of historical heritage.

In addition, in the project developed by Reidy and the DHP, principles of modern architecture were present that can also be considered as gestures towards a more sustainable proposal. By defining that the complex should be destined for public servants who worked in the areas close to the lot, they avoid the need to travel and transport costs, and offer affordable housing. To meet everyday needs, they proposed that there be, together with the complex, an autonomous neighborhood unit. With these two solutions, the need to use other means of transport was avoided and access to basic public services, such as health and education, was avoided, contributing to social well-being and better conditions and quality of life for the population, especially if we consider that before they lived in precarious conditions of favelas, without access to decent housing, drinking water, sewage collection and easy access to services.

With regard to energy efficiency, Reidy proposes a frame design that allows for permanent cross-ventilation of the apartments, through shuttered windows. It also takes advantage of the ceramic cobogós, a common element in Brazilian architecture, and the wooden louvers installed in a section of the intermediate floor, in common use, using them as an element for sun protection. With use, however, the frames proved unsuitable for times of cold weather, even in Rio de Janeiro, and users ended up closing the windowsill of the frames, where the shutters were, with masonry walls. Due to these functional changes to the frames, during the restoration works the original wooden frames were replaced by aluminium ones, in response to a request from users to improve the habitability of the apartments and for being a material with greater durability and low maintenance (Nascimento, 2016, p. 427)

The choice of aluminium, however, can be understood as unsustainable, if we consider the environmental impact that its production generates, even using recycled aluminium. Regarding the frames, from the point of view of intervention in the heritage, there is also the aspect related to the appearance of the material and the colour that, although it is the same as the original, can result in a differentiation of the element due to the material. Another aspect that could be reconsidered is the total replacement of the cobogós, whose justification was to maintain the formal standard of the drawings, however, from an environmental and economic point of view, those in good condition could have been preserved, thus avoiding the production of waste and the need to produce new materials and all the environmental impacts and energy expenditure associated with their production.

The contribution of a housing complex to economic development may be relatively small, however it is fundamental to achieve other essential values for

the understanding and effectiveness of sustainable development, especially since it is the one that has a direct impact on human life from the moment it decent housing offer. Its contribution to economic development lies in the fact that, from the resources available, it produces something that generates the best possible development within these conditions, aligning the project with one of the UN objectives, which is to "make cities and human settlements inclusive, safe, resilient and sustainable" through "safe, adequate and affordable housing and basic services and upgrading slums". (United Nations, n.d.).

There is a contribution in the moralizing sense of the market where it values the rehabilitation of existing buildings, returning them to habitability conditions, thus guaranteeing their use and taking advantage of the useful life of the building, extended from its proper maintenance. It also does so by guaranteeing quality housing and access to basic services for the less favoured sections of the population. Furthermore, by maintaining public ownership of the building, it helps to avoid uncontrolled sales processes that could lead to gentrification.

Within the social aspects related to sustainable development, Reidy's work is, without a doubt, a great contribution: to offer quality housing, at an affordable price, for people with reduced resources and who lived in a precarious situation. The neighbourhood unit proposed for the complex contributes a lot to improve access to basic services such as education and health, keeping them close to homes. Bruand (2008, p. 226), explains that, for the architect, "the school represented the symbol of progress, in a country where more than half of the population was illiterate", and would provide children with primary education and confidence on the way to follow, with better prospects for the future and even being able to exert influence over their parents.

The complex still has a strong cultural contribution because it is a fundamental modern example and also because of the architectural importance, in addition to the social one already addressed, which its rehabilitation reinforces. In it, the concept of neighbourhood unit guided the proposal and would contribute to improving the quality of life of its inhabitants, were it not for the operation and maintenance problems that appeared in the early years. Its rehabilitation helped to reinforce these values as it restored the habitability of the buildings and reestablished their most significant façade elements.

4. Conclusions

The case of Pedregulho can be considered a contribution to aspects related to the provision of adequate housing, health and well-being, quality education, sustainable city and communities and responsible consumption and production. Its contribution to better living conditions lies in the fact that it offers access to basic services, such as housing, health and education through neighbourhood units. The presence of a health post is also a contribution

to the improvement of health and well-being conditions. The provision of early childhood and primary education through the implementation of a day care center and primary school within the complex enables easy access to quality education. With the neighbourhood unit, it is still possible to reduce the need for vehicles for displacement and access to basic services, since the necessary services for daily life are located there. The rehabilitation of the building avoids the need to build a new one or the demolition of the existing one, considerably reducing the production of waste.

Although it was designed and built in the mid-20th century, the set proposed by Reidy for the Rio de Janeiro DHP meets many of the principles of sustainable development defended by the UN. The neighbourhood unit, a proposal with an urban bias pertinent to a set of those proportions, and staunchly defended by Carmen Portinho and Affonso Eduardo Reidy, is, without a doubt, largely responsible for this relationship. And, with that, it makes its rehabilitation even more emblematic, which is no longer just the preservation of an important achievement of the Modern Movement, and becomes an element of great social and environmental impact, for the reasons already raised in this work.

As for the buildings themselves, Reidy's project contributes to: cross ventilation through the design and position of the frames; the possibility of shading and ventilation through cobogós and louvers, a passive and low-cost solution; adaptation to the topography, without generating the need for large soil movements; use of durable coating materials, such as tile panels, which would reduce maintenance costs in such a specific climate location as Rio de Janeiro. The rehabilitation of the complex, although not solving all the problems related to the daily use of the buildings, certainly contributed a lot to the improvement of the habitability conditions of the building. This aspect is very important to be considered within the field of preservation of modern heritage, since this is a good still in use (Torrent, 2018, p. 10) and that needs to adapt to the new demands that contemporary human life places.

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Acknowledgements

This work is financed by national funds through FCT – Fundação para a Ciência e a Tecnologia, I.P., under the Strategic Project with the references UIDB/04008/2020 and UIDP/04008/2020.

Conjunto Habitacional Cerro Sur.

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The Conjunto Habitacional Cerro Sur was part of the Housing Program developed in Montevideo, Uruguay, from 1955. Created within the first Master Plan of the city, the Housing Program was intended as a solution to the housing deficit that was present in the Uruguayan capital.

Román Fresnedo Siri (1903–1975), an Uruguayan architect graduated from the School of Architecture of the Universidad de la República, was in charge of the complete project of the Plan de Obras del Cerro, where the Conjunto Habitacional Cerro Sur was inserted. He was the author of the iconic projects of the building of the School of Architecture (1938) and the Palacio de la Luz (1943), headquarters of the UTE in Uruguay, Hipódromo do Cristal (1951) in Porto Alegre (Brasil), and Pan American Health Organisation building – PAHO (1961) in Washington (USA) in addition to being one of the Latin Americans awarded at the 1941 MoMA exhibition “Organic design in home furnishings” under the curatorship of Eliot F. Noyes.

The work presented in the paper provides a view of the Conjunto Habitacional Cerro Sur as a complete project through the study of original drawings, documents from the design and construction period. The work develops the entire project in 2D and 3D graphics, creating a new perspective of analysis on the set of buildings and their relationship with the city. These tools are indispensable as the construction was never completed.

The attempt is to approach the original proposal of Román Fresnedo Siri and with this to create another chapter of analysis of the architect's work. The investigation also places Fresnedo's housing production in Uruguay and Brazil side by side, interpreting the reality of the architectural production of apartment buildings in both Porto Alegre and Montevideo during the 1950s.

1. Introduction

The first Master Plan for the city of Montevideo (1955–1959) was developed, which, among other resolutions, created the Housing Program. The housing complexes followed the pattern of location outside the urban fabric made up of traditional cities, they were designed from model housing cells that were linearly repeated in planes or superimposed, used isolated bars or towers in search of sunlight, were located on naturally green soil, and organised according to functional sectors.

The “Conjunto Habitacional Cerro Sur”, the central theme of this article, was an integral part of the Housing Program. Urban scale project developed by Uruguayan architect Román Fresnedo Siri, between 1955–1960, partially built.

2. Roman Fresnedo Siri

Monsieur Joseph Carré, a French architect who graduated from the École des Beaux-Arts in Paris, was hired to teach Architecture in Uruguay in 1907, when the course was still part of the School of Mathematics. After the separation of the courses in 1915, the School of Architecture became independent and Carré was a predominant figure within the teaching of architecture, a professor of enormous prestige, based on his quality as a professor and his tolerance and focus on innovation. Architects Julio Vilamajó, Mauricio Cravotto and Juan Antonio Scasso were students of Carré.

Román Fresnedo Siri, who studied at the Faculty of Architecture from 1923 to 1930 and was also a student of Carré, was among the last generations of architects who received academic training with concepts at the Beaux-Arts school, already in transition to modernist ideals and who developed projects who sought elements of modern architecture to reconcile with their classical training. Among his contemporaries are the architects Mario Payseé Reyes and Carlos Gómez Gavazzo.

Born on February 4, 1903 in the city of Salto, Fresnedo Siri was also a plastic artist, musician, photographer, furniture designer and even designed boats and yachts. Winner of the Gold Medal at the end of his degree in architecture, he was offered a scholarship to travel to Europe in 1930.

He has worked as a professor in the faculties of architecture and agronomy, as a public employee and as an independent architect who has won many design competitions. With his architectural production, he covered the most diverse typologies and project scales such as houses, hospitals, racetracks, institutional buildings and also the School of Architecture of Montevideo.

3. Conjunto Habitacional Cerro Sur

Background

The control of the municipality is formed by a group of seven people, called the “Consejo Departamental de Montevideo”, which was directly elected by the population. At the end of its term, the Council published the “Memoria del Consejo Departamental de Montevideo”, a 194-page document containing information on all the work carried out in the administration of the city during the period 1955–1959. One of the most important achievements of the ‘Consejo Departamental de Montevideo’ was the study of the Master Plan for the City of Montevideo. It was proposed the formation of five Housing Units in different areas of the city of Montevideo. For its implementation, large plots of land were chosen, outside the city centre, on the edge of what was being considered an “urban area” or even in the “suburban” regions of the municipality. The Council’s text also stated that this alternative was the most advanced expression of urban planning technology and it was the primary element of the modern city. The idea of Neighbourhood Units is described in A

Decade of Contemporary Architecture (Giedion, 1954) as “a stage on the way to a new urban standard”.

Master Plan

The Housing Units that were proposed by the ‘Viviendas Program’ were named after the neighbourhoods where they would be built. The first, Buceo, began to be built in 1956, still during the mandate of the “Consejo Departamental” but there is no information about the authorship of the project. The second, Casavalle y San Martín, as well as in Buceo, also had its works started during the mandate of the “Consejo Departamental”, but with no record of the date of the beginning of the works. It is worth mentioning that in the “Memoria del Consejo”, published in 1959, it is presented as a finished work. The authors of the implantation and architectural project are not mentioned.

The Cerro, with two planned housing complexes, North and South, had some of its parts built from 1956 onwards, being the main object of study for this work. The architect Román Fresnedo Siri was responsible for the entire project. The Reducto unit is listed only as projected in the Memory and without reference to authorship. Malvín Norte, with five Housing Complexes planned, does not have the beginning of its construction registered in the Council's Memory, being indicated only as projected. It is important to mention that the urbanisation project was authored by Carlos Clémot.

The Cerro area

The Cerro area caught the attention of Le Corbusier who, as we know, visited South America in 1929 and Montevideo was one of the cities that hosted lectures by the architect at that time. The results of this visit were studies and proposals published in “Precisions – on a present state of architecture and urbanism”. In Le Corbusier's proposal for Montevideo, the Cerro area is illustrated, making it possible to identify the image of the Cerro Fortress.

Located in a place far from the centre, it was identified as a populated area, with its own characteristics, separated from the rest of the city by the river ‘Arroyo Pantanoso’. In this area was located a core of meatpacking plants, some related industries and dwellings mostly occupied by the working class that worked in the companies. Due to its complexity, the Cerro area ended up deserving special attention from the public administration. The “Dirección General de Obras del Cerro” was created, which developed a special study for the area, unlike the other Housing Units. The architect Román Fresnedo Siri was hired and became responsible for all the projects and works of the “Plan del Cerro”.

The beach area, as the region to the south was called, should house a Cerro Housing Unit. Defined by the ‘Plan de Obras del Cerro’, this was the location of the Cerro Sur Housing Complex and a neighbourhood centre. In the IHA documents

file, three implantation versions were found for this area of the project. Since the May 1956 implantation proposal consisting of three apartment blocks is the most referenced by the authors studied, the only one in which the implantation plan has the architect's signature and there are primary source documents detailing its construction, this work considers the implantation proposal as an original one. The following analyzes will be carried out on it.

Conjunto Habitacional Cerro Sur

The project of the Complex is composed of 4 large parts: the Neighbourhood Centre and the three apartment bars. The first point observed is the clear juxtaposition between the traditional city and the city of modern architecture. The Neighbourhood Centre was used as a transition piece between the square and the blocks in the park. It follows the same orientation and shape of the predominant fabric, with approximately 1/4 of the dimension of the blocks. It has a rectangular shape, with the extension of one of its galleries towards the apartment blocks and is connected to the set of the theatre. As with the traditional occupation, the use of edges is proposed, leaving the centre free. The south portion of the pavilion is aligned with the adjacent block, leaving the theatre volume in the visual axis of the existing street. The production of this axis can be understood as an invitation to bring the neighbourhood closer to the new equipment, which should serve not only the new blocks, but the neighbourhood as a whole.

Also from the choice of this version of implantation as the object of study, the complete project was redesigned in 3 dimensions, in order to verify



Figure 1. Román Fresnedo Siri, Conjunto Habitacional Cerro Sur, Montevideo, Uruguay, May/2017, perspective from the interior garden space. ©Nathalia Bichinho.



Figure 2. Román Fresnedo Siri, Conjunto Habitacional Cerro Sur, Montevideo, Uruguay, undated, perspective from the interior garden space. © IHA Archive. PI.156.

other aspects of the Housing Complex that are not possible today, since the construction was never completed. The redesign was based on the documentation found in the IHA archive, all signed by the architect Román Fresnedo Siri: implantation plan, floor plans, facades and sections.

No documents were found about the Neighbourhood Centre detailing its construction. Data from the survey carried out at the site, the dimensions of the May 1956 implantation project and an image present in the “Memória del Consejo” were then used for the redesign. The result is a piece with a strong presence within the set, but which still dialogues with the apartment bars, in addition to being very elegantly accommodated in the uneven terrain.

The shading relationships between the bars and the maintenance of visuals towards the Bay were analyzed. The incidence of the sun in the case of the Cerro Sur Housing Complex proved to be extremely favourable, with only a small shading of Barra 01 at the eastern end of Barra 02 near the time of the winter solstice.

The volume of the building consists of a rectangular prism with four floors supported on pilotis and with the addition of the water tank exactly on the central axis of symmetry. It is 75 meters long and just over 11 meters deep.

The type plan is organized in a single strip, consisting of 10 apartments and five stair cores, each one giving access to two apartments per floor. In this way, the circulation occupies a small area of the block, avoiding the interior, closed and dark horizontal circulations. To overcome each floor, the stairs are

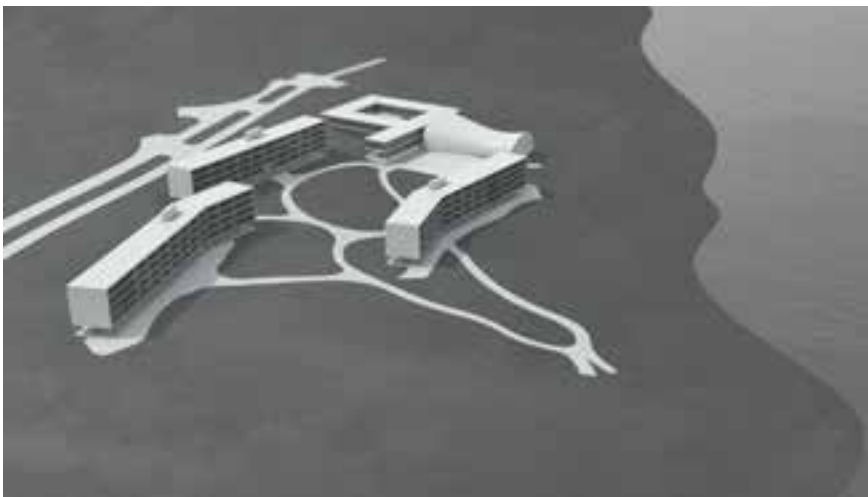


Figure 3. Román Fresnedo Siri, Conjunto Habitacional Cerro Sur, Montevideo, Uruguay, March/2018, perspective of complete "Conjunto Habitacional". © Drawing by Nathalia Bichinho.

divided into two levels, creating a half-level marking on the ground floor. At the ends of the bar are the 3-bedroom apartments and in the middle are the eight 2-bedroom units.

The ground floor has a free plan proposal under pilotis, housing common areas (laundry, day care and collective living) with iron and glass panels. Also within this enclosure are the five stair cores that give access to the apartments. In the organization of the structure, which is fully apparent on this floor, there are three dimensions of intercolumns, making the rhythm of the structure different on each of the facades.

Domestic Interior

The first aspect of the interior of the apartments of the Cerro Sur Housing Complex to be considered is the clear division between the social area and the intimate area, which is very clear in the spatial reading and in the way in which the apartments are used. The kitchen and living-dining area are part of the social area, both with access to a balcony and divided between them by a piece of furniture. In the kitchen, the workspace was organized in a line, leaving approximately 5.8m² free for a dining space, designed mainly for the two-bedroom apartments. In the three-bedroom apartments, where a new 2.90 m intercolumn is added, the living-dining space ends up receiving an extra 12m² of area. In this social area, a new piece of furniture is also added that works as a divider, this time between the social area and the intimate area.

In the intimate area, the bedrooms have 13.3 m² and 10.7 m² and have built-in closets. In the three-bedroom apartments, the new room is 9m², without

specified furniture. The bathroom's form nuclei in the central strip of the plant, and only the two apartments at the ends have natural ventilation.

On the south facade of the apartment blocks, Fresnedo Siri explored the transparency between the interior and the exterior where, in addition to the openings, the guardrails were also built in iron and glass. The view from the social area is entirely facing the bay of Montevideo.

All apartments have double solar orientation, north/south. The north facade, materialized with exposed brick, has horizontal strips of window evenly distributed across its surface, strips that are highlighted with a white masonry frame. The south facade is a large grid, completely occupied by the balconies and with the vertical marking made by masonry walls that delimit the area of each apartment. The second plan comprises fully glazed openings from the kitchen and living room spaces.

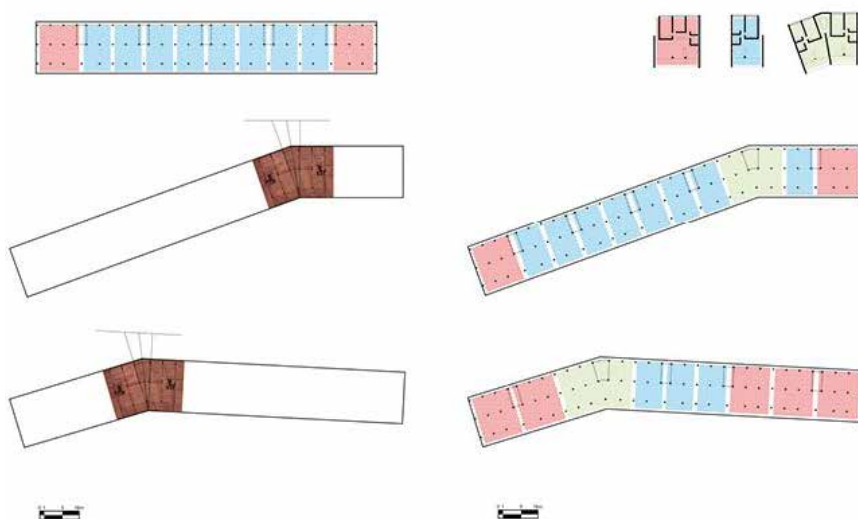


Figure 4. Román Fresnedo Siri, Conjunto Habitacional Cerro Sur, Montevideo, Uruguay, March/2018, complete "Conjunto Habitacional" plans. © Drawing by Nathalia Bichinho.

4. The not built

In the redesign process, it was decided to carry out a study to try to design the type plans for Bars O2 and O3. In addition to achieving greater precision in the dimensions, this process would facilitate the volumetric graphics, including the facades. This decision was also made based on the discovery of a constructive detail present on board number PL.8336, where the legend says "variant in blocks 2 and 3". It shows the proposed solution in plan for the inflection area of the bars. The detail shows that the stairwell loses its

orthogonality, creating an inflection of 20°, and gives access to two two-bedroom apartments. With this solution, the interference of the angle in the interior spatial organization of the apartment is minimal and is completely accumulated in the living room. The proposal of this part of the study has a sense of speculation, seeking a closer approximation to unbuilt bars. The result in bar O2 was a typical floor plan with 12 apartments, being 2 with three bedrooms located at the ends of the bar, and 10 with two bedrooms. The best arrangement found for Barra O3 resulted in more apartments with three bedrooms per floor. Thus, Barra O3 would have 10 apartments in its standard plan, 4 of them with 2 bedrooms and 6 units with three bedrooms. One hypothesis for this possible difference in relation to the other bars is that Barra O3 would be privileged in relation to the others. It is more isolated in relation to the complex, close to the beach and next to the parking lot.

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Learnings from *Escuela Tapatía*. The study of the use of sunlight as a wellness proposal since the public space to the contained space

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Fast growth of Guadalajara city and its Metropolitan Area led in past middle century an accelerated professional training that would mark a strong manifestation of the Modern Movement. An example of this was called the *Escuela Tapatía*, one of the most important expressions where different locals and foreigners professionals had the opportunity to develop a series of urban planning and architecture works that have become references today. The particularity of this group was related to the diversity of studies and personal interests of their developers. As they were attracted to the arts usually and the engineering's techniques.

Establishing a first bibliographic approach to the design concepts of Alejandro Zohn, Erich Coufal and Luis Barragán, their urban approaches are studied in a preliminary way to finish with a study of architectural cases where those design intentions related to a complex climate understanding of the environment linked to comfort and human well-being are corroborated through the performance of Barragán's solutions in façade with small windows, Alejandro Zohn's volumetric exploitation and the widely used strategies through lattices of Erich Coufal.

1. Introduction

Approaches to climatic conditions as part of the search for architectural expression makes Guadalajara and its metropolitan area a region of interesting study, because, in addition to hosting one of the largest representative personalities in Latin America; Luis Barragán, has a wide academic and professional history surrounding the Modern Movement. This study tries to collect the expression of what it's called by Mónica del Arenal "the three generations of engineers and architects"¹ whom, through the influence of the *Escuela Tapatía* were able to make referential works especially through the management of sunlight in the processes of conceptualization, design and construction. The work of Luis Barragán Morfín, Alejandro Zohn Rosenthal and Erich Coufal Kieswetter are the three references to study, taking as a starting point three conditions: referential bibliographic research on its contributions at the urban scale, selection of a single-family home and location in the

Metropolitan Area of Guadalajara. This selection system allows an approach as balanced as possible in terms of location, scale and needs of the architectural program, enabling to make a comparative approach that allows a general reading of the expressions of the *Escuela Tapatía*. For that purpose, a theoretical review is developed as an introductory way to the cases, through bibliographic consultation, to frame the background regarding the Modern Movement in Guadalajara.

2. Modern movement in Guadalajara

From the 40's, Guadalajara began to experience series of events that benefited the urban development "thanks to the efforts of some young engineers and prominent contractors. The construction sector boomed in Guadalajara, as numerous private developments sprang up" (...) At that time, the urban planning was dominated mainly by engineers² until the technician Ignacio Díaz Morales appears in 1943 as the main effort to train architects.

When Jesús González Gallo became Governor of the state of Jalisco (1947–1953), Guadalajara began to undergo important changes since urban planning became a legal and technical instrument to redefine the future of the city (...) at that moment it is founded the Architecture School of the Universidad de Guadalajara. Ignacio Díaz Morales had been developing the idea for five years (...) The project was carried out by three talented men whose sense and sensitivity combined in the creation of a coherent educational vision: Jorge Matute Remus, a professional engineer (...) Jesús González Gallo, a courageous politician (...) and Ignacio Díaz Morales a graduate of the Escuela Libre de Ingenieros and a man of wide culture and great tenacity, concerned with the architectural future of the city³.

In this context, a powerful expression of Modern Movement was born in Guadalajara because of the Architecture's school directed by Ignacio Díaz Morales. Founded in November 1948, it was formed through a permanent staff of professors from the European post-war⁴. Although the idea of bringing in European professionals seemed vague "upon arriving in Europe, Díaz Morales found an atmosphere of destruction after the war, coupled with a number of unemployed professionals and a shortage of work"⁵ which encouraged him to invite them.

The combination of those professionals detonated a drastic manifestation towards architecture and public space, "buildings reflecting the new visions of architecture that were developed in Europe during the first three decades of the twentieth century, mixing the contemporaneity and international technology with manufacture and artistic local expressions"⁶.

Emergence of the Escuela Tapatía

According to various biographical revisions, the personality of Díaz Morales was decisive for the conformation of the spirit of the School of Architecture

“Díaz Morales was an austere classical personality in contrast to the lyrical and aristocratic personality of Barragán (...) Díaz Morales was not a follower of Le Corbusier, Wright, or Mies van der Rohe”⁷. In this context, some authors refer to the fact that although the school had been enriched with teachings of the Bauhaus due to other influences, such as Mathias Goeritz, the *Escuela Tapatía* remained rather in a traditionalist and regionalist view. “Díaz Morales preached an ethical, austere architecture, more Catholic than socialist and, above all, regional, *Tapatía* (...) trying to practice pure regionalism, adaptation to the climate, the liking and the materials of Guadalajara”⁸.

3. The Solar Control manifesto

For the *Escuela Tapatía* and its exponents, the architectural object becomes the cause of its regional proposal. The colour combination and textures accompanied the foundational proposal of chiaroscuro, sunlight, and shadow, as a remembrance towards religious colonial architecture⁹. The use of sun light ended up materialized in different ways, from the shyest setbacks on façades, the widely used latticework or the *troneras* –the way small windows are known in Guadalajara– Somehow, the diversity for solar control remarks the hands behind the work, marking a match of modernity and a regional architectural perspective.

Alejandro Zohn, Luis Barragán and Erich Coufal as well as other referents of the *Escuela Tapatía* were characterized by having a very sensitive understanding of the human scale in their works. Thereupon these three referents had numerous opportunities to reflect their knowledge in different scenarios, urban interventions (**Fig. 1**) and housing. In addition, Alejandro Zohn, due to his extensive career in Urban Planning, developed distinguished work in urban proposals, led him to stand out with iconic examples such as the Agua Azul Park, where the structural compound allow large shaded areas with a very low margin of support. In the surroundings two great works by Erich Coufal were hosted; the *Teatro Experimental de Jalisco* and *Casa de las Artesanías* where he showed excellence through the use of vegetation as a shadowing system,



Figure 1. From left to right Agua Azul Park, Bosque Los Colomos Park and Casa de las Artesanías. Architectonic element on public space examples. © Credits Isamar Anicia Herrera Piñuelas, 2020.

perhaps in a continuous search for textures as an element that generates a visual spectacle of light and shadow comparable to the use of lattices. Luis Barragán is represented by the sculptural domain given by large architectural elements with a strategic arrangement, which generates high volumes of shadow where art and architecture work together.

Architectural foundations

The architecture proposed by the members of the Escuela Tapatía is committed to revaluing some essential spaces of our architecture, such as the use of the patio, roofs, pergolas, openings that promote lighting to highlight elements as well as fountains and lattices but always trying to use materials and techniques from the region. All this on the line of integrating user's emotions, generating gloom if necessary, creating spaces for meditation, to relax¹⁰.

A clear example is the strong remembrance towards the typology of the *hacienda* that ended up manifesting itself in large spaces with central patio and fountains where the volumetrics stimulate the degradation of colour through chiaroscuro.

For the *Escuela Tapatía*, sunlight and shadow were a scenic part of the space, but it also takes a second variable where the architectural needs as the comfort are potentiated. "Modern *Tapatía* architecture, perhaps in its essence, seeks shadow as a mechanism to build interior and exterior space, unlike in other latitudes such as the Nordics who sought sunlight as an element of interior space. The shadow was understood as an architectural element and texture of the space itself¹¹". Regarding the shadow, the curious and few documented relationship of Luis Barragán with the muralist and lithographer José Clemente Orozco has risen to interpretations of how they revealed formal qualities produced by the management of shadows.

Case Studies

After a bibliographic review of the work and intentions of the authors, the architectural case's study is simplified to the simulation of three works. The three selected houses are: *Casa Coufal Díaz Garza* located at *Calle Mar Negro* n°1,221 in Guadalajara, *Casa Loma Larga* at *Calle Loma Larga* n°360 in Zapopan, Jalisco, and *Casa González Luna* located at *Calle José Guadalupe Zuno Hernández* n°2,085 in Guadalajara, Jalisco (**Fig. 2**).

It is easy to distinguish the personal style of the authors in each house and their approach, a different and very peculiar way, to the daylight factor.

In the case of Coufal; inspired on the work of Edward D. Stone, the use of lattices marked his entire career "prefabricated latticework was ideal for resolving the problem of fenestration on a façade as to ensure privacy and filter sunlight"¹². With a great artistic sensitivity and his recognized skills



Figure 2. From left to right Casa González Luna, Casa Loma Larga and Casa Coufal Diaz Garza. Representative photographs of each house and location. © Credits Abril Hai Quintanilla Cerda, 2022.

towards freehand drawing, he had the opportunity to enhance handcraft processes “the use of prefabricated lattices with their own designs, vaults of bricks, tiles compositions, mosaics of coloured glass, mural painting in acrylic, sculpture in concrete and the gobelins designed on purpose, were elements and systems that he recurrently incorporated into his works”.¹³

Otherwise, Alejandro Zohn and his strong influence through the work of Félix Candela and Oscar Niemeyer marked a discourse focused on the structural design, especially about relations based on nature. Taking his own words, “we must note the analogies that lead us to absurd conclusions, for example, that cities, like all living organisms, are born, mature and die”¹⁴. In that sense, Zohn’s work has seen strong formal connections to animal skeletons or curvilinear shapes from nature¹⁵. His work, although focused mostly on a bigger scale, kept a certain affinity and persistence on certain regional materials such as ember stone and enameled clay that allowed him to generate a management of space and sunlight in a particular way¹⁶. Said by the *Consejo Nacional para la Cultura y las Artes* his work honors the rites that humans perform every day when the sun rises and illuminates the different windows of the houses in which they live. It is understood that Zohn’s formal and structural work is strongly related not only to how buildings are made or built, but also to how they are thought according to the climate of the place and the construction system¹⁷.

Regarding Luis Barragán, who is perhaps best known internationally, he understands the sunlight is linked to the deepest biological and natural origin of people. He mentions in some interviews the importance of collecting the need of human beings for indirect sunlight, relating it to the feeling of physical, mental and spiritual tranquillity. For Barragán, the relationship of sunlight

use from an indirect approach was linked to promoting spaces that reduced the anxiety of the hectic rhythm of modern life, designing from the desire to generate spaces that allowed human pleasures such as thinking or talking from the absence of dazzling or disturbing light. In a more intimate interview, he mentions: "I do not agree with many houses that have been built in El Pedregal, large windows having to be closed by curtains. If you go to Pedregal, both day and night the curtains are always closed, then, what are the windows for? Their windows are always closed because people need privacy and intimacy. Your house, which is your territory, must possess these qualities and this is not possible with such large windows to the street".¹⁸

For Barragán it seemed easy to find solutions for solar control, from the use of small windows to match the management of volumes¹⁹, design of envelopes that allowed large setbacks in the façade, peculiar solutions with lattices and architectural elements that are still due to the knowledge acquired in his visits to North Africa²⁰. Finally, it is important to mention the Barragán's style regarding the relationship of housing with the outer space, which was a non-negotiable issue because it reflects the importance of the cycle of day and night into the daily way of living. During the day the garden had to be filled with light but at night it should be in total darkness, far from artificial lighting sources²¹.

Tapatia's conditions

The climate in Guadalajara is mild, described as temperate, hot from April until the rainy season that begins in June²². (**Fig. 3**). Those conditions means that even with the disadvantage of the heat island effect in most cities of the Metropolitan Area of Guadalajara, a green and humid atmosphere is generated most of the year. However, the warm season has a large presence associated with the amount of solar incidence due to the latitude factor of the city.

4. The use of lighting, a matter of shadows

The simulation of the cases was carried out using a solar tool software as a widely used application for the generation of shadow masks. A window of each house that was located in the day area or social zone was selected. All the information regarding orientation, size and location of the window was also loaded to the metadata of the model.

The results confirm the previous bibliographic conclusions and concur with the design's sunlight terms. As we observe in the shadow masks (**Fig. 4**), in the three cases studied, although having unfavourable orientations for the Metropolitan Area of Guadalajara, they manifest a dominance over solar control, generating an abundant amount of direct shadow.

Erich Coufal's solution, about the size and arrangement of the lattice towards the garden, guarantees a shaded area almost all year round, except

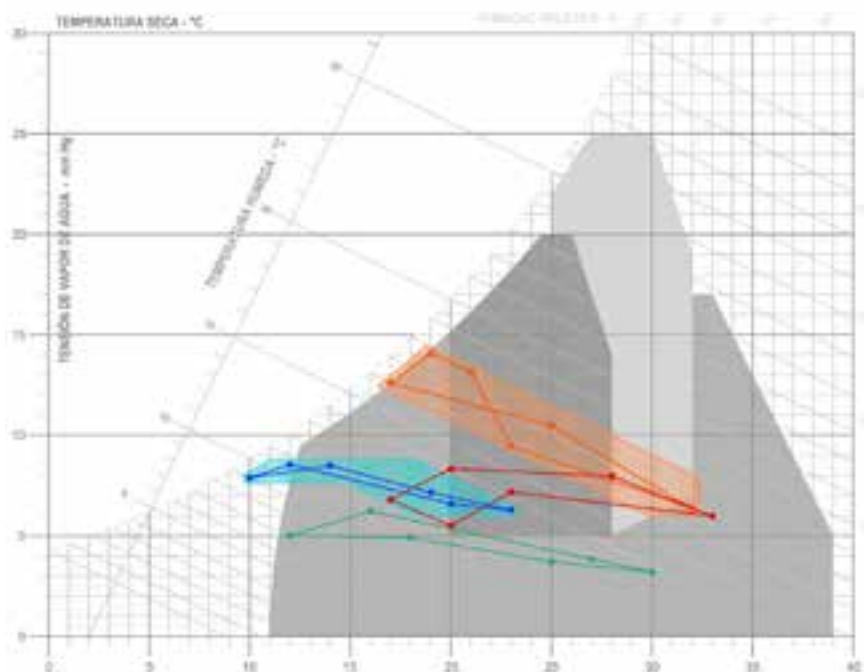


Figure 3. Psychrometric chart of Guadalajara according to Givoni. © Credits Alfred Esteller Agustí.



Figure 4. From left to right *Casa González Luna*, *Casa Loma Larga* and *Casa Coufal Díaz Garza*. Result from sun mass-ks. © Credits Alfred Esteller Agustí and Isamar Anicia Herrera Piñuelas.

for some summer sunsets mostly in the time of the rainy season. In the house of Alejandro Zohn, with a similar orientation to Coufal's, his strategy of orienting the day area towards a large area of four meters deep covered terrace guarantees almost in its entirety the shade. In the case of Luis Barragán, taking into account that it is the most unfavourable orientation, his hybrid solution of "tronera" with shutter, although shade is not guaranteed throughout the year, obtain an approximate period from 16 pm until sunset.

This way, we can conclude that the magnificent control of shades and sunlight of these technicians lead us to affirm that it was a primordial aspect in their projects and was worked with a surprisingly prodigious accuracy taking in consideration the moment in which those houses were developed.

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Notes

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Brazilian modern houses in the 1960s: **gourmet *favelization***

Marta Silveira Peixoto

UFRGS – PROPARG

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Modern architects were fully involved in designing the new life, disdaining 19th-century bourgeois homes, and challenging essential notions of domesticity such as privacy. In Brazil, the peak of this process occurred in the 1960s, especially in São Paulo. Some of these projects were provocative cases that extended the idea of liberation from the traditional principles of the domestic interior. The case studies of this article are Butantã House (Paulo Mendes da Rocha, 1964–1966), Tomie Ohtake House (Ruy Ohtake, 1966–1968) and Albertina Pederneiras House (Rodrigo Lefèvre and Sergio Ferro, 1964), made for the architects themselves, or family members, or very close friends. Despite being middle-class residences, they are all very unconventional houses in many ways. Regarding the layouts, their intimate spaces have little privacy. Designed to be crossed or flanked by circulation, the places for sleeping, bathing, and dressing are deconstructed and reduced, ceasing to be rooms in the bourgeois common sense. They are conceived as secondary spaces within open houses that prioritize, to different degrees, the collective over the private. The allusion to the word *favela*, present in two different testimonies, one by Flavio Motta and the other by Paulo Mendes da Rocha, is used as a trigger to discuss privacy in some of the houses of Modern Architecture and its consequences for the lives of residents.

1. Houses with no rooms

Housing was an important research and professional field for modern architects. Despising nineteenth-century bourgeois homes, they were fully involved in the conception of modern living, challenging essential notions of domesticity, such as privacy. A peak of this process may be found in some 1960s houses situated in São Paulo, Brazil: provocative cases that stretched the idea of liberation from “well-behaved” interior tenets.

Paulo Mendes da Rocha’s residence (Butantã House, 1964–1966) is a one-story over *pilotis* house. Its plan is organized in three strips: an interior veranda defining the access and a family room, a second sector with bedrooms and a kitchen, and the social area. The circulation between the entrance and the social space can be made by a corridor right in front of the door and between the kitchen and the bedroom wing, or through the bedrooms or the kitchen, both designed so as not to constrain this circuit. On the contrary, they are arranged like passages between these rooms set at opposite ends. The third strip is the large space of the living room, arranged according to three

different functions, which are the dining room, the sitting room, and the study (Fig.1).

The bedrooms' layout alternates pathways and furniture. The private space for each child is composed of a bed and a study place, all in about eight square meters – square footage that can be considered good by Brazilian middle class standards. However, part of this area can be used as connection between the family room and the social space, something that completely transforms the characteristics of these places. In addition to halving the usage dimension, it also reduces the privacy of these bedrooms, which are no longer exactly private.



Figure 1. Paulo Mendes da Rocha, Butantã House, São Paulo, Brazil, 1964–1966. Upper floor plan. © Marta Peixoto Archive.

The architect's preference for socializing is also explicit in the bathrooms and closets. All countertops with washbasins are open, and the only enclosed rooms are the shower stalls and the cubicles of toilet and bidet, and only the last ones are closed by doors. The closets are also open. More than that, they are along the pathways that connect the living and family rooms. Furthermore, no internal partition reaches the slab. There is no place where a future teenager could be isolated, since using bedrooms and closets as passageways is the regular pattern for the residents.

This solution caused some problems of habitability and peculiarities regarding privacy. space He used artifices such as skylights, shutter panels, and *domus* to solve lighting and ventilation. Lack of privacy, however, was desirable to him.

Ruy Ohtake also proposed unconventional bedrooms in the one-story residence (1966–1968) he built for his mother, the artist Tomie Ohtake, then a widow living with her two adult sons, Ruy and his brother. The building's floor plan is a large rectangle with the rooms arranged along the longitudinal axis. The volume touches the back and an entire lateral edge of the lot. On the other lateral, the terrain opens wide and lifts off the cobblestone. From that point on, this facade is glazed, while the opposite is completely blind.

The deep access goes parallel to the service area, where the garage and the service rooms are, until reaching a large space created as a square, according to the architect.¹ Part of this course is external, running free next to the car shelter. From the entrance door, on the right side, a concrete shelf extends to



Figure 2. Ruy Ohtake, Tomie Ohtake House, São Paulo, Brazil, 1966–1968. Plan. © Marta Peixoto Archive.

the back of the house, all along the boundary blind facade (**Fig.2**).

Next to the kitchen, is the fixed concrete tabletop for meals. Then, a fireplace, loose and centralized is the focus of the living room that occupies the entire width. A compact volume divides this space into two strips in the next stretch. Inside this loose box are two micro-rooms and a spartan bathroom. To its left, there is an office. Narrower, on the opposite side, the space works as a gallery with concrete shelves along the blind border facade. The next room, again full width, is the artist studio. Her suite is in the back, comprising a hall, bedroom, and bathroom. The sleeping area is slightly larger than her sons', but it has more privacy due to its position and layout.

These bedrooms are boxes-within-a-box, made of pre-molded partitions that do not reach the roof slab, as in Paulo Mendes' house, and covered by a thin concrete lid. Having two doors each, across from each other, they connect the office to the gallery. These rooms seem lost in the social space, and such exposure is acceptable only if we consider that the two children are already adults. The fact they probably wouldn't be living in the house for long, suggesting that these rooms could be used in another way later, can be a good "excuse" for this. On the other hand, as the furniture is fixed, any major modification would be difficult.

The bedrooms: the enrichment and enhancement of collective spaces result, in part, from limiting private areas to what is strictly necessary. The bedrooms were large, because then, the functions themselves were more varied. Today, one can think of a bedroom-drawer (Translated by the authors).²

Albertina Pederneiras House (1964), designed by Rodrigo Lefèvre and Sergio Ferro, is on a rectangular corner lot. The house is a two-story building that leans against the border at the back, one of its larger sides. On the opposite is the entrance from the street. Perpendicularly, on the left, there is a small annex that houses two bedrooms and a bathroom for domestic servants.

Most of the rectangular ground floor of the house is the social space. The stairs are perpendicular to the front facade, close to the entrance, on the wall that delimits kitchen and toilet. Bedrooms and bathrooms are on the upper floor, a usual solution for a middle-class residence like this. However, the triviality of the proposal ends there.

The entire pavement looks like a single large bedroom despite the light partitions and three loose and parallel walls in the central third of the floor plan. In the same strip are the stairwell hole and all the beds. Along with the longitudinal facades are the washbasins and the cabinets on opposite sides. The shower stalls and toilets are inside two protruding volumes, on the front facade. The cabinets occupy the entire blind border at the back (**Fig.3**).

The double bedroom and the one at the opposite end, as well as the bathrooms, have more privacy thanks to an ingenious door opening scheme that allows circulation in all directions and between beds, closets and countertops, something similar to the bedrooms in the house of Paulo Mendes da Rocha. Like the ground floor, there are no corridors on this pavement either. This solution blurs the boundaries between private and collective spaces and strengthens shared life.



Figure 3. Rodrigo Lefèvre and Sergio Ferro, Albertina Pederneiras House, São Paulo, Brazil, 1964. Ground floor plan. © Marta Peixoto Archive.

According to the architects, they made that in the name of the economy. Not only of space, but also in terms of optimizing construction options, such as using walls and structures without plaster, with the installations exposed. However, more than saving money, it was about the authors' belief in the pedagogical role and transformative potential of Architecture.³

Rodrigo Lefèvre, Sergio Ferro, and Flávio Império formed the Arquitetura Nova group, which designed a significant set of houses, such as this one. Not addressing themselves – or their mothers – these projects could only exist due to their proximity to the clientele, made up of family members or friends who shared the same convictions.

2. Less is Poor. Or not?

The supremacy of socialization at the expense of individualism is the rule in the three cases presented here. The private spaces of these houses, tiny or designed to be crossed or flanked by the circulation, are not rooms like those of the bourgeois houses of the past. They are secondary rooms of open houses that prioritize, to different degrees, the collective over the private. Albeit being part of Modern houses, they resemble what Brazilian people call *alcovas*, a frequent trait in Portuguese colonial tradition, abandoned as a bedroom alternative due to updated notions of habitability and privacy. There is no proper sound insulation, and the circulation is allowed, or even encouraged, in all rooms, especially in Butantã House. At Tomie Ohtake House, the solution of the sons' bedrooms and bathroom resembles the Brittany's *lit-clos*, a sort of sleeping cabinet considered inadequate for the same reasons than the *alcovas*. It was a piece of late medieval furniture, a box-bed that allowed some privacy and helped keep people warm during European winter. Even made of concrete, bedrooms in Tomie Ohtake House are a kind of *lit-clos*. Furniture playing the role of architecture is a resource that modern architects explored a lot. But they also did the opposite, using architectural elements as furniture.

Much of Tomie Ohtake and Butantã Houses' furniture is fixed and made of concrete, immutable and inflexible. In consequence, the use of their rooms cannot be altered without renovation work. There seems to have some contradictions between the authors' avant-garde discourse on freedom and fixed furniture. Even if exaggerated to a certain extent, Yves Bruand has some reason to say that Butantã House's furniture symbolizes an authoritarian social conception.⁴ Furthermore, these layouts avoid corridors. Its absence can be interpreted as an anti-segregation solution, leaving movement completely free. Contradictorily, this freedom entails a dangerous lack of privacy in intimate areas. And lack of privacy is a form of control, even if disguised.

Marie Jaoul, daughter, and granddaughter of the owners of Le Corbusier's Jaoul houses, wrote about her experience of having lived there. And her

comments are not at all favourable. She recalls the shock of moving from their former apartment to a completely different environment. Marie wrote:

There, suddenly, in the Jaoul house, it was a terrible shock because we found ourselves among ourselves, something we had never experienced before...I often locked myself in my room to read all night, quietly, so that my parents would not notice. In the previous apartment, no one watched me. There, in this house, we saw everything...There were wooden partitions, or brick walls, but I heard everything my parents did because I was only separated from them by a cupboard...I could hear my parents' bathroom flushing every morning...A love story was unimaginable there as everything was under surveillance. Everyone lived constantly under the gaze of others in this space where everything communicated (Translated by the authors).⁵

Although the text reports a personal – and certainly upper-middle class – view, one can imagine that the design, layout, and furniture arrangement in these houses may have affected the lives of their inhabitants. There is also the little flexibility of fixed furniture and its little ability to adapt to the unexpected facts of life. In the case of Paulo Mendes da Rocha, there was an unforeseen event named Joana, his daughter, born after the Butantã House was already in use. There was no place designed for her – she was accommodated in her older sister's bedroom.

When she was still barely a baby, Joana invaded one of the toilet cubicles of the house and transformed it into her private territory. She brought a rug, a lamp, books and slept there for six months. Some time ago, one of Paulo Mendes da Rocha's five children moved to the Butantã house with his wife and daughter. Ironically, this little girl also appropriated a toilet space just like her aunt had done before.⁶

Silvia Filippelli, daughter of Felipe Filippelli, for whom Ruy Ohtake built a house (1972), declares in her blog that the fixed furniture of the house he lived in as a child "although striking, make the spaces rather inflexible."⁷ She also said that her father met the architect sometime after they had moved in and told him they were expecting another child. Ruy Ohtake, looking horrified, would have said: "No no! You can't do that!"

Her report is about lack of adaptability, which is common to these three houses. Paulo Mendes da Rocha's daughter and granddaughter and Marie Jaoul complain about another issue, the lack of a space to call their own. Perhaps the young girls in these families have a special need for individuality. Or they express a more comprehensive phenomenon.

There was an understanding developed throughout the 18th and 19th Centuries, that the drives of the body and soul need isolation. That is so important that even socialist utopias tend to protect it. A closed room, like a bedroom, would guarantee it.

The separation of grownups and children, the polarity established between the (it became routine in the course of the [nineteenth] century when working-class housing construction was undertaken), the relative segregation of, the strict instructions as to the care of nursing infants (maternal breast-feeding, hygiene), the attention focused on infantile sexuality, the supposed dangers of masturbation, the importance attached to puberty, the methods of surveillance suggested to parents, the exhortations, secrets and fears, the presence – both valued and feared – of servants: all this made the family, even when brought down to its smallest dimensions, a complicated network, saturated with multiple, fragmentary and mobile sexualities.⁸

Modern architects go against these beliefs, shared by the 19th Century bourgeoisie. They transformed the previous conception of the closed and impenetrable domestic interior, projecting transparent and/or permeable spaces. There are several examples in this direction in the first half of the 20th century, but the remarkable changes would occur only in the social areas. These three cases are more radical, proposing changes in the intimate space.

According to Ruy Ohtake

And the house is a small square where friends meet. Protected from sun and rain. This represents the enrichment and appreciation of spaces for collective use, overcoming certain bonds loaded with prejudice (Translated by the authors).⁹

A good part of these prejudice is related to privacy, and these are ideas shared by a much larger group of Brazilian architects, most of them working in São Paulo in the middle of the last century. In addition to promoting a more shared life at home, they speak out against what they understand as a “bourgeois way of life”, that separates children and parents, boys, and girls, closes bathrooms, seals rooms...

Paulo Mendes da Rocha proudly said that his daughter *favelizou* (slummed) the palace built by her father when she invaded one of the toilets at the Butantã House. He was proud that she was anti-establishment, just like him. The artist and historian Flavio Motta used the same word to suggest that Butantã House was a “rationalized *favela*” where everyone would respectfully accept the presence of others.¹⁰ Here, the comparison is made in the sense of essentially community life that is characteristic of *favelas*.

But the ideology of collectivism works as a windshield for the hypertrophy of visibility, resulting in a fallacy, the identification of visual freedom with freedom of conduct, and a threat, the disregard on the political level of the importance of the private sphere as a fundamental battery recharge for the sphere public, as Hannah Arendt points out. Even if it wasn't consciously, the denial of privacy at Paulo Mendes da Rocha's house, for example, leads to evident patriarchal control.

The romanticization of the collective seems to be the issue here, wanting to counter two hundred years of consolidation of a bourgeois European concept

of comfort. The statements of former residents of these houses – or about them – suggest that architecture has not yet been able to undo it. In other words, gourmet *favelization* is not a tasteful solution.

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S10

Transatlantic Modernities

Fernando Agrasar Quiroga

ETSA. UNIVERSIDAD A CORUÑA

The group of papers that make up the thematic area “The Latin American Contribution”, in the *DoCoMoMo International Conference 2022*, are added to the historical sequence of intersecting views of the modern experience between Europe, North America and Latin America. Particularly significant among these transatlantic threads are the two exhibitions held at New York’s MoMA in 1955 and 2015.

The exhibition held at the MoMa, *Latin America Architecture Since 1945*, opened in 1955, with Philip Johnson as chairman of the Museum’s Architecture Section. It was curated by Henry–Russell Hitchcock and Rosalie Thorne Mckenna photographed many of the works on display. The predecessor of this exhibition was the one held by the same institution, under the direction of Philip L. Goodwin in 1939, focusing on Brazilian architecture. Hitchcock’s text, in the exhibition catalogue, sets out some decidedly Eurocentric ideas, assuming the modern experience in Latin America as a process of implantation and diffusion, with considerations of its specificity linked to history, including the influence of pre–Hispanic and colonial architecture. Hitchcock goes so far as to state that “the new architecture of Latin America belongs specifically to the age of the aeroplane”, since “building materials do not travel by plane, but architects and their ideas do”. To reinforce this northern view, the MoMa catalogue text points to a generation that over the course of three decades faced the task of opening the way to modernity by overcoming the Beaux–Arts tradition imposed from Europe. Hitchcock states that Latin America has not had Wright, Perret or Behrens, but “men like José Villagrán García in Mexico, Sergio Larraín in Chile, Lucio Costa in Brazil and Carlos Villanueva in Venezuela, took the profession out of the dead end of institutional French architecture”. According to this perspective, these pioneers of modernity did not overcome their own strong tradition, but rather the imported forms of an outdated power and prestige. The new art also came from the United States and Europe to play an important role in the establishment of the new modern architecture: Calder, Léger or Arp, with their works in Villanueva’s University

of Caracas are an example of this idea, without mentioning other important local artists and their connections with architecture. The 46 buildings in the exhibition seek to exemplify these ideas, which correspond to a vision of orthodox and all-encompassing modern architecture in a context of exceptional demographic and economic growth.

In 2015, MoMa once again turned its attention to modern architecture south of the Rio Grande. *Latin America in Construction: Architecture, 1955–1980* offered the continuation of the modern experience under the curatorship of Barry Bergdoll, together with Carlos Eduardo Comas, Jorge Francisco Liermur and Patricio del Real. The formation of this curatorial team is a clear indicator of a richer and more complex vision of the modern experience in Latin America from the inside. Here, at last, are contributions of their own whose value is analysed in a global context. It is true that from 1955 onwards we are talking about a mature modern experience, firmly supported by the work of a first generation of architects, active in the period covered by the exhibition, who designed some of the most memorable buildings exhibited in the New York museum in 2015. The title of Bergdoll's text in the catalogue is a real statement of intent: "Learning from Latin America".

The global crisis, which began with the bankruptcy of the Lehman Brothers bank in 2008, had very important architectural consequences, marking the end of what Rem Koolhaas called "Starchitecture". All those experiences far removed from the international editorials with spectacular images were replaced by others of low-budget buildings, discreet forms and a high degree of social and environmental engagement. This emergence of an important part of modern-rooted architectural research drew international attention to Latin America, with its long tradition of creative programmes with low resources and local construction. This new situation was visible in the 2015 MoMA exhibition, with modern works that only a decade earlier would have been unthinkable in the show.

The section of the XVII International DoCoMoMo 2022 Congress entitled "The Latin American Contribution" takes up the same spirit, with the intention of investigating the specific features of Latin American modernity that continue to offer valuable materials in our fragmented and complex present. What are these architectural contributions of Latin American modernity? Some of them are included in the papers that make up this round table of the congress.

Hannia Gomez in "Suite Iberia: Spanish Influence on Modern Caracas Architecture", reveals the true nature of the contributions that came from abroad, in this case from Spain, to the city of Caracas. If architects and their ideas travel by plane, as Hitchcock said, it is no less true that, like them, a good number of developers and builders also travelled with heavy baggage of nostalgia and a clear way of expressing, in architectural terms, the economic and social success achieved with their work. Undoubtedly, modern novelties from Europe or the United States by recognised authors have been of great

importance, but with them also came other approaches that were quickly hybridised, adding to the shaping of a modernity of their own.

Pablo Manuel Millán–Millán and Simona Belmondo, present research on a landmark piece of Chilean industrial heritage: the factory of the *Sociedad Nacional de Envases y Enlozados* in Valparaíso, by Italo Sasso Scampini. These works, built at the key moment of the industrialisation processes in different Latin American countries, freely tested innovative solutions, with spatial and constructive values of great value. The structural solutions and spatial discoveries became an unavoidable reference in the shaping of an industrial heritage that needs to be understood in terms of these foundational works.

Lara Scanapieco Barreto and Andréa Borde present the problem of preserving social housing developments in the complex peripheries of Latin American cities. The Marechal Hermes housing complex in the suburbs of Rio de Janeiro opens up a perspective of modern heritage conservation that is even more difficult and intense than in the European peripheries, due to the social dynamics, the processes of degradation and the specific needs of the population. The processes of integration and consolidation of residential complexes in areas of growth and settlement of disadvantaged populations are similar on both sides of the Atlantic, but the special intensity and dynamism of Latin American cities is a testing ground that demands, because of its value, the preservation of a heritage, and also urgent and effective housing and social solutions

Logan Leyton studies one of the dimensions, as interesting as it is usually forgotten, of modern Latin American architecture: the landscape. The tourist facilities located along routes such as the Roosevelt Highway in Chile created landmarks in a virgin landscape in just a few years that transformed it. In the humanised European territories, profoundly modified over centuries, the insertion of new modern elements implies a necessary landscape reflection. In Latin America, where nature has a vibrant scale and power in sparsely inhabited areas, a few built pieces possess a capacity for transformation that in Europe can only be imagined.

Finally, Alejandro Leal Menegus explores the architectural and, above all, theoretical legacy of Königsberg, with its *New and Truthful Architecture*. This heterodox contribution, aligned with the “flowered architecture” referred to by Lina Bo Bardi, was silenced by the media, academia, publishers and cultural dissemination of modernity. This is certainly a moment to turn our gaze towards these unusual ideas and forms of certain unorthodox modern architectures, not only out of intellectual curiosity and a desire to delve deeper into the modern legacy, but also for the opportunity to feed contemporary architectural responses with valuable theoretical reflections, whose trajectory has yet to be explored.

The contributions of modern Latin American architecture, in this international context of dissemination, are undeniably topical. The specific features, experienced from Mexico to Patagonia, were responses to the circumstances

of the culture itself, to changing social and economic dynamics, to making the best possible use of resources, and to the will to transform cities, territories and societies. Today circumstances have changed, but perhaps only some of the factors in the equation have altered, which still shows signs of vitality. If we understand it in this way, it is undeniable that the contribution of the modern Latin American experience plays a key role in our present.

Suite Iberia: Spanish Influence on Modern Caracas Architecture

Hannia Gómez

DOCOMOMO VENEZUELA

From 1900, the tradition of the Laws of the Indies and the heritage of Colonial architecture in Caracas were a fertile basis for the reception of the Spanish immigrant population, summoned up for new projects in a city that was rushing into modernity. The Spanish had already become the largest European colony the Venezuelan capital. Its cultural presence –due to Spain's prolonged influence–, felt as something natural which had been there since the city's foundation in 1567, practically fused with its identity. Today, those architectures, works of art, engineering and urban projects are no longer works of Spanish influence. Now, they are Caracas. The Spanish architects, builders, urban planners, artisans, technicians, engineers and artists impacted the local way of doing architecture, transforming the city: they turned around the quality of its construction industry, allowed more complex projects to be undertaken, multiplied its architectural and artistic languages, expanded its repertoires. But above all, they filled Caracas with expertise, academic training, urban architecture, and also Iberian popular and rural architecture rich in ornamental languages and regionalisms. Spanish modernity caught strongly in Caracas. It felt just right monumentalizing the Historic Center; Neo-Hispanisms were a successful and very tropicalizable expression of continuity for Colonial architecture, and the avant-gardes of Spanish modernity found an auspicious territory to renew invention. The Spaniards, founders of cities, had in the valley of Caracas a miniature America ready to sow new urbanisms. The city is the most formidable enterprise for the Spanish. Modern Caracas was enriched with urban and architectural landscapes of appreciable nostalgia for Spain. We find everywhere the Spanish idea of the enlightened lot, a virgin territory where to establish a rational universe. There is no architecture of Spanish influence that does not try to lay on the land a knowledgeable lesson about architecture and/or the city.

1. URBAN WORKS

The tradition associated with the Laws of the Indies and the sensitive heritage of colonial architecture in Venezuela were a very fertile base, from 1900 on, for the reception of the architectures, urban art and modern urbanisms brought by the immigrant population and Spanish professionals that were summoned to make new projects in a country that aimed to modernize.

In the twentieth century, Spanish migration became the largest European colony in Venezuela. Its cultural presence, together with the prolonged influence of Spain, was already something natural, almost of its own, which had been there since immemorial times, that is, since 1492, and which therefore we find practically fused within the Venezuelan cities, beginning with the capital. This is a situation that makes it somewhat more difficult for the

common observer of modern architecture to differentiate between what is local and what is Spanish. And it is because these architectures, works of art, engineering and urban planning are now no longer, as when they were built, works of Spanish influence. Now they are part of our urban identity.

The search for skilled labour force undertaken by the governments of Venezuela in the first half of the 20th century, amply bore fruit: it would transform the cities. Spanish architects, builders, urban planners, artisans, technicians, engineers and artists impacted the way architecture was being done, turned the quality and the construction industry around, allowed more complex projects to be undertaken, multiplied the architectural and artistic languages and expanded the repertoires. But above all, they filled our cities with expertise, academic training, urban architecture and also with popular and rural architecture rich in ornamental languages and regionalisms.

Spanish modernity caught on strongly in our cities. It monumentalized the Historic Centers drawn as checkerboards full of corners; its Neo-Hispanisms were a successful expression of continuity for colonial architecture, very easy to tropicalize, and the vanguards of Spanish modernity found a more than favourable territory to renew invention. The Spaniards, founders of cities, had in Venezuela a miniature America that they planted with urbanisms.

Many stayed in our country forever.

Others, on the contrary, came for a short period of time, to do a project and then return to Spain, or continue their path. The fact is that the compendium of these works turned out to be a profit for the cities. Modern Venezuela has urban and architectural landscapes of appreciable nostalgia for Spain, but the most usual situation is the merger with local professionals, firms and companies in order to build the city together. Because the city is the most formidable enterprise for the Spaniards.

Solares

From very early in the history of Venezuela, on both sides of the ocean, the chronicles preserve the record of the works of the Spaniards who arrived on our shores after making the long crossing of the Atlantic. We can imagine what the Spaniards felt when they had the first sight of our coasts on the Caribbean. And



Figure 1. Rafael Bergamín Gutiérrez, House 39, Caracas, Venezuela, 1953
© Velutini & Bergamín, C.A., 1938–1953.

we can also imagine how all this quickly and easily began to mutate until it became the metaphor of memory.¹

Many Spanish engineers and architects worked in Venezuela since its discovery to contribute with their creations, but especially from the first half of the twentieth century onwards. Particularly between 1900 and 1970, they arrived, coming from very diverse Spanish cities and schools of architecture, whose family trees and influences we must follow; some more modern, others more academic. Some were contracted punctually to do work that they would design from outside Venezuela, like Secundino Suazo, Josep Lluís Sert, Victorio Macho or Andrés Martínez Abellanda; others received special commissions that would bring them to the country to carry them out right here, on site, as was the case of Manuel Mujica Millán and Ángel Cabré i Magrinyà. The rest of the authors, in one way or the other, decided to make our cities their city, resuming their splendid careers and professions in them, making them their own, to the good fortune of our country. Their trajectory would diversify and multiply when they arrived in our territory and started mixing with the local practice.

Spanish-influenced architecture will encompass all of modern Venezuela. The main places where these new architectures, urbanisms, works of urban art and artistic integrations will appear are Caracas, Maracay, Mérida y Maracaibo: the new developments and urbanizations of the modern nation. However, although we have managed to find many of the works that the Spanish masters made here, it is impossible to determine how far the influences extend. Neo-Hispanic Venezuela is a beautiful, largely invisible nation, whose vast set of its Iberian forms is still waiting to be revealed in its totality.

Venezuelan cities, mostly planned as cities of the Indies based on an ideally infinite checkerboard layout, launched since 1567 their desiderata of order and civilizing construction throughout the territory.² Although the grid did not continue to be ideally constructed and modern metropolises opted for other urban ideas to transform their haciendas into cities, the influence of the grid persists, immanent, untouched, intangible, like an ideal plan.

We find everywhere the Spanish idea of *el solar esclarecido* (the enlightened lot), ready to orderly nest on the virgin territory to establish a rational universe and impart its own city chair. There is no architecture of Spanish influence which does not try to render on its lot a lesson in architecture and the city and act as a harbor for the great construction traditions and the best ideas of its time. An attitude that summed up very well the "Madrid Rationalist", Rafael Bergamín Gutiérrez, in Caracas, when he wrote from his tribune in *El Universal*, in 1938: "I am going to suggest what a modern city should be. Like elementary lessons in urban planning available to everyone".³

Evocations

A range of evocative compositions from the many regions and ways of making art, architecture and cities in Spain in the 20th century, will confirm this new



Figure 2. Francisco Íñiguez de Luis and Amós Salvador Carreras, model of Las Mercedes urbanism, Caracas, Venezuela, 1940 © Archivo San Román.

attitude in Venezuela as well. Therefore, the allusion we make in the present set of episodes of Spanish influence to *Suite Iberia*, the musical Spanish retablo (altarpiece) that Isaac Albéniz composed between 1905 and 1909, and his dozen compositions for piano dedicated to various Spanish places, the first of which is called, precisely, *Evocaciones*.⁴

However, we do not start from punctually representing all the regions of Spain. Everything emanates from what the very fabric of cities has to tell us: from the list of the most notable architectures, from the best artistic projects, from the most significant places. These places existed, they were already notable parts of the cities, they were ours before we decided to remember who had made them; even before we had temporarily forgotten them. They are part of the Venezuelan cities that we all admire. And they are, yes, a list of works exclusively made by Spaniards. Because let's not forget that in Venezuela there were also many Venezuelan architects of virtuous Hispanophilia who knew very well all the architectural languages of the time in Spain, especially Neo-Hispanic. For instance, the work of Carlos Raúl Villanueva.

In this way, we find among the main neo-Hispanic urban developments in Venezuela, El Rosal and Las Mercedes urbanizations in Caracas, built from 1940. Both layouts, sharing the same idea of a city, duplicated to the north and south of the Guaire River, with their American city-like urbanisms, but imbued with the cultured urban memory of the Spanish cities of its time, had always been admired. Today we begin to glimpse the Riojan evocations of these very Caraquenian regions, designed by Francisco Íñiguez de Luis and Amós Salvador Carreras, both natives of the city of Logroño.

Or also, the vast imprint left on the country by architects, draftsmen and builders from the Basque Country, who propitiated the creation of a whole new formal language, of an architectural “style” of Basque ascendant: the Venezuelan Neo-Basque. This language produced in our cities very particular and widespread housing typologies, from single-family to multi-family, based on variations of the Basque *caserío* (rural farmhouse).

Officiating a monumental evocative operation, the creator of most of the Basque-style buildings that exist today in the capital (including the famous 1941 Eguzki building built in Los Caobos urbanization, and also author the Basque Center), was Miguel Salvador Cordón. He turned Caracas into an authentic Gipuzkoan region. Based on his nostalgia and knowledge, he bequeathed us his richly decorated tropicalized *caseríos*, like scattered ships of the “pilgrim Euzkadi”, anchored everywhere in the valley of Caracas and its coastline.

Neo-Basque architecture successfully spread rapidly. In the 1940s other professionals began also to stand out in “versioning architecture to Euskera”.⁵ Many urbanizations began to be filled with names like Izarra, Amaya, Mondragón, Toki Eder, Mendi Eder...⁶ Thus, we find the Neo-Basque chalets of architect Manuel Mujica Millán, who, although he had been trained in Barcelona as an architect, was born in Vitoria, province of Alava, and left us many works of his personal interpretation of the Neo-Basque style. Lighter, more delicate, if you will.

Mujica Millán, who in himself deserves –and is still waiting– for an individual retrospective of his complete work in Venezuela, is the master of evocations. Only in Caracas he is the author in 1930 of the renovation of the “Altar de la Patria” (Altar of the Country), the National Pantheon, whose high transparent towers are so reminiscent of that of the Church of San Vicente in the city of Vitoria. Famous as the sublime versioner of all styles, he went from Neo-Basque to Neo-Hispanic, from there to Neocolonial and to Rationalism, to Neoplasticism and to Functionalism... although we will never know for sure where his architectural dreams were truly going in each fragment of his works. works, so rich in content and hybridizations. In them, there seem to be all the places in Spain –and in Venezuela, through whose territory he loved to travel so much in order to learn about colonial architecture–, only to later return to the drafting table and evoke it in his own projects. Like an architectural Albéniz.

Arte nuevo

And since modernity in Spain was a matter of capital cities, Madrid, Barcelona, Seville, the cities of Venezuela were not left behind either. Nevertheless, they did not offer here the same resistance to change that the Spanish capitals experienced. Our yesteryear cities were long desirous of progress and modernity. The spirit of renewal was well received; it was contagious and

dazzling, and since it began it only grew exponentially. Although it was not, on the other hand, not exactly a “spirit of the avant-garde, of radical innovation”, but instead the cities were slowly adapting to change by living with the local urban traditions. That made Venezuelan urban modernity nuanced, tropicalized and produced the language of its own that characterizes it, at the same time so nourished by the Spanish influence.⁷

The architects of the “Arte Nuevo” –as the first Spanish modernity is known–, that came to work for Venezuela, had to make their way in Madrid, for example, among an ocean of eclectic nineteenth-century urban fabric, in order to insert their rationalist buildings and their modern urbanisms. Here, their new architecture, their building and planning art, functional and crystalline, came in handy for the constructive outpouring of the cities. Looking at all the period architecture of the main cities, they were all like Madrid’s Gran Vía: showcases to exhibit the newly released cosmopolitanism of the nation, aspiring to reflect all the forms and ideas of the new world architecture. A very clear image of this is the perspective that Manuel Mujica Millán made in his “*Proyecto de avenida en Caracas*” (Project for an Avenue in Caracas) (c. 1930), where from



Figure 3. Miguel Salvador Cordón, Donosti building, Caracas, Venezuela, 1950 © Docomomo Venezuela, Elías González Sanavía, 2015.

side to side he aligns the road with architectures where many of the languages of modern architecture of the moment appear.

The technical and constructive capacity and the masterful craftsmanship of the Spaniards make their way and prevail in the cities. The sobriety and strength of their new architecture, its spirit markedly attached to tectonics, its clear forms, "its horizontal mansions and diaphanous windows without mouldings", its love for urban typography (one of whose paradigms was the Capitol building, the great "lighthouse of Madrilean modernity"), its very rationalist austerity, expands with our cities, and today is part of their identity as modern cities.⁸

Thus, enters the capital, for example, by the hand of Rafael Bergamín Gutiérrez, Madrid's rationalism and many of the connections with the European avant-gardes would establish through Mujica Millán's series of white houses from the 1930s in Caracas. Bergamín, who had been the author in Madrid of the so-called "rationalist culmination", with his *colonias* (neighbourhoods) Residencia and El Viso, bequeathed to the capital a Historic Center full of enlightened projects, carried out together with his Venezuelan partner, engineer Rafael Emilio Velutini, transforming the heart of the city on a brilliant and sobering route of urban architectures. Not forgetting either that together with the house of the *Marqués* of Villora, in Madrid, House No. 39 of Alta Florida is perhaps the most important and beautiful rationalist house of Bergamín that remains standing today in the world.

Other skilful modern designers with a fertile imagination, like Urbano de Manchobas Careaga, José Lino Vaamonde, Miguel Salvador Díaz, Fernando Salvador Carreras, Eduardo Robles Piquer, Joan Capdevila Elías, also sowed our cities with remarkable modern architectures, among the best of their time: the Colimodio building, the park of the Simón Bolívar University and the La Estancia building in Caracas, the Mirador (Gazer) El Vigía in Los Caracas, the La Guaira Hospital. Without forgetting either the flagship projects of architects with bold structural works such as Valentín Beato Téllez, and of the great engineers, Félix Candela Outeriño and Eduardo Torroja Miret, who made Venezuela a parabolic and hyperbolic nation: full of catenary arch vaults and concrete sheets. Another feature that soon became an invariant of its modernity.

All this rationalist architecture soon began to hybridize and mix with the other Spanish languages and neo-Hispanic styles in the various urban fabrics. It is very difficult to say in many works what is Neo-Basque, what is Neo-Hispanic or what is purely Modern. This peculiarity of the miscegenation, veiled for a while the visibility of the Spanish authors. Also contributed to this, in many cases, the difficulties for signing their projects on Venezuelan soil, and also the curious fact that the master craftsmen who came from Spain, the blacksmiths, the granite workers and the carpenters, worked with the same fashion on all projects, leaving similar traces in the works of their different compatriot authors.



Figure 4. Urbano de Mantxobas, Colimodio building, Caracas, Venezuela, 1949 © Archivo Fundación de la Memoria Urbana.

Many Spanish authors up to 1970 were left out of this work, in order to explore them better further on. They deserve to be mentioned here. Like the painter Manuel Cabré (son of Ángel Cabré i Magrinyà and born in 1890 in Barcelone); the Oficina Alayeto Bled (with projects such as the 1951 Broadway Cinema and the 1952 Teatro Imperial in Caracas); the engineer Franco López (author in 1907 of the Klindt Hotel in Caracas); the architect Joaquín Ortiz García and the Catalan architect José Maria Deu Amat; the Catalan firm Serra i Prat; the Barcelona architect Amadeo Quelart Arque (designer of the Teatro Caracas, 1933); Juan Félix Quiroz (author of the Church of the Immaculate Conception of El Recreo in Caracas in 1900); Juan Navarro Gutiérrez (author in 1950 of the Estoril building, on Avenida Victoria); Ignacio Zuloaga Zuloaga, Basque architect who participated in the design of the Hollywood Cinema and worked with Luis Malaussena in Los Próceres and in the Military Circle (where he made a ceramic mural for the entrance). Or the Basque sculptor and builder Benjamín Etayo, (author of the Pasaje Cantabria in Catia, of the Cabrini B building in Maripérez and of the Teatro El Pinar in 1947), the architect Miguel Casas Armengol and his magnificent work in Maracaibo in the 1950s (like the Palacio Municipal, from 1959) and the cartoonist Eusebio Bordes, architect of several very personal and formalistic villas from the 1950s in Altamira and San Bernardino, such as the Quinta Alovera. All of these in the capital.

Finally, this list of architectures of Spanish influence in Venezuela would not be complete without mentioning two great Spanish architects who were of enormous importance: Secundino Suazo Ugarte (1887–1971) from Madrid and José Luis Sert (1902–1983) from Barcelona. The first, for being the author around 1936 of a project, the Plan de Ensanche para Caracas (Expansion Plan for Caracas), which would never come to fruition.⁹ The second, in addition to his great influence in the capital and his participation together with Robert Moses and Prost, Lambert, Wagenstein & Rotival in the *Plano Regulador de Caracas* (1951–1958) (Regulatory Plan of Caracas), for having been the author of a single-family residence on the main avenue of the Caracas Country Club, the Carrillo Batalla House (1952), which was also never built.¹⁰

Conservation of its modernity and its unique urban qualities? Is Caracas

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Königsberg's New and Truthful Architecture. An alternative to the Modern Movement architecture in Mexico

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Jacobo Königsberg (1935) is an unclassifiable figure in the architectural scene of the second half of the 20th century in Mexico. Nonetheless the value of his ideas and buildings they haven't been sufficiently appraised by historiography. The aim of this paper is to make a first assessment of his contributions, particularly his prospective publications and apartment buildings, contrasting them, specifically his commitment to a formalist architecture, with the prevailing principles of the period 1950–1970, mainly the crisis within the Modern Movement in architecture and the emergence of alternative discourses.

1. Introduction

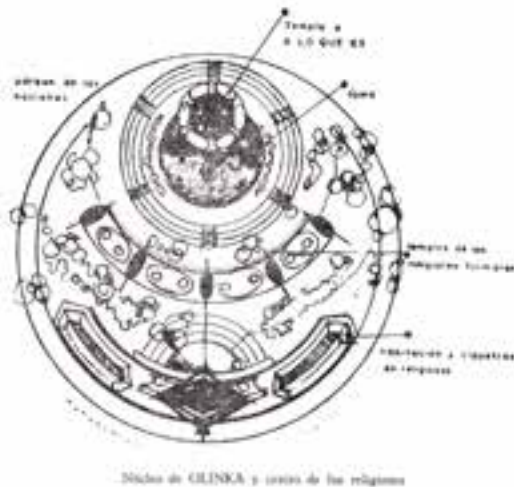
In 1958, as a recently graduated architect he published the book *Croquis Pro–Arquitectura* (Fig. 1). By means of 137 sketches “in which soft forms abound”¹ and seven short texts of “[...] clear, violent nature ...”² he tried to lay the foundations for a *New and Truthful Architecture*. Revealing he not only had the ambition of changing architecture, but he also had no trouble sharing it with renowned international figures such as Le Corbusier and Richard Neutra, from whom he received letters of encouragement. Even artist Salvador Dali had a copy of the book and was seduced by the imaginary drawings, doodling some pages with his own fantasies.

On the other hand, his radical ideas didn't stay on paper as mere prospective fantasies. Many of his projects, specifically his apartment buildings materialize his formalistic ambitions. His designs built in the 60's were based



Figure 1. Book cover and sketch 54 and 55, *Croquis Pro–Arquitectura*, 1958. Credit: Königsberg, *Pro–Arquitectura*, 78–79.

His lack of recognition may be attributed to the fact that many times historiography often focuses on understanding the representative and leaves aside the atypical or singular.⁴ Moreover, one main issue facing the



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architectural historian of the second half of the twentieth century is diversity;⁵ the architecture of that period was largely made up of dissimilar architectures and singular personalities. Hence, this paper seeks to promote the inclusion of this dissimilar architecture in a more pivotal way in the history of architecture within the broad avant-garde movement that took place in Mexico between 1950 and 1970.⁶ In Königsberg's case, by contrasting his ideals with the principles of Modern Architect in Mexico at that time. On the one hand, the last phase of the Modern Movement, on the other, the development of alternative discourses to modern principles.⁷ This resulted in both a moment of crisis and a renewal of architectural theories and would give way to a period of change.⁸ Among these critical discourses in Mexico, we find *Integración plástica*, *Arquitectura orgánica*,⁹ *Arquitectura emocional* or specific groups and architects, such as the *Lejanistas*, or the works of Enrique Castañeda Tamborel and Manuel Larrosa,¹⁰ among others.

2. Towards a new and truthful architecture

The dissemination of the ideas behind Königsberg's New and Truthful Architecture began with the publication of the book: *Croquis Pro-Arquitectura* in 1958 (Fig. 1); and was reinforced a few years later with the publication of a second book entitled: *Nuevos cauces para nuestra arquitectura* in 1971 (Fig. 3). In both books he committed himself to conceiving architecture as art and revising the importance of form. In fact, Königsberg himself did not mind being labelled a *formalist*. Nevertheless, he was aware from the beginning that his stance would be perceived by many as something close to an insult. It must be said that in Mexico at that time, Modern architecture was labelled as *Funcionalismo* and was understood by many as dogma, and uncritically repeated the phrase: "maximum efficiency with minimum effort". Hence, Königsberg's idea of promoting an architecture of formal, artistic, and spiritual nature was perceived as a disruptive at least.

Later, he defined his work as *Arquitectura Simborealista*, in his own words: "[...] an ancient and ever-present school [...] where symbolic and constructive plasticity converge [...]." And stated: "The free interpretation of the symbols advocated by this ancestral tendency means today that each individual can and must read them according to his spirituality, [...]."¹¹ In this respect we recall Goeritz's promotion from 1953 onwards of an *Arquitectura emocional*, which sought: "[...] to disassociate contemporary man from functionalism in order to transport him to a primordial state that would connect him again with an absent faith."¹² This aspect will play a significant role in Königsberg's work, as it represented on the one hand the rejection of the present, of the idea of the world conceived only from a rational and capitalist mentality, but also, the bet on a future conceived from a new worldview, with the final goal being creating utopia. Both visions were constructed on his scholarly knowledge of the ancient past, specifically Judeo-Christian history.

In this sense, although it may seem surprising, Königsberg and José Villagrán –considered by many the theoretical father of Mexican modern architecture– would not be so far apart in their way of perceiving architecture in the early 60s. Both agreed in the diagnosis that architecture was going through a formal crisis; in that there was a perceived gap between the *general program* of the time, and the need to find a solution in terms of architectural form, which would not merely reproduce, but rethink the relationship between both. This was the concern of many other contemporaries, such as Juan Antonio Tonda.

In *Croquis Pro-Arquitectura* subtitle it is stated that it is a: “Selection of Sketches to create a New and True ARCHITECTURE accompanied by brief notes that give reasons for it and every precise detail necessary to create it by the architect JACOB KÖNIGSBERG published in the years of 1919 or 1958.” The seven short introductory texts seem almost manifestos, as we can glimpse from their titles (*Del porqué de estos croquis, or Del maquinismo y de la esclavización del hombre por su crio*) and makes us understand Dr. Atl's opinion regarding their violent style; for we observe not only the mocking and free form in which they were written, but an open criticism of the *status quo*, specifically for those conceiving architecture only from the modern principles of *Funcionalismo*. It is worth noting the way the date is indicated, in a traditional manner and at the same time with the Hebrew calendar, which not only indicates his cultural roots, but the idea of linking the past with the future, an idea that we will see present throughout his work. The books content is mainly made up of sketches, which deliberately have no use or purpose assigned to them, that is, we do not know what they were designed for, beyond what we can sense from the shape of the architectural object itself. Thus, they are devoid of the idea that architecture should have a specific function, they are purely architectural forms. It may seem an apparently banal idea, but we believe it is at the root of his critical stance to the predominant *Functionalism* view in mid-twentieth century Mexico and reminds us in two dimensions of the implications of Malevich's *Arquitectones*.

In Mexico Königsberg gave copies of the book to Goeritz, Dr. Atl, T. Arai and Ramírez Vázquez, among others. He also sent copies abroad to Le Corbusier, Neutra, Shizuo Oka, Zevi and the magazine *L'Architecture d'Aujourd'hui*, all of whom responded favourably to the work of the young Mexican architect.

Regarding the book Le Corbusier, in one of the two letters they exchanged commented: “Your research is very interesting. [...] it shows us that Vignola has left the scene.” In other words, the academicism that in its last expression was represented by the International Style, finally gave way to a new stage in the history of architecture of which the Königsberg sketches were examples. Neutra congratulated him and defined the studies as a “formal fantasy, [...] exceptionally interesting.” For their part, in the magazine *L'Architecture d'Aujourd'hui* they reviewed the book and commented:

Two illustrious predecessors owe much of their notoriety to their imaginative and visionary sketches: Eric Mendelsohn and Sant' Elia. J. Königsberg shows signs of an undoubtedly overflowing imagination, but it will certainly be daring for him to claim that the integral freedom of forms can be in itself an architecture [...].¹³

Significantly, a copy of the book *Croquis Pro-Arquitectura* was found in the library of the surrealist artist Salvador Dalí. In his copy we see how Dalí himself filled the pages of the book with doodles, because the strength of the sketches stimulated in him “[...] the creation of architectural fantasies that develop, hypertrophying the inventions of this enigmatic architect.”¹⁴

In the second book, *Nuevos cauces para nuestra arquitectura* (Fig.3), Königsberg endorses his rejection of Modern architecture principles.

However, he defines more clearly the sense of criticism in that it is, above all, a problem of language, of an unnecessary reductionism of the possibilities of expression of architecture. Going further, he labels *Funcionalismo* “absurd–comical–spooky” and states that each era has the architecture it deserves. For him, the real problem of architecture is one in which society is concerned with satisfying only the ‘lower’ needs, almost animal, and not the truly human ones which for him derive from the symbolic and spiritual.

To transform society, Königsberg predicts that architecture will have to find a new path that goes hand in hand with the spiritual and materializes through the expressive possibilities of architectural language. In this regard he specifies: “Making our walls, our pillars, ceilings and floors speak to man, sing of how much is lofty and elevated in him.”¹⁵

In this respect, he criticizes the way pillars have been reduced to their minimum expression, they are mere prisms or cylinders that no longer express anything and reminds us that they were: “[...] for millennia the architectural element that characterized and differentiated styles; it was a primordial and irreplaceable element of composition.”¹⁶ Regarding corridors and specifically stairways, he points out how they can be conceived as “well–defined spatial units that envelop the interior spectator [...]”¹⁷

In this second book, they are only 20 sketches, far fewer than in his first, moreover, they appear with a legend below that specifies in many cases their

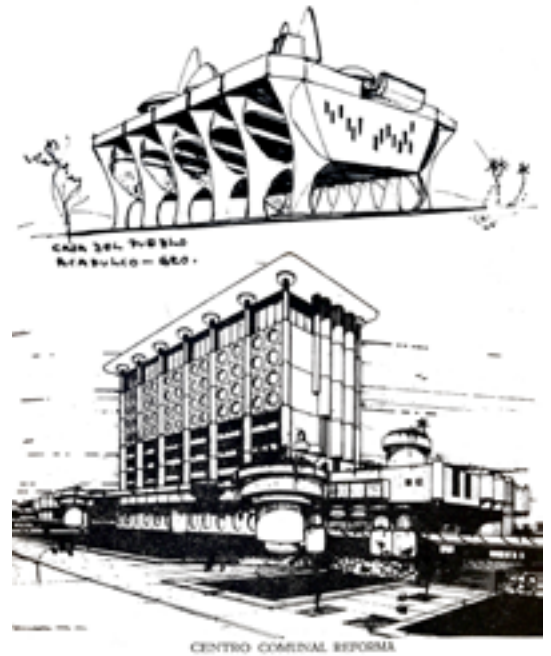


Figure 3. Sketches, Casa del Pueblo and Centro Comunal Reforma, 1971. Credit: Königsberg, *Nuevos cauces para nuestra arquitectura*, 19, 67.

function and location, for example: *Casa del Pueblo en Acapulco*, *Edificio de oficinas en la Zona Rosa*, and *Centro Comunal Reforma*, among others, which evidences a change in his discourse.

Parallel to these books focused on architecture, in his written work we find three other texts that delve into his ideas in a different manner: *Olinka* (1967), *El lugar del Hombre en el cosmos* (1971) and *Urbanismo con sentido común* (1974). The first, it's of singular importance, for it illustrates a project for an ideal city inside a crater in collaboration with Dr. Atl. Regarding the second and third, it can be said that they define his worldview – of Gnostic spirit, and his ideas about the city; in which the criticism to the materialistic and dehumanizing condition of the world is confirmed as well as his longing for an alternative future. He even goes as far as proposing a new capital for Mexico, called *Anahuactlán* situated with a certain resonance to Brasília: “near the centre of gravity of the country.”¹⁸

3. The apartment buildings

In the 60's Königsberg designed four apartment buildings in Mexico City: Unión 24 (ca. 1962), Unión 31 (1964), Minería 20 (1967) and Minería 17 (1968). Of these, three of them forcefully embody his ideals since they are not only expressive in a formal way but also a testimony to his pragmatic character. In which he was able to build a bridge between resting true to his ideals and designing commercial architecture within a capitalist society. This is even more remarkable if we consider the apartment building a very ‘speculative’ typology.

In terms of their general layout, his buildings echoed the ideals that prevailed at the time; thus, they were not innovative in that sense. It is worth remembering that the 60's represented a turning point in terms of the way apartment buildings were design in Mexico; with the preference for direct access tower blocks instead of corridor and laminar blocks; but also, and more significantly in terms of the transition from being buildings intended for rent to being now mostly for sale.

Regarding their overall composition, they follow a traditional scheme, in the sense of having a base, shaft and entablature. However, in an unusual way, their base is pushed behind the entrance and garage gates, freeing up the pillars, in such a way that they remain the protagonist element on the ground floor and produce one of the most unique exterior features of the buildings (**Fig 4**). However, the facades design is atypical, since the elements that comprise it: pillars, gates, balconies, windows, and cornices pursue the idea of fragmenting the plane, generating a markedly three-dimensional and ornamental set, which distinguishes this architecture from much of other architecture of the period that pursued continuity, uniformity, and neutrality. In Königsberg facades we observe an integrated ornamental design.

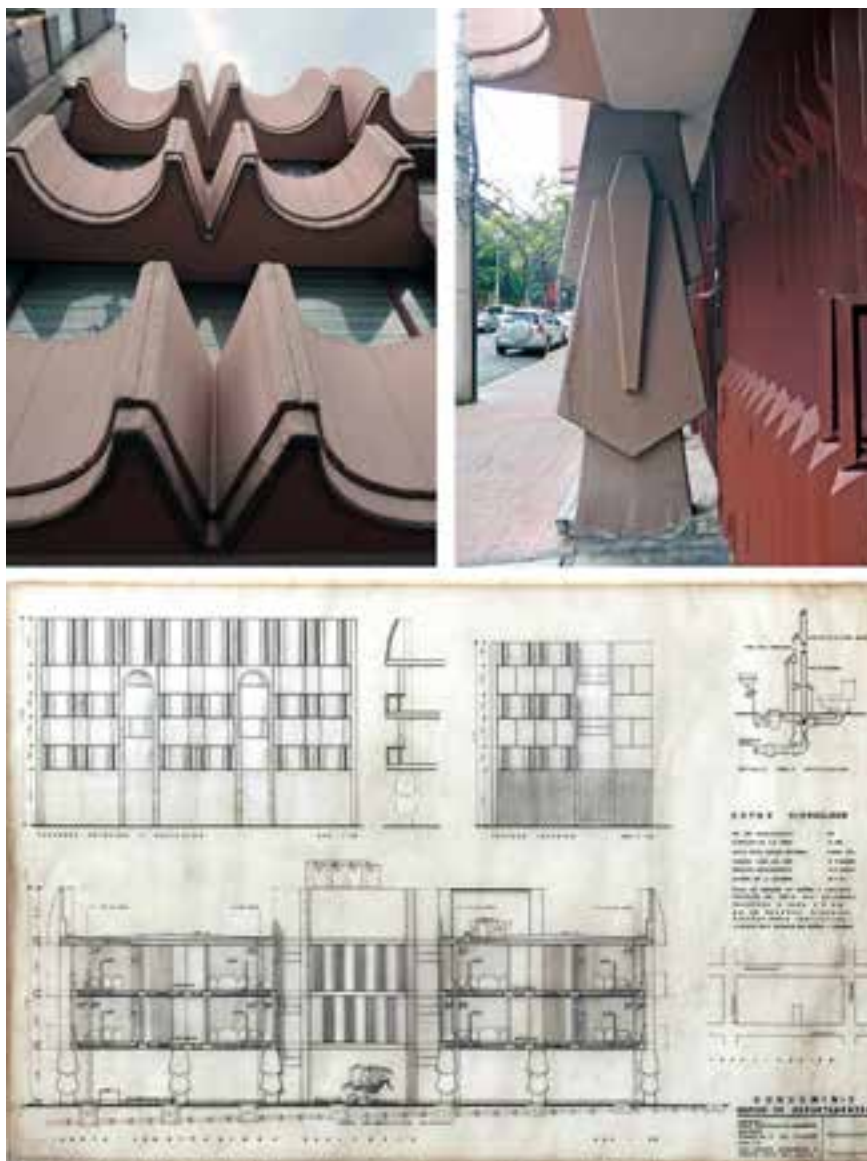


Figure 4. Photo, façade, and column detail, Minería 31, 2021; Architectural drawings, Minería 31, 1967.
Credit: Photograph's by author, architectural drawings AJKK.

Regarding the interior distribution of the apartments, we can say that they are practical and rational. In them, we perceive an accepted modernity. Hence, we envisage a certain gap between the level of detail and formalistic aesthetic of the facades, and the much more purposeful solutions of the architectural floorplans. Even so, besides the significance behind the pillar design in all

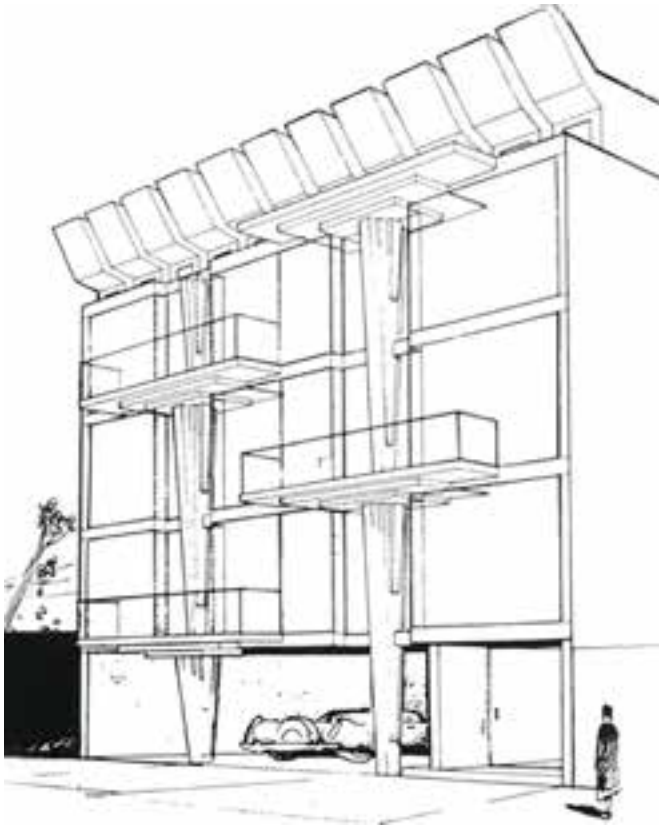


Figure 5. Sketch, Minería 20, 1966. Credit AJKK

four apartment buildings the staircase plays an important role, being the octagonal staircase of Minería 20 the most singular among them.

4. Conclusion

About Königsberg we can confirm that he tried to change the course of architecture in Mexico, envisioning what he called *Nuevos cauces*. However, it was not an aspiration unique to him, but rather common to many other of his contemporaries, a generation that anticipated change. Hence, we esteem Königsberg's main contribution lies within the specifics in which he sought change: his architectural forms; "a very marked decorative geometricism, a step ahead of art deco."¹⁹ Yet, as we observed in his apartment buildings, a gap

remains between the characteristics of their facades in comparison to rest of the buildings, which shows us a major conceptual compromise. Something he recognized and would justify under the slogan a "viable fantastic architecture." In any case, Königsberg figures as a visionary architect with a singular oeuvre that remains to be thoroughly assessed. Even so, both contributions, his apartment buildings and his architecture on paper are evidence of an effervescent period of architectural design in Mexico and a legacy to be recognized.

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Notes

- 1 Ramírez, *Edificios cuerpo*, 79.
- 2 Dr. Atl's (Artist Gerardo Murillo) opinion regarding the texts of the book *Croquis Pro-Arquitectura*.
- 3 Königsberg, *Olinka*, 33.
- 4 As González Pozo points out in his text: "La arquitectura a contracorriente". One of the few texts written by others that refers to Königsberg's work. Alberto González Pozo, "La arquitectura a contracorriente", in *La arquitectura mexicana del siglo XX*, 141–150.
- 5 Philippe Johnson's speech at the Gold Medal Award Ceremony, American Institute of architects, *AIA Journal*, July 1978, 18.
- 6 Rita Eder, *Desafío a la estabilidad*, 24–45.
- 7 As in the two condemnatory conferences dictated by Juan O'Gorman on *Functionalism*: "Mas allá del Funcionalismo I y II," given in 1955 and 1962 respectively, but also, the lectures of José Villagrán García regarding the formal crisis of architecture dictated in 1961 and published in *Cuadernos de Arquitectura del INBA* no. 4 in 1962.
- 8 Montaner, *Después del movimiento moderno*, 56.
- 9 In the case of Mexico, the contributions of two architects: Carlos Lazo and Juan O'Gorman, both with architectures interwoven with the natural environment; and on the international scene two other figures: Richard Neutra with his *Biological Realism* and Frank Lloyd Wright with *Organic or Intrinsic architecture*.
- 10 Architects that González Pozo defined as the 1931 generation. Both Tonda and Königsberg were born in 1931, while Larrosa was born in 1929, nonetheless, we can consider them all not only contemporaries but also close in their architectural pursuit.
- 11 Königsberg, *Viajes al más allá*.
- 12 Ibarra García, *Mathias Goeritz*, 77.
- 13 *L'Architecture d'Aujourd'hui*, September 1959.
- 14 Ramírez, *Edificios cuerpo*, 79.
- 15 Königsberg, *Nuevos cauces para nuestra arquitectura*, 31.
- 16 Königsberg, *Nuevos cauces para nuestra arquitectura*, 50.
- 17 Königsberg, *Nuevos cauces para nuestra arquitectura*, 47–49.
- 18 Königsberg, *Urbanismo con sentido común*, 113.
- 19 González Pozo, "La arquitectura a contracorriente", 145.

The Hotel and The Road: From Singular And The Local Yachting Club to Interconnected and the Continental Pan–American Teodoro Roosevelt Road; A Transformation Of an Anonymous Landscape; 1946–1956

Logan Leyton Ossandón

PONTIFICIA UNIVERSIDAD CATOLICA DE CHILE

Two infrastructures over the same territory; one for pleasure and tourism, the other for movement and productivity. In them, the pretension of freedom and control is crossed, of freedom for new ways of life, of conquest and displacement for the habitability of indomitable territories. The objective is to bring to light the relevance of the Yachting Club as a unique architectural piece of modernity for pleasure in Chile and, at the same time, its relations between another infrastructure, of movement and productivity, apparently unconnected. The infrastructure of movement and productivity is also one of conquest and control, and it is none other than the Teodoro Roosevelt Pan–American Road; a network of highways that unites all Latin American countries. From Alaska in the north to Chiloe in the south. Thus, this continental–scale road gave an unexpected turn to the destiny of the solitary architectural piece of leisure and tourism of small communal scale, as well to its city of placement.

1. The rise of Chilean hotel industry and Martín Lira Guevara

The rise in the production of tourist and leisure infrastructure in Chile began in the 1930s. At that time, society underwent a renewal and modernization of its lifestyles: an imaginary of outdoor life was created, and vacations and sports became part of this imaginary as everyday activities. The Chilean State played a leading role in this transformation, through financial and administrative support, or directly as a promoter of the idea of tourism and its implementation. By 1928 Ferrocarriles del Estado and the government of President Carlos Ibáñez del Campo undertook an ambitious plan of transport infrastructure and movement of railway lines, which “allowed for more than 4400 km of railway networks by 1936” (Saric: 2008, 32). Therefore, it can be stated that railroads, railways, initiated the development of tourism in Chile changing the reality of the conditions of occupation of the territory. They form a longitudinal route that complements the transversal network that had already been consolidated at the end of the 19th century, thus linking an inland city with a coastal city, central cities with others near lakes, coasts or mountains, thus integrating the territory (Salazar: 2020, 5). In each city a station, and next to it; the Grand Hotel, all with a strong economic connotation, thus opening the summer capacity (Salazar: 2020, 5).

In 1939, during the government of President Pedro Aguirre Cerda, the Corporación de Fomento de la Producción (CORFO) was created, which promoted tourism through the creation of companies and loans, tariff franchises, hotels and travel agencies that incorporated the company Ferrocarriles del Estado into this work. In 1944, and after the formation and dissolution of different hotel companies in the country, the Consorcio Hotelero de Chile was created, composed of Ferrocarriles del Estado, the Banco del Estado and the Treasury (Saric: 2008, 32). This company finally gave rise in 1951 to Hotelería Nacional S.A., (HONSA), the most important and longest lasting of all, whose objective was the construction, maintenance and administration of state-owned hotels throughout the country with a total of 39 hotels and more than 120,000 m², all until 1985, when it was liquidated.

In addition to this, the *Guía del Veraneante* and *En Viaje* magazines, both published by Ferrocarriles del Estado, played the role of apparatus, in Agamben's sense, which positioned the image of the country as a territory full of natural and untamed landscapes. *En Viaje* "accompanied the tourist formatively, it wanted to be mainly a form of education and promotion about the virtues of national tourist destinations, the habits of modern life, as well as international events and trends" (Galeno:2013, 96). All these policies contributed to colonize and control the variety of territories in the country, whether by land or sea, at the same time, they consolidated the image of the country in the international arena as a tourist destination where in each relevant city there was a hotel, and this was, a piece of modern architecture that dominated the landscape. Thus, "the hotels were located in remote landscapes, where nature is made present by the imposing mountain, the reflection in the lagoon or lake, and the lush forest (Cortés, Puig, Vergara: 2013). The architecture is portrayed "inserted in a distant and uninhabited landscape, where nature shows its splendor, which has characterized the tourist image of Chile until today." (Cortés, Puig, Vergara: 2013).

Therefore, tourism as we know and understand it today, is a genuinely modern activity, as were the railway interventions at the territorial level; a completely new way of occupying and moving through the territory. Thus, modern tourism was associated with cultural activities, such as the birth of leisure time, vacations as a social right and travel as a widespread activity in the different strata of society. In this way, past and long institutionalized cultural forms were overcome; leisure understood as associated with moments of reflection, vacations as a privilege, both activities reserved only for a few belongings to the elite, and travel; as an almost exclusively religious pilgrimage (Cortés: 2014,19). In this context, architect Martín Lira Guevara worked on multiple tourism projects and stood out as one of the most relevant figures of modern hotel architecture. He was born in 1906, graduated as an architect from the Universidad de Chile in 1926. He was a lover of snow, skiing and outdoor life. Perhaps because of these hobbies, he was closely involved in the hotel programs of his time. His projects marked the tourist imprint of different cities in the country and were built in the period of the leisure infrastructure

production boom and the Grand Hotel format. Among these stand out: the Portillo Hotel de Los Andes of 1941–1949, the Antofagasta Hotel of 1950–1953, finally, of a different typology and small scale, the Yachting Club La Herradura de Coquimbo of 1950–1951, which “refers to what will be a new generation of inns during the fifties and sixties” (Perez: 2017, 133).

2. The Club

In 1951 was inaugurated the Yachting Club of La Herradura, owned by the businessman José Claro. It is located on the beach of the same name in the commune of Coquimbo, in the so-called Norte Chico area of Chile, with a medium temperate climate. The Club was the smallest project of architect Martín Lira. It is a long building with an inverted butterfly roof and slight slopes, which project the image that two asymmetrical bodies compose it. Both bodies rest on a single base that in turn rests on two rocky promontories that protrude from the ground level. The first and smaller part of the building is anchored to a rock that is on the coastal terrain of the beach, the second and longer one rests on a rock that rises from the sea, and between them, a distance that allows water to pass under the building. This is accessed through a long ramp parallel and out of phase with the main volume, which geometrically is in line with the slope of the inverted roof. It is born in the sand of the beach and away from the rocks where the building rests. These decisions extend the club from the sand of the beach to insert its main body in the sea. The operation is intensified with a 40-meter-wide pier, thus achieving a total extension of 120 meters between its three parts: pier, body and ramp (Fig. 1).

On the north façade, both rocks were left alive and exposed, while on the south side and under the slab, spaces were provided for boat storage and

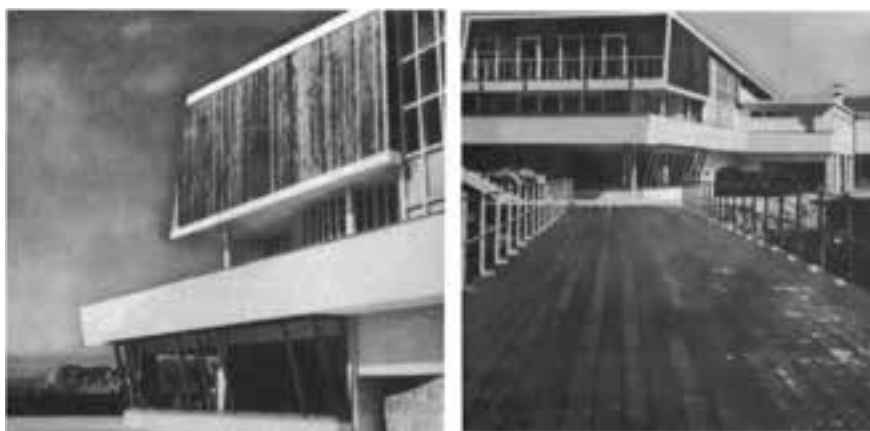


Figure 1. Osvaldo Sagúes, Yachting Club at the time of its inauguration, *Urbanismo y Plan Serena*, Talleres del Instituto Geográfico Militar, c1956, Santiago, Chile. Personal collection of Logan Leyton.

a wide floor was built, which is related to a dock for nautical sports (Torrent: 2008, 44). The main body presented a clear rational conception, composed of the first block with a shorter and lower roof that housed four suits of triple capacity. This was followed by a long and spacious double-height hall that was attached to the south by a suspended volume where the kitchen was located. Finally, the long hall ended in a loft overlooking the sea. All these rooms were connected by the ramp that, like a *promenade*, went up in continuity with the main floor, running to the end of the hall where it allowed to surround the entire volume with a large perimeter terrace or down to access a small lounge that extended over the sea thanks to the long pier. The entire upper level of the main volume was covered with glass and dark wood in natural color, while the main and lower levels had white plastered concrete walls, thus creating a language of both contrast and dialogue between materials and forms, modern and vernacular, architecture and landscape.

Unlike his other two larger and more massive works –the Antofagasta Hotel and the Portillo Hotel– the Yachting Club was a small and precise piece. Moreover, it differed from the other two in the way it worked with the site: the Antofagasta Hotel was a boundary between coast and sea, and the Portillo Hotel was located alone in the middle of the snow and mountains. On the other hand, the Yachting Club was born from the sand, perched on the rocks, crossed by the sea underneath and ended on the waves of the Pacific. These operations, truly more daring than those that constituted Lira's previous imposing and massive works, showed an indissoluble relationship between work and place, with geography, not simply as a stage. At the same time, with its architecture and spaces, the club proposed new relationships between the forms of leisure and the good life. But mainly because, in it, the landscape was not assumed as a background, but as a place capable of being activated, lived and enjoyed through an architecture for people (Torrent: 2008, 47). However, all this indissoluble activation between place and architecture went unnoticed by almost the whole country, and if it was known, it was only by a few local walkers.

3. The Port, the Beach and the Plan

In the mid-1950s, the port of Coquimbo was a small settlement in the province of the same name, located 465 km north of the country's capital, Santiago. In those years, Coquimbo was far from the political and economic center as well as from the road infrastructure that connected the country. The only way to Santiago was through a railroad road with a route that dated from colonial times and that, in spite of its intricacy, crossed the center of the city. To reach the capital, one had to go first to the city of Ovalle, located 90 km east of the port in a journey that lasted 10 hours. Ovalle was not only geographically in the center of the province but also in the center of the road that connected the country and, therefore, in the center of development. A trip from Coquimbo to Santiago started in the direction of Ovalle, continued in a southerly direction passing through the cities of Combarbalá, Illapel and

Salamanca, all of which were larger, more important and developed, and took two days. If the trip was in a south–north direction, that is, from Santiago to Coquimbo, once arrived in Ovalle, a minor and inefficient detour had to be taken, since it was geographically backward to reach its destination. This road was long and complex due to its geographic conditions, since it crossed transversely the valleys and hills of the area. These apparently disadvantageous conditions positioned Coquimbo, the *Balneario de La Herradura*, its beach and the Yachting Club, not only far from the centers of interest, but also in a relative anonymity. One that guarded the conditions of virgin, bucolic and untamed nature of the beach.

Consequently, “the omission of any pictorial representation of the northern area should not attract attention. Until 1943, the north was completely disregarded by official tourist propaganda” (Booth, 2008). The Summer Visitors’ Guide itself made it clear, in its first editions, that the entire area between the provinces of Tarapacá and Coquimbo, that is, the whole of northern Chile, lacked any real points of interest for tourists. It was practically disconnected from the national railway system and did not have an infrastructure in accordance with the tourist imaginary that had been installed. With all of the above, it is feasible to think that the logistical arguments that were presented hid a more complex and difficult judgment to transform in the construction of the imaginary of rest areas and tourism, and that is that: by the mid–twentieth century the barren and arid aesthetics characteristic of an extensive region that was summarized in the Atacama Desert, failed to penetrate the imaginary or the considerations of the north as an attractive space from the landscape point of view (Booth: 2008). However, “the favorable climate of the northern cities began to be published as a benefit to the tourist’s health [...] conditions characteristic of modern salubrity” (Galeno: 2013, 98).

Thanks to the above, the Club became the spearhead of a tourism plan with “alternative conditions to urbanity; the conformation of a place that the mass imaginary demanded: nature, ideal climate and warm waters” (Torrent: 2017, 183). Those conditions that had remained anonymous, were now a reason for desire. The beach of La Herradura was unknown and little visited, a small forest surrounded it and there was no road to reach it. It was not a pole of desire but of daily and solitary strolls. The local people lived and visited it in large groups because of its remoteness, but isolated from each other, and some dressed on Sundays to walk around it. This tourist plan that sought to give place to this imaginary of landscapes and outdoor life was part of a larger one: the Development and Urbanization Plan for the Province of Coquimbo.

This was developed between 1948 and 1952 and promoted by the President of the Republic of Chile, Gabriel Gonzales Videla, a native of the area. This policy was the first and so far only attempt in Chile to decentralize state investment on a large scale, generating an economic, cultural and tourist pole in an area outside Santiago, all with clear modern implications in its conception. “The city would be the center of the new economic activity and at the same time articulation of a nascent network of landscape exploitation of the regional context” (Torrent: 2017, 183). Based on the territory’s own resources, combined

with a sustainable development management for the production and economy of the province, and which was to serve as a model to be replicated, a situation that never happened.

Although it is the only one of its kind in Chile, it had been little studied due to the erroneous idea that it was limited to the city of La Serena and the neocolonial stylistic implications that it imposed on the foundational center of that city. The distance of the club from the center of La Serena gave it stylistic freedom for the operations described (Pérez: 2017, 133). However, neither the plan nor the formal freedoms were sufficient, and it was still known by very few people, as it was never published in the state railroad devices, the magazine *En Viaje* or the vacationer's guide, in fact there was no explicit formulation of an anticipatory nature that allowed to imagine, or previsualize, the different future that the plan proposed (Torrent: 2017, 183). Something more was needed. Despite this, the president was very clear; La Serena and Coquimbo "are called to be a powerful center of tourism" (González Videla: 1952, 15).

4. The Road

In 1956, a road infrastructure project was inaugurated between Coquimbo and Santiago, which was part of a larger one: the Pan-American or President Roosevelt Route. This work is an interconnected and continuous system of highways that links almost all the countries of the continent with more than 18,000 km of extension. It was conceived at the V International Conference of American States in 1923. The Coquimbo-Santiago section began with the approval of funds for its execution in 1945 by President Juan Antonio Ríos. Initially it was intended to replicate or at least assume a layout similar to the colonial one that already operated in the interior of the region, but despite the advantages of "the coastal road, in technical and economic conditions, to the central road, there were protests from the neighbors of Ovalle, Combarbala and Illapel" (Escobar: 1945, 3 and 4). This led to a search to avoid the major geographical features of the center of the province, associated social problems and "the definitive acceptance of the route along the coast" (Torrent: 2021, 123). Therefore, by 1945 the route had already changed (**Fig. 2**). Its construction was carried out in 1946 by President Gabriel González Videla and its inauguration in 1956 also by him. The Pan-American Road was built with the highest technologies of the time, which the North American allies had at their disposal. They provided support, guidance, supervision and machinery, but the labor was local.

The road has much deeper implications for different actors, in some cases even unthinkable. It is perhaps born from the Monroe Doctrine of 1823 of the U.S. President, James Monroe, who announced with his synthetic formula, 'America for the Americans', a political-military disposition to oppose any attempt of external, it means European, intervention in the continent. From which, a whole program of control and appropriation of Latin America by the United States was built. This was followed by the creation of the Pan American



Figure 2. Author Revista de Caminos, Republic of Chile, Sectors of the Pan-American system of highways 1951. Revista de Caminos, 1951, first quarter. p 98.

Organization, with headquarters in Washington, in 1890, the famous corollary enunciated by President Theodor Roosevelt in 1904, the V International Conference of American States in 1923 and the First Pan American Road Congress held in Buenos Aires in 1925.

The U.S. domination was affirmed through numerous military interventions and, at the same time, through loans and investments that progressively ensured an important hegemony over the weak and unstructured Latin American economies. A control, of course, differentiated according to each nation. Dependence on the United States has been multidimensional in Latin America; in diplomacy, the armed forces, politics, the economy, trade and cultural models (Moreno: 1980, 23). Although it is true that it is in the military field where dependence on the US has been most clearly expressed, perhaps its importance is greater in the cultural and political spheres; "If there has historically been dependence on North America, it has been so, and to a great extent, because the so-called Latin American countries have made themselves culturally and politically available to be so [...]. And the Latin American countries have suffered dependence because they have also invoked it". (Moreno: 1980, 23–24).

With elites, power groups, intellectually and affectively dependent on everything foreign,

whether European or North American, which cause a radical disarticulation of Latin America. Nevertheless, this highway changed the route that united Chile, displaced the centers of development in the province and literally put the city of Coquimbo, the beach of La Herradura and the Club on the map, placing them in sight of every traveler who needed to go from Santiago to the north of the country and vice versa. But this time, with a different program.

5. The Hotel

The life of the Yacht Club with this program was short (**Fig. 3**) and in 1956, only five years after its inauguration, the project to transform it into a hotel began, with Lira again at the helm in conjunction with Aarón Reyes Azócar. That year

coincided with the inauguration of the Pan-American or President Roosevelt Road. The great affluence of vehicles and people that accompanied the bay of La Herradura thanks to the Road gave a new beginning to the Yachting Club, with another program and another name; El Hotel Bucanero. The conversion project lasted six years and was finally approved in 1960. The operations were complex and not as precise as the original ones, the club was not thought to receive more rooms, but the great ship with its double height was flexible, and Lira together with Reyes Azocar were skillful. Two operations were added to the *promenade*; the first was to add a vertebra of concatenated suits that accompanied it along its entire length and on the main level of the work. The second was an interior enlargement of the balcony located on the third level that dominated the double height, the promenade itself and the sea (**Fig. 4**).

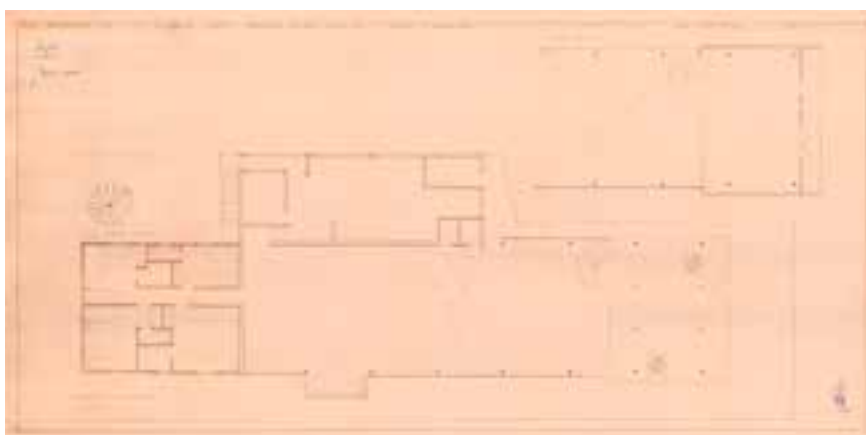


Figure 3. Martín Lira, Aarón Reyes Azocar, Plan 1 of 2, existing location Yachting Club La Herradura, c1956. Dirección de obras Municipales, Coquimbo, Chile. Personal collection of Logan Leyton.



Figure 4. Martín Lira, Aarón Reyes Azocar, Plan 2 of 2, proposed location ex Yachting Club La Herradura now Hotel Bucanero, c1956. Dirección de obras Municipales, Coquimbo, Chile. Personal collection of Logan Leyton.

Initially, these operations were considered by the historiography of Chilean architecture as improvised operations that deconfigured the rationality and original precision of the Yachting Club. However, the plans recently found by the author at the Coquimbo municipal works department (illustrations 16 and 17) show that first, Martin Lira was part of the project, and second, that these operations were limited to the interior of the great ship, without touching the exterior image or changing the original site operations that astonish us so much and for which we positively evaluate this small but daring work. This recent discovery, January 2020, allows us to affirm or at least classify as canonical the operations of change of program and interior extensions of the yacht club to hotel, which allows us to look with new eyes the 5 short years that its original program had vs. the 30 years that it remained unchanged with its new destination and program.

6. Conclusions

During the 1960s and 1970s, the Bucanero Hotel lived its golden age, kept its main operations intact and was the protagonist of many photographs as a testimony of the memories of vacationers who came to the area. However, what stands out is a series of postcards that promoted the arrival of more tourists and leisure lovers to the area. Thus, the bay of La Herradura and the hotel became part of the imaginary of rest and leisure, with its calm waters and an alternative life to the city (**Fig. 5**). The Pan-American or Theodore Roosevelt Road was not built by the United States, but it was conceived and



Figure 5. Unknown author, south view of Hotel Bucanero or Yachting Club La Herradura, postcard collection of La Herradura Bay as a tourist destination, c1960–1970. Postcards from Editora Grafica Codarte S.A.I.C. Viña del Mar, Chile. Personal collection of Logan Leyton.

supervised by its state. It is naive to think that this was only to provide the inarticulate Latin America with a faster interconnected transportation route. However, its execution changed the status of a beach from an anonymous spot to an object of desire, and that of a city, Coquimbo, which went from being at a distance to being today the fourth largest urban area in Chile. These changes undoubtedly affected the Yachting Club, changing its program and becoming a hotel, however, in the collective imagination it is still the summer postcard of many tourists who visited it in the 60s and 70s. The work began its life lost on a lonely beach, but with the arrival of the highway it became a relevant actor in the image of freedom that leisure and post-war tourism fostered in modern societies. Since the 1980s, the hotel underwent profound alterations, mainly exterior, that deconfigured its initial image, to fall today in a total abandonment, perhaps condemning its useful life, but not the memory of leisure and tourism that is present in postcards and photographs of vacationers who immortalized their passage through the Teodoro Roosevelt Road, the port of Coquimbo, the bay of La Herradura beach, the Yachting Club and the Hotel Bucanero.

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The urban cultural heritage in the suburbs of Rio de Janeiro: APAC Marechal Hermes and the Modern social housing as cultural preservation display in marginal spaces

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This paper investigates the effectiveness of preservation and conservation measures for urban and cultural heritage site spaces located on the periphery of the central areas, considering its insertion in the Latin American challenges to preserve its cultural heritage. The usual discourse on cultural preservation states that conserving such cultural buildings and landscapes is more precarious when situated in non-central localities, where urban public policies for cultural preservation would be insufficient. The hypothesis is that such factors in this discourse could contribute to a systematic deterioration and erasure of historic buildings and cultural landscapes located in marginal spaces. Therefore, we investigated Marechal Hermes, Rio de Janeiro's first suburban district labelled as *Área de Proteção do Ambiente Cultural* – APAC (Cultural Environment Protected Area), in 2013. This district's architecture and urban form express an urban ideal in the 20th century and the first State intervention to build a Modern social housing complex to minimise the persistent housing crisis in Brazil's former capital. The research method involves investigations concerning this APAC, Rio de Janeiro suburbs' urban form and landscape, public and urban policies regarding the district and the city. These procedures consider the theoretical, iconographic, cartographic and journalistic sources about this subject. We point out that the continuous displacements between central and margin spaces are the basis of the idealisation of the spaces and intentions of these projects. This process participates in the contemporary perspectives of cultural heritage policies in Brazil. Although they legitimise and recognize the cultural heritage of marginal spaces, policies are insufficient to preserve and conserve their built environments.

1. Introduction

Latin American cultural heritage preservation faces significant contemporary challenges regarding the diversity of their building environment and the narrowness of their public conservation policies. In order to examine the status of these challenges concerning the effectiveness of preservation and conservation measures for urban and cultural heritage sites located in marginal spaces surrounding central spaces and centralities, we investigated

more specifically Marechal Hermes, Rio de Janeiro's first suburban district labelled as *Área de Proteção do Ambiente Cultural* – APAC (Cultural Environment Protected Area), in 2013.

It is essential to point out that Marechal Hermes is a special district in suburban Rio de Janeiro. The protection area mentioned above concerns the first State Intervention to build a Modern social housing complex in 1913 when Rio de Janeiro was Brazil's capital. It is remarkable that a few years later, in 1937, the government founded the first Brazilian agency for cultural heritage preservation, and it will establish strong bonds with the Modern Movement.

Therefore, we can consider the Marechal Hermes project to testify to the early 20th century Brazilian new urban ideal to respond to the persistent housing crisis in its former capital.

In order to accomplish this paper's primary target, we studied the spatial and morphological transformations in Marechal Hermes district's landscape and urban form during the 20th century, as well as the 1910 architectural plans for the workers' village, the 1930–1960 urban reforms and the Modern housing and cultural buildings projects. These historic perspectives allow us to take a new look at APAC Marechal Hermes legislation and its social housing phases. In this sense, we choose to focus on cultural heritage representing the collective memory of the marginal space population, the historical and socio-economically vulnerable one. Consequently, we raise urgent questions regarding the effectiveness of urban public policies targeting the preservation of historical urban and cultural landscapes.

In this way, this paper investigates the spatial and morphological transformations in Marechal Hermes district's architecture and urban form during the 20th century, considering two moments: 1910's Marechal Hermes proletarian villa designed by military engineer Palmiro Serra Pulcherio and 1930s *Vila 3 de Outubro* housing and cultural projects by Modernist architects. Our approach method also involved theoretical, iconographic, cartographic, and journalistic sources of Rio de Janeiro and Marechal Hermes district related to their urban form and urban public policies in order to establish whether the condition of "unseen display" (Oliveira, 2009 and Fernandes & Oliveira, 2010) repeats once again with the APAC legislation in Marechal Hermes.

Considering that cultural heritage preservation and urban policies could be shifting intentions from central spaces and centralities to marginal spaces after so many decades of oblivion and contempt for such legacy, two questions arose: What is the role of these policies in the contemporary world as they are now focusing on alternative cultural heritage and evoking narratives? Moreover, what should be these policies? Even if they imply broader issues than this paper limits, we should expect that this paper's discussion could contribute to understanding the state-of-art of preservation, conservation and management of marginal spaces' cultural heritage within Brazilian and Latin American reality.

2. Central Spaces, Centralities and Marginal Spaces: the Carioca Suburb

The theoretical background of our subject tried to articulate the usual discourse on cultural preservation and systematic deterioration and erasure of historic buildings and cultural landscapes in marginal spaces. More specifically, those concerned with the preservation area of Marechal Hermes and its Latin–American, Brazilian and Carioca cultural context. Thus we started by reviewing the literature according to central areas and suburbs’ historical formation in Rio de Janeiro, which allowed us to propose an understanding of central space and marginal space according to our theme.

Central spaces, centralities and suburbs have different meanings in the different cities and cultural contexts (LEAL DE OLIVEIRA, 2019; PEREIRA, 2014; SANTOS, 2019.) Rio de Janeiro’s original central nucleus remained the most significant metropolitan centrality. It concentrated the main functions and infrastructure for three centuries until the mid–1800s producing fragmented territorial dispersion and a polynucleated urban fabric (ABREU, 1987; BORDE, 2006). From the 1840s onwards, urban expansion followed the tram and train tracks creating connections and new centralities in non–central localities (SANTOS, 2019). The first decade of the 20th century signalized the beginning of significant urban interventions in the central area, followed by a legal restriction of the residential function in this one area (BORDE, 2006). The poorest population expelled from such profitable areas started a surviving process that led to the formation of slums and tenements in areas around central neighbourhoods and occupations in more distant areas unveiled by the railway system’s development (SANTOS, 2019; PEREIRA, 2014). Slums (favelas) correspond mostly to informal areas relegated to their fate. Occupations in more distant areas became later suburban districts, and they were mainly designated for industrial workers as their residential areas, north and northeast of central Rio de Janeiro (FERNANDES, 2011; SANTOS, 2019). There is no need to say that a few years later, private and state investments took the other way shaping a wealthier residential area in the South Zone.

According to this brief introduction, we can understand Rio de Janeiro’s marginal spaces as an antinomy of central spaces considering infrastructure, urban equipments and valuable location. The lack of the first two items together with the assumption that marginal spaces have few (or even none) cultural elements considered worthy of preservation and conservation by public policies for cultural heritage contributes to a stigma of “degraded, dangerous and sad places” for Rio’s suburbs (FERNANDES, 2011; PEREIRA, 2014).

The urban legislation ensured the maintenance of this geographical and socioeconomic distinction by establishing functional zoning that strongly discouraged residential use in the central area, confirmed as the financial and business centre (BORDE, 2006), and considering the North and Northeast areas as residential spaces for the working class (SANTOS, 2019). Notwithstanding, Rio’s suburbs became the original and paradigmatic land

for formerly Modern urban and architectural projects guiding the city's urban development (FERNANDES, 2011; FERNANDES & OLIVEIRA, 2010).

Thinking about housing issues, many of these suburban railway areas turned out to be, in the upcoming decades, privileged locations for planned workers' and hygienic villages and large-scale housing complexes (BONDUKI, 2014; FERNANDES & OLIVEIRA, 2010). These unique experiences, such as Realengo Residential Complex (1940), by architect Carlos Frederico Ferreira, and Penha Residential Complex (1947), by the Roberto Brothers architects (ARAVECCHIA-BOTAS & NASCIMENTO, 2019), created a specific social and identity perspective about these spaces (FERNANDES, 2011).

Until the 1950s, the federal government focused on public policies and housing finance agencies for the suburbs. As a result, many architects, urban planners, engineers and government officials participated in housing projects for suburban areas in large Brazilian cities (ARAVECCHIA-BOTAS & NASCIMENTO, 2019; BONDUKI, 2014; FERNANDES & OLIVEIRA, 2010). They designed these projects aligned with the Modern Movement principles to overcome social inequalities of vulnerable population segments. The ultimate target was to create a new industrialised and modern prospect for Brazil (BONDUKI, 2014; SEGAWA, 1997).

However, in the 1960s, Rio fell into federal government oblivion: Brasília became the new federal capital in 1960, and four years later Brazilian coup d'état radically transformed the scenario (SEGAWA, 1997). The mitigation of inequalities ceased leaving behind the modern principles and the ideal suburban projects.

3. Urban Public Policies for the Brazilian built Cultural Heritage in contemporary cities: APAC legislation in Rio de Janeiro

In the 1970s, the concept of contemporary cities emerged, signaling the new challenges worldwide, such as production structure transformations and the upcoming neoliberal policies. The new urban system in great global cities reinforces the differences between its components, as stated by Santos (1999), Sasken (1999), Lefebvre (2001), Arantes (2001), Castells (2002), Maricato (2001), Borde (2006), Harvey (2012), Rolnik (2019). We observed a weakening and impoverishment of the state and the population.

This framework began to change in the 1990s when new urban demands arose. The resumed urban interventions were associated with strategic plans and public-private partnerships to realize large-scale urban renewal projects based on information technology and communication networks (BORDE, 2006). As a result, large-scale urban projects become an instrument to emerge more attractive cities and secure capital flows (CHOAY, 2011). Concepts such as renovation, rehabilitation, re-qualification, and urban revitalization, for example, are emblematic proposals when considering the

potential to transform spaces, buildings, and the urban form into cultural heritage assets (CHOAY, 2001; BORDE, 2006).

Nevertheless, creating remarkable and exceptional places for the global cities' cultural industry reinforces the differences between central and marginal spaces as once more traditional central areas became the privileged location for these projects. This process promoted a remarkable contest opposing traditional preservationist segments and the audience of consumers, tourists attracted by the industry of goods and services contemporary conceptions (CHOAY, 2011). Cultural heritage concepts and measures should understand how flexible, or not, the perception of cultural heritage protection in contemporary cities could be. The past seemed to represent somehow a compensational resource to the flow of changes in an accelerated rhythm (HARVEY, 2012 [1989]; HUYSEN, 2000).

This excessive appreciation of the built past is not necessarily interchangeable with practical preservation and conservation through cultural and historical buildings. The contemporary cultural industry takes over such buildings for cultural mass commodification (CHOAY, 2011). Therefore, legal instruments for preservation and conservation focus on remaining buildings with the most potential power to attract the most significant number of visitors to experience the exceptionality of those spaces. In this sense, the predilection to protect "more expressive" buildings with remarkable cultural and historical assets is noticeable. Also, public and management urban policies have a crucial role in maintaining and financing such places.

Public and urban policies and legislation for cultural heritage protection reflect what is understood by the "worth of preserving cultural heritage", and they favour actions in places where a considered "relevant cultural heritage" is located.

The preservation of cultural environments and historical architectures is undoubtedly a recurring concern of many contemporary cities worldwide. Cultural environments relate to local culture and history, a community's or a nation's identity and social values that people want to preserve for the future by the union of the landscape's natural elements and the changes made by the human occupation of that space through time. "Cultural environments" guide Rio de Janeiro's cultural heritage preservation and conservation legislation (IRPH, 2012). This notion aims to protect the entire cultural environment, including cultural and historic architecture and urban form; thus, it understands the landscape as cultural heritage (IPHAN, 2009).

However, "cultural environment" is not wholly apart from the "cultural heritage" concept since it is a notion very close to the "cultural landscape" category defined by World Heritage Convention in 1992. The "cultural landscape" is a category created by the United Nations Educational, Scientific and Cultural Organization (UNESCO) concerning a particular category for "cultural heritage" and legal instruments aiming to recognize and protect "cultural landscapes" (UNESCO, 2008). The first Article of the Convention defines "cultural

landscapes” as a testimony of the evolution of human society and settlement over time. Local physical constraints and (or) opportunities presented by its natural environment and successive social, economic, and cultural external and internal forces from the location could influence and shape each landscape. The category “cultural landscape” embraces different expressions of the interaction between human cultures and their natural environment; it broadens the concept notions between “cultural heritage” (when related to physical attributes, such as architecture and urban design) and “natural heritage” (natural environment)..

The IPHAN Ordinance no. 127/2009 officially established the legal instrument to define and protect Brazilian cultural landscapes at a national level (IPHAN, 2009). In Rio de Janeiro, the municipality has several legal instruments to preserve architecture and landscapes. Since the 1980s, some experiences have adopted a more comprehensive notion of “cultural heritage” as an environment, associating architecture, urban form, and landscape as a single entity and, therefore, worthy of preservation (BORDE, 2006; CARLOS, 2008.).

This notion of “cultural landscapes” is highlighted here since it has its influence on the understanding of the “cultural environment” definition by “*ambiente cultural*” considered for cultural heritage protection legislation by Rio de Janeiro’s municipality, particularly by APAC legislation (*Área de Proteção do Ambiente Cultural*, in English, Cultural Environment Protection Area). The APAC legislation is nowadays the primary tool for ensuring the protection of cultural environments by Rio de Janeiro’s municipality. Additionally, it defines guidelines for urban development policies and sustainable occupation. The municipality acknowledges that a particular area is historically and culturally relevant to the city by creating a cultural environment under the APAC legislation.

The APAC instrument implementation contributes to a perception of “definitive” preservation and conservation by traditional neighbourhoods, leading to an unprecedented recognition of Rio de Janeiro’s urban policy compared to previous moments of radical urban renewal processes (CARLOS, 2008).

APAC Marechal Hermes is the first APAC instrument in Rio’s suburban territory as an initial movement to reverse the neglect and abandonment situation of many suburban areas. Such neglect is related to investments in urban infrastructure and development unevenly distributed among Rio’s districts, but it also epitomizes the lack of recognition of its historical and cultural importance to Rio’s urban history (SILVEIRA, 2014.).

4. Marechal Hermes as an “unseen display”: what is there to display through an APAC?

Marechal Hermes’ villages as an “unseen display” is the hypothesis elaborated by Oliveira (2009) and Fernandes & Oliveira (2010) regarding the idealization,

feasibilities and use of Marechal Hermes' villas as a political "display" through the architectural and urban form by two crucial figures in 20th Century Brazilian politics, Hermes da Fonseca and the initial industrialization of Brazil (1910–1914) and Getúlio Vargas and the prospects of a Modern Brazil (1930–1945). Such displays could showcase outstanding residential, educational and cultural buildings due to its privileged suburban location crossed by the railway network, which connected the former capital to the most important cities in Brazil and the countryside.

The "social" thinking, but still hygienist and authoritarian concerning workers' housing conditions, marked Brazil's next phase in social housing. Bonduki (2014) characterizes this second phase as the central moment of state intervention in popular housing. At that time, themes about architecture, construction, rationalism and prefabrication took over several debates in meetings held by different professional segments. They were mainly thinking about the influence of the Modern Movement ideas on the housing theme, such as minimum housing plans – discussed in the CIAMs (*Congrès Internationaux d'Architecture Moderne*) – and large housing projects undertaken by the state in the mid-1940s. The housing issue received attention and priority from the Getúlio Vargas government (Ibid.; FERNANDES & OLIVEIRA, 2010).

However, Marechal Hermes' villages have been forgotten in the suburb landscape for decades until their narrative and memories are rescued in the 21st Century with APAC legislation by the technical office for the cultural heritage of Rio de Janeiro's municipality (*Instituto Rio Patrimônio da Humanidade*, IRPH), precisely in 2013 during an exceptional context for international events in Rio de Janeiro (2007–2016) and a century after the villages official opening (SILVEIRA, 2014).

Suburbs and peripheries are often subordinate to a logic of neglect within urban and cultural policies, perpetuating them in a condition of marginal spaces. This logic relegates suburbs and peripherals to the background, to the margins. It might help understand how the pioneering and first State urban intervention project to address the persistent housing crisis in Brazil has fallen into oblivion for the classic Brazilian Modern Architecture historiography for almost a Century. However, Marechal Hermes once again emerged to display its history through the APAC instrument by Rio's municipality in 2013.

The *Villa Proletária Marechal Hermes* is a pioneering and audacious project on both scale and purposes, designed and constructed by military-engineer Palmyro Serra Pulcherio in 1911, but it was abandoned in 1915 after Fonseca's office terminated (OLIVEIRA, 2009). The village project was later retaken in 1931 by Getúlio Vargas, during Brazil's industrial development and the establishment of Modern Architecture and Urbanism in Brazil (Ibid.), highly influenced by the Modern Architecture international movement (SEGAWA, 1997).

It is important to highlight certain aspects of the Hermes da Fonseca government, as it diverges from the liberal ideology that guided the First

Republic until 1930 regarding housing issues for popular population segments (FERNANDES & OLIVEIRA, 2010).

The historical context surrounding Hermes da Fonseca's presidential office in the First Republic is representative of the initial discussions on the persistent housing crises for the poorest and the lack of hygienic conditions, such a combination of facts led to many epidemics and health crises in Rio de Janeiro during the late 19th Century (Ibid.). Those facts lead to State interventions for the construction of popular hygienic housing, for the first time understanding it as an urgent urban issue for Rio's proper economic development (Ibid.). The planning and construction of hygienic housing and

workers' villages became a priority for the First Republic. When the government started to intervene in housing production, controlled by a private market with some public investments, it inaugurated a new phase: *popular housing State production* (BONDUKI, 2014). Nonetheless, the comparison between those initial projects and the consequent Marechal Hermes proletarian villa (1910–1914) is unfair since the villa has remarkable architecture, urban form and intentions on a scale never seen before in Brazil (Fig. 1).

Hermes da Fonseca feared popular insurgencies with revolutionary motivations when syndicates were emerging in Brazil (OLIVEIRA, 2009). Therefore, his government adopted a more "sensitive" posture regarding housing for popular segments to see an opportunity to control these populations through "social and hygienic reforms" (FERNANDES & OLIVEIRA, 2010). Even if they built only a tiny part of the original project between 1911 and 1914, it overcomes other villa projects for popular housing in Brazil regarding its scale and purposes (Fig. 2). The village is unique in its idealization and realization. However, Marechal Hermes villa is not yet fully recognized by Brazilian social housing origins literature, as not its post-1931



Figure 1. Palmiro Serra Pulcherio, Villa Proletária Marechal Hermes, Rio de Janeiro, Brazil, 1911. Official leaflet (front and back) showing the original villa project during its first open exposition "From Utopia to reality" ("Da Utopia à realidade") at Rio's Engineers' Club in 1911. It was originally planned to build 1350 family apartments in total, 738 two floors buildings, including a housing complex exclusively for single workers, as well as many educational and cultural facilities. © Biblioteca Nacional, official leaflet with site plan by Palmiro Serra Pulcherio, 1911.

additions and reforms are equally not fully addressed by classic Brazilian Modern Architecture literature.

The villa construction was retaken under a new project in 1931, after being abandoned incomplete due to Hermes da Fonseca office termination (1914) and Pulcherio's death (1915). Getúlio Vargas authorizes the villa's ownership transfer to federal institutes responsible for the social security system then (*Instituto de Previdência dos Trabalhadores Públicos da União*, IPFPU and later named *Instituto de Aposentadoria e Pensão dos Industriários*, IAPI and *Instituto de Previdência e Aposentadoria dos Servidores do Estado*, IPASE),



Figure 2. Palmiro Serra Pulcherio, Villa Proletária Marechal Hermes, Rio de Janeiro, Brasil, 1918. Villa Marechal Hermes incomplete project aerial footage. © Biblioteca Nacional, Jorge Kfuri, 1918.

aiming to renovate and conclude the unfinished houses and to construct new urban infrastructure with cultural and educational facilities (**Fig.3**), following CIAM and Brazilian Modernist Movement influences (*Ibid.*).

The new *Vila 3 de Outubro* (1931) had its urban form extended to the south-west of the original villa under modern urbanism principles to accommodate new family houses, housing complexes, schools, a theatre, and a movie theatre. Architect Carlos Frederico Ferreira was responsible for housing complexes *Centro Comercial* (1948) and *Residencial 3 de Outubro* (1949), and Affonso Eduardo Reidy was responsible for the Armando Gonzaga Theatre project (1954), with Roberto Burle Marx being responsible for the landscape design (**Fig. 4**). This second phase, modern and more clearly concerned with social issues, is called the *Social Housing phase* (BONDUKI, 2014).

They are memories of a progressive project aligned with the most up-to-date and Modern discussions on housing and cultural facilities, translating

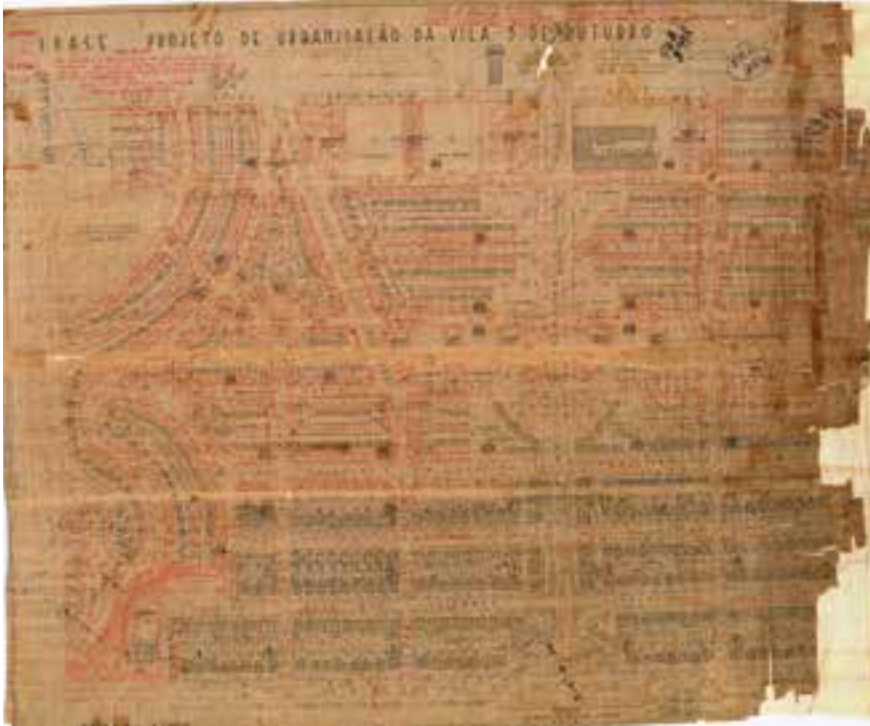


Figure 3. Projeto de Urbanização da Vila 3 de Outubro, Projetos de Alinhamento (PAA) n.3998 e de Parcelamento n.9546 (PAL), 1944. Urbanization project for Vila 3 de Outubro, new architectural additions and urban form following Modernist influences. © Prefeitura da Cidade do Rio de Janeiro, Secretaria Municipal de Planejamento Urbano (SMPU), 1944.



Figure 4. Affonso Eduardo Reidy, Teatro Armando Gonzaga, Rio de Janeiro, Brasil, 1954. © Núcleo de Pesquisa e Documentação da Faculdade de Arquitetura e Urbanismo da Universidade Federal do Rio de Janeiro (NPD/FAU/UFRJ), unknown photographer and year.

the thought of the beginning of the 20th century's *avant-garde*, a moment of significant social, political, economic and cultural transformations in Brazil and the world. However, the villas are also a memory of the state's control and manipulation of workers' insurgencies.

5. Marechal Hermes as an "unseen display": what is there to display through an APAC?

Marechal Hermes villas narratives evoke the origins of social housing discourses in Brazil. However, mostly they are a counterpoint to Rio's suburbs' negative imaginary and, therefore, with many potential cultural and historical architectures worth preservation, in order to be used as a physical "display" to show a "legitimate" and "acceptable" ideological vision of suburb. However, Marechal Hermes does not escape the subsequent abandonment relegated to marginal spaces even after the APAC instrument.

Following the "unseen display" by Fernandes & Oliveira (2010), it is possible to notice the resemblance between the Proletarian Villa (1910) and *Vila 3 de Outubro* (1931) with APAC Marechal Hermes (2013).

The "unseen display" shows Marechal Hermes villas as a repercussion of government propaganda, as both villas and Rio's suburbs were once a model to "display" different concepts and realizations. Additionally, through the resident's expectations, the APAC instrument aimed to emerge a new cultural circuit on the margins (SILVEIRA, 2014). Therefore, supposedly, to remove the condition of oblivion and abandonment relegated to the marginal spaces, it has not been seen again.

We conclude that spaces and intentions for such project idealization are continuous displacements between central and marginal spaces. This displacement is also present in contemporary perspectives for cultural heritage policies in Brazil. Those policies legitimize and recognize cultural heritage sites situated in marginal spaces but are insufficient to preserve and conserve such built environments.

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Italo Sasso Scampini and the genesis of the Chilean industrial heritage: *la Fábrica de la Sociedad Nacional de Envases y Enlozados* in Valparaíso (Chile)

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Chile is probably the Latin American country that more than others has permanently reconsidered the concept of heritage. The complex seismic situation with which the population coexist, has obliged to think over the architectural values. Moreover, because of the relevant industrial development that affected Chile at the beginning of the XX century, several urban reforms were carried out, preventing a lot of buildings from being recognized such as cultural heritage.

In this fast-moving context Italo Sasso Scampini (1895–1977) acted. Architect, born child of Italian immigrants who arrived to Chile for its convenient industrial and harbour economic situation. He started his work in a really difficult period due to the global economic crisis (1929) and to the potassium nitrate crisis which held the Latin American development back. Because of this slowdown in the economic advancement, the government encouraged significant projects in order to reduce unemployment. In this circumstance, *la Fábrica de la Sociedad Nacional de Envases y Enlozados* in Valparaíso was built.

This architecture, designed by Italo Sasso Scampini, was the result of technical studies about the application of concrete, reinforced floor vaults and organised system of pillars in one of the hill slopes in Valparaíso. Thanks to this project he resolved some issues about differences of levels between a three-floor and six-floor buildings, adapting perfectly to the place topography. Due to its peculiar location and constructive system, this building turned into an example of use of the concrete in architecture.

The contribution we present is the result of a research accomplished after finding the project (unpublished) in the municipal archive of Valparaíso and several on-site visits. The goal was to document this architecture and its impact on the constructive advancement of that time. After many researches, we illustrate the contribution of Latin America to the modern architectural landscape, starting from an unknown building which embrace all the essential values in order to be recognized as cultural heritage.

1. Valparaíso, the potassium nitrate crisis and the industrialization of the country

The city of Valparaíso has been for an important period of time intimately linked to the extraction and economy of the potassium nitrate, since the

first scientific impulse that allowed its extraction in 1809 from the caliche of Tarapacá¹. Starting from the second half of the 19th century, the exploitation of potassium nitrate, copper and coal assumed a huge wave of organized industrialization and consequently an economy strongly linked to the mines. These changes implied important transformations linked to the need for industrialization and concretely with the creation of some real industrial cities: Chile, from the end of the 19th century began a social, political and economic transformation.

With the end of the First World War and the economic losses of markets, the extraction of potassium nitrate and the infrastructures connected to it, gradually entered into crisis, until their definitive decadence with the great crisis of the late twenties of the 20th century.

The crisis pushes the Chilean government to put in place a series of measures to employ the unemployed workforce and significant state interventions to give a boost to industrial development. These measures were embodied in the desire to build new industries and infrastructures to give new impetus to a country that saw the foundations of its economy changing, in parallel with the entry into the market of the construction of new techniques and materials.

Although it is commonly considered that the process of industrialization of construction in Chile began only at the end of the 1930s of the 20th century with the creation of the *Corporación para el Fomento de la Producción* (CORFO) in 1939, well before that date in Chile there had been important pushes to a new industrialization of the country with numerous new virtuous realities. In fact, although many important industries arose during the 1940s receiving economic and logistical support from state institutions, already at the end of the 1920s with the creation of the *Ministerio de Fomento* (1927) numerous industrial plants had been built, including the one explained by this article. Most of these industrial plants were directly connected to the construction sector, considering the entry into the market of new techniques and materials, which not only produced a new economy but revolutionized the very principles of architectural project.

2. Earthquakes and the implications of industrialization

In this new phase of industrialization of the country, the construction sector is permeated by important technical and material revolutions. New construction technologies and new materials entered the scene, first of all reinforced concrete, a new material that was low-cost, easy and fast to produce². The standardization of production and the possibilities given by the new materials available on the market completely subvert the logic of the architectural project, especially in a strongly seismic territory like the Chilean one.

In Chile earthquakes, considering their regularity and magnitude, have always been an unavoidable condition for construction. Reinforced concrete was

immediately considered the only suitable material to cope with the seismic characteristics of the Chilean territory, despite its behavior under seismic stress aroused important concerns. The problem of the application of reinforced concrete in a highly seismic territory was apparently solved, at least at first, by a systematic oversizing of the structural elements.

The Talca earthquake of 1928 created an urgent situation, making architecture an absolute priority issue. The destruction of vast urban surfaces created the ideal conditions for the application of the principles of modern architecture widespread throughout the world. The urgency of the reconstruction facilitated the application of new techniques that allowed speed of execution and reduction of costs compared to traditional building materials (stone and brick mainly). The earthquake then became a real catalyst for the spread of modern architecture in Chile and was closely connected to the processes of industrialization in the country.

The Talca earthquake also marked another important turning point in the use of new materials, as well as being, as mentioned, a push for the spread of modern architecture. Only after the earthquake of 1928, in fact, the Chilean government commissioned engineers to systematize the application of structural calculation through the historic *Primera Ordenanza General de Construcciones y Urbanización*. Although the earthquake of 1939 already questioned the correct application of the material, the ordinance following the Talca earthquake also marked a fundamental ideological step regarding the application of reinforced concrete in constructions.

3. Industrial architecture in Chile: the case of the *Fábrica de la Sociedad Nacional de Envases y Enlozados* in Valparaíso

New construction technologies, new materials, industrial production, standardization of production, urban growth and housing shortage for an expanding population were the factors that characterized the context in which architects operated. The city became a living organism that transformed and developed.

Industrial production and standardization of production caused changes in architecture, rationalist influences from abroad began to permeate insistently within the country, and new aesthetic and formal models spread. Pure and geometric lines were directly connected to technical revolutions and reinforced concrete became the perfect material to give new formal answers.

The principles of rationalist architecture left no room for the eclectic historicist tendencies of Chilean architecture of the time, however, especially in an early phase of transition, a coexistence between these trends and the desire for renewal was evident.

There was immediately a strong resistance to abandoning ornament as a mean of architectural project; for this reason in many cases the new materials

were formally resolved again through the use of a historicist style. In the period between 1924 and 1927, the magazine *El Arquitecto* still presented mainly eclectic or historicist projects, still linked to an “artistic” vision of architecture. This style covered various types of buildings including museums, libraries, courts, isolated dwellings and social housing.

The architect Gustavo Casali in an article of 1929³ posed the key question of the debate of the time about the changes that concerned architecture: “¿Como proyectar, prescindiendo en absoluto de todos los estilos?”.

The real revolution in architecture, and the concrete application of the reflections around which the architectural debate revolved, coincided with the birth of new types of buildings, namely bridges, railway stations and industrial buildings in general, including the *Fábrica de la Sociedad Nacional de Envases y Enlozados* in Valparaíso. The building dates back to 1929, designed by the architect Italo Sasso Scampini, son of Italian immigrants who moved to Chile attracted by its rapid industrial progress and its harbour economic situation.

The *Fábrica de la Sociedad Nacional* fully shows all the new principles of modern architecture and goes on a direct collision course with the models that many magazines still proposed. In a 1929 issue of *Arquitectura y Arte Decorativo* two projects by Italo Sasso Scampini were shown, both in Valparaíso: on the one hand the façade of the *Casa Andrés Buston*, with a clear eclectic style and with numerous ornaments, and on the other, completely different, the project of the *Fábrica Nacional*, demonstrating how complex and articulated the field of action of the architects was. If in the housing typologies the use of ornament and an eclectic style were still often used, industrial buildings allowed architects to measure themselves with completely different projects.

Italo Sasso Scampini’s building was built on the corner of Avenida Francia and Calle República on a land characterized by an important difference in altitude. For this reason, the *Fábrica Nacional* presents a six-floor façade on Avenida Francia and only a three-floor on the opposite side, adapting perfectly to the place orography on which it is implanted (**Figs. 1–2**).

The free plan perfectly exemplifies the needs of the industrial buildings of the time: large spans, large free areas for industrial production and versatility in distribution. The structural elements, reinforced concrete pillars, have a clear position in plan, arranging themselves according to a perfectly organized grid within an irregular perimeter that follows the orography of the ground. The only exceptions outside the organized grid of the plan are the stairs and the bathrooms, which no longer constitute the elements around which the composition is structured but become almost marginal elements (comparing them to the large free spaces of warehouses and production workshops).

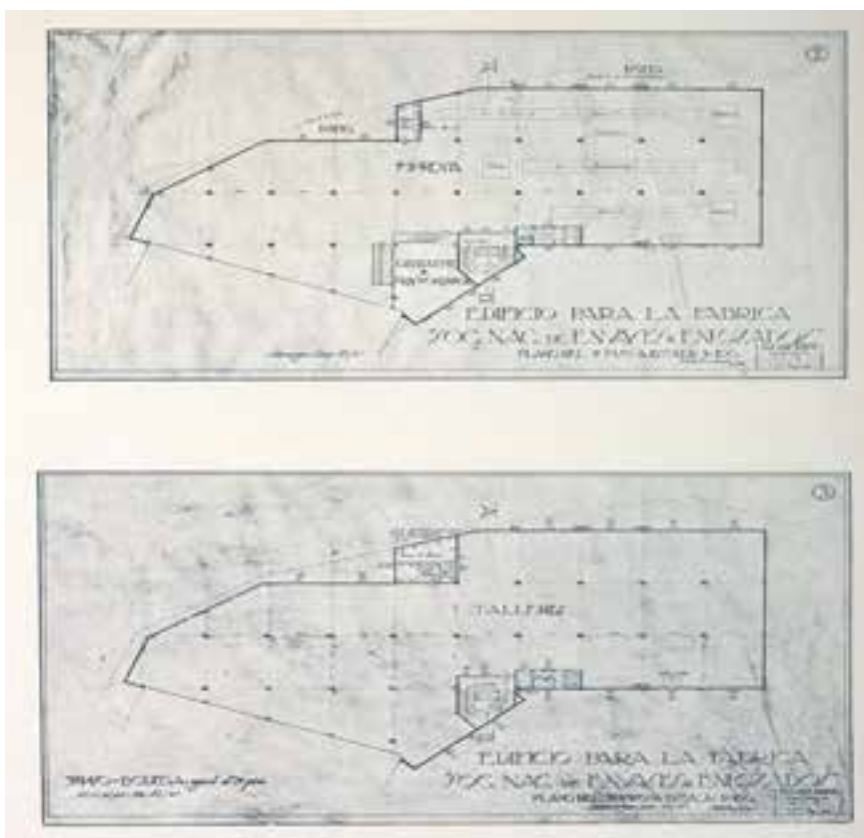


Figure 1. Italo Sasso Scampini, Fábrica de la Sociedad Nacional de Envases y Enlozados, Valparaíso, Chile, 1929. © Credits (Aranda E. "Apuntes de taca", *Arquitectura y Arte Decorativo*, no. 3 (1929): 109).

The treatment of the facades appears equally revolutionary: geometric and pure lines dominate the building and you can perfectly recognize the pillars that follow the whole building in height, ending with a decoration, albeit minimal, a reference to eclecticism, still widely present in architecture (Figs. 3–4). The reinforced concrete is left exposed, showing the structure of the building. The composition of the façade is measured in terms of full–empty ratios: the window takes on a leading role, a true symbol of the spatial achievements of reinforced concrete. On the top floors of the building the window becomes horizontal, exemplifying, once again, the achievements of modern architecture and of new building materials.

Another fundamental aspect is the conquest of height, being, as mentioned, a building of six floors. Since the 1920s, in Chile buildings in height appeared (especially in the cities of Santiago de Chile and Valparaíso), expression of the utopia of modern society. Also from this point of view, the building designed by Italo Sasso Scampini is innovative and in step with the times.



Figure 2. Italo Sasso Scampini, Fábrica de la Sociedad Nacional de Envases y Enlozados, Valparaíso, Chile, 1929.
© Credits (Aranda E. "Apuntes de taca", *Arquitectura y Arte Decorativo*, no. 3 (1929): 107).



Figure 3. Italo Sasso Scampini, Fábrica de la Sociedad Nacional de Envases y Enlozados, Valparaíso, Chile, 1929, exterior of the building. © Credits (Pablo Millán Millán, 2018).



Figure 4. Italo Sasso Scampini, Fábrica de la Sociedad Nacional de Envases y Enlozados, Valparaíso, Chile, 1929, detail of the decoration at the top of the pillar. © Credits (Pablo Millán Millán, 2018)

4. Conclusions

The *Fábrica de la Sociedad Nacional de Envases y Enlozados* in Valparaíso designed by Italo Sasso Scampini presents a series of revolutionary features in an era of profound reflections in the field of architecture such as that of the late 1920s of the 20th century.

The renewed needs of modernity involved the birth of new building types and the emergencies of reconstruction connected to the advent of new techniques allowed a real change. The *Fábrica Nacional* is one of the examples of Chilean industrial heritage. It is a building that today assumes, without a doubt, the value of cultural heritage as a bearer of fundamental architectural principles.

The application of the free plan, the visible treatment of the facades, the appearance of the horizontal window (especially in the top floors of the building) and the conquest of the height (six floors was a remarkable achievement for the time) make it a testimony of great historical and architectural value.

Buildings of this kind tell us the story of the birth and development of industrial architecture in Chile, of the slow transition from an architecture

still of historicist plant and a geometric one with an international scope, an architecture that is quick to realize, cheap and able to respond to the needs of the time. Examples like this must be protected and enhanced as cultural heritage and memory of a fundamental passage in the history of 20th century architecture.

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Notes

- 1 Sergio González Miranda, "Auge y crisis del nitrato chileno: la importancia de los viajeros, empresarios y científicos. 1830–1919", *Tiempo Histórico*, Santiago de Chile, Universidad Academia de Humanismo Cristiano, 2011, 163.
- 2 The first concrete factory in Chile was built in 1909 in El Melón.
- 3 Gustavo Casali Bandelli, "La arquitectura moderna o viva", *Arquitectura y Arte Decorativo*, Santiago de Chile, Asociación de Arquitectos de Chile, 1929, 261–270.

S11

The Latin American impact

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What's the meaning of modern Latin American modern architecture? Is it a category, a concept, an idea, an architectural critic construction or just an architectural production with specific codes? This session aims to answer and discuss the topic addressing Latin American architecture through a language denomination in order to enlighten a specific realm.

The impressive qualities of the architectural production coming out the Latin American countries is worldwide recognized and admired. Although it has not been considered properly till now as a disciplinary category by the historiography, neither referred in the architectural histories which have been mainly focused in Europe and North America production.

As Barry Bergdoll states in the catalogue of the exhibition curated together with Carlos Comas, Jorge Francisco Liernur, and Patricio del Real, that took place in 2015 at MoMA *Latin America in Construction: Architecture 1955–1980* “the spectacular urbanization of Latin America after 1945 transformed architectural culture in the vast region and became the catalyst for some of the most heated and productive debates of the mid–twentieth century. For the first time, architecture and urban planning in Latin America – in particular in Mexico, Brazil, and Venezuela – seemed not the belated reflection of examples set in Europe or in the Americas north of the Rio Grande but previsions of a modernization to come: lessons from the ‘underdeveloped’ world useful even for the ‘developed’ world to contemplate in the 1950s and ‘60s”.

The truth is that its architects faced a task of sustaining the sense of place and questioning strategies beyond the issue of climate, and embracing wider themes such as tradition, memory, community, technology and sustainability. As proposed by Roberto Fernández in *El laboratorio americano: arquitectura, geocultura y regionalismo*, since 1492, Latin America has been a laboratory for the experimentation of numerous political, economic, and cultural models and utopias. To address a key example, today it is obvious for all the seminal

importance of the Ministry of Education and Public Health building (MESP) as the first and unique modern facility ever built in a city. Designed and built between 1936 and 1942, by Lucio Costa's team with the consultancy of Le Corbusier, the building stands for the first most significant modern facility ever constructed. But it is not mentioned in the histories considering its impact, or even its avant-garde qualities. With its definition in the late 1930s and dissemination during the following decade, after the exhibition at MoMA in New York in 1942, and the worldwide reach of its catalogue the next year, Brazilian modern architecture became part of a strategy of modernization.

During the next decade, it is time for the fantastic University Campus of UNAM in Mexico; for the experimentation of Candela and the integration of arts with Orosco, Portinari; for the invention of the modern landscape design under the Burle Marx inventions, or for the amazing researches on housing in Mexico, Colombia, Peru or Chile. And of course, the 1950s is the decade of the great and fantastic modern capital, Brasília. Indeed, new concepts of living arose in this period that allowed the investment in public works as housing complexes, schools, hospitals and cultural recreation facilities for the increasing urban population. Nowadays, several of these buildings are face with the challenges of adaptation to current climatic, comfort and technological requirements, thus being important to recognize their values and identity to preserve them.

In Uruguay during the 1940s with the liberalist political vision, the central location of the modernism outbreak was Montevideo given its high level prosperous and educated population. Architects broke with the more traditional and local architecture practices, working namely on public works and housing, or residential buildings. In this context, the social housing complex of *Unidad de Habitación Sur* (1956) the *Edificio Ciudadela* (1958), the *Edificio Panamericano* (1964), as well as the several new university buildings, constructed throughout the city, reflect the grand lightness of modern materials and forms, and the Latin modern monumentality. Likewise, the Pocitos seaside neighbourhood, next to the Plata River, was one of the areas where, during the 1950s and 1960s, a radical transformation took place with the typological substitution of the individual residential houses by high rise buildings.

In Cuba, modern architecture is marked by a relation between international modernity, vernacular and traditional identity, thus, the importance of the regional climatic conditions and the cultural influences must be considered. Cuba assisted to an exponential growth of high-rise residential and commercial architecture in the 1950s, namely in Havana, mainly influenced by the climate-responsive high-rise buildings of Brazil and Venezuela. Examples are the *Tribunal de Cuentas*, constructed in 1953; or the 1958 built *Seguro Médico* building, which is an exemplary case of a mix-use urban building adapted to the tropical climate conditions. The turning point occurred in the 1960s with the implementation of Fidel Castro's government and the nationalization of construction industry. An ambitious construction campaign sponsoring the creation of schools, housing complexes, hospitals,

and recreation facilities was pursued corresponding to the revolution's social programmes. Important avant-garde projects of this time are not only the *Habana del Este* housing complex (1959–1961), but also the Multiflex System (1965–1969) and the brutalist apartment building located at Malecón and F (Girón Building, 1967). Located at Havana's oceanfront boulevard Malecón, the *Edificio Girón* became an architectural landmark in Revolutionary Cuba, given its experimental character, innovative in terms of the interiors spatial flexibility and exterior expressivity, having served as guidance for other housing projects.

In Mexico, modern architecture emerged tightly related to the post-Mexican Revolution political and economic reconstruction process. During the late 1920s and 1930s, several schools, hospitals, and public housing projects were built. The Institute of Hygiene (1925) in Popotla, was one of the first examples of this new national architecture, and the *Centro Urbano Presidente Alemán* (1947–1949) in Mexico City, by Mario Pani, is Mexico's first low-cost high-density housing complex. Also the studios for Diego Rivera and Frida Kahlo (1931–1932) and the *Casa O'Gorman* (1929–1930) are exemplary single houses of vanguard architecture in Latin America.

As mentioned, notable is the modern project, started in 1950, for the construction of the National Autonomous University of Mexico campus, in Mexico City, developed under the leadership of Mario Pani, by Enrique del Moral and Carlos Lazo. Further with it started a current of incorporation of mural art by Mexican artists in architecture that became a constant in Mexican architecture as an identity mark.

In this scope, the 1950s and 1960s were, in Mexico, a period of experimentation and structural innovation namely with Félix Candela's thin-shell concrete structures, such as the Church of the Miraculous Virgin (1953) in Mexico City and the Cosmic Ray Pavilion (1952) on the university campus. Alejandro Zohn, student of Candela, conceived a series of complex public large-scale infrastructure marked by the use of the hyperbolic paraboloid, to design not only the roof but the entire building, creating unique interior and exterior spaces, which are halfway between architecture and sculpture. *Concha Acústica del Agua Azul* (1957), the *Nuevo Mercado Libertad* (1958–1962) and the *Mercado Mezquitán* (1961), the bleachers and entrance canopy of *Unidad Deportiva Adolfo López Mateos* (1962), or the *Iglesia del Nazareno* (1967).

Not to forget is as well Luis Barragán's work, which is representative for a search towards the reconciliation of Le Corbusier's lessons with the Spanish colonial tradition, as shown in the houses he designed in the 1950s and 1960s.

Writings and practices conducted in Latin-America focused on the search for a new ethic in architecture, whose aim was to encompass an original link between tradition and innovation. From the modern housing projects of Pocitos in Uruguay, presented by Alfredo Peláez Iglesias, Maximiliano García and Nathalia Olivera and of Girón Building in Cuba, presented by Óscar

Fernández and Sara Cajaraville, to public infrastructures designed by Alejandro Zohn in Mexico, revisited by Claudia Rueda Velázquez, Isabela de Rentería and Magda Serrano, and the large vision between Lucio Costa's regional and radical approach analysed by Cláudia Costa Cabral, this session 11 is enriched with the panoramic critical discussion proposed by Ruth Verde Zein and Horacio Torrent. Addressing the canonical historiographical criticism, Horacio Torrent and Ruth Verde Zein argue that the beginning of a new historical path can be detected in Latin American architectural culture, as it has been pointed out on "Latin American Architecture as a Historiographic Category" by Horacio Torrent in 2015 in his *Cristal Opaco* essay.

Experimental Multiplanta Multifamily Building in Malecón and F (Girón Building, Havana, Cuba, 1967): a document to preserve its memory

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With the triumph of the Revolution on January 1, 1959, very significant changes took place in Cuba from the political, economic, social and cultural point of view, with decisive repercussions in the architectural and urban sphere. In Cuba in the 1950s, a high level of quality in architecture had been achieved from the assimilation of the principles of the international Modern Movement adapted to the local context. Speaking of the 1960s is to speak of experimentation and the search for alternatives to overcome the scarcity associated with the commercial, economic and financial blockade that the United States practiced against Cuba in 1960 and in the following years. With the disappearance of private firms, professionals were integrated into groups of projects joined in the Ministry of Public Works.

The decade closed with two singular achievements within an almost constant experimentation in housing adaptation and evolution: *Multiflex System* (1965–1969) and the Apartment Building located in Malecón and F, in Vedado (Girón Building, 1967). The architects Antonio Quintana Simonetti and Alberto Rodríguez Surribas in collaboration with engineers and several students from the School of Architecture of Havana carried out an experimental building that served as a testing ground to meet the objectives of that public housing policy.

The “Experimental Multiplanta Multifamily Building in Malecón and F” was an architectural landmark in Revolutionary Cuba, as it is a singular and unique collective housing project, both due to its criteria of spatial flexibility in the interior, as for its expressive brutalist volume. The work presented contains a graphic survey of the building, carried out on site, with the aim for this piece to remain in the collective memory due to the accumulated deficit of maintenance.

1 introduction

At times, the hackneyed expression of the architect as a builder of dreams (those of the Revolution and collective housing) becomes so intense that when one visits this architecture, even a ruinous one, we become part of that experience. The amount of time exchanged in the form of vocation and the courage that accompany the construction of that dream, especially when it is an experimental process, entail an intellectual reward that does not quantify the hours of dedication and uncertainty. Rafael Moneo’s reflection on a building that “remains in complete solitude... acquiring its definitive condition

and remaining alone forever, master of itself”¹ reaches its maximum level of drama in the mere fact of thinking what happens if that architecture, after having remained silent, were to disappear. So too, its creators’ dreams and the ideas that gave birth to it. We mean, the fall of symbols. For their oblivion. For thinking of durability exclusively as a question of civil responsibility, even though we are aware that architecture only belongs to a place, to a time, and therefore becomes unique and unrepeatable. The work presented here contains a graphic survey of the Girón Building –one of those dreams–, of an unpublished nature, carried out *in situ*, after the impossibility of accessing primary sources where the original documentation could be found.

The rigorous graphic representation of any architecture for which there is hardly any documentation translates into the generation of knowledge that goes beyond the representation of the piece itself, insofar as this representation becomes a way of learning and apprehending the building, of travelling through the minds of those who lived that dream. Like a musical composition of which we barely know its time signature and key and over which one feels the need to appropriate it. And it is in this modest attempt to transfer reality to paper that architecture becomes memory, as the shadow of its ruin is cast darkly over the building. With a big difference compared to the previous score: the nostalgia of the ruin does not threaten the music, which can always be performed wherever it is. This brief digression serves to portray on a modern building the same nostalgic image that is projected on the classic *almendrones*² that ride in front of it, along the Malecón; or the buildings from the middle of the last century in the gentrified district of El Vedado, behind it, many of them suffering the same fate.

2. Context

Historical context

A large number of architectures that emerged under socialist and communist regimes opened up a new field in architecture by managing to translate the values underlying these political approaches into space. Political architectures, in the strictest sense, whose genesis combines the architect’s personal language with the political ideal that gave rise to them. In Cuba, with the triumph of the Revolution in January 1959, very significant changes took place from a political, economic, social and cultural point of view, which had a decisive impact on the architectural and urban sphere. While in the 1950s a high level of quality had been achieved in architecture with the assimilation of the principles of the international Modern Movement adapted to the local context, speaking of the 1960s is to speak of experimentation and the search for alternatives to overcome the shortages associated with the commercial, economic and financial blockade imposed on Cuba by the United States in 1960 and the years that followed. Private commissions were replaced by State Plans, social housing for rural communities, large school, sports and health

centres that sought to improve the living conditions of the population. With the disappearance of private firms, professionals joined project groups under the auspices of the Ministry of Public Works, which in December 1963 became the Ministry of Construction (MICONS). This decade ended with two unique projects within an almost constant experimentation in the adaptation and evolution of housing, of which the architect Fernando Salinas (1930–1992) was a tireless advocate: *Multiflex System*³ (1965–1969) and the Apartment building located at Malecón and F, in Vedado (Girón Building, 1967). The architects Antonio Quintana Simonetti (1919–1993) and Alberto Rodríguez Surribas (1923–) in collaboration with the engineers Sixto Ruiz, Hugo Wainshtok Rivas and César Rivero Laga and several students from the School of Architecture of Havana carried out an experimental building that served as a testing ground to fulfil the objectives of the public housing policy between 1967 and 1968, which the MICONS management decided to build with a progressive method inserted in the trials of industrialisation of construction. This housing building was an architectural landmark in Revolutionary Cuba, as it was a singular and unique collective housing project, both for its criteria of spatial flexibility in the interior and for its expressive brutalist volume.

Architectural context

The demographic expansion and urban and industrial growth in Europe in the 19th century moved to Latin American countries between 1940 and 1950 – barely two decades – in a hasty and irregular manner. Modern architecture there developed from the premises of architects who had studied in Europe or the USA, applying the international avant-garde to their different contexts. In residential architecture, the influence of Le Corbusier's *Unités d'Habitation* will be the most important reference among most Latin American architects. However, despite this common link with the Modern Movement, modern Latin American architecture developed with great autonomy, registering many of the most interesting, spontaneous and daring experiences in the search for its own interpretation of the rationalist language. From the 1950s onwards, the approaches of British architecture – with Alison and Peter Smithson or James Stirling as referents – were incorporated, articulating the blocks of collective housing by means of horizontal and vertical traffic pieces and the forceful materiality of exposed reinforced concrete, giving expressiveness to the composition of the building, as in the project for the University of Sheffield (1953) or the Leicester Engineering Faculty Laboratories (1959) respectively. Ernő Goldfinger's Balfour Tower (1967) and Trellick Tower (1972) also appear as landmarks. All of them dissociate Le Corbusier's *rue-corridor* from the block to which they are tributaries. In this context, "Cuba will turn institutionally to the use of advanced technologies and will tend towards an architecture of international character with the concern to find a specific prefabrication for its peculiar climatic conditions"⁴.

3. Girón building. A document to preserve its memory

Implantation. The building's response to the site

The Girón Building is a sample of the ideas that were being developed in Europe. In its essence lies the virtue of finding the *genius loci* of a place as hard as the civil works of Havana's Pier *Malecón Norte* and the urban grid that meets it. It also emphasises the importance of light, the breeze and the views towards the sea, which are decisive. This is why the building is turned with respect to the grid of El Vedado, in a strict east–west alignment, marking an angle of 24°, ignoring the urban traces, to invisibly relate to the largest cemetery in the country: The Necropolis of Christopher Columbus, the most identifiable piece of the whole city from the air and which closes this city area on the south (Fig. 1a). The building is transformed into a sculpture on a platform, thus qualifying the urban space, with a rationalist architecture in perspective that is fragmented according to the uses and circulations, breaking the traditional monotony of residential stacking. But at the same time there is a clear reading of the work and spatial continuity due to the rhythm of the structure and the characteristic “floating galleries” that weave its circulations. Thus, the ground floor is liberated, configuring a hallway, an ambiguous transition space, in keeping with the experiences of the *Unités* (Fig. 1b). In the gesture of the meeting of the pillars with the ground, there is a clear allusion – conceptual, but not formal – to the independence of the structure in the support of the aforementioned *Unités d'Habitation* or even the hollowed-out pillars of Le Corbusier's Swiss Pavilion (1930). With great humility and simplicity, the form of the structure on the ground floor reflects the desire for urban continuity always recognisable in the entrances to the residential units in Modern Movement architecture. A gesture which, in Havana, has led to the Girón Building being popularly identified as *palito tendadero* (clothes peg).



Figure 1. Antonio Quintana and Alberto Rodríguez. *Apartment building at Malecón and F (Girón Building)*. Havana, Cuba, 1967. Location, relation with urban grid (1a, left); ground floor (1b, right). Produced by the authors based on measurements on site. © Óscar Pedrós Fernández, Sara Rodríguez Cajaraville.

Layout

Behind an apparently simple configuration lies a variety of situations that make building's reading and representation more complex. This richness comes from the use of a series of strictly spatial resources that bring us back to the very essence of the profession. Although these resources, read individually, may seem immediate, their vision as a whole gives the building a great spatial complexity, justified in equal parts by the physical environment and the characteristics of the place and by its functionality. This also makes its architecture very difficult to summarise in a few sections. For reasons of extension, projections that most condense its geometry have been resorted.

In plan, the complex is made up of two blocks offset from each other, drawing the sun's path, reducing the amount of self-shading to the maximum, thus optimising the amount of natural light received by the pieces and benefiting their cross ventilation (**Fig. 2**). Both blocks have a length of 37.00 m. and are divided into four spans with the same inter-axis (9.25 m.). The front block (North block or morning block) is made up of four three-bedroom dwellings per floor, while the south block has four dwellings per floor, with two bedrooms instead. The difference of 1.50 m. in width between both blocks is what absorbs the need for a larger surface area in the three-bedroom dwellings. The non-alteration of the length of the blocks gives an almost unitary perception, serving to an even more rational reason: not to alter the length of the elevated passages mentioned below. All the dwellings have cross ventilation and natural light in all the rooms. The bedrooms are preferentially oriented towards the north, while the main living area fills the whole span. A series of prefabricated boxes, opaque to the south and perforated to the north, serve as storage space and ventilated clotheslines respectively, as well as breaking up the characteristic monotony of the residential stacking on the building elevation with a relief sequence, which also does not consume

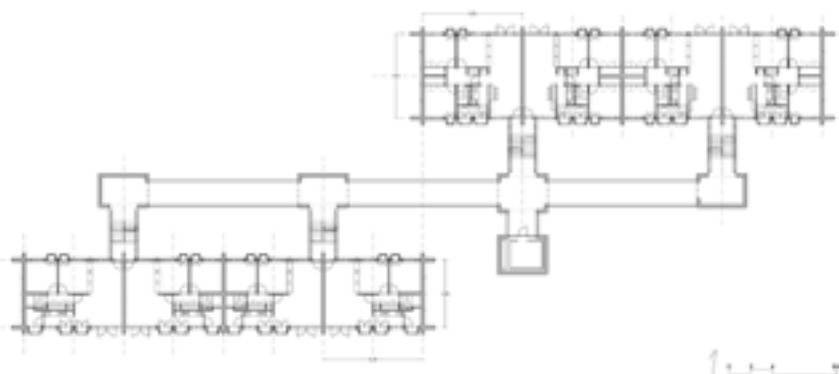


Figure 2. Antonio Quintana and Alberto Rodríguez. *Apartment building at Malecón and F (Girón Building)*. Havana, Cuba, 1967. Typical floorplan. Produced by the authors based on measurements on site. © Óscar Pedrós Fernández, Sara Rodríguez Cajaraville.

usable floor space. In the original project, the furniture was designed without touching the ceiling to further facilitate visual continuity and cross ventilation⁵.

In section, the two blocks reach the same height. However, in the front block, which relates to the Pier, two storeys are freed up on the entrance level, while in the rear block (south block, which relates to El Vedado), only one storey remains empty (**Fig. 3**). This decision brings the scale of the building closer to that of the surrounding spaces, in order to turn it towards the sea. The main access, the route to the main element (the lift) is thus hierarchized from the Pier. A walkway built with the same prefabricated material that covers the floating galleries, but inverted, confirms this decision. On the other hand, the inverted reading of this piece, which in this case must withstand the overloads of use, makes it necessary to place a series of intermediate supports, as the edge of its folding is much smaller than the one that gives the galleries their inertia. Finally, the decision to raise the free height in the north block reduces the number of three-bedroom dwellings by four, with sixteen storeys in this first block and seventeen in the second, for a total height of 50.00 m. and a difference of 2.70 m. between storeys.

Circulations.

The two blocks of Girón Building are fed by four staircases that vertically connect each and every one of the dwellings with the ground floor, each of



Figure 3. Antonio Quintana and Alberto Rodríguez. *Apartment building at Malecón and F (Girón Building)*, Havana, Cuba, 1967. North elevation-section facing Malecón Norte (Havana's Pier). Produced by the authors based on measurements on site. © Óscar Pedrós Fernández, Sara Rodríguez Cajaraville.

these staircases serving two dwellings per floor. These cores are extended one floor above the last level of the dwellings to access the roof. At the start, the first half flight resolves the difference in height between the entrance level of the building and the platform. However, it is the appearance of the machine, the lift, which definitively configures the image of the building, which makes it unique, so that if the whole of the lift and all the apparatus that accompanies it were to be dissociated, the captivating presence of the Girón Building would disappear – almost completely (**Fig. 4**). A single tower, intentionally free-standing, houses the also-only-one lift that feeds one hundred and thirty-two dwellings distributed between the two blocks. Five levels of elevated passages – *floating galleries* according to their authors⁶ – rise from it, being placed at half-height with respect to the level of the dwellings and interspersed every three floors. And then, questions also arise.

– The decision to place the “floating galleries” halfway between floors responds to the desire to free the view from inside the dwellings and protect their privacy, dissociating the Corbuserian *rue-corridor* from the dwellings. This is even more evident in the narrow slot that separates the two prefabricated units that make up the gallery. However, this decision means that none of the dwellings is accessible, something that –without a doubt– contradicts the very essence of the lift, even more so given today’s paradigms. From this pretension to equalise, there is a lift for all and for none.



Figure 4. Antonio Quintana and Alberto Rodríguez. *Apartment building at Malecón and F (Girón Building)*. Havana, Cuba, 1967. Cross-section facing west (4a, left); view of the building from northwest Malecón (4b, right). Produced by the authors based on measurements on site. © Óscar Pedrós Fernández, 2018.

– In view of the above, it is intuited that the economic investment in the whole deployment of “floating galleries” greatly exceeds the profitability of four individual lifts (one per nucleus), which would disembark at the level of each floor of dwellings, making them accessible.

Roof

The roofs of the Girón Building become – once again – a compositional element that was made in some of the works of the Modern Movement in Europe. However, its elements are not so much reinterpreted from the transatlantic liner’s plastic image offered by Le Corbusier’s *Unités d’Habitation* (modelling the smoke vents) or even its functional aim as an outdoor community space or nursery) but – even within the function – as a practical service to the installations. Two large water tanks crown the blocks. A dilemma appears when usage of potential energy to supply water to the dwellings becomes an enormous overload fifty meters high, both in vertical loads and in horizontal acceleration, if this were to occur. However, the two community tanks become a symbol of the unequivocal coherence of the egalitarian dream on the part of their designers, while at the same time testing the individual conscience of each dwelling on responsible water consumption. Perhaps it is these elements, which go so unnoticed, that best reflect the eternal dispute between the individual and the whole when it comes to collective responsibility for tangible, measurable goods such as water in a place like Havana.

4. Conclusion

The current deterioration of the Girón Building, due to the accumulated lack of maintenance and the exposure to the high salinity of the marine environment of the Caribbean Sea, make it a living ruin. From a western gaze, certainly comfortable, although flooded with nostalgia when visiting The Island, is clouded when one witnesses, helplessly, the next ruin of revolutionary architecture. And this happens for at least two reasons: because we are faced with an architecture that, from the dream of its creators, began as utopian and came to materialise, transcending the status of “dream” to really serve those who still inhabit it, and because the great majority of architectures like this one, which clearly identify with political values and enrich the imagination so much from the project, end up becoming an excessively ephemeral dream for the life that is presupposed for the architecture, the message they send and the effort invested in their creation. The purpose of this document is, fundamentally, to ensure that the Girón Building in Havana –perhaps the most contemporary piece of architecture of the Revolution– remains in the collective memory at a time when, unfortunately, the costs of demolition are already outweighing those of restoration and which, for the reasons that have been explained, is unrepeatable.

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- 1 Rafael Moneo, *The solitude of buildings*, Harvard, Chair Kenzo Tange, 1985.
- 2 Classic, rickety cars that still drive along Havana.
- 3 The System gets its name from José Antonio Novoa Sarasa, a pioneer of prefabrication in Cuba since the 1920s. The system of small-format prefabricated elements was adapted by MICONS and renamed the *Sandino System* in 1965 as it was used to build the *Agricultural Community of Ciudad Sandino* in 1964.
- 4 Leonardo Benévolo, *Historia de la arquitectura moderna*, Bari, Editori Laterza, 1960, 785.
- 5 Antonio Quintana y Alberto Rodríguez, "Edificio experimental de Malecón y F", *Revista Cuba Construye* 3–4, 1967, 21.
- 6 Antonio Quintana y Alberto Rodríguez, *op. cit.*, 19.

Alejandro Zohn: structure & form

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Alejandro Zohn (1930–2000) studied both at the same time civil engineering and architecture in Guadalajara, Jalisco, Mexico. From his student times he became interested in the plastic and formal qualities of ruled structures and concrete. This is evidenced by his final works and his engineering thesis “Nuevo Mercado Libertad” in the San Juan de Dios neighbourhood, in 1955. A couple of years later, the thesis became one of the main buildings in the city. This design project will determine his personal path in architecture: using the hyperbolic paraboloid, a ruled surface that solves not only the roof but the entire building, obtaining spaces of great interior and exterior expressive richness, which are halfway between architecture and sculpture. Added to this is the use of a reduced range of traditional materials in conjunction with industrial materials. This article explores the origin of this way of designing and unfolds the compositional mechanisms that the architect–engineer uses in his design projects. Starting from a basic unit that, singularly or systematically repeated, solves a wide range of architectural typologies, Zohn creates a set of masterful works that have spatial qualities in accordance with the specificity of the place, with the properties of the materials and with the programme requirements.

1. Introduction

Alejandro Zohn (1930–2000) studied civil engineering and architecture, graduating in 1955 and in 1959 respectively. The School of Architecture was the third founded in the country as part of the Technological Institute of Guadalajara (ITG). It was the initiative of the Engineer Ignacio Díaz Morales, who structured a programme trying to separate from the architectural education in the country's capital. The school was organised with local, national, and foreign teachers which allowed learning about the modern architecture that was being developed in Europe, but also claiming the local craft building qualities and the traditional architecture of Guadalajara that had been already boosted at the Free School of Engineers, where several of the professors at the school of architecture and engineering had been trained.

From his architectural school designs, Zohn explored the qualities of concrete and laminar roofs, such as in the *Centro Cívico* (ca. 1955), where he designed spaces with roofs made of laminar structures, or in the *Núcleo de viviendas*

*para 1000 individuos in Mazanillo*¹ where the basic unit was solved with a network of laminar structures. In addition to his regular studies, Zohn studied at the National University of Mexico (UNAM) for a diploma² on laminar structures taught by Félix Candela, developing then the skills to design and build these types of structures.

Zohn began his professional career at the age of 22 with the largest work he carried out throughout his life, the *Mercado Libertad*, to which he would return again and again carrying out extensions and adaptations. This building, which was his engineering thesis in 1955, determined his personal path in architecture with regards to the use of covering elements with different ruled shapes subjected to the same structural principle.

In Alejandro Zohn's works, structure, form, and interior space are intimately linked through the construction of hyperbolic paraboloid roofs. This article explores the origin of this way of designing and unfolds the compositional mechanisms that the architect-engineer uses in his buildings. Starting from a basic unit that, singularly or systematically repeated, works out a wide range of architectural typologies, Zohn creates a set of masterful³ buildings that have spatial qualities in accordance with the specificity of the place, with the properties of the materials and with the programme requirements. In addition, the hyperbolic paraboloid solves not only the roof but the entire building, obtaining spaces of great interior and exterior expressiveness, which are halfway between architecture and sculpture.

Zohn, in his architecture, often uses the hyperbolic paraboloid with straight edges, with a variety of square, rectangular or rhomboid plans. From the paraboloid, he generates a catalogue of solutions that range from the basic unit to various aggregation systems. The hyperbolic paraboloid's shape allows highly efficient structures because of the even distribution of stress on its surface; In addition, the ruled surface allows a formwork of straight lines that it is easy to build.

Traditionally these surfaces were made of stone or brick, as in the works of Antonio Gaudí, who was a pioneer in its use. However, in Zohn's work, the covering material is concrete that, due to the geometric characteristics of the paraboloid, can reduce its thickness to a minimum. On the other hand, in bases, walls or pavements, Zohn uses materials that combine the modernity of the roof with the construction tradition, such as the stone and the brick fabrics.

2. Variations on a covert: parable and systems

Basic unit

Zohn starts working with a single hyperbolic paraboloid in his first building, the open-air auditorium (1957), also known as *la Concha Acústica del Agua Azul*, to later combine it in very different ways. He received this commission when the market was under construction, which allowed him to test on a one-to-one scale with the auditorium roof (basic unit), as a prototype for the market roof design.

In the outdoor auditorium design, he establishes the structural form with which he will work:

The two lateral columns support the roof's structure and contain the stairs that lead to the basement. The roof is a hyperbolic paraboloid with unequal branches, linking its mentioned supports by means of a tensor housed within the thickness of the stage floor. A series of rods were welded to it to link it with the ribs. The walls are made of stone and give stability to the roof in the direction of the major axis; the ribs are tapering towards the tip. The front part of the warped roof is made of lightweight concrete with a thickness of 5cm and 20cm at the top. ⁴

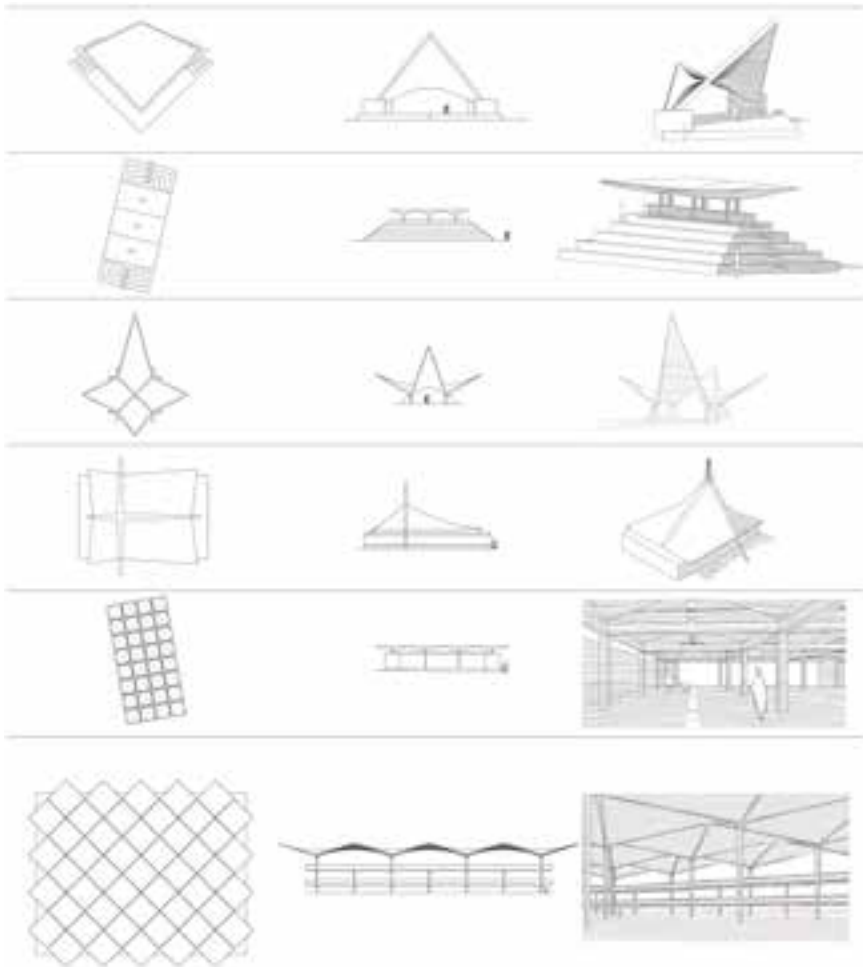


Figure 1. Drawings of the analyzed works of Alejandro Zohn. From top to bottom: *Concha Acústica del Agua Azul* (1957), Bleachers and acces canopy of *Unidad Deportiva Presidente Adolfo López Mateos* (1962), *Iglesia del Nazareno* (1967), *Mercado Mezquitán* (1961), *Nuevo Mercado Libertad* (1958–1962). © drawing by Claudia Rueda, Lesly Gonzalez, Alfonso Mares, Juan Carlos Ruiz, 2022.

The fact of using pillars or pedestals to raise the roof, as well as the reduced number of materials – stone and brick fabric and concrete – will serve him as a strategy hereafter. He also adds, as a finishing touch to the sheet of the auditorium roof, an edge beam whose figure decreases to the extreme so that the roof develops asymmetrically, responding to acoustic needs and acquiring a greater plastic expression. The edge beams distinguish Zohn's solutions from those of Candela, who left the edge of the shell free.

At the *Sinagoga del Club Macambi* built in 1971, Zohn designs with the basic unit, as he did in the Acoustic Shell, his first work. Whereas that one was an open structure, the Synagogue is a closed space, in which Zohn introduces light between the roof and the perimeter wall, just as he had done in other buildings. The hyperbolic paraboloid also loses, in the Synagogue, its condition of double symmetry to respond to interior and acoustic requirements and, in addition, provides it with greater expressiveness.



Figure 2. Alejandro Zohn, *Unidad Deportiva Adolfo López Mateos*, Guadalajara, Jalisco Mexico. Bleachers at the sport unit. ©Historical Archive of Guadalajara, Mexico.

Linear or unidirectional system

One of the ways of aggregation to regulate a growth is the unidirectional design. Zohn uses the repetition of a paraboloid that, as a pattern, solves the cover system in a linear way. A clear example is the bleachers of the *Unidad Deportiva Adolfo López Mateos* from 1962. This complex, built on a large piece of land, contains several elements arranged on the landscape: the bleachers, the water tank, the springboard, the pavilions, the access canopy, among others, that are solved volumetrically with sculptural forms. Once again, a reduced number of materials is used for its construction: "stone for the low walls and foundations, vitrified clay blocks for almost all of the

walls, and concrete for the roofs.”⁵ Zohn explained that the idea of the design was “to give each type of element the most suitable form, while preserving a unitary compound. For this reason, hyperbolic paraboloid mantles were used, whose various combinations allow great ease of adaptation.”⁶ This system, which can cover large areas, in addition to its lightness, is sustainable due to its formal and material economy and its low maintenance requirements.

In the bleachers, we find a roof solution of a linear aggregation of hyperbolic paraboloids in the form of inverted umbrellas, settled on a pyramidal base inspired by pre-Hispanic architecture, which reinforces its sculptural appearance. The umbrellas, 5 cm thick, are supported by pairs of light embedded columns; Each pair holds four paraboloids. In addition, the form of an inverted umbrella solves in a very simple way the rainwater’s drainage that is carried out inside the pillars.



Figure 3. Alejandro Zohn, *Nuevo Mercado Libertad*, Guadalajara, Jalisco, Mexico. ©Historical Archives of Guadalajara, Mexico.

Isotropic Aggregation

The lines that shape the internal order of a design need not solely be oriented in one direction, but can also be given a bidirectional orientation, which broadens the possibilities with regards to program and volume. If one adds spatial development to this, one finds an overall system that lends order, based on which formal possibilities are infinite.⁷

Isotropic aggregations are based on a two-direction growth of a unit. Zohn used this mechanism in the kiosk of the mentioned *Unidad Deportiva Adolfo López Mateos* and, above all, in the market design projects. In these cases, he found in the inverted umbrella paraboloid a very efficient growth solution, in addition to a fast and economical construction, which adapted to the subsequent expansion needs of the program, to the exterior requirements of covering, the water drainage, and to the indoor needs, because in isotropic growth “we are able to add or subtract as many elements as we desire without the whole losing its defining traits”.⁸

In the triple-height central space of his first project, the *Nuevo Mercado Libertad*, each paraboloid is supported at two points: "It was designed with a roof of warped surfaces bridging spans of 18 by 18 meters and separated by strips of light (its appearance of "blankets spread out" offers a certain relationship with the canvas protections that many street stalls have, although this relationship was never intentional)".⁹ The repetition system is also used for the rest of the building, that is structured with "a 6 by 6 meter grid, which gives adequate flexibility to establish different types of positions. The mezzanines, with flat roofs, have large capitals in the shape of an inverted pyramid for greater resistance".¹⁰

The same bidirectional aggregation system made it possible to use the links between the basic units as strips of natural light source, that would be one of the characteristic contributions of Zohn's work. This singularity not only provides a dim overhead light source distributed throughout the interior of the space, but also allows each of the pieces that make up the *ad infinitum* tapestry to stand out.

Another example is the *Mercado de Mezquitán* that he designed in 1961. The market was intended for the sale of flowers to supply visitors to the *Mezquitán* pantheon. The design solution consists of 32 hyperbolic paraboloids in the shape of inverted umbrellas to cover the space. As in the *Nuevo Mercado*

Libertad, light enters between the joints of the umbrellas, distinguishing each piece. It was not the first time that this type of roof was used for the solution of a market, as Pedro Ramírez Vázquez and Rafael Mijares, in collaboration with Félix Candela, built the *Mercado de Coyoacán* in 1955. Unlike Zohn's project, there the linear groupings of the umbrellas were placed differentiating the heights of each line and the entrance of the light was sideways.

In the year 1960, Zohn was invited to design the *Nuevo Mercado Hidalgo* in San Luis Potosí, that finally was not built. However, we can see the evolution of the project according to the same variables. In the composition of the floor plan, he displays again a central space, as in the *Mercado Libertad*, and for the structure, he uses the inverted umbrellas in an isotropic arrangement at different heights to generate light inflows between the units.



Figure 4. Alejandro Zohn, *Unidad Deportiva Adolfo López Mateos*, Guadalajara, Jalisco, Mexico. Access canopy at sport unit. ©Historical Archives of Guadalajara, Mexico.

The repetition of a unit generates a network that facilitates the internal organisation and the systematic regulation of the stalls, which thus enjoy the same environmental and size conditions. All these stalls were designed by the architect and built on site with traditional building materials and techniques.

In a growing system, the repetition of the paraboloid occurs through translations, mirror symmetries, double symmetries, or rotations, which fit together in different ways, forming patterns that are reproduced on the plane and in space. This growing system may remain open and be reproduced without limits or be transformed into a closed form. This last happens when introducing a deformation of the paraboloid or an asymmetrical condition for the sake of a greater plasticity or symbolism. An example is the entrance canopy to the *Unidad Deportiva Adolfo López Mateos*, formed by four hyperbolic paraboloids that intersect with each other. What stands out about the design is that each of these pieces grows asymmetrically on its axis and is extruded at different heights to form a sculptural ensemble. As in other projects, a base supports and absorbs the thrusts of the roof.

The *Church of the Nazareno*, built in 1967, uses a similar roof system, incorporating again the light gap between each of the pieces. In this case, the roof of the rectangular space is made up of four hyperbolic paraboloids that are separated by "strips of light that, from the aerial view, form a cross to give the design project greater symbolism. The ribs on the edges of the mantles coincide with the inclined columns that discharge into the ground, and the roof then seems to float. To finish off the roof, four slender elements are placed forming a cross".¹¹

The fundamental difference between these projects is that the paraboloid units sacrifice their neutrality and capacity for infinite growth and adapt to a hierarchical system, which prioritizes some pieces over others for the sake of greater symbolic power.

3. Conclusions

Structure & form

These design projects by Zohn, are framed within the years where architectural structuralism was present in the works of the main architects. Moshe Safdie explains that for structuralism, the word structure is synonymous to organisation, complexity, and order, so that the structure of a building is not only what supports it, but it is also the light that illuminates it, the air that flows in it, the interior ambiance, the facilities that condition it or the movement of its occupants.¹² In the same way, Zohn's structures work out the design projects in a holistic way, considering both the constructive aspects as well as the formal, environmental, and functional ones.

Unity and aggregation: the importance of links

Such compositions are dominated by the concept of the element or basic unit, but also focus on the specific mechanisms by which these elements and units relate to one another and grow. The terms that describe these mechanisms – interval, repetition, seriation, and system – enlighten us that it is not the overall shape of the result, but rather the shape of the individual elements and, above all, the links between these elements that are essential.¹³

Zohn uses a variety of element's association syntax, by building aggregations of paraboloids with different links. While the unit by itself allows a manipulation of the form to emphasize some of the spatial aspects of the design project – the canopy indicating the access to the Sports Complex or the Acoustic Shell favouring sound propagation – , in the aggregations, the link plays a primary role in qualifying the space. This is what happens with the gaps between the pieces which allow light to enter, in the extension of the geometric units that generates a ceiling that flows in all directions, and in the serialization itself, which blurs the limits.

Structure and the inner quality

The face and the underside of the structure – as in a leaf – , the repetition of the unitary module, the overhead light between the units, the combination of resistant materials, the furniture made in situ, the resulting geometry itself, all this produces a rotund architecture that, by itself, determines both the exterior appearance and the interior character of the spaces. This architecture does not need additives because the plasticity of the parabolic units, the light through the links, and the rhythm of repetition furnish and condition it.

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- 3 The *Nuevo Mercado Libertad* (1958–1962), the *Concha Acústica del Agua Azul* (1957), the *Mercado Mezquitán* (1961), the *Unidad Deportiva Presidente Adolfo López Mateos* (1962), the *Iglesia del Nazareno* (1967), the *Unidad Deportiva La Federecha* (1967), the *Restaurant and Neveria Daily Queen* (1969), the *Sinagoga at the Club Macabi* (1971).
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Modern Pocitos. Domestic interior in high rise dwellings in Montevideo (1950–1970)

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Pocitos, a neighbourhood in Montevideo concentrates a great number of high rise dwelling buildings. These dwellings, of clear modern affiliation, were designed in the 50s and 60s by architects as Sichero (1918–2014), García Pardo (1910–2006), Villegas Berro (1918–2015), Jones Odriozola (1913–1994) and Pintos Risso (1906–2003). They proposed a transformation in the domestic way of living in Montevideo. This paper shows advances of an ongoing research; looking for characterizing some of the main interior space design strategies of that dwellings. Our research is supported by survey, register and redraw of the studied cases. We could see in these sceneries a horizontal space conception, communicated with the outside landscape, open to diverse uses and available to be transformed by their dwellers. This approach to the study of high design quality precedents understands them as architectural lessons, that allow us to reflect about the contemporary dwelling design.

1. Introduction

Pocitos in Montevideo concentrates a great number of high rise dwelling buildings, of clear modern affiliation, made in the 50s and 60s. They were designed by architects such as Raúl Sichero (1916–2014), Luis García Pardo (1910–2006), Francisco Villegas Berro (1918–2015), Guillermo Jones Odriozola (1913–1994) and Walter Pintos Risso (1906–2003). These projects share the same conception of the domestic program and its interior scene, and the use of formal abstraction, consistent with its construction in reinforced concrete and glass.

Located on the coast of the River Plate, the construction of this group of high rise buildings in *Pocitos* proposed a transformation in the way of living, not only for the city, but also for the domestic interior in Montevideo. We can see in these sceneries how the high rise dwelling moved away from the gloomy and vertical space of the city old houses¹, to a horizontal conception,

communicated with the outside landscape, open to diverse uses and available to be transformed by their dwellers.

Our paper characterises some of the main interior space design strategies of the high rise dwellings of the 50s and 60s in the *Pocitos* area. These strategies were observed as recurrent solutions in the cases considered. This approach to the study of high design quality understands them as architectural lessons that allow us to reflect about the contemporary dwelling design.

Although the *Pocitos* buildings had been highlighted by the critic with expositions and monographic works dedicated to its most relevant architects², little attention has been paid to the whole, as happens in other similar contexts³. Also, the studies dedicated to the domestic space in Montevideo⁴ are based on those most paradigmatic buildings.

This paper is part of a larger research "*Modern Pocitos. A catalogue of high rise dwelling buildings in the 50s and 60s in the Pocitos area in Montevideo*", being developed by a design studio at FADU UdelaR, Montevideo. As its names shows, this research proposes the cataloguing of modern buildings in a specific period and area of the city. It attempts to make a documental and systematic platform of a high-quality architectural set, linked to the compositional values of the modernity, contributing to the knowledge of the architecture in Uruguay. Catalogued cases were photographed and redrawn from original documentation found in the city archives, in order to produce comparable graphic pieces. Specifically, this paper is part of the second stage of the research project and shows advances that expand what was communicated in previous publications⁵. It is a qualitative study of the graphic catalogue produced, highlighting the recurrences, and integrating



Figure 1. Arq. Sicheo. *Guayaquí* and *Perú* buildings, 1951 and 1954, at the *Pocitos* waterfront in 1954. © Arquitectura no. 229 (Montevideo: SAU. 1954): 1.



Figure 2. Raúl Sichero. *Martí* and *Guayaquí* buildings, Pocitos, Montevideo, 1954 and 1951. © Francesco Comerci et al., *Pocitos Moderno. Un catálogo de edificios residenciales en altura en los años 50 y 60 en el área de Pocitos en Montevideo* (Montevideo: Universidad de la República, 2019), 24. (Ph. Marcos Guiponi)

other drawings and photographs, in order to identify some of the main design strategies for the domestic interior.

2. Pocitos and modern architecture

Pocitos is a seaside neighbourhood of Montevideo, with sand beaches over the River Plate. In the first half of the XX century, it was a seaside resort of large houses, with eclectic architecture, where the introversion and verticality of interior spaces and human relationships predominated⁶. At the beginning of the 50s starts a process of wide typological substitution of the individual residences for high rise buildings, promoted by a few architects, designers, and real estate developers. They were taking advantage of the 1946 act of “horizontal property” that allowed this kind of condominium⁷. It was a process similar to what had happened a few years before in Sao Paulo and Rio in Brazil⁸.

Although there had been a previous development of modern architecture in Uruguay, starting in the late 20s, it was in the late 40s that this way of design breaks with the precedent practices⁹. Looking at the new Brazilian architecture, and the European and North American post-war developments, the modern architecture in Uruguay was assumed by architects, and accepted by the State and the privileged classes of society through the promotion of public works and new residential buildings in the *Pocitos* area.

In this neighbourhood of checkerboard urban traces, a modern city is built, based on individual buildings, without a common urban plan, but sharing a clear urban vocation¹⁰. In one hand, the new residences dialogue with the site and the street, offering a human scale environment. In the other, they stress the architecture to find and maintain the modern values of transparency, free ground floor and the formal consistency of the isolated block.

The current state of this buildings is acceptable because of the well maintenance of their owners, showing care and appreciation. Some of them have been declared of heritage value by the city government.

3. Domestic interior in pocitos

The catalogue of modern housing mentioned above allows to observe some design strategies for the conformation of the domestic interior in *Pocitos*. In the next paragraphs, we will highlight three of them: a conception based on a horizontal space, dissolving the limits between in and outside; the inclusion of rooms with no predetermined destination, enlarging the domestic ambit to others spheres of activity and the availability of area for a custom occupation of the scenery by their dwellers.

Horizontality

The first strategy is about the horizontal expansion of the apartments. The dwellings, developed to maintain wide contact with the outside, are organised in such a way to be illuminated and ventilated by two sides. This simplifies the hygiene as well as the intelligible perception of the spaces. The absence of sceneries with a vertical spatial component is notorious, while the horizontal direction predominates, creating a link with the outside and specially, staring at the coast of the River Plate. Apartments become participants in the landscape, thanks to balconies, terraces, floor to ceiling windows and sunshades, in a scene framed up and down by horizontal planes. In this way, the architects profit the favourable conditions of the coastal geography to give room to a new and modern way of living, extending to the whole year the summer social practices of the old seaside neighbourhood¹¹. This is why, in some cases, the architects brought in some archetypical domestic elements, such as the fireplace or the direct extension of the interior to the exterior, to the high rise housing.

In this sense, the dwelling is transparent to the eye, both from the point of view of the incorporation of the landscape into the interior and the exposition of the domestic privacy of the dwellers¹². But also, its transparency can be found in the intelligibility of the architectural form and of the social relations that the apartments propose. The buildings organise around a central core dedicated to vertical circulation, serving, in general, two dwellings with two to five bedrooms by floor. The systematic arrangement of the services in



Figure 3. Arq. García Pardo, *Guanabara* building, *Pocitos*, Montevideo, 1954. Interior view. © Drawing by the authors.

the centre or centre-back of the plan allows to free the façades to the main rooms, linking them directly with the outside. A clear hierarchy of the areas dedicated to living room and the parents' bedroom is evidenced, leaving the other bedrooms and the domestic service to the rear façade. The living room presents proportions in the horizontal direction, occupying an important portion of the front of the dwelling, with the sought-after views and expansion towards the landscape.

Unlabelled rooms

At first sight, the organization of the plan of the *Pocitos'* residences seem to be destined to locate a typical nuclear family, identifying rooms of day and night and areas for the service that support the domestic living. The dwelling different zones are linked by halls and corridors that filter and mediate between the different grade of intimacy needed. They allow a partition of the apartment into units with a certain independence from each other.

However, we can see some elements that introduce variations to these conventions. Mainly linked to the living rooms, it is possible to find rooms without a predetermined destination or use. The rest of the apartment rooms seem to be label and fixed to a clear activity, while these rooms could be seen as sceneries empty of the architect determination. There are rooms with folding doors or curtains, that can be integrated to the living room, expanding it, or can make place to an activity programmed by the dwellers, as a playroom, a library, a place to work or to study. The programmatic sphere of the house is expanded in this way, problematizing the modern scheme of function zoning. The dwelling cease to be a specific scenery of habitation to offer itself as a more complex space, integration other activities, some of them considered external to the domestic living¹³.

On the other hand, the above-mentioned domestic service rooms are a manifestation of the social relations prevailing at the time. They also represent a housing scheme parallel to the dwelling they are serving. If we think of a contemporary appropriation of this sceneries, more than the possibility of reproducing the old social practices, this particular organization, with a housing nucleus deployed around the kitchen, offers greater versatility for its diverse occupation, being common its use as a teenager apartment, workshop or office.

Availability

Pocitos' buildings contain apartments of generous dimensions, between 100 and 200 square metres. This spatial extension turns away from the idea of a minimum dwelling and a precise adjustment between form and function proposed by modern architects in the 20s and 30s. The dimensions of the different rooms allow an extended appropriation by the dweller, closer to the traditional domestic scenery. Furniture can be arranged in different ways, and

this together with the movable enclosures discussed before, transform the inhabitant in a tactic manipulator of the space¹⁴. If the residences have rooms without a predetermined destination, capable of containing work activities, the bedrooms can also include zones for non-domestic uses but in a more intimate context.



Figure 5. Arqs. Falkenstein, Guerra and Clerc. Augustus building, Pocitos, Montevideo, 1961. Plans with furniture.
© Drawing by the authors.

On the other hand, the internal partitions create a specific distribution but can, in many cases be easily modified. This is seen in the absence of integration of the bearing structure and its modulation to the partition distribution, drawing spaces with an independent pattern. This counterpoint puts on display the conception of the unit of dwelling as a container, relatively open to the dweller transformations, both manipulating the furniture and the internal partitions.

We can identify, in this way, three orders present in our residences: the bearing structure that governs the whole building and the façades; the interior partitioned itself; and the services annexes. This diversity of orders allows, in one hand, the variation of the organization of dwellings floor to floor in some cases, adding or modifying rooms. In other hand, it promotes the technical experimentation searching to minimise and concentrate the bearing structure elements and enhance the space variety and expansion.

4. Afterword

The domestic scenery of the *Pocitos'* buildings presents an adaptation of the modern design principles to the Montevideo seaside context, showing

a specific synthesis. When the *Pocitos'* buildings replace the old houses, they change the way of living. They change the introverted and verticality for the horizontality and extroversion of ambiances, its availability for the transformation by the dweller and the possibility of mixing uses inside the dwelling. These are strategies that propose a flexible way of living, stress habits and conventions, placing in a dialectical relationship the inhabitant and the architect¹⁵, appealing to low complexity solutions to get a wide range of dwelling versatility.

If we think in some of the main design strategies of contemporary housing, we could see the convergence with the strategies reviewed and present in the *Pocitos* sceneries. The search for simplicity and neutrality of domestic space, based in the incorporation and availability of square metres to the inhabitant; the natural conditioning of ambiances, dissolving the limits between inside and outside, between the home and the city, through the coexistence of uses; or the dweller participation in the organization and customization of domestic spaces¹⁶, can be cited as some of that crossing lines that could allow to reinterpret our sceneries for our times.

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Notes

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- 2 Henry–Russell Hitchcock, *Latin American Architecture since 1945* (New York: Museum of Modern Art, 1955), 49; Bergdoll, Barry et al., *Latin America in Construction: Architecture 1955–1980* (New York: Museum of Modern Art, 2015); Pablo Frontini, *Arquitectura moderna y calidad urbana. La obra de Raúl Sicheo en torno al edificio Ciudadela (1958–1962)*, PhD dissertation. Barcelona: Universidad Politécnica de Catalunya, accessed November 2014 <http://hdl.handle.net/10803/134598>; Santiago Medero, *Luis García Pardo* (Montevideo: IHA, FArq, Universidad de la República, 2012); Diego López de Haro, *Luis García Pardo (1953–1963)*, PhD dissertation. Barcelona: Universidad Politécnica de Catalunya, 2016, accessed January 2020 <http://hdl.handle.net/2117/96164>; Helio Piñón, *Pocitos, Montevideo (sin palabras)* (Valencia: TC Cuadernos, 2019).
- 3 Gustavo Robinson and Martín Torrado. *Arquis. Patrimonio moderno 40–50–60*. Documentos Arquis de Arquitectura y Urbanismo (Buenos Aires: Facultad de Arquitectura, Universidad de Palermo, 2012).
- 4 Alemán. *Bajo Clave*, 91–95.
- 5 Francesco Comerci et al., *Pocitos Moderno. Un catálogo de edificios residenciales en altura en los años 50 y 60 en el área de Pocitos en Montevideo* (Montevideo: Universidad de la República, 2019); Alfredo Peláez et al. "Pocitos Moderno. Um catálogo de edifícios residenciais nos anos 50 e 60 de Pocitos em Montevideu" *Revista DOCOMOMO Brasil* 3, no. 4 (December 2019): 85–93.
- 6 Alemán. *Bajo Clave*.
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- 16 Canales, *Mi casa, tu ciudad*.

On Nature and Environmentalism: **notes on Brazilian Modern Architecture's Legacy**

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The expansion and consolidation of modern architecture in Latin America coincided with economic developmentalism, the perception of abundant natural resources (including land), the need to expand borders occupying untouched territories, as well as a full confidence in technology to manage the problems raised by growth and lead to social improvement. Developmentalism promoted a certain understanding of nature, which was primarily considered as an economic resource, and the acceptance of the logic of the machine as the foundation of productive and social activity. On the other hand, the often-controversial relationship between modern architecture and the city has also been pointed out, and a supposed antagonism to the “urban” was not a despicable ingredient for architecture in the modern era, provoking other answers regarding nature. Moreover, formative texts in the historiography of modern architecture in Latin America highlighted a climatic concern and expertise shaped through the development of architectural devices to control excessive heat, either inherited from traditional construction or invented by modern architects. In this sense, the engagement of modern architecture with nature in Latin America poses a more diverse and complex scenario that, at first sight, the opposite *topoi* of the machine and the wild nature might suggest. The paper argues that an idea of nature that goes beyond aesthetic enjoyment (although not denying it) can be tracked in Brazilian modern architecture before the environmental turn in the sixties, and that this legacy deserves to be re-examined in the light of contemporary environmental awareness, recognizing both ambivalences and disciplinary contributions

1. Introduction

Adrian Forty sustained in *Words and Buildings* that “nature” had been the main category for architectural thought until “the era of high modernism”; from early to mid-century, nature was “largely put into abeyance” – except by Le Corbusier and Wright – to be “reinvented” in the sixties with the coming of the environmental movement.¹ This argument contrasts with the idealized notion of Latin America’s modernism as the creation of a tropical Eden shaped by pilotis, roof gardens and brise-soleil, amidst palm trees and cactuses.

In fact, when historically situated in relation to the environmental problem, modern architecture seems to contain dimensions that are not always convergent. Most environmental historians agree that environmentalism gained momentum as a mass cultural phenomenon after the Second World War, finding the term anachronistic when associated to earlier efforts on the conservation of natural resources.² The environmental issues would be officially installed in the world’s political agenda in 1972, with the United

Nations Conference of Stockholm. In the same year, Club of Rome's report *The Limits to Growth* challenged the ideal of economic growth, warning of the limits of the planet's capacity to maintain the usual growth trends indefinitely.

In Latin America, the expansion and consolidation of modern architecture throughout the continent coincided with economic developmentalism, the perception of abundant natural resources (including land), the need to expand borders occupying untouched territories, as well as a full confidence in technology to manage the problems raised by growth and lead to social improvement. Developmentalism promoted a certain understanding of nature, which was primarily considered as an economic resource, and the acceptance of the logic of the machine as the foundation of productive and social activity.

On the other hand, the often-controversial relationship between modern architecture and the city has also been pointed out, and a supposed antagonism to the "urban" was not a despicable ingredient for architecture in the modern era, provoking other answers regarding nature. Moreover, formative texts in the historiography of modern architecture in Latin America, from Goodwin (1943) to Hitchcock (1955), highlighted a climatic concern and expertise shaped through the development of architectural devices to control excessive heat, either inherited from traditional construction or invented by modern architects.

In this sense, the engagement of modern architecture with nature in Latin America poses a more diverse and complex scenario that, at first sight, the opposite *topoi* of the machine and the wild nature might suggest. The paper argues that an idea of nature that goes beyond aesthetic enjoyment (although not denying it) can be tracked in Brazilian modern architecture before the environmental turn in the sixties.

2. Back to the rural village

In 1934, Lucio Costa entered the competition launched by the Companhia Siderúrgica Belgo-Mineira, a steel company, for the construction of a village for its workers in João Monlevade (Minas Gerais). The brief called for single-family houses for two thousand people and a few buildings for community life. The company was founded in 1917 by a group of Brazilian engineers. In 1921, they opened the capital to a Belgian partner, increasing production and logistic operations. In 1935, president Getúlio Vargas laid the cornerstone of the Belgo-Mineira's modern steel mill in João Monlevade, as well as the rail branch to give access to that.

In 1995, Costa compiled his work in *Registro de uma Vivência*. Under the subtitle "Rejected project," he presented the Monlevade's entry. The article's opening drawing, and the only one in full page, was not the overall view of the village, but a sketch depicting a specific angle of the typical house (**Fig. 1**).³ It pictures a domestic scene taking place at the house's ground level, where a

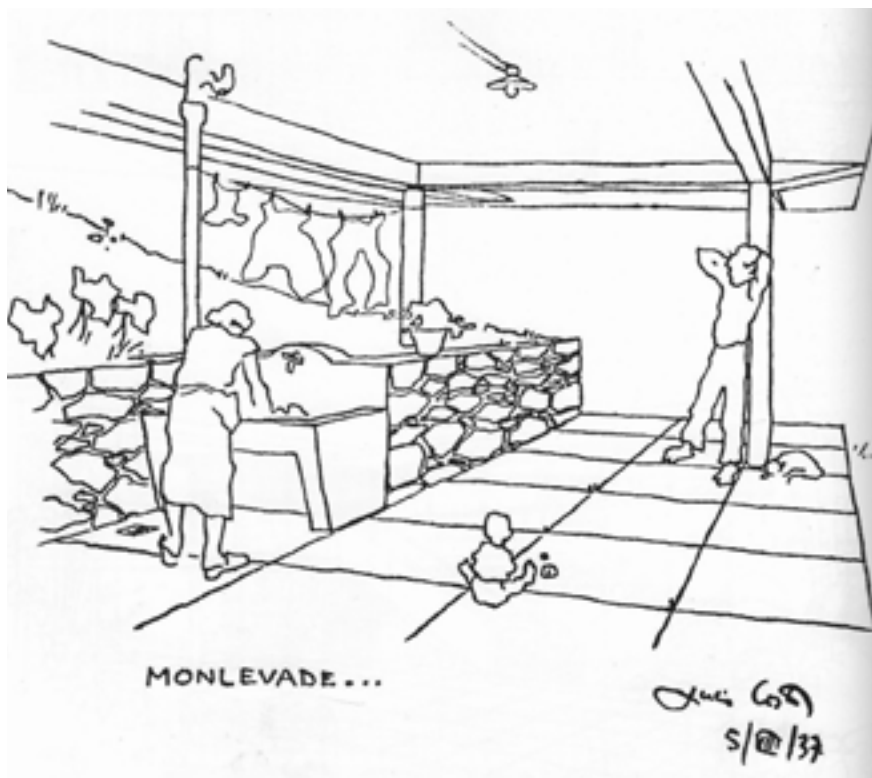


Figure 1. Lucio Costa, Monlevade House, 1934. © Costa, Lucio. *Registro de uma vivência*. São Paulo: Empresa das Artes, 1995.

woman does the laundry while a man watches a baby seated on a tiled floor. The water tank reminds us that the private house is also a place to work. The water tank is placed against a half height stone wall, which both defines the domestic space and holds the sloping site, framing a beautiful view of the vegetated landscape. The hanging clothes, perhaps rustling to a passing wind, suggest a refreshing, shadowed space under the concrete porticoed structure, surrounded by permeable areas covered with flora, which would help decreasing temperature storage.

As Comas noticed, Costa introduced his proposal with a quote from Frederick Law Olmsted, suggesting an affinity with the American conservative movements that inspired the creation of the first national parks.⁴ The submitted entry to the competition seems to lack a master plan. Apparently, he did not design a traditional urban plan with lots and streets, which could be more clearly paired with the conventional garden city scheme, or the American suburb. His drawings suggest a farther rustic imprint. Despite the symmetric ordering of the community buildings, the village's main open space is conceived more like a clearing in the woods than like a regular paved square.

Houses are grouped in pairs, forming neatly defined volumes, scattered over an almost untouched nature. At the bottom of the page, a schematic section explains the relationship to ground. Costa defends the Corbusian *pilotis*, “neither in front nor behind the house, but under it,” as the way to cope with declivity and minimize excavations, to both obtain waterproof houses, detached from the ground, and the covered area for domestic use, protected from sun and rain.

Moreover, according to Costa, the *pilotis* allowed the use, above the concrete slab, of a light, local, and economical independent building system. He proposed to build the suspended, enclosed part of the houses with an improved version of the primitive “pau a pique” (wattle and daub) technique, a well know construction system used for rural houses in Brazil. Combined to the airy ground level, the reinforced clay walls that shape the house’s indoor spaces, as poor conductors of heat, would also contribute to a climatic-responsive design.⁵

Costa’s crossbreed house, joining the modern to the primitive, yet admitted an industrialized roofing, at that time imported. He proposed a single slope Eternit roofing for the houses, due to the lightness and Belgian provenance of that fibre-cement material, which could represent an economical vantage for the Company. The first Eternit plant in Brazil would open in 1948. Since the seventies, the use of the asbestos in the fibre-reinforced cement, harmful to human health, was progressively abandoned.

3. Pieces of the compact city

In 1955, Hitchcock closed *Latin American Architecture since 1945* with the section “Urban Façades,” displaying an ordered sequence of photographs of high-rise buildings in distinct cities and latitudes all over the region. He pointed out the many varieties of façade treatment, from the flat ones with horizontal strips of windows to the rich patterns of horizontal or vertical sunbreaks. “More and more,” he said, the “articulated types of façades are superseding the flatter mode inherited from the 1920s,” highlighting Latin American strong contribution to the development of the modern language in this way. One Brazilian example was Lucjan Korngold’s C.B.I Building (São Paulo, 1948–51), associated to the “crate-like grid” type of façade, where “movable louvers provides adjustable sun-control.”⁶

Goodwin’s *Brazil Builds* had made a similar point a decade before, stating that Brazilian modern architecture fitted the climate, confronting and “often brilliantly solving” the problem of protection from heat and glare.⁷ Kidder-Smith photographs and some explanatory diagrams produced enough evidence. The chief case was the Ministry of Education and Health (Rio de Janeiro, 1936–1943) by Lucio Costa, Oscar Niemeyer, Affonso Eduardo Reidy, Carlos Leão, Jorge Moreira, Ernani Vasconcelos, with Le Corbusier invited as a consultant in 1936. The final solution, defined after Le Corbusier’s departure,

embraces a sophisticated system of movable sunshades on the northwest façade of the building. Other cases were Niemeyer's Day Nursery (Rio de Janeiro, 1937), with adjustable vertical louvres; Marcelo and Milton Roberto's Brazilian Press Association (ABI) Building (1936), with fixed ones, arranged vertically; Luis Nunes' Olinda Water Tower (1936), with a permeable façade of mass-produced hollow concrete blocks; and Niemeyer's Grand Hotel in the colonial city of Ouro Preto (1940–44), with wooden latticework panels on the balconies.⁸

In 1956, Henrique Mindlin's *Modern Architecture in Brazil* singled out the research into the functions of sunlight as a decisive, formative factor for the country's new architecture. Mindlin, both the historiographer and the practicing architect of the modern movement, noticed the continuity of a local engineering expertise, from Alexandre Albuquerque studies on orientation and sun lighting of buildings in São Paulo, in 1916, to the later experimental research of Paulo Sá and others in Rio de Janeiro, as the scientific basis upon which Brazilian architects learned to handle sunlight graphs and improve their design solutions.⁹ The idea of the thick but permeable façade would be consistently expanded in the forties and fifties, either through the development of crater-like concrete grids, open work pre-cast concrete and hollow tiles, or by the superimposing of lighter metallic or wooden screens on glass façades or balconies.

Lucio Costa's free-standing slabs at Guinle Park (Rio de Janeiro, 1943–53) display a variety of textures of vertical louvres and hollow bricks, controlled by a unifying regulating grid. Affonso Reidy's residential blocks in the Pedregulho complex (1946–52) also combine vertical movable wooden sun-breakers and perforated surfaces at the galleries and balconies to the use of wooden sash windows with shutter panels at the apartments. But unlike the Guinle Park and Pedregulho, which stand over generous open green areas, many of the buildings that assumed this collective search for a climatic responsive façade were fitted into the increasingly crowding urban block. They belonged to the dense urban blocks of continuous façades, which composed the traditional city whose virtues would be rediscovered in the last decades by the sustainable thinking, due to its compactness and functional complexity.¹⁰ The flat façade gains thickness, in order to let the wind pass, block the sun light, and still preserve some views. It was the case of the Roberto brother's Mamãe Building (1945) and Fátima–Finusia Building (1951), in Copacabana, whose volumes match the lot width. The Mamãe Building has a double façade, comprising an exterior cantilevered concrete grid, at times filled by aluminum shutters or horizontally inserted Eternit slabs. The inside one combines a central strip of glazed sliding windows with panels of movable shutters above and below. Niemeyer stretched horizontal reinforced concrete sun breakers along the undulating façades of the Copan Building (São Paulo, 1951–66) and Liberdade Building (Belo Horizonte, 1954). The sun breakers are disposed in front of glazed surfaces at a regular rhythm (three for each floor), achieving the modern continuity of inside and outside.

The layering façades of wooden or metallic screens and glass planes may be exemplified with the work of Jorge Moreira, Paulo Antunes Ribeiro, and the Roberto brothers. Moreira's Antonio Ceppas Building (Rio de Janeiro, 1952) is worth noticing for the varied patterns of wooden trellises and swiveling wooden vertical and horizontal louvers, combined to sliding windows or facing balconies. Ribeiro's Caramuru Building (Salvador, 1946) has detached outer walls formed by a checkboard pattern of metallic grilles. The Roberto brothers suspended a metallic framework on the façade of the Marquês do Herval Building (Rio de Janeiro, 1952–55), and hung movable louvered aluminum panels on it (**Fig. 2**).



Figure 2. MMM Roberto, Marquês do Herval Building, Rio de Janeiro, 1952–1955. © NPD – DPA FAU UFRJ

The Roberto's diagram showing the functioning of the inventive, gadget like façade of the Marquês do Herval Building perhaps epitomizes the essence of this collective research on the shaping of architecture regarding nature and the city (**Fig. 3**). The diagram shows a system of moving sun breakers on a presumably multi-story building, fixed on protruding windowsills. The human figure, placed at the center, can handle the panels to enjoy the outside view and still be sheltered from the sun. This human-tailored façade, although clearly showing the mastering and understanding of natural forces, was however centered on comfort issues. In the next decade, when the use of air conditioning became gradually more accessible, the interest in solving climate issues by means of architectural devices decreased. The beautiful, ingenious superstructure of Marquês do Herval façade would be removed after ten years of use, allegedly for saving maintenance expenses.¹¹



Figure 3. MMM Roberto, Marquês do Herval Building, Rio de Janeiro, 1952–1955. © NPD – DPA FAU UFRJ

4. Brasília's superblock

Brasília has been seen as the very symbol of developmentalism in Latin America.¹² Lucio Costa explained his winner Pilot Plan (1957) not as the result of regional planning, but rather its cause, defending the importance of giving shape to such a deliberate act of territorial conquest.¹³ The moving of the capital from the coastal city of Rio de Janeiro to the central plateau was a long-time idea, finally accomplished during President Juscelino Kubitschek government (1956–1961). The inland capital was part of the conquest of a “new frontier,” with goals as practical as symbolic. The automotive industry and the expansion of the road network were central to Kubitschek's national development plan. Brasília should be the physical focal point for a system of highways crossing the country, to achieve territorial integration, allow the flow of goods from industrialized to rural areas, and alleviate regional inequalities.¹⁴

Brasília has been also seen as the apotheosis of the dispersed city model, the “great phagocyte of the land” related to CIAM's car-oriented urbanism and opposed to the compact sustainable city.¹⁵ Nevertheless, Brasília was also an effort to bring nature back into the city, and to overcome the enduring problems of the compact city, such as the lack of significant green areas placed under everyone's

windows, and not just at the privileged streets around squares and parks. Costa presented his solution for the residential issue in the Pilot Plan, the “superquadra” (superblock), beginning by the trees and not by the buildings. He says that occurred to him the creation of a sequence of big blocks at both sides of the highway residential axis, “framed by a wide, densely wooded belt,” complemented by an intermittent curtain of shrubs over a grassy floor (Fig. 4).¹⁶ He would later insist on the natural component as an integral part of the 280 x 280 meters superblock’s structure, in the same way that the six-story buildings raised on pilotis and its public ground level. The twenty meters wide green strip, planted with rows of trees “whose crowns touch each other,” as he put it, would “move with the wind and breathe, thus forming, instead of walls, living frameworks, opening to wide internal spaces.”¹⁷ If the Guinle Park was the reference for the free-standing buildings suspended over pilotis, the idea of the liberated “under the block” space was perhaps not so far from the little Monlevade house.¹⁸ Costa’s Brasília, or the Pilot Plan, is now the geographical centre of a huge conurbation of three million people. Brasília’s conurbation in fact contrasts with the finite figure of the city imagined by Costa, the airplane-shaped plan proposed in the Pilot Plan, with an estimated population size of 500.000 inhabitants that was never achieved. Paradoxically, Brasília’s urban structure was designed against the idea of the infinite growth of the city over nature.

As Frank Zelko has observed, a distinguishing trace of environmentalism was the “reinvention” of the idea of nature as something “fragile,” which demands to be protected and nurtured.¹⁹ In this regard the environmental shift poses a new challenge for architecture, redirecting a concern for nature mostly centred on the human comfort and well-being to an ecological concern for nature in the planetary sense. The real answer to this challenge depends on a complex array of factors and different knowledge systems, since no solution has just local implications. Nevertheless, effective changes in resource consumption might go through the acknowledgment of modern architecture’s disciplinary legacy. It would be unrealistic to suppose that architectural



Figure 4. Lucio Costa, Superblock, Pilot Plan, 1957© Costa, Lucio. *Registro de uma vivência*. São Paulo: Empresa das Artes, 1995.

devices shaped to provide a comfortable shelter will substitute the power operated solutions, as air conditioning, but they can help building a culture of sustainability and minimizing of energy consumption.

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Notes

- 1 Forty, Adrian. *Words and Buildings. A Vocabulary of Modern Architecture*. New York: Thames & Hudson, 2000, p. 220; p. 238.
- 2 Zelko, Frank. "The politics of nature." In *The Oxford Handbook of Environmental History*, edited by Andrew Isenberg. New York: Oxford University Press, 2014, p. 718.
- 3 Costa, Lucio. *Registro de uma vivência*. São Paulo: Empresa das Artes, 1995, p. 90.
- 4 Comas, Carlos Eduardo. *Precisões brasileiras. Sobre um estado passado da arquitetura e urbanismo modernos a partir de obras e projetos de Lucio Costa, Oscar Niemeyer, MAM Roberto, Affonso Reidy, Jorge Moreira & Cia., 1936–45*. Doctoral Tesis. Universidade de Paris VIII – Vincennes – Saint Denis, 2002, p. 81.
- 5 Costa, p. 92.
- 6 Hitchcock, Henry–Russell. *Latin American Architecture since 1945*. New York: The Museum of Modern Art, 1955, p. 191; p. 194.
- 7 Goodwin, Philip; Kidder-Smith, E. *Brazil Builds: Architecture New and Old, 1652–1942*. New York: The Museum of Modern Art, 1943, p. 103.
- 8 For the evaluation of the thermal performance of these solutions see: Peixoto, Marta. "Sistema de Proteção de Fachada na Escola Carioca." *ARQTEXTO* 2, (2002): 122–137.
- 9 Mindlin, Henrique. *Modern Architecture in Brazil*. New York: Reinhold Publishing Co., 1956, pp. 10–11.
- 10 Rueda, Salvador et. al. *The sustainable city*. Barcelona: Centre de Cultura Contemporània de Barcelona, Diputació de Barcelona, 1998, p. 96.
- 11 Bruand, Yves. *Arquitetura Contemporânea no Brasil*. São Paulo: Perspectiva, 1981, p. 179.
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- 13 Costa, Lucio, "Memória Descritiva do Plano Piloto." In *Registro de uma vivência*, p. 283.
- 14 Schwarcz, Lila Moritz; Starling, Heloisa Murgel. *Brasil: uma biografia*. São Paulo: Companhia das Letras, 2015, p. 416.
- 15 *The sustainable city*, p. 52.
- 16 Costa, p. 291.
- 17 Costa, p. 308; p. 326.
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Modern Architecture historiography and Latin America: postcolonial challenges to overcome silences and biases¹

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In a seminal article published in 1999 Sybel Bozdogan reflects on the pressing postcolonial challenges of the architectural history field, asking for adequate ways to “expose the biases and exclusions of the western canon without discarding it altogether”², and how to “include the hitherto excluded and marginalized ‘others’ without either neutralizing their differences or essentializing these differences into incommensurable and timeless categories”³. Two decades later these are still open questions. This paper addresses the importance of debating ways to “resist the naturalization of differences by a [hypocritical] benign inclusion”⁴ arguing that expanding the field should be much more than just the indulgent act of allowing ‘others’ to have their ‘peripheral place’. It briefly considers the inception and usefulness of the historiographical category “Latin American Architecture” the risks of its use in global debates, and how the plurality may become a mild inclusion and not an effective instrument of change of the status quo. It suggests ways to establish proper paths to fulfil the postcolonial challenge of building a comprehensive planetary vision of modern architecture history – considering Latin America, and beyond it.

1. Introduction

“Modern architecture” is a historiographical definition constructed in a short period of time around a century ago. It was prompted by the emergence of a selected set of works, interpreted and postulated as the built result of a series of conceptual and spatial instruments to attend to the demands of the times and to assert their appropriate formal language. These new instruments of modern architectural practice and thought were presented by a series of paradigmatic cases, coming from a relatively restricted geographical area, and displaying a relatively homogeneous appearance. After its initial assessment, a prolific series of new instruments for designing and thinking “modern architecture” quickly dominated the scene: abstraction as a source, pure shape, volume instead of mass, the openness of the architectural box, independence between the load-bearing structure and the arrangement of the programs, the promenade as the physical dimension of time, the interior–exterior relationship, the material objectivity, and the tectonics of construction, among others.

Some of the masterfully designed works that grounded that definition acquired immense notoriety as tokens to further produce “modern architecture”. They immediately attained great prominence in books and magazines, which by then had achieved great preponderance in the diffusion of knowledge, supplanting the manuals of architectural theory⁵. Historians and critics helped reiterate and emphasize this notoriety. By the end of the heroic period⁶, a catalogue of paradigmatic buildings had consolidated said “modern architecture” as a historical subject and its canonical interpretation.

This inherited canon, made from a relatively limited collection of paradigmatic cases, is never questioned, only repeated and mystifying⁷. We keep working within the boundaries of this canon, documenting, and preserving it. There is no doubt that these exemplary canonized works are still relevant not only to understanding the initial efforts of modern architecture but also, to the contemporary restoration and conservation efforts to preserve them; but also, to keep assuring their canonical stance.

And yet, a century after this successful historiographical interpretation was construed and was established as a canon, it is necessary to go beyond it, and to ask what it does not contain, but is also important, and what it excludes, and was rendered invisible by its blinding brightness. And if it is enough to revise it only by including other manifestations: engorging the field but keeping the canonical edifice intact.

2. Modern architecture historiography and post-colonial challenges

In a seminal article published in 1999 Sybel Bozdogan reflects on the pressing postcolonial challenges of the architectural history field:

*How can we expose the biases and exclusions of the western canon without discarding it altogether? How can we include the hitherto excluded and marginalized ‘others’ without either neutralizing their differences or essentializing these differences into incommensurable and timeless categories?*⁸

Two decades later these are still open questions. On one hand, well-grounded research is being done, all over the planet, its results being recognized and disseminated, expanding our knowledge about the multifaceted 20th-century modern architecture. On the other hand, despite the acknowledgement of the worldwide modernity manifestations in architecture and urbanism, the historiographical theories and interpretations that keep regulating the field remain almost the same. That, even though their basic tenets were built on the very limited amount of data then available, considering only some very circumscribed geographical situations, basically European. Although incomplete, that limited amount of material was hastily extrapolated, its supposed “universal” precedence asserted, and every other modern architecture piece situated in different geographical areas was deemed as a delayed

accomplishment, despite occurring simultaneously, or even previously. That canonical definition ensured a bias: everything else is acknowledged as the result of influences and 'transpositions', never as interconnected pieces of a complex panorama, in many-sided 'cross-cultural' exchanges.

Latin American critique on this situation – the canonization of a few works and the exclusion, or trivialization of all the others – happens at least since the 1970s, through the work of several authors:

For a long time, our architectural reality [Latin America's] has been judged or appreciated in terms of other realities; it has been categorized with guidelines derived from other architectures and other urban realities; it has been appreciated or despised insofar as it comes closer or farther from the ideals of other architectures. This situation has now been reversed, as a valuable nucleus of scholars has appeared on the scene of theory and criticism, trying to look at the architecture of our countries, both the present and the past, with American eyes and with their instruments. By changing the point of view, we can focus on the object of analysis in its proper framework.⁹

It is of fundamental importance to "change the point of view", to question and revise the unilateral assumptions of the canonical discourses on Modern Architecture and realize how they come from a very fragile, biased, and limited basis. The century-old canonical discourses and assumptions that regulate the historiographic field of Modern Architecture must be seriously addressed, questioned, and revised from a contemporary and truly global stand, fit to the challenges ahead in a post-colonial world. That will probably affect, in one way or another, the very core of some basic definitions upon which even Docomomo's initial premises rest.

The point, after all, is not to replace the western canon with the cultural production of the marginalized "others" but to show the historical connections, exchanges, and confrontations between them.¹⁰

This is a long-overdue discussion, and it is high time to promote it.

I do not believe that there can be one Modernity suitable for developed people and another (second class?) Modernity for us ['the others']. I believe, on the contrary, that it is time for a new concept of Modernity to emerge from a world that, despite all circumstances, still believes in a future, still believes in the need for a project, still believes in a history that must begin to be rewritten.¹¹

3. Latin American modern architecture history and historiography

The debates on Latin American modern architecture (LAMA) configure an interesting case of how the idea of "others" worked as an appeasing device to enlarge the field without changing its core (and biased) assumptions.

"Latin American modern architecture" is an idea that is not only meant as a geographical category, but suggests the existence of some cultural, social, economic, and historical unifying conditions. The consolidation of this category in Latin American and international scenes occurs in the 1960s, after panoramic visions encompassing the region drawn in the 1940s and 1950s¹². The exhibition, *Latin American Architecture since 1945* held in 1955, at the Museum of Modern Art in New York¹³ helped consolidated the idea of LAMA as a critical and historiographical category, establishing a basis for its interpretation that eventually became canonical. It followed the exhibition *Built in USA: Post-War Architecture*¹⁴, and fed on the transcendence of *Brazil Builds* exhibition of 1942¹⁵. The parallelism is not minor: Hitchcock warned that LAMA demonstrated a larger impetus than North American architecture in some fields, such as the university cities and the residential complexes. His writings are not based on a supposed dichotomy between Latin American and international architecture but on the evident integration of the region in the modern architecture world scene of that time¹⁶.

In the 1960s, Paul Damaz wrote "Art in Latin American Architecture"¹⁷ with a seminal interpretation of the relationship between art and architecture, that is repeated in so many texts that became canonical. There were a series of Latin American monographic publications revising the national panoramas of different countries¹⁸, and essays like Sibyl Moholy-Nagy's on Carlos Raúl Villanueva and the architecture of Venezuela¹⁹. In 1969 Francisco Bullrich proposed the first strong historiographical production about Latin America by a local author, "*Arquitectura Latinoamericana*"²⁰, articulated first by country, then by significant categories, partially repeating the historiographical focus of the canonical discourse on (European) modern architecture: a genealogy, pioneers or tutelary figures, some key ideas about construction, some formal shared conditions, new themes, and a venturous future.

Criticism and history helped the construction of the idea of Latin American architecture, frequently subjecting it to economic and social development dilemmas and/or dualistic theoretical approaches around the 'spirit of the time and spirit of the place'. In the last twenty years, LAMA has become a habitual trope to aggregate different and diverse works, with some interesting approaches by Roberto Segre and Lopez Rangel²¹, Silvia Arango²², Ana Esteban Maluenda²³ and the curators of the "Latin America in Construction" MoMA exhibition²⁴. The increasing strength of LAMA characterization is replicated by international criticism configuring a category: the Latin American mosaic, an articulation between geography and social image.

4. "The Latin America contribution" or, how to include by excluding

Despite its continued presence as a historiographical category, there are perks and risks in its use at large, especially when framed within the scope of global debates – as is the case of the Docomomo International Conferences. Why

had it seemed necessary, in a 2022's conference about Modern architecture, to propose a "special" theme on Latin America – and by the way, another one on Iberia – which is geographical, not thematic descriptions?

At first, that seems a thoughtful initiative, perhaps born from the awareness that authors, buildings, and debates coming from Iberia (and its former colonialist extension, Latin America), have been less considered in our debates on "Modern Architecture". While "modern architecture" is a tag that pretends to include any geographical discrimination, a separate section comprising a large geographical area suggests that open inclusion is not quite what usually happens. The reasons behind are probably more complex than the supposition of that being a result of objective selection based on "quality"; as so, an exclusive section seems to be a sensible and practical way to open opportunities to overcome that relative absence. Although granting its space, diversity is pushed to a corner. It is inclusion not to reconsider LAMA's contribution to revising and completing the panorama but as a concession to the periphery, where it keeps belonging. Or more precisely, where it has been put by the dominant canonical (limited and excluding) discourses on modern architecture, construed not by the examination of all the facts, but by misinformed assumptions and biases born from centuries of metropolises' colonial mentality.

So, let's address the huge elephant in the room, that must be named to be made visible. Inclusion without the will to reconsider the structural frame that defines the status quo suggests a subtly, pervading, prejudiced belief that alas, is still active: that whatever may come from "other" parts of the world will never amount to more than the status of a curious minor contribution to "modern architecture", let alone for the revision of its established core tenets. It leans on the belief (perhaps unconscious and certainly insensible) that the understanding of what the term "modern architecture" means is an already solved: an established and immutable truth from a years ago, with eternal validity. And that, being a long-established deed, albeit less than a century old in making, nothing else we may learn about modern architecture worldwide manifestations would ever prove to be meaningful and key to the efforts in pro of its revision. It seems to denote that no revision would ever be necessary and that we, the so-called others, must resign ourselves only to contribute to the simple engorgement of Modern Architecture repertoire. Latin America is the subject here – but it is not the only meaningful case.

It may be difficult to acknowledge the fundamental importance of the growing amount of information about the achievements of Modern Architecture, all over the world, in the last two centuries, for that will certainly change the status quo, and the canonical discourses and definitions it leans on. Changing is difficult because it will destabilize the scenario, and there is no assurance that the same forces will keep dealing the same cards in a rigged game called "canonical historiography of modern architecture".

Yet, we are here. Instead of rejecting participating in a game, we are not meant to win, we have chosen to use this space to address the importance of debating ways to “resist the naturalization of differences by a [hypocritical] benign inclusion”.

*For postcolonial criticism, the objective of criticizing Eurocentric biases in the constitution of knowledge is not a simple matter of seeking inclusion or claiming space for hitherto excluded others while leaving the existing hierarchies intact. Rather, in insisting on the difference shown by other cultures (or women, blacks, orientals, and so forth) and resisting the naturalization of this difference by a benign inclusion, postcolonial critics seek to unsettle the canon itself and expose the relations of power that are integral to its initial constitution as the canon.*²⁵

This space is hopefully an opening of an interstice. We accept it is an absolute necessity in this 21st century to expand the scholarly well-founded understanding of Modern Architecture, its nature, its manifestations, its importance in its moment and contemporaneity. This expansion should be more than the indulgent act of allowing ‘others’ to have their ‘peripheral place’. That is not an effective instrument of change, just of appeasing.

5. Some conclusions

In a post-colonial global panorama, Latin American modern architecture may be a meaningful historiographical category to deeply understand some local realities – not as a sort of mock instrument of inclusion. Perfunctory political correctness inclusion is not enough anymore for Latin America or anywhere. To change is to collectively take the risk of letting the existing fissures grow. The canonical narratives should be exorcised, and a different sort of narrative should be construed, as a better foundation for addressing our contemporary challenges. That renovated construction will also be as provisional as the former one(s), “for the times, they are a-changin’”.²⁶

The goal is to reach a comprehensive understanding of the deeds and challenges of modernity, as a worldwide complex manifestation, in which all and any of the parts are as important as the others. Nothing less will do. The Latin American case may be an interesting example to consider, as a token for a much broader claim in favour of ampler and necessary changes.

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Notes

- 1 This work is a partial advance of Fondecyt N° 1221316 Research “Modern Architecture and the City: the urban project facing the challenge of development. The author is grateful to Fondecyt for the support given. It is also a partial advance of the CNPq funded Research Modern Ibero–American Heritage: Historical Legacy and Contemporary Safeguarding (Process 405185/2021–9).
- 2 Bozdogan, S., 1999, pp.208
- 3 Idem, ibidem.
- 4 Idem, ibidem
- 5 Janniere &, Vanlaethem, 2008. pp. 41–68
- 6 Smithson, Alison & Peter, 1965.
- 7 For the case of Brazil see: Verde Zein, Ruth (ed.), *Revisões Historiográficas / Historiographical Revisions*, Rio de Janeiro: Rio Books, 2022
- 8 Bozdogan, idem, pp.207
- 9 Waisman, Marina. “1991, pp. 89
- 10 Bozdogan, S. Op cit. pp.208
- 11 Waisman, M. Op cit. pp.97
- 12 The most interesting precedents can be seen in the special reports about different countries – in which Brazil was prominent – that were successively published in the most important magazines in terms of international distribution from the 1940s, such as *L'Architecture d'Aujourd'hui* (1947 and 1952), *Architectural Review* (1943 and 1950), *Domus* and *Casabella* (1954), and *Architectural Forum* (1947).
- 13 Hitchcock, 1955
- 14 Hitchcock & Drexler, 1952
- 15 Goodwin, Kidder Smith, 1943
- 16 Torrent, 2015, pp 276 –291; and Torrent, 2018, pp.492–497.
- 17 Damaz, 1963)
- 18 Such as in Chile (1968) and Uruguay (1970) in *Summa*. “La arquitectura en Chile” *Summa* n° 11, Buenos Aires, Argentina, (Abril, 1968); y “Uruguay: panorama de su arquitectura contemporánea” *Summa* n° 27; Buenos Aires, Argentina, (Julio, 1970)
- 19 Moholy Nagy, 1964.
- 20 Bullrich, 1968 & 1969.
- 21 Segre, López Rangel, 1982.
- 22 Arango, 2013.
- 23 Esteban Maluenda, 2016.
- 24 Bergdoll, Comas, Liernur, 2015
- 25 Bozdogan, S. Op.cit. pp.209.
- 26 Dylan, 1965.

#04

**Modern pioneering
women**

S12

Breaking down Myths: **Great Women in Architecture**

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The fact that the great architects are almost exclusively men is not a coincidence or simply the legacy of an outdated tradition. In a monopolized discipline by men, the figure of the great architect and its continued application in biographies served to further marginalize female professionals. [...Women] low visibility in art history is due precisely to a myth of the creative genius, whose characteristics are associated with aspects that have historically been considered masculine: geniality, mastery, authority, individuality, performance in the public sphere, etc.¹.

This session will bring about some brief but very important considerations on the trajectories of four professional women.

Sibyl Moholy-Nagy (née Dorothea Maria Pauline Alice Sybille Pietzsch) was born in Germany and migrated to the United States, working as an architectural and art historian. Ignacio Urbistondo Alonso will critically consider some academic debates and controversies between her and other professors and architects during *The Modern Architecture Symposia (1962–66)* organized by Columbia University.

Esmée Cromie was a British landscape architect living in Chile, responsible for several important works on architecture and urbanism from the 1950s on. Her work is highly praised but not yet sufficiently known and deserves the celebration and careful reconsideration of her contribution brought by Barbara Rozas's and Romi Hecht's article.

Ángela Schweitzer was a Chilean architect, researcher, and professor; although her name is included in the local canonical historical books, her work goes further and beyond than a brief notice about a notable building. Her ample, meaningful, and varied contribution is the subject of Fabiola Solari Irribarra's and Hugo Mondragón's article.

Edith Emery was an Austrian medical doctor that had also trained as an artist and architect at the Kunstgewerbeschule in Vienna; escaping the war she migrated to Tasmania, influencing the development of local modernism by designing a series of yet largely unknown modernist houses, mainly for women clients. The achievements and difficulties she faced in her professional career are discussed in Stuart King's, Fabiola Solari Irribarra's, and Mat Hind's article.

Notes

- 1 Rigotti, Ana María; Liedenberger, Georg. (ed). Sobre la biografía y el gran arquitecto. Buenos Aires: Diseño, 2019, p.17–8.

Expanding the Field: Esmée Cromie's Version of Modern Architecture

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The 550-square-meter chapel of the Benedictine monastery of the Holy Trinity (1961–64) is a renowned piece of Chilean Modern Architecture that consists of two interlocking white cubic volumes nestled into the northern slope of Santiago de Chile's Los Piques hill. There is, however, less knowledge of the project that set its guidelines: the winning design of a competition for the complex developed between 1953–54 by Jaime Bellalta, Fernando Mena, León Rodríguez, Octavio Sotomayor, and Esmée Marian Cromie de Bellalta (1927–2007), one of the first active female landscape architects in South America.

Flash forward two decades from that proposal –her first in the Chilean architectural scene– and Esmée was playing a fundamental role in the expansion of the disciplinary field of architecture as Head of the Pontificia Universidad Católica de Chile's Department of Environmental Design (DDA). Although the DDA began in 1971 as an experimental program to fulfill the need to teach architects how to design with and within nature, one year later it offered an independent studio and a group of theory courses that set parameters towards an ecologically oriented design and aimed to give form to a graduate program in the long term. Nevertheless, following the 1973 Chilean coup d'état, in 1975 the university closed the DDA and shortly after Cromie and Bellalta left the country.

This paper aims to shine a light on Esmée's contribution to modern architecture in Chile through her cooperation in pushing, blurring, and redefining the disciplinary boundaries in favour of a comprehensive understanding of human –and more than human– habitat.

1. The excuse

Santiago's Benedictine monastery chapel crowns an ensemble that includes the monks' cells, a refectory, a library, a guest house, and a private cemetery [fig.1]. Conceived between 1961–62 and built between 1963–64 by monks and architects Martín Correa and Gabriel Guarda, the building emerges as two overlapping white cubic volumes that approach Los Piques hill's summit from the west, without touching it.

The chapel's commitment to modern architecture has been highlighted by Chilean architectural historian Fernando Pérez for at least three reasons: first, for favouring the cube as a compositional and spatial matrix (Pérez et al, 1997: 178); second, for the use of concrete and light as prime materials – both in

real and abstract terms (Pérez et al, 1997: 178); and third, for its early inclusion in the selected group of projects mentioned in Chile's entry in the catalog of MoMa's exhibition *Latin America in Construction: Architecture 1955–1980*. Here Pérez (2015: 159) states that Correa and Guarda's *opera prima*:



Figure 1. Aerial picture of the Benedictine monastery of the Holy Trinity, 2015. © Camila Romero for LOFscapes.

[...] made natural light the protagonist of their structure, following the reforms of the Liturgical Movement, and the brilliance of their ascetic –albeit rich and intense– design was immediately recognized both nationally and internationally.

Thus, it is not a surprise that the monastery became one of the few constructions of the second half of the 20th century to be declared a Historic Monument in Chile (Ministry of Public Education, 1981). Moreover, in the 1990s the chapel emerged as an anchor point connecting Chilean contemporary architecture with modern precepts, surpassing the “postmodernist stream without getting wet” (Díaz, 2014). Fifty years into its existence, the chapel has turned into a postcard and trademark of local architectural discourse, further highlighted in 2020 when Universidad del Desarrollo's Faculty of Art and Architecture won the Getty Foundation's “Keeping it Modern” grant to develop a manual for its conservation and maintenance.

There is, however, little knowledge of the masterplan that initiated everything: a design conceived between 1953–54 by Fernando Mena, León Rodríguez, Octavio Sotomayor, and newlyweds Jaime Bellalta and Esmée Cromie. Although this was her first appearance in the Chilean architectural scene, she does not always appear in its credits, and even her family has no record of her involvement in the project (Bellalta, 2022). It is possible that she joined the team after it won the competition, as well as Miguel Eyquem and Pedro

Burchard, who also tend to go unnoticed (Muñoz, 2010). Yet, whether it was due to her influence or not, the location of the complex depicts a conscious reading of the landscape: it overlooks the surrounding panorama, separating itself from the valley while enhancing the hill's arid qualities defined by a vegetation of dry grasses, cacti, and thorn bushes – mostly *espinos*.

The group's proposal [fig.2] was an ensemble of overlapping orthogonal volumes placed halfway up the northern slope of Los Piques hill, facing the then–rural valley of Las Condes and the Andes mountain range. The volumes shaped a central courtyard, geometrically counterpointed with a series of ramps, curved paths, and a crooked retaining wall. It's first stone was laid on March 26, 1954, two years before the wing with the monk's cells and common rooms was finished (Gross, 2014). Yet, only that volume, a provisory chapel, and a small cemetery (monk Correa's work under Bellalta's lead) were built following the original project. In fact, funding for the rest of the works would be granted only in 1959, three years after Bellalta and Cromie had moved to London. Overseas Esmée worked in the offices of architect Percy Kane as well as of garden designer, author, and cofounder of the Institute of Landscape Architects (originally the British Association of Garden Architects) Dame Brenda Colvin, while Jaime took graduate courses at the University of London (Proctor, 2016). Simultaneously, the couple ran a private practice formed in 1954: Bella–Alta Associates Architectural Landscape Urban Design.

In their absence, monk Correa suggested that the project for the remaining volumes of the monastery should be developed by members of the School of Architecture of the Catholic University of Valparaíso (originally named Institute of Architecture), which Bellalta had co–founded. But they proposed something so different, grandiose, and massive that the Benedictine community rejected

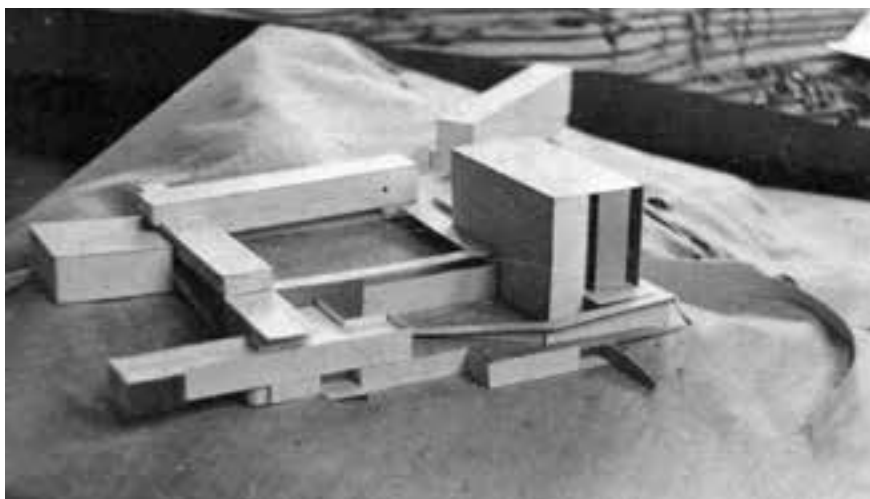


Figure 2. Model of the first project for the Benedictine monastery, ca.1954. © Benedictine community archive. Published in *Monasterio Benedictino de Las Condes: una obra de arquitectura patrimonial* (Gross and Vial, 2021).

it (Gross and Vial, 2021). Consequently, Correa and Guarda ended up leading the development of the complex and chapel, which in time would consolidate the design principles defined by Bellalta's group: first, to establish a fluid relationship between architecture and landscape, guiding the growth of the monastery in time; and second, to push a comprehensive approach towards the environment, recognizable in their exploration and use of light qualities. Both ideas recall the "thoroughly modern" yet transformative notion of 'habitat' (van den Heuvel, 2020: 20).

Already in 1949 Le Corbusier expressed that the International Congresses of Modern Architecture (CIAM) should consider a Charter of Habitat. Coincidentally or not, at the end of the following year Lina Bo Bardi and Pietro Bardi published the first number of a journal called *Habitat: Revista das artes no Brasil*. Still, only in June 1952, during the intermediate CIAM meeting of Sigtuna, the tumultuous lexical debate on habitat, together with the deliberations on its disciplinary repercussions were officially kicked off in the modern discourse arena. Two years later Jaap Bakema, Aldo van Eyck, Daniel van Ginkel, Hans Hovens Greve, Peter Smithson, and John Voelcker distributed a pamphlet entitled "Statement on Habitat" (van den Heuvel, 2020: 11). Also known as the Doorn Manifesto, the document proposed that every "form of association" –such as buildings, villages, towns or cities– operates on a specific "ecological field" (Bakema et al, 1954: 2). But, because the word's meaning was strongly dependent on the language it was spoken, it was impossible to reach an agreement on what kind of habitat was being addressed; much less if it was to be incorporated into the 'official' modern architectural discourse.

Consensus was neither reached in 1952, 1953 nor 1956 and the Charter on Habitat remained an idea. Still, the term permeated the western embedded modern discourse, strengthening the gradual replacement of the functional city utopia for a more humanistic approach towards the urban realm. As such, habitat pushed the borders of the architectural discipline beyond a few certainties, emphasizing a much-needed collaboration among the fields of architecture, landscape and city planning; and forging the idea that "Architecture was no longer a discipline of autonomy, but something relational, embedded, conditional as well as contextual" (van den Heuvel, 2020: 9). In other words, modern architecture became something less focused on form and more fixed on that which lies among forms, recalling Emanuele Coccia's definition of life (Coccia and Godoy, 2020) and building a bridge between contemporary discussions and debates held over half a century ago.

A similar conflict was particularly evident during the 1940s at Harvard's GSD between Walter Gropius's and Dean Joseph Hudnut's views on teaching architecture, with the former betting for a design taking on the Bauhaus legacy, and the latter pushing for a humanistic approach embracing the larger contexts of design (Pearlman, 2015). The feud ended in 1952, with Gropius's resignation and Hudnut's retirement.

2. Esmée's habitat

1952 was also crucial beyond the confines of Harvard. Whether by chance or not, that year architect Alberto Cruz and Argentinian poet Godofredo Iommi initiated an intellectual, experimental, and unconventional project called Valparaíso's Institute of Architecture. The founding group—which also included painter Francisco Méndez and young architects Arturo Baeza, Jaime Bellalta, Fabio Cruz, Miguel Eyquem, and José Vial—defied the institutionalized academic canon, rejecting architecture as a profession, and advocating for an “absolutely modern” way of thinking and practicing (González, 2015). The experiment included poetic acts, costume parties, and theme feasts.

Bellalta informally included his wife, British landscape architect Esmée Cromie [fig.3] in this adventure. They settled in Chile shortly after marrying in Cambridge on June 24, 1952, crowning a relationship that had begun at the GSD, precisely during Hudnut's tenure. While Bellalta took graduate courses with Hudnut's nemesis Gropius, Cromie took studios in the Master's in Landscape Architecture Program “in collaboration with Architecture and Planning Departments” (Cromie, nd). It is certainly possible that that was an attempt to broaden her approach towards landscape beyond horticulture, as defined by her Royal Horticultural Society's College Diploma (Sudley Horticultural College, 1945–47), and her bachelor's and master's degree in Topiary Art (GSD, 1951 and 1952).

Esmée's involvement with the three-dimensional space experience strengthened when she contributed to expand the disciplinary field of architecture as Head of the Department of Environmental Design (DDA) at the Pontificia Universidad Católica de Chile (PUC).



Figure 3. Esmée and Godofredo Iommi at a Greek-themed party in Santiago, nd. © “Jaime, Stories of Life,” *Picture Life Blog* (May 2015). <http://www.picturelifebooks.com/blog/?p=3745>

The DDA was formed in 1971, only one year after 20 million people gathered in the USA to raise awareness about the environmental impact of anthropic activities. Cromie, together with architects Mario Pérez de Arce Lavín and Claudio Ferrari founded the department with a twofold intention: first, to equip students “with a greater sensitivity towards the environment, where architecture is located” (Cromie, 1975); and second, to introduce among designers a wider intervention scale than the architectural one (“Taller Diseño Ambiental,” 1974). Initially, the DDA provided services to other departments at the School of Architecture, but from 1972 onwards it offered an independent studio and a core of theory courses: Cromie’s “Environmental Balance” and “Seminar of Ecology and Architecture,” Raúl Irrazábal’s “Space Class on Chile,” Marta Viveros’s “Landscape History,” and Ute Behm’s “Vegetal Material” (Cromie, 1975). For Cromie, the DDA became a medium to create a degree in Environmental Design in the long term, as well as a tool to embrace a wider field and push forward the idea that architecture is always settled in a particular environment with a unique geography, hydrography, and climate, together with specific human, material, spatial, and ecological resources (“Taller Diseño Ambiental,” 1974).

For her, “ecosystems and their rectifying dynamism reflected another possibility for environmental design, through a conscious interrelating of all the parts –the designer together with the designed–for– in a new form of designing” (Cromie, 1976). As such, a garden, probably the most domestic of human spaces and a living example of intertwined relationships, was defined by a particular place and a specific culture without departing from a universal ‘net of gardens’ (Cromie, 1998: 8). Consequently, she understood landscape as something connecting specificity and universality on a biological, cultural, and spiritual level.

A very telling example of Esmée’s approach towards design is a housing complex for the PUC, conceived in collaboration with DDA colleagues Pérez de Arce and Renato Parada, plus a handful of students. Even though she worked and encountered different architects and urban designers along her lifelong practice, for her this was the one and only time she worked in a truly holistic manner (Cromie, 2003).

Conceived in 1969, Model City offered an avant-garde view on housing for three reasons: first, because it proposed a new approach to design by organizing a professional office within the university that included “advanced architectural students working with an external construction firm” (Cromie, 1976). Second, because it attempted a sociological experiment by proposing a community of residents with different social statuses, but a common sense of belonging. Finally, because it defined a conjoin funding, with potential owners choosing their house–type and site first, and only then backing up their decision with a down–payment to the bank to receive a loan, which was complemented with funds provided by the university.

very differently [fig.4]; some of the flourished as neuralgic communal spaces while others dried out completely (Cromie, 1976). Her explanation for this situation was that letting and subletting had become a common practice in a timespan much shorter than predicted, leading to a mixture of original owners and newcomers that “affected the community’s responsibilities and relationships” (Cromie, 1976, nd).

3. Esmée’s lessons

Cromie’s teaching activities and the Model City progresses were equally affected by the local context: the DDA was suspended in 1975, shortly before she left the country with her husband and kids for political reasons. Yet, considering that at that time the notions of “landscape architecture” and “architecture of the environment” were practically nonexistent in Chile (Viveros, 2012), the DDA effectively planted the seed for a Graduate Program in Landscape Management at the PUC, formed in 1989. In turn, this endeavor laid out the foundations for the country’s first Master’s in Landscape Architecture Program, opened in 2009.

Esmée Cromie was a pioneer when teaching about the relevance of including ecological thinking into design processes and understanding the environment beyond its ornamental and aesthetic services (Hecht, 2015). Her “indispensable participation” in the DDA’s origins (Borgheresi, 1972), as well as her interest in revealing the beauty of basic ecological elements inspired a whole generation of professionals, such as renowned landscape designer Juan Grimm, and longtime professors Cristina Felsenhardt, Marta Viveros, and Juanita Zunino, who deepened the presence of landscape ideals within the PUC’s School of Architecture. Furthermore, Cromie’s commitment to a comprehensive environmental design surpassing the intermediate scale of the built form dialogues with the slippery concept of habitat discussed by CIAM members between 1952–56, placing her contribution within the discourse of modern architecture.

Although the term ‘landscape’ was hardly present in the debates on habitat pushed by the CIAM, for Dirk van den Heuvel it appears uncovered by the words ‘territory,’ ‘terrain,’ ‘land,’ ‘soil,’ and ‘environment,’ as well as ‘ecology,’ ‘ecological field,’ and ‘ecological setting’ (2020), proving that modernity recognized an intertwined relationship between architecture and landscape. This “implicit assumption regarding landscape as a precondition for urban design and architecture” (Van den Heuvel, 2020: 17) was one of Esmée’s main ideas, commonly overlooked in the accounts written about her. Consequently, we hope that this revision of her disciplinary contribution inspires us to look at modern buildings from bottom up in order to recognize and embrace the habitats they belong to. We believe that unveiling Esmée’s story, which we conceive as another form of ‘othering’ the discourse of modern architecture,

might yield some cornerstones to reflect and imagine contemporary forms of cohabitation within designed surroundings.

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On the contribution of Sibyl Moholy–Nagy to the Historiography of Modern Architecture: The Diaspora

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In 2014, Joan Ockman and Rosemarie Hagg have published for the first time a compilation of the interventions carried out in the Modern Architecture Symposia (MAS) organized at Columbia University in 1962, 1964, and 1966. This event, closed to the public, brought together successive key figures in the history of architecture. Its objective was to reanalyse the divergences that arose between form and theory during the development of Modern Architecture from 1907 to 1939. In a generational and methodological collision, the days of debate were a clear prelude to the imminent theoretical revolution, formal research, re–politicization of architecture, and the American–European gap that emerged from the sixties.

Given the influence and possible imprint of the discussions generated in the Symposium, this communication will consider in detail the contribution of Sibyl Moholy–Nagy. Her intervention, entitled *The Diaspora*, attempted to explain, from her own experience as a Bauhaus émigré, the impact that this exodus had on the evolution of modern architecture. During the Sunday discussion, she elaborated a much more extensive argumentation, detecting some key issues of modern historiography, such as the misinterpretation of the exhibition *The International Style*, or the conscious depoliticization of modern ideals by Siegfried Giedion.

Included among other interventions in the debate session, her intervention is difficult to trace. But from its publication in a special issue of the *Journal of the Society of Architectural Historians* (March, 1965) that also shows the images that Sibyl used (and that are not reproduced in Ockman and Hagg’s book) it becomes clear that her vision is an essential contribution for the development of a critical attitude towards the drift of modern architecture.

1. Modern architecture symposia

Architectural Historians Meeting in the 60s

The Department of Art History and Archeology at Columbia University headed by George Collins, together with Adolf Placzek, then director of the Avery Library, were the forerunners of the Modern Architecture Symposia (MAS). Three meetings were organized in 1962, 1964, and 1966 with the intention of reviewing and discussing the history of Modern Architecture prior to World War II. *The Modern Architecture Symposia: 1962–1966 A critical edition* (2014) is a recent compilation of all the interventions made in these three congresses. As its authors indicate, and therefore the importance of its publication, the editorial coverage of it was almost non–existent at the time,

as only the 1964 proceedings were published in a special issue of the *Journal of the Society of Architectural Historians* in 1965.

Although we cannot judge its impact by its printed scope, reviewing the interventions of some of the participants, as well as guests and students, gives us an idea of the possible magnitude of the event. Different generations of key figures in the historiography of modern architecture shared a debate closed to the public and possibly less formal than usual. Among the members were the promoters of *The International Style*, Henry Russell-Hitchcock and Philip Johnson, along with the first director of MoMA Alfred H. Barr. Other important companions were Rudolf Wittkower, Edgar Kauffman, and Sibyl Moholy-Nagy; the generation that would become the leaders of the American Academy personified in Vincent Scully or Colin Rowe. Finally, younger faces at the time became important protagonists in the following decades, such as Robert Stern who acted as Hitchcock's assistant, Peter Eisenman, and Kenneth Frampton who attended as listeners in 1966.

The different controversies that arose between the participants announce, and are an echo of, a decade in which modern architecture as a historical, architectural, and intellectual project finished dismembering. The dissolution of CIAM in 1959 and publications as diverse as that of Jane Jacobs *The Life and Death of Great Cities* (1961) and Robert Venturi's *Complexity and Contradiction in Architecture* (1966) make explicit a change of direction. Within this critical period, the historical review that is intended in the MAS highlights relevant issues of the modern narrative.



Figure 1. Sibyl Moholy-Nagy at the MAS 1962, surrounded by Edgar Kaufmann Jr., H. Allen Brooks, James Marston Fitch, Philip Johnson and a student. © Credits: George Collins papers, 1838–1986, Avery Architectural & Fine Arts Library, Columbia University.

Sibyl a non-academic self-educated woman among academics

Sibyl Moholy-Nagy was then holding the position of architectural history professor at the Pratt Institute. Hers was a career that was far from any of the colleagues she joined in the MAS event. Without any kind of formal training, her entry into the academic field began with her husband Lazlo Moholy-Nagy, when they both established the New Bauhaus in Chicago upon their arrival in the United States after their European exodus. On the death of her husband in 1946, with two daughters in her care and after the disagreements with the new director of the Institution, Sergey Chermayeff, she needed to find a new job. In a first stage, together with the preparation of her book on the work of her husband *Experiment in Totality* (1951) (with a prologue written by Walter Gropius) she begun teaching in California and to sign articles in some art editorials. The definitive step towards her specialization in history of architecture will be given after being hired as a lecturer for that same discipline at the Pratt University of Architecture in New York in 1951, thanks to a recommendation from Josep Lluís Sert.¹

From that moment, thanks to her direct knowledge of some of the main figures of Modern Architecture, such as her husband Laszlo, Gropius or Giedion; and with a prolific work as a teacher and writer, she will achieve the position of full professor in just 10 years. In turn, her writings would become a regular part of the architectural press: both commercially as *Progressive Architecture* or *Architectural Forum*, and academic in magazines such as *Perspecta*, or internationally in *Casabella*, *Bauwelt* or *Architecture d'aujourd'hui*. Over the years, she will generate a consolidated position within the field of architecture criticism and history and will establish important alliances with key figures of the time such as Philip Johnson or Bruno Zevi.

However, her lack of university education relegated her on numerous occasions to a position of intruder and insecurity about the validity of her own merits. Her brief intervention at the MAS in 1964 will in fact be harshly questioned and in the subsequent day of debate she will be forced to defend herself.

2. American Misunderstanding of modern values

Has *Less is more* become *Less is nothing*?

If 1960s atmosphere was already leaning towards a change in architectural direction, the deaths of Le Corbusier (1965), Gropius (1969) and Mies (1969) contributed to the feeling of the decade as the end of a movement. The historical review carried out during the MAS exemplified that, although in other areas the modern re-evaluation already pointed to real alternatives, the historiographical review still granted a privileged position to the modern pantheon, which made difficult a truly decisive rereading of the period.

A good example of this attitude is another event that was organized at Columbia University in 1961 and that allows us to contextualize Sibyl's later intervention in the MAS. Under the title *The Four Great Makers of Modern Architecture: Gropius, Le Corbusier, Mies van der Rohe, Wright* (*Four Great Makers*), a series of conferences were organized this time by the School of Architecture. The four protagonists were awarded the degree Doctor in Humane Letters honoris causa. Such a display of decorations came to announce the almost null critical attitude that Richard A. Miller² evidenced in the preface to the transcribed records of the congress.

Several guests coincided in both events. Philip Johnson and Sibyl Moholy-Nagy were part of the cycle on Mies van der Rohe. Edgar Kauffman and George Collins joined in explaining Wright's work. Rudolf Wittkower dedicated his presentation to the importance of Le Corbusier's Modulor.

<p>FOUR GREAT MAKERS OF MODERN ARCHITECTURE</p> <p>Gropius Le Corbusier Mies van der Rohe Wright</p> <p><i>The Verbatim Record of a Symposium Held at the School of Architecture, Columbia University, March-May, 1970</i></p> <p>DA CAPO PRESS • NEW YORK • 1970</p>	<p>A PERSONAL TESTAMENT: 10 Philip Johnson</p> <p>MIES, THE EDUCATOR 13 Daniel Broussard</p> <p>HAS "LESS IS MORE" BECOME "LESS IS NOTHING"? 18 Sibyl Moholy-Nagy</p> <p>HABITATS FOR AMERICAN COSMOPOLITES 22 Charles Gendler</p> <p>MESIAN SPACE CONCEPT IN DOMESTIC ARCHITECTURE 28 Edward Sorensen</p> <p>THE URBAN SPACE CONCEPTS OF MIES VAN DER ROHE 31 Jeanne Broussard</p> <p>PEOPLE, MASS PRODUCTION, AND THE MESIAN UNIVERSAL 36 Peter Blauvelt</p> <p>MIES VAN DER ROHE AND THE PLATONIC VERITIES 39 James Harrison Finch</p> <p>CONFUCIUS ADDRESS 44 Le Corbusier (translated by Richard Ansd)</p> <p>A TALK TO STUDENTS 50 Le Corbusier (translated by Charles Rogers)</p> <p>LE CORBUSIER AND THE IMAGE OF MAN 55 Joel Luis Sarr</p> <p>THE CORBUSIAN TRINITY 57 James J. Sorensen</p> <p>THE INFLUENCES OF LE CORBUSIER 60 Harry A. Anthony</p> <p>POTENTIALS OF THE SKYSCRAPER-STUDIED FAME 65 Harry A. Anthony</p>
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Figure 2. Published verbatim record of the Four Great Maker Symposium lectures by Da Cap Press in 1970.
© Credits: Trustees of Columbia University.

Sibyl Moholy-Nagy's intervention began by questioning whether the creation of a movement should be attributed to only four individuals.

"The leitmotif of the Four Great makers Program is that Walter Gropius, Le Corbusier, Mies van der Rohe, and Frank Lloyd Wright are the "great founders of modern architecture" (...) I must dissent. I do not believe in ascribing to four individuals the creation of a movement that took almost two centuries from his first definable beginnings, even if their contributions were uniformly great." ³

After this clarification, methodologically historiographical, she critically emphasized the limitations of modern doctrine after its transfer to North American ground, focusing on part of Mies's work. Her concern was summed up in the title of his entry: "Has 'Less is more' become 'Less is nothing'?"⁴. Such a statement competes in propagandism with Venturi's famous maxim *Less is a bore*. The thesis defended by Sibyl in her paper highlights that Mies, in his American career, equated technology with great historical movements such as Platonism, Scholasticism, or Humanism. Thus, having overcome his brilliant European stage, his philosophy of technology as a creative medium crystallized in a new industrial aesthetic. For Sibyl, this identification of technology as architecture of the highest design promoted by Mies is his greatest contribution to the American scene. But this technological dehumanization will lead to the disappearance of the individual or, better said, to a repeated standardization without reflection, especially harmful in domestic buildings. "This anonymity deprived the technological living cell of any means of personal identification."⁵

The Diaspora

The Diaspora is a text of barely two pages (in contrast to the 10 pages that Scully's transcribed lecture occupies, for example) in which the author tries to demonstrate the simplification that the transfer of the ideas of the original Bauhaus to North America entailed. Deepening the thesis that she defended in 1961, Sibyl explains that the key fact lies in the disparate understanding of the term functionalism. At the Bauhaus, heir to Kantian idealism, functionalism was understood as pure ideology, founded on a conception of a world of necessary and obvious aesthetic, ethical and social truths. On the contrary, its American translation was based for the historian on building as economically and technologically as possible, without any consideration for these principles. She points out that this erroneous translation was promoted by the publication of *The International Style*, the presentation of Modern Architecture in the United States. Many of the foundational principles of the movement were contradicted by the catalog compiled by Henry Russell-Hitchcock and Philip Johnson (who were in the same room as Sibyl said these words):

"It is hilarious to read in 1932 about the necessary separation of architecture and building (on whose absolute unity the whole Bauhaus idea was founded); about a hierarchy of aesthetic significance (against the fierce renunciation of "taste and form" in all the patristic utterances)."⁶

One of the main topics of analysis during the Symposium, as Scully explains in his talk *Dolrum in the Suburbs* (later republished in *Perspecta*), focused on the apparent stagnation of the works of major modern authors such as Gropius and Breuer during the 40s. Sibyl attributes this architectural deterioration precisely to the renunciation of said ideological commitments. Moholy-Nagy also admits that Mies was the only one of those living in America who managed to reinvent

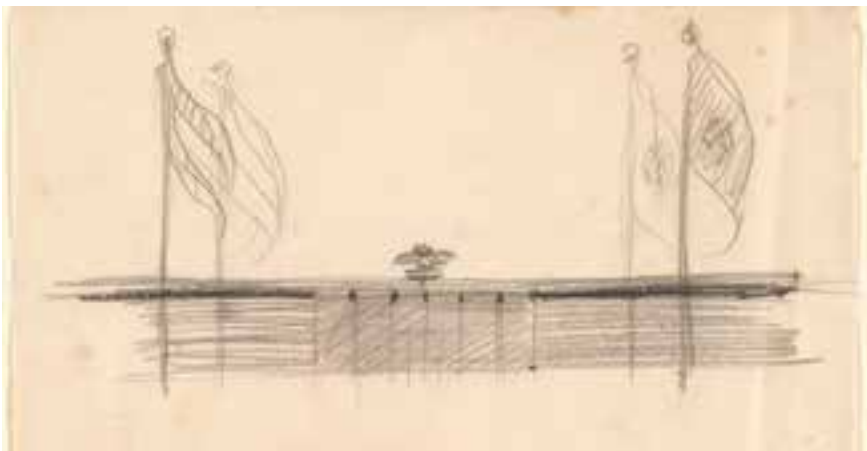


Figure 3. Mies van de Rohe, German Pavilion, International Exposition, Brussels, Pencil on tracing paper, 1934.
© Credits:2022. Digital image, The Museum of Modern Art, New York/Scala, Florence.

himself after World War II. Why? Surely because the functionalism he defended was purely technological, the architect would never have understood it in its possible ideological association. For this reason, Sibyl explains, Mies was the only one on the staff of the now-defunct Bauhaus who stayed in Germany after Hitler's rise to power. Albert Speer's final preference for a monumental classicism precipitated the architect's search for a new beginning in the United States.

For Sibyl, it is this lack of ethical commitment the differential fact that allows Mies his brilliant adaptation and architectural evolution in a mainly agnostic and increasingly capitalist American context.

"He was the only one of the diaspora architects capable of starting a new life as a creative designer following World War II. (...) His finest achievement, The Seagram Building in New York, carries root's Reliance Building of 1893 to its ultimate perfection."⁷

Sunday Discussion. ¿New Beginning or Historical Conclusion?

Criticized Mies, and criticized Philip Johnson and Henry Russell Hitchcock for his exhibition, the latter one intervened after Sibyl's talk defending himself. In an unfortunate sentence Hitchcock will affirm: "I cannot believe that writers on the arts influence history to that extent."⁸

The next day, in the open debate, upset by some of the comments received after her presentation, and in strong self-defense, Sibyl developed a key explanation to understand the decade of the 30s. Although her official presentation the day before was short and hardly had any images, during the

debate she stopped the discussion and elaborated an argument transcribed over six pages and seventeen comparative images to reinforce the idea of how important the psychological effect caused by the diaspora was. She begins by warning:

"I am more interested in the general mood of that time and the psychological basis of it. (...) I felt perhaps was too negative to show these few comparisons I have, but now I feel that we really should look the facts in the face."⁹

Moholy-Nagy then revisits the modern architecture of the 20s and 30s and propose an interesting change of methodological perspective. What would happen if we took Gropius's Bauhaus building not as a starting point but as an end? If the Bauhaus was indeed the conclusion, the final materialization of a set of ideas that preceded it; Gropius no longer acts as founder, but as the last link. By the time the end is reached, there may be nothing left to do or improve, and then anything attempted afterward is merely a copy of the previous achievement, with no progress at all. For Sibyl, this is the period of decadence that characterizes the majority of modern architects in American lands during the 1940s. That American historians had understood the architecture of Breuer or Gropius in North America, as the indisputable progress of modern European architecture, is for Sibyl due to the enormous influence of Giedion:

"It is interesting to observe the role which Giedion has played with his book; its influence is still unbelievably strong today. Anything that Giedion chronicled has been accepted by the next generation of students, and Giedion's complete neglect of the cross-influence between Wright and Germany, and between Holland and Germany, has put the Germans in a position of original creators, but it just 'ain't so'."¹⁰

Space-Time and Architecture (1941) is presented to Moholy-Nagy as another of the essential pieces to understand the differences between Modern Architecture developed before the diaspora (let's call it ideological functionalism), and its American interpretation as International Style (let's call it technological functionalism). Siegfried Giedion's book, who became part of Harvard University at the request of Gropius, became the textbook par excellence in American academia. But, in his written construction, he leaves out important authors and influences that Sibyl denounces, such as the disappearance of the Mendelshon, which as she explained "was absolutely synonymous with historical death sentence."¹¹

Now putting Giedion's book in the spotlight, she widens the historiographical suspicion that the previous day had fallen on Henry Russell Hitchcock and Philip Johnson.

The rereading of some of the histories of modern architecture that were written in the first half century has been a recurring study since the crisis of the movement, which had its peak in the radical criticism that Tafuri would

develop towards operational history in his book *Teorie e storia dell'architettura* (1968). Curiously, an extensive quote from Sibyl will be the one that opens the first chapter *Modern Architecture and the Eclipse of History*.

3. A possible influence

Factors such as the influence of Giedion, along with the psychological shock of the diaspora or the stylistic reduction of *The International Style* are key to understand the different meanings of functionalism that Sibyl proposes in her talk. And indeed, they have been key topics of analysis in modern historiography in the second half of the century. Technological functionalism, which focused on industrial development and the economy of the object over the subject, was a disconcerting starting point for a new generation of architects in the 1950s, not only in North America. In an article for the *Architectural Review* in 1957 Alison and Peter Smithson precisely express this contradiction:

"We are still functionalists, and we still accept the responsibility of the community as a whole, but today the word functional does not simply mean mechanical as it did thirty years ago. Our functionalism means accepting the realities of the situation, with all its contradictions and confusions, and trying to do something with them."¹²

Sibyl Moholy-Nagy's remarks, however, were harshly criticized by most of her colleagues on the day of debate, with Henry Russell Hitchcock lauding that it was quite useless to "seek automatic conexions between political movements and architecture".¹³

The only one capable of reconciling these two positions was precisely Colin Rowe. He attended the MAS in 1964 only as a listener. Wittkower had been the director of his final dissertation on Inigo Jones at the Wartburg Institute. In the fifties Rowe moved to the United States. There he did his graduate work under Henry Russell-Hitchcock at Yale, overriding Wittkower's recommendation to go to Harvard, Giedion's domain. In the debate, Colin Rowe will be the only one to defend Sibyl's position:

"I identified when Mrs. Moholy-Nagy was speaking about the emotional tone of an era and its phycological aura. (...) In the most laconic way, I think one could insist that there was somewhere some rapport between modern architecture and millennials politics, or, if you like, between modern architecture and Marxism."¹⁴

There was, uncomfortable as it was to express it in the midst of the cold war, a direct connection between Marxist ideals and the principle of modern architecture. This enthusiastic aura faded after the diaspora.

This theoretical Moholy-Nagy-Rowe affinity will not be left alone at the congress. Four years later, when Sibyl publishes her book *Matrix of a Man: Illustrated History of Urban Environment* (1968), Rowe will sign a review in *The New York Times*, categorizing it as an "important and impressive book".¹⁵

Recently, with the publication of the epistles of Colin Rowe in the book edited by Daniel Nagele, we can verify that said praise was sustained over time, or at least in Rowe's library. In a letter dated February 1977 to L. N. Haywood, the graphic designer at Warehouse Publishing (to which *Collage City* publishing was initially committed), Rowe discusses the references they are using for their next book. He expressly cites two works: Sigfried Giedion's *Mechanization* (1948) and Sibyl Moholy-Nagy's *Matrix of a Man* (1968). Anyone who looks at *Collage City* (1978) and flips through its pages at the same time as flipping through those of *Matrix of a Man* (1968), will see interesting similarities.



Figure 4. Sibyl Moholy-Nagy, September 7, 1960. © Credits: Pratt Institute Archives Negatives Collection. Brooklyn, NY.

If we remain in the field of speculation, and carefully read Rowe's words when defending Sibyl's position at the 1964 Symposium, would he already be thinking of that architecture of good intentions that failed in his utopia?

"When you come across the relics of the 1930s, when you walk through them, when you smell the atmosphere they breathe, you feel the body of ideas they react to. And one recognizes that throughout the 1930s there is a millennial personality that in its most extreme cases becomes Marxist."¹⁶

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Edith Emery and the Glazed Igloo in an Icy Desert

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TAYLOR AND HINDS ARCHITECTS

In 1938, Dr Edith Emery (1909–2004), an Austrian medical doctor with a specialization in gynaecology, migrated to Hobart, Tasmania, escaping the political turmoil of Europe. Later settling in 1948 but unable to practice as a doctor in Tasmania, she embarked on a new course of study and a career in architecture. She is among European emigres who arrived in Australia between 1930 and 1950 and influenced the development of modernism in the Antipodes, though she has been unknown in architectural circles until recently. Within that group, her career trajectory is particular, combining formative architectural experiences at the Kunstgewerbeschule in Vienna during the late 1920s with professional architectural training in Hobart in the 1950s, leading to solo architectural practice from the late 1950s into the 1970s, designing a series of largely unknown modernist houses mainly for women clients. This paper presents the first focused account of Edith Emery's architectural career, drawing upon her self-published autobiography and archival records. It discusses her background and education, questions her contribution within the modernist practice in which she trained, and explores the translation of her philosophies and the challenges of her architectural career through her projects, among them her own timber, glass, butterfly-roofed house which she reflected upon as "a glazed igloo in an icy desert."

1. Introduction

Discussing the role of women architects as historic subjects involves a disturbing ambiguity since it is both a harmless addition to established history and at the same time a radical substitution of it.¹ In this sense, the architectural career of Edith Emery (née Wellspacher, 1909–2004), the first professionally trained and independently practicing woman architect in Tasmania, Australia, unsettles established narratives of the island's postwar architectural historiography. (Fig. 1).

Emery's involvement in Tasmanian architecture, between the 1950s and 1970s has only recently been recognised, largely because of awarded additions by Taylor and Hinds Architects (2017) to her own house, designed and built in 1958–60, and subsequent advocacy around her legacy. This late recognition is despite her publication of an autobiography in the mid-1990s, which includes



Figure 1. Edith Emery looking over her design for her own home at Longview Avenue Hobart, in 1958 © News Ltd / Newspix.

a record of her experiences entering architectural practice. Belied by her married name, Emery's architectural biography is of further interest because it brings formative experiences and design training in Vienna in late 1920s into play with professional training in Tasmania in the 1950s, providing further nuance to experiences and careers of mid-twentieth-century architectural emigres in Australia. Moreover, her architectural education in Tasmania entailed work in the office of one of Tasmania's (and Australia's) most celebrated modernist architects, with tantalising evidence of her contribution to that practice's work. This paper is the beginning of a project to understand the scope and legacy of Emery's architectural practice more fully.

2. Discovery of Vienna

Edith Emery's determination to study architecture as an adult in the 1950s, was to fulfil a longstanding interest in the field. In Austria in 1922, aged thirteen, she was considered of artistic talent and accepted in Franz Čížek's Jugendkunstklasse, a private painting and drawing school for children based in Vienna's Kunstgewerbeschule (Academy for Arts and Crafts or School of Applied Arts). Contrary to conventional teaching, where the goal was to accurately copy templates, the Jugendkunstklasse encouraged children

to experiment with various materials and techniques, in a laboratory-type environment.²

Following her artistic interest, Emery enrolled in the Vienna Kunstgewerbeschule in 1925, and was accepted in Čížek's "Ornamental form theory," further developing experimental expressionist and cubist artwork, and leading to architectural interests.³ In her second year, 1926, she undertook a class on architecture and theatre design with Oskar Strnad, who would have introduced the young Emery to Viennese ideas of space-making and scene-setting, over form-making. Strnad was also one of the exponents of the Wiener Wohnkultur (Interior Design in Vienna), interested in the social dimension of design manifested in a human-centred, cosy and eclectic idiom distanced from the ideal of creating a total work of art.⁴ In later reflections, Emery identified her studies at the Kunstgewerbeschule as formative for her later artistic and architectural practice.⁵

Emery's personal and political positions were also forming at this time. She was questioning religious institutions and accepting personal responsibility for her choices and actions. She also encountered socialism, first glimpsed through Vienna's modernisation. In her words, she learnt of socialism "not from mighty personalities, theories or books, but from visits to huge apartment blocks the socialist City of Vienna was building for the workers and underprivileged out of taxes paid by the wealthy house owners."⁶ The association between socialism and architecture, in turn, fuelled a "fascination for Vienna's communal buildings and architecture on the whole."⁷ This concern with architecture's social role was to stay with her and underpin her practice from the late 1950s.

Despite her interests in theatre and architecture, Emery determined on an alternative career as a medical doctor, completing matriculation requirements at the Socialist Workers' Matriculation Night-School and gaining entry to medicine at the University of Vienna in 1928.⁸ Yet she continued life drawing classes and exercised her theatre design skills in making costumes for expressionist dancers that she met through her boyfriend Tizian, an architecture student at the Kunstgewerbeschule.⁹

In 1934, she qualified as a doctor and subsequently pursued a specialisation in gynaecology. However, when Hitler occupied Vienna in 1938, her political views and refusal to declare support for the Nazi party made her position at the Elisabeth Spital Hospital untenable, and she planned emigration. The opportunity came via an advertisement for a Čížek-trained art teacher for Fahan College, an independent girls' school in Hobart, Tasmania. With a recommendation letter from Čížek, Emery left Austria, arriving in Hobart in August 1938.¹⁰

But it was another ten years before she was to stay in Hobart. En-route in 1938, she had developed an affection for John Emery, an English official with the British Foreign Service stationed in Sudan, who she soon married, and the next year followed to Sudan.¹¹ In 1940 she left Sudan to give birth to their

first son in France, and again found herself trapped by Hilter's advance, and was detained as a prisoner of war, unable to return to Sudan until 1942. In 1944, she travelled to the UK to give birth to their second son and, planning for future professional and economic independence as the war was ending, Emery sought (unsuccessfully) a medical faculty to recognise her Viennese qualifications. After the war, in 1948, the family returned to live in Tasmania.¹²

3. Back to architecture

Without a clear avenue to return to medical practice, Emery sought an independent professional identity and income that returned her to architecture. Despite her husband opposing her undertaking professional study, Emery gained admission to the newly established Diploma of Architecture, a five-year program of articulated employment and study at the Hobart Technical College from 1951.¹³ Whilst her formative social and architectural influences were Viennese, from the mid-1920s, her professional training in the field was Tasmanian in the 1950s.

The 1950s in Tasmania was a period of population growth which generated urban and suburban expansion, and entailed a restructuring of the local architectural profession. Smaller practices were merged into larger firms, nurturing individuals – predominantly men – whose careers dominate local architectural historiography and Tasmania's inclusion in national architectural histories.¹⁴ The Diploma of Architecture that Emery entered in 1951 had been established in 1949 and whilst conservative in its adherence to a Beaux Arts conception of design and resisting the introduction of scientific methodologies, it was new and independent of interstate examinations in Sydney. A pupillage system with teaching staff from the local profession fostered a local professional discourse, which was further extended by the journal *Tasmanian Architect* from the late 1950s, promoting regionalist positions aligned to environmentalism by 1960. It was a vibrant time in the local profession.

Although Edith Emery's autobiography (published in 1995) provides substantial commentary on her entry into architectural practice, she is surprisingly silent on her professional training and especially her employment during the 1950s with the state's most celebrated modernist, the ex-Melbourne architect Esmond Dorney (1906–91). Dorney is known as an individualist who primarily worked in solo practice, in Melbourne, from the 1920s and, following active WWII service, in Hobart from the late 1940s through to the 1980s, during which time he secured his architectural reputation in a series of innovative, low-cost modernist designs from the 1950s and early 1960s.¹⁵ Accounts of Dorney are similarly silent on any staff, including Emery, yet recollections of Emery's son place her in Dorney's office and her signature appears on key drawings, including the drawings for Dorney's renowned Jarvis House (1957–59), indicating that she was there through to her graduation in 1957 at which

time she was also designing her own house, Longview Avenue (1958–60) and launching an independent architectural practice in 1958 (**Fig. 2**).



Figure 2. Edith Emery, Longview Avenue house, Hobart, Australia, 1958. © Michael Emery.

Personal and professional concurrences possibly drew the two together in 1951. They were similar in age, both in their mid-forties, Dorney three years Emery's senior, and both were remaking their lives in Tasmania following WWII. They shared life-experiences, notably difficult wartime experiences – although in very different circumstances, both had spent periods as prisoners of war – and shared progressive social views, which they vocalised through various means. Both appear to have been equally strong personalities. They also shared interests in architecture as a social endeavour and, ultimately, both pursued solo practices. An opportunity to deploy Emery's medical knowledge must also have been attractive to both: as she commenced her architectural studies in 1951, Dorney was working on his design for the hospital Nazareth House Hospital, St Leonards, Tasmania (1950–54), exploring ideas about healthy, holistic environments for patients and staff, and he was patenting designs for radial hospitals in 1953 and 1956. From 1957, as Emery completed her architectural studies, Dorney was gaining hospital commissions elsewhere in the region, including the Sandringham Hospital in Victoria (1957–64).¹⁶ Noting this aspect of Dorney's practice, corresponding with the commencement of Emery's architectural studies, her medical expertise must have presented valuable architectural assistant.

While the relationship between Emery and Dorney is shrouded in silence, architectural exchanges between the two appear in several aspects of their respective domestic projects. For example, the Jarvis and Longview Avenue houses, designed at roughly the same time and attributed to Dorney and Emery respectively, share: a simplified order; tight orthogonal planning; and a rigorous organisation of program employing joinery as primary space-making and scene-setting devices, echoing Viennese modernist interiors. Extending the comparison, Dorney's Young House (1958) consolidates a highly ordered, economical plan arrangement, as does Emery's later plan for the Coolamon Road house (1967, unrealised) (**Fig. 3**). In contrast, Dorney's later work such the dramatic, radially-planned Dorney house (1966), built upon a former gun battery, shows what architectural critic Rory Spence has described as "intuitive and expressive manipulation of internal space and external form,"¹⁷ characteristic of Dorney's work of the 1950s and '60s. Despite its remarkable primary living space, it lacks the plan resolution of preceding

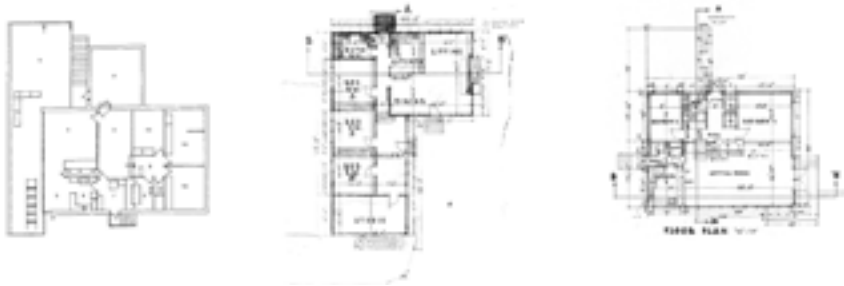


Figure 3. Plan analysis showing designs of (left) Esmond Dorney, Young house, Hobart, Australia 1958, redrawn by Mat Hinds; (Middle) Edith Emery, Longview Avenue house, Hobart, Australia, 1958; and (right) Edith Emery, Coolamon Road house, Hobart, Australia, 1967 (unbuilt).

houses especially at the edges of its complex geometries. These comparisons of plan-form and plan-making invite further research on Emery and Dorney's working relationship and their designing.

In other respects, Edith Emery's houses are fundamentally different to Esmond Dorney's, intrinsically people- rather than object-centred, and aligned with her political and social engagement. She regularly spoke on national and local radio and featured in local newspaper articles addressing topics ranging from political persecution in Austria in the late 1930s when she arrived in Australia, and, in the 1950s, on culture, religion, politics and education experienced while travelling internationally, as well as architectural design and opportunities for women in the profession as she entered it. She also acted via her membership of a number of left-leaning cultural groups, and she was surrounded by a community of strong and socially-engaged women who supported her architectural practice, including the poet and peace activist Eve Masterman, for whom Emery designed 'Brinken' at Eaglehawk Neck, and Dr Anne Matz,

an environmental activist, for whom Emery designed a house in Bellerive. More generally, Emery expressed an interest in designing and building for the economically marginalised which meant an oeuvre of modest buildings outside the mainstream of architectural clients and professional recognition. Later reflecting on her architectural practice, which extended into the 1970s, Emery noted, "I did not build very many houses and most of the people I built for had little money, but most of them were happy with my designs."¹⁸

Emery's people-centred approach to modern architecture translated to a preoccupation with the plan as a diagram for the domestic lives of individual clients, echoing ideas of living environments as assemblages as advocated by Oskar Strnad during her formative years in Vienna.¹⁹ "To plan," Emery wrote:

*not only just in space, but stressing or improving people's way of life; creation within boundaries of construction, building regulations, materials, the particular problems of the terrain, the financial situation of the client – all mattered, all was a challenge...it meant tying you to people, allowing you to make them happier, their lives fuller, let them find contentment because of a house which suited their lifestyle, temperament and purse.*²⁰

Emery's work is thus characterised by open-plan structures and an internal logic based on social ideas of the hearth, and orientation to the garden and the wider landscape constituting an extension of the living realm. The hearth appears as the fulcrum in the residential designs by Emery, often bordering upon an inglenook in scale within the open structure of the plan. It is a freestanding ovoid shape at the centre of a square arrangement of living spaces in the design for Mrs Wilmott (1960) and at Coolamon Road (1966) the hearth organises the plan and modulates the section. Modest interior spaces are complemented by built-in joinery and expanded by adjoining terraces and gardens with protection from prevailing weather conditions. Her buildings are typically of small scale and economical in their construction employing a clear tectonic expression, in lieu of formal gesturing, while orchestrating sequences of interiors oriented to gardens and landscapes.

A focus on broadly contextual conditions is echoed in Emery's artistic practices, primarily painting, which were re-invigorated by her architectural studies and complemented her subsequent practice.²¹ Painting was a means for Emery to study Tasmanian contexts she worked within. It was also a means of observing places that she visited on her extensive solo international sojourns, including trips to Mexico (1952), Europe (1957), Soviet Union (1961, '65 & '69) People's Republic of China (1964 and '70) and India. She was an extensively-travelled practitioner and her depictions of places, for example her painting of Beijing's Forbidden City, are often shown from an elevated vantage which monumentalises the context, while depicting the nuanced character of the setting as a human place (**Fig. 4**). The subjects are frequently architectural and, importantly the elevated visions are not perspectival, rather orthographic in geometric character – implying a strong architectural reading. The canvas was also a context for Emery. At times she painted on the rough



Figure 4. Edith Emery, Forbidden City, Beijing (n.d.) © Michael Emery.

side of masonite sheeting such that the material remained a figure in the finished work. Through her painting, Emery was able to explore contexts and experiences that the circumstances of her modest architectural practice limited.

4. Conclusion

Emery described her years in architectural practice as part of the most rewarding period of her life.²² Practice provided emotional and economic emancipation from within her marriage, but sole-practice also had its difficulties. As an independent woman practitioner from the late 1950s, Emery was also required to negotiate the discrimination of the building industry and clients. Gaining commission through personal networks also had its limits; a great disappointment was that one close friend would not engage Emery to design her family home and Emery believed gender was at stake. There is the further question of whether such discrimination also obscures the scope of her legacy, including potential contributions and influence while working

with Esmond Dorney. The dynamic during her employment in his office, when he was re-inventing his practice during the 1950s and 1960s, invites further research with the potential to shift local historiographic narratives. Despite all this, Emery built an unpretentious practice with the support of women clients and publicly advocated other women to become architects, actively contributing to the expansion of the profession. For Emery, architecture was a social practice, and her own modernist home, oriented to gardens and prospects over Hobart, was a sanctuary – her “glazed igloo in an icy desert”.²³

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Designer, researcher, and teacher. **Angela Schweitzer's integral modern practice**

Fabiola Solari Iribarra

HERITAGE AND MODERNISM CLUSTER CENPUC

Hugo Mondragón López

PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE

Ángela Schweitzer (1923–2002) is one of the nineteen Chilean women architects mentioned in ten canonical books of Chilean modern architecture, as shown by the research “Between lines. Re-visiting the modern discourse by studying its women contributors of the Pontifical Catholic University of Chile”,¹ yet she is the only one whose work was achieved as a sole practitioner. Two of the books refer briefly to her work as the designer of the Palacio Consistorial de Valdivia (Valdivia’s Town Hall). Nonetheless, Schweitzer’s contribution to modern architecture as professor of six schools of architecture, director and dean of one, contributor to the curricular program of three, and pioneer researcher in charge of four nationally funded projects about how architecture was being taught and how architects practice their profession, has not yet been reckoned.

This paper will review her publications and curricular projects and unveil her references while studying in a school of prominent modern architects. An unexpected angle of her work will be explored, focusing on her role as a researcher, professor, founding member, key contributor, and creator of curricular programs of different schools of architecture, aiming for a more comprehensive understanding of a woman who was “one of the first modern architects of the country”.²

1. Introduction

Unveiling the role of women as historical subjects is a pending task in the historiography of modern architecture, both internationally and locally.³ The revision of ten canonical books of modern architecture in Chile showed women’s appearances were both brief and scarce. Two of the ten books did not mention women at all, and only nineteen Chilean women architects were mentioned in the remaining eight. Ángela Schweitzer is the only one of these women whose work was accomplished as a sole author, with her Palacio Consistorial de Valdivia (Valdivia’s Town Hall) included in two of the reviewed books.⁴

The following essay will review Schweitzer’s background as an architecture student, later architecture designer, teacher, and researcher. A critical analysis of her curricular proposals and research on architects’ training aims to

contribute to a broader understanding of modern architecture in the country by focussing on one of their women protagonists.

2. The designer

Ángela Schweitzer was born in Valdivia in 1923. She started her architectural studies in the 1940s at Universidad de Chile in Santiago, the country's first architecture school, where she showed an early interest in education. According to Euclides Guzmán's testimony, he invited her to teach in the Night School for construction workers, an institution that had emerged in the 1920s under the Student Federation of the University and that Guzmán had directed since 1938:

*"She [Schweitzer] felt it wasn't right that applicants were rejected for not knowing how to read or write and took on solving the problem as a personal challenge. She then recruited a group of women students willing to attend these difficult cases personally. She investigated adult literacy methods until she achieved some results."*⁵

Schweitzer finished her architecture studies in 1952.⁶ She studied when the university reform was being gestated among students and young professors, eager for a modern education that imitated the Bauhaus experience. They wanted the architecture curriculum to embrace social concerns, and finally, in 1945, a program that aimed for a so-called integral architect engaged with plastic, technique, and philosophy was established.

It was the first modern architecture curriculum in the country presented as the breaking point with tradition, embodied in the Beaux-Arts. The reform meant a new approach to architecture teaching, pertinent to the complex national context, which had been radically transformed by industry, machines, science, history and collectivism.⁷

The implementation of the new curriculum in 1945 – a change demanded and expected by successive generations of architecture students since at least 1933 – almost immediately became one of the emblems of the triumph of modern architecture in Chile. The talented generation of students that studied under the new curriculum endorsed it systematically and attempts to modify it caused bitter disputes within the faculty.⁸

In 1957, five years after finishing her architecture studies, Schweitzer won the Valdivia's Town Hall competition with a modernist project. The building would secure her a mention in two canonical books about modern architecture in Chile. In *Arquitectura y modernidad en Chile / 1925–1965*, the building is referred as one successful example of Le Corbusier's influence in Chile,⁹ whereas, *La Arquitectura de Chile Independiente* by Osvaldo Cáceres, positions it among other notable works of Chilean architecture developed between 1950–1970, such as Universidad Técnica del Estado by Bresciani,



Figure 1. Ángela Schweitzer, Palacio Consistorial de Valdivia, Valdivia, Chile, 1957–1977. © Andrés Téllez, 2018.

Valdés, Castillo, Huidobro in Santiago and the Lutheran Church of Valdivia by Javier Anwandter (Fig. 1 and Fig. 2).¹⁰

In 1958, a year after the architectural competition's success, Schweitzer was part of the group of Chilean architects who travelled to the V Congress of the International Union of Architects in Moscow, where the cities' demographic growth, housing deficit, urban planning, and the construction industry challenges were discussed. She was the only woman in the twenty people delegation led by the dean of the School of Architecture of Universidad de Chile.¹¹ The next year, Schweitzer was invited to become the headteacher of the second-year design studio in the recently inaugurated branch of Universidad de Chile in Valparaíso. While teaching in Valparaíso, she travelled with her students to Valdivia, her birthplace, to help with the city's reconstruction after the great earthquake of 1960.¹²

With an intensity of 9.5Mw (moment magnitude) and 10 minutes duration, the Valdivia earthquake is considered

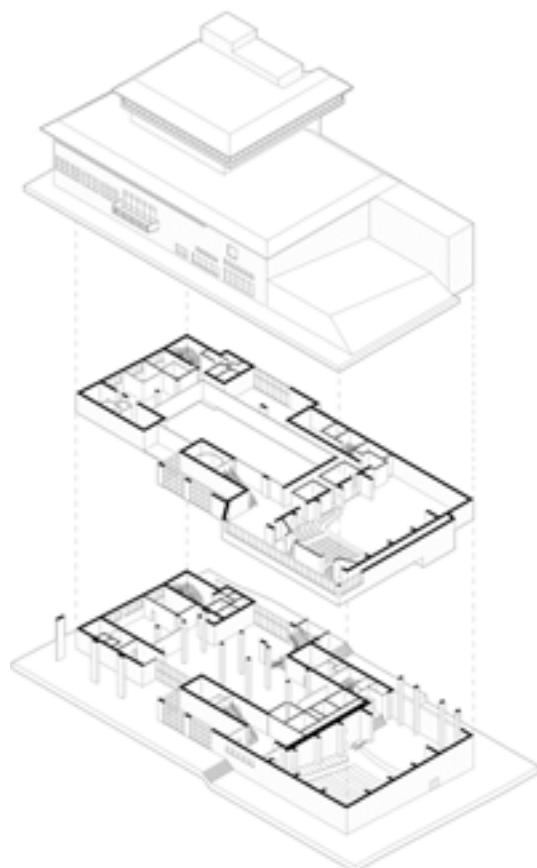


Figure 2. Ángela Schweitzer, Palacio Consistorial de Valdivia, Valdivia, Chile, 1957–1977, isometric. © Drawing by Trinidad Murúa, 2022.

the largest on record.¹³ Students and professors from Universidad de Chile travelled to the city in an odyssey that aligned with the ideals of a socially engaged profession. Among other initiatives, Schweitzer and her students helped the inhabitants of Valdivia build a housing complex known as Población Valparaíso.¹⁴

3. The teacher

In 1968 Schweitzer received a grant by the British Council to visit 20 schools of architecture, schools of design and planning, research institutions, professional organisations, architectural offices, and communal and regional planning departments in Great Britain. During the visit, she analysed how architecture was taught in the UK and later, in 1976, she published an article about her impressions.¹⁵ She emphasised the protagonist role of the design studio at the core of architecture studies, noting other subjects would give theoretical support to it.

Interestingly, the idea of the design studio at the core of architecture teaching was something Schweitzer had already experienced firsthand as a student. The architectural reform of the Universidad de Chile in 1945 incorporated design studios across all years of study. It was a major shift from the previous model, where projects were not developed until the third year.¹⁶

Other issues that caught Schweitzer's attention were that professors from different backgrounds taught theoretical subjects (philosophers, psychologists, mathematicians). Also, students needed to practice the profession for a few years or do a master's degree before being able to register as architects,¹⁷ noting some similarities between the architecture schools in the UK:

*"a) the design process is teachable and can be systematised; b) teaching focuses on applying the design process to projects; c) theoretical teaching focuses on teaching how to study and think (recognise, attack and solve problems), stimulating the use of libraries and information sources; d) the nature of the project is what determines the quantity, quality and opportunity in which the theoretical courses intervene; e) theoretical teaching takes the form of seminars, conferences and individual or small group tutoring."*¹⁸

A few years later, in 1982, she was allowed to put her research and experience into practice: she was invited to establish the new School of Architecture of Universidad del Norte in Antofagasta (now Universidad Católica del Norte), becoming the first woman director and later dean of a school of architecture in the country. She proposed a curriculum that accentuated the relevance of the new university's relation to its geographical environment, located next to the world's driest desert and surrounded by ancient human settlements of the Andean north. Architecture, environment and heritage would be the three structural concepts to support teaching, research, and extension activities,

identifying the need to provide contemporary architectural responses to this particular cultural environment.¹⁹

When comparing the Universidad de Chile's 1945 curriculum to Universidad del Norte's (UN), some similarities stand out. The idea of an integral professional is explicit in both curriculums, and the education in plastic, sociology, philosophy and technical aspects of Universidad de Chile permeates the UN's curriculum. The plastic becomes architectural design, the sociology and philosophy appear as the humanities, and the technical turns out to be technological and instrumental. Architectural design is still the core of architecture training, but more importantly, the connection between architecture teaching and the national reality and contextual problems strongly appears in both curriculums.

Furthermore, the need to articulate the theoretical subjects and their application to the architecture design studios and the profession was a clear matter of interest to Schweitzer. She introduced a research seminar studio in the UN curriculum in year five, materializing an unprecedented connection between the design studio and research (**Fig. 3**).

She insisted on the theoretical–practical issue as part of different seminars on architecture studies in the coming years. In 1982 – her first year as director of the newly inaugurated UN architecture school – she attended the “First Conference about Architecture Teaching”, celebrated at Universidad de Belgrano in Argentina with international attendees from Argentina, Italy and Uruguay. The objective was to exchange ideas and experiences in teaching architecture design and methodology.²⁰

In 1983, she would attend the “Second Conference about Architecture Teaching” in Argentina and later organise the “Teaching of the history of architecture” Seminar at Universidad del Norte.²¹ During the seminar, the participants emphasised that architecture history should be articulated with architecture design, as architecture problems derivate from architecture history. Argentinian architect Marcelo Trabucco insisted on architecture history being more than the mere revision of architectural works. Instead, it had to unveil the design issues of the projects it studied. It was crucial to him that the architecture history teacher would also be engaged in design studios and/or professional practice.²²

Two seminars related to architecture teaching were based at the UN in 1984. One was about “Architecture Language” with teachers from the School of Architecture of Universidad de Belgrano in Argentina. The other was on “Architectural teaching in developing countries” with the English teacher John Abel as lecturer.²³ A seminar on rural human settlements in the area was organised for first–year students with Abel, José Miguel de Prada Poole from Spain, a physicist, a geologist, and a doctor. The interest in studying how people in the surrounding lived shows the relevance of the connection between the university teaching to its environment and social context.

UNIVERSIDAD DE CHILE (UCH)

AREA	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
PLANNING	PLANNING CONCEPTS PLANNING PLANNING	PLANNING CONCEPTS PLANNING PLANNING	PLANNING CONCEPTS PLANNING PLANNING	PLANNING CONCEPTS PLANNING PLANNING	PLANNING CONCEPTS PLANNING PLANNING	PLANNING CONCEPTS PLANNING PLANNING
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COMPLEMENTARY	LANGUAGE APPLIED ARTS	PHOTOGRAPHY	SCULPTURE	SCULPTURE	STATISTICS	SPORTS PLAYING

UNIVERSIDAD DEL NORTE (UN)

AREA	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
ARCHITECTURE	ARCHITECTURE CONCEPTS ARCHITECTURE ARCHITECTURE	ARCHITECTURE CONCEPTS ARCHITECTURE ARCHITECTURE	ARCHITECTURE CONCEPTS ARCHITECTURE ARCHITECTURE	ARCHITECTURE CONCEPTS ARCHITECTURE ARCHITECTURE	ARCHITECTURE CONCEPTS ARCHITECTURE ARCHITECTURE	ARCHITECTURE CONCEPTS ARCHITECTURE ARCHITECTURE
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COMPLEMENTARY	LANGUAGE APPLIED ARTS	PHOTOGRAPHY	SCULPTURE	SCULPTURE	STATISTICS	SPORTS PLAYING

ABBREVIATIONS

BEQ: BEGINNING (SHELTER); HERIT: HERITAGE; MAN ENVIR: MAN ENVIRONMENT; RES: RESOURCES; LANG: LANGUAGE; PROJ: PROJECTS; RESEA: RESEARCH; PHIL INTRO: INTRODUCTION TO PHILOSOPHY; ELECT: ELECTIVE; GEO: GEOMETRY; COMP: COMPUTER SCIENCE; PROG: PROGRAMMING; PHYS: PHYSICS; MORPH STRUC: MORPHOLOGY AND STRUCTURES; ENGL: ENGLISH; COM: COMMUNICATION; METH: METHODOLOGY; MONO: MONOGRAPH; CONST PROC: CONSTRUCTION PROCESSES; INTER: INTERNSHIP; CAPST: CAPSTONE

UNIVERSIDAD DE SANTIAGO DE CHILE (USACH)

AREA	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
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COMPLEMENTARY	LANGUAGE APPLIED ARTS	PHOTOGRAPHY	SCULPTURE	SCULPTURE	STATISTICS	SPORTS PLAYING

ABBREVIATIONS

EXPL: EXPLORATORY; TRAIN: TRAINING; INTERN: INTERNSHIP; RESEA: RESEARCH; CULT: CULTURE; HIST: HISTORY; ARCH: ARCHITECTURE; URB: URBANISM; CONT REAL: CONTEMPORARY REALITY; PSYCH: PSYCHOLOGY; ANTRQ: ANTHROPOLOGY; SOCIO: SOCIOLOGY; ECONO: ECONOMY; PROJ EVAL: PROJECT EVALUATION; RESEA METH: RESEARCH METHODOLOGY; PLANN: PLANNING; GEO: GEOMETRY; COMP: COMPUTER SCIENCE; HUM ENVIR: HUMAN ENVIRONMENT; PHYSICS: PHYSICS; CONST SYST: CONSTRUCTIVE SYSTEM; STRUC LAB: STRUCTURE LABORATORY; ENER: ENERGY; LUM & ACUST: LUMINOSITY & ACOUSTICS; ELECT: ELECTIVE; OPT: ADVANCED OPTATIVE; CAPST: CAPSTONE; MANG: BUSINESS MANAGEMENT; HUMAN: HUMANISTIC

Figure 3. Comparison between curricular programs. Universidad de Chile (1945), Universidad del Norte (1982) and Universidad de Santiago de Chile (1992). © Fabiola Solari, 2022.

The issue was explored further by seminars and activities related to the environment, heritage and architecture design.

Schweitzer moved to Santiago in 1985, leaving a legacy at Universidad del Norte that is relevant to the day. Hernán Illanes, her colleague and contributor to the university's curriculum, took her place as dean.²⁴

4. The researcher

After leaving Antofagasta, Schweitzer developed a series of government-funded architectural teaching research projects. The first was *The Presence of the city as a subject of study in the architect's training* in 1986. As part of her research, she compared architecture teaching of the seven schools of architecture that existed at the time in the country and analysed their influences. She referred to her alma mater's modern curriculum as being aware of time and materials economy, placing students in close contact with the financial viability of projects. She later identified a growing interest in social sciences, heritage and environmental studies as topics that have progressively been incorporated into architectural design since the 1960s.²⁵

Only two years after, she won government funding for another research project: *The training of the architect in our country: contrasting the profile of the teaching-learning process cradled in their schools*. The research findings were published in the book *The Architect in Chile: university and profession* in 1990.²⁶ As part of her research, she interviewed recent graduates from the four oldest universities in the country and attempted to provide a professional profile of the school graduates. The students identified a disarticulation between the design studio and the theoretical subjects that she explored further in her 1990s research: *The architect's training in our country. Exploration of alternatives aiming to overcome the theoretical-practical duality that prevails to this day*.²⁷

In numerous interviews, she identified that universities wouldn't completely prepare students to document buildings for construction. Furthermore, recent graduates would do part-time jobs in architecture studios to gain the missing training.²⁸

Her work in curricular programs would extend further in the 1992 when she co-authored the curricular project for the new school of architecture of Universidad de Santiago de Chile (USACH), alongside Fernando Castillo and others.²⁹ Remarkably, the technological and instrumental areas in USACH's curriculum imitated the ones of Universidad del Norte. The humanities area's subjects became cultural history, architecture, and history of urbanism. Notably, a subject named contemporary reality is included, following the social concern stream of curricular programs started with Universidad de Chile. Moreover, professional practice and research studios were included as part of the curriculum (Fig. 3), which aligns with her observations in Great Britain and may also respond to recent graduates' concerns about their professional knowledge (Fig. 4).



Figure 4. Ángela Schweitzer (centre) and others at Universidad Católica de Chile. © Courtesy of Carmina Sutil.

5. Conclusion

The broader revision of Ángela Schweitzer's work is only a small contribution to bringing to light the role of women as historical subjects in the construction of modern architecture.

Even when Valdivia's Town Hall is worth exploring in its own right as a significant piece of local architecture, a comprehensive analysis of Schweitzer's work contributes to understanding modern architecture by reviewing a scarcely discussed aspect of it: the analysis of architecture training.

Since her training at Universidad de Chile, characterized by the university reform that implemented a new modern curriculum, it's possible to see some ideals that she embraced and continued to explore in her professional practice. She would apply the socially contextualized approach and position the design studio at the core of architecture teaching at both Universidad del Norte and Universidad de Santiago de Chile.

Nonetheless, Schweitzer's most interesting contribution to curricular programs in Chile might be the introduction of the research studio, proposing a scientific dimension to architecture studies, detaching it from the ineffable creative act. The relation between theory and practice was an issue she revisited in different stages of her career, and the integration of both aspects into the architecture curriculum was a key aspect of her research.

In conclusion, as a designer of built work in solo practice, teacher of design studios, creator of curricular programs, and researcher, Schweitzer was, in fact, an integral modern architect whose legacy extended far beyond one notable building.

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S13

Female Pioneering architects. From 'Bribes de conversation' to an integral History of Architecture

Mar Loren-Méndez

UNIVERSIDAD DE SEVILLA

Otti Berger, from Croatia and Vladimira Bratuž, from the Slovenia.

Matilde Ucelay, María Cristina Gonzalo-Pintor, Rita Fernández-Queimadelos, Margarita Mendizábal, Juana Ontañón, María Eugenia Pérez-Clemente, Elena Arregui, Milagros Rey-Hombre, Mercedes Serra-Barenys and Margarita Brender-Rubira, all of them from Spain. Gertruida Brinkman and Eleanor Ferguson, from South Africa of dutch origin; Ethel Mary Charles, Grada Wolffensperger, Margareth Kropholler; Nelly Edwards; Minna Damstra; Gwynneth Goodricke. Polish architects Jadwiga Dobrzyńska, Barbara Brukalska, Anatolia Hryniewiecka, Helena Syrkus, Jadwiga Grabowska-Hawrylak and Adrianna Górka. The French architect Charlotte Perriand completes the list of female architects included in this research works.

As in the ceremonies where we pay homage to a collectivity, there is a powerful force in the act of pronouncing each and every name involved in it, in order to be able to avoid the anonymity of the individual singular achievements.

In the 17th DoCoMOMO International Congress taking place in 2022 one out of five sections is devoted to women in architecture and design: *Modern pioneering women* constitutes a conquer in the context of architectural research. The five contributions of this section are monographic studies on female architects from different geographies. Croatia and Slovenia, by Nataša Koselj; Spain, by Arianna Guardiola-Víllora, Luisa Basset-Salom and Elena Navarro-Astor; South Africa, by Nicholas Clarke and Marieke Kuipers; Polland, by Agnieszka Tomaszewicz and Joanna Majczyk, complemented with a thematic research on the french architect Charlotte Perriand, by Caterina Franchini. Eight out of nine authors are also women. I myself am also a woman, who is committed to this huge task ahead us.¹

They have offered valuable research studies in pioneering women on architecture within their framework, characterizing their specific contributions and achievements, within the limits and obstacles they worked with. These studies reflect the patient construction of the fragments: we can confirm we are in a mature stage of the identification and characterization phase of this research line on female architects. In this phase, there is a predominance of contributions within a specific geographical or chronological framework. This urgent and enormous task has already become a research line in which projects, publications and all different initiatives are taking root in both academia and society.²

Their architectural work and main contribution should be put into context, in dialogue with their contemporaries, inviting to a discussion of the innovation, the values they incorporated to their historical architectural context. As an architectural historian, I believe that we have to work on the rewriting of history, which must integrate the presence of women as authors and promoters in each and every historical period, developing an integral history of architecture.³ In addition, there are contributions in a specific chronological period, with modern and contemporary architecture being the most attended.⁴

Capsules, islands, which should be integrated in the history of architecture. These female architects and their contribution, in dialogue with their male contemporary colleagues, looking for transversalities, unveiling their innovation and creative force in a greater context. The first section *European Avant-Garde* would have also been the natural place for Charlotte Perriand critical vision of Modernity, and her vision of the dialogue and integration of tradition. In this section Margarete Lihotzky's innovative Frankfurt kitchen (1925) represents the modest female presence among the Modern male Masters. The work of Slovenian Vladimira Bratuž during the second half of the 20th century is enriching the second section *Post-war international expansion*, where women –Florence Knoll and Ray Eames– appeared with men –Saarinen and Charles Eames respectively. Ten Spanish (female) architects sum up to the fifth and last section *Iberia. Cultural Identity*.

It is essential to also incorporate female architects as historians, as authors of history, with the urgent integration of women in historiographic key.

This implies the bibliographic review in gender key. Catherine Bauer Burster's (1905–1964) historiographical work in a gendered key is little known: in the bibliography of Modern Housing;⁵ Octavia Hill, Dorothea Jacobi or Carol Aronovici appear alongside established authors such as Walter Gropius or Raymond Unwin.⁶

This first conquered 'Atalaya' allows us to perceive the next territories awaiting. 'Bribes de Conversation' is a French expression to depict the unrelated fragments of conversations that we accidentally listen while walking on the street, while waiting on line in some random supermarket. Essential and suggestive, we are now ready to develop the whole conversation of architectural history.

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Notes

- 1 My academic work on architecture and gender dates back to 2011. Together with José Pérez de Lama, Mar Loren–Méndez directed the course *Nuevos imaginarios en género y tecnología*. (Des) montando espacios y prácticas de conocimiento de arquitectura. Género y docencia para la arquitectura. Course organized by the Instituto de Ciencias de la Educación, Universidad de Sevilla, 2011, Escuela Técnica Superior de Arquitectura, Universidad de Sevilla. In 2015 Mar Loren–Méndez participated in the International Exhibition and Seminar *Women Build! Caucasus meets Europe*, MoMA, Tbilisi, Georgia. In the last decade she intensified her research commitment Mar Loren–Méndez, “Las mujeres en la historia de la arquitectura y de la ciudad contemporáneas,” in *Jornadas de Arquitectura con perspectiva de género* (Málaga: Universidad de Málaga, 2019) Mar Loren–Méndez, “Gunta Stölzl,” in *Reencuentros en torno a un centenario. Bauhaus 1919–2019* (Cádiz: Colegio de Arquitectos de Cádiz, 2019) 78–79. She included this commitment in her tenure proposal: Mar Loren–Méndez, “Proyecto investigador docente,” in *documentación presentada 3 diciembre de 2019 para concurso de acceso a cuerpo de Catedráticos de Universidad, Área Composición Arquitectónica*, Resolución Universidad de Sevilla 29 de Julio de 2019, BOE 7 de agosto de 2019).
- 2 Devoting monographic section to women in Congresses have stopped being an exceptionality and become a common practice. In 2019 the *Asociación de Historiadores de la Arquitectura y del Urbanismo* AhAU (Association of Historians of Architecture and Urban Planning) also devoted a section to women of its II Congress on the Bauhaus. The text Mar Loren–Méndez, “Las mujeres en la arquitectura. Historia e historiografía de una red más allá de la Bauhaus,” in *In and Out: Perspectivas desde España*, eds. Laura Martínez de Guereñu, Carolina García Estévez *Bauhaus* (Madrid: AhAU, 2019) 76–79 offers a critical reflection and research context of the papers presented by Raquel Franklin on Lena Meyer–Bergner; M. Dolores Sánchez Moya on Helene Nonné–Schmidt; Joseña Hervás on Wera Meyer–Waldeck, and Marisa Vadillo’s study on women and design.
- 3 The publication by Zaida Muxí Martínez (1964–) works on the integration of women in the history of architecture. Zaida Muxí Martínez, *Mujeres, casas y ciudades* (Barcelona: dpr Barcelona, 2018).
- 4 In the seventies, Doris Cole tackled a history of women in architecture in the United States: Doris Cole, *From Tipi to Skyscraper. A History of Women in Architecture* (Cambridge, MA: MIT Press, 1978) (original ed. 1973); Joseña Hervás worked on studies of gender in the Bauhaus originating in her doctoral thesis: Joseña Hervás, *Las mujeres de la Bauhaus, de lo bidimensional al espacio total* (Buenos Aires: Diseño, 2015). Elena Díez Jorge contributed to history of women in medieval Islamic and Renaissance Spain. Elena Díez Jorge, *Mujeres y arquitectura: cristianas y mudéjares en la construcción* (Granada: University of Granada, 2016) (original ed. 2011).
- 5 Catherine Bauer, *Modern Housing* (London: George Allen & Unwin, 1935)
- 6 Joseña Hervás, “Arquitectas en la Bauhaus. ¿ordinario o extraordinario? talento. El ejemplo de Wera Meyer–Waldeck,” in *In and Out: Perspectivas desde España*, eds. Laura Martínez de Guereñu, Carolina García Estévez *Bauhaus* (Madrid: AhAU, 2019) 90–103

Two Pioneering Female Architects in South Africa. Gertruida Brinkman and Eleanor Ferguson

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This paper continues on from a recently completed research project on shared built heritage of South Africa and the Netherlands from 1902–61, mainly created by Dutch-born architects. It focuses on two pioneering female architects in South Africa, Gertruida Brinkman (1906–77, née Siemerink) and Eleanor Ferguson (also Stakesby–Lewis; 1900–82), both of Dutch descent and married to South African architects. They were not only the first two women architects to lead a private practice in southern Africa, but also introduced ideas of the Modern Movement through their built projects, while continuously demonstrating a great concern for quality of life. Brinkman, graduated from the University of the Witwatersrand, was based in Port Elizabeth (now Gqeberha). She undertook two ‘grand tours’, through respectively Europe (1939) and Brazil (1954), which influenced her oeuvre. The other protagonist, the globetrotter Ferguson, trained at the Delft Institute of Technology (now TU Delft) and relocated subsequently to South Africa. With her third husband, set up a joint practice in Johannesburg in 1938 and acted, under her maiden name, as its principal designer. The personal circumstances of both pioneers resulted in other priorities than seeking publicity in architectural journals. They focussed on designing and building, alongside a general social commitment additional to raising their children. Consequently, their legacies are hitherto scarcely known, except for some incidental references, which triggered our interest. By applying a combination of field, archival and bibliographical investigations with oral history research, we can now draft portraits of these two pioneering women architects. Their discovered portfolios reached far beyond the domestic sphere, including amongst others clubs, office buildings, schools, hospitals and industrial buildings and complexes. These discoveries show that biographical research is essential to augment the limited bibliographical information available on the contributions made by female architects to the built environment.

1. Architectural formation and practice for women in early C20

During 1902–61, South Africa formed part of the British Empire and its architectural norms and professional structures largely mirrored those of the United Kingdom.¹ The legislation that formalized the architectural profession caused great difficulties for immigrant practitioners not educated in the British Empire. They had to pass examinations based on British training and regulations before being allowed to enter private practice, all in English.

These regulations favoured men, who had easier access to technical and/or academic education and professional networks. Women at the time were obliged to be dedicated spouses in support of their husbands' careers. Female aspirant architects where, if not excluded by rules, excluded in practice.

In the Netherlands, the Delft Institute for Technology allowed female students from its inception (1905), but its first female architectural engineer alumnus, Grada Wolffensperger graduated only in 1917.² It was difficult for female architects in the Netherlands to develop a professional career due to various social constraints and prejudices. A Royal decree directed women working in public service to resign from their posts upon marriage. Married women were barred from opening their own banking accounts or taking out insurance, but were dependent on the endorsement of their husbands until 1957. Such social-administrative limitations could eventually be overcome when an architects' couple started a joint practice. Married female architects also needed to take responsibility for running their households and raising children.

In the Union of South Africa, the situation was partly different for educated women of the white minority as they could more easily employ relatively cheap black labour to assist in the housekeeping. Still, in 1934 only three or four female practitioners were registered as architects, though not all were professionally active.³ We have however identified two pioneers who were both formally trained and importantly acting as principal designers of a private practice in southern Africa from 1936 onwards. One was Gertruida Siemerink (later Brinkman), who worked in the Eastern Cape (1932–77). The other was the Dutch-trained engineer Johanna Eleanor Ferguson (later Stakesby-Lewis), being the ninth female to formally register as an architect in South Africa. She established her practice first in Johannesburg (1938–53), then transferred to Salisbury/Harare (1953–61) and finally to Camberley (United Kingdom).

2. Gertruida Brinkman (1906–77)

Ge(e)rtruida Hendrika Siemerink was born in 1906 in Pretoria, South Africa, into a Dutch immigrant family. Her architect father, Hendrik (1870–1944), was acting chief inspector of Public Works at the time and soon after supervised the construction of the Union Buildings there. The Siemerinks relocated to Port Elizabeth (today Gqeberha) in 1915, where Hendrik served as Public Works district engineer for ten years.⁴ Probably inspired by her father's work, Gertruida studied architecture at the Witwatersrand University in 1927–31.⁵

That school by then had fifty students and two staff members, including Stanley Furner, who introduced international Modern Movement architecture to South Africa.⁶ Her years at the University coincided with the emergence of

a group of *avant garde* students, including Rex Martienssen, who advocated a radical turn to modernism.⁷

Following her graduation, she entered the practice of her father, then partnered with Hugh Walker and briefly, Cyril Lane. This firm mainly applied a historicist vocabulary to their commissioned commercial buildings and maintained good contacts with industrial clients. Port Elizabeth, then the second largest seaport of the country and the main economic, cultural, social and administrative centre in the Eastern Cape, was also the major base of the motor vehicle industry. Siemerink & Walker, for instance, designed the assembly plants for both Ford and General Motors (1928).⁸

Gertruida introduced an *avant-gardist* approach to the firm's architectural design, breaking with the Beaux Arts-like traditions and eclectic ornaments, albeit not yet under her own name. The Mill Park Bowling Club (1933) demonstrates her modernist approach: an elegant flat-roofed building with a protruding extension in the centre of the field-facing façade, accentuated by a cantilevered canopy with rounded edges (**Fig. 1a**).

Shortly after Gertruida had married mechanical engineer, Jack Brinkman, she completed her professional registration and in mid-1936 she entered into partnership with her 66-year old father, changing the firm's name into Siemerink & Brinkman and becoming its principle designer.⁹ Some of her early designs, like the Berkeley Court apartment block (1936) with its arched windows and balcony fronts with Art Deco styling, mediated modern elements with the historicist tradition practiced by her father.

She proved instrumental in introducing the ideas of the Modern Movement to the Eastern Cape. The stunning House 'Ridgewood' (1936) built for the Danish-born director of the Ford factory, Axel Stockelbach, is exemplary (**Fig. 1b**). The influence of Erich Mendelsohn, whose work she admired, is clearly visible in the composition of curved volumes and canopies.¹⁰

Another project that reflects her trend towards modernity is the Marine Hotel in Summerstrand. The very reserved Art Deco front and the radically modern side facade (**Fig. 1c**) date from 1939. In the same year the Brinkmans undertook a months-long tour through Europe. Alongside historical highlights, they visited Rationalist projects in Italy and made an excursion to view Wim Dudok's Hilversum Town Hall.



Figure 1. GH Brinkman, [a] Mill Park Bowling Club, 1933; [b] House 'Ridgewood', 1936; [c] Marine Hotel 1939, 1948, all Gqeberha, South Africa. © [a, b] Bryan Brinkman, c.1936; [c] Transnet Heritage Library, 1950.

These explorations had a lasting influence on Brinkman's architecture. The rational 1948 extension to the Marine Hotel (**Fig. 1c**) shows a total architectural control, resulting in a clear articulation and dynamic volumetric expression. Her design for the Mobbs Factory (1952, **Fig. 2a**), constructed in only seven months with half-shell concrete sheds, exemplifies her structural dexterity.¹¹ The Livingston Hospital (1953) is an equally impressive example of her control of programme to deliver a solution that is both rational and aesthetically appealing (**Fig. 2b**).

Inspired by the *Brazil Builds* publication, the Brinkmans journeyed to Brazil in 1954.¹² The Brazilian influence and a lingering reference to the Italian Rationalists is evident in Gertruida Brinkman's subsequent projects. The Port Elizabeth Museum extension (1961) (**Fig. 2c**) and various hospital complexes, such as the large ward blocks for the Provincial Hospital in Port Elizabeth (1960s–77) are exemplary. With the latter, she was expanding the 1917 building designed by her father when in Public Works.¹³ Similarly, she designed extensive new facilities to the General Motors Factory, originally by her father.¹⁴



Figure 2. GH Brinkman, [a] Mobbs Factory, 1952; [b] Livingston Hospital, 1953; [c] Port Elizabeth Museum extension, 1961, all Gqeberha, South Africa. © collection Bryan Brinkman.

Brinkman's professional career spans over 45 years, during which she remained the principal architect of the sequence of practices.¹⁵ Her oeuvre includes numerous modernist private houses, churches, hospitals, schools, museums and factories and she was an important pioneer of both Modern Movement and Brazil Builds ideas in South Africa. She was a trailblazer for women in architectural practice and in society. She acted as honorary secretary and treasurer of the Port Elizabeth Local Committee of Architects and was the first president of the Eastern Cape Chapter of the Soroptimist International.¹⁶ Her son and grandson followed in her footsteps and her legacy lives on today as B4 Architects.

3. J. Eleanor (Stakesby–Lewis) Ferguson (1900–82)¹⁷

Johanna Eleanor Ferguson was born in 1900 in Shanghai, where her Dutch-born father was employed as commissioner of the Imperial (later Chinese) Maritime Customs Service. While a teenager, she relocated to the Netherlands for a proper Dutch education. Subsequently, she studied architecture at the Delft Institute of Technology, being the first woman in her family to do so. Even

before her graduation, she designed her own, very modern house near Breda, where she went to live following her marriage to Ewoud van Everdingen in 1925.

That two-storeyed flat-roofed house, called *Sunnyside*, was constructed in brick and has a semi-circular extension with upper balcony at the eastern side to allow for early morning light in the master bedroom upstairs (**Fig. 3a**). The central entrance is accentuated by a canopy and two long strips with decorative stained-glass windows to light the stairwell.

When she graduated in the summer of 1926—already a married woman, which in itself was pioneering—she was one of the first female architectural engineers in the Netherlands. However, it proved very difficult for her to build up a private architectural practice, particularly after she had given birth to two children. Her main clients were her—divorced—parents. Ferguson designed an expressive reed covered house in Wageningen (*De Huif*, 1927) for her mother. For her father, she designed another version of the first *Sunnyside* near Utrecht (1928) (**Fig. 3b**) followed by a third, smaller-sized, version of the same on the neighbouring plot (1935/36). The wooden built-in furniture of these projects was also made to her design and intended to be both functional and create a cosy atmosphere.

Meanwhile, her marriage floundered and she relocated to the International Theosophical Centre at Naarden, where she married her second husband, Paul Boswinkel in 1934. Professional prospects, especially for female practitioners, were almost non-existent in the Netherlands due to the great economic depression. The newly-weds decided to emigrate (with two little children) to the 'Golden City' Johannesburg.

Upon arrival in early 1936, Eleanor, as she called herself from then onwards, started working as a 'draughtsman' while studying for the compulsory special qualifying exam. Divorced again, she registered as an architect under her maiden name, Ferguson in 1937. She soon found a true partner in work and life and with an interest in theosophy in Stakesby Lewis, whom she married in December 1938. They set up a joint practice in the newly completed modernist Washington House (1938, Harry Le Roith), preferring to keep their professional and private lives spatially separated. This was in part possible because of the availability of cheap labour to staff their home. They likewise maintained clearly defined professional roles: she was the first designer and he was the builder.



Figure 3. JE Ferguson, [a] *Sunnyside*, Breda, 1925; [b] *Sunnyside*, Utrecht, 1928; both the Netherlands; [c] *Cottage AJ du Plessis*; 1943, Johannesburg, South Africa. © [a] Collection Stedelijk Museum, Breda, c1930; [b] collection Eric Ferguson, c.1937; [c] Tsica Heritage Consultants, 2019.

Her earliest Johannesburg works include various ‘Wrightian’–or rather ‘Dudokian’ or ‘Wilsian’–houses built in the suburbs, often covered by low pyramid hipped roofs with large overhangs. As is customary in South Africa, they were often provided with a small loggia or ‘stoep’, which served as shaded outdoor space. A typical example is the cottage for Technikon Witwatersrand staff member, A.J. Du Plessis (1943) (**Fig. 3c**).

The firm was also responsible for new commercial buildings, such as a diamond cutting factory (1943) and an industrial pastry bakery (1944): large cubic building volumes in orange–coloured brick, interspersed with horizontal steel window strips and accentuated by thin concrete frames. This idiom was continued in the high–rise buildings of August House (1946) (**Fig. 4a**), Rondi Ice Cream Factory (1948) and Sterling House (1951). All were executed in a strictly controlled modernist brick aesthetic, which gave the buildings a local expression of the international Modern Movement. August House has an impressive construction of reinforced concrete with conical mushroom columns (**Fig. 4b**). Similar constructions had already been taught and applied in warehouses. Ferguson’s use of these in plain sight in office spaces, as in August House, was pioneering in South Africa and was applied to allow better day light distribution and thereby improve working conditions.

The Bienvenue Shelter on Terrace Road, Bertrams (1944) relates to Ferguson’s social commitment to improving living conditions for lesser privileged South Africans. Alongside her architectural practice, she acted, privately under her married name, as national president of the Theosophical Society in Southern Africa (1946–53), frequently lecturing abroad and supporting various charitable initiatives. Under her leadership it established ties with the Institute of Race Relations, a liberal independent advocacy organisation that aims to address, amongst others, issues of racial inequality and poverty in South Africa. She designed a new Theosophical Lodge *pro bono* in 1949, but it was never executed.

In December 1953 the Stakesby–Lewis family relocated to Salisbury (now Harare), where Ferguson designed mainly private bungalows in the suburbs (**Fig. 4c**). In 1961, in response to political uncertainty, the couple relocated to the theosophist Tekels Park Estate in Camberley, England.



Figure 4. JE Ferguson, [a] August House, 1946, with later art installation by artist R1, c.2019; [b] August House interior, Johannesburg, South Africa; [c] Plan for a bungalow, 1958, Induna Salisbury/Harare, Zimbabwe. © [a] R1; [b] Kim Gurney, c.2018; [c] collection Noortje Loveday.

There she only designed a few new detached houses: two successive houses for herself (1962, 1970) and one for her eldest daughter and her family (1964). These were all built in brick, with large steel-framed windows, strong horizontal lines, a functional layout following domestic preferences and were provided with plenty of storage space. When Eleanor passed away in 1982 in her last self-designed house, she was remembered only in theosophical and local circles. She wrote over twenty publications related to theosophy, but kept her architectural work apart, always remaining proud on her Delft engineer's title. A surviving letterhead from her Johannesburg practice, which includes the abbreviation B.I. (Delft), was the key to start our research into her architectural practice.

4. Reflection

The current historiography of C20 architectural history is largely based on the architectural discourse in the journals at the time and for the Modern Movement heavily coloured by the positive narratives of such authors as Siegfried Giedion and Adolf Behne.¹⁸ With a few exceptions, female architects rarely published in architectural journals. Their particular design contributions are often overlooked due to name changes after marriage or becoming anonymous staff members in public service or architectural offices. We were surprised to discover the work of Eleanor Ferguson and Gertruida Brinkman when investigating the contributions made by Dutch-born architects to the built environment in the Union of South Africa. Such a manifest underrepresentation of women within an already little-known group of immigrant architects prompted us to further investigate. This demanded many hours puzzling together those bits and pieces that are left of the lives and works of these two pioneering women architects in public or private archives. They aspired to equality in their architectural practice and society, stepping out from the shadows to lead and produce architectural oeuvres of great complexity, which now in turn deserve reappraisal.

Oral history, archival and field research are immensely important alongside bibliographical research. We learnt that these female pioneers were involved in all kinds of building typologies, but rather than working for professional fame, they used their architectural and social skills to improve the living and working conditions, both for their families and communities.

Acknowledgements

The authors are grateful to Bryan Brinkman, Noortje Loveday, Beatrice Sales, Elsa Berentzen, Eric Ferguson, Marguerite Pienaar, Catherine Deacon, Kim Gurney, R1 and Tsica Heritage Consultants for sharing their personal information and documents.

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- 4 Catherine Deacon and Marguerite Pienaar, "Building for Banking and Industry," in Clarke, Fisher and Kuipers, *Common Ground*, 110–33.
- 5 Bryan Brinkman (grandson of Gertruida Brinkman), public lecture, 24 November 2021.
- 6 Stanley Furner, "The Modern Movement in Architecture," *South African Architectural Record*, 40, no. X (December, 1925): 87–89; Idem, 41, no. XI (March, 1926): 6–8.
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- 8 Deacon and Pienaar, "Building for Banking," 129–130.
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- 10 Bryan Brinkman, public lecture, 24 November 2021.
- 11 Michael Louw, "Technological Trajectories from North to South," in Clarke, Fisher and Kuipers, *Common Ground*, 189–191.
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Complex appropriations. Other Otherness: Otti Berger and Vladimira Bratuž

Nataša Koselj

DOCOMOMO SLOVENIA CHAIR

This paper is analysing sublime work of two artists and architects from the territory of ex–Austro–Hungarian Empire and ex–Yugoslavia, two women ('Other Sex') from the territory often put into the 'Other Modernisms' framework, i.e. Other Otherness; Otti Berger's work from the first half and Vladimira Bratuž's work from the second half of the 20th century.

Otti Berger (Otilija Esther Berger) was born in 1898 in Austro–Hungarian Empire and died in Auschwitz in 1944. She studied at the Academy of Fine Arts Zagreb, Croatia and continued in Bauhaus Dessau as one of the most creative students at the weaving workshop. She became deputy to Lilly Reich and wrote a treatise on fabrics and the methodology of textile production. In 1932 she opened her own studio. Berger is the only woman designer from Bauhaus, who sought patents for her textiles.

Vladimira Bratuž – Laka was born in 1923 and died in 2006 in Ljubljana, Slovenia. She simultaneously studied architecture at Plečnik's Architecture School and sculpture at the Academy of Fine Arts in Ljubljana. After graduation, she was Plečnik's assistant and also finished sculpting specialisation under Professor Francišek Smerdu. She is the author of the famous Ljubljana Fish (1958–59), a concrete sculpture located in the Tivoli Park children's playground, used for children's play. She is the author of her own atelier named '*Moj dom*' ('My Home') in Cankar Centre vicinity.

The research is based on the Bauhaus archives, Standpoint Theory, Simone de Beauvoir's writings, starting with Hegel's and Marx's observations of the importance of the standpoint. The conclusion distinct between pre– and post–war 20th century women artists and architects appropriations and discusses today's situation and the inheritance.

1. Introduction

Otti Berger and Vladimira Bratuž, two creative forces from an ex–Yugoslavia territory, did not know each other. It is about their immense creative power being so elegantly expressed in two different periods of the 20th century, which draw my interest. I titled these two periods 'Otti Berger and The Bauhaus' and 'Vladimira Bratuž and Slovenian Structuralism' as her works presented in this paper relate to Slovenian structuralism. Otti Berger's work has been studied internationally in recent years¹ and a park in Zagreb is going to be named after her. Vladimira Bratuž's legacy does not have similar successful story as her original fish sculpture, which has been serving its original purpose for over 65 years in Ljubljana Tivoli park, recently got its twin 3D concrete print reproduction at Ljubljana River, a gesture from Ljubljana authorities, which is an absolute devaluation of her original artistic work. Now there are two of them, an original one in Tivoli Park and a copy by Ljubljana

River, which questions the artistic work intrinsically. As their work also present the 20th century appreciation of women in art and architecture, let me first present a brief philosophical background on women's position in 20th century society.

2. Philosophical background

Hegel was interested in the standpoints between masters and their slaves. He noticed, that the relationship between master and slave was related to a person's position and on how information and authority was dictated.² Marxist Theory emerged from the Marxist argument that people from an oppressed class have special access to knowledge that is not available to those of a privileged class.³ For Lukács, the perspective of the proletariat is valorised because the worker becomes a conscious object.⁴

Simone de Beauvoir's *Other Sex* writes of the specific ways that the natural and social sciences and the European literary, social, political and religious traditions have created a world where conflicting ideals of femininity produce an ideology of women's "natural" inferiority to justify patriarchal domination.⁵ De Beauvoir's primary thesis is that men fundamentally oppress women by characterizing them as the "Other", defined exclusively in opposition to men. Man occupies the role of the subject; woman is the object, the other. He is essential, absolute and transcendent. She is inessential, incomplete and mutilated. He extends out into the world to impose his will on it, whereas woman is doomed to immanence, or inwardness. He creates, acts, invents; she waits for him to save her. Standpoint theory, a feminist theoretical perspective, argues that knowledge stems from social position. This perspective denies traditional science is objective and suggests that research in theory have ignored and marginalized women and feminist ways of thinking.

Nancy Hartsock examined standpoint theory by using relations between men and women. She published *The Feminist Standpoint: Developing Ground for a Specifically Feminist Historical Materialism* in 1983 where she used Hegel's master-slave dialectic and Marx's theory of class and capitalism as an inspiration to look into matters of sex.

Feminist standpoint theory's initial focus was in challenging the idea of scientific neutrality and objectivity from a presupposed generalized knower. The term was coined by Sandra Harding to categorize epistemologies that emphasize women's knowledge. In Harding's 1986 book *The Science Question in Feminism*, she distinguishes the idea of a standpoint from the more generic idea of a perspective with the requirement of political engagement. Generally, standpoint theory gives insight into specific circumstances only available to the members of a certain collective standpoint. Feminist standpoint theorists claim that certain socio-political positions occupied by women can become sites of epistemic privilege and thus productive starting points for inquiry into questions about not only those, who are socially and politically marginalized,

but also those who occupy the positions of oppressors. This claim was generated by Sandra Harding: "Starting off research from women's lives will generate less partial and distorted accounts not only of women's lives but also of men's lives and of the whole social order."⁶ This practice is also quite evident when women enter into professions that are considered to be male oriented such as architecture.

3. Otti Berger and the Bauhaus

Otti Berger was born to a Jewish family in Zmajevac, Croatia, close to the Hungarian border, which was then part of Austro-Hungarian Empire. Between 1922 and 1926 she studied at the Academy of Fine Arts in Zagreb. Even though the Bauhaus school was established already 1919, it was not until 1928, under the head of Hannes Meyer, that women were allowed to study architecture.⁷ Otti Berger came to Bauhaus Dessau in study year 1926/27. As she had hearing difficulties, Bauhaus weaving workshop was ideal for her and she soon became one of the most creative and most productive weaving workshop student and later also head of the weaving workshop. Having in mind the Bauhaus slogan "Art into Industry" and "gesamtkunstwerk" the weaving workshop tried to answer new needs for upholstery fabrics of Bauhaus tubular steel furniture and covering large glass areas of modern architecture by experimenting with new technically innovative functional fabrics such as iron thread, cellophane and cellulose. Besides, the Bauhaus weaving workshop fabric patterns were functional, minimalistic, geometric, abstract and artistically inspired with Bauhaus teachers László Moholy-Nagy, Josef Albers, Paul Klee and Wassily Kandinsky. The Bauhaus weaving workshop was a great success of the school, also financially, and produced some great artistic personalities such as Anni Albers, to whom the New York Museum of Modern Art devoted a solo exhibition in 1949. During her Bauhaus period, in 1929, Otti Berger joined a weaving course in Stockholm and gave a lecture about the Bauhaus there, which led to a Bauhaus exhibition in Stockholm in 1930. She exhibited fabrics with simple geometric patterns emphasizing the structure of the fibre. She also published an article *Fabric in Space* in the *Form* magazine, where she discussed the new functions of textiles with emphasis on texture, structure and fracture. She also designed the fabrics for famous Villa Schminke (1932–33) by Hans Scharoun. Otti Berger is the author of zebra fabric pattern for Aalto's chair No. 39, sold under the name *Wohnbedarf* from 1933. The weaving workshop was an early testing ground for women emancipation. Even though women Bauhaus teachers were paid less than men and did not have pension rights, Otti Berger, was the first and the only one of the Bauhaus women to get patents for her fabric, one in Germany and one in England and collaborated with textile companies in UK, Germany, The Netherlands and Switzerland. She also succeeded to put her trademark initials "o.b." into some of her innovative industrially produced fabrics, using techniques she herself developed, for example for *Möbellstoff – Doppelgewebe*. In 1932 she formed her own studio



Figure 1. Otti Berger: Piano cover, cca. 1930, Bauhaus–Archiv Berlin, 499.

for fabrics in Berlin with the name “*otti berger atelier für textilien, stoffe für kleidung und wohnung möbel–vorhang – wandstoffe bodenbelag*”. Following the Bauhaus principles, all the capital letters in most of Otti Berger’s writings and titles, were replaced with non–capital letters. She studied and experimented with relations between colour and form and between material and reflection in her textile design (**Fig. 1** and **Fig. 2**). Beside new artistic solutions, she put lots of her efforts to systematization and optimization of industrially production process of fabrics. In the Bauhaus–Archive Berlin, as well as in Whitworth archive collection UK, Werner Textile Archive UK, Museum of Modern Art MoMA US, The Metropolitan Museum of Art US, Harvard Art Museums US, Rids Museum US and The Art Institute of Chicago US, there are over thousands of her studies for textile



Figure 2. Otti Berger: Piano cover detail, cca.1930, Bauhaus–Archive Berlin.

patterns using new materials which speaks of her enormous creative power and production capabilities. Legislation passed in 1936 banned Jewish people from having business in Germany. Berger was forced into exile, coming to London whilst awaiting an American visa. In England she collaborated with Helios textile company in Bolton. Unfortunately, in the end, she was not able to accompany her fiancé Ludwig Hilberseimer to America, where she was invited to lecture textile design at the New Bauhaus in Chicago, and where most of the Bauhaus professors flee from Nazis in Germany. Instead she left for Zmajevac to look after her ill mother. In 1941, when she was finally granted American visa, Yugoslav authorities refused to renew her passport. She was deported to Auschwitz concentration camp where she died in 1944.

4. Vladimira Bratuž and Slovenian Structuralism

Vladimira Bratuž was born in 1923, twenty five years after Otti Berger, and in 1942, during the WWII, she started to study simultaneously architecture at Plečnik's School of Architecture and sculpturing under Prof. Frančišek Smerdu at Academy of Fine Arts in Ljubljana. After her graduation at both studies in 1950 she became Plečnik's assistant and continued her specialization studies at the Academy of Fine Arts. She collaborated with Plečnik on numerous war monuments and made his portrait sculpture in Krizanke complex. Between 1952–53 she also collaborated with Prof. Edvard Ravnikar on his famous Rab Island Kapor memorial cemetery in Croatia. In 1955 she was awarded *Diplôme d'honneur* Cannes for her ceramic sculpture exhibition in France. In late 1950s she designed her most famous concrete sculpture *The Fish* (Fig. 3), which is located in Ljubljana Tivoli children's playground and is used for children's play. It is influenced by Henry Moore and Barbara Hepworth, a unique functional sculpture, which is an unforgettable memory of most of the children from Ljubljana, mine as well. Inside hollowed out fish body sculpture there is just enough space to sit two children and the feeling there is exceptional, almost like being in a small house or in a whale's belly. At the same time, it can be used to run through and slide out its mouth. It is static and dynamic at the same time, a sculpture and a playground, an organic and functional peace of art in any direction. It is a brave monument of time and at the same time timeless. It is at the same time architecture and sculpture. Exactly the joint, that Bauhaus philosophy was looking for in the first half of the 20th century. As such, it is a groundbreaking element in the history of Slovenian art and architecture and is being still in use after more than sixty years.

During the years 1967 and 1981 Vladimira Bratuž was teaching at the Ljubljana School of Design. These were the years of Slovenian Structuralism, with Edvard Ravnikar's Cankar Centre (1977–83) representing its peak. She built her own studio (which she called "Moj dom" i.e. "My Home") in 1977, in Veselova Street, right in the year Cankar Centre building site opened in close vicinity, on Prešernova Road (Fig. 4). The two buildings have much



Figure 3. Vladimira Bratuž, *The Fish* – functional sculpture in the children playground Tivoli, 1958–59, Ljubljana, Slovenia, © Nataša Koselj, 2016.



Figure 4. Vladimira Bratuž, Her own studio called 'Moj dom', Ljubljana, Slovenia, 1977. © Nataša Koselj, 2009.

in common especially in their similar structuralist approach as in both cases the classical perspective and understanding of facades spreads into sequential views, which give more complex and multidimensional expression

of the space and building elements. This brings new dynamism in the understanding of architecture, in case of her studio – in a very small scale, and in case of Cankar Centre – in a very large scale. In both structures light comes from unexpected directions, which adds to excitement in building perception and is opposite to an early modernist rational, logical and strict geometrical order. The building in Veselova Street was initially a garage, which Vladimira Bratuž adapted into a workspace, and later expanded into a living studio. She created an articulated space, where the central staircase with zenithal lighting divides the old section from the new annex. The building has two storeys. The existing section is static and made of reinforced concrete; the new annex is made of modular hollow concrete blocks and reinforced-concrete columns. For exterior cladding, rendered EPS panels were used. The roof cladding is sheet metal. The interior is innovative in structure and connected to the garden greenery by means of glass surfaces. The ground floor features a large anteroom, a kitchen, and living space. On the upper floor above the garages are a studio and a sleeping section with a terrace alongside. The yard-side (northern and eastern) façade is varied. On the southern and western side, where it abuts the adjacent plots, it is predominantly closed. There is an oval pond in front of the house. It has been refurbished and is now owned by Login family.

5. Conclusion

Taking into account philosophical background of standpoint theory and after a brief focus on brilliant work by Otti Berger and Vladimira Bratuž, we can better understand the situation of women artists and architects in the first and second half of the 20th century. Parallel to multiple textile workers strikes in the beginning of the century, which led to the women voting rights across the world in the second half of the century, there was a quieter revolution going on in the fields of art and architecture. In the Bauhaus, where in the first decade, women were even not allowed to join architectural classes, a weaver Otti Berger was the one who was the true game changer. She was so vulnerable on one hand being a woman with hearing difficulties from the territory of ex-Yugoslavia and so strong, creative, inventive, intelligent, brave and talented on the other hand. She is a pioneer and educator of new weaving techniques, combining new materials with new textile designs developed and modified from different traditions, a devoted weaver, a revolutionary thinker and internationally successful author and patent owner. Vladimira Bratuž from the second half of the 20th century, Ljubljana based architect, sculptor and educator, is the author of two milestone artworks from the time of Slovenian Structuralism – The Fish and her home house 'Moj dom', where she used groundbreaking concepts, materials and building techniques which even inspired Edvard Ravnikar's Cankar Centre structuralistic approach. Both of them, Otti Berger and Vladimira Bratuž, still lack monographic exhibitions and books about their precious work.

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Notes

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| <p>1 Antonija Mlikota, Widar Halén, Judith Raum, Rabbi Michael Shire.</p> <p>2 Hegel, G.: <i>The Phenomenology of Spirit; Mastery and Servitude</i>. 1809.</p> <p>3 Marx, Karl and Engels, Friedrich: <i>The Communist Manifesto</i>, 1848.</p> <p>4 Lukács, György: <i>History and Class Consciousness</i>. 1923.</p> | <p>5 De Beauvoir, Simone: <i>The Second Sex</i>, 1949.</p> <p>6 Harding, Sandra; Hintikka, Merrill B. (eds.) <i>The feminist standpoint theory reader: intellectual and political controversies</i>. New York, Routledge, 2004.</p> <p>7 Jeske, Cornelia: <i>The Bauhaus Women's Class</i>. Bauhaus Dessau Foundation: bauhaus-dessau.de</p> |
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The absence of the first Spanish women architects in the registers of the modern movement

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The Iberian DOCOMOMO foundation was created in 1993 with the purpose of studying and documenting the architecture of the Modern Movement in Spain and Portugal. The initial Database covered the 1925–1965 period, however, in 2014, since many works executed after 1965 clearly identified as part of the Spanish Modern Architecture Movement, the period was extended up to 1975. Nowadays the Iberian DOCOMOMO Registry includes around 2400 works, documented by a technical commission, made up of experts from the Iberian Peninsula, responsible for defining the criteria, selecting works, and documenting them following the DOCOMOMO International template. During the first years of the period under study (1925–1965) there were no women enrolled in the Architecture section of the Academy nor in the first Schools of Architecture founded in Madrid and Barcelona. Matilde Ucelay was the first woman to obtain an architectural degree in Spain from the Madrid School of Architecture (ETSAM) in July 1936. Other women graduated in ETSAM from 1940 to 1965 were Maria Cristina Gonzalo-Pintor, Rita Fernández-Queimadelos, Margarita Mendizabal, Juana Ontañón, Maria Eugenia Perez-Clemente, Elena Arregui and Milagros Rey-Hombre. As regards the Barcelona School of Architecture (ETSAB), the first women to graduate before 1965 were Mercedes Serra-Barenys and Margarita Brender-Rubira. These ten women were pioneers of the Spanish architectural profession prior to the transition to democracy. This paper tries to analyse if the Iberian Docomomo Register includes contributions to constructed works and professional achievements of their professional activity. With this aim, the Iberian Docomomo register has been extensively revised simultaneously with the works of the above mentioned women architects, to check if, not forming part of this database, they would suit Docomomo international conditions to be part of the register.

1. Introduction

Docomomo International is a non-profit organization devoted to the documentation and preservation of the Modern Movement (MoMo) buildings and sites. There are 77 Docomomo branches around the world, that act as local consulting bodies and inform about their countries' activities towards the protection and conservation of this 20th cultural heritage.

The Iberian Docomomo foundation was created in 1993 with the purpose of studying and documenting the architecture of the MoMo in Spain and Portugal. Its mission was: "to discover, collect, disseminate, reflect on the meaning and value of these buildings and urge their protection by the administrations".¹ For this reason, the identification of the buildings, the study of the context in which they were built, the registration of the original projects and the assessment of their current state were necessary steps to follow. This work has been carried out in successive stages in the Iberian Docomomo register (Ib-Docomomo-Rg). The initial database covered a forty-year study period from 1925 to 1965. However, in 2014, since many works executed after 1965 clearly identified as part of the Spanish MoMo, the period was extended up to 1975, coinciding with the end of the dictatorship in Spain and Portugal.²

Nowadays the Ib-Docomomo-Rg includes around 2400 works, registered and documented by a technical commission, made up of professional experts from all parts of the Iberian Peninsula. They are responsible for defining the criteria and methodology for this task, suggesting and selecting works and documenting each one in an extensive record according to a template designed by Docomomo International.

Matilde Ucelay Maortua was the first woman to enrol at the Madrid School of Architecture (ETSAM)^{3,4} in 1931 and to obtain an architectural degree in Spain in July 1936.^{5,6} Other women who graduated in ETSAM from 1940 to 1965 were Maria Cristina Gonzalo-Pintor (1940) and Rita Fernández-Queimadelos (1941). They make up the triad of Spanish women architects of the first four decades of the 20th century.⁷ Juana Ontañón Sánchez-Arbós (1949), Margarita Mendizabal-Aracama (1956), Maria Eugenia Perez-Clemente (1957), Elena Arregui Cruz-López (1958) and Milagros Rey-Hombre (1960) followed them (**Fig. 1**).^{8,9} As regards the Barcelona School of Architecture (ETSAB), the first women to graduate before 1965 were Mercedes Serra-Barenys (1962) and Margarita Brender-Rubira (1964).¹⁰

Their graduation date related with the study period of the Ib-Docomomo-Rg is shown in **Fig. 2**, followed by a short biography of the first ten Spanish women architects (SWA) object of this study. Taking into account Carme Pinós' words, "with a family life I would not have been able to devote myself 100% to my work"¹¹ their personal details are considered relevant to understand the context of their profession. It must be stressed that it has not been easy to find information about their professional and/or personal lives. This confirms Lucia C. Pérez-Moreno who asserts that these scarce references show "the lack of reflection on women as historical subjects".¹²

- a) Matilde Ucelay-Maortúa (Madrid 1912–2008) was the first woman to obtain an architectural degree in Spain, in 1936, at the ETSAM. Due to the political purge that took place after the Spanish Civil War, she was not authorized to sign her projects until 1946.
She was married, and although mother of two children, over the course of a working life of more than 50 years, she never worked part-time. Ma-



Figure 1. Several unknown authors. Accessed Feb 25, 2022.

Source: a) Universidad de Alicante. <https://biblioteca.ua.es/fr/documentos/politecnica/exposiciones/ellas-fueron-las-primeras/triptico-matilde-ucelay.pdf> - b) Agencia Estatal Meteorología. <https://aemetblog.es/2017/03/07/las-primeras-mujeres-en-el-servicio-meteorologico-espanol/> - c), g) h) j) Blog Un día una arquitecta. <https://undiaunaarquitectura.wordpress.com> - e), i) Cuadernos de Arquitectura y Urbanismo 1977 n° 125 / 1969 n° 73 <https://raco.cat/index.php/CuadernosArquitecturaUrbanismo/article/view/121986/244982> - <https://raco.cat/index.php/CuadernosArquitecturaUrbanismo/article/view/112302/160921> - d) Veredes. Arquitectura y divulgación. <https://veredes.es/blog/las-arquitectas-pioneras-la-presencia-de-la-ausencia-x-cristina-garcia-rosales/> - f) Arquitectura Viva. <https://arquitecturaviva.com/etiqueta/m-eugenia-perez-clemente>

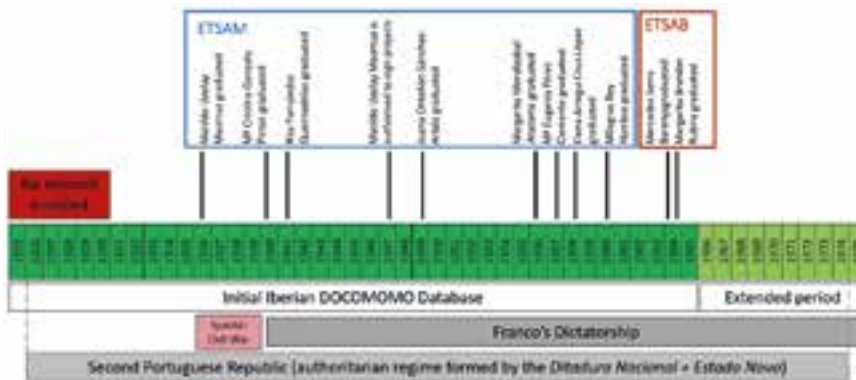


Figure 2. © The Authors

tilde owned her own office and developed partnerless as a recognized independent professional. She completed around 120 projects and was awarded with the National Architecture Prize in 2006.^{13- 17}

- b) M^a Cristina Gonzalo-Pintor (Madrid 1913–2005) was the second female architect to graduate in ETSAM in 1940. She was married and mother of

three children. She was registered at Madrid's professional body until 1984, having more than 43 years of effective seniority in the profession. She was municipal architect of a small town in Cantabria, and built numerous houses.^{18–20}

- c) Rita Fernández–Queimadelos (A Cañiza –Pontevedra 1911–2008) was the third one to graduate in 1940, she obtained her license in 1941 and became the first woman to officially sign her own architectural projects in Spain.²¹ She was married and had six children. During the post-war period (1940–1948) she was employed at the Department of Devastated Regions. She opened her studio in Murcia (1955) and worked there as a provincial architect building schools (1960–1967) and as a municipal architect in Mula (1962–1967).^{22, 23.}
- d) Juana de Ontañón Sánchez–Arbós (Tenerife 1920–2002) graduated in ETSAM in 1949, becoming the fourth Spanish female architect. She was married to an architect and had two boys. She worked on more than 200 projects, most of them with her husband.^{24, 25}
- e) Margarita Mendizábal–Aracama (Vitoria 1931–) is the fifth one to graduate in 1956. She completed around 36 projects, of which 16 were for new buildings. In 1964 she worked together with the architect Fernando Higuera on the ideas competition for the Madrid Opera House. However, her collaborative authorship is not usually recognised.^{26, 27}
- f) M^{ra} Eugenia Pérez–Clemente (Coria, Cáceres) was the first woman from Extremadura to obtain a degree in architecture in 1957 (Madrid). No biographic/professional information has been found about her.
- g) Elena Arregui Cruz–López (Irún–Guipúzcoa, 1929–2018) graduated at ETSAM as the seventh Spanish female architect in 1958 and developed her career in Santiago de Compostela. She married an architect with whom she had five children. They opened a practice in partnership and carried out projects of all types, embracing the MoMo's principles and imbuing their work with a modern and renovating character. In 2003, she was awarded the Castelao Medal.²⁸
- h) Milagros Rey–Hombre (Madrid, 1930 – A Coruña, 2014), daughter of a renowned architect from A Coruña, was the first licensed female architect in Galicia. She was not married and she did not have children. She was devoted to her profession as independent practitioner, as municipal architect at A Coruña City Council. In 2005, she was awarded the Castelao Medal.²⁹
- i) The only woman in her class, Mercedes Serra–Barenys completed her studies in 1964, becoming the first female architect to study architecture for a full degree at ETSAB. She obtained her license in 1964 and started working as municipal architect in Vallgorguina city council. She also wor-

- ked freelance, mainly in the field of housing, and always on her own. She never got married nor had children.^{30,31}
- j) Margarita Brender–Rubira (Romania 1919–2000) studied architecture in Romania, being her degree recognised by the ETSAB in 1962, making her the first woman to be registered as a professional in Catalonia.^{18,21} She developed her career mainly in the 1960s as a freelance architect, with the Spanish economic and tourist development.

Being these ten women pioneers of the Spanish architectural profession prior to the transition to democracy, the purpose of this study is to verify their presence in the Ib–Docomomo–Rg.

2. Methods

The Ib–Docomomo–Rg in the Iberian Docomomo website has been extensively revised according to three approaches.

First, since the “search form” does not include the “gender” box, the “author” box has been filled in with the name of the first ten SWA and the first period after Matilde Ucelay’s graduation (1936–1965). The result of this search only shows the female architect Juana Ontañón.

Second, the database was checked again, for every year from 1925 to 1965. At present, this database encompasses 271 records in Portugal and 2144 in Spain. However, as the structure of the database includes in the “year” box of each record all the years that the work lasted, each record appears in several years, multiplying the number of records significantly. Thus, it was necessary to check 7121 records from the first period. Luckily, despite not including the “gender” field, most of the records include the author’s full name, being easy to detect whether it is a male or female name. This new search also failed.

Third and last, the search period was extended to 1975 and 2342 more records were analysed. With this new search approach Margarita Brender–Rubira and Elena Arregui Cruz–López appeared (the latter with the name Elena Cruz–López).

3. Results

From the Ib–Docomomo–Rg

Seven records were found with a female architect, always in collaboration with male architects (**Fig. 3**). Only three of these correspond to one of the first ten SWA and the other four referred to Mercedes de Miguel Sancho, Carmen Córdova and two registers of Maria Noémia Coutinho (timeline, with the starting data of the works, in **Fig. 4**).

In addition, two records including the architect Cruz Lopez–Müller, a man included in the group of early women architects³⁴ because of his unisex name, were retrieved before the error was detected.



Figure 3. Source: Own elaboration based on information found in Iberian Docomomo web site: <http://hostmaster.docomomoiberico.com/index.php?lang=en>

Regarding the three above-mentioned women architects, Mercedes de Miguel Sanchez participated in the renovation of the parish church of Nuestra Señora de la Fuencisla in 2002 shortly after finishing her degree.³⁵ Carmen Cordova, (1929–2011) was an Argentine architect who was part of the Modern Architecture Organization (MAO).³⁶







Finally, the only information about the Portuguese architect Maria Noémia Mourão do Amaral Coutinho is her final project: “Uma escola de iniciação de arte”, defended on 31 May 1965 found in the University of Porto repository.³⁷

Constructed works and professional achievements

Once the search for the first ten SWA in the database has been completed, having retrieved the above mentioned registers of Juana M^a Ontañón, Elena Arregui Cruz–López and Margarita Brender–Rubira, a new search of the most significant projects of the other seven SWA was triggered, with the following results:

- Matilde Ucelay–Maortua’s architectural works include different houses, like the Oswald House in Madrid, as well as the Turner and Hispano–Argentina bookshops in Madrid.³⁸
- Rita Fernández–Queimadelos’s new plant projects include the Colonia Tercio y Terol (1946) and the single–family row houses in Carabanchel (1942–1951).³⁹
- In 1977, the journal *Quaderns d’arquitectura i urbanisme* published Margarita Mendizábal–Aracama’s project for a single–family house in Pineda de País (Girona),⁴⁰ being her participation invisibilised in the authors’ index showing only her surname initial.
- Among Milagros Rey–Hombre’s works is the Torre Dorada (1969), the first skyscraper in A Coruña. According to Nuria Prieto this project shows the

avant-garde idea of the programmatic flexibility within the structural rigidity.⁴¹

<p>1ª Juana Onsolas</p>	<p>AULA MAGNA DE LA UNIVERSIDAD LABORAL DE GUÓN</p> <p>current building designation: Parroquia de la Universidad Laboral de Ojón</p> <p>autor: María Juana Onsolas y Manuel López-Iturrón</p> <p>start of the design: 1949</p> <p>year of completion: 1953</p> <p>address: Calle Luis Moya Blanco s/n. 261</p> <p>town: Ojón</p> <p>country: España</p> <p>register: Modern social facilities</p>	
<p>Mercedes de Miguel Sánchez</p>	<p>IGLESIA PARROQUIAL DE NUESTRA SEÑORA DE LA FUENCISLA</p> <p>current building designation: no info</p> <p>autor: José María García de Paredes Barreda, Alfonso Barón García, Mercedes de Miguel Sánchez y Antonio Abalos Culebras</p> <p>start of the design: 1961</p> <p>year of completion: 1965</p> <p>address: Calle de Piedrabuena</p> <p>town: Madrid</p> <p>country: España</p> <p>register: Modern social facilities</p>	
<p>Carmen Córdoba</p>	<p>COLEGIO MAYOR NUESTRA SEÑORA DE LUJÁN</p> <p>current building designation: Colegio Mayor Argentino Nuestra Señora de Luján</p> <p>autor: Horacio Salinas y Carmen Córdoba (arquitectos); Javier Peduchi Benlure (arquitecto director de obra); Jesús García Neta (aparejador)</p> <p>start of the design: 1964</p> <p>year of completion: 1969</p> <p>address: Calle Martín Fierro 3, Ciudad Universitaria</p> <p>town: Madrid</p> <p>country: España</p> <p>register: Modern social facilities</p>	
<p>Margarta Brender Rubira</p>	<p>GRUPO DE VIVIENDAS PARA LA CAJA DE PENSIONES, CAN MERCADER</p> <p>current building designation: Can Mercader</p> <p>autor: Francisco Juan Barba Conser, Margarta Brender Rubira y Juan-Antoni Padros Gomis</p> <p>start of the design: 1968</p> <p>year of completion: 1973</p> <p>address: calles Sant Eloi, Tívoli, Riera, Juvetier</p> <p>town: Barcelona</p> <p>country: España</p> <p>register: Ampliación temporal, 1965-1975 - Nivel A</p>	
<p>María Noleira Coutinho</p>	<p>ESCOLA DE INICIAÇÃO DE ARTE CALOUSTE GULBENKIAN</p> <p>current building designation: Conservatório de Música de Aveiro - Calouste Gulbenkian</p> <p>autor: José Carlos Loureiro, Maria Noleira Coutinho y Pádua Ramos</p> <p>start of the design: 1966</p> <p>year of completion: 1971</p> <p>address: Avenida Artur Ravara</p> <p>town: Aveiro</p> <p>country: España</p> <p>register: Ampliación temporal, 1965-1975 - Nivel B</p>	
<p>María Noleira Coutinho</p>	<p>MERCADO DE BARCELOS</p> <p>current building designation: Mercado de Barcelos</p> <p>autor: José Carlos Loureiro, Pádua Ramos y Maria Noleira Coutinho</p> <p>start of the design: 1965</p> <p>year of completion: 1972</p> <p>address: Rua Filipe Borges, Jardim da Praça de Pontevedra, Rua Sérgio de Freitas</p> <p>town: Barcelos</p> <p>country: España</p> <p>register: Ampliación temporal, 1965-1975 - Nivel B</p>	

BLOQUE DE VIVIENDAS COLECTIVAS PARA LA SOCIEDAD GUILA	
current building designation	bloque de viviendas colectivas para la sociedad Guila
autor	Francesc Miquel Molà, Elena Cruz López, Artur Zola Aznar y Ricardo Magaña Gayán
start of the design	1968
year of completion	1972
address	Calle Artesa de Segre, 1
town	Madrid
country	España
register	Ampliación temporal, 1965-1975 - Nivel A

Figure 4. © The Authors

- e) In 1969, the magazine *Quaderns d'arquitectura i urbanisme* published Mercedes Serra-Barenys's project for a complex of five flats of 60sqm in Calonge,⁴² and in 1972, the same journal published her single-family project in Sentmenat, Barcelona.⁴³

No information has been found for M^a Cristina Gonzalo-Pintor and M^a Eugenia Pérez-Clemente.

4. Conclusions

The database search shows few results. With the exception of Juana Ontañón, Margarita Brender and Elena Arregui, the first ten SWA's works do not seem to appear among the Ib-Docomomo-Rg.

According to the Iberian Docomomo web page, the Register includes around 1200 works. Yet, this search shows there are more than twice: 2415. Out of these, only nine works include a woman architect, representing less than 0.4%.

In addition, a gender focus should be applied to the database structure by adding a new "gender" box and all authors' names should be revised to make sure their full names are included. The use of their initials or only surnames is not enough to facilitate their identification.

This paper's authors are not experts in MoMo's architecture, but they suggest that the members of the corresponding technical commission analyse in depth the works of these pioneering women architects, in order to see if they can be included in the Ib-Docomomo-Rg.

Due to the scarcity of documented images, plans and descriptive reports, it has not been easy to find information about the projects developed by these pioneer SWA. Hence, whether some of their projects have been built or if they are still standing remains unclear. Further research must be carried out on this topic, not being possible to expand on it here due to the number of words limitation.

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The Power of Void: Charlotte Perriand's Lesson from Japan

Caterina, Franchini

POLITECNICO DI TORINO

The paper investigates Charlotte Perriand's theory of design by focusing on the analysis of the articles she has published on Japanese architecture and design. Her articles reveal how issues concerning the construction, building techniques, materials, and furniture design shall be considered as a result of the social and practical needs of each civilization. Looking through the lifestyle and gestures inside the traditional Japanese house, Perriand shows its intrinsic functional coherence and genuine modernity. She critically faces the consequences due to the westernization of lifestyle in interior design revealing, on one hand, the intercultural dialogue that encourages the reflection on the relationship between modernity and tradition, on the other, putting into question the concept of internationality in the Far East as well as in the Western world. Her texts and images show the design approach of the architect/designer who, with a seductive change of scale, from the environment to the smallest artefact, penetrates the heart of the nature of individual gesture finding out its consequences on objects of daily use and modern house design. Perriand reveals a cause-and-effect relationship that goes beyond the common definition of functionalism, involving the concept of the power of the void that can contain everything, and where movement becomes possible.

1. Introduction

Charlotte Perriand devoted several articles to Japanese architecture, interiors and artefacts. These articles are mostly illustrated by the images she collected during her mission as a consultant for industrial art at the Japanese Ministry of Trade and Industry (1940–1942) and her stays in the 1950s (1952–1954, 1955). But well before she arrived in Kobe in August 1940, Perriand had already come into contact with Japanese culture and had written about it whilst working with her colleagues Kunio Maekawa (1928–1930) and Junzō Sakakura (1931–1936) at the studio of Le Corbusier and Pierre Jeanneret.

In 1932, she received the French version of *Le livre du thé* (*The Book of Tea*, first edition 1906) by Okakura Kakuzō¹ from Sakakura, and she used it repeatedly to write those articles in which she chose ekphrastic prose in the attempt to syncretize the Modern Movement with traditional Japanese culture.

Perriand's vital and vibrant writings reveal her personality, life ethic, and design process, being free from preconceived stylistic settings. The prose echoes the design method of the architect/designer who penetrates the essence of every single gesture to reveal its consequences on design. Daily use objects and the

house design are both tackled in a cause–effect relationship that goes beyond the Cartesian logic of functionalism to encompass the immaterial dimension.

2. Harmony arising from ‘true facts’: the functional emptiness of the rural house

The first time Perriand published a Japanese dwelling was in cooperation with Junzō Sakakura. Significantly, she presented a traditional Japanese peasant house in her article “L’habitation familiale. Son développement économique et social” (Family Housing, Its Economic and Social Development) issued by *L’Architecture d’Aujourd’hui* (AA) in 1935.²

While vernacular architecture had already interested several avant–garde architects seeking for a modernity in harmony with tradition, it was Bruno Taut who recognised the components of modern Western architecture in traditional Japanese one. The German architect –consultant in Japan before Perriand– will publish “Architecture nouvelle au Japon” (New Architecture in Japan)³ a few months later in AA. And Taut’s thoughts would be further elaborated by Perriand later on.

In the 1935 article, Perriand wanted to show the social nature of the ancestral family home, in which beauty embodies the uniqueness of functions and needs. The text suggests to modernist designers a quest for a kind of beauty created by “the harmony of true facts that flow naturally from one another”⁴. From the Savoy mountain pastures to Japan, examples of this beauty are the houses of shepherds, peasants, and fishermen, whose planimetric distribution, including the furniture, is guided by the type of work that takes place inside.

The authoress describes the traditional rural house without anachronisms, since it is a direct expression of the wealth offered by its territory, and free of unnecessary bulks and rather empty. Nowadays, we name it sustainable architecture as built out of local materials and in close relationship with environmental resources, topography, climate, and local mores.

Perriand presented the Japanese house on a two–column page with illustrations on the left. And a floor plan legend lists the functions, focusing on building elements and materials. The term *façades éclairantes* (illuminating façades) designates the *shoji* (sliding windows and doors). And it evokes the image of the curtain wall that is part of the stylistic features of the Modern Movement. This lexical choice suggests to the reader a syncretic vision of modernity within the tradition. **Fig.1.**

It is meaningful that, of all the examples, only the page on the Japanese house centres on the furniture such as the *casiers de rangements* (storage cabinets). This is since the concept of integrated furniture had already guided the design creation of Perriand, as for the *Maison Loucheur* (1929, not built) where she designed sliding elements –which Le Corbusier did not design until then– to

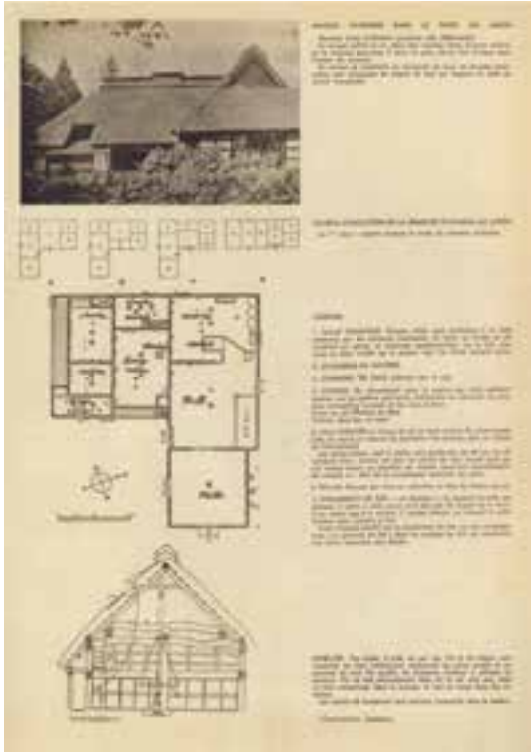


Figure 1. C. Perriand and J. Sakakura, page of the peasant house in the north of Japan from: Charlotte Perriand, "L'habitation familiale. Son développement économique et social," *L'Architecture d'Aujourd'hui*, no. 1, (January 1935): 29. © Free Credits.

reconfigure interiors for day or night use⁵, and leaving the space empty at the same time.

The article appeals for not claiming the curve or the straight line, stone or cement, wood or metal, but to use each of them in an appropriate place according to both construction technique needs and individuals and society to which they belong.

Only after the Second World War, Perriand published several articles entirely devoted to Japan, thus helping to restore a positive perception of Japanese culture in Gaullist France.

Immaterial values as a distinctive feature of Japanese design

AA published the article "Au Japon" (In Japan) in the special issue on plastic arts (1949)⁶. Perriand states "Art is in Life and is expressed in every occasion and all countries"⁷. Chosen from the country's 'intimate' life, images exemplify her all-encompassing vision of art in an attempt to overcome the distinction between major and minor arts.

The text is just as unconventional, consisting of a numbered sequence of caption without following criteria of importance, chronology, or type. The images include a fragment of a calligraphic sign on a *torii* (traditional gate of the Shinto shrine); the packaging of a gift; the imperial villa of Kyoto; the interior of a Tokyo restaurant; a metal teapot; a ritual dance and a country house. The photos lead the reader to a deductive synthesis that makes visible the immaterial component as an expression of artistic value. Thus, a gift acquires value for how it is packaged and offered, while the artistic value of the ceremonial metal teapot lies in the song of the water generated by the pieces of metal on the bottom.

Via the example of the traditional house, Perriand proposes an interpretation that goes beyond the archetypes of Western culture. While for the Western supporters of the Modern Movement, the value of the traditional Japanese house is in the rationality of modular construction and in the functionality given by the flexibility of size and uses of spaces, for the Japanese the lie in the ease of assembly and disassembly. The traditional prefabricated

construction system allows to respect the ancient Shinto mores that set out the evacuation of every house upon the death of its occupants and it required the construction of a new house for each new couple.

To reach a non-western-centred interpretation, Perriand uses *Le livre du thé* and its philosophy aimed at expressing the full concept of man and nature.

In the caption of the pottery for the tea ceremony, through Kakuzō words, Perriand provides her definition of Teism: a sort of ethical and moral discipline based on the adoration of beauty amidst the “vulgarity” of daily existence. At the basis of the conception of the tea pavilion, and of any traditional Japanese room, is the apologia for the power of the void that can contain everything and where only movement becomes possible. In the comparison between the western interior, arranged to show off the furnishings, and the Japanese interior, the sobriety of the latter is preferred because it enhances the imaginative and poetic possibilities of its inhabitants.

In the last paragraphs, the authoress highlights the dubious taste of artefacts produced for export to the West, or of Japanese knick-knacks for foreigners. She had previously shown some of these objects as negative examples in the exhibition “Contribution à l'équipement intérieur de l'habitation, Japon 2601. Sélection, tradition, création” (Contribution to the interior design of the house, Japan 2601. Selection, tradition, creation) at the Takashimaya Department Store of Tokyo in 1941.

In a nutshell, Perriand narrates the identity conflict experienced by the Japanese on the eve of the war's end. During the day, at work, the Japanese embraced European customs by dressing in Western-style, sitting on chairs behind tables, and looking out the windows, while in the evening, after work, they abandoned the Western livery to wear the kimono, relax in their *ofuro* (traditional bathtub), and finally find themselves in their traditional style life.

Perriand reiterated the appeal already launched to Japanese during her lectures in Japan in the 1940s and at Hanoi conference (1942)⁸: assimilating modern Western knowledge and techniques to build full freedom, according to their needs, their way of thinking, living, and feeling.

3. Toward the theory of void

Kakuzō's theory of void became prominent in the long article “L'art d'habiter” (The art of dwelling) issued in 1950 when in France the housing matter became a priority due to the post-war reconstruction.⁹ With an open gaze to the world, Perriand chosen an illustrative approach by presenting a multitude of houses, furnishings, and ways of life starting from the ancient times.

She asserts the idea of everyday life as an art. As regards architecture, its interiors, and the normalization of construction, by building components and standardisation, Japan has a preponderant place and is taken as an example

in the sections: “*L’art d’habiter*” (The art of dwelling), “*Rangement*” (Storage), “*Hygiène*” (hygiene), “*Délaissement*” (relaxation), “*Ambiance and Geste*” (ambience and gesture), “*Forme*” (form), “*Technique*” (technique).

The images attempt to show the analogy between the traditional Japanese architecture and the works of masters of the Modern Movement, Alvar Aalto and Richard Neutra, whose spaces are conceived to create “an environment that enable human being to live in harmony, isolated as much as possible and benefiting from nature by means of a very open facade to the garden or the sky”¹⁰ **Fig. 2.**



Figure 2. C. Perriand, from left to right: page on “*Rangement*”, and double page of the article “*L’art d’habiter*,” *Techniques et Architecture*, no. 9–10, (August 1950): 59, 34–35. © Free Credits. Left: Interior of the 16th-century Imperial Villa of Katsura, and an 18th-century Japanese house. Double page: left (above) the living room of Villa Mairea by Alvar Aalto, 1939, (below) a traditional restaurant in Tokyo; right (above) Villa del Re “*Sho*” Ruykyu in Japan, (below) the living room of a house in the Colorado desert, Richard J. Neutra.

The words *harmonie* (harmony), *habitat* (environment), *esprit* (spirit) and *vide* (void) are recurring in the text. Void is in bold type to designate the stance taken by Perriand already on the first page of the article when she puts the question, “*Allons-nous faire du plain ou du vide?*” (Shall we make the full or void?).

On void, she combines the space of the western monk’s cell –which helps to achieve meditation– with the exaltation of the cult of void, quoting Okakura:

*It is only in the void that the essential lies. The void is all powerful because it can contain everything. In the void movement only becomes possible. Applied to art, this essential principle is demonstrated by the value of suggestion. By not saying everything, the artist leaves the viewer the opportunity to complete.*¹¹

In May 1956, Perriand published “*Une tradition vivante*” (A lively tradition)¹², in the AA issue on Japan created by R. Diamant–Berger and Sakakura (correspondent for Japan) who collected the texts and photographic documents **Fig. 3.**



Figure 3. A hotel room in Kinyama spa shows a mix of western furniture pieces and Japanese ones. Illustration of the article by Charlotte Perriand, "Une tradition vivante," *L'Architecture d'Aujourd'hui*, no. 65 (May 1956): 16. © Free Credits.

The prose becomes lyrical in the implicit attempt to combine Teism with the principles of the Modern Movement. In the direct comparison between the traditional Japanese house and the Western one, the authoress assumes the lessons of Teism by adopting the theory of void as guiding principle of the modern interior: "There is always a void that every being can fill according to the moment, mood, and his imagination, always changing, subtly perceived in the course of the seasons of life"¹³. The similes and metaphors adorning the prose try to restore the perceptive essence of the Japanese interior: "The feeling of the new-born child looking at everything with fresh eyes"¹⁴.

In conclusion, with the metaphor of a beautiful bridge over the wave, Perriand expresses the rapprochement between the concept of Japanese living and the Modern one. She attributes the merit of it to construction techniques in reinforced concrete and steel that have allowed give up the load-bearing masonry construction, setting the house in communication with nature and sky.

Encounter/clash between the East and the West: Which modernity?

Perriand had already been recognized internationally as a designer of the Modern Movement and for her Japanese experience when *Casabella Continuità* published "Crisi del gesto in Giappone" (Crisis of gesture in Japan) in 1956.¹⁵

Through reasoning animated by pressing questions, Perriand suggests designers take an anti-dogmatic approach toward modernity and to no longer act as *maîtres à penser* (masters of thought) but rather as problem-solvers.

From women's and home magazines, Perriand collected a series of practical issues that designers must know and having to do with the daily gestures on which the restyling of the Japanese house depends.

To stop using the kimono and dress in the European style implies that men have to care not to crease their trousers, and women have not to tear their silk stockings when kneeling on the *tatami* (rush-covered straw mat). Wearing shoes at home means giving up soft and clean floors where you can lay your futons for the night, and risking stepping on the sliding panels' guides with rigid soles, thus making them lose their efficiency. Sitting on the chairs, instead of on the cushions on the floor, means redesigning the tables, which have to rise from their low position, hence visually cluttering the interior space and interfering with the right relationship between man and traditional architecture. Sleeping on a bed instead of a *futon* (traditional mattress) also means that rooms will be permanently cluttered. All this will inevitably lead to a predefined use of the rooms and an increase in the number of rooms. These changes contradict the main requirement of the modern house, which is to reduce its surface.

Perriand states that the designer has to solve everyday life problems which arise from the gestures of a culture and society. She put stress on the inherent modernity of the traditional Japanese approach and expresses her intention to see it applied to modern Western and European architecture. When the *Maison Japonaise* (Japanese house, designed by Ren Suzuki) was exhibited to the Parisian public at the Salon des Arts Ménagers (Household arts fair) **Fig. 4**, Perriand published a short article on the aim of this construction: to show the elements of standardisation that remain factors of progress for both civilisations. In this respect, she criticises modern Western architecture which, in addressing the highly topical issue of industrialisation, "[...] has not created unity either between architects or between architects and industry, for a public enamoured of the desire to differentiate itself from its neighbours"¹⁶.

From Charlotte Perriand's writings arises an intercultural dialogue which, by thought-provoking reflection on the relationship between modernity and tradition, questions –in both the East and the West– the notion of international style.

The articles discussed so far are mainly featured by an exposition of the ways and gestures of living and dwelling. Free from technicalities or rhetorical speculations, these writings well reflect an anti-dogmatic interpretative process. This process facilitates a design method centred on the immaterial needs and spiritual dimension of the modern man. And it sees its most powerful Japanese lesson in the concept of building a void, where both body and soul motions find their place.

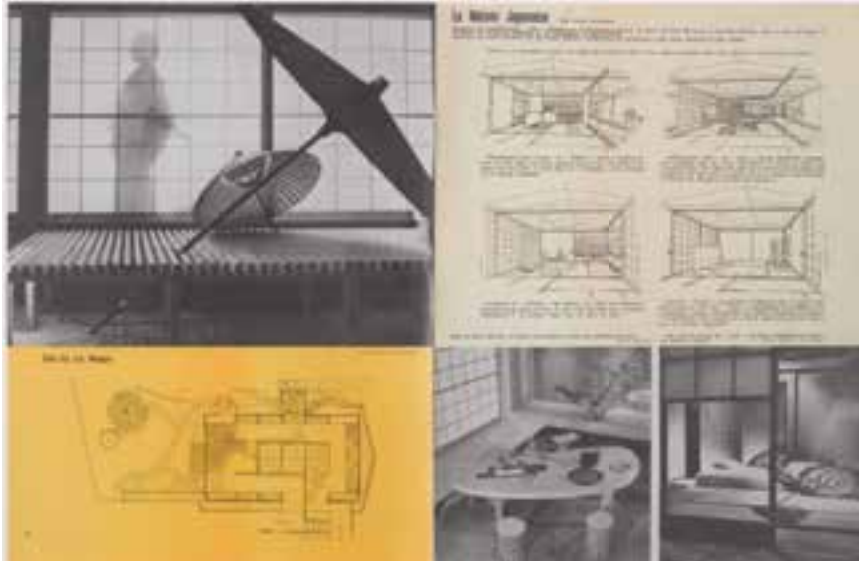


Figure 4. Double page of the article by Charlotte Perriand, "Salon des Arts Ménagers. La Maison Japonaise," *Aujourd'hui art et architecture*, no. 12, (April 1957): 91–92. © Free Credits.

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Notes

- 1 Kakuzō Okakura, *Le Livre du Thé*, tans. Gabriel Mourey (Paris: André Delpeuch éditeur, 1927).
- 2 Charlotte Perriand, «L'habitation familiale. Son développement économique et social,» *L'Architecture d'Aujourd'hui*, no. 1 (January 1935): 25–32.
- 3 Bruno Taut, "Architecture nouvelle au Japon," *L'Architecture d'Aujourd'hui*, no. 4 (April 1935): 46–83.
- 4 All quotes are translated by Caterina Franchini. Perriand, "L'habitation familiale," 25.
- 5 See: Jaques Barsac, "Contexte," in *Charlotte Perriand. L'aventure Japonaise*, ed. Saki Nagato (Cinisello Balsamo: Silvana Editoriale, 2013), 47.
- 6 Charlotte Perriand, "Au Japon," *L'Architecture d'Aujourd'hui*, no. 2 (special issue 1949): 113–24.
- 7 Perriand, "Au Japon," 114.
- 8 The Hanoi conference (9 January 1942) was published in 1949. Charlotte Perriand, "Influences sur l'art industriel japonais," *Bulletin de la Grade Masse* (1st quarter 1949): 28–31.
- 9 Charlotte Perriand, "L'art d'habiter," *Techniques et Architecture*, no. 9–10 (August 1950): 33–96.
- 10 Perriand, "L'art d'habiter," 33.
- 11 Perriand, "L'art d'habiter," 33.
- 12 Charlotte Perriand, "Une tradition vivante," *L'Architecture d'Aujourd'hui*, no. 65 (May 1956): 14–19.
- 13 Perriand, "Une tradition vivante," 15.
- 14 Perriand "Une tradition vivante," 15.
- 15 Charlotte Perriand, "Crisi del gesto in Giappone," *Casabella Continuità*, no. 210 (June 1956): 54–66.
- 16 Charlotte Perriand, "Salon des Arts Ménagers. La Maison Japonaise," *Aujourd'hui art et architecture*, no. 12 (April, 1957): 92.

Pioneers. Polish modernist female architects. **The centre and peripheries**

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The history of women in architecture began in Poland in 1915, when architectural studies at Warsaw University of Technology had been opened to them. Jadwiga Dobrzyńska (1898–1940), the first graduate of this faculty, completed her degree in 1922 and in the interwar period took part in several dozen competitions, winning a lot of them. Other women followed in Dobrzyńska's footsteps, with Barbara Brukalska (1899–1980), Anotolia Hryniewiecka (1896–1989) and Helena Syrkus (1900–1982) among them. All of the abovementioned female architects were members of the avant-garde "Praesens" group, which in 1928 became a Polish section of the Congrès International d'Architecture Moderne. Helena Syrkus edited and translated into Polish the Athens Charter while in 1948, Barbara Brukalska was the first woman to be awarded with the title of Professor of architecture. When WW2 was over, the situation of Polish female architects improved a little. Cities damaged during the war required the involvement of all designers, and declared equality constituted one of the postulates of socialism, introduced in the countries politically and economically dependent on the Soviet Union. Apart from pre-war female modernists, who would successfully continue their artistic activity, female architects educated already in the new post-war reality began their work. One of the most interesting female architects of late modernism was among others Jadwiga Grabowska-Hawrylak (1920–2018), implementing model schools and residential complexes inspired by metabolism.

The aim of the paper is to present the profiles and works of Polish female architects of pre- and post-war modernism together with the difficulties that women were forced to face both in the "progressive" city of Warsaw, the capital of Poland, as well as in smaller, more conservative environments. This article is a brief summary of research on the situation of women in the architectural profession, in which the authors analysed not only the activities of selected female architects, but also their memoirs and the ways in which female architects were presented in the pre- and post-war press.

1. Model female architect. Polish woman in Paris

"If you really are gifted in this area [...], then there will be nothing «mad» if you decide to study architecture. You are not the first one to do it! We have already got quite a significant number of female architects. And for example Adrianna Górka in Paris – where it is hard to «make a mark» – at a young age has already gained the fame, appreciation and – money. That you have to climb on scaffoldings and keep the workers «in check» – there's nothing unusual in it". The quoted fragment comes from the responses of the editors

of “female” columns in the “Kurjer Warszawski” journal from the year 1932 to the letter of an anonymous female reader. On one hand, it illustrates the perception of architects’ duties, while on the other, it brings the role model of a Polish female architect who had become successful not just anywhere, but in Paris – the mecca of style, artistic life and modernity. In the Polish press, Górska used to be presented as the woman of a new kind, independent, professionally active, and at the same time fulfilling her own passions, clearly opposing the archetypical mother, guardian of Catholic tradition, common in Poland, the country affected by the partitions of its territory². Górska herself would emphasise in numerous interviews that she didn’t see “any obstacles for a woman to work in the same way as a man–architect”³, and she would also notice her pioneering role in preparing the society, in particular investors and contractors, to accept a woman assuming the role not even of an engineer, but leader and decision–maker. Górska would point out that she owed the advancement of her career to other women who, as she said, “would usually sympathise with me, would not hesitate to entrust the orders [to her], expressing their content that they would finally cooperate with an architect of the same gender”⁴. The architect began her professional activity by designing interiors considered “closer to female nature” – one of her earliest designs consisted in arranging the Paris atelier and apartment of her sister, painter Tamara Łempicka. Apart from the interiors, Górska designed “on her own” – as emphasised by the press – eight–level modernist tenement house built in the Passy district in Paris, and then the apartment building in Neuilly–sur–Seine (**Fig. 1A**). In the early 1930s, Górska began her cooperation with an architectural partner company established by Emile Moliné and Charles–Henri Nicod, where she met Pierre de Montaut, her future husband; together, they would design cinema facilities.

2. FEMALE ARCHITECTS–MODERNISTS IN PRE–WAR WARSAW, POLAND

Women in Poland were given the right to apply for university admission relatively late compared to other European countries. It had been influenced not only by patriarchal cultural patterns, but also by extremely complicated political situation of Poland as the country regained its independence as late as in 1918. Within the territories of the former Republic, forming part of the Russian, Austrian and Prussian partition, women had not been allowed to study until 1894, when first female students were admitted to Jagiellonian University in Cracow. The first technical university – Warsaw University of Technology – only partially opened its doors for women in 1915. In the first academic year, four women were admitted to the Faculty of Architecture, while the first diploma was awarded to Jadwiga Dobrzyńska in 1922, the same year when Adrianna Górska completed her studies.

Other women would follow in Jadwiga Dobrzyńska’s footsteps and by 1939, 84 women had already obtained their degree in architecture (13% of all graduates of architectural studies). Among the most famous and active students and

graduates of the Faculty of Architecture of this university, the names of Barbara Brukalska, Helena Syrkus and Anatolia Hryniewiecka–Piotrowska are worth mentioning. Female architects used to form the environment of avant-garde designers–modernists, maintain broad international contacts and represent Poland beyond its borders. Helena Syrkus and Barbara Brukalska used to co-organise the Praesens artistic group, national representation during the Congr s Internationaux d'Architecture Moderne (CIAM) in 1928. Helena Syrkus took part in the famous cruise of modernists from Marseille to Athens in 1933, during which the Athens Charter "had been born"⁵. Anatolia Hryniewiecka–Piotrowska, in turn, was the author of the Female Activity Pavilion during the Public National Exhibition in Poznań (1929), during which Polish achievements were presented on the occasion of the 10th anniversary of the country regaining its independence. The pavilion itself was supposed to constitute the visualization of female activity in all areas of life as well as "a



Figure 1 A). Adrienne G rska, housing estate design, Paris, Passy, 1920s. Marja Kastarska, „Kobiety–architekci”, *Świat Kobiety*, Warsaw–Lviv, 1928, N  14, 307; B) Anatolia Hryniewiecka–Piotrowska, the Female Activity Pavilion, Public National Exhibition in Poznań, 1929. „Architektura i Budownictwo”, 1929, N  11–12, p. 25; C) Barbara i Stanisław Brukalski, a model kitchen. „Dom, Osiedle, Mieszkanie” 1929, N  1, p. 10; D) Jadwiga Dobrzyńska, Zygmunt Łoboda, Antitubercular Sanatorium for Children and Youth, Istebna, 1937. Narodowe Archiwum Cyfrowe, Reference code: 3/1/0/13/265.

component consolidating Polish women's environments in the country and abroad"⁶ (Fig 1B).

Professionally active female architects would usually remain under the influence of western avant-garde, and thus they used to transfer the way of thinking characteristic for modern design to Polish conditions. In their opinions and works one can easily find the echoes of activity of the Weimar Bauhaus, Le Corbusier, J.J.P. Oud as well as the De Stijl artistic group. The design of the first completed modernist building – their own house – was created by Barbara and Stanisław Brukalski who, together with Helena and Szymon Syrkus, belonged to the group of pioneer designers of social housing in Poland. The architects would opt for the construction of cheap, available and functional flats, erected with the use of prefabricated elements. They referred to the notion of rationalization and improvement of residential interiors, presenting designs in which the emphasis was put on their utilitarian aspects and the optimization of living space. Interiors of the flats, that followed the *existence minimum* trend became the area of functionalist experiments. Barbara Brukalska, in cooperation with her husband, developed the concept of a model kitchen (Fig 1C), inspired by a pioneering design by an Austrian female architect Margarete Schütte-Lihotzky⁷. The kitchen-laboratory, logically and sensibly arranged, was supposed to become the space of a modern woman, active both professionally as well as at home. The priority consisted in reducing the time necessary for meal preparation.

The activity of female architects from Warsaw mentioned above should rather be treated as an exception from the rule than an example of a "model" women's career in this profession. They represented intellectual elite of a big European city, well-educated in different areas and active within a strictly defined social context, in the world to a large extent shaped by an influential group of Polish and European modernists. Nevertheless, in the majority of cases women on engineering positions used to be treated with mistrust, their alleged physical weakness was discussed together with difficulties in competing with men. In 1933, Barbara Brukalska pointed to financial abuse and open hostility of some of her male friends from university ("corporate national young men would sometimes put drawing boards belonging to women out of the classroom door"⁸). Some kind of opportunity that opened up for women and was eagerly used by them consisted in taking part in architectural competitions anonymously. They often referred to the concepts of prestigious public facilities and obtaining an order of this kind by a woman on the "free market" was practically impossible. The already mentioned Jadwiga Dobrzyńska would soon become aware of this fact herself when she took part in several dozen competitions, in particular for the designs of public utility buildings and schools. In the late 1920s, she performed together with Zygmunt Łoboda the design of children's tuberculosis sanatorium that became a model facility and was erected in the Polish mountains in the village of Istebna (Fig. 1D).

3. The view from the peripheries. Polish female architects in pre-war Lviv

If in the context of pre-war female architects from Warsaw the adjective "privileged" can be used at all, then they were privileged compared to their fellow female architects who used to make the attempts to study or work outside the Polish capital. Careers of the graduates of the Faculty of Architecture of the Lviv University of Technology, the biggest university within the Eastern Borderlands of the Republic of Poland, still remain practically unexplored. Selected faculties within those institutions had opened for women in 1919, so four years later than at Warsaw University of Technology and by 1939, only 23 women completed their architectural studies in Lviv; this number is nearly four times lower than in Warsaw. The first female architect from Lviv was Irena Obmińska-Wieczorek, daughter of Tadeusz Obmiński, architect and professor from Lviv. Obmińska managed to achieve the impossible – after graduation, she was employed at her Alma Mater as assistant at the Department of Utilitarian Construction and she was the only female architect during the whole interwar period to work at the Faculty of Architecture. Until the outbreak of WW2 she conducted her design activity together with her husband Erwin Wieczorek with whom she shared the same profession. The overview of Irena Obmińska's achievements shows that adopting a progressive attitude towards one's own private life did not necessarily have to result in abandoning traditional models in architectural design. The Lviv environment would accept foreign trends with a slight delay and by the end of the 1920s, the Faculty of Architecture was dominated by a conservative model of design teaching based to a large extent on the studies of historical buildings. The aftermath of the teaching method adopted at Lviv University of Technology was undoubtedly reflected in the concept of the church in Białystok, developed by Irena Obmińska-Wieczorek and her husband in 1927 (**Fig. 2B**). The design was prepared simultaneously with the house of the Brukalski family (**Fig. 2A**), but its structure remained distant from neoplastic spatial compositions of the architects from Warsaw. The Lviv modernism, culturally connected with former Austria-Hungary, was shaped as late as in the 1930s, and younger female adepts of architecture would contribute to its fullest expression – for example Wiktoria Kańska-Frydecka and Janina Bielska, who together with Andrzej Frydecki performed the competition concept of an ultra-modern church of priests Missionaries in Lviv (**Fig. 2C**). In spite of their victory, there were no chances for the design to be carried out as it did not meet the expectations of both the clergy as well as parishioners, who assessed its structure as deprived of "the spirit and characteristics of a Roman Catholic church"⁹. The careers of Wiktoria Kańska-Frydecka and Andrzej Frydecki, who at least in theory took part in the competition representing equal positions, as they both graduated from the Lviv University of Technology with distinction (1930), clearly demonstrate the differences in professional path between women and men. Already before obtaining his diploma, Andrzej Frydecki had got employed by the university, ran his individual design studio in Lviv and after WW2 acquired the title of professor of architecture. Wiktoria Kańska-Frydecka, Andrzej's design partner

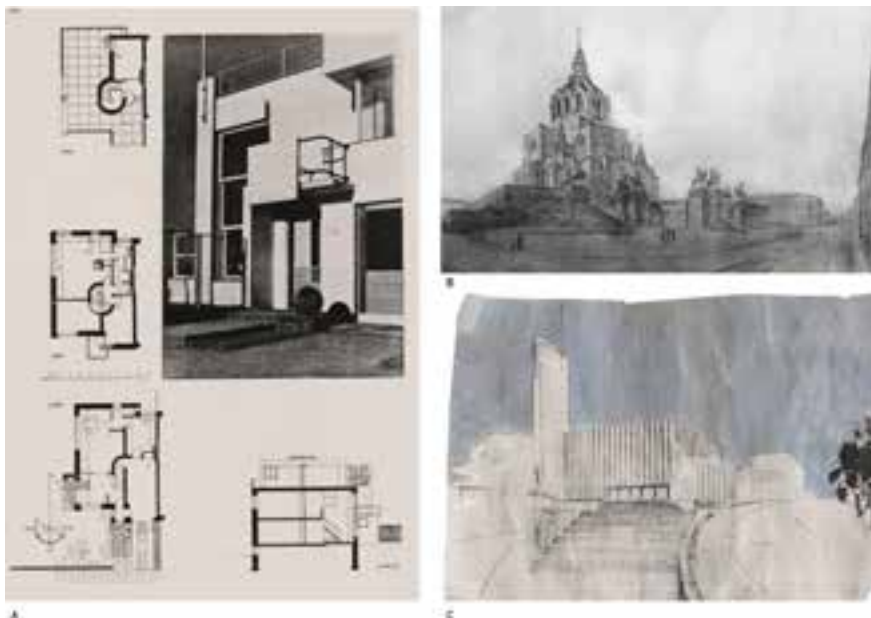


Figure 2 A). Barbara Brukalska, Stanisław Brukalski, The architects' house, Warsaw, 1930. *Praesens*, 1930, N° 2, 60; B) Irena Obmińska-Wieczorek, Erwin Wieczorek, Church in Białystok, competition design, 1927. *Życie Techniczne*, 1927, N° 1; C) Wiktoria Kańska-Frydecka, Andrzej Frydecki, Janina Bielska, Church and Congregation House of the Missionaries Order in Lviv, competition design, 1937. The Archives of the Congregation of Missionaries in Kraków-Stradom.

and co-author of their joint competition projects, received the employment within office structures, where she used to be involved in the supervision over municipal construction projects.

4. Female architects–modernists in post-war Poland

This briefly sketched reality of working women changed radically in 1939, when WW2 broke out. Men were called up for military service, so women not only gained the opportunity, but even had to become more active on the labour market. A representative illustration of wartime reality of architects was constituted by the life of Anna and Tadeusz Ptaszycki from Warsaw, jointly running a design studio. Tadeusz Ptaszycki fought in 1939 in the defence of Warsaw and when the city surrendered, he was incarcerated in German POW camps, where he spent the entire period of the war. Anna Ptaszycka, in turn, took over a position at a furniture factory, where she would perform renovation and construction designs as well as keep the inventory of buildings damaged by the Nazi within the Śródmieście district in Warsaw¹⁰. When the conflict came to its end, women preserved their position within Polish economy as they outnumbered men within the population as well as in connection with disastrous damage of cities, towns and villages that required to be reconstructed as fast as possible. Professional emancipation

of women was accelerated by new geo-political situation of Poland as the country found itself under the influence of Soviet Union, losing as a result of the provisions of the Yalta Conference its Eastern Borderlands and gaining as compensation eastern border territories of the former Kingdom of Prussia, so called Regained Lands. Throughout the new areas included within national borders, the entire organizational structure had to be established from scratch and women had the possibility to find a place for themselves there. What is more, right after Poland regained its independence, socialist doctrine began to be established under the influence of the Soviet Union and it initiated radical social transformation, resulting in women being hired on a large scale or in the opportunity of promotion being given to citizens originating from workers' or peasant background. The first constitution of People's Republic of Poland as of 1952 formally "decreed" equal rights for all citizens.

Simultaneously to the remodelling of the political system, in-depth transformation of economy took place, subordinated to political goals. Right after the war, planned economy was introduced in Poland and private property abolished. In 1949, state design studios were established to replace private activity of architects. As all designers found themselves bound by the state system, their independence in the area of design was limited, but it was no longer necessary to search for the orders for their work, which in turn made it easier for women to remain professionally active. Nevertheless, post-war career of female architects from Warsaw took different courses. Brukalska did become the first female professor of architecture at Warsaw University of Technology, but it was made impossible for her – due to political reasons – to get involved in design work¹¹. Helena Syrkus, in turn, who after WW2 became a declared communist, assumed the position of Bolesław Bierut's, President of the Republic of Poland advisor in the area of architecture. In the post-war era, Helena and Szymon Syrkus designed two housing estates in Warsaw, in which they would experiment with the use of prefabricated components, searching in the industrialization of the construction industry for a remedy for "making flats commonly available for every Polish family"¹² (**Fig. 3A**). Anatolia Hryniewiecka-Piotrowska would follow a similar path and together with H. and S. Syrkus and her husband Roman Piotrowski, she took part in developing the program of post-war reconstruction of the city of Warsaw.

The situation of women in architecture improved also outside the capital, even if changes within the so-called province would take place much slower. Even if women were admitted for architectural studies equally as men, in practice the number of female students during first years after WW2 was still low. At Wrocław University of Technology, being a symbolical inheritor of the Lviv University of Technology, among the first graduates of the Faculty of Architecture who completed their studies in 1950 there were 20 men and one woman – Jadwiga Grabowska-Hawrylak. A year later, seven women and 46 men graduated from the Faculty and genuine gender equality among graduates was achieved in the early 1970s. Similarly to Warsaw, also in Wrocław female architects were equally to their fellow male architects

engaged in efforts aimed at the reconstruction of the city, and after the establishment of local branch office of the national “Miastoprojekt” studio in 1949, many of them found a job there, searching for – as far as possible – their individual career paths. Anna Tarnawska (diploma in 1951) got involved in mid-1950s in preparing a pioneering reconstruction design of the Wrocław Old Town, following the spirit of the “second modernism”¹³ (Fig. 3B). In 1960s, she created together with her husband Jerzy Tarnawski a prototype model building – computing centre, where computers were used for performing the work. The already mentioned Jadwiga Grabowska-Hawrylak specialised in designs of primary schools and innovative solutions in residential architecture – she co-designed so called “maisonette” building consisting of two-level apartments as well as residential and service complex known as “Manhattan”, in which she relied on an original concept of prefabricated materials inspired by Japanese metabolism (Fig. 3C). In spite of her extraordinary achievements, none of them, and no other woman, never assumed any position in the management of “Miastoprojekt”; Jadwiga Grabowska-Hawrylak was the only woman to lead a small design team.

After the death of Joseph Stalin in 1953, and Bolesław Bierut three years later, regime relaxation took place in Poland, moving towards so called national communism, which resulted in the change of attitude towards the

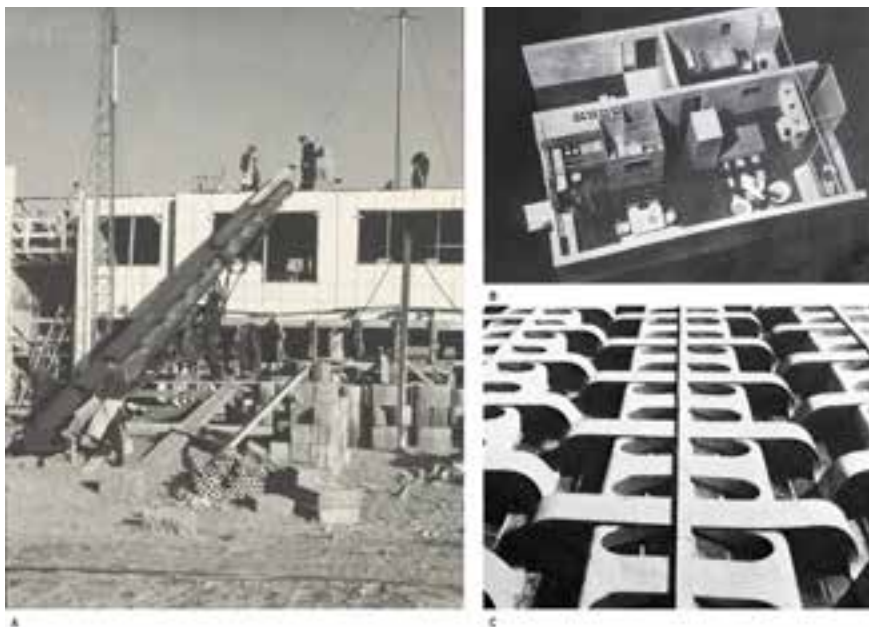


Figure 3 A). Helena Syrkus, Szymon Syrkus, WSM housing estate Koło in Warsaw, 2nd colony. Field prefabrication, photo Edmund Kupiecki, 1947–1949. Museum of Architecture in Wrocław, Reference code: MAI IIIb-455/24; B) Anna Tarnawska, Jerzy Tarnawski, Włodzimierz Czerechowski, Ryszard Natusiewicz, type “A” housing unit, model, Wrocław, Nowy Targ. Stanisław Morelowski, „Dzielnica Wrocław – Stare Miasto”, *Rocznik Wrocławski*, 1958, Wrocław 1959, 150; C) Jadwiga Grabowska-Hawrylak and associates, „Manhattan” housing estate, Wrocław, 1973. *Architektura*, 1973, N° 10.

emancipation of women. Starting from mid-1950s, official propaganda would more often emphasise the role of women outside professional sphere, in order to openly refer at the turn of 1960s and 1970s to threats resulting from equal access of both genders to the labour market. In 1958 Wiktoria Frydecka, aged 57 at the time, was fired and this decision was justified with her stable financial situation ensured by her husband employed at the Wrocław University of Technology. As a sign of protest, Frydecka gave back her high state distinction that she had been awarded two years before for her exemplary work¹⁴.

5. Summary

The history of woman in architecture is very short and complicated in Poland and is also varied in terms of the degree of difficulty depending on where female architects lived and worked. While in the pre-war Polish capital women tried – sometimes not without success – to pursue independent professional activities, outside Warsaw female architecture graduates worked mainly as officials in the building administration. In 1938 Wanda Sawicka wrote in one of the “female” magazines that “for female architects, the work is usually hard as apart from professional competition, they also need to fight with superstitions shared by the society and prejudice towards their career”¹⁵. After the war, the situation improved in part due to: the change in the state’s political system, the country’s economic needs, and the establishment of state design offices. There was also a steady increase in the number of women graduating from architectural studies. Already in the 1970s the Wrocław University of Technology promoted more female than male architects (**Fig. 4A**), but even though, until the fall of the communist regime in Poland in 1989, there was not a single woman to assume any leader’s function at the Faculty of Architecture. As late as in 1997, the first female architect employed by the Wrocław university – Barbara Stępniewska-Janowska – was awarded with the scientific title of professor. Within the last 55 years, the most prestigious trade prize – Honorary SARP distinction – was awarded only to six women, including three of them acting independently (Jadwiga Grabowska-Hawrylak, Halina Skibniewska, Ewa Kuryłowicz) and three together with their husbands (Hanna Adamczewska-Wejchert, Małgorzata Handzelewicz-Wacławek, Małgorzata Pizio-Domicz). Within the same period, the prize was awarded to 68 men.

At present, the role of female architects is still consequently marginalised not only in the history of architecture, but even in shaping their achievements – one of the papers dating back to the first decade of the 21st century mentioned that in the creative duo of Helena and Szymon Syrkus, “Sz. Syrkus was the specialist, expert architect, while the layer of ideas was mainly the work of H. Syrkus”¹⁶. Helena’s intellectual input remains unquestioned, but her technical skills are being called into question. Is history about to come full circle?

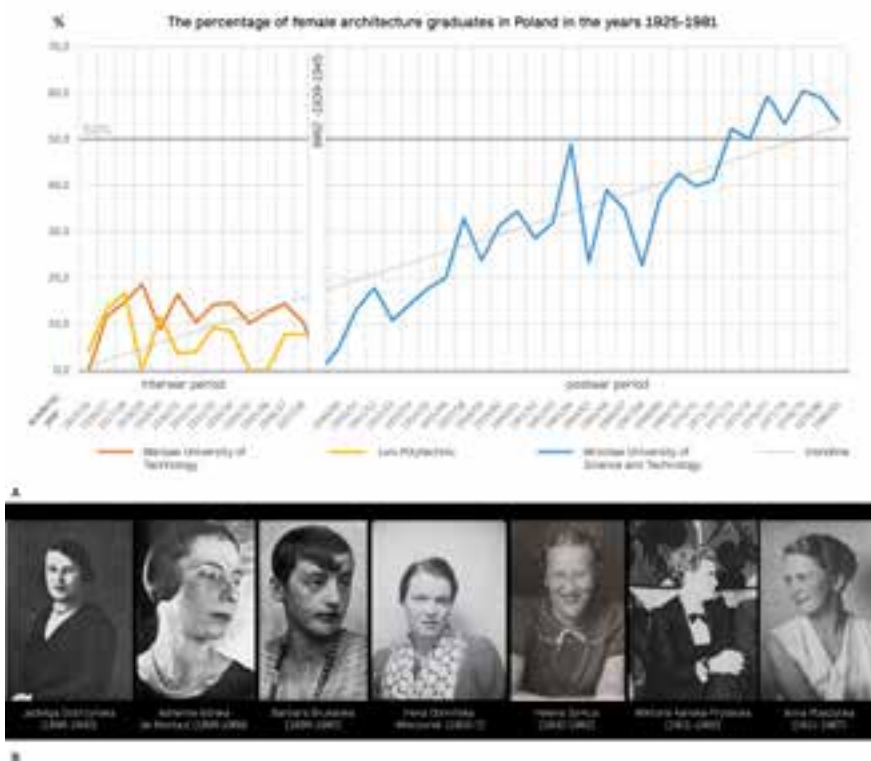


Figure 4 A). The percentage of female architecture graduates in Poland in the years 1925–1981, prepared by Authors. Sources: "Programy", Politechnika Lwowska (1922/23–1938/39), "Programy" (1926/27–1933/34) and "Składy osobowe i plany studiów" (1934/35–1938/39), Politechnika Warszawska, Wrocław statistical yearbooks (1945–1982); B) The Pioneers–Architects Gallery. Family archives or Public Domain.

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S14

Making visible: women architects and designers

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The presence of women in the field of design and architecture predates the Modern Movement, already in the last quarter of the 19th century, the incorporation of women¹ into work and design in the Arts & Crafts Movement in Great Britain allowed them to achieve other roles and participate in alternative institutions and structures, of visibility and prestige. For this reason, belonging to the Arts & Crafts Movement was a tool that women used to be active agents of their own history. In the UK between 1880 and 1914, there were at least 360 organised women's groups in this Movement. Despite this incorporation, and as would also happen in the Bauhaus years later, the structure of roles within the Movement was still patriarchal and hierarchical, meaning that women were allowed certain areas of work where they could express their "limited and special feminine skills". In any case, and even though they were assigned the lighter trades and arts due to the stereotypes, women were active agents who found paid work and personal fulfilment through them².

In turn, the women of the bourgeoisie who aspired to personal and financial independence could find work in the field of architecture by copying plans and writing the specifications of works, an opportunity that was limited due to the social and professional roles for women. The work of drawing and copying plans was an essential part of Victorian architectural practice, albeit a less prestigious and boring job that was associated with qualities considered natural in women: patience and attention to detail. The lack of prestige of these tasks made it a poorly paid job and, therefore, suitable for women, considered a cheap, occasional and part-time resource in assistance tasks to the benefit of the men's work³.

In the United States of America, the academic and professional consolidation of architecture began with the founding of the American Institute of Architects (AIA) in 1857, which defined the professional standards, the responsibilities of the practice of architecture, and the differences in this practice with

other professions related to construction. Eleven years later in 1868, the Massachusetts Institute of Technology was the first recognised school of architecture.

The first female architect to be recognised as such by the AIA and to open her own studio in 1881 was Jennie Louise Blanchard Bethune (1856–1913).

Likewise, the first women to obtain a degree in architecture would also do so in the 19th century, with the first woman to get a degree being Mary Louisa Page at the University of Illinois in 1878, and the second was Margaret Hicks at Cornell University in 1880.

In Europe, the first women architects were trained in Finland at the end of the 19th century. Technical training for architects in Finland began at the Helsinki Technical School in 1849, transformed in 1879 into the Polytechnic Institute. In 1887, Signe Hornborg (1862–1916) was accepted as a “special” student, being the first woman to graduate in 1890. In eleven years, until obtaining the right to enter the university, six more female architects graduated from Helsinki. Signe Hornborg worked with Lars Sonck, who would become the master of the new architecture close to Art Nouveau, and also carried out her own commissions from the moment of her graduation, such as the Newander House apartment building in Pori in 1892, in which, as she would do in other commissions, in addition to the architectural project, she also carried out the construction management.

Due to the major lack of knowledge shown by general historiography regarding the presence of women in the fields of design and architecture, updating modern historiography is an obligation of currently active generations.

At the height of the modern movement there were many women protagonists, although not always, or at least very rarely, included in a fair way in the historiographical accounts of the time. The invisibility of their work was carried out with different mechanisms, and in many cases, such as Sigfried Gideon, self-reference as a protagonist was allowed even at the cost of eliminating referents such as Jacqueline Tyrwhitt, Lilly Reich and Aino Aalto, among others.

In terms of exclusion of women in the storytelling, either as omission or removal of female names – and their architectural or urban contributions – the books published for the first time in 1936 stand out, “Pioneers of modern design. From William Morris to Walter Gropius” and in 1941 “Space Time and Architecture”. As Hilde Heynen points out, Pevsner and Giedion are the most important “ghost writers” who were able to disguise the convictions that the Modern Movement shared with the social reformers and feminists of the nineteenth century. But in addition to not recognising previous women, they omit the women of their own present from their speeches. Sigfried Giedion collaterally includes a few women linked to painting, women who were liaisons or promoters of productions of the time.

The exclusion of Lilly Reich from the narratives referring to the exhibitions and as director and member of the Werkbund is absolute in the narratives of Pevsner, Giedion and Zevi, as she is also as a design partner with Mies Van der Rohe and as a professor at the Bauhaus.⁴

The five research presented in this section delve into the knowledge of fundamental women for the project, urban planning and the diffusion of the Modern Movement, Lilly Reich (1885–1947), Margarete Schutte Lihotzky (1897–2000), Jacqueline Tyrwhitt (1905–1983), Susana Antonakaki (1935–2020) and Teresa Assoreira Almendra (1943). And despite belonging to different generations and geographical contexts, the lack of knowledge of their trajectories makes them equal.

Many of them did not have to face as many difficulties to exercise their profession with equal relevance and recognition in life as their historiographical recognition, for this reason, I insist again on the importance of reviewing what is written, the rereading original documents, and rewriting of historiographies to build a different history and, therefore, a more egalitarian and fair future with the contributions made by women and men to architecture.

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Margarete Schütte-Lihotzky – two rescued Works: her own Apartment and the ‘Building of Truth’ in Vienna

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It was always important to me, both in my profession and outside it, to contribute with all my little mini strengths to ensuring that I leave the world a better place than the one I was born into. Margarete Schütte-Lihotzky

Today, what can we learn from the important architect Margarete Schütte-Lihotzky, from her eventful life and her architecture?

In contrast to a playful kind of formalism devoid of meaning, she emphasised content rather than show and placed the focus firmly on suitability for the users' daily life. In response to the question posed by the motto of the Venice Biennale in 2021 'How will we live together?' not only her architecture but also her life can provide extremely useful answers.

In 1939 Schütte-Lihotzky joined the Austrian Communist Party (KPÖ). In 1940, back in Austria, she became part of the Austrian Communist resistance movement. In 1941 she was arrested by the Gestapo and sentenced to 15 years imprisonment. The inscription on the tombstone of her grave of honour in Vienna's Zentralfriedhof (Central Cemetery) reads 'Architektin – Widerstandskämpferin' ('architect – resistance fighter').

In Schütte-Lihotzky's view architecture should look also at social questions, at the politics of power and society. In what kind of political society do we live? Does commercialisation take precedence over everything else? How are things for the single working mother? For children? What are people's needs and what really helps them? And what about architects' social responsibility?

In times in which it has been shown that enormous wealth is concentrated on fewer and fewer people and the gap between rich and poor grows constantly wider these questions go beyond architecture. And yet they are visibly manifested there, perhaps more clearly than anywhere else. Is there such a thing as social housing in the first place? What are its qualities and solutions it offers? What is the impact of investment in real estate, so-called 'concrete gold'?

In finding answers to these absorbing questions projects by Schütte-Lihotzky, such as her own apartment and the *Globus-Verlag* building in Vienna can offer important and helpful answers.

Body text

I am not a kitchen. Had I known I was going to have to talk about this damned kitchen for my entire life I would never have built it.

Margarete Schütte-Lihotzky

Margarete Schütte-Lihotzky (1897–2000, **Fig. 1**), who was born in Vienna, is regarded up to the present day as Austria's most important woman



Figure 1. Margarete Schütte-Lihotzky in her apartment in 16 Franzensgasse, Vienna 1998, © ulrikewieser.at

architect. Her eventful life as architect, peace activist, women's rights activist, communist and resistance fighter brought her to Frankfurt, Moscow, Japan, China, London, Paris, Istanbul, Sofia, and Berlin. Her "Frankfurter Küche" (Frankfurt Kitchen, 1926), the original of the modern built-in kitchen, brought her world-wide fame and today examples are to be found in numerous museums. However, Schütte-Lihotzky's work and her social commitment go far beyond this kitchen.

It has recently proved possible to rescue two of her works from destruction: the flat that she planned for herself (1969) and the 'Globus' newspaper, printing and publishing building (1956).

As early as the 1920s Schütte-Lihotzky designed apartments for the "working woman" and for the minimum existence, i.e. compact small and tiny apartments with a reduced floor area but an extremely economical use of space and, where possible, with direct access to an outdoor space. Shaped by her keen sense of social commitment the oeuvre of Margarete Schütte-Lihotzky is characterised by simplicity and functionality. The Viennese architect and urban planner Gabu Heindl summarises as follows: *"Throughout her life Schütte-Lihotzky fought for social justice, in concrete terms for better living conditions for people, for high quality in the design of housing, kindergartens and schools, for fair access to housing and for women's rights and for an anti-fascist Austria and Europe".*¹

Like Adolf Loos (1870–1933), Margarete Schütte-Lihotzky was a part of the Viennese Siedlerbewegung (lit. "settler's movement") in the 1920s and she also worked on the housing construction program of Red Vienna in the

interwar period. She worked together with Adolf Loos on the Viennese housing development known as the “Friedensstadt” (1921).

In the design of the Viennese “Werkbundsiedlung”, which was initiated by Josef Frank (1885–1967), Schütte–Lihotzky was the only woman architect among the 31 planners (Hugo Häring, Josef Hoffmann, Clemens Holzmeister, André Lurçat, Oswald Haerdtl, Adolf Loos, Gerrit Rietveld, Gabriel Guevrekian and others), and designed a pair of single-family houses, nos. 2 and 4 Woinovichgasse (listed buildings since 1978). This housing estate is considered one of the most important records of Modernism in Austria. It was opened to the public in 1932 as a model for “the modern way of living”. She herself first visited the pair of houses in the Werkbundsiedlung in the late 1970s, as she was not in Vienna when they were being built and had sent the plans from Moscow, where she had moved in 1930 along with the entire group of architects around Ernst May from Frankfurt am Main.²

Schütte–Lihotzky developed a particular competence in the area of school and kindergarten design. In Vienna, for example, she designed the kindergarten on Kapaunplatz that dates from 1952 and in 1964 the kindergarten at 47 Rinnböckstraße.

1. Her apartment on Franzensgasse

At the age of 73 Margarete Schütte–Lihotzky moved as the first tenant into a rented apartment that she designed herself on the 6th floor of a cooperative apartment building at 16 Franzensgasse in Vienna. She lived there for the last thirty years of her life. Despite its relatively modest floor area of 55 square metres, her flat seems spacious and is a real architectural gem.

The architect’s approach to the design of living space is clearly expressed here. This approach was based on economic and social spatial solutions that give women an independent area for working and living and combine Modernism with the traditions of Viennese design of spaces for living.

The floorplan of the apartment that Schütte–Lihotzky drew herself has survived and is dated 15.12.1967 (**Fig. 2**). Her drawings of the furnishings and fitting with plans and wall elevations (living room, kitchen, bedroom, storage closet, bathroom, terrace) have also survived.

The apartment, designed down to the tiniest detail, is a continuous space without hardly any doors (**Fig. 3**), apart from door to the storage space and the toilet. In Schütte–Lihotzky’s plan this open space is divided up into several different zones: eating area, living area, work area and sleeping area. The combined areas for work and sleep can be separated from the living room by drawing a curtain, creating in a spatially economical way a sequence of spaces some of which are more public, while others are more private.

In designing the small kitchen that has a floor area of just 5 m², Schütte-Lihotzky paid great attention to detail. As can be seen in the floor plan from 15.12.1967 she made serving openings in the kitchen that provided a direct connection to the dining area in the living room and to the outdoor seating

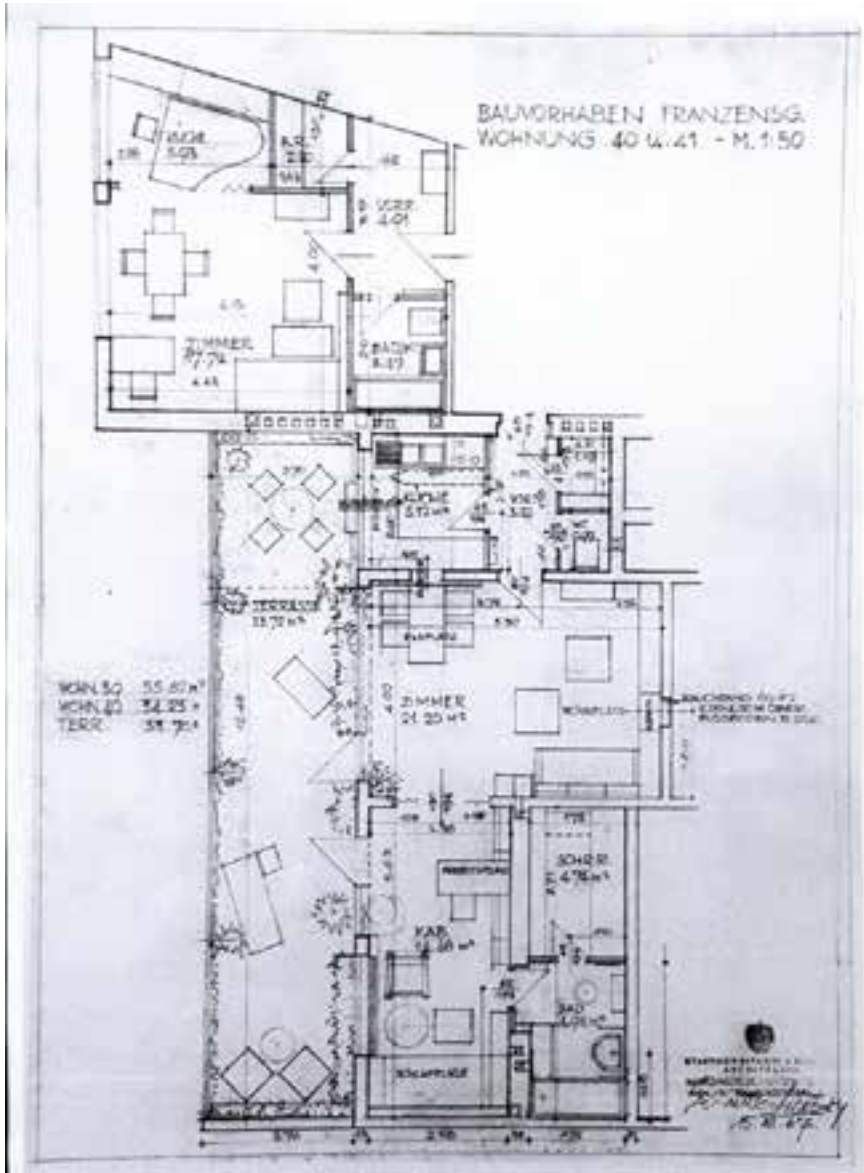


Figure 2. Floorplan of the apartment and the neighbouring small flat in 16 Franzensgasse, Vienna; pencil drawing by Margarete Schütte-Lihotzky, dated 15.12.1967, © University of Applied Arts Vienna (UaK), NL MSL, Inv.Nr 201/1



Figure 3. Vienna, apartment no. 16 Franzensgasse, looking into the living / dining room with the study and bedroom area behind, 07/2000, archive-number 9828-B, photo Margherita Spiluttini, © Architekturzentrums Wien, Sammlung

area on the terrace. The detailed drawing of the kitchen, dated 1 December 1967, shows a large glass sliding window to the terrace. The large opening in the kitchen still exists today, but not in the form of a sliding window. Like in the "Frankfurter Küche" from 1926 the plan of the kitchen includes an ironing board that can be folded down from the wall. The kitchen units were painted dark green on the outside, red inside.

Schütte-Lihotzky also made a precise detailed drawing (dated 15.1.1968) of the 5 m² bathroom which has survived largely in its original state with small, light blue tiles and a bathtub. She included a bench seat and full height curtains.

The wall surfaces in the living room are structured by 8-cm-wide wood strips and are painted pastel green up to the level of the uppermost wood strip. The area of wall above this strip and ceiling are painted white. The colour and the simple wood framing give the space a cosy feeling.

The long, narrow work area has light built-in bookshelves. Above the sleeping area at the end of the space the ceiling slopes downwards and a piece of Kyrgyz embroidery (**Fig. 1**) is mounted on the end wall and the sloping ceiling.

Most of the original light fittings in the apartment have survived.

If necessary, a caregiver could live in the neighbouring small apartment (see drawing of the floorplan), which has a floor area of 34 m². Generally, a student lived there.

Schütte–Lihotzky's planning is also relevant for current apartment design, as given the rapid and dramatic increase in rents, land and apartment prices, as well as the growing number of single households, compact housing concepts such as hers are today much in demand. In this sense Schütte–Lihotzky's apartment can also be seen as a source of inspiration, for example for what are known as "SMART flats" in Vienna, which combine a high level of suitability for daily life with reasonable rents and from 2012 onwards have been planned and built as a model of compact, economical housing. Schütte–Lihotzky's apartment illustrates how an intelligent floorplan allows every square metre of space to be used in the best conceivable way. The combination of spatial economy and a high standard of domestic comfort is based on the one hand on the traditions of social housing from the 1920s but also points the way towards the apartment of the future with urban gardening, adequate sun protection and greenery to provide cooling. In an age of climate change, overheating in summer, and a growing number of heat-related deaths, this seems particularly important.

"Schütte–Lihotzky was a visionary, and her designs are timeless. She introduced so many international influences and was herself involved in several positions of modernism which she then transferred to the apartment. Here one can trace a continuous feeling for living space and her concepts." says architect Christine Zwinkl, a member of the Schütte–Lihotzky research group since 1986 and head of the Schütte–Lihotzky Centre.

The terrace, 12.7 metres long and 2.6 metres deep, which extends along the west front of the apartment, is an important part of the overall concept. Schütte–Lihotzky conceived of the terrace as a roof garden that offers both a pleasant place to sit and a connection to nature.

The detail plan of this terrace (dated 11.4.1968) envisages lavish planting in plant troughs, clay pots, flower boxes and flower beds enclosed by a low brick wall and made water-tight with the use of tarred paper and bitumen. According to the plan vines, apricots and oleander were to be planted here.

The railings to the terrace consist of a metal frame with glass panels. The 2.20-metre-high uprights are mounted 2.50 metres apart, cables are spanned between them to provide support for climbing plants.

The drawing even includes a hook on which to hang a garden hose, a swing seat, and a deckchair. Directly in front of the kitchen window a round table with four chairs are drawn. Sun protection for this seating area is provided by an awning that can be extended out 2.45 metres, so that it shades almost the entire depth of the terrace. For the remaining area of the terrace an awning that extends two metres is indicated.

Windows, some full height, which connect inside and outside give the apartment a feeling of generosity and illustrate Lihotzky's sense of spatial economy.

In the Viennese "Settlers Movement" the garden was an important part of the concept and was used for growing fruit and vegetables and keeping animals. The design by Adolf Loos for the model housing estate 'Heuberg' (1921–1923) with its 'House with One Wall' includes precise plans for large, long kitchen gardens including tomato and cucumber beds.

The kitchen garden had a special significance, as it was intended to allow residents, many of whom had experienced famine during and after the First World War, to become largely self-sufficient.

Landscape architect Leberecht Migge's garden concept for the "Römerstadt" housing development in Frankfurt (1928, planner Ernst May), offers a further example of such self-sufficiency gardens. Incidentally, Margarete Schütte–Lihotzky designed four versions of a garden pergola for the gardens in the Römerstadt.

Schütte–Lihotzky saw stepped buildings as the ideal form of housing for urban life. Housing, she believed, should reflect a society in which employment for all women, the desire for collective living and a closer connection to nature could become reality.

Communal service facilities were to relieve working women and men from the demands of housework. Communal spaces were intended to facilitate communication between the residents of a building, to encourage joint activities and, above all, to provide playrooms for children. The planted terrace offers contact with nature in front of the living room, with relatively simple maintenance requirements.

Adolf Loos also designed several stepped buildings in 1923, for example the small apartment house with terraces and "Hochstraßen" (elevated roadways) in Vienna Favoriten (1923), the Grand Hotel Babylon in Nice (1923), and a group of twenty villas with roof gardens on the Cote d'Azur (1923).

In Vienna architect Harry Glück (1925–2016) designed several housing developments with stepped buildings that reflect his creed "living like the rich, also for poor people". The best-known and largest of these housing developments is the Wohnpark Alt–Erlaa (1973–1985), which houses around 9000 people and has seven communal swimming pools on the roofs.

During the Corona pandemic Schütte–Lihotzky's concept for her living space with a relatively large terrace measuring 33 m² acquired a new significance. Due to the need to quarantine and the various lockdowns an individual outdoor space such as a balcony, wintergarden or terrace became extremely important for apartments. Schütte–Lihotzky's flat is example of how a small apartment can be designed and organised in an ideal way. It offers a vision for how to build even better apartments in the future.

As it represents a very rare example the architect's apartment, in which most of the original fittings have survived, is of enormous value. In 2021 Schütte–Lihotzky's apartment was placed under a preservation order. In the course of this procedure the appreciation of this architect's work grew even further among those involved in the project. The owner's representatives, too, were extremely interested from the very start and supported the project, and in this way contributed to preserving "The Schütte–Lihotzky Apartment."

The examinations required to discover the original state of all the surfaces, the walls and ceiling, and the coating of the metal parts to the terrace railing were conducted in November and December 2021³.

The results as regards the colour concept are:

- Hall: walls light yellow, matt and washable, ceiling grey (NCS S 1002–Y)
- Cloakroom and toilet: walls grey, ceiling broken white
- Bathroom: walls grey, ceiling broken white. The paint was gloss and washable, with a strongly structured surface.
- Kitchen, sleeping and workspace: monochrome broken white.
- Living / dining room: walls and ceiling broken white. Areas of wall between the wood strips light green (between NCS S 3020–G and NCS S 3020–G10Y).
- Terrace railings: gloss painted in a greyish shade of broken white.

In 2022 the existing original fittings and furnishings of the apartment will be restored and missing parts will be reconstructed. The restoration and reconstructions are based on the restoration examinations, the Schütte–Lihotzky estate in the Collection and Archive of the University of Applied Arts Vienna, architecture photographs from the Margherita Spiluttini Photograph Archive of the Architekturzentrums Wien, private documentation, and the plans by Schütte–Lihotzky from 1967–1969, referred to above.

The Kyrgyz wall hanging, which has survived, and which probably originated in the Soviet Union in the 1930s, is to be restored and mounted again on the wall in the bed niche and the sloping ceiling above it, the way Schütte–Lihotzky had it.

The original curtain tracks produced horizontal lines in the space that were important in terms of grasping the spatial context. The curtain tracks and the yellow curtains will be mounted again along the entire window front. The camel-hair coloured velvet curtain to the work and sleeping area is to be mounted again. The modular book shelving, made up of elements from the *String* shelving system, on the walls in the work and sleeping area, the desk and the bed will be reconstructed.

The aim is to recreate the apartment with all its qualities so that the state in which Margarete Schütte–Lihotzky lived and worked in it can be experienced once again.

“So, on the basis of Schütte–Lihotzky’s original plans and the informative archive material, as well as the restoration examinations, it will be possible to present this architect’s apartment as an authentic monument”, says Manuela Legen–Preissl, the responsible staff member of the Federal Monuments Authority Austria (Bundesdenkmalamt).

The reconstruction of the kitchen and the fireplace wall as well as the fitting of the original window type, a timber frame construction with sliding glass panel on two planes, will take place from 2023.

The apartment is to be used by the Schütte–Lihotzky Zentrum. It is planned to open this architectural gem to the public from autumn 2022, so that it can serve to commemorate Schütte–Lihotzky and her concepts. The preserved and protected apartment is therefore not only an important part of Austria’s cultural heritage, but also plays a significant role in communicating and explaining this legacy.

I never thought of building train stations or palaces of culture. I wanted to become an architect as I wanted to help alleviate the miserable housing situation. Margarete Schütte–Lihotzky

2. The House of Truth

The *Globus* newspaper, printing and publishing building of the Communist Party of Austria was erected between 1954 and 1956. It was designed by Margarete Schütte–Lihotzky, Wilhelm Schütte, Fritz Weber and Karl Eder.

After the liberation of Austria in spring 1945 and the occupation by the four victorious powers, Great Britain, France, USA, and the Soviet Union, Vienna became a central stage in the Cold War. The competition between the systems extended to the area of architecture, too.

Globus Verlag was intended to be a model of socialist production and of the unity of the working classes and to offer excellent working conditions. At the laying of the foundation stone in March 1954 it said on the construction site sign: *“We are laying the foundation stone for the Building of Truth”*. The aim was to present, at equal level, an alternative to the capitalist West in architectural terms, also. This clear positioning of a Communist business in the animated cultural and political climate of the Cold War gives the *Globus Verlag* building great importance in the history of architecture from the post–war era. Buildings of this kind represent an important part of modern Austrian history.

The complex consists of the office building (**Fig. 4**), a large hall (bookbinding), the rotary printing shop, and the wing with the events hall, social rooms, and technical services rooms. Margarete Schütte–Lihotzky designed the four–storey part of the complex on Meldemannstraße (**Fig. 4**), which housed the technical rooms (photography), the canteen, and a two–storey events hall on the 2nd and 3rd floors.



Figure 4. Vienna, *Globus* printing and publishing building and headquarters of the Communist Party of Austria, 3 Höchstädtplatz, Margarete Schütte-Lihotzky, Wilhelm Schütte, Fritz Weber, Karl Franz Eder, 1954–1956, left: office wing by W. Schütte, right: wing with events hall by M. Schütte-Lihotzky, © KPÖ – Communist Party of Austria Archives

Through the colour scheme and carefully considered detailing the *Globus* building offers an excellent example of the architecture of the 1950s.

Following the fall of the Iron Curtain in 1989 the publishing house of the Austrian Communist Party found itself in an increasingly difficult economic situation and the business was closed in 1993.

As it was declared a listed building by the Federal Monuments Authority Austria in 2018, it was possible to prevent the demolition of the *Globus* building. The intention is to convert it for residential purposes.

In preparation for the renovation and conversion work various examinations of the building were conducted. The examination of the facade in September 2018 revealed the original tiled facade that had been hidden underneath a later layer of thermal insulation. The facades had originally been clad with tiles in light grey (NCS S2005–Y30R, 6.5 x 25 cm, white joints and 25 x 6.5 cm, red joints) and in Venetian red (NCS S4550–Y70R, 2 x 2 cm, without joints), also known as 'Kremlin red'. The ceramic facade is to be recreated as part of the renovation work.

A model of the *Globus Verlag* building that is still in existence shows the original colours of the design. This model, now also a protected object, was exhibited in the show *Cold War and Architecture* (October 2019 to February 2020) in the Architekturzentrum Wien, the Austrian museum of architecture.

The architect Margarete Schütte-Lihotzky was involved in planning the KPÖ printing works *Volkswille* in Klagenfurt (1947–1948).

Like Brazilian architect Oscar Niemeyer (1907–2012), Schütte–Lihotzky was an avowed communist. Both designed communist party headquarters. Niemeyer's excellent architectural design for the French Communist Party Headquarters in Paris dates from 1965.

Because of her political beliefs as a communist, after the Second World War Schütte–Lihotzky received hardly any commissions from the City of Vienna, as the Social Democrats who held power in Vienna took a strictly anti-communist line. It was only when already advanced in age that she received numerous awards and honorary doctorates.

the modern spirit is a social spirit and an anti-social spirit is an unmodern spirit. Adolf Loos, 1927

Seen in this light, there is still much that we can learn from Schütte–Lihotzky's modern spirit.

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A Fair Recognition: [On set with] Lilly Reich

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This paper presents the research and cinematographic work resulting from the winning project of the second edition of the Lilly Reich Grant for Equality in Architecture organised by the *Fundació Mies van der Rohe* in 2020. Like many other co-authors who worked together with master architects, Lilly Reich could barely aspire to be considered anything other than a collaborator if we believe the literary and visual narratives produced about her. Therefore, in order to shed light on the role of a pioneering woman of the Modern Movement, the project *[On set with] Lilly Reich* explores the contextual limitation of the profession and the recognition, under conditions of equality, of the work of Lilly Reich. One of the goals was to reach a more extensive audience, and so the chosen means of communication was the cinema. To do so, the production and recording of a short documentary were proposed, structured from the combination of two contrasting arguments: what she contributed (what was done) and what was told about her (what was narrated). Methodologically, the film project was preceded by a research project that analysed and compared two chronologies. The first corresponded to Lilly Reich's work: it focused on the solo career, covered the ten years of joint work with Mies van der Rohe and the brief subsequent production. The second chronology addressed her historical representation, based on the written, graphic, and photographic narratives about Lilly Reich. Once the research was complete, the documentary was made, whose contents are introduced through an anonymous character who acts as a thread to develop the study through the construction of the two timelines. The aim is to create a product that engages the audience and sheds new light on a specific and fundamental subject in the history of twentieth-century architecture.

1. The Lilly Reich grant opportunity

In June 2020, the *Fundació Mies van der Rohe* announced the second edition of the Lilly Reich Grant for Equality in Architecture, whose objective was to recognise the architectural legacy of Lilly Reich under conditions of equality: in this way, it promoted the study, dissemination and visibility of architectural contributions that were unduly relegated or forgotten for discriminatory reasons. In response to this call, the authors of the present communication presented the winning proposal *[On set with] Lilly Reich* by proposing a project that would combine architectural research with cinematographic

communication (Fig. 1). The aim was to show the contextual limitation of the professional field and the recognition of Reich's work through the combination of two contrasting arguments: what she contributed (what she did) and what was told about her (what was narrated). To this end, the production and recording of a documentary were proposed as a means of disseminating the announced objective: a short film work that would combine original archive sources with newly created visual materials. In the development of this proposal, it was necessary to work previously on two different blocks for the purposes of methodology: the research project – based on the results of previous studies,¹ although proposing advances in knowledge – and the film project.



Figure 1. Advertising poster of the proposal *[On set] with Lilly Reich*. © The authors, 2020.

2. The research project: Two timelines

The research project consisted of constructing the chronologies to be contrasted. The first corresponded to Lilly Reich's production: her first solo works – sometimes coordinated with different partners –, the decade of joint projects with Mies van der Rohe, and her subsequent limited production. Practically all of Lilly Reich's work was in the field of interior design and ephemeral architecture, and all of these spaces are a substantial and valuable legacy for understanding her specific contribution.

The second chronology was based on the written, graphic and photographic accounts of Lilly Reich. This was a journey backwards in time, a turning back searching for clues that would make it possible to identify and decode her presence in history. Despite the turn of recent research, well-known figures in architectural criticism have ignored Lilly Reich or have alluded to her as a designer, but only with regard to the work, she carried out with Mies. However, consultation of the databases of digitised journals from the 1920s and 1930s revealed Reich's regular presence in German periodicals. Therefore, her

presence in the professional press of the time contrasts with the absence of the later literature, which in fact, has been building up the history of architecture.

Therefore, it was necessary to draw two comparative timelines: *what did Lilly Reich do* and *what was said about Lilly Reich?* For both timelines, a biographical temporal classification was established. First, Reich's career up to 1926 was examined: her training in the minor arts, her solo career, the institutions she was part of, the people she collaborated with, and the design features that made her a renowned designer. Secondly, it delved into the years when she worked together with Mies, from 1927 to 1937, a decade in which she was introduced to the major arts. It also studied the period that followed until her death in 1947, although with hardly any professional activity. Finally, her posthumous recognition up to the present day was analysed (Fig. 2).

What did Lilly Reich do?

Lilly Reich began her career in 1911, designing interiors and furniture. From the outset, her proposals revealed a great formal simplicity, as well as the use of noble materials constructed efficiently. She was soon recognised by architectural critics and was elected a member of the *Deutscher Werkbund* in 1912. At the end of the First World War, Reich was the first woman to become a member of the *Werkbund's* board of directors, and from then on, commissions

of increasing importance followed, which brought her greater recognition. The stand she designed in 1920 for the *Fashion Craft* exhibition is of interest, as it identifies the architectural mechanisms used in her later period with Mies van der Rohe: the continuous route around a free plane of strong geometry on which to hang the material to be exhibited, in this case, the fabric. Over fifteen years, her work had an ascending trend, culminating in the design and organisation of the exhibition *From Fibre to Textile* for the International Frankfurt Fair in 1926. Lilly Reich's ability to create an extremely innovative display on a priori unattractive subject has earned her critical acclaim for her professionalism and acknowledged the progressive evolution of her interior design, furniture, and ephemeral architecture projects.

At the end of 1926, Mies van der Rohe asked Lilly Reich to help him organise his first exhibition, *The Dwelling*, in Stuttgart. This

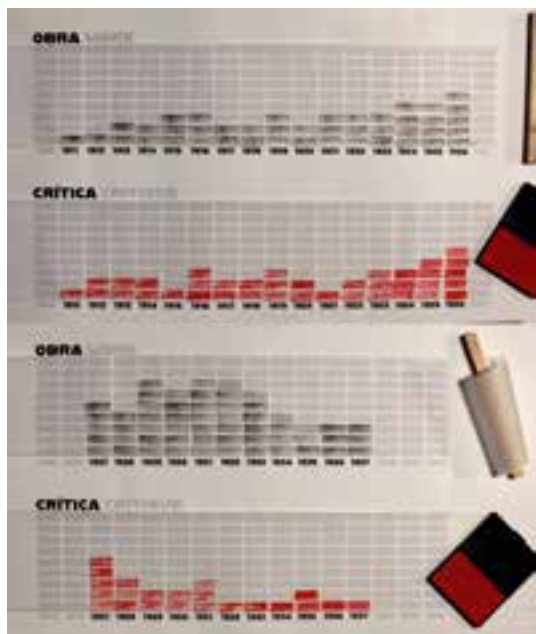


Figure 2. Scene from the documentary, comparative of the two timelines. © The authors, 2022.

was the starting point for a decade of professional collaboration in which a large number of residential designs and more than eighty exhibition spaces came to fruition. From the outset, they took on different roles: Mies was responsible for the architectural work – master plans and building projects – while Lilly Reich took over the design and organisation of interiors and exhibition stands. This was the case in Stuttgart, – see the *Weissenhofsiedlung* and the industrial halls, the *Plate-Glass Hall* and the *Linoleum Hall* being their first joint project – in Berlin, – the *Velvet and Silk Café* – and in Barcelona – where Mies designed the two pavilions and Reich the twenty-five industrial displays representing Germany–.²

Between 1927 and 1931, Mies and Reich produced a series of single-family houses and apartment designs developed jointly, even though Lilly Reich was not credited as the author. This is the case, for example, of the Lange and Esters House in Krefeld, the Tugendhat House in Brno, or the Philip Johnson Apartment in New York.

In 1931 Mies and Reich were involved in another high-profile exhibition in which the roles were once again segregated. In the Berlin exhibition *The Dwelling in Our Time*, Mies orchestrated the planning of the residential complex, while Reich organised the *Material Show*, a materials stage with a didactic approach that showed the relationship of objects in the architectural space from two to three dimensions. Lilly Reich was involved on the ground floor, designing the interiors of two of the flats placed in the Boarding House block and building the first and only house of her career. In the apartments, she achieved elegance and spaciousness despite the minimal floor space, and the furnishings were limited to the essentials and were characterized by their compactness. About her house, it was connected with the Mies' house by an *umbilical wall*.³ This experience, Reich's first and only time constructing a building, showed that although her architecture was realistic, functional and straightforward, it was also "rigid and lacking the elegance of the expert."⁴

This was the last exhibition in which Reich – and Mies – could express their architectural principles freely, as the political advance of the National Socialist government soon began. The projects she carried out were few and far between, mainly after Mies emigrated to the USA. Reich suffered the harsh consequences of the Second World War and had very few job opportunities in the years leading up to her early death in 1947. She did furniture and interior design projects and worked for Ernst Neufert and Hans Scharoun.⁵ She also tried to revive the *Werkbund*, but she remained linked to Mies and was responsible for safeguarding the graphic and photographic material that can now be consulted at the Museum of Modern Art of New York.⁶

What was said about Lilly Reich?

In the field of architecture, as in many other artistic and professional areas, the historical narrative has tended to be individualistic, heroicist, somewhat simplified and in tune with the dominant values of the time.⁷ In the specific case of Lilly

Reich, the compilation of all her criticism shows different forms of recognition, not without praise, but also marginalisation. This discrimination is aggravated by the medium of communication: books are often the primary documents of the narrative, while professional journals do not tend to transcend time (Fig. 3).



Figure 3. Scene from the documentary, journals that mention Lilly Reich in the 1920s and 1930s. © The authors, 2022.

The first references to Reich in the trade press refer to her first commission: the interior design for the *Youth Centre in Charlottenburg*, for which she received rave reviews.⁸ Her career continued upward, with frequent publications in the specialised press praising her work for her contributions to textile design and interior design; although she was not exempt from derogatory criticism due to her gender,⁹ nor from comparisons with male counterparts when solving innovative solutions.¹⁰

From the criticisms of this period, it is clear that Lilly Reich was a visible woman in her professional context, appreciated for her excellent organisational skills and her design criteria, developed either alone or in collaboration with colleagues. Nevertheless, these joint authorships did not cloud the visibility of her contributions and the recognition of her figure. However, a change occurred in this narrative when Reich's professional work became exclusively collaborative with Mies van der Rohe. An analysis of the publications between 1927 and 1937 reveals that, although Reich is still acknowledged in the first of these, Stuttgart, from then on she virtually disappears. Her output increased, but she is hardly mentioned; the joint commissions have only one author: the architect Mies van der Rohe. The only written mention of this period is the one made by George Nelson in the journal *Pencil Points*. He interviews Mies in 1935, assigning Reich a secondary role in the silk exhibition room, even though it was an exhibition commission that was within her professional speciality.¹¹ Another example of this invisibilisation can be seen in the pages of *Die Form*, published in Berlin from 1922 to 1935. In the

early years, the journal published several articles on Reich's work, but from 1927 onwards, Mies van der Rohe was mentioned three times more than Lilly Reich, even though almost all the works published were joint efforts.

Reich's limited activity from 1937 until her death in 1947 did not bring her back to the media; and at the time when books were the exclusive medium of knowledge, there was a specific resistance to change the established trend. Reich did not exist for Bruno Zevi, Emil Kaufman, or Manfredo Tafuri. Nor did Sigfrid Giedon or Nikolaus Pevsner mention her. Leonardo Benevolo included her in a caption as "L. Reich," and Keneth Frampton blamed her for Mies's failure to go beyond the Expressionist aesthetic.¹² A further step in the degradation of the figure of Lilly Reich was Frank Shulze's account of her in the mid-1980s, breaking into the realm of personal relations and physical appearance.¹³

Fortunately, shortly afterwards, several female architectural historians undertook various research projects and offered a new interpretation of the facts. Sonja Günther and Matilda McQuaid – authors of the only two monographs on Reich – Sandra Honey, Beatriz Colomina and Christiane Lange, are just some of the researchers who built a new profile, providing a multitude of new information on her work both alone and in collaboration. Paradoxically, these monographs have returned Reich to the pages of academic journals, where numerous research articles have delved into different aspects of her legacy.

3. The film project

The film project had to transmit the results of the research project through a limited audio-visual narrative, with the added effort of reaching a wider audience than the academic world itself. Conceived as a documentary of around thirty minutes in length, the contents were introduced through a character, someone anonymous, who would develop the research through the construction of the two timelines mentioned above. The aim was not to make a work of fiction but to weave together the arguments that would accentuate the working hypotheses and offer a personal view of Lilly Reich, moving away from a mere biographical perspective or the chronology of her works.

The first task was to create a script that emphasised the turning points of the two chronologies, superimposing the two levels of information – that of what Lilly Reich did versus what came after her – accompanied by a historical and cultural context that provided the minimum information to reach a non-specialist audience. Consequently, the contents were essential and required careful consideration for their selection and subsequent presentation in a limited format. In the same way, the media became highly relevant: how to accompany the words with images, how to emphasise or complement a voice-over, and how to use a voice-over as a means of communication?

Different visual formats were chosen to combine original documentary sources with newly created materials: fragments of interviews, archival images, publication reviews, animations, drawings and specially filmed shots (Fig. 4).



Figure 4. Cross-fade edition of the Barcelona Pavillion, 1929–2021. © The authors, 2022.

The script and the media were developed in parallel, taking shape in the different versions of the production and depending on the real possibilities of access to information. However, the first decisions involved the largest budget: travel associated with the interviews and filming locations. Without the collaboration of renowned researchers such as Beatriz Colomina, Christiane Lange and Fritz Niemeyer, the documentary would not have offered various reflections on Lilly Reich's contributions to the field of architecture and her visibility in the media; without the generous collaboration of the Krefeld Museum or the Mies van der Rohe Foundation, the filming of still-living spaces that demonstrate the theses defended in the documentary would not have been possible. Other meticulous and complementary tasks, such as the management of the rights to reproduce the images, the recording of voice-overs, the choice of the actress, the creation of the animations and the composition of the music, had to be coordinated in order to offer a chorus-authored cinematographic work whose final editing and post-production conveyed coherence and unity.

4. A fair recognition

From her education at the *Wiener Werkstätte* to her teaching role at the *Bauhaus* in Dessau and Berlin, Lilly Reich integrated the plastic and applied arts into practice. In keeping with the times, her early professional work was based on fashion and industrial design but gradually incorporated other disciplines such as ephemeral architecture, especially after joining the *Deutscher Werkbund*. Her professional career, which had been established on an individual basis, became collaborative when her disciplinary circles were extended to the field of architecture by Mies van der Rohe. However, far from making her access to a greater art form visible, her participation was relegated to the background. Like many other co-authors with architectural masters, Lilly Reich could hardly aspire to be seen as anything more than a collaborator if one considers the literary and visual narratives produced about her.

The thesis stated in the previous paragraph needed to be demonstrated and disseminated, and this was the fundamental task of the proposal submitted to the second edition of the Lilly Reich Grant for Equality in Architecture. Restoring Reich's visibility, as with other women of architectural modernity, requires successive actions linked to research but which need to be narrated to a broader audience. This work adds to the promotion of a woman who has been insufficiently recognised in the history of architecture.

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Jaqueline Tyrwhitt and the Ethics of Post-war Modern Planning: Globalisation, Recentralisation, Humanisation

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Jaqueline Tyrwhitt was a British town planner, editor and educator who had one of the most influential yet unacknowledged female contributions to the shaping of modern planning. Although her multifaceted education and practice in landscape design, town planning and architecture is indebted to the early period of modern architecture, her contribution was catalytic in the establishment of a universal ethos in post-war planning. However, her authorship in the field of urban design and the science of ekistics is still largely unknown as she remained in the shadow of prominent figures whose influence was greatly extended by her work: Patrick Geddes, Josep Lluís Sert, Sigfried Giedion, Constantinos Doxiadis. The representation and impact of modern planning would have been weaker, had it not been for the creative and communicative skills of the “extremely articulate, highly cultured, exceedingly well-travelled” Tyrwhitt, the first female member of faculty at the Harvard Graduate School of Design. This paper sheds light on the themes Tyrwhitt’s work engaged in the attempt to form the principles of planning and urban design as an intellectual and professional post-war movement and as part of a larger cultural shift toward a more anthropocentric view of the world: globalisation, recentralisation, humanisation. This vision was advocated by the impressive scope and cross-scalar nature of her work moving from Housing and Community Planning (India) to Urban Design (Harvard GSD) and Regional and City Planning (Indonesia), and from the movement for universal urban planning to the re-centralisation discourse on urban renewal of the 8th International Congress of Modern Architecture and to the need for a “sense of community” in the city centres. Through an exposée of Jaqueline Tyrwhitt’s major undertakings, this paper aims to pay tribute to her most striking quality as a modern pioneering woman: “the way she unselfishly gave herself to develop the ideas of others.”

1. Education and early influences on the scales of planning (1941–50)

Mary Jaqueline Tyrwhitt (1905–83) was a British town planner, editor and educator who had one of the most influential yet unacknowledged female contributions to the shaping of the ethics of the post-war Modern Movement. **(Fig. 1)** The uncovering of her hidden voice and transnational activity will be used as a vehicle to analyse the development of the planning arm of post-war reconstruction as part of a larger cultural shift toward a more anthropocentric view of the world. Tyrwhitt was born into an upper class English family with an architect father. Her struggles as well as her pioneering course as a woman in the male dominated field of design and planning are captured in a statement about her beginning by one of her students at the Harvard Graduate School

of Design (GSD) where Tyrwhitt taught for 14 years: "She always wanted a career but in that class at that time women did not pursue careers. Her family encouraged her to take up landscape gardening, and that's how Jacky got started."¹ During her multifaceted education Tyrwhitt obtained a diploma from the Royal Horticulture Society in London, continued her studies at the Architectural Association and the London School of Economics, followed a Town Planning course at the Technical University in Berlin in 1937, and returned to England to obtain a post-graduate diploma from the School of Planning and Regional Reconstruction (SPRR) which had originally been founded as an extension of the Architectural Association.²

The outbreak of the Second World War brought about exceptional conditions which gave the opportunity to women to take up posts and tasks normally undertaken by men. It was thanks to the opportunity to replace a man who had to join the military service that Tyrwhitt became Director of the SPRR from 1941 to 1948. However, it was thanks to

her productive and organizational skills that she managed to develop new educational, research and cartographic agendas including social, economic and sanitary considerations that led the War Office to commission the SPRR the preparation of "the official Army Education correspondence course in Town and Country Planning."³ Her tri-partite course trained over 2000 architects and planners serving at the Allied Armed Forces and the United Nations who then equipped the national and local councils.⁴ Not only did Tyrwhitt introduce new categories and scales of practice such as rural and urban planning to the tradition of town planning in Britain, but also new planning factors such as land use policy, social thinking centered at establishing communities and integrating democratic values within the planning layout, the relationship between the town centres and the open countryside, the importance of woodlands, and, ultimately, effective administrative structures for the coordination of planning decisions at all scales.

The Town and Country Planning Association welcomed Tyrwhitt within the network of key actors in the burgeoning post-war reconstruction movement as part of the national planning. Based on her research in health

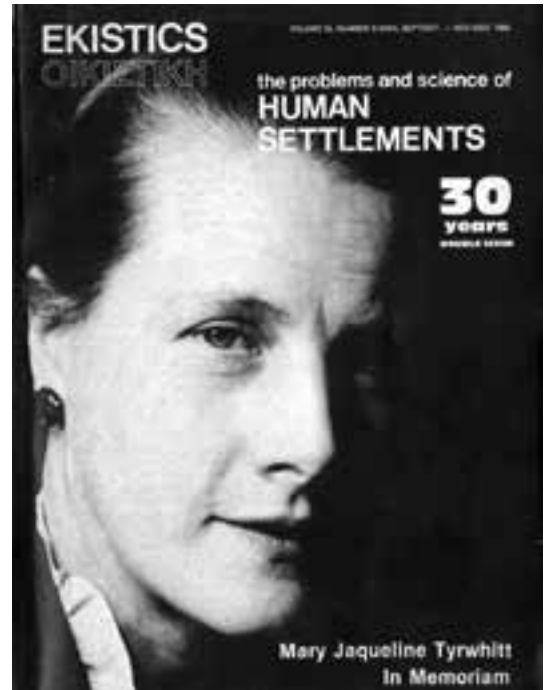


Figure 1. Jaqueline Tyrwhitt featured in memoriam at the cover of a special issue of the Ekistics Journal in 1985. Ekistics: The Problems and Science of Human Settlements, vol.52, no.314/315, 1985. Published by the Athens Center of Ekistics. © Constantinos A. Doxiadis Archives

and education for the Association of Planning and Regional Reconstruction (APRR) which she founded, she also enriched the movement with ecological conceptions of planning inspired by her collaboration with the Scottish biologist Patrick Geddes (1854–1932).⁵ Geddes's study of the interrelationship between existing context (natural system), formal proposal (man-made system) and social thinking about urban settlements on a regional scale was perceived by Tyrwhitt as broadening the discipline and constituting a more inclusive field, that of scientific community planning. At the core of this branch of modern planning she conceived was a research project into "what makes a 'community'" with valuable inputs on social welfare by the Institute of Sociology/ Le Play House –an organisation founded to promote Geddes's "diagnostic" regional surveys and plans in India, Scotland and South France.⁶ These years formed a solid basis of a lifelong process of Tyrwhitt's involvement in institutional reforms, global Organizational activity, and the evolution of the town planning and architecture disciplines.

2. Towards a transnational discourse on urban planning (1951–62)

Tyrwhitt formulated her synthesis of Geddes's bio-regionalism and modernist planning ideals into theoretical discourse at the International Congress of Modern Architecture (CIAM) and community-development practice under the United Nations. As a member of the MARS group – the British branch of CIAM – she conditioned the theme of CIAM 8 in 1951 which called for planned "recentralisation" that would save "the core" of the cities in their process of renewal.⁷ In a break with the pre-war congresses, the "needs at the core" manifest the necessity of a vital city center to be developed as a space where the "sense of community"⁸ could be physically expressed. Tyrwhitt came up with the concept of the "urban constellation," a further development of Geddes's ideas, to describe the dynamic relationship between a city (village or town) and its core as "the element which makes a community of people, whether large or small, a real community (and not an aggregate of people)."⁹ Her conceptualisation of global planning methods and revival of city centres as the way to improve human living conditions were developed in the CIAM 8 companion book, *The Heart of the City: Towards the Humanisation of Urban Life*.¹⁰ These ideas were also featured in an editorial for the U.N's Housing and Town Planning Bulletin and were modelled in the design of the Village Center at the International Exhibition of Low-Cost Housing in New Delhi in early 1954, which Tyrwhitt undertook as the first ever female UN technical consultant to the Indian Government. (Fig. 2)

In the Village Center Tyrwhitt adapted the CIAM notion of the core of Western cities to the housing needs, socio-economic conditions and available means of construction of rural villages in India. As a model it featured essentially an open space enclosed by community buildings designed to be practicable for the average village in India and implemented through self-help methods instigated by locally formed cooperatives.¹¹ Her approach to rural housing



Figure 2. Jaqueline Tyrwhitt and Constantinos Doxiadis (middle) among the participants of the United Nations Regional Seminar on Housing and Community Improvement, held in New Delhi, January 21 – February 17, 1954. India vol.1, 1954, p.80, photo 4.19 (Archive files 24965). © Constantinos and Emma Doxiadis Foundation

policy promoted the political and economic revival of village life “based primarily upon the restoration of responsibility to the village panchayat – a restoration of the self-reliance and pride that made the Indian village of earlier times the real home of thought and culture in India.”¹² The creation of the Village Center amid a group of 70 new low-cost houses aimed “to show that the two are inseparable” and that “the community facilities provide the basis of village life.”¹³

This integrated and scientific approach to housing and community development for post-war reconstruction attracted important collaborations for Tyrwhitt. Her studies had a great influence on the formulation of the theory of Ekistics by architect and town planner of developing countries Constantinos Doxiadis.¹⁴ By 1954, Tyrwhitt was a senior collaborator of the Athens Centre of Ekistics, the international manifestation of advanced research, graduate studies and documentation in the science of Ekistics. There she became the tacit co-author and editor of numerous books and a journal on Ekistics,¹⁵ all representing the Doxiadis Organisation consisted of the Doxiadis Associates (DA) planning consultancy and the Athens Center of Ekistics (ACE). About 1956 Tyrwhitt accepted the invitation to become Professor of Town Planning at Harvard University, the first female member of faculty at the Harvard Graduate School of Design (GSD). She could hardly have found a more stimulating and fitting context among leading figures in the search of ‘a new Humanism’ in the Modern Movement, José Luis Sert, the Head of GSD, and Sigfried Giedion, for whom she paved the way from ETH Zurich to MIT. Her collaboration with Giedion dated back to 1948, when Tyrwhitt invested her efficiency as assistant to him and Max Fry for the organisation of the first CIAM Summer School “on the architectural aspects of urban

planning.”¹⁶ The influence of Gedion’s subsequently published emblematic works, *Mechanization Takes Command* and *Space Time and Architecture*, would have been much weaker, had it not been for Tyrwhitt’s scholastic and once again anonymous editing of his texts.¹⁷ (Fig. 3)

Her contribution to the educational sector was equally significant. In the same selfless manner, Tyrwhitt committed herself to Sert’s and Gedion’s vision for the GSD, the construction of the first faculty of Urban Design combining architecture, landscape architecture and city planning inaugurated in 1959. This course, in which Tyrwhitt taught the environmental design studio,

operated at two scales: that of “a frame of reference” surveying and conceptualising social, economic and wider community considerations, and that which is “directly concerned with what is physically visible at the human scale.”¹⁸ Not only did this agenda introduce a revolution in urban planning education promoted by a series of eight international Urban Design conferences organised and documented by Tyrwhitt while bearing Sert’s stamp,¹⁹ but also pioneered current global discussions on metropolitan growth and urban sprawl with alternatives that continue to frame relevant 21st-century debates. At the same time, she was called as a Harvard expert and UN Advisor to Indonesia for the creation of a graduate School of Regional and City Planning at the Bandung Institute of Technology.²⁰ Her introduction of the first practical course in physical planning for large villages in West Java was inspired by the local traditions of independent rural government and was very successful in systematising the recording and provision of infrastructure as well as in training planners for the development of the country.



Figure 3. Jaqueline Tyrwhitt with Sigfried Gedion at the Delos Symposium in 1963. (Photographs 31252) . © Constantinos and Emma Doxiadis Foundation

3. Lessons for urban evolution: ‘The City of the Future’ (1962–83)

In 1962 Tyrwhitt gave in to Doxiadis’s pressures to take on a full-time role at the ACE, and particularly the Ekistics Bulletin and DA’s assignments of large-scale community programmes in the Middle East, in recognition of her contribution to UN’s evolving human settlement policy. There she was challenged to move away from the micro-scale of the core of the city

toward the macro-scale of large metropolitan regions. Tyrwhitt was drawn to the ideas of the Metabolists on collective form and of Buckminster Fuller on general systems theory, which formulated her theoretical and geometric models for rapid growth as part of ACE's study of the City of the Future. Her proposition of a dynamic system "of regional planning to guide urban growth into a polycentric constellation"²¹ backed Doxiadis's concepts of 'anthropopolis' (city for human development) and 'ecumenopolis' (worldwide city)²² which, in their schematic sense, became widely accepted as sustainable patterns of development. (Fig. 4)

At the same time, Tyrwhitt joined the planning committee of the Delos Symposia, an idea for a CIAM's informal offspring to promote Ekistics that she had discussed with Doxiadis since 1958, but was only realized in 1963 thanks to her organisational skills and international high-rank academic, governmental and institutional contacts. This experiment resulted in the Declaration of Delos for the establishment of Ekistics as the new discipline of human settlements by the Group of Delos, whose scientific agenda, organization and advocacy through the Ekistics journal was assigned to Tyrwhitt.²³ By managing successfully the Delos Symposia and the Ekistics Documentation Center for the implementation of the Ekistic Grid, a classification system she contextualized within a broader discourse on standardization of planning concepts and the use of matrices for cross-referencing, she placed Doxiadis



Figure 4. Jaqueline Tyrwhitt addressing a meeting at ACE including Hasan Fathy (left at the table) and Constantinos Doxiadis (right), discussing the City of the Future project. City of the Future (COF) meeting (Photographs 33482) e © Constantinos and Emma Doxiadis Foundation

in a lineage of the great contributors to the modern urbanist discourse after Geddes (Notation of a Life Diagram) and Le Corbusier (CIAM Grid).²⁴ In 1969, when she officially resigned from Harvard to spend her late years in Athens, the UN publication of the Symposium on the Planning and Development of New Towns, which she had co-authored, acknowledged Tyrwhitt's multiple commitments as Professor of City Planning and Urban Design, Harvard University, United Nations Consultant and General Secretary of the Athens Center of Ekistics.²⁵

Tyrwhitt's time at the ACE was the last chapter in a lifelong dedication to implanting her practical, creative flair to countless receptive minds. "It's so grand to see your own ideas emerging in someone else's words," she once wrote in her diary, "—suddenly grown and clothed and mature, when you'd felt them wee and naked."²⁶ However, one should not misinterpret her words as mantled insecurity. Tyrwhitt's acute awareness of her most striking quality as a modern pioneering woman was manifested in her answer to a student's question asking why she had never set up her own practice. "She replied that she had come to think of herself as a 'catalyst' rather than as a practicing architect or town planner, one who, while not herself changing, makes vital chemical changes in others."²⁷ More than her planning ideals of globalisation, recentralisation and humanisation, Tyrwhitt's group ethic and discrete presence have defined the anthropocentric and practicable view of the world she sought to instill in the shaping of post-war planning and urban design.

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Notes

- 1 Fumihiko Maki et. al., "Harvard Graduate School of Design News, The Harvard years, 1955–1969," *Ekistics* 52, No. 314/315 'MARY JAQUELINE TYRWHITT: In memoriam' (Sept/Oct. – Nov./Dec.1985): 436.
- 2 Paola Zanotto, "Planning Education by Post: Jaqueline Tyrwhitt's War Correspondence Course," in *MoMoWo: Women Designers, Craftswomen, Architects and Engineers between 1918 and 1945*, eds. Marjan Groot, Helena Seražin, Caterina Franchini and Emilia Garda, (Ljubljana: Založba ZRC, ZRC SAZU, 2017), 147.
- 3 Inès Zalduendo, "Jaqueline Tyrwhitt's Correspondence Courses: Town Planning in the Trenches," in *Harvard University Graduate School of Design Special Collections*, (Cambridge, MA: Harvard University Press, April 2005), 4. According to Shoshkes, the research agenda that Tyrwhitt set up for the Association of Planning and Regional Reconstruction included regional planning, industry, agriculture and nutrition, services, population, housing and recreation, health and education, and uses of waste. Ellen Shoshkes, *Jaqueline Tyrwhitt: A Transnational Life in Urban Planning and Design*, (Burlington, USA: Ashgate, 2013), 52.
- 4 Zalduendo, *op. cit.*, 8.
- 5 Shoshkes, *op. cit.*, 53.
- 6 Shoshkes, *op. cit.*, 54. Tyrwhitt provided her editorial skills in the publication of Geddes's work in India with an introduction by Eric Mumford asserting that "the tasks that [Geddes] undertook as a solitary thinker and planner have become the collective task of our generation." Ellen Shoshkes, "Jaqueline Tyrwhitt: a founding mother of modern urban design," *Planning Perspectives* 21, no. 2 (July 2006): 184.
- 7 CIAM 8, Hoddesdon, "Summary of Needs at the Core," in *Architecture Culture 1943–1968: A Documentary Anthology*, ed. Joan Ockman, (New York: Rizzoli International Publications, 1993), 135–136.
- 8 Eric Mumford, *The CIAM Discourse on Urbanism, 1928–1960*, (Cambridge, MA: MIT Press, 2000). The "sense of community" became ever since one of the main requirements in urban housing developments in European and American cities that defined their spatial, social and economic planning.
- 9 Ellen Shoshkes, "Mid-century Modernism: Jaqueline Tyrwhitt and the Village Centre at the 1954 International Exhibition of Low-cost Housing in New Delhi," *Traditional Dwellings and Settlements Review* 24, no. 1 (Fall 2012): 14.
- 10 Tyrwhitt, Jaqueline, Sert, Jose Luis and Rogers, Ernesto Nathan, *CIAM 8. The Heart of the City: Towards the Humanisation of Urban Life*, (New York: Pellegrini and Cudahy, 1952).
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- 12 This was according to Tyrwhitt the legacy of the great teacher Gandhi. *Ibid.*
- 13 *Ibid.*
- 14 Ellen Shoshkes, "Jaqueline Tyrwhitt: a founding mother of modern urban design," *Planning Perspectives* 21, no. 2 (July 2006): 179–197. See also Panayis Psomopoulos, "Jaqueline Tyrwhitt and the Athens Center of Ekistics," *Ekistics* 52, no. 314/315 'MARY JAQUELINE TYRWHITT: In memoriam' (Sept/Oct. – Nov./Dec.1985): 442.
- 15 Constantinos A. Doxiadis, *Ekistics: An Introduction to the Science of Human Settlements*, (London: Hutchinson & Co, 1968).
- 16 Shoshkes, *Jaqueline Tyrwhitt: A Transnational Life*, 112.
- 17 *Ibid.*, 115–7.
- 18 *Ibid.*, 204.
- 19 *Ibid.*, 191.
- 20 Jaqueline Tyrwhitt, "Preliminary research into uses of house plots by the new regional planning school in Indonesia," *Ekistics* 52, no. 314/315 'MARY JAQUELINE TYRWHITT: In memoriam' (Sept/Oct. – Nov./Dec.1985): 434–5.
- 21 Shoshkes, *Jaqueline Tyrwhitt: A Transnational Life*, 207.
- 22 Constantinos A. Doxiadis and Giannis G. Papaioannou, *Ecumenopolis: the inevitable city of the future*, (New York: Norton, 1974) and Constantinos A. Doxiadis, *Anthropopolis: City for Human Development*, (Athens: Athens Publishing Centre, 1974).
- 23 Shoshkes, *Jaqueline Tyrwhitt: A Transnational Life*, 210–2.
- 24 *Ibid.*, 213–4.
- 25 United Nations, "Planning of Metropolitan Areas and New Towns 1969," *Conference Proceedings: United Nations Symposium on the Planning and Development of New Towns, Moscow, August 24 – September 7, 1964*, 255, (New York: United Nations, 1969).
- 26 Shoshkes, *Jaqueline Tyrwhitt: A Transnational Life*, 61.
- 27 *Ibid.*, 59.

Teresa Almendra's House of Oz and the expansion of the modern

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In the 1980s, in Ubatuba, on the shore of the state of São Paulo (Brazil), the architect Teresa Assoreira Almendra (1943, Angola) built what is believed to be her most accomplished work: the House of Oz. With a personal and professional path developed mainly in Angola and Portugal, the architect and interior decorator achieved, in this work, an intense dialogue between space, materiality and nature. Designed and built after Almendra left Angola, it allowed the architect to re-encounter a tropical context that was natural to her. Therefore, both as an architectural proposal and in a biographical sense, this work can be read as a personal synthesis of her African and European experiences, reinvented in Brazil. The goal of this proposal is to assess the particular condition of producing houses in their context. Methodologically, the work gathers relevant historical and architectural material – including drawings, texts, interviews – setting them in opposition and dialogue, in a critical perspective. Built in 1984, the House of Oz, which overlooks the beach, was commissioned by a Portuguese couple, who gave the architect complete freedom. Called Oz because of the importance given to its paths, these constitute an anchor between everyday life and the surrounding natural territory. For Teresa Almendra, the poetics of the place was underlined by the tracing of these crossings, where paths, passageways, galleries and bridges underpin domestic holiday life, forging a generous relationship with the enveloping forest and beach. In the House of Oz, architecture and decoration form a single entity, shaping family activities.

Alongside the understanding and contextualization of the house, there is the perplexity of seeing a house with such architectural value be neglected within the historiography of Portuguese architecture: by mapping presences, we identify the glaring void of absences.

1. Introduction

When we look at the existing bibliography on the history of architecture in Portugal, we come across an absence of women architects that does not differ from the international panorama of the history of architecture.¹ The same is true of retrospective or current exhibitions, interviews and public events that perpetuate a hegemonic architectural culture.² Studies that focus on the contributions of women architects to the history of the discipline are on the rise. Among other things, they strive to fight this imposition of invisibility.³ One of the main difficulties of this research is the identification of women architects

and the mapping of their works, given the silencing to which they are subjected. One of the methodological strategies that aim at overcoming this difficulty is the use of the so-called 'snowball' method, whereby it is possible to slowly gather, through interviews⁴ and references, those elements that the bibliography and the archives do not show. The Portuguese architect Teresa Almendra⁵ and her extensive work belong to that genealogy of discoveries.⁶

The House of Oz was built in Ubatuba in 1984, on the Brazilian shore. Within the Portuguese architecture panorama, it can be viewed as a way to understand how the various tensions that result from the complex conditions of historical and geographical influences are solved. This article intends to contextualize and dialogue with this house, as well as to give visibility to the author.

In the late 1970s, Portugal tried to create a social and economic context that would turn its back on the Estado Novo conservative dictatorship, the colonial empire and poverty.⁷ The country saw the path to modernization and development in Europe. In the field of architecture, this meant an expansion of references, models and answers, alongside an attempt to consolidate the idea of what (so-called) Portuguese architecture could be.

From these premises, we will intersect the architect's personal and professional history with the history of the commission, design and materialization of the House of Oz, where the encounter of Portuguese, Angolan and Brazilian territorial and architectural cultures is crucial.

2. Teresa Almendra: An introductory biography

Teresa Almendra's personal and professional life (Angola, b. 1943) is characterized by geographical and cultural multiplicity, the combined training in interior design and architecture, and a diversity of commissions for various programs. She completed a course in Interior Design at the Ricardo Espírito Santo Silva Foundation,⁸ in Lisbon, in 1967. Upon her return to her native country, and until 1974, she worked as an interior decorator and architect for the Espírito Santo family and other private clients, designing hotels, restaurants, bank agencies, shops, and villas.⁹

With the Revolution of 25 April 1974, and after the independence of Angola, Teresa Almendra returned to Lisbon. With six small children and a day job, she took evening classes of Architecture.¹⁰ After receiving her degree in Architecture, she opened an office together with her former professor, Joaquim Brazinho. In 1983, they were featured in the "After Modernism" exhibition, in Lisbon, where only 10% of participants were women,¹¹ which shows the extent to which Portuguese women architects and their work were removed from the public sphere. Later, she opened a studio under her own name.¹² The diversity of scales in which it operated, including urbanism, architecture, interior design, decoration, and object design, as well as a large workforce (reaching 25 workers in the 1990s), accompanied the rise of the studio.

She left in Brazil the work with which she identified the most. The House of Oz constitutes a moment of rupture and apparent simplicity, going against most of her production characterized by decorative and architectural narratives that can be described as post-modern. Also, the opportunity to design and build the House of Oz in Brazil, in that particular moment, allowed her to go back to nature, with which she had lived in close proximity in Angola. The architect remembers Angola as more cheerful and culturally open than Portugal and, in a certain way, Brazil gave her back that foundational experience.

For the family formed by António José Louçã Pargana¹³ and Maria das Dores Pargana,¹⁴ the architect designed villas and apartments in São Paulo and Ubatuba, in Brazil, New York, in the U.S., and Vale do Lobo, in Portugal. The Ubatuba commission was a holiday residence in a tropical context, a privileged spot between the beach and the forest for São Paulo's elites.

3. The House of Oz: An idea of immersive architectural proposal

"The House of Oz"

I have always believed in the Genius Loci.

It is that strength conveyed by places that can lead us to the search of the "Magical Oz".

This house is a path – a path with bridges, squares, viewpoints. Sketch by sketch, I found the courage to assume it as it is: archaic but current, reserved but shocking!

It stemmed from that place, as if it had always been there... therefore, it cannot be associated with a certain architectural style or trend.

It pulsates in harmony with the place, another self, ancient dreams... memories of another country!

Mysterious walk!

It might not be a house, it might not be anything...

Scarecrow, fierce lion, tin man...

But it is

Because what I feel is that far away, by the sea, in the middle of the forest, I replanted roots, not even caring if it's spring! (Fig.1)¹⁵

Implanted by the beach, in a luxuriant tropical environment, the House of Oz constitutes a design without restrictions. From the legacy of classical architecture, the clear forms of the two main volumes arise, punctually interspersed with wood elements and small subtractions and add-ons. If the contact with the ground is frank and complete, the gable roof stands loose and is supported by raw and elegant columns built with tree trunks.¹⁶ The covering hovers protects the volumes, a light and loose presence, which fits perfectly into the tropical context that surrounds it (Fig.2).

If the understanding of the house can be broadly described by the inhabited volumes and the horizontal plane of the covering, the construction of the proposal carries the poetical intensity of opposites: between the apparent simplicity of the whole and the complexity of the different elements that

compose it. The articulation of domestic life is made, as the architect mentions in the descriptive memoir, as a “path – a path with bridges, squares, viewpoints”. These lines/plans of circulation link, permeate and expand the life of the inhabitants, in a balanced interplay between lightness (since they are suspended) and the coherence and articulation that they provide to the whole.¹⁷

In these visual interpenetrations, framed by the masses and the horizontal plane, Nature appears and becomes omnipresent: the beach, the sea, and the green mass of the surrounding forest (**Fig.3**). While in other Teresa Almendra's

creations, impressive artworks organize the spaces, in the House of Oz the main guiding motif of the project is the unique and intense Nature of this place.

On the ground floor of the cylinder, we find the living room, and on the upper floor the master bedroom, with its own bathroom and balcony. Outside, the stairs that envelop this volume provide independent access to this bedroom. The parallelepiped-shaped volume has a large kitchen with a dining area on the lower section and other bedrooms on the upper floor.¹⁸ The connections between volumes, on the same level, are made by passageways that extend into galleries on the upper floor.

Everyday life's needs found answers through an architecture proposed in a continuous and almost ludic way. By the unfolding of the architectural elements – floor, walls, ceiling –, the furniture pieces that complement the spaces arise. Folds and rigorous movements of wood expand the hollow, endowing it with the completeness that is intended. Tables, benches, beds emerge from what is, strictly speaking, architecture. In the House of Oz, Teresa Almendra proposes

a continuum between the architecture and the intervention of interior design: everything is a gesture, action and materiality in intimate complementarity. The various paths, movements and crossings, on the one hand, dismantle the rigidity of the base-volumes and, on the other hand, unfold into opportunities to welcome everything that we expect a house to allow, promote and shelter (**Fig. 4**). The supposed harshness and imposition of fixed furniture is counteracted by the vastness and openness of spaces, where views and air prevail.



Figure 3. Teresa Almendra, House of Oz, Ubatuba – São Paulo, Brasil, undated, ground floor plan. © Rita Almendra's personal archive.



Figure 4. Teresa Almendra, House of Oz, Ubatuba – São Paulo, Brasil, undated, the relationships between the interior and the exterior. © RTP Arquivos.

Therefore, the House of Oz intersects the clarity of volumes overlooking the beach with the approximation to a late modern that closely dialogues with the place – as Teresa Almendra mentions when she summons the *genius loci* –, but it also tries to achieve the historical dream of the total artwork. Teresa Almendra's decisions for the House of Oz intersect different times and references, besides mixing different geographies: Angola, Brazil and Portugal.

The general ignorance about this house led us to try to understand the way it was publicized at the time. In the realm of interior design, the house appeared in several publications in the late 1980s.¹⁹ In Brazil, the house was featured in *Casa Vogue*, in 1988. Entitled "The Softness of Architecture", the article introduced the architectural proposal, describing it as a "daring and simple project, in the style of new Portuguese architecture". It also highlighted that the Portuguese architect was enchanted by Brazil's weather and nature. Interestingly, in the brief text written by Teresa Almendra, she identified herself as an architect linked to Africa: "Once upon a time, there was a woman architect from Africa" who designed a house as a journey, "a path with bridges, corners and squares".²⁰ A year later, the house is shown in *Annual of Interior Design/2. European Masters*, which features creators from all over the world.²¹ This publication contained the most information about the house.

In the 1990s, within *Sintra First Architectural Triennale*, the House of Oz is presented by Teresa Almendra in the “Home: The Poetics of Dwelling” competition.²² Counting on an international jury, 57 housing projects were proposed, with various typologies and a few built houses.²³ The House of Oz appears in the catalogue in a single black and white photograph – the façade overlooking the beach, the two volumes with a covering, the passageways, and the columns made of rough trunks. There is no indication, however, that this publication contributed to the general knowledge of the work.

4. Final notes

As a white woman from the upper class, Teresa Almendra initially moved in a very particular Angola. Upon her return to Portugal, she faced conservativeness and persistent greyness. The opportunity to design the House of Oz in the luxurious Brazilian coast allowed her to relive her previous intense tropical experience. With the House of Oz, Teresa Almendra followed the holiday home program, but above all, she realized the pleasure of designing in close dialogue with a vibrant nature. Free from constraints – of typological embedding and client expectations – the architect interweaved, like never before, the many triangles in which she moved. The geographical, with the relationship between Angola, Portugal and Brazil. The architectural culture, with the light-colored volumes, the presence of the place, and the immersive architectural proposal. But also, the material, between the crude textures, the common construction materials and the ethereal dimension, the air that vigorously occupies the houses of the house. In the beginning of everything, there is nature, which dialogues with the House of Oz as a visceral artwork.

In Teresa Almendra’s professional path there is a surprising paradox: a vast built work, in part because of an unequivocal proximity to the elites, but also a lack of knowledge and recognition of her work and path. There are many reasons that can explain this invisibility, which we will present here as hypotheses to be studied in the future.

On the one hand, her long path as a woman architect who built her studio and career alone. We cannot forget that in the 1980s, women architects still worked in a male-dominated world and those leading their own studios were rare.

On the other hand, Teresa Almendra’s initial education as an interior designer, when seen from the perspective of architecture, may carry with it the stigma of a “lesser-than” activity, both artistically and technically. In other words, instead of expanding and strengthening her knowledge and skills (which it did) as an architect, it might have irreparably linked her the professional elitist idea of a “lesser-than” architect.

Finally, a significant part of her work is made up of so-called “houses of ostentation”, spatial representations of the power of the elites that

commission them. Moreover, another type of elite, formed by her colleagues, must have undoubtedly viewed Teresa Almendra's work as so-called "commercial" architecture, and thus irrelevant to the development of architectural culture, in Portugal or abroad. The knowledge about the House of Oz should represent a rupture in this (public and peer) non-recognition, allowing Teresa Almendra's exceptional proposal to be part of Portuguese architectural culture and History.

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- Interview with Rita Almendra within the W@ARCH.PT project, by Patrícia Santos Pedrosa. 13 February 2022.
- Interview with Teresa Almendra within the W@ARCH.PT project, Lisbon, by Patrícia Santos Pedrosa and Lia Gil Antunes. 15 July 2020.

Acknowledgements

This research and the translation of this article was supported by Portuguese national funds through Fundação para a Ciência e a Tecnologia (FCT), under project PTDC/ART-DAQ/32388/2017.

Notes

- 1 See, among others, Arias Laurino, Daniela. 2018. "La construcción del relato arquitectónico y las arquitectas de la modernidad. Un análisis feminista de la historiografía". Tesis doctoral, Barcelona: UPC Barcelona Tech. Escola de Doctorat.
- 2 In the Portuguese context, see, for example, Duarte, Ana. 2020. "(in)Visibilidades das Mulheres Arquitectas. Eventos de arquitetura em Portugal, 2010–2019". Master's Degree in Architecture's Dissertation, UBI.
- 3 In the 21th century there has been an international proliferation of research on the history of women in architecture. In Portugal, the research *W@ARCH. PT. Women architects in Portugal. Building visibility 1942–1986*, within which this article is produced belongs to this genealogy of research.
- 4 The authors emphasize the work and support of the architect Natália Fávero in the transcription of the interview with Teresa Almendra, in the treatment of the images and in the critical reading of the text.
- 5 Born Maria Teresa Ribeiro Pinto Assoreira, she acquired the surname Almendra through marriage. After her divorce, she reassumed her maiden name, Assoreira, in a legal context. Professionally, she continued using the name under which most of her work was made: Teresa Almendra. (Interview with Teresa Almendra, 2020)
- 6 The architect João Paulo Delgado was the one who drew attention to Teresa Almendra's work and the House of Oz. When he was an architecture student, Delgado worked with her and was involved in the final blueprints of the house.
- 7 To learn more about the context of women architects in Portugal, in the passage from the dictatorship to democracy, see: Pérez–Moreno, Lucía C., and Patrícia Santos Pedrosa. 2020. 'Women Architects on the Road to an Egalitarian Profession – The Portuguese and Spanish Cases'. *Arts* 9 (1): 40.
- 8 The Ricardo Espírito Santo Silva Foundation is a private institution, founded in Lisbon, in 1953. Its double role as a museum–school has been present since its inception, and Portuguese decorative arts have always been its main focus. In this course, the students were mostly women. Almendra recalled Maria José Salaviza in particular (1925–2006). (Interview with Teresa Almendra, 2020)
- 9 According to the architect, this intense production in Angolan territory was made invisible, since the authorship was attributed to the engineers who coordinated the projects. (Interview with Teresa Almendra, 2020)
- 10 In 1981, she received her Architecture degree from Lisbon's School of Fine Arts.
- 11 Alongside Teresa Almendra, we find Margarida Grácio Nunes, Maria do Céu Barradas, Maria Manuel Godinho de Almeida and Maria Rosário Venade. (Serpa et al., *Depois do modernismo*)
- 12 *Almendra, Maria, Lda.* was located on an industrial building, in Jardim do Tabaco, by the Tagus river. (Interview with Teresa Almendra, 2020)
- 13 António Pargana "was born in Porto, studied in Mozambique and Lisbon, and got his degree in Luanda. After the 25th of April, he completed the old triangle route of the colonial empire, which took him to Brasil." (Carvalho and Pinto, 2017).
- 14 Maria das Dores Pargana is a pediatrician.
- 15 Document handwritten by the architect herself (Rita Almendra's personal archive, n/d).
- 16 The columns are 13–meters tall wood trunks brought from the Brazilian region of Rondônia. (Asensio Cerver, 1989)
- 17 Veríssimo, "Maria Teresa Almendra. RTP 2 Artes e Cultura".
- 18 Interview with João Paulo Delgado, 2022.
- 19 See the issues 40 and 43 of the *Casa & Decoração* magazine, from 1989.
- 20 "A Suavidade da Arquitetura", 1988.
- 21 Asensio Cerver, 1989.
- 22 CMS and AAP, *Jo Trienal de Arquitectura*, 57.
- 23 Only eight of the proposals came from women architects. Three of them were solo works – Teresa Almendra, Graça Nieto Guimarães and Cristina Veríssimo – and the remaining five were co–authored – Mónica Barreu, Isabel Laxximy, Maria da Conceição Melo, Cristina Salvador and Isabel Rosa.

Being-in-the-boundary.

The project of the envelope in the constellation of Suzana Antonakakis

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The Greek architect Suzana Antonakakis (1935–2020) founded the well-known Atelier 66 in Athens in the mid–1960s together with Dimitris Antonakakis. Their joint work includes housing and public buildings, but also interesting tourist and recreational housing projects. This paper aims to highlight the architectural thought process of Suzana Antonakakis on the basis of her texts and her solo work. Special attention is given to the project of the envelope: to the design of the boundary as a generator of both physical and oneiric inhabitation. In leisure architecture, the design of the boundary becomes even more expressive as it offers a multitude of dialogues with the idyllic landscape. In this sense, her work in tourist fields establishes relations with other shared approaches such as those proposed by Candilis, Konstantinidis or Díaz Llanos and Saavedra. They all also share a need to transfer arguments from popular architecture along the lines of Pikionis, Sert, Bonet, Heilbrunner, Manuel de la Peña and Luis Cabrera.

The contemporaneity of Suzana's ideological constellation is based on the hybrid nature of her approaches. On the one hand, it reflects the modernity of the Greek architectural scene of the mid–twentieth century, but at the same time it reacts to a structural organicity, always from a deep–rooted social commitment and a concern to seek in every architectural action a true local tradition, or what Riceur called *the ethical and mythical core of humanity*.

The goals of this research are to approach the architectural thought of Suzana Antonakakis, claiming the cultural process as a guideline for the project, as well as to look at the design of the envelope of these tourist projects from the concept of the boundary as a mechanism in response to environmental, social and poetic needs.

1. Suzana Antonakakis in the context of 20th century Greek architecture

The work of Suzana and Dimitris Antonakakis, like the history of Greek architecture in the 20th century, can be narrated through the adversities experienced by their people and their way of dealing with them. Two periods in particular have a special impact on the work of these architects: the between–war period, with its opening up to European modernity and the *Neues Bauen*, and the post–war period, with the building effervescence that managed to boost the economy through collective housing buildings and architecture for tourism.

On the one hand, the overpopulation and shortage of housing caused by the First World War and the arrival of refugees from Asia Minor after the Greco–

Turkish War was seen by the young Greek architects as an opportunity to put the precepts of the Bauhaus into practice: rationality, standardisation, healthiness and an austere aesthetic not only solved the problem¹ materially but also represented an identity position for modern Greece. On the other hand, the Second World War, the German occupation and, above all, the Civil War, once again put housing in crisis. It was at this time that the state devised a strategy which transferred the production of housing to private enterprise: the *Antiparochi* system, where a direct agreement was made between the owner of a plot of land and a builder, whereby the transfer of the land gave the right to one or more flats in the building constructed. Under this umbrella, from the 1950s onwards, the physiognomy of Greek cities very quickly replaced their low-density neoclassical fabric with *Polikatoikias* or multiple dwellings, most of which continued the rationalist aesthetic ideals strongly established in the inter-war period. After studying at the NTUA, Suzana and Dimitris Antonakakis founded their own architectural studio, Atelier 66, in the mid-1960s². Both also developed some *Polikatoikias* under the *Antiparochi* regime, but, apart from the difficulties that the system entailed, such as the immediacy of the process, they managed to benefit from the flexibility that it could offer. The balanced relationship between the financial capacities of the different agents established a more human relationship between owner, builder and architect, and small agreements³ were managed in this way. With this approach, they succeed in making their projects tailor-made suits, closely designed like handicraft products, intended for a social and cultural multiplicity.

Economic prosperity continues largely due to the country's openness to tourism. Numerous hotels and holiday homes were the image of the well-known "Greek miracle". Aris Konstantinidis's hotels for the national tourism organisation Xenia between 1956 and 1966 stand out for their modern, vernacular-ethic approach to design. Konstantinidis as well as Dimitris Pikionis are for this reason clear antecedents of S. and D. Antonakakis who continue this legacy while integrating universality into their local thinking, thus contributing significantly to the evolutionary drift of modern Greek architecture.

2. The boundary in the constellation by Suzana Antonakakis

One of the most vital words for architectural theory and praxis is the word boundary. Boundary is a keyword for Architecture, not an abstract notion. Every architectural expression is a built interpretation of boundaries. Every intervention in space is judged from the way of treating surfaces, volumes or building groups within bounds; from this treatment it becomes clear whether an architectural event has as its principal aims the housing of human activities, liveability and a potential poetic presence with whatever most essential and archetypal characterises poetry and links it with construction. ⁴

Designing the border between the inhabitant and the world offers the possibility of addressing multiple dimensions. In the work of Suzana Antonakakis we can understand the treatment of the architectural envelope from climatic dimensions, which balance the habitability between inside and outside, social dimensions that provide material structure to the encounters and misencounters of community life, and poetic dimensions that strengthen the feeling of belonging to a specific place in the world. In the texts in which Suzana Antonakakis records her understanding of architecture, the question of the boundary is one of the central topics. As she explains it, architecture is to be found in the ontology of the boundary itself:

*This becomes clearer by the realisation of the common root of the Greek words horismos (i.e. definition) and horio (i.e. boundary). The definition condenses the meaning of a word just as the meaning of a built area is condensed in its boundary.*⁵

The haptic dimension of the boundary

*(...) It is an indivisible whole: the man moving standing, viewing and the space containing him –anthropometric– looking at him, whilst man as another space–in–movement projects space on to himself, being simultaneously projected on it.*⁶

Suzana Antonakakis' *polikatoikia* on Doxipatri Street in Athens, is the result of understanding the body as the centre of the architectural experience, in a constant state of redefinition with its surrounding space. The project groups together different dwellings set on a plot of land between party walls on the side of a hill. The vibrant and expressive façade is the external face of the architectural limit. The anthropometric reference is present in the different situations that the project offers to the exterior: balconies, belvederes, porches, vestibules, galleries, different types of windows and enclosures. Intermediate spaces that have widened the boundary with interior life. In addition to regulating environmental needs, they offer different sensory perceptions depending on each bodily action linked to this boundary space. The dwellings are ingeniously arranged to create a double-height living space in each house, in the manner of an open Greek courtyard, where the other spaces are servants of the main living space. We could say that the living space is the space defined in itself by the architecture, and that the boundary is configured by the contours of the uses that take place on the margins of this central space. Following a sort of *Raumplan*, the server spaces respond specifically to the actions that will be carried out in them with different proportions and materiality, while maintaining a visual relationship between them all, in a spatial fluidity of a tectonic nature. This haptic perception, which the body recognises as it moves around, is enhanced by the design of the surfaces of the enclosure: walls, floors and ceilings offer a multi-sensorial

experience through the play of colours and textures both inside and outside: polished, rough, shiny surfaces, suggestive shapes and geometries, the light entering through the coloured glass of the room.... All this forms a *continuum*, which modifies our consciousness and alters the perception of space and time⁷. This is also understood by Konstantinidis and de Pikionis, who identifies: *The investigation of the local is the condition for reaching the concrete and the real, and for rehumanizing architecture*.⁸ Architectural translations of the Greek way of inhabiting are sought, but not from form but from action, which connects with thought in a phenomenological process capable of transferring the values of the biocultural past of a community through everyday actions that facilitate its architecture, thus preserving essential aspects of its identity.

The boundary, bidirectional continuous envelope

*If we agree that every inhabited outdoor space, small or large may contain in a nutshell and in a broad sense, all the meanings which are the characteristics transforming an open space into a "home", making it familiar, recognizable, a space you long for, you are nostalgic of, and to which you want to go back? On the other hand, an indoor space can have the characteristics of an open space, how can that be?*⁹

The inherited need of the Greek inhabitant to live in the open air demands spatial ambiguity as a desirable condition for architecture. An interior space must therefore convey the characteristics of an exterior one and vice versa. In the case of the projects of S. and D. Antonakakis, the exterior or urban quality is associated with movement and is one of the foundational arguments of their work. In this way, streets, interior squares and meeting areas appear that generate degrees of community and privacy, which, as Alexander and Chermayeff published in those years, would make it possible to recognise existing domains, relate hierarchies, preserve intimacy and reinterpret the functions of relationship, separation and transit¹⁰. The boundary as a continuous envelope is capable of bringing the same complexity to exterior spaces by endowing them with interior attributes. We can see how this search is continued over time through three holiday home projects: the Vacation House at Porto Heli, Peloponese, 1967, in House in Oxyliothos Euboea, in 1973 in or in House at Siphnos Island, 1985. Here the exterior elements no longer appear isolated but form an aesthetic unity, not only with the interior volume but also with the expanded landscape. (**Fig. 1**) In these three projects – intentionally categorised by them within the group of "Outdoor Landscapes" – outdoor living rooms, thresholds, unexpected views, situations of the ambiguous germinate in the line of Neutra's biological humanism. As Konstantinidis pointed out, architecture coexists with the surrounding nature in the same way that man inhabits the landscape. Man, architecture and landscape form the same ontological unity, they belong to the same reality.¹¹ In a translation of scale we find the same bidirectionality in two



Figure 1, Suzana and Dimitris Antonakakis, House in Oxylithos, Euboea, 1973. Credits: Atelier 66, Dimitris Antonakakis

major tourism projects. These are the Hydra hotel in Hermionis, 1965, and the Lyttos hotel in Hersonissos, Crete, 1979. They are very different projects, but they are both complex and flexible projects that seek, from an open mesh, to generate a dynamic organism rather than a closed form¹². **(Fig. 2)** A network of interconnected spaces is thus formed, reacting to the spatial or contextual conditions encountered. Again, private streets, interior squares, intermediate spaces with the body as scale. Continuous transfer from inside to outside, contamination of public life in private life, spaces that promote socialisation. A reciprocity as vital to architecture as the human breath that flows in and out of the organism, as Aldo van Eyck suggested. The result is warp buildings: architectures where the permeability of the limit transforms the object into landscape.

The boundary, the place to live

*What is the Mediterranean? It is one thousand things at the same time. Not one landscape but innumerable landscapes. Not a sea, but a succession of seas. Not a civilization, but civilizations amassed on top of one another.*¹³

The boundary is the place where the person and the world meet, has the capacity to provoke emotion, to create a poetic atmosphere where the continuity of certain timeless elements generate an envelope that connects body, space and memory, placing the inhabitant in a relative position within a mental constellation of his or her own. The boundary is then transformed into an existential space, from which to be an active part of an integral landscape.

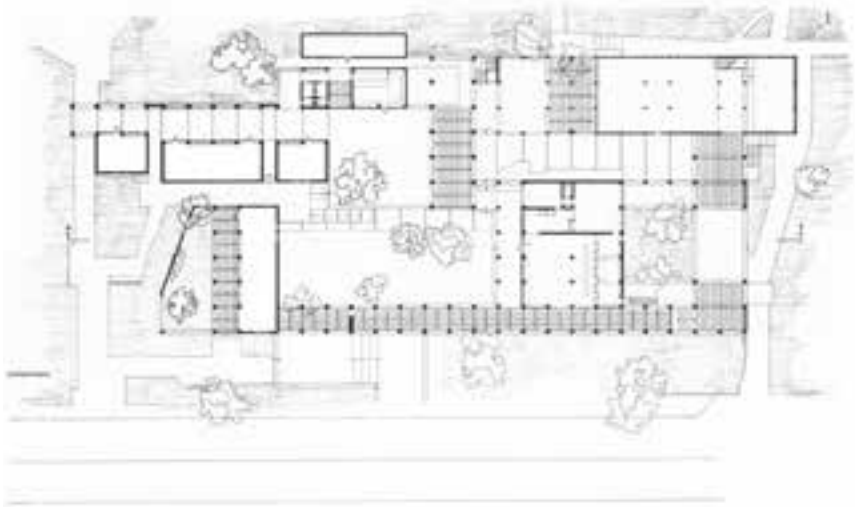


Figure 2, Suzana and Dimitris Antonakakis, Hydra Beach Hotel, 1965. Credits: Atelier 66

Inhabiting this border concentrates the experience of what Merlau-Ponty defined as Being-in-the-world. It is a holistic perception where the senses do not perceive separately but experience a global image: Rilke points out that this experience is similar to that of creating an authentic work of art, that is to say, a condensed product from the decantation of experiences accumulated over time¹⁴. **(Fig. 3)** In this way, at the limit, one inhabits a “curdled time, a multiple time” to use Madieri’s expression, where a reality is never only the present *but a labyrinth of different times and epochs that intertwine in a landscape and constitute it*¹⁵.

*These timeless elements return perpetually, often renewed after their travels around the world, and are the birthplaces of architectural appearances that are fruitfully adapted to different local and cultural contexts.*¹⁶

From the Mediterranean vernacular we recognise in her a sensitivity to form and organisation: open, ambiguous interior spaces reminiscent of Hellenistic houses on Delos¹⁷, also in her use of colour to frame the structure, highlight or give importance to different parts of the rooms in cheerful colours. This Greek polychrome tradition is continued by Suzana, for example, at Doxipatri. The use of mosaics also contributes to the final effect of the space. Geometric patterns play to underline relationships and trajectories, as in the courtyard of the Lyttos Hotel. A continuity of the essential elements of Greek architecture that is not necessarily linear but transmutes back and forth. *It is not by chance, says Magris, that the journey is above all a return and teaches us to inhabit our own home more freely and poetically*¹⁸. Pikionis understood and expressed it

in the same way in his architecture and his texts, clearly visible in the project of the Philopappos path. His architecture has elements subtly adapted to the principles of modernity, but at the same time, it approaches the vernacular to offer us images as if transferred from another time, symbols that sink into popular tradition and are reinterpreted to experience belonging to that place. (Fig. 4)

3. Conclusion. Being-in-the-boundary

The paradigm shift that involves understanding the boundary as a realm rather than a line, as an inhabited threshold rather than a border, expands the capabilities of architecture into multiple dimensions. In the thought process observed in the writings and work of Suzana Antonakakis, phenomenological, sociological and anthropological arguments that respond to physical, social and poetic needs respectively are interwoven around the boundary.



Figure 3, Suzana and Dimitris Antonakakis, Vacation House at Porto Heli, Peloponese, 1967. Credits: Atelier 66, Susana Antonakakis



Figura 4, Suzana Antonakakis at the House in Oxyliothos. Credits: Atelier 66, Dimitris Antonakakis.

*However, tradition – as Seferis writes – does not mean the enumeration and recitation of ancient titles, but works that live on and fertilise the creative imagination of those alive today.*¹⁹

In Suzana Antonakakis' imagined house there is a Greek house, infinitely conjugated. A condensation of times and experiences that are pressed into the contours of the architecture, at its boundary. Different times coexisting, which provoke transfers of thought, like electric currents that transfer images between past and future worlds coinciding at the moment of the experience itself. A continuous process of creation through which one manages to "read what has never been written"²⁰. An unprecedented reading with meaning and density that expands knowledge and enriches culture.

The collective Mediterranean imaginary is consciously²¹ cultivated in order to open it up to universality. Therefore, the contemporaneity of the design process lies in the capability of its architecture to process the existing reality, present or latent, in a project that reveals a more visible, more intense existence. *By experiencing the boundaries, we displace our confines. Later we will find them again, they will reappear full of meaning, but they will be further away. We will have surpassed them.*²²

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Notes

- 1 The clearest example was the school programme of the 1930s, when more than 4000 schools were built under the rationalist canons throughout the country between 1928 and 1937.
- 2 The presence of Greek women architects was very discreet during the 20th century and before the 1960s few founded their own studios. Most of the female graduates in the post-war years worked for the administration, as in the case of Elli Vasilikioti at the Ministry of Public Works, where she developed important projects such as the Assymatos Building in Athens, or Maria Zagorisiou with her interesting contribution to the conservation and transformation of traditional architecture for tourist use within the Hellenic Tourism Organization. Although the first woman enrolled at the NTUA School of Architecture in 1918, it was not until the 1940s that the number increased significantly, a period in which Anastasia Tzakou also graduated. She was the first female Professor at the NTUA School of Architecture in 1981. "Digital archive of Greek female Architects 1923–1981" Sadas Pea–Attica Department, accessed 2022, <https://www.femarch.gr/en/>
- 3 Dimitris Antonakakis, Suzana Antonakakis "Apartment houses in Athen. The architect's role". *Architecture in Greece*, 12, 1978, 151–153.
- 4 Suzana Antonakakis, "Boundary–Peras–Transition", 1995 <https://a66architects.com/writings/boundary-peras-transition/>
- 5 Ibidem.
- 6 Suzana Antonakakis, "Indesem", 1988, <https://a66architects.com/writings/indesem/>
- 7 Steven Holl, *Cuestiones de percepción. Fenomenología de la arquitectura*, trans. Moisés Puente. (Barcelona, Gustavo Gili, 2011), 27.
- 8 Kenneth Frampton, *Modern architecture: a critical history*, London, Thames und Hudson, 1980, 326–327. Other architects in the Spanish tourist context like Erwin Heilbrunner, Antonio Bonet, Josep Lluís Sert and also Manuel de la Peña and Luis Cabrera in Canary Islands approached the biography of the place in the same way. Rocío Narbona Flores, "La arquitectura del paisaje turístico de Canarias y la definición de sus elementos cartográficos". (PhD diss., Universidad de Las Palmas de Gran Canaria, 2017). 148–150.
- 9 Suzana Antonakakis, Op.cit., 1988
- 10 Serge Chermayeff, Christopher Alexander, *Comunidad y privacidad: hacia una arquitectura humanista*. Buenos Aires, Nueva Visión, 1963.
- 11 Aris Konstantinidis, *Aris Konstantinidis, Projects + Buildings*, Ekdoseis Agra, 1992, 261.
- 12 It shares characteristics with the mat-building successfully applied as a typology for the emerging tourist activity. In France, for example, Candilis, Josic and Woods in the holiday complex of Leucate–Barcarès, Languedoc–Rousillon or in the Canary Islands in the cases of the TenBel groupings between 1964 and 1980 by the architects Javier Díaz Llanos, Vicente Saavedra and Luis Cabrera in Tenerife or in the Hotel Oasis, 1965 by José Antonio Corrales, Ramón Vázquez Molezún and Manuel de la Peña in Gran Canaria. Rocío Narbona Flores, Op.cit., 56–62.
- 13 Fernand Braudel, *La Méditerranée, l'espace et l'histoire*, Paris, 1977, 7. In *Modern architecture and the Mediterranean. Vernacular dialogues and contested identities*. Routledge, 2010, 16.
- 14 Juhani Pallasmaa, *Habitar*, Trans. Álex Giménez Imirizaldu (Barcelona, Gustavo Gili, 2016), 65.
- 15 Claudio Magris, *L'infinito viaggiare*, Milán, Arnoldo Mondadori Editore, 2005, 19.
- 16 Suzana Antonakakis, "Αρχιτεκτονική και παράδοση", (Architecture and Tradition) 2007. <https://a66architects.com/writings/αρχιτεκτονική-και-παράδοση/> Translation by the author
- 17 Rex Distin Martiensses, *La idea del espacio en la arquitectura griega*, Spain, Ediciones asimétricas, 2020, 99–111.
- 18 Claudio Magris, Op.cit., 12
- 19 Suzana Antonakakis, Op.cit., 2007
- 20 Walter Benjamin, *Libro de los pasajes*. Madrid, Akal, 2005
- 21 Kenneth Frampton, Op.cit., 319
- 22 Paolo Bürgi, *Landscapes+ 100 palabras para habitarlo*. Barcelona, Gustavo Gili, 2007, 62

S15

Women in Architecture

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Carmen Martínez

DISEÑO DE INTERIORES, ESCUELA DE ARTE Y SUPERIOR DE DISEÑO DE VALÈNCIA

Our session deals with the role of women in the architecture of the Modern, which has been ignored for many decades by historiography, both in those cases in which the authorship should have been joint, as in the specific collaborations in certain aspects of the works. While it is true that the construction of the myths of the modern also eluded the role of any collaborator to magnify the figure of the leading architect, this is accentuated when they were women. The current academy is not only recovering the role played by women architects but also the role played in architecture by professionals with different specific training and who have determined many significant aspects of architectural works.

History has shown us how the role of women in architecture, interior design, design, urban planning or landscaping has been relegated to the background or has been made invisible directly, as these disciplines were considered to be the domain of men. The authorship of the collective creations of a couple was naturally awarded to the “head” of that unit, the male figure. Probably until Zaha Hadid, and we do not really know what her internal dynamics were like, this had never been reversed. Nowadays more and more women are leading studios, designing spaces and buildings and making decisions about the city, reclaiming the equality that had been lost for years.

We have gone from only male Schools of Architecture, Matilde Ucelay was the first woman architect in Spain, to a universe in which they already exceed 50%, by far, in our great schools.

Textiles are the focus of Anni Albers’ work at the Bauhaus, first as a student and second as a teacher in charge of the textile workshop inherited from Stolz. As has happened with so many other women, this dedication led her to be an innovative pioneer, not only formally, but also from the technical point

of view. It is these technical solutions, unexpected by the male universe, that attract the attention of her colleagues. Recall the tradition of women inventors who are usually known for other aspects of their work, such as actress Hedi Lamarr.

Anni Albers is a great example of how to make textiles play an important role in modern architecture and, as Constanze Sixt shows in her contribution, Albers defended that textiles for interiors could become architectural elements with the added advantage that, compared to other constructive elements, textiles are dynamic. A good example of this is the collaborative work that the designer developed with architect Philip Johnson for the guest house of MoMA patron Blanchette Rockefeller in New York, where the textile fulfills two functional requirements: creating privacy and, at the same time, highlighting the space. But, in addition, the textile adds improvements in the conditioning of the space, helping in its acoustic attenuation and generating reflections that give the fabric its own light at night.

It is remarkable to see in the quotes collected by Sixt the approach of Anni Albers to her project. It is not the designer's ego that leaves its mark, but the protagonist is the object that she unveils, which she brings to life, deliberately occupying an intermediary role, not putting her own identity first to let the object's potential lead the design process.

These papers reveal transversally how it is the domestic universe that centers the work of our creators, the redoubt in which they are allowed to act, the everyday scale in which materials, colors, textures are the protagonists that define the third skin of the individual beyond their own skin and clothing, a terrain also largely reserved for them. But the level of the heroic elements of Architecture continues to be led by men, as in the case of Mies van der Rohe and Lilly Reich or Le Corbusier and Charlotte Perriand, which is studied by Melgarejo in her paper as well as by so many others that are emerging in the world of academia from the different roles played by Alvar and Aino Aalto, or the furniture of Barragán's houses that are made in collaboration with Clara Porset. Women had been relegated to the background because they were dedicated to the minor or decorative arts, which, on the other hand, dominated because of their gender condition at that time in history, and although their value was recognized within the architecture of the mid-twentieth century, they were not placed in the role that corresponded to them until much later.

Hervás y Heras explains how at the Bauhaus, at the beginning, the presence of women in textile workshops was limited, where some of them took refuge because they were in the comfort zone of the two-dimensional. However, it was Gunta Stölzl, their teacher, who turned them into true textile engineers, researching new materials and leading them towards standardization.

Summarizing what architect Carme Pinós, winner of the Spanish National Prize of Architecture 2021, said in her interview on Televisión Española (Spanish public TV channel) architecture is art because of its will of transcendence, but it really solves everyday life.

It must be designed on equal terms and for all groups, understanding everyone as equals without distinguishing between gender, race or functional capacity, with inclusion as a starting point.

The works reflected in the papers were developed in the domestic domain or in the immediate scale, such as the pavilion designed by Mies van der Rohe for the Barcelona exhibition, with furniture and textiles, carpets and curtains, defining the central space in which the Kings would be located, at the same level as the exquisite textures of its walls. Or in the same way how furniture and textiles modulate the spatial elements of the void of the Tugendhat, as well as the textures of the walls.

The flexibility and transformability of modern space was built into iconic examples with these elements. The importance of furniture and textiles as defining elements of space in the successive works in which Reich and Van der Rohe collaborate is reminiscent of the earlier work of Margaret McDonald and Charles Rennie Mackintosh.

Other women, although with a background not directly related to architecture, influenced it thanks to their personal relationships with the architects who signed them. This is the case of Pauline Gibling Schindler, wife of the Viennese architect Rudolph M. Schindler, who designed his own house, the Schindler House in Los Angeles, with the invaluable contribution of the composer. The couple began their life together in Frank Lloyd Wright's studio in Taliesin, Wisconsin, where he worked. And Castro Marcucci points out how she was involved in the work of Wright's studio with her writings, highlighting the influence that the natural context of Taliesin exerted on the development of project ideas, and how this influenced the way in which the Kings Road house, of great constructive simplicity, knew how to understand the needs and possibilities of the Los Angeles environment, becoming an icon of modern California architecture.

For years women have not been present in the important debates of the city because it was men who occupied positions of power. Only in exceptional cases, as Josenia Hervás y Heras explains, such as that of Wera Meyer-Waldeck and her colleague Annemarie Wilke, outstanding students of the Bauhaus, when Mies van der Rohe became director of the school they were able to finish their studies in the workshop that allowed them to learn to design buildings and even neighborhoods, such as the colony for Junkers workers in Dessau. This would allow the former to end up collaborating in the Berlin office of the director Hannes Meyer or Wilke in Hilberseimer's studio.

Today the situation has changed, in fact, the number of women in positions of responsibility is increasing, although there is still a long way to go.

The gender perspective is important when it comes to design, as history shows. This femininity must sometimes be used as a creative weapon because the project requires this sensitivity, projects conceived by women and for women. Let us learn from those women who, not without great difficulty, produced with their work great works of modern architecture and let us maintain their legacy by taking it to its rightful place.

The silent gesture. Pauline Gibling Schindler in modern architecture

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The silent gesture is a research work which aims is to visibilize the work that Pauline Gibling Schindler did in the early 20th Century. Her influence is mainly located in Los Angeles, California (United States), specially during her time married to R.M. Schindler, and in support of her progress and political ideas.

Since the publication of her epistolary archive, it was possible to identify episodes in art and architecture history in which she had direct participation (Sweeny: 2001). After learning about her actions and pondering her involvement, it is necessary to re-read three specific moments, 1) her life in Taliesin alongside Frank Lloyd Wright, 2) the events leading up to the construction of the Kings Road's house and subsequent life in it, and 3) the Neutra's arrival in the United States.

In Gibling Schindler's trajectory, there are events after Schindler's separation and her departure from Kings Road that are important, such as her work in publishing The Carmelite, her relationship with John Cage and the founding of Friends of Schindler House (FOSH). However, the paper will focus on the three points mentioned above, as they closely accompany the birth of the California modern architecture and the careers of three modern architects: Rudolph M. Schindler, Frank Lloyd Wright, and Richard Neutra.

1. Introduction

This research aims to visibilize the work that the composer Pauline Gibling Schindler did in the early Twentieth Century. She promoted and marketed ideas of modernism that were omitted at the time, by the historiography of modern architecture. Most of her legacy was dedicated to trying to build a wider acceptance and appreciation of Southern California culture. Since the publication of her epistolary archive, it was possible to identify episodes in the history of art and architecture in which she had direct involvement, especially while married to Viennese architect Rudolph M. Schindler (1887–1953).

Her actions and contributions lead to a new reading, which points to three specific times in history in which her work can be included 1) The time she spent at Taliesin alongside Frank Lloyd Wright, 2) the events leading up to the construction of the home on Kings Road and its inhabitancy, and 3) Neutra's arrival to the United States in 1923. The evidence that demonstrates Gibling Schindler's influence was found brushing history against the grain and many of the facts emerged from the trajectory of her spouse between 1919 and 1927. After her separation from R. M. Schindler, and the departure from the Kings Road House, her career took a shift. Pauline worked as a publisher for

Dune Forum and The Carmelite, she had a relationship with John Cage and founded Friends of The Schindler House (FOSH), these were major events that influenced her life's disciplines.

The evidence that demonstrates Gibling Schindler's influence was found brushing Kings Road House's history against the grain and many of the facts emerged from the trajectory of her spouse between 1919 and 1927. Nevertheless, the paper focuses on the above-mentioned periods, as they closely accompany the birth of California's modern architecture, and the careers of three seminal modern architects: Rudolph M. Schindler (henceforth R.M. Schindler), Frank Lloyd Wright, and Richard Neutra.

A new narrative on the origin of the house in Kings Road is imperative. Gibling Schindler through history was only associated as the companion to her husband and was never considered a person of her own. Thomas Hines, Margaret Crawford, Kathryn Smith, and Robert Sweeny are only some of the people that have mentioned her in their writings about Schindler and the house. As this paper clarifies, Schindler House was a more complex expression of her ideas about inhabitancy, politics, and society.

However, the house went down in history under the name of Schindler House, thus automatically attributing exclusive authorship to R.M. Schindler, when in fact its original name was Kings Road, as its location refers to it.

2. Pauline Gibling before 1919

The composer Sophie Pauline Gibling was born in Minneapolis in 1893, She was raised in New York City area, and studied music at Smith College (1915) in New Jersey. From an early age, she developed social awareness and focused on community work that led to her involvement at the Hull House in Chicago, which was one of the most important settlement houses of the time since it served mostly as a roof to European immigrants. She used to work tirelessly and committed herself to different initiatives around issues that were of her interest, like music, politics, and criticism. In 1915 her father intervened as he observed the large number of commitments she undertook:

It is unfortunate that you should have repeated at Hull House the mistake you made at Smith (college) of attempting too many things, as a result of which you seem to be continually rushing from one thing to another and apparently have little time to reflection (sic).¹

In December 1918 she met R. M. Schindler and a few months later they got married². Nevertheless, it was not until the building of her house in Kings Road, that her social and philanthropic activity became more intense, and she liaised not only with architects but also with musicians, artists, and political activists, thus endorsing herself as an advocate of modernism.

Different from other women during modernity who have been completely invisible, Gibling Schindler has been present in most of the texts written about the house. Nevertheless, the participation attributed to her has been minimal and always referred to early ideas about housing. This research seeks to demonstrate that Gibling Schindler's influence transcended the conceptual since she accompanied the development of the house on Kings Road until her death.

3. Taliesin and the first ideas of Kings Road House

After the marriage in 1919, Pauline Gibling and Rudolph Schindler agreed to maintain economic and sexual independence, meaning that they could have extra marital liaisons with others³. in parallel to their life as a couple. The couple had the idea of moving to Europe months after the wedding, but the outbreak of World War I caused the marriage to remain in the United States. Rudolph Schindler, who worked with Frank Lloyd Wright from Taliesin, Wisconsin, remained in the studio and participated in the project for the Imperial Hotel in Japan.

Wright invited the couple to live in Taliesin and during that time Gibling became involved in the studio's day-to-day work. Although there is no evidence of her involvement in these projects, there are letters that Gibling Schindler wrote and sent during this period in Taliesin, as well as an essay



Figure 1. Pauline Gibling Schindler in Taliesin. © Credits: Esther McCoy Papers, Photographer: R.M. Schindler, 1920.

titled "Taliesin in 1919", in which she described her life in the studio and the contrast with the surrounding nature. In a letter to her parents, she explained:

"There are such strong contrasts, such primitive simplicity of life besides things of the highest possible finish and texture. After I have been churning butter, perhaps, or talked for a while with a lonely horse in pasture, I come back into the studio to look for a while at the model of Los Angeles buildings. Like going from folk-song to Schönberg or Debussy"⁴.

In 1920 the couple moved to Los Angeles for Schindler to attend the construction of Wright's Hollyhock House. The architect was struck by the landscapes and climate of the new city that greeted them. The change of city was an opportunity to boost his work, which led him to start an independent practice in 1921 and the construction of the house on Kings Road, although he remained working with Wright until 1923.

Gibling Schindler was closely involved in Wright's studio work, her essay is one of the few records that managed to describe and understand the studio dynamics, as well as making contributions about the influence of the natural context on the development of project ideas. "As any work of architecture may constitute a philosophy statement, so Taliesin spoke repose, –a harmonious consonance with earth."⁵

4. The kings road house and the life in it

*"(I am) grateful to you, r.m.s... for... this house, which has been so dear to me that in a way it has determined life."*⁶

Social and political ideals of Pauline Gibling Schindler and embodied in the house. This shows the beginning of R.M. Schindler's career, and subsequently, the house became an icon of California's modernism. Esther McCoy published the book *Five California Architects* (1960) and included a chapter dedicated to R.M. Schindler and the Kings Road House, putting him on the map. In 1971 Reyner Banham wrote:

Those earlier small works of Schindler's included the most remarkable design he was ever to produce the house for himself and Clyde Chase on King's Road. (...) It is a model exercise in the interpretation of indoor and outdoor spaces, a brilliant adaptation of simple constructional



Figure 2. Cover of the essay Taliesin in 1911. © Credits: Esther McCoy Papers, circa 1973.

*technology to local environment needs and possibilities, and perhaps the most unobtrusively enjoyable domestic habitat ever created in Los Angeles.*⁷

Gibling Schindler's participation went far beyond an ideological influence; she contributed intellectually and economically. She repeatedly expressed her apprehension for the house and considered it their first work together, although there is no evidence of joint authorship: "As the young architect's first independently designed building and 'our first work together,' as Pauline wrote her father, who helped finance it, the studio-dwelling was to be a background for ourselves"⁸.

In 1921, the couple began construction with the help of a loan from the bank for about \$5,000 and another loan of \$2,000 from the Giblings (Smith: 2001)

which is equivalent to 28.000\$ today. In April 1922 Gibling Schindler accepted a three-month teaching job at El Centro, California to help pay for the construction as the initial budget had been exceeded⁹. Although the financial contribution does not prove her authorship, it demonstrates her commitment to the completion of the project.

Another relevant contribution was the relationship with the Chace couple. Clyde Chace and Marian Da Camara are linked to the project through the latter's relationship with Pauline Gibling. Da Camara was a close friend of Gibling's and they had attended Smith College together. From there their friendship spanned years, sharing experiences at the Hull House and some teaching assignments during her life in Chicago. By the time the house was finished, Clyde Chase was working as an engineer alongside architect Irving Gill, who was deeply admired by Schindler.

The house became an institution that accommodated the most authentic ideas, desires, and expressions of the

avant-garde. Some of the most distinguished visitors were Upton Sinclair, Scott Nearing, Edward Weston, John Bovingdon and Marta Graham, Igor Stravinsky, John Cage, Galka Scheyer, Max Eastman, Lincoln Steffens, Aldous Huxley, Clifford Odets, Anaïs Nin, Theodore Dreiser, Frank Lloyd Wright, and the Neutra family.

In addition to being a meeting place, the house was also a refuge for many of its visitors, since in 1924 the Chace family moved to Florida and their studios were rented on several occasions by members of Schindler's circle of friends.



Figure 3. Pauline Gibling and R.M. Schindler in Yosemite, October 1921.
© Esther McCoy Papers, circa 1973.

Gibling Schindler was recognized by all as a great hostess, and the house had become a reflection of her ideas.

Between 1922 and 1924 different authors refer to the meetings and evenings at the Schindler house. Gibling Schindler continuously wrote to her family about the people who visited them and their contributions to different disciplines. At the same time, the problems of their marriage become increasingly serious, and in 1924 Gibling Schindler attempts suicide as a response to her husband's extramarital relations with other women. The same year the Chaces left Kings Road and moved to Florida.

From the cited records, it is possible to observe that in this first moment of the study of Gibling Schindler's life, the relationship with R.M. Schindler is defined from a collaborative perspective and with protagonist equity. Subsequently, the house, as a project and as an executed work, becomes an enhancer of Gibling Schindler's way of assuming society.

5. Her contribution to neutra

Gibling Schindler was linked to the Neutra family even before they arrived to America. Richard Neutra had been a colleague of R.M. Schindler in Vienna and at the outbreak of the war immigrated with his family to the United States. Gibling Schindler sponsored the family's visa and after staying for a time in Chicago and Taliesin, they accepted the Schindler's invitation to move into the Kings Road House, first to the guest room and then to the rooms previously occupied by the Chace family.

As Neutra explored one way of escape after another his letters often became frank. Schindler, earning little at Wright's, managed nevertheless to help him financially, but as for getting him admitted to the United States before the peace agreement was signed—even for several years afterward—that was hardly possible. Schindler, who was not a citizen, called upon Pauline Gibling to petition the State Department to allow Neutra to enter the country, agreeing to be responsible for him financially. Neutra mentioned the petition several times in his letters, once in April 1920 from Vienna where he had moved after two years in Zurich.¹⁰

Gibling Schindler was the first to publish a review of Neutra's fledgling work in an East Coast newspaper in 1927¹¹. There are no records of this publication, but it is known that it is through this, and through the intercession of the Schindlers, that Neutra connected with one of his most important clients, Dr. Lovell, for whom he planned one of his most recognizable works, the Lovell Nursing Home.

The lives of all the inhabitants of Kings Road House shifted in 1927. Gibling Schindler finally separated from R.M. Schindler and left the house with their son Mark. She began her independent life in the Halcyon community with a group of artists, intellectuals, and radical modernists. The Neutra's also left the

house in the same year. Schindler continued to live and run his studio from the Kings Road House and in 1930 Gibling Schindler returned to the house and settled in the section originally planned for the Chases, where she lived until she died in 1977.

6. Final comments

The research shows how most of the architectural historiography on the Schindler House and the aforementioned modern architects omits the involvement of collaboration, like the case of Pauline Gibling Schindler. This is not to add more names to the protagonists of the modern ideal in the 20th century, but to identify and define the people who made the development of modernism avant-garde possible.

The history of architecture showed modern architects as individual figures¹². This means that by not reflecting on the collaborative aspect there are figures that were invisible.

Today, with a more sensitive look at collaborative, interdisciplinary, and multidisciplinary work, the work of these figures, who were key in the processes and their development, is evident. In this way, it is possible to identify protagonists in modernist architects' practices such as Wright, Le Corbusier, Mies van der Rohe, and in this case Schindler and Neutra, that evidence collaborative processes in which different actors of great value intervene and influence.

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Notes

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Pliable architecture – Anni Albers, a modern visionary

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The present text aims to shed light on Anni Albers' contribution to modern architecture. Trained as a weaver at the German Bauhaus, Albers turned out to be a designer–artist, teacher, scholar, and writer who bridged disciplines and cultures in an experimental exploration of the constructive nature of weaving. Using cutting–edge materials and techniques, Albers developed inventive textile solutions for ever–changing needs in architecture.

This article will take a closer look at three of Albers' architectural collaborations in the context of the modern movement, which show her unique position as a designer who foregrounds the serving character of textiles and undertakes each commission as an investigative project into the architectural realm, enquiring into the structure, texture and colour of a fabric that would best serve its function in its specific surrounding.

The text also intends to show that Albers takes on an important role amongst other weaving artists and designers of the 20th century, as she incessantly complemented her practical, experimental work with theoretical study and writing. Her seminal books *On Designing* and *On Weaving* show that, parting from design concepts disseminated at the Bauhaus, she strived to find her own stance as an artist–designer, developing in her late career a wide range of non–functional but inherently structural 'pictorial weavings'.

The article ends with an outlook of further advancements of Albers' conceptions of textiles in contemporary architecture and design.

1. Introduction

Already during her study years from 1922 to 1929 at the Bauhaus weaving workshop in Weimar and Dessau, Anni Albers was involved in architectural projects. She received her diploma for the development of a technical textile which enhanced building performance, and after her emigration to the United States in 1933, she undertook various collaborations with textile firms, such as the emblematic modern furniture company Knoll, as well as with architects of the modern movement, amongst them former Bauhaus director Walter Gropius and Philip Johnson, founder of the architecture department at the Museum of Modern Art, MoMA in New York. In parallel to her professional commitments, she reflected on textiles in numerous articles, several of which she published in a collection of essays called *On Designing* (1961) and in the seminal compendium *On Weaving* (1965).

2. Pliable architecture¹ – the architectural dimension of weaving

In her text *The pliable plane; textiles in architecture* Albers makes it clear that weaving is, as architecture, "a process of structural organization":

*If [...] we think of the process of building and process of weaving and compare the work involved, we will find similarities despite the vast difference in scale. Both construct a whole from separate parts that retain their identity, a manner of proceeding, fundamentally different from that of working metal, for instance, or clay, where parts are absorbed into an entity.*²

To Albers, the way in which a textile is constructed as a continuous interlacing of elements from the bottom up is consistent with architecture. Albers' text, *The pliable plane*, highlights the spatial character of textiles as they fold and are deployed in space. She follows Gottfried Semper's idea of textiles' space-creating capacity, outlined in his seminal book, *Style in the Technical and Tectonic Arts; or, Practical aesthetics*: "Weaving began [...] as a means of dividing the 'home', the inner life from the outer life, as a formal construct of the spatial idea. It preceded the simple wall made from stone or another material."³

While Albers primarily developed textiles for interiors, she made it clear that *textiles for interior use can be regarded as architectural elements. In contrast to other elements their special characteristic is their dynamic quality. Fabrics above all are pliable, and being pliable they can change their position. We draw a curtain to let in light or to shut it out; to close off a section of space or to open it up [...]*⁴

Albers' focus on structure as a central theme of weaving is significant. Colour and texture of her fabrics are generated by the way threads of different characteristics are interlaced; they are the consequence of the textile's structure. Conveniently, a wide range of varieties may be produced with a reduced set of elements. Structure is of such concern to Albers that not only did she unravel historic textile pieces to understand their structural logic, but she even undertook an academic study at Yale's Art History Department.

3. Case studies – textile structures for modern architecture

The following case studies – three collaborations in architectural projects related to the modern movement – illustrate how Anni Albers' textile structures offer specific solutions for different contexts. they not only exert a serving function within architecture, but also act as space, time, and meaning-creating elements; it is ultimately through the textile elements that the building finds its accomplishment.

Case 1: Silver fabric wall covering – enhancing building performance

After taking over the directorship of the Bauhaus Dessau in 1928, Hannes Meyer's strategy to involve all Bauhaus workshops in real building projects found its fruition in the execution of the new Trade Union School Building (ADGB Bundesschule) in Bernau near Berlin. This project provided a unique

opportunity to the Bauhaus, as a showcase not only for the ground-breaking design concepts of the lead architects, Hannes Meyer and Hans Wittwer, but for all Bauhaus workshops.

Having detected malfunctions in the acoustics and illumination of the school's auditorium during construction, in April 1929 Meyer commissioned the Bauhaus weaving workshop to create a wallcovering material that would mitigate echo and glare. Anni Albers oversaw the development and production of the fabric, which would turn into her diploma thesis. She developed an ingenious invention of a double-sided material consisting of chenille for sound absorption on the rear and cellophane as a reflecting material – hence the name silver fabric, 'Silberstoff' – on the front, with both sides bound together by a black cotton warp thread (Fig. 1). The fabric and its performance potential so impressed Hannes Meyer that he sent a sample to German optics company Zeiss-Ikon to have them thoroughly examine the fabric's light-reflecting mechanisms and to identify how it should be installed in the room to best fulfil its purpose.⁵ As Anja Guttenberger, director of the UNESCO visitor centre Bundesschule Bernau, points out, in the early 1930s other members of the weaving workshop also produced functionally advanced textiles, such as Gunta Stölzl or Otti Berger who even patented two new types of enhanced performance textiles.⁶ Albers' use of innovative weaving materials and her exploration of interlacing structures might be seen in line with this type of applied research. Nevertheless, beyond the use of cutting-edge materials and techniques for textile advances, her research focuses ultimately on the perceptual and spatial performance of textiles, on their architectonic quality and application.

Case 2: Copper cloth curtain – (not) showing (off)

In 1933 Anni Albers emigrated with her husband, the painter and Bauhaus fellow Josef Albers, to the United States to establish a weaving workshop at



Figure 1. left: Hannes Meyer/Hans Wittwer, Auditorium ADGB Bundesschule, Bernau, 1930 ©Archiv baudenkmal bundesschule bernau e. V., right: Anni Albers: Wall-Covering Material for the Bundesschule Auditorium in Bernau, 1929 ©The Josef and Anni Albers Foundation (JAA)/ Scala.

the newly founded Black Mountain College. In 1949, at the culmination of her teaching commitment, Philip Johnson, who had also been the driving force behind the Albers' invitation to Black Mountain College, organised a solo show for Anni Albers at the MoMA titled *Anni Albers Textiles*. It was the first solo exhibition for a – female and foreign – textile artist in the United States. The MoMA press release then presented Anni Albers as “one of the most imaginative and daring of modern weavers working in the United States.”⁷

Albers herself commends Johnson for his exhibition design. She highlights his intelligence in placing the exhibition objects⁸, distinguishing amongst them free-hanging, room-high textile space dividers (**Fig. 2**). Not only does the objects' perpendicular placement, close to each other, allow the visitor to simultaneously capture their different structures and degrees of permeability, but the installation also creates a truly textile space in its own right. According to art historian Briony Fer, “the room dividers can be seen as a kind of experimental laboratory for modern living; as screens or partitions that are able to create different kinds of mutable space. Referred to as ‘partition material’ in *On Designing*, it is likely they were prototypes that could be adapted for larger spaces.”⁹

Philip Johnson further extends his collaboration with Anni Albers through an architectural commission for the guesthouse for MoMA patron Blanchette Rockefeller in New York. According to the New York City Landmarks Preservation Commission, the guesthouse is “one of the earliest buildings in New York City to reflect the influence of the modern movement in architecture.”¹⁰ The initial function of the tiny building on a narrow plot in Manhattan was to act as a societal showcase of Rockefeller's private collection

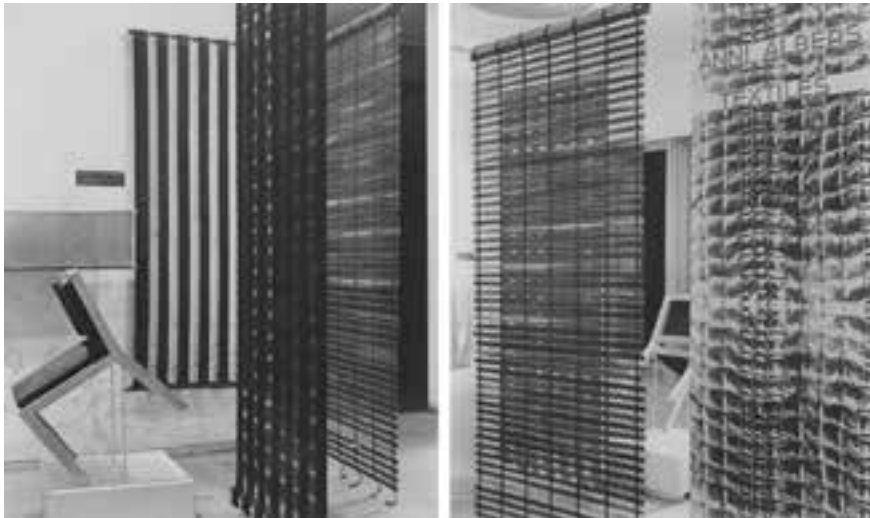


Figure 2. Installation views of the exhibition *Anni Albers Textiles*, Museum of Modern Art, New York, 1949. Photographer: Soichi Sunami ©The Museum of Modern Art/Scala.

of contemporary art, which could be admired in nightly receptions. Johnson organised two main spaces with a completely glazed façade around an interior water pond–patio, assuring natural lighting and ventilation.

In the casement material for the living/reception space and dormitory (**Fig. 3**), Albers succeeded in meeting two different functional requirements: creating privacy while concurrently highlighting the space. Her specifically developed chenille and copper lurex yarn fabric exerts a similar function as the silver fabric in Bernau: it attenuates sound and reflects light, only that here, it is electrical light that is taken into consideration. Albers explains the fabric's changing aspect as follows: "it was designed in such a way that at daylight it almost looks like a potato sack, but at night it lights up and becomes a light of its own, so it takes on a new character with daylight or artificial light."¹¹ Converting the inconspicuous building into a beacon at night, Albers' fabric underlines a certain type of lavish understatement or "opulent minimalism"¹² inherent in the guesthouse. From Johnson's compliments it can be understood that Albers' interpretations were in line with his own intentions: "She turned out to be the dream designer of fabric. I remember a copper cloth that she once designed. It was just so beautiful; you didn't know copper could do that."¹³ He leaves no doubt about Albers' contribution to modern architecture: "Fabric as an important part of architecture was what was her importance."¹⁴



Figure 3. left: Philip Johnson with Landis Gores and Frederick Genz, Rockefeller Guest House, New York, 1950. ©Photo: Gottscho-Schleisner Inc., right: Anni Albers: Drapery material for the Rockefeller Guest House, New York, 1949. Filmstill from: "Anni Albers. Design Pioneer", JAA, 2010.

Industrial Lurex – spiritual reflections

A closer observation of Anni Albers' fabrics reveals that interaction with light is a recurring motive in her oeuvre. The exploration of changing degrees of material transparency through different interlacing techniques, that is, by the fabric structure itself, is evident in her room dividers, but also in numerous casement fabrics she designed for the textile industry. This exploration is complemented by experiments with reflective materials, such as metallic yarns or synthetic threads. In her collaboration with Gyorgy Kepes for the ark curtain of Temple Emanu-El in Dallas, Texas, reflection becomes the main

theme of her intervention, a theme she would continue to explore in later commissions.

Designed by architects Howard Meyer and Max Sanfield, together with William Wurster as a consultant, Temple Emanu-El is a collaborative project aimed at integrating art and architecture. In 1955, Kepes, along-time assistant of former Bauhaus master László Moholy-Nagy, and at the time teacher at the Massachusetts Institute of Technology MIT, had been commissioned as an art consultant in the design and execution of the temple. Kepes asked Albers to design the curtain of the temple's ark, which would be integrated in a curved wall, made of adobe bricks. The ochre wall was highlighted by glass covered joints, giving it a golden, sparkling touch.

In this project, Albers opted for a semi-rigid curtain, mounting the fabric in separate strips on sliding panels. As the height of the ark, at more than five metres, exceeded the reasonable length of a manually woven fabric, Albers decided for the machine production of the textile elements with an industrially produced synthetic lurex yarn. The curtain shows a "crisp, industrial aesthetic that comes from Albers's Bauhaus heritage."¹⁵ as art and architecture historian Susan Solomon remarks. It combines technical progress and spiritual objectives.

Albers fulfilled the project's challenging requisites in an inventive way, translating a crown motif that had been requested for the curtain into an abstract geometric pattern¹⁶. The pattern is formed through slight geometric distortions, subtle shifts and inversions of the panels' colour blocks. The selected colour scheme, intense blue, green, gold and silver, unusual for Albers up to that moment, can be understood as a reflection of the colours of the surrounding elements – the stained-glass windows and the sanctuary wall (Fig. 4).

Reflection is the overall theme of Albers' temple work. First, there is geometric reflection, in the vertical and horizontal inversions of the ark panel strips. Then, there is literal reflection, based on the material, the shimmering lurex yarn, which produces an oscillation that responds to the reflections of the ark wall.



Figure 4. left: Howard Meyer et al., Temple Emanu-El, Dallas, 1957. <http://howardmeyer.org/>, right: Anni Albers: Study for Temple Emanu-El Ark panels, 1956. Photo: Tim Nighswander/Imaging4Art ©JAA/Vegap.

And finally, there is also phenomenal or conceptual reflection, as the curtain reflects upon the circumambience. According to Solomon, "The result is a 'splendid architectural element'. It gives the ark a needed prominence and artistry without making it a fetish."¹⁷

4. Conclusion and outlook

It is the consideration of transition, of change within or by means of the fabric, the fabric's changing performance or position within space that underlines the specific role of Anni Albers' textile designs in architecture and makes her interventions outstanding. The textiles she designed not only integrate themselves perfectly in their surroundings but seem to accentuate the very intention of the architectural project, or even make it legible. Albers describes her work as that of a conscientious designer, one who "does not design at all, but rather give the object to be a chance to design itself."¹⁸, an "intermediary who is trying to help the not-yet-existent turn into reality. Standing between the actual and that which may be, the conscientious designer, as I see it, seeks to forego his own identity, in order to be able more impartially to interpret the potential."¹⁹

As art historian Briony Fer points out in her article *Close to the stuff the world is made of: weaving as a modern project*, "In Albers's hands, weaving became an exemplary modern form of artistic participation in life and a means to make work in which new ways of living could be articulated."²⁰ This future-oriented way of thinking is present in Albers' advocacy for a structural revolution of textiles and their production techniques, as she states: "the vast field of weaving itself is open today for experimentation."²¹

Her wish may yet come true. Saskia Diddens, general manager of Dutch design studio Jongeriuslab, who in 2020 reconstructed Albers' silver fabric with contemporary materials, states that weaving is "the strongest and lightest construction method that creates a lot of options for the future."²² The team around designer Hella Jongerius consequently explores weaving materials and techniques for future building components. Textiles, understood as pliable architecture, are a means to dynamically adjust to changes in both external conditions and functional needs. According to architect Achim Menges, director of the Institute for Computational Design and Construction at the University of Stuttgart, textile structures are considered a "driving force for technology".²³ Menges points to "the innovative power and future viability of fibre-based materials and textile techniques".²⁴ New fabric developments, amongst them auxetic fabrics or conductive (solar) fabrics, and advances in production methods like 3-D weaving, robotic winding and biological fibre systems, are testimony to this evolution, which may have the potential to revolutionise architecture.²⁵

Notes

- 1 *Pliable architecture* is an expression coined by Dutch designer and artist Hella Jongerius, following the title of Anni Albers' essay "The Pliable Plane; Textiles in Architecture".
- 2 Anni Albers, "The Pliable Plane; Textiles in Architecture", *Perspecta* vol. 4 (1957), 36–37.
- 3 Gottfried Semper, *Style in the technical and tectonic arts; or, practical aesthetics* (Los Angeles: Getty Research Institute, 2007), 248.
- 4 Anni Albers, "Fabrics", *Arts and Architecture*, (March 1948), 33.
- 5 Letter from Zeiss-Ikon A.G. to Hannes Meyer, 28 October 2029, The Josef and Anni Albers Foundation (JAA).
- 6 See also: T'ai Smith, "Weaving as Invention. Patenting Authorship", *Bauhaus Weaving Theory. From Feminine Craft to Mode of Design*, Minneapolis, University of Minnesota Press, 2014.
- 7 "Anni Albers Fabrics", Press Release, New York, Museum of Modern Art, 9 September 1949.
- 8 "Anni Albers. Design Pioneer", Anni Albers interviewed by Judith Pearlman, JAA, 2010.
- 9 Briony Fer, "Close to the stuff the world is made of: weaving as a modern project", *Anni Albers* (London: Tate, 2018), 40.
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- 11 Ibid. 8.
- 12 "269. Philip Johnson." OfHouses, accessed February 14, 2022, <https://ofhouses.com/post/137734314380/269-210116-johnson-philip-rockefeller>
- 13 "Anni Albers. Design Pioneer", Philip Johnson interviewed by Sedat Pakay, JAA, 2010.
- 14 Ibid. 18.
- 15 Susan G. Solomon, *Louis I Kahn's Jewish Architecture: Mikveh Israel and the Midcentury American Synagogue* (Waltham: Brandeis University Press, 2009), 41.
- 16 Ibid. 8.
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- 19 Anni Albers, "Designing as Visual Organization", *On Weaving*, Princeton, Princeton University Press, (2017 re-edition): 55.
- 20 Ibid. 14, 43.
- 21 Anni Albers, "Constructing Textiles", *Design* 47,8, (1946): 14.
- 22 "Bauhausdenkmal Bundesschule Bernau.", Bernauer Stadtgespräche, accessed February 14, 2022, <https://open.spotify.com/episode/7roOHYbJ4rDxOI5YD5kCqV>
- 23 "Textoversum.", Achimmenges.net, accessed February 14, 2022, <http://www.achimmenges.net/?p=21724>
- 24 Ibid. 28.
- 25 "New three-dimensional weaving technologies could revolutionise architecture and lead to lighter, more flexible buildings.", "3D textiles could 'replace concrete and cement' in construction says Hella Jongerius.", Dezeen, accessed February 14, 2022, <https://www.dezeen.com/2021/04/30/3d-weaving-architecture-hella-jongerius/>

Charlotte Perriand and Lilly Reich: **furniture is architecture**

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Charlotte Perriand and Lilly Reich were designers, with similar trajectories that ran parallel in time, in the first decade of the 20th century. A curious and surprising fact, which became the common thread of this investigation.

Both began their collaboration with two of the most significant architects in the definition of Modern Architecture: Le Corbusier and Mies van der Rohe respectively. This article starts from the hypothesis that the authentic transformation of architecture took place from within it, or as Le Corbusier expressed with regard to the 1925 L'Esprit Nouveau Pavillon in Paris: "The furniture here does not add its possible architecture to an immobilized architecture, it is architecture in itself."¹

The Methodology used here is the comparative study of the work of these two designers from within Architecture. Both from different positions, initiated a new way of conceiving furniture as an element with which the space was built and configured.

1. Introduction

1927 is the year in which Charlotte Perriand enters Le Corbusier's workshop and at the same time Lilly Reich establishes herself as a collaborator of Mies van der Rohe. After having worked together before, it will be in the Stuttgart exhibition, and in the projects for the Weissenhof neighborhood, where they will consolidate their collaboration.

Charlotte Perriand's work for Le Corbusier's Atelier would consist in this period of giving shape to the new elements – furniture: the equipment, a new word that Le Corbusier had devised to replace the old notion of furniture. Already at L'Esprit Nouveau Pavillon in Paris in 1925, he sensed that a new concept of furniture could transform the floor plan of the house.

Perriand's role at the Atelier was to bring this new furniture to life. One of his first works was the design of metal furniture for the Church and La Roche villa complex between 1927 and 1928, the armchair with pivoting back, the grand comfort armchair, the chaise longue and the glass table on a lacquered tube steel structure. To these was added the chair with revolving back, created by Perriand for her apartment, which was presented at the Salon des Artists Decorators in Paris in 1928 and which has since appeared in all of Le Corbusier's interior perspectives.

The storage remained to be resolved. Le Corbusier was convinced that the *casiers* were the elements that were going to solve this problem in the home, just as they already did in the offices, in addition to compartmentalization,

eliminating unnecessary heavy furniture that would give the home the degree of freedom that needed.

Perriand resolved the technical development of metal *casiers*. The *casiers* would form part of the basic program of the equipment, they would provide a solution for storage and would also serve as compartmentalization elements. Thus appeared the solution to a new concept of housing.

Perriand acknowledged having discovered there the importance of designing the pieces related to each other, integrating factors such as color, rhythm, light.

This seemed to culminate a process that would be confirmed by Le Corbusier in his conference in Buenos Aires in 1929 "The Adventure of Furniture": "He will not effectively approach the renovation of the floor plan of the modern house until after he has laid bare the issue of furniture. Here is the Gordian knot. it must be cut off, otherwise all pursuit of modern life is in vain."²

Around the same time Mies and Reich were working on several projects simultaneously at the Velvet and Silk Café, 1927, in Krefeld, and at the Glass Room for the Stuttgart exhibition, these two projects would consolidate a new way of delimiting interior space through planes of glass, fabrics, and pieces of furniture creating sequences of spatial effects.

A new way of doing that built and determined the configuration of the space.

2. A new relationship between space and furniture

Although the trajectories of these designers are similar, 1929 will be the year in which two exhibition projects exemplify all the previous tests and consolidate the new way of designing from furniture.

In Paris in 1929, in the absence of Le Corbusier who was in Argentina giving a series of lectures, Charlotte Perriand and Pierre Jeanneret were in charge of assembling the stand of the Autumn Salon. This was the occasion chosen by the workshop to show the renovation of the modern house plan.

The starting plan was approximately 100 m² square. According to the existing sketch, it was organized in two rectangles, the great room and the rest of the functional program, kitchen, bedrooms and bathroom. There were no longer walls or doors, instead the *casiers* were used as architectural compartmentalization elements, which with their different combination possibilities allowed the space to be articulated. (Fig. 1)

The stand was designed to be walked freely, a gestural trace on the floor showed it. The organization of space moved away from the principles of classical composition, without axes, without symmetry. Through the furniture the apparent disorder was ordered. A balanced relationship between opposites was established, the furniture was the architectural elements

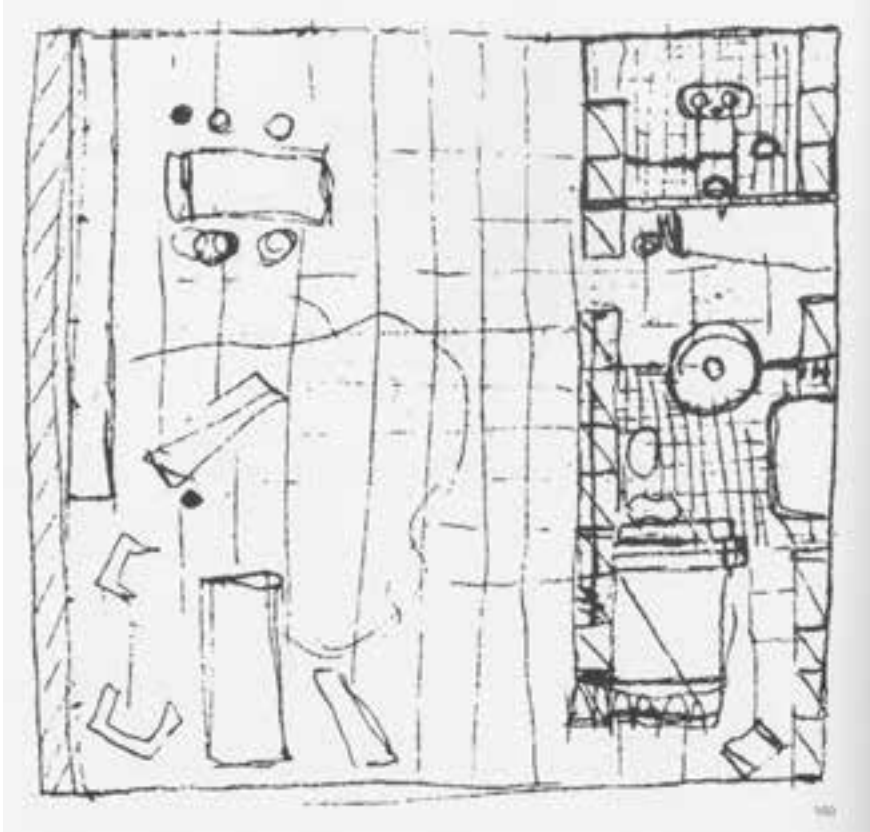


Figure 1. Le Corbusier, Charlotte Perriand, and Pierre Jeanneret, Equipment of a Dwelling, Stand at Salon d'Automne, Paris, France, 1929, Sketch of the floor plan. ©Foundation Le Corbusier, Paris. ©Foundation Le Corbusier, Paris.

with which the interior space was built, through a set of tensions between opposites, whose focal point was the chaise-longue, which due to its plasticity, its position and dimension attracted the eye.

The floor plan appears free, the chaise-longue, the chairs of different shapes and sizes, the glass table, the casiers, are the protagonists of the space, on the other side the kitchen and a large transparent cylinder-shower that articulates the two rooms and the open bathroom lets the space flow, the porcelain toilets are shown as elements worthy of being exhibited.

Beyond the furniture, a new concept appeared: domestic equipment. For the first time the architecture Project, began from the organization of the interior space. (Fig. 2)

A new relationship between space and furniture was also consolidated by Mies Van der Rohe and Lilly Reich, which will be evidenced in the German



Figure 2. Charlotte Perriand, Equipment of a Dwelling at Salon Stand d'Automne, Paris, France, 1929, photomontage perspective interior. Figure 2. © Foundation Le Corbusier, Paris. L'Architecture Vivante 1930, ©Foundation Le Corbusier, Paris.

Pavilion for the Barcelona International Exhibition, held on Montjuïc on 1929. It was conceived to accommodate the official reception presided over by King Alfonso XIII of Spain along with the German authorities.

Built from glass, steel and different kinds of marble and textiles. Also a small sets of furniture were placed on a plane cut out on a continuous floor, this plane, the rug area, acted as a delimiting element of the space. They were the true protagonists of the space (**Fig.3**). An abstract concept of space appeared that was configured through planes of glass, marble, curtains, rugs, pieces of furniture that took the name of the space for which they had been designed.

At the same time that the German pavilion, Mies and Reich worked on the project for the Tugendhat house, it is easy to think that some ideas passed from one project to another and were repeated, already experienced, in previous projects, its owner Grete Tugendhat remembers the process of its construction:

The chairs were all chromed steel. In the dining room we had 24 chairs that were later called Brno. They were upholstered in white kid; In front of the onyx wall were two so-called Tugendhat chairs upholstered in silver gray leather and two Barcelona chairs, with emerald green leather. Facing the large window

wall, a chaise-longue in ruby red velvet. Mies and Mrs. Lilly Reich tried all these color combinations for a long time.

The curtains and rugs also belonged to this set: in front of the onyx wall was a light-colored natural wool hand-woven rug; behind the wall was a hand-woven brown wool rug, and in the library. Under the piano two Persian rugs woven by ourselves.

The special black of the Shantung curtain in front of the conservatory was also carefully chosen to harmonize with the black velvet of the curtain next door and the silver gray silk shantung with the opposite wall.

Between the entrance and the library, a white velvet curtain allowed this part of the room to be completely closed to create an intimate space to rest.³ (Fig. 3)

The chairs, their upholstery, the colours, the velvet, the curtains and the rugs, the Shantung silk and the velvet allude here to the 1927 Berlin project for the Velvet and Silk Café, for the Die Mode der Dame exhibition, project in which Mies and Reich created a spatial configuration through large suspended fabric canvases, which took on different shapes and sizes, some curved at their ends and others in a straight line. The canvases could slide along the threads transforming the space, they were envelopes for small sets of Weissenhof chairs and tables, they acted as delimiters of the space.



Figure 3. German Pavilion, International Exhibition, Barcelona, Spain, 1929, Interior perspective with black carpet. Mies van der Rohe Archive ©The Museum of Modern Art, MOMA, New York. ©Mies van der Rohe Archive ©The Museum of Modern Art, MOMA, New York. Fundación Mies van der Rohe. Barcelona

With this project, a new way of delimiting spaces began to achieve a sequence of visual spaces, with glass, with fabrics, with marble, in order to structure spaces freely. (Fig. 4)



Figure 4. Mies van der Rohe and Lilly Reich, Velvet and silk Cafe, Women's Fashion. Berlin, Germany, 1927. Mies van der Rohe Archive ©The Museum of Modern Art, MOMA, New York. ©Mies van der Rohe Archive ©The Museum of Modern Art, MOMA, New York.

The quality of the fabric, its texture, its color, the shape it takes in movement, its placement were important to create those sensations in space, shantung silk was soft to the touch and made a sound when it moved, velvet was dense and heavy, silent, protected, isolated, the fabric was no longer a material for decoration but a material with which to build the space, which raises the following reflection: would the Barcelona Pavilion be the same without the red velvet?

Mies and Reich were looking for spatial freedom, as Mies explains about the project for the brick country house built between 1923 and 1924: *"On the floor plan of the house I have abandoned the usual system of delimiting the interior spaces to achieve a sequence of spatial effects instead of a series of singular spaces. Here the wall loses its character of enclosure and serves only to structure the organism of the house."*⁴

It is easy to think that some ideas passed from one project to another and were repeated, already experienced in previous projects, thus consolidating a new spatial concept.

3. By way of conclusion

A new sense of space demanded new means with which to build it.

Talking about furniture had ceased to make sense in its traditional conception. The furniture was understood as architectural elements of spatial configuration. They became the protagonists of the space, with the furniture architecture was made.

This generation of women was allowed to work in this small-scale realm, from the particular to the general, from the inside to the outside. It was a realm they knew well, the realm of the domestic, the private, to which women had been relegated for centuries. It was from within, being part of it, that they were able to carry out this renovation, they were not anonymous specialists, they knew this area well from their training, what functions it should fulfill and how it should be conceived.

Le Corbusier entrusted Charlotte Perriand in his Atelier with the mission of bringing furniture to life, as she explains in her autobiography: *"My steps led me to Rue Sèvres until 1937, my unexpected role was to collaborate as an associate of le Corbusier and Pierre Jeanneret in the elaboration of the furniture program (...) that he had announced in 1925, in L'Esprit Nouveau Pavilion."*⁵

Lilly Reich had worked as a designer of fabrics and clothing for women and children. She introduced abstraction in her designs for her exhibitions, configuring the space with objects and from a deep understanding of the possibilities of materials.

From their first works Mies and Reich understood furniture as architecture, their furniture was built for and with the building in a unit, used by them as architectural elements of spatial configuration.

An authentic transformation that came from the hand of women designers: furniture is architecture.

Would it have been possible without them?

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Notes

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- 2 Le Corbusier, *Precisiones respecto a un estado actual de arquitectura y urbanismo*, (Barcelona, Poseidón, 1978), 135
- 3 Daniela Hammer-Tugendhat, *Ludwig Mies Van der Rohe: The Tugendhat House* (Viena: Springer, 2000), 7
- 4 Fritz Neumeyer Mies Van der Rohe: *La Palabra sin artificio. Reflexiones sobre arquitectura 1922–1968* (Madrid, El croquis, 1995), 380

The Bauhaus Women Architects: Dicker, Meyer-Waldeck and Wilke

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Unity in diversity, the motto used by Walter Gropius, the founder of the Bauhaus, is not just a title; it is a sequence of time. As the final goal of the Bauhaus was Architecture —the complete work of art where all disciplines are involved—, the School, without a female presence, would have been born castrated, it would not have been the Bauhaus. The interweaving of a variety of youthful talents working to make a better world was and always will be an appeal to future generations. Youth with different political ideas, different religions, different places of origin all came together at the Bauhaus, where women, first timidly and gradually more actively, managed to position themselves, and eventually become architects, as was the case of Friedl Dicker, Wera Meyer-Waldeck and Annemarie Wilke.

1. Introduction

To get into the Bauhaus it was not necessary to have completed higher education; it was enough to have artistic skills and no criminal record and so 84 women and 79 men enrolled on the initial course. This almost identical balance between male and female students was seen as feminization, something considered anomalous by professors, who then quickly decided, in 1920, that only women of extraordinary talent should enter their classrooms: "The ratio of male to female students is such that the acceptance of women should, without question, be restricted (...) therefore, I suggest that for the foreseeable future, only women of extraordinary talent be accepted at the school"¹.

However, the message transmitted by the director Gropius to the entire student body in his inaugural speech was different. There was to be no special consideration for women: absolute equality, and absolutely the same duties. At work, all were craftsmen.

The Masters' Council, however, decided that the textile workshop (weberei) should have a markedly feminine character and so prevent a large exodus of women to other workshops. They wanted to restrict women to the field of two dimensions and fabric. This had its effects, as outstanding students such as Gunta Stölzl, claimed that weaving is above all the field of work for women, with their more intuitive than logical thinking². Helen Nonné-Schmidt went even further asserting that women lacked spatial vision, something peculiar to men, and that therefore, as through a child's vision, they appreciated the details, but not the whole³. All these feminine self-limitations provided them

with a strong sense of identity within their own workshop, forcing professor Muche to leave his position and be replaced by Stölzl. Once that goal had been achieved, they varied their discourse, Stölzl drafting a study plan for the weaving workshop where she added subjects such as mathematics, experimentation with new materials, and the use of machines. Nonné-Schmidt's descriptive geometry notes on Klee's classes, of great spatial complexity, were also famed, leading her later to become professor at the HfG school in Ulm.

What was really happening is that, as time went by, women students had become increasingly interested in the rest of the workshops, without ever fully neglecting the textile workshop, some from outside, such as Alma Buscher, Marianne Brandt, Friedl Dicker, Wera Meyer-Waldeck or Annemarie Wilke and others from within the fabric workshop, such as Benita Otte, who designed the kitchen of the *Haus am Horn* experimental house together with Ernst Gebhardt and drew a magnificent perspective of its structure (this isometric now forms part of the graphic history of the Bauhaus) ⁴. All of these women broke the two-dimensional limits and were advancing to shape the total space.

Professor Moholy-Nagy, wrote in 1929 that spatial experience is not the privilege of the talented architect, but rather a biological function of individuals, and that spatial experience is accessible to all⁵.

It should not surprise us, therefore, that in a school run by architects, women students wanted to learn the same trade as their masters.

2. The bauhaus female architects

Friedl Dicker

Friedl Dicker arrived at the Bauhaus in 1919, following in the footsteps of her master Johannes Itten, who had already taught her in Vienna, as well as her colleagues Franz Singer, Anni Wottitz and Margir Téry. Dicker was an outstanding person, much appreciated by the entire student body. Director Gropius himself, in a letter of recommendation from 1931, recognized that she was "one of the best students so that already in her first year she began to teach the beginners"⁶.

Already in the year 1922, as students, Dicker and Singer signed a joint house plan. It was a house where each one would have their own room, a shared study and a grand piano in the living room with two stools. The following year they left the Weimar Bauhaus to set up their own studio, first in Berlin and later in Vienna. It was in the latter city where they developed their projects: shops, housing extensions, auxiliary sports buildings, pavilions... they even dared to intervene in Adolf Loos's Villa Moller, given that the young Mrs. Moller (Anni Wottitz) was a friend of theirs and wanted a bedroom more in keeping with his character. They also built a small apartment in the garden of the house for Hans Moller's mother.



Figure 1. Plan of municipal childrens' garden Goethehof, Vienna. © Bauhaus Archive Berlin

The refurbishment, both exterior and interior, including the multipurpose furniture and the games of the Kindergarten Goethehof (which taught the Montessori method), is another of his memorable interventions (Fig. 1).

In 1933, with the arrival of the National Socialist regime, the job expectations of both were cut short, due to their Jewish ancestry. The murder in Auschwitz cut short Dicker's exemplary career, as she was not only a great creator, but also a pioneer in hiring young female architects within her own studio.

Wera Meyer-Waldeck

Wera Meyer-Waldeck (WMW) moved to Dessau in 1927 to join the Bauhaus because she longed to be a part of that innovative school. After only one year at the center, she stated in an interview that "For me literature, dance and music are as interesting as shape, color, mathematics or any static issues"⁷. She was a versatile woman who valued, intuitive thinking and mathematical logic. Her initial inclusion in the carpentry workshop (tischlerei) brought her numerous satisfactions (one of her works was published in the Bauhaus magazine), and she received the diploma of the Chamber of Craftsmen with an excellent grade. She wanted, however, to continue learning and the arrival of Mies van der Rohe at the direction of the Bauhaus, merging the construction and finishing workshops (bau-ausbau), provided WMW and her partner Wilke with just that opportunity. They finished their studies within the workshop, where they learnt to design buildings and even neighborhoods, such as the Junkers workers' colony in Dessau. In this class exercise, WMW, together with student Hilde Reiss and four other students, designed a neighborhood where the inhabitants lived in small apartments and women with children had a profusion of nurseries and kindergartens. There was central heating and laundry services, large sports areas with tennis courts as well as swimming pools, orchards, leisure areas with meeting rooms, clubs, cafeterias, a cinema and a theater, as well as numerous educational buildings with housing for professors and boarding schools for students and even a hospital. Her final degree project focused on the construction of a children's home and a school for the Junkers-Siedlung neighborhood unit. (Fig.2).

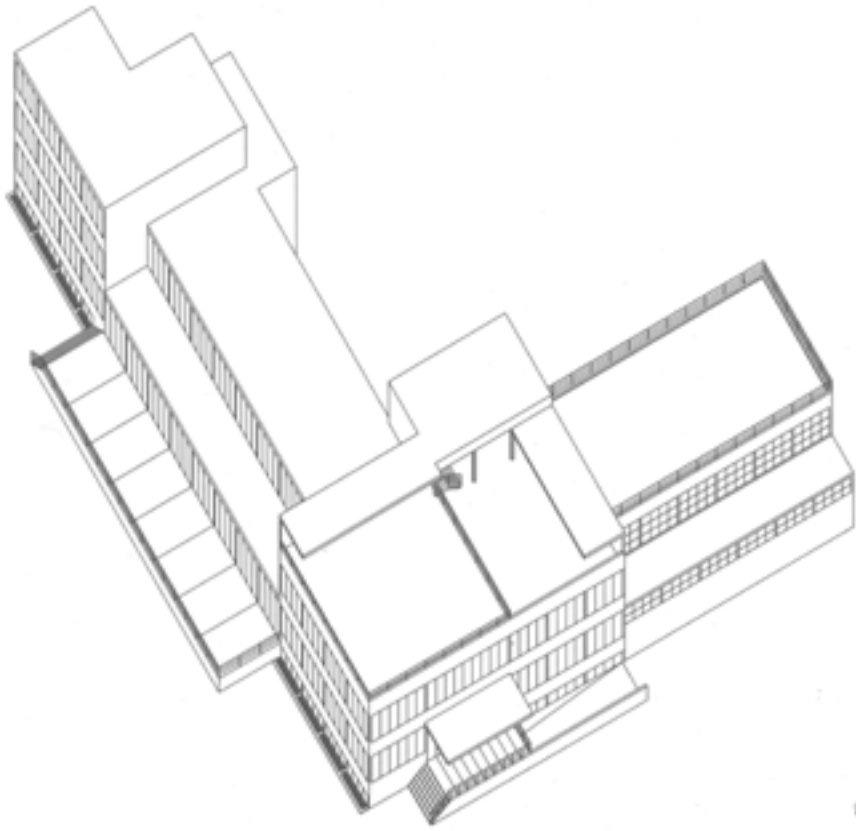


Figure 2. Axonometric elevation produced with Meyer-Waldeck's working drawings for her Bauhaus end-of-course project, 8-Klassige Volksschule (Eight-Classroom School). © Esteban Herrero and Josenia Hervás

WMW learned something from all three Bauhaus directors. She collaborated with Gropius in the interior design of the Employment Office in Dessau, with Hannes Meyer in the trade unions school in Bernau and it was Mies van der Rohe who awarded her architecture diploma in the summer of 1932. During the period of the National Socialist regime, she held various responsible jobs, mostly because of the lack of qualified men who were on the war front. She collaborated on various projects such as the architectural form of bridges (*Elbehochbrücke*), the design of railway stations such as Ortsgüterbahnhofes, Hoppegarten and Neukölln in Berlin or as the architect responsible for the planning and building department of the Karwin mining company in Upper Silesia.

In 1949, after the war, Wera participated in the first exhibition of the Deutsche Werkbund held in Cologne (she presented playful-children's furniture that was subsequently successfully marketed) and worked as a freelance architect for the architect Hans Schwippert on the interior design of the Parliament and the

Chancelleries of the new capital in Bonn. From 1950 she had her own studio and in 1951–52 she built the first residential building prototype in Bonn with *Ytong* cellular concrete blocks. As a board member of the League of German Women and chairing the Commission for Public Works and Housing, she organized one of the first housing exhibitions in post-war Germany in Bonn, entitled “So...Wohnen”.

In 1953 WMW travelled to the United States where she reencountered her former directors Walter Gropius and Mies van der Rohe, as well as master Frank Lloyd Wright. She also met urban planner Catherine Bauer at the University of California at Berkeley⁸, a great connoisseur of Central European interwar architecture. Bauer had travelled to Europe in 1930 where she visited many buildings in different countries, including the Bauhaus in Dessau (all of this reflected in her book *Modern Housing*). In America WMW came across colleagues with new ideas on sustainable housing construction with renewable energies: The American house built by the architect Eleanor Raymond in collaboration with solar energy scientist Maria Telkes inspired her design for the future home of Dr. Bockemühl in 1954/55.

In 1957 the architects Wera Meyer-Waldeck and Hilde Weström were invited to participate in the exhibition *The City of Tomorrow* (die Stadt von morgen)⁹. As a gateway to the Hansaviertel neighborhood, where the new buildings for the *Interbau* were located, a temporary pavilion was erected, in which the two architects, in addition to designing housing facilities, attended roundtables discussions, Weström, dedicated herself to leisure advice, and WMW to housing. Unlike their male colleagues, who designed and built houses that are still standing today, the ephemeral apartments of the architects (where they displayed bedrooms, kitchens and living rooms) were dismantled at the end of the exhibition. However, there was something important and transcendental in their work: they were advising and explaining new ways of using domestic space, so that all family members feel involved. This proximity with the public who approached their exhibits, was a valuable experience, as they learnt from the concerns and wishes of the public, to then address those concerns in subsequent urban actions.

WMW died when finishing off a project for a female hall of residence where the students would have their own cars. It will not come as a surprise that she had belonged to numerous women's organizations, being president of the *Soroptimist Club* in Bonn, an association of professional women that today continues to work on the education and training of girls and women to improve their lives. (Fig.3) Despite various job offers, she always remained a freelance architect.

Annemarie Wilke

Annemarie Wilke witnessed the abrupt closure of the Bauhaus in Berlin. Nevertheless, her relationship with the professors continued, collaborating

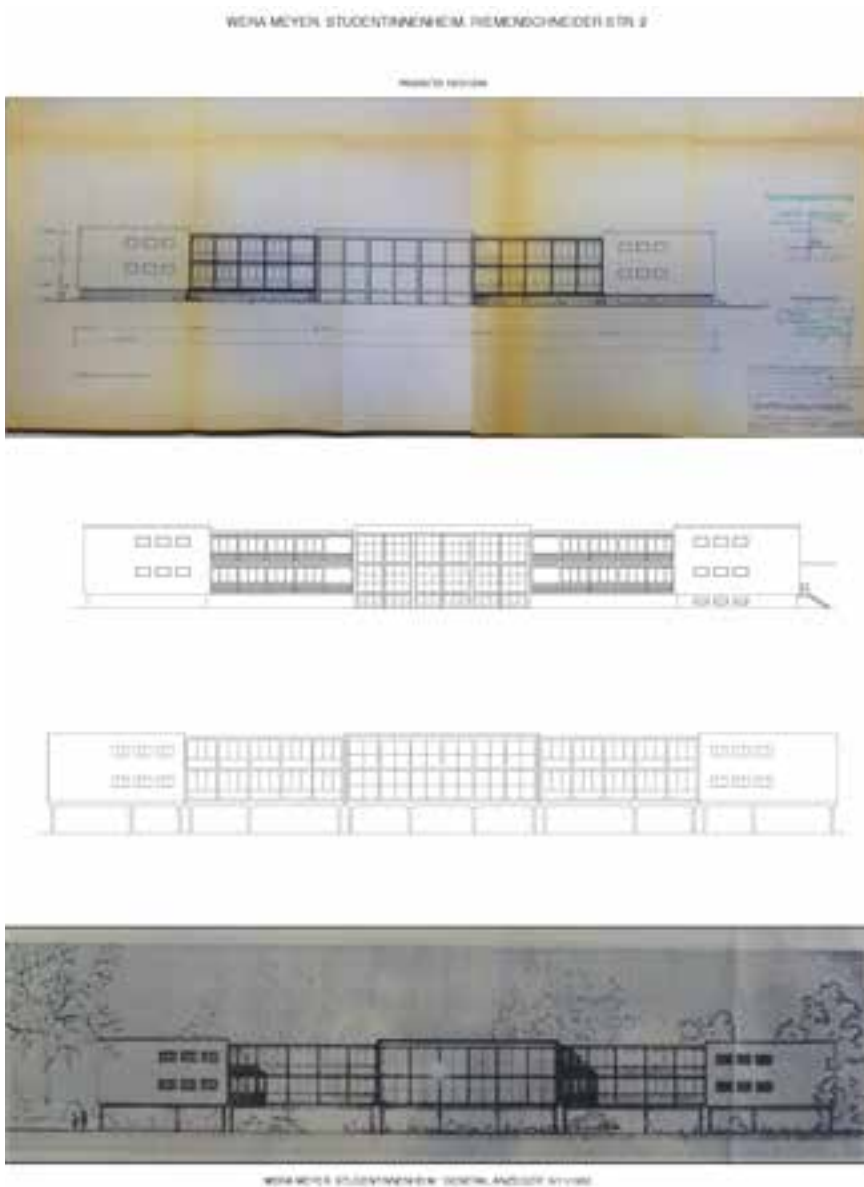


Figure 3. Wera Meyer-Waldeck. Wera Meyer-Waldeck. Women's hall of residence for students in Bonn-Friesdorf, first version from 1962 and second version from 1964. © Esteban Herrero and Josenia Hervás

with Lilly Reich and working in Hilberseimer's studio. That, in itself, is sufficient proof of her worthiness, as it places her in the category of the few students chosen by their masters to collaborate in their private offices. As precedents we know at least of the collaboration of Marianne Brandt in the architecture

studio of Walter Gropius and that of WMW in the Berlin office of the director Hannes Meyer.

In Berlin, she founded her own studio and at least three single-family housing projects are known to have been carried out by her, the most complex being the country house for Frau Trude Schulze dated 1938 (**Fig. 4**). Behind conventional elevations with a sloping roof, there is a floor where all the well interlinked spaces are resolved without corridors, exactly as she had learned from her master Van der Rohe.

She moved to Vienna in 1939 where she met the engineer Paul Mauck. In 1944, fleeing the bombing, she moved again with her children to the Inn Valley, later traveling to Kassel¹⁰, where she would project her own family home during the years 1945 and 1946, to be built in the couple's home town of Lübeck.

There is no evidence that she actually built the family residence, but she moved to Lübeck in 1947. Wilke set up her studio there, where she combined projects for the company founded by her husband, MT (Maschinenfabrik auf der Teerhofinsel), with work for clients in her city. She also undertook construction details for a guild magazine. In 1961, then divorced, she worked in the furniture section of a department store for a large commercial firm in Munich. She regretted not having time (her children were in her care) or the opportunity to work as an architect again.

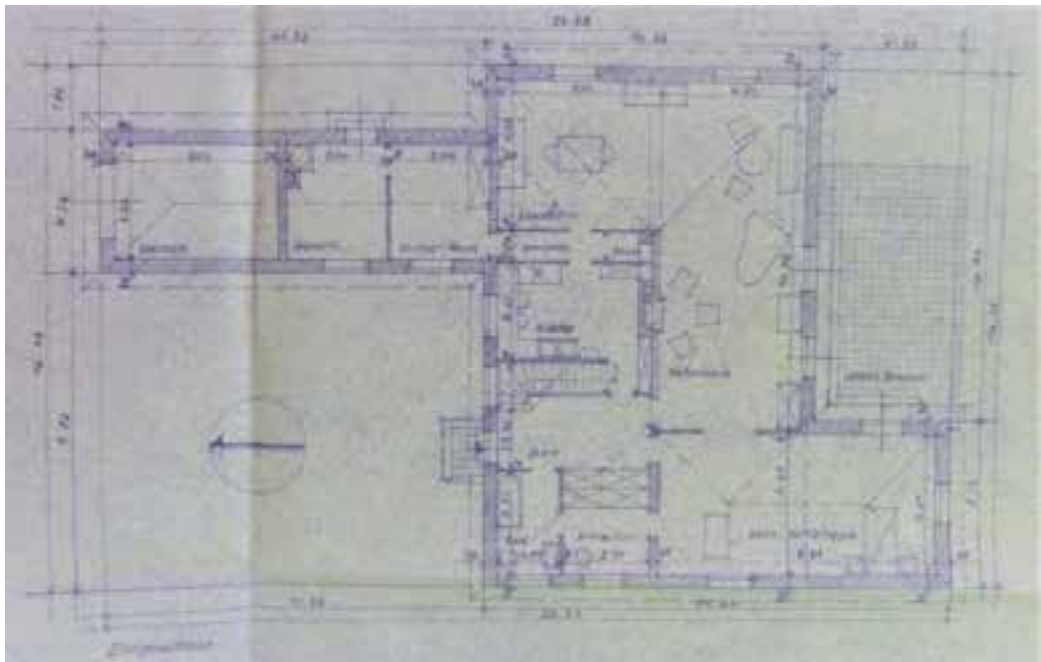


Figure 4. Annemarie Wilke. Second version of house for Frau Schulze in Klausdorf Am Mellensee, 1938. Author's photograph. Original Bauhaus Archive Berlin.

3. Conclusion

The initial policy of restricting most women to the weaving workshop resulted in women feeling limited. This led some students to assert themselves as the most suitable in the two-dimensional field, so turning this limitation into a refuge. They were organized in an autocratic territory, especially when their master Muche tried to reorganize the workshop for industrial purposes. Once they managed to get Gunta Stölzl as master, they then began to develop work on standardization, researching new materials and becoming authentic textile engineers.

Despite the fact that most women studied in the weaving workshop, there were always some dissidents who broke the two-dimensional limits and set out to shape the total space, proving that architecture is a female profession as well.

In May 1968 the fiftieth anniversary of the Bauhaus was inaugurated in Stuttgart, with an exhibition and a catalog published in German. Out of a total of 99 individuals worth remembering, none of these three women architects are cited as relevant figures. We would have to wait for the centenary of the Bauhaus for them and other women students to be remembered again.

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Notes

- 1 Ulrike Muller, *Bauhaus women. Art. Handicraft. Design* (Paris: Flammarion, 2009), 84.
- 2 Gunta Stölzl, „mit welchem recht und zu was ende“ beschäftigen wir uns mit weberei am bauhaus? (*With what right and to what end“ do we occupy the looms of the Bauhaus?*), 1926. Archive Bauhaus Berlin
- 3 Hans M. Wingler, *La Bauhaus* (Barcelona: G.Gili, 1975), 142. Original Vivos voco, 1926
- 4 Walter Gropius, *Staatliches Bauhaus in Weimar 1919-1923* (Weimar: Bauhaus, 1923), 165.
- 5 Laszlo Moholy-Nagy, *Von Material zu Architektur* (München: Alber Langent, 1929), 14.
- 6 Elena Makarova, *Friedl Dicker-Brandeis, Vienna 1898-Auschwitz 1944* (Los Angeles: Talfellow, 2001), 19.
- 7 Meyer-Waldeck, Interview, *bauhaus*, no. 4 (1928): 18–19.
- 8 Meyer-Waldeck: "Kleine Visite in Harvard und Berk[e]ley", *Werk und Zeit*, vol3, no. 6 (1954): 6.
- 9 Hervás y Heras, J., & Herrero Cantalapiedra, "Wera Meyer-Waldeck y Hilde Weström: Dos arquitectas en la Interbau Berlin 1957", *VAD*, no. 6 (Dec 2021): 92–14.
- 10 In a conversation between the architect Corinna Bauer and her son Ferdinand Mauck, someone stole her Bauhaus diploma, her Leica and her two Kadinsky paintings in Kassel.

#05

**Iberia. Cultural
identity**

S16

The development of modern movement in the socio-political and cultural framework of Iberia after the Second World War and in the 1960s and 1970s

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Introduction

In Portugal and Spain modernism emerged during the republican periods and the early stages of dictatorial regimes. However, especially during the 1940s, there was a growing assertion of a nationalist and historicist style more in tune with the totalitarian, conservative, imperialist, colonialist and rural ideology of both Estado Novo (Portugal) and Francoism (Spain) dictatorships. During the Second World War, both countries, despite having a neutral position, aligned themselves with the Axis Powers. After the war, the winds of freedom that spread through Europe brought into the Iberia the hope of a political reform, but despite a certain, temporary opening, both dictatorships would last for more than four decades. The activist defence of modern principles was assumed so as a political combat and an opposition to the regime. New generations of architects engaged with their time reinterpreted the international references based on a full awareness of the territory, the social framework and the cultural context.

The four papers presented in this session focuses precisely on the development of modern movement in Iberia after the Second World War, giving a special attention to the 1960's and 1970's decades where were implemented a serious of reforms that led to a economic growth and sociocultural changes, accompanied by new consumer needs. The measures of economic liberalisation and modernisation together with the encouragement for industrialisation, foreign investment and private initiative brought new perspectives to modern design and architecture in consequence

of new programs and interiors that were needed. This meant that 1960s and 1970s were also years of affirmation and institutionalisation of design practice in both countries. Each in its own way, the papers address the collective housing and the new neighborhoods, the hotels, commercial and offices spaces, plus large tourism enterprises, contributing for a wide-ranging view over the debate taken place during these decades about Iberia architectural identity and culture.

María Sebastián brings us from 1963 two major interior design in two hotels in Majorca: one is from José Antonio Corrales and Ramón Vázquez Molezún at Hotel Formentor; the other is from Federico Correa and Alfons Milà in Hotel de Mar. Both interiors are quite unknown and no longer exist. The first one was demolished and the second one has undergone several changes from the 1980's on, being an example of the paradoxical condition of interiors. Although they are exemplary to the understanding of each epoch, reflecting design culture, mentalities, taste patterns and fashions in force, they represent the more ephemeral side of architecture and design. By analysing this two interiors, their main characteristics and the international influences they had, this paper rescues them and recognises their representativeness as modern interiors, comparing yet also with other works by their authors. The evolution of these two hotels allows us to debate the radical economic transformation and the expansion of urbanisation that took place in the Balearic Islands since the mid 1950 changing radically the territory, transforming them into a destiny of a mass tourism destination with new urban coastal and metropolitan areas. Not least, it also permits us to discuss the consequences of the economic model behind them, comparing with other contemporary mega-tourist enterprises in Portugal.

The other three documents focus on Portugal, allowing for a deeper discussion of architectural culture in the country during the second half of the 20th century.

Ana Tostões and Zara Ferreira analyses the neighborhoods of *Olivais Norte* (1960) and *Olivais Sul* (1963) built by public initiative in Lisbon during the decade of 1960, continuing the city expansion strategy northwards, while responding to the housing deficit problem. The authors examine the circumstances and international cultural influences that involved its conception, design and implementation, showing how they represent a key moment in the modern planning in Lisbon and in the promotion of modern daily life. Particularly interest is the cross analyses between the housing development models and the socioeconomic categories for which they were designed. Looking from the urban plan to the dwelling interior spatial organisation, the paper shows how Olivais were a real laboratory to programmatic, typological and urbanity innovations while foster social diversity.

João Duarte and Maria João Soares analyses the influence of Japanese culture and traditional architecture, especially the tearoom typology, in the

development of the Portuguese architect Fernando Távora thought, writing and work on the house and spatial organisation. The unity of traditional architecture meet and consolidate Fernando Távora's conviction of the importance of knowing vernacular architecture as a source of learning and inspiration for its adaptation to the site and climate, rationality, functional solutions and economy of means, preference for natural and local materials and the use of inventive construction techniques. Fernando Távora's sensitivity and awareness of vernacular culture and architecture as examples of rationality and sustainability were essential to sustain his criticism of false regionalisms, national official style and blind adoption of the International Style, leading him to open a new path in Portuguese architecture, Critical Regionalism, a movement also recognised in Spain.

Guilherme Maia takes as subject of his paper the Portuguese architect Francisco da Conceição Silva to analyse multiuse buildings designed by him with a scale and a organisation that make them be considered cities segments. The author uses Reyner Banham's theoretical concept of Megastructures to analyse five case studies from the 1960s and 1970s, when Conceição Silva was a prominent architect in Portugal, being in charge of multiple office and commercial spaces, hotels or major tourist enterprises based on an entrepreneurial attitude. During his life, but particularly in these years, Conceição Silva promoted his ideal of an architecture as a work of synthesis. Consequently, in his studio he created a multidisciplinary teamwork (with architects, designers, painters, sculptors, photographers) that designed from the building to the furniture. Integrating the equipment, they carefully studied the exterior/interior relationship, opted for a fluid spatial organisation and chosen specific artworks in order to create unique, complete and harmonious environments.

The four documents together mirror how the approach to interior design as a natural complement to architecture gained strength, being conceived as an integral project valued in aesthetic and functional terms, far from historicism. The concept of modern habitability was maturing in both countries, as was the growing awareness of the relevance of design to modern everyday life. These values find expression in the creation of modern, sustainable and functional solutions for each space, in accordance with the specificity of each place and the changing society. The importance of the architects' research into traditional settlements, buildings, materials, techniques and construction processes is also highlighted, as it gave them a broader knowledge of man in his different dimensions, and of the socio-cultural and geographical reality of each time. This humanism has led to a new architectural attitude that emphasizes the social role of architecture and the ethical dimension of the architectural profession, a legacy that remains very relevant to maintain, know and share by its authenticity and vitality.

A Home For Tourists.

Two Cases of Hotel Interior Design In Majorca

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In 1963, two major works of tourist architecture were taking place in Majorca. On the one hand, José Antonio Corrales and Ramón Vázquez Molezún were commissioned to design new suites for Hotel Formentor, in the north of the island, which had just been extended.

On the other hand, Federico Correa and Alfons Milà were in charge of the interiors of Coderch's Hotel de Mar. The project involved all spaces –from rooms to the bar– and all possible scales –from the stage of the dancing room to the vents.

Though both projects are quite unknown, especially the one in Hotel Formentor, they are major examples of hotel interior design and two of the few cases in the Balearics, because this discipline is often considered as a second-class activity by architects, promoters and historians.

The paper aims at recovering these projects that no longer exist. The first one has been recently demolished and the second one has undergone several changes from the 1980's on.

Through the analysis of the project plans, drawings, reports and photographs and also by comparing them with other works by their authors, a study is proposed of shapes, materials and colours used to arrange the furnishings and to create a homely feeling. The conclusions point to a connection with the beginnings of industrial design in Spain and an intimate relationship with other personal designs by the same architects. In relation with the international context, Correa and Milà are closely linked to Italian influences. But, above all, the soberness of both projects breaks with the overwhelming decoration of some of the most popular American hotel designers, as Morris Lapidus, and set them up as alternatives to the usual impersonality and excesses of leisure interiors.

1. Forgotten typologies, lost spaces

If leisure projects seem to have been a secondary activity for architects, designing their interiors has still raised less interest. Research on history of tourism architecture and of contemporary design in Spain has not been carried out until recent dates. Coming to combine both disciplines, most of the references found deal with the very beginnings of travelling¹ or with brand new fashionable creations².

In Majorca, as well as in many other territories, there has been a lack of sensibility towards tourist architecture, even when approaching some of the most relevant creations of the most popular period, the 1950's and 1960's tourist boom. There has been scant recognition of these productions as part of contemporary heritage. This, together with the prevalence of economic

aspects, has led to the loss or distortion of many constructions. Besides the scarcity of studies, research done has found it difficult to discover interior design projects linked to the globality of the building³.

The paper deals with the interior design of two of the most charismatic hotels of the island, Hotel Formentor and Hotel de Mar. They are both milestones of tourism development, the former for its cultural implications –especially in the field of literature–; the latter for its application of critical regionalism to leisure. However, they have not escaped from the consequences of the aforementioned lack of sensibility. In December 2021, Hotel Formentor interior was demolished⁴. Hotel de Mar is in a better situation, as the building is protected; but from the 1980's on, constant furniture renewal has completely changed most of the original spaces. The following analysis aims at shedding light on these lost interiors through the study of the project materials and at placing them in relation with their authors' works and context.

2. Austerity and asceticism: Hotel Formentor

Hotel Formentor is located in the northern peninsula of the island. When it was built in 1929, the site was isolated, as no roads arrived there. Though its project has been traditionally attributed to its promoter, the Argentinian Adán Diehl, it is more likely to have been the work of some architect close to Diehl's cultural circle⁵.

Its exterior cleanliness and simplicity put it in between Modernity and Regionalism. The absence of superfluous ornaments, the window repetition and its horizontal proportions link the hotel to Rationalism; but the heavy structure of loading walls made of *marès* –the local limestone– and the tiled roof are bound to tradition.

After several changes of ownership, the hotel is acquired in 1953 by a group of businessmen led by family Buadas. In 1962, Inmobiliaria Formentor S.A. (INFORSA) commissions the Majorcan architects Gabriel Alomar and Felipe Sánchez-Cuenca to extend the hotel towards the southeast⁶.

A year later, José Antonio Corrales and Ramon Vázquez Molezún are commissioned to design the new suites on the first and second floor of the previous extension. Its pillar structure allows a free distribution with a pretty hierarchical space zoning conditioned by the views, as usual in tourist architecture.

The rectangular plan is split into two by a longitudinal aisle. The back side, looking at the mountain, is devoted to a huge laundry room on the first floor and to worker's bedrooms on the second.

The front side, facing the sea, is occupied by six suites. The entrance to each one of them is formed by a hall and a walk-in wardrobe leading to the bathroom or to the main space, which is at a lower level. The latter consists of a living room

and a double bedroom connected by a sliding door, both looking at the hotel gardens and the Mediterranean through two picture windows (**Fig.1**).

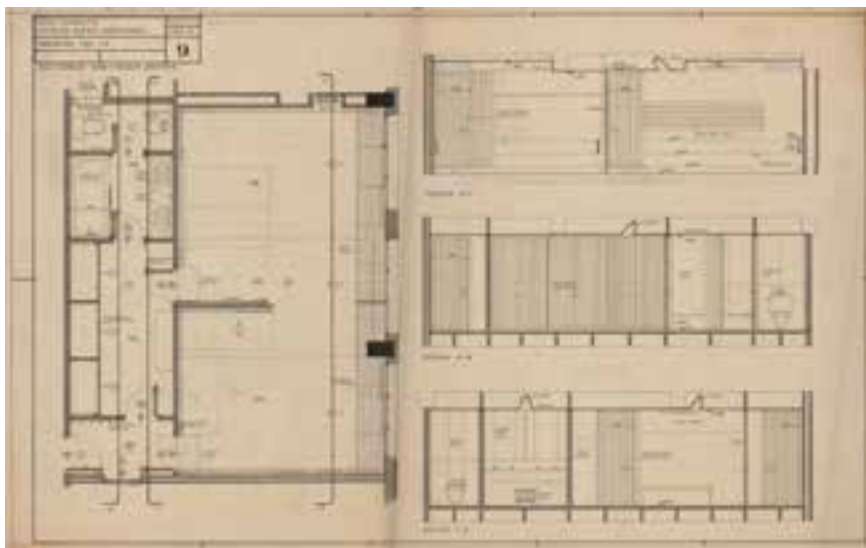


Figure 1. José Antonio Corrales and Ramón Vázquez Molezún, Hotel Formentor, Majorca, Spain, 1963. Plan and sections of a suite. © Fondo Ramón Vázquez Molezún. Servicio Histórico Fundación Arquitectura COAM.

The interior is furnished with extreme austerity. Materials are reduced to pine wood and cloth. Wood forms the furniture structure, the wardrobe doors, the horizontal panels that run across the walls and the step that marks the transition from the hall to the living. Although no project documents on the qualities of textiles have been found, photographs published in *Cuadernos de Arquitectura* (1964)⁷ make it possible to differentiate three types: a whitish one for eiderdowns, a dark one for sofas upholstery and a shiny dark one –probably natural or synthetic leather– for armchairs. The contrast between the furniture and the off-white walls and ceilings result in a very powerful image.

Furniture geometry is reduced to the minimum elements, ruled by horizontal lines and cubic volumes that remind the importance of modules in Corrales and Molezún work. The strictness it may suggest is broken by the double use of some furniture, which constitutes one of the strengths of the project and can be understood as an example of their “personal union of rationalism and organicism”⁸. So, the structure of the wood panel over the headrest goes through the wall and enters into the bathroom where it works as a cupboard. Much more obvious is the transformation of the sofa into an extra bed by simply removing the upper cushions. On the contrary, architects devise a creative way to turn the desk into a dressing-table: by lifting its top, a mirror and a hiding lamp appear (**Fig.2**).

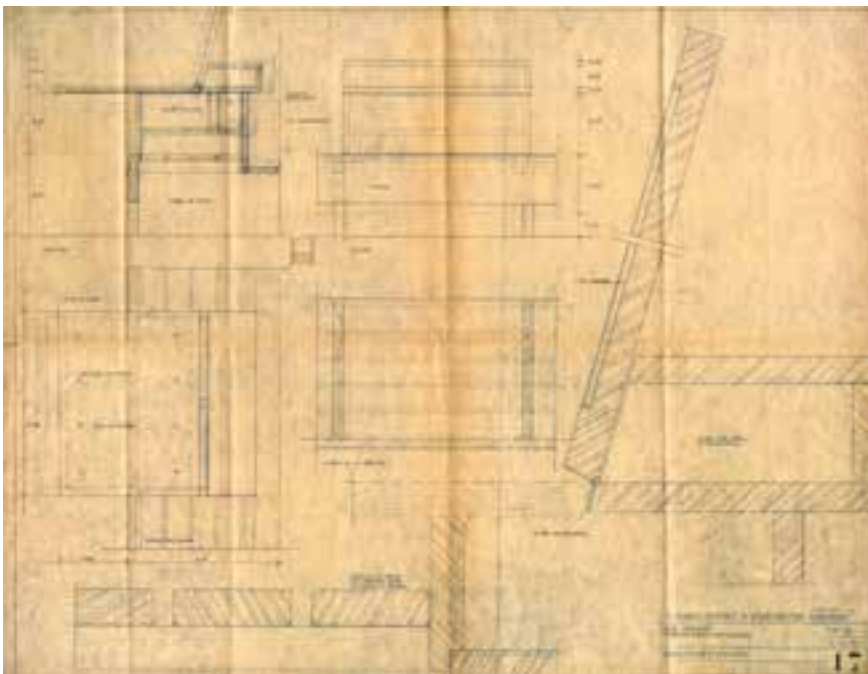


Figure 2. José Antonio Corrales and Ramón Vázquez Molezún, Hotel Formentor, Majorca, Spain, 1963. Desktop and dressing table. © Fondo Ramón Vázquez Molezún. Servicio Histórico Fundación Arquitectura COAM.

Corrales and Molezún show a strange attitude towards facilities. While switches are made evident by installing them on the wood panels, lights are meticulously hidden behind them and into the ceiling. Again, heating vents are carefully designed in wood by the architects and finally located on top of the walls, in full view⁹.

Altogether, there is a sense of fluidity. The bench that runs under the picture windows or the horizontal wood panels on the walls give continuity to the bedroom and the living. Besides, the various uses and possible locations of furniture seem closer to the flexibility of a modern house than to the usual rigidity of hotel design. Its asceticism is connected with the interiors of their Casa Huarte (1965). Corrales, by himself, will resume these mechanisms in Hostal El León in Sotogrande (1963). Its bedroom furniture guided by a horizontal composition and some details as the hidden lamps in the ceiling resemble the ones of the Formentor.

3. Soberness and luxury: Hotel de Mar

José Antonio Coderch probably began to work on the project of Hotel de Mar in 1961¹⁰ although the final plans date from 1962¹¹. The promoter is Hoteles

Federados S.A., a company ruled by Buadas family, the same one as Hotel Formentor.

Located on the coast of Illetes, a vacation development near Palma, it is a nine-storey building with all its rooms facing the sea and distributed in two wings following a half herringbone disposition. A ground floor volume on its backside contains the access and the service spaces. The hotel is an example of outstanding equilibrium between architectural composition and specific requirements of the typology. Not only Coderch applied his previous experience in the project of Torre Valentina, but he also resided for some days in a hotel to test the real necessities of the guests¹².

The interior design was devised by Federico Correa and Alfons Milà, who were working at Coderch's office by that time. Company H Muebles was the one to manufacture the furniture created by them. Nevertheless, no evidence of the completion of the work has been found¹³. It is possible that some parts were not executed as the project had to be delivered with certain urgency because the hotel was to be inaugurated by the minister of tourism Manuel Fraga in 1964, during the celebration of the so-called "25 años de Paz".

On the 29th October 1963, Bartolomé Buadas wrote a letter to Coderch to remind him the commitment to finish the building before the 1st April 1964. He also informed that the furnishings budget had been increased from 16 million pesetas up to 26 million to cover H Muebles demands¹⁴. The furniture company manager, Fernando Aranguren, had previously sent a letter to Correa demanding him more standardised models and simpler wallpapers because they have already spent 15,5 million only to equip the bedrooms¹⁵.

Wood forms the structure of most pieces of furniture; but in this case there is no contrast between them and the walls. They are integrated in the same ambiance due to the use of distinctive colour cloths and wallpapers in each one of the spaces. Bedrooms are characterised by a combination of timber and black tones, the restaurant by ochre and black, the living by timber and green, the bar by green and the dancing room by red.

Geometry seems to quietly follow the space pattern created by Coderch. But a closer look reveals the capacity of the interior design to transform the space. For instance, Correa and Milà use Coderch's module to deconstruct the typical big hotel restaurant into ten small units. Each one is configured like a tiny basilica, with a half-hexagon apse oriented to the kitchen and a glass wall at the opposite side, looking at the sea. About ten tables are accommodated, five of them combining conventional chairs and benches that follow the path of the walls. This space is closely related to the architects' interior design for the Reno Restaurant (1961) in Barcelona. Not only colours and wallpapers are alike, but even the same armchairs, a reinterpretation of Louis XVI style ones¹⁶, are used.

An analogous strategy is applied to the living room. Partition walls and built-in sofas produce intimate rest areas (**Fig.3**). Occasionally, wicker armchairs



Figure 3. Federico Correa, Hotel de Mar, Illetes, Majorca, Spain, 1963. Perspective of the living room.
© Fons Federico Correa. Arxiu Històric COAC.

are introduced. The project narrative explains that “wicker furniture (already existing in the bar of Hotel de Paris in Montecarlo) achieves a summer Mediterranean air with a determinate luxury”¹⁷, a key ingredient in the conception of the interior and always according to the exterior.

In the hall, pillars define a complex space “where symmetric order is not evident, but only sensed”¹⁸. So Correa and Milà design a hexagonal bench with a plant pot on its centre and place it in the centre of the hall, suggesting the way for the guests to go in and out.

In bedrooms, they keep on playing with the views over the sea that define Coderch’s module. Paradoxically, beds occupy a secondary place slightly distanced from the terraces and approximately parallel to the coast, so the Mediterranean can never be seen straight ahead. This liberates quite space for a small sitting room next to the balcony.

Finally, the open-plan of the dancing room is transformed into a lavish space by the complete covering of its walls in bright red paper, only interrupted by mirrors hiding the lamps, as the expressive drawings by Correa show (**Fig.4**). Polygonal volumes on the ground and the ceiling will later be recovered in their project of Up&Down Disco (1982) in Barcelona.

Lightning is another key ingredient. Most of the lamps were designed by Miguel Milà and completely fit in the guidelines of the project: basic materials for complex effects. Simple forms out of wood, metal and methacrylate shape models as the Americana series that can be seen in the project perspectives (**Fig.3**). They were created for the hotel¹⁹ and now are considered classics of Spanish modern design.



Figure 4. Federico Correa, Hotel de Mar, Illetes, Majorca, Spain, 1963. Perspective of the dancing room.
© Fons Federico Correa. Arxiu Històric COAC.

The outcome is a sense of sensuality and soberness. Contention and balance create the emotion of being in an exclusive and warm place, with subtle differences depending on the area. A homely feeling is captured in the restaurant, the living and the bedrooms. Later hotel projects by Correa and Milà, such as the Victoria in Barcelona and a non-executed one in Oyambre, highlight this by adding flowers, books on shelves and other small details in the bedrooms. Meanwhile, there is an evasion intention in the dancing room, much more related to typical leisure spaces although avoiding usual decorative excess.

4. Against tourist non-places

Hotel Formentor and Hotel de Mar interior designs are very personal projects that incarnate the spirit of their authors. At the same time, they coincide with the first steps taken by industrial design in Spain aiming at legitimate the architect as the responsible for achieving truly modern ambiances²⁰.

Corrales explained that he always worked from a *tabula rasa*, never reading architectural magazines and trying to erase the images he may had seen from his mind. He will even state "I don't have a system"²¹. Needless to say, it is quite impossible, but still no explicit connections have been found between Hotel Formentor furniture and another architect's projects.

Correa and Milà's designs are strongly influenced by Italian architects such as Ignazio Gardella whose furniture pieces like the LB2 shelf share the same

idea of attaining luxury with the minimum elements. Their link with Italy will be obvious in commissions like the one for the Olivetti's stores (1969) in Barcelona with podiums for the typewriters and built-in sofas that remind the geometries in the living of the Majorca hotel.

At the same time, both projects constitute a brilliant exception to the usual opulent hotel ornamentation. They are miles away from the over-elaborate interiors that Morris Lapidus was proposing in hotels such as the Arawak in Jamaica or the Eden Roc in Miami and that were compiled in manuals of hotel design²². Lapidus opted for scenographic rooms full of eclectic furniture and loud colours. Instead, Corrales, Molezún, Correa and Milà align with more pragmatic proposals mixing the elegance of Arne Jacobsen's SAS Hotel in Copenhagen with the comfort and soberness of their own commercial and housing projects. Their hotels are not Auge's non-places but warm holiday homes.

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- 2 See *On diseño*, n.383, 2018; *Summa+*, n.165, 2018.
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- 19 Miguel Milà, Barcelona, Generalitat de Catalunya, 2003, 66.
- 20 See María Villanueva y Héctor García-Diego, "El arquitecto y los inicios del diseño industrial en España", Oriol Pibernat (ed.), *Diseño y Franquismo. Dificultades y paradojas de la modernización en España*, Madrid, Experimenta Libros, 139–156.
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Echoes of Japan: An Interpretation of Fernando Távora's Approach to Design

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Fernando Távora (1923–2005), a Portuguese born in Porto architect with an ample understanding of the world, became interested in Japan and its culture early on. He viewed Japanese architecture in the various books he was to acquire from the late 1940s onwards. He paid particular attention to traditional architecture, establishing a process of gradual rapprochement. In 1960 he had the opportunity to visit Japan, attending the WoDeCo conference in Tokyo. He was not very well impressed by contemporary Japanese cities and architecture. On the contrary, his fascination for traditional architecture was confirmed, particularly for the harmony that comes from its unity. In many of the drawings he then made of the spaces he visited, one recognises a gaze that takes delight in the minute detail, revealing a desire to understand that unique unity of traditional Japanese architecture. Interior spaces are looked at as large pieces of furniture. Távora's interest in traditional Japanese domestic space is confirmed in the unpublished text he titled "Reclusão numa habitação" [Reclusion in a House], most likely written in the late 1960s or early 1970s. In the text, Távora proposed reflection on the essence of the Japanese tearoom. Távora's contact with Japan is reflected in some of the buildings he was working on at the time. Less obvious, but no less significant, is the possibility of discerning that reflection in a more abstract – less formal – way.

This paper proposes reflection on the echoes of the relationship that Fernando Távora established with Japan and with its traditional architecture, in particular that of its interior spaces. The object of observation will be the new wing of rooms at the Guimarães Monastery *Pousada*, in Guimarães, Portugal, crossing the reflections in some of the texts he wrote, of which "Reclusion in a House" is a stand-out, with his design practice.

1. Introduction

"I keep a photograph of my parents taken in the cloister of the Convent of Santa Marinha da Costa in 1915 before I was even born. // Relationships, fatality."¹

Fernando Távora (1923–2005), a Portuguese architect who was born in Porto, Portugal and graduated from the Porto School of Fine Arts (EBAP) in 1950, brought to Portuguese architecture the challenge of seeing tradition as a fundamental element for achieving modernity. As early as 1945, the year in

which he began his higher training in Architecture, he wrote the essay “O Problema da Casa Portuguesa” [The Problem of the Portuguese House]² in which he formulated the connection between Modern Architecture and the traditional house. Throughout his life as an architect, pedagogue, traveller and active participant in the national and international debate on modern architecture, he at all times revealed a desire for continuity with tradition. He became a decisive figure for understanding Portuguese architecture in the latter half of the twentieth century.³ Távora became interested in Japan and its culture early on. He observed Japanese architecture in the various books he was to acquire from 1945 onwards. He paid particular attention to traditional architecture. In 1960 he visited Japan, attending the World Design Conference (WoDeCo) in Tokyo.⁴ The contemporary Japanese cities and architecture did not make a good impression on him. On the contrary, he found his fascination for traditional architecture validated, particularly for the harmony that comes from its unity – the unity that permeates the design of the interiors of this architecture, integrating all the elements necessary for the unfolding of daily life. Távora’s contact with Japan is reflected in some of the projects he was working on when he visited the country in 1960 – the Tennis Pavilion in Quinta da Conceição, Leça da Palmeira, Portugal, for example, as he himself confirmed. Less obvious, but no less significant, is the possibility of discerning that reflection in a more abstract, less formal way, at the level of the unity and integrative quality that was at the root of the designs for some of his works.

This paper proposes a reflection on echoes of the relationship that Távora established with Japan and with its traditional architecture, in particular its interior spaces. The object of observation will be the new wing of rooms at the Guimarães Monastery *Pousada*, in Guimarães, Portugal, crossing the reflections contained in some of Távora’s writings with his design practice.

2. The discovery of Japanese architecture

Távora’s first contacts with Japanese architecture took place through books when he was still a student at the Porto School of Fine Arts.⁵ He sought to widen the architectural references that dominated at the time at the school. One such book, *La nouvelle architecture*⁶ by Alfred Roth (1903–1998), included the Japanese Pavilion at the International Exposition in Paris of 1937, a design by Junzo Sakakura (1901–1969). It was a modern work that incorporated values of traditional architecture. Távora was sensitive to the fact that the pavilion presented the fundamental characteristics of Japanese tea houses. Two other books, *The Modern House in America*⁷ by James Ford (1884–1944) and Katherine Morrow Ford (1905–1959) and *Built in USA: 1932–1944*⁸ edited by Elizabeth Mock (1911–1998), included the House in Fellowship Park in Los Angeles, California designed by Harwell Hamilton Harris (1903–1990) in 1935, a work that was clearly influenced by traditional Japanese architecture. These initial contacts with Japanese architecture were not premeditated. However, both Sakakura’s pavilion and Hamilton Harris’ house represented a meeting

of modern architecture and tradition that Távora formulated in his essay of 1945. His interest in Japan was consolidated by his meeting with Japanese architects at CIAM conferences. In 1951 he got to know Junzo Sakakura, Kunio Maekawa (1905–1986), Kenzo Tange (1903–2005) and Takamasa Yoshizaka (1917–1980) at the CIAM VIII event in Hoddesdon, England. He met Tange again in 1959 at the last CIAM in Otterlo, Netherlands and also at the WoDeCo event in Tokyo. In the late 1950s, Távora purchased *Japanische Architektur*⁹ and *The Japanese House and Garden*,¹⁰ by Tetsuro Yoshida (1894–1956) and *The Lessons of Japanese Architecture*¹¹ and *Japanese Gardens*¹² by Jiro Harada (1878–1963). Harada, and Yoshida in particular, saw in traditional architecture a means of nourishing modernity. Távora acquired these books around about the same time as his involvement in the Survey of Portuguese Regional Architecture, for which the republication in 1947 of his text on “The Problem of the Portuguese House” proved to be fundamental.

During his stay in Japan, Távora purchased more books, including *Houses and People of Japan*¹³ by Bruno Taut (1880–1938) and *Japanese Architecture*¹⁴ by Hideto Kishida (1899–1966). From WoDeCo he received a copy of *Nature and Thought in Japanese Design*¹⁵ by Teiji Ito (1922–2010). Taut’s book was a sort of Western counterpoint to Yoshida’s Japanese approach in *Das Japanische Wohnhaus*. Both books were decisive for the dissemination of traditional Japanese architecture in the West. Távora continued to purchase books on Japanese architecture during the 1960s. Amongst these books was *The Japanese House: A Tradition for Contemporary Architecture*¹⁶ by Heinrich Engel (1925–2013). Engel wrote a “treatise”¹⁷ on the traditional Japanese house, conducting an exhaustive study of its forms and their reasons for being. His book is a modern counterpoint to the works by Yoshida and Taut.

3. The trip to japan

Távora’s visit to Japan was to be a crucial moment in the confirmation of his appreciation of traditional Japanese architecture.

Távora arrived in Tokyo on May 11, 1960¹⁸ and stayed in Japan for 17 days. Besides Tokyo, he visited Kyoto, Osaka and Nara. The reason for his visit to Tokyo was his participation in the WoDeCo event. However, he really focused on the “physical and human landscape of Japan.”¹⁹ Tokyo proved to be a “disastrous”²⁰ city, but it did have peculiarities that enchanted him, the majority of which had to do with ancestral Japanese culture. Távora sought to dive into the city. He met with Toshihiko Ota (1928–2008) and his wife, Kyoko, with whom he ventured into small restaurants, bars and a Sumo wrestling show. Távora and Ota most likely met in Portugal. The observations he made in his travel diary tell of his delight at the small details in interior spaces, particularly those that were most impregnated with Japanese culture. “We have gone to heaven, which is the same as saying a pure Japanese

restaurant.”²¹ He took a particular interest in the interior spaces. About getting to know the house of his friend Ota’s father, he wrote:

*of course, we took our shoes off immediately when we entered and then moved to a gallery with sliding doors that overlooked a small but beautiful garden. Because the house is raised about 40 or 50 centimetres off the ground, the threshold is an ideal place to sit. Later we found ourselves in a room with no chairs and with a low table which also opened onto the garden. Sliding doors feature all through the interior spaces, and function impeccably... without any type of hardware.*²²

Távora showed attention to detail and awareness of the relationship between the body and the elements that make up the space. It was that attention that caused him to highlight something that makes no sense to him in the dining room fitted out with Western furniture: “Japanese houses are made for people to sit or kneel on the floor, meaning Western furniture does not fit into that ambience at all.”²³ The traditional Japanese space, and the way in which it is used, essentially horizontally, entered into conflict with Western furniture, which is essentially vertical in nature. Here, Távora saw signs of a world that was gradually being lost, being open to the new development that was so little informed by the wider Japanese identity.

In Kyoto he found a Japan that had changed less. The city made a deep impression on him. For example, in the various types of construction, above all the temples, “wood is explored to the maximum of its physical and plastic possibilities.”²⁴ He had the opportunity to spend the night at a Japanese inn. In Tokyo he had stayed at a contemporary hotel. His first contact with the inn caused a “certain feeling of weirdness”,²⁵ under which one finds his fascination for the space and the way in which the space was experienced – taking off one’s street shoes when one entered and changing into “house shoes”; then taking off the house shoes to walk barefoot on the tatamis; the courtesy of the people; the room proportions; the lack of furniture and sleeping on a futon on the floor; the different toilets; bathing and the respective ritual, so different to what was normal in Western countries. Távora made a number of comprehensive drawings of his room, seeking to register all the details (**Fig. 1**) – the proportions of the space, which was small and had a low ceiling, the sliding door, the floor covered with tatamis and “of course, its tokonoma.”²⁶ It was a small interior world that opened “onto a small ‘cour’ with its lantern, always running water and its red fishes”.²⁷ In its austerity, the room itself could be understood as an item of furniture.

4. Echoes of Japan

After his trip to the country in 1960, Távora continued to show an interest in Japan and its culture. That interest was confirmed by the unpublished text he titled “Reclusão numa habitação” [Seclusion in a House] (**Fig. 2**), which most likely dates from the late 1960s or early 1970s.²⁸ It is a translation of

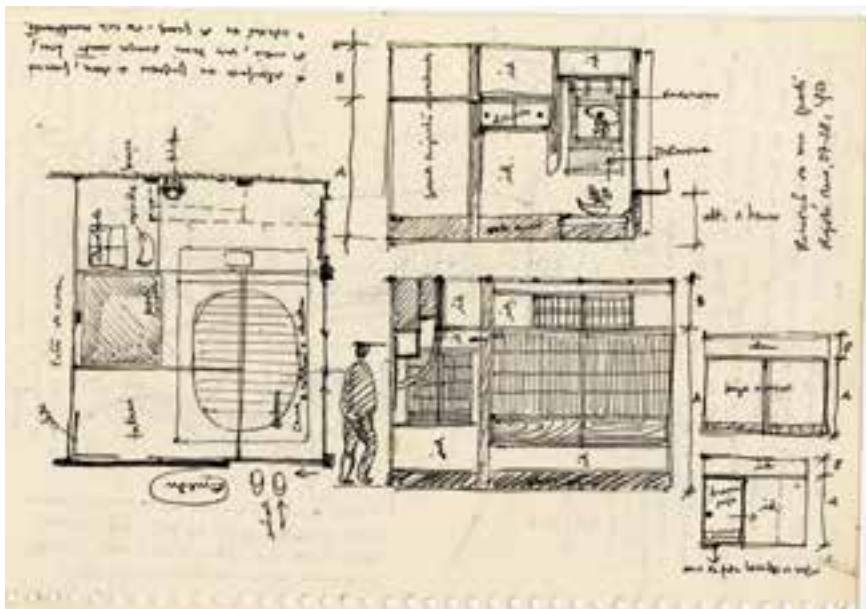


Figure 1. Fernando Távora, Hotel room in Kyoto, Japan, May 27–28, 1960. © Fundação Instituto Marques da Silva, Porto, Portugal, Fernando Távora collection, FIMS/FT/VJapão.

some parts of the sub-chapter titled “Seclusion” from *The Japanese House: A Tradition for Contemporary Architecture*²⁹ by Heinrich Engel. It is possible that this text was meant for a conference or a class Távora was to give.

Távora proposed reflection on the essence of the Japanese tearoom. The text confirmed his interest in the possibility of crossing traditional architecture with contemporary architecture. The rewritten parts and what was omitted from Engel’s work revealed the relationship Távora had with Japanese architecture. Engel begins the sub-chapter by listing the underlying concepts of seclusion in a building. He established as the first of said concepts that seclusion “is both the state of and the place for being in solitude within the house. It is the physical and psychological isolation of the individual from both his fellow man and his environment.”³⁰ In Japanese architecture, seclusion materialises in a particular situation: the tearoom. In contrast to traditional architecture – house, palace, temple – where the spaces open up successively to the exterior, in a tearoom the relationship with the outside takes place in a more isolated way. The tearoom “shuns external experience other than bringing the microcosm of the room into precise relationship to the macrocosm of the universe by a limited picture-like glimpse of a small tea garden or by a simple flower in a vase.”³¹ The exceptional interiority of this space derives from that deliberate distancing from the exterior world. The isolated views of the tea garden confirm that interiority. Guests enter by means of a small door that is approximately 70 cm high and 65 cm wide and

positioned on the elevated flooring of the tearoom. The body is forced to bow to enter, thus assuming a gesture of modesty and exalting the aesthetic experience inherent in experiencing this space.

Távora does not linger on the meaning of seclusion. He limits himself to highlighting the defensive nature of seclusion in the West. He also omits the importance of the tea garden. Thus he focuses on the physical and material characteristics of the tearoom. Távora emphasises the space's tight dimensions – four and a half tatamis, which corresponds to a square with a length of 2.70 m on one side and which offers space for 5 persons at the most. The walls are made of dark clay and contain few apertures. Such spaces house the tokonoma, an alcove that can be home to a floral arrangement and sometimes also a picture scroll. Both allow for purification of the gaze. The fire, an element that connects to earth, is slightly off centre. All the elements that make up such spaces come together to create a peculiar sense of unity. They are unified spaces, void of all furniture. The minute details in describing the space reminds one of the drawings Távora made of his inn room in Kyoto. The tearoom is a small piece of architecture that functions as a large item of furniture.

Távora seems to have been particularly sensitive to the interiority of the tearoom, perhaps more so than to the conceptual meaning behind such spaces. The omission of the importance of the tea garden confirms his interest. The interiority is observed on the basis of its materiality and the relationship with the place. Interiority and seclusion are, ultimately, values that have to do with Portuguese architecture.

This understanding of the tearoom as a unified object, as a large item of furniture, opens up a new reading of the new wing of rooms in the Guimarães Monastery *Pousada*, in Guimarães, Portugal. Távora worked on his design between 1972 and 1989.³² The wing is L-shaped in plan, opening up to the south and west. It is inserted between the former monastery and the local topography, and almost disappears. The arms of the L receive a large-dimensioned piece, a horizontally distended body that is homogenised by the



Figure 2. Fernando Távora, "Reclusão numa habitação", undated typewritten draft with handwritten notes, first page. © Fundação Instituto Marques da Silva, Porto, Portugal, Fernando Távora collection, FIMS/FT/ 5090-0001.

brick–red colour. It contains the room window openings. There is a succession of panels – creating a calm and long repetition (**Fig. 3**). In the interior of each room the effect is one of counterlighting. The slight elevation of the floor level next to the windows accentuates the horizontality of the space.

This large piece made of wood can be associated with a reading of vernacular Portuguese architecture. However, in its crossing of tradition and contemporaneity, it is also possible to find here echoes of Japan. As Távora wrote of Sanjūsangen–dō Temple in Kyoto, which dates from 1164:

*the building, which they say is the longest wooden structure in the world, is very beautiful, particularly on the interior [...]. It is a composition that repeats similar (not identical) elements throughout the whole building. I believe the principle is not very common and it impressed me greatly.*³³



Figure 3. Fernando Távora, Guimarães Monastery Pousada, Guimarães, Portugal, 1972–1984, new wing © Photo by Maria João Moreira Soares, 2022.

5. Conclusion

In 1945 Távora wrote: “I am very open to things from outside, things that I have nothing to do with or never thought about; which is why I love new things, ideas I never had and knowledge that I ignore.”³⁴ Fifteen years later, Fernando Távora travelled to Japan. In that country, coming from the outside, with things from outside, he encountered a particular unity in another vernacular universe: small architectural objects conceived as large design objects – like items of furniture. It was a new “idea” for contemporaneity. Relationships, fatality.

Acknowledgments

The authors wish to thank Dr Paula Abrunhosa and the José Marques da Silva Foundation Institute (FIMS) for permission to use the images of the drawing and the typewritten document owned by the architect Fernando Távora. The authors also wish to thank Ms. Carine Silva and the Pousada Mosteiro de Guimarães for welcoming us on our visit to the pousada.

This work is financed by national funds from FCT – Foundation for Science and Technology under the Project UIDB/04026/2020.

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Notes

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- 2 The text was published in November 1945 in the weekly publication *ALÉO*. Two years later, a revised and enlarged version was published in the first and only issue of the *Cadernos de Arquitectura* periodical. This is the version that is normally taken into consideration in the diverse works on Fernando Távora. See Fernando Távora, "The Problem of the Portuguese House", in *Fernando Távora*, ed. Luiz Trigueiros (Lisbon, Blau, 1993), 11–13.
- 3 For further discussion on Fernando Távora and his work, see José António Bandeirinha, ed., *Fernando Távora Modernidade Permanente / Fernando Távora Permanent Modernity* (Porto, Associação Casa da Arquitectura, 2012).
- 4 The visit to Japan was part of a four-month-long voyage that took Távora to USA, Mexico, Thailand, Pakistan, Egypt, and Greece.
- 5 See João Miguel Couto Duarte and Maria João Moreira Soares, "Fernando Távora's Japan Through Books: A Fascination with Tradition in Search of Innovation", in *Tradition and Innovation*, eds. Maria do Rosário Monteiro, Mário S. Ming Kong, and Maria João Pereira Neto (Leiden, CRC Press/Balkema, 2021), 179–187.
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- 16 Heinrich Engel, *The Japanese House: a Tradition for Contemporary Architecture* (Rutland, Tuttle Publishing, 1964).
- 17 Ibid., 24.
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- 19 Ibid., 1:306; translation by the authors.
- 20 Ibid., 1:306; translation by the authors.
- 21 Ibid., 1:307; translation by the authors.
- 22 Ibid., 1:314; translation by the authors.
- 23 Ibid., 1:314; translation by the authors.
- 24 Ibid., 1:324; translation by the authors.
- 25 Ibid., 1:322; translation by the authors.
- 26 Ibid., 1:323; translation by the authors.
- 27 Ibid., 1:323; translation by the authors.
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- 29 Engel, *Japanese House*, 278–301.
- 30 Ibid., 278.
- 31 Ibid., 279.
- 32 See Bandeirinha, *Fernando Távora*, 342–347.
- 33 Ibid., 1:325; translation by the authors.
- 34 Távora, *Raízes e Frutos*, 1:1718; translation by the authors.

Urban futures of a recent Portuguese past: Francisco Conceição Silva and the Megastructures

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The concept laid by Maki on Megastructures – a large frame in which all the functions of a city or part of it are housed – guides the book *Megastructures: urban futures of recent past* in which the author Reyner Banham examines the architectural developments of such concept on the third quarter of 21st century. Intentionally or not, Francisco da Conceição Silva, a prolific Portuguese architect, and a leading figure in tourism consolidation as Portugal's economic strength in the 1960s aligns itself with this architectural trend with achievements such as Hotel do Mar and Hotel da Balaia – the latter is the turning point in his practice from a small studio to a multidisciplinary firm.

Hotel da Balaia is not an isolated case: Conceição Silva designed other megastructures, which are the subject of the present paper. To attract investments to its endeavours and to answer to external clients' demands, the firm designed a series of mixed-use buildings with enough scale to be considered cities fractions', which will be analysed in this paper: "neighbourhood-schemes" of Dafundo (1971), Restelo (1973) and Alvito (1974) and "bridge-buildings" at Batalha Highway (1966) and over Avenida de Roma (1972). In both cases, Atelier Conceição Silva aligns itself with its contemporaries in the search for the urban future mediated through large physical structures; though, the Portuguese firm has more pragmatic and less utopic or libertarian reasons behind its proposals.

The scope is wider (five projects against one) and the amount of information is smaller – all projects were not developed beyond concept and volumetric studies – than Lobo's, which will lead to a more panoramic view of Atelier Conceição Silva's work. The paper is based on documental sources, especially the Conceição Silva estate, currently under the conservation of CIAUD – FAUL.

1. Posthumous memoirs

Published in aftermath of the events reported, the 1976' Reyner Banham's book *Megastructures: urban futures of the recent past* is a critical review of large, all-encompassing architecture designs from the 1960s, and is especially scathing on architects' self-confidence that supports their role as comprehensive designers and the consequential failure of their propositions to solve problems way more complex than built environment design. Despite not being exhaustive, Banham's book is deep enough to point out some *phenomena* characteristics which can serve as a guide to examine its implications in other countries not mentioned in *Megastructures*, such as

Portugal. During the period analysed by Banham – plus a few overtime years – Francisco Conceição Silva led the biggest Portuguese architecture firm¹. This status was achieved through a sequence of well-succeeded commissions in tourism², an emerging force in the Portuguese economy as of the 1960s³; however, Conceição Silva not only landed big project jobs but also took control over the whole developing process, managing a holding that design, build, promote and sell those buildings⁴. On one hand, it allowed being both architect and client – which did not prevent him from working with “external clients”; on the other, to keep the huge corporation machine running, a permanent search for new business was mandatory. In the 1960s and early 1970s, Atelier Conceição Silva had the financial and workforce resources to risk in studies with less probability of success but with a bigger payoff.

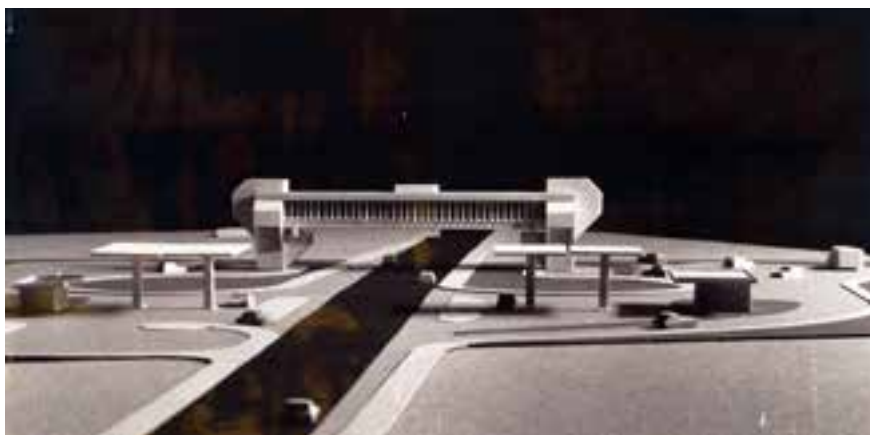


Figure 1. CS Mega Batalha

This paper analyses five of these studies developed between 1966 and 1974: they were chosen because fit with some accuracy in the concept adopted by Banham, discussed later in the paper. Mostly, the architect is the client: the main purpose of those proposals is to seduce prospective investors and test their legal clearances limits, all within a frame of maximum profitability, not revolution or utopia. When the client is not the architect, proposals go for alternatives already tested by other authors somewhere else. This assumption can be made by observing the documentation gathered around the studies, including drawings and models' photos, collages, and texts, that often compose the study folders. In written form, the firm led by Conceição Silva is most explicit in its beliefs and affiliations, aligning itself with the current architectural environment and assuming many concepts that later Banham will criticize. These ideas will be further discussed here by reflecting on what is disclosed by Conceição Silva on his selected designs.



Figure 2. CS Mega Av. Roma

Banham critically presents through the pages what some authors thought, architects designed, and clients commissioned during those mega years. Banham starts by borrowing the definition of megastructure from Wilcoxon's etymology⁵, followed by Fumiko Maki's concept of Megastructure – which is further developed in chapter Megayear 1964 – as “a large frame in which all the functions of a city or part of a city are housed”⁶; “In a sense, it is a man-made feature of the landscape”⁷. His text moves through likely, unaware, antecedents; discusses Archigram's role and aesthetical exploration of functional parts of buildings; recounts the apex of Megastructure in its built form with Expo 1967. Descent part of the argument presents the idea of street, a familiar concept to mega structuralists: to create a controlled, artificial environment, which can reproduce the urban life with “issues” as weather or car traffic under control. Before the last argument, Banham points to high density and the failure of intents to build it, with new towns of Cumbernauld and Thamesmead as insufficiency examples. With those concepts in mind, it is time to analyse the case studies from Atelier Conceição Silva through these lenses. Designs selected can be roughly divided into two groups: Bridge–buildings and Neighbourhood schemes.

2. Bridge-buildings

Bridge-buildings are those that support urban functions in a structure that crosses an obstacle, profiting from aerial space use, as Restaurante da Batalha (1966) and Ocupação aérea da Avenida de Roma (1971) did. Atelier Conceição Silva designed both commissioned by large corporations such as Shell Portugal or CP.⁸

Shell asked Conceição Silva to design a service station to be built in Batalha, along Autoestrada do Norte – the highway which connects Lisbon and Oporto. The firm offers two solutions, designed by José Forjaz and Manuel Vicente⁹: one is the traditional mirrored service stations; the paper will discuss the other, a bridge restaurant over the highway, which only required duplicated fuel-supplying and parking spaces¹⁰. Tectonically simple, Restaurante da Batalha replicates the idea introduced by Angello Bianchetti in northern Italy¹¹: pre-stressed concrete beams cross the highway and receive a second metal structure that houses the restaurant hall. This ensemble is supported by concrete in situ servant spaces on both sides of the road. At Batalha, what matters is the emotional power and marketing impact given by the futuristic view of a building standing on the distant vantage point of a highway, taking advantage of the client's long exposure and experience through speed:

Thus, the almost spectacular appearance that the restaurant assumes and its dominance over the landscape and the road affirm its presence and define an environment that is considered to be extremely enriching of the solution¹².



Figure 3. CS Mega Dafundo

In 1971, Conceição Silva present to CP a study on the aerial use of the railway that crosses Avenida de Roma. The firm proposes 23000sqm of built area, throughout a span of 25 by 400 meters, taking advantage of the vast flow of people expected by mass transit hub implementation to propose an occupancy less affluent but much more numerous: small studios, shops, and offices for independent professionals such as physicians, lawyers, architects, etc. Even with mass transportation literally at its feet, the building was designed with 8500sqm parking spaces. It perfectly captures the

infrastructure spatiale of Yona Friedman, summarized by Banham as “a three-dimensional grid raised on pilotis above ground level”, with “heavyweight uses (industry, large meetings, circulation) occupy the ground surface”¹³.

3. Neighbourhood schemes

Neighbourhood schemes are those that intend to create a frame with all – or most of – a city’s functions settled directly on the ground: it is the case of Urbanizações Dafundo (1971), Restelo(1973), and Alvito (1974), all in Lisbon and all developed under the holding led by Conceição Silva, who act both as designer and client.

Urbanização Dafundo was developed between 1970 and 1971. The land has an elongated proportion in plan, perpendicular to the hillside facing the Tagus River in which it sits. On the plot’s midsection, one road split it from east to west: each side is partially occupied by a lower building embedded on the hill, with the side facing the ground dedicated to parking or public spaces and the one facing the river with housing; over these lower buildings, residential towers with fifteen floors were proposed to create a comb-like composition pointing the sky. These “combs” are shifted in a plan to guarantee a direct and permanent river view. A bridge-building with commercial and administrative uses connects the two sides, completing the ensemble: if erected, that would mean a built area of 65000sqm and a density of 304 inhabitants/ha. Led by architect Tomas Taveira¹⁴, the Dafundo project explicitly aligns with the mega structuralist discourse: “It is evident that the proposal we are now presenting is more related to ‘utopian urban structure’ (Archigram, Yona Friedman, etc.) than the one that appears built in the historical development process.”¹⁵ The ensemble’s image intentionally applies Maki’s ideas as “The concept of the image that structures itself from the notion of the urban landscape as an aesthetic object.”¹⁶

Developed under the leadership of architect Conceição Dias in 1973, Urbanização do Restelo is less pretentious in terms of urban discourse, but still carries forward the mega structural approach to design. Situated between Algés and Restelo neighbourhoods, the plot was a recently abandoned bullring, close to areas with a growing upper class. Design is focused on this stratum: aimed to create a new centrality attractive to managerial offices of maritime companies situated at Infante Santo and Alcantara by offering specialized commerce such as powerboats and sports cars; and offering a high standard hospitality service through apart-hotel and panoramic restaurant. The land is majority flat, with a proportion near to square: as in Dafundo, it is split in mid-section, but in a north-south direction. On the western block, two cylindrical buildings – a 23-story high office building and a 6-story commercial under a 29-story apart-hotel – sit above a low-rise commercial base; the eastern block houses an 11-story parking building, with seven floors above the ground. Urbanização do Restelo is more of an accidental than an intentional member

of the mega structuralist line in Atelier Conceição Silva's work: it advocates for the high density (50.000sqm built over 40% of an 8500sqm plot), for the creation of an urban centre apart from traditional Lisbon downtown, for the trending aesthetics of high-tech, cylindrical shapes, topped by amusement use of the panoramic restaurant, an important feature that project description reinforces: "The proposed altimetry seeks to take advantage of the panoramic views of the Tagus and Monsanto Park; in Lisbon, there is no hotel that fully enjoys the views of the Tagus and the other side".¹⁷

The preliminary designs for Urbanização do Alvito were developed in 1974, as a multidisciplinary effort within the firm. The intervention area is given by two fusiform plots – a wider and a narrower – juxtaposed: the first was a former limestone quarry and the second was formed by the land between Estrada do Alvito and Autoestrada do Sul – a highway opened by 1966. Facing the valley, the area has advantages that get noticed by the firm during design development, especially regarding landscape features: not only does it provides the conditions to create viewpoints like those present in Lisbon downtown, but also has the means to be widely seen, as the collages with models and pictures taken from the highway can prove. The wider plot measures 15,4ha and has a proposed built area of 125000sqm. Along the fuse's stretch, a central axis "structures this space, longitudinally developing in



Figure 4. CS Mega Restelo

a linear configuration that recreates the **idea of street**¹⁸, dynamizing in terms of animation a situation that is clearly intended to be urban".¹⁹

The axis mirrors a series of L-shaped buildings, creating semi-private squares – like those proposed in Tróia by the same firm. The axis is tangentially balanced in plan by an elementary school on the south and a hospital on the north end. On the end of L-shaped buildings, square-plan residential towers, ranging from 12 to 27-stories, complete the composition. The narrow plot is occupied by a complex of hotel activities, an apart-hotel, conference centre, and hospitality: here, the lower buildings are arranged in polygonal crescents facing the valley in the southeast, topped in the centre by two square hotel towers. The typical section of lower buildings of both plots is strikingly like Brunswick Center, a brutalist shopping mall designed by Patrick Hodgkinson and opened in 1972 in London²⁰: a terraced building supported by concrete columns on gallery face, instead of using earth as backing as Conceição Silva itself did in Hotel do Mar.

Alvito's design synthesizes some intentions of both Restelo and Dafundo: the project description makes it clear when mentions "it is foreseen to supply the city with basically a hotel centre in a unique location, offering a multiplicity of panoramic views of Lisbon that correspond to a visitor wishes"²¹ or describing the volumetric solution as "this centre emerges, forming a 'unitary object' that develops around the current quarry". However, is the intention to control the environment through idea of street in Urbanização do Alvito takes further the concept of the urban future mediated through large physical structures as the megastructures supposed to do.

4. When the lights go out

Conceição Silva did the same as his contemporaries did in those mega years, as the five structures presented in this paper can demonstrate. They express a candid interest in building big and being feasible at the same time, supported by the idea of having the architect as a client or from examples built abroad. These studies did not intend to create a new society nor were based on the possibilities of interchangeable buildings, despite aspiring to create a purified view of urban life. The studies comprise large, denser parts of conventional cities, aesthetically shaped to be a feature of the landscape, but built with conventional technology and looking to be sold to conventional real estate clients or implemented by big corporations. They were part of a common business operation to prospect new commissions – only possible because Atelier Conceição Silva had the resources to risk in studies that with no guarantee of return – which means carrying sufficient detail to seduce investors and clarify regulators, without adopting detailing or social requirements that could undermine the proposal. Such under-development provides a flexibility that allows designs to move in different directions until get built, one way or another. A specific event changed Conceição Silva's

trajectory as a mega structuralist designer and sponsor: the attack suffered after the Carnation Revolution and his decision to quickly move to Brazil, leaving behind an almost unassisted behemoth corporation he have created²². Even if he hadn't moved, Portuguese socioeconomic landscape changes were so impactful that his company probably wouldn't have survived.

Even if the book of Banham can only be read like a report of past events, almost as an idea's obituary, the short period between the events and the publication plus the bleak conclusion on the self-cancelling concept of megastructures takes the reader to conclude that the *phenomena* are over. Of course, it is easy and maybe unfair to say now, almost fifty years after Banham's book – that some dinosaurs evolved into birds like crows, chickens, or hummingbirds, for instance. Even controversial, Lisbon got its towers with panoramic views; the idea of street environmentally controlled expanded to the whole world through shopping malls during the 1980s²³; in academe, all-encompassing designs that float above flawed real-life sites are still in fashion. If Conceição Silva had the time to build his mega structures, probably he would keep his multidisciplinary approach, bringing together painters, sculptors, engineers, social scientists among many other different professionals to create an encompassing work, and maybe today we could have a market-savvy and aesthetically concerned extra argument to demonstrate that megastructure is a permanent aspiration of architecture, not an isolated phenomenon.



Figure 5. CS Mega Alvito

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The Olivais neighborhoods as a laboratory for housing development in Lisbon. Translations between architecture and socioeconomic stratification

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The neighborhoods of *Olivais Norte* (1960) and *Olivais Sul* (1963) are paradigmatic examples of the Portuguese State's response to the housing shortage that was acknowledged in Lisbon in the period of the post-WWII, and of their designers' quest to respond to the need for "housing the greatest number". Because of the size of the operation, its role in the city's plans for expansion, and because the architectural designs of the various buildings and facilities were entrusted to different design teams, *Olivais* received unprecedented conditions for modern planning in Lisbon and acted as a laboratory for housing development. In social terms, *Olivais* was framed by a legal framework that established a ratio of 70% for social housing to 30% at market rents, in which, within the first group, housing should be programmed and designed for 4 different social categories determined according to household rent to foster social diversity.

With great autonomy, the 32 teams who undertook the architectural designs had the opportunity to explore programmatic innovations and new ways of living, adapting the homes to Portuguese habits and customs within the context of the minimal areas and limited budgets. In terms of the internal organization of the apartments, the most progressive solutions were found in the buildings intended for the lowest socioeconomic categories, in which more organic alternatives were explored, incorporating features of Mediterranean life, much inspired by the experiences of the Italian INA-Casa neighborhoods or some Madrid social housing developments. On the opposite, the buildings provided for the wealthier families remained closely tied to ancient logics of space organization.

Through case studies, this paper aims to explore the relationship between the urban and architectural designs of the *Olivais* housing and the socioeconomic categories for which they were designed, while referring to the international cultural influences on their production.

1. Habitat for the greatest number in Lisbon

Throughout the 1940s, the shortage of housing in the metropolitan area of Lisbon increased inordinately, leading to the appearance of illegal dwellings and shanty towns in many areas of the city. To solve the situation, the Municipal Council of Lisbon created the Urban Studies Office (GEU) in 1954,

and the Housing Technical Office (GTH) in 1960, to build new housing with affordable rents for low-income households, co-funded by the State¹. *Olivaís Norte* (GEU, Guimarães Lobato, Sommer Ribeiro, and Pedro Falcão e Cunha, 1960–1962) and *Olivaís Sul* (GTH, José Rafael Botelho and Carlos Duarte, 1963–1972) were the first projects developed within the Decree–Law 42.454 that has determined that the housing shortage should be resolved by providing a ratio of 70% social housing distributed within 4 different socioeconomic categories (40% I, 30% II, 20% III, and 10% IV). Although Portugal was under a dictatorial regime that survived the end of the Second World War – the *Estado Novo* (1933–1974) –, the 1960s were marked by an overarching idea that Lisbon had to be a modern city, in line with what was most innovative in Europe. Rethinking the traditional city, the idea of an “integrated plan” became prevalent, extending the concept of housing to a full and balanced quality of life. Housing implied not only the dwellings, but everything else involved with human life in an urban context. At long last, the ethical dimension of the Modern Movement was accepted on a large scale in the Portuguese capital, and the development of habitat for the greatest number could finally be undertaken by socially aware architects.² Swayed by the climate of challenging the regime and inspired by visits to welfare state developments in other European countries, the Portuguese architects appealed for their involvement in seeking solutions for the housing question.³ Covering more than 200 hectares, *Olivaís* provided decent housing for around 46,000 inhabitants.

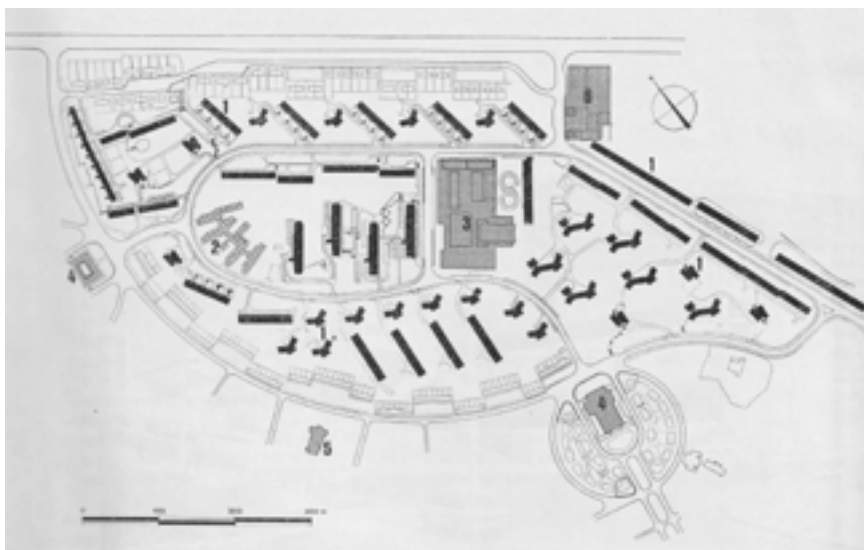


Figure 1. Guimarães Lobato, Sommer Ribeiro, Pedro Falcão e Cunha, *Olivaís Norte*, Lisbon, Portugal, 1960. General plan. 1) Residential buildings, 2) primary school, 3) shopping civic center, 4) markets, 5) church, 6) petrol station. © GTH Boletim, vol. 3, n. 20, 1971, 199.

2. The social organization of the urban space

Olivaís Norte, with 1,889 houses for 8,500 inhabitants on 40 ha, was conceived as a smaller scale trial for the major operation that would follow it to the south, the neighborhood of *Olivaís Sul*, providing 7,996 dwellings for 38,250 inhabitants on 186 ha. The fact that they succeeded one another chronologically enables a critical reading of the evolving interpretation of the Modern Movement in Lisbon on this period.

Olivaís Norte inaugurated the adoption of the Athens Charter in Lisbon⁴: the urban structure was based on a rational occupation of the site marked by the isolated insertion of residential buildings, subject to the criteria of solar exposure and ventilation, in an open landscaped space. The circulation spaces formed a hierarchical system with a clear differentiation between the traffic and pedestrian circulation networks, with a road layout independent of the buildings' orientation. Conceived as a neighborhood unit, the facilities supporting the housing, of a social nature (commerce, culture, and recreation), constituted a nucleus in a civic-commercial center. School groupings were located to never be further than 250m from the housing. Exploring the linear, block and tower typologies, the solutions presented were divided into two scales of intervention determined by social categories: the higher classes (III and IV) were given taller buildings (8 and 12 floors) and the lower classes (I and II) lower buildings (4 floors). The tallest buildings were arranged next to the civic-commercial center and the primary school in the highest and most central area of the urban-cell, oriented along Cartesian axes and resembling a kind of acropolis. The lower buildings, with greater repetition of type, and more varied orientation, were dispersed around the periphery to follow the terrain, following a *plan masse* logic. As a belated application of the Athens Charter, the plan reflected post-war tendencies as the British new town construction program⁵.

Due to its size, the planning of *Olivaís Sul* was divided into 4 basic urban scales, based on the number of inhabitants: urban fabric (38,400–48,000 inhabitants), urban cell (9,600–12,000 inhabitants), neighborhood unit (4,000–5,800 inhabitants) and residential group (1,200–2,400 inhabitants). The residential groups were clustered into neighborhood units that were arranged around a local civic-commercial center, together constituting an urban cell. While the main amenities of social life (civic-commercial centers, health facilities, parish centers, sports facilities, and urban parks) were designed on the perimeter of the cells, concentrated along a main vector running through the center of the urban fabric, schools (pre-school and primary) were sited in the central zones of the urban cells (serving a radius of 150–200m and 400m, respectively). In addition to *Olivaís Norte* (subsequently known as cell A), *Olivaís Sul* were established around 6 cells: four mainly intended for housing (B, C, D, E), another incorporating a housing nucleus for rehousing, and largely occupied by a cemetery (F), and another intended to be entirely occupied by the main civic-commercial center (G) at the core of the urban fabric. The vehicle and pedestrian



Figure 2. José Rafael Botelho and Carlos Duarte, *Olivais Sul*, Lisbon, Portugal, 1963. General plan. 1) Primary School, 2) Elementary School, 3) Secondary Commercial Centers, 4) Church, 5) Contador-Mor, 6) Sports Area, 7) Cemetery, 8) Industrial Area, 9) Lisbon Water Company, 10) Social Medical Centre, 11) Nursery/Kindergarten, 12) Parks.
© *GTH Boletim*, vol. 3, n. 20, 1971.

circulation networks remained independent, and the buildings were sited organically, as the topography dictated – the towers were placed at the highest points while, on the slopes, the buildings were sited to follow the terrain – on an immense green space that played a fundamental role from a hygienic, sanitary, recreational, and psychological point of view. To avoid creating socially segregated areas, the 4 social categories established by Decree-Law 42.454 were included in every cell and the coordination between higher buildings, higher locations to the highest social categories, as in *Olivais Norte*, was no longer applied. However, there was an attempt to define a socially homogeneous spatial system through the grouping of nuclei of similar categories, leaving schools and civic centers to articulate social heterogeneity, according to principles implicit in the concept of neighborhood unit. This was the basic concept of post-war British urbanism, which relied on primary schools becoming a center to foster civic activity that, through a series of extra-curricular services would encourage a fluid boundary between the population and the school community. Additionally, regarding the younger population, it was intended to create outdoor spaces that provided educational experiences, inspired by the Swiss Robinson Crusoe parks, through the inclusion of facilities suitable for cultural and craft activities. The principle of combining art and architecture, both on private and public spaces, assumed in *Olivais Sul* a scale unprecedented in Portugal, reflecting a belief in the transforming power of art in society.⁶

3. Social interpretations of housing design: from the common to the domestic space

Inspired by the work of Chombart de Lauwe in France, social studies were undertaken at the time with the aim of understanding the environment and ways of living of the working classes⁷. As opposed to the dogmatic solutions of “storing the population” that arose from the orthodox spirit of the CIAMs⁸, open and participative methodologies were recommended but, in fact, different approaches can be recognizable in *Olivaís* neighborhoods: with great autonomy, the 32 teams⁹ who undertook the architectural designs had the opportunity to explore programmatic innovations and new ways of living, adapting the homes to manners and customs within the context of the minimal areas and limited budgets of social housing.

Olivaís Norte follows a strict formal social hierarchy: the buildings intended for the higher social categories (blocks designed by Artur Pires Martins and Cândido Palma de Melo, or by Abel Manta) had a more imposing volumetric presence and embodied rationalist devices in a more pronounced way, being paradigmatic of the typical modern housing block in the use of *pilotis* on a broad platform articulating accesses, the expressed modulation of the structure in the elevations, the plastic exaltation of vertical communications, the shared terraced roof, generous windows, and the wall-to-wall balconies. The buildings intended for the lowest social categories had a noticeably more modest scale, with the maximum of 4 floors, avoiding the need of installing an elevator that makes construction more expensive.

In *Olivaís Sul*, two main different urban approaches coexisted but, unlike in North, with no correlation with social categories, but instead with different interpretations of ways of living: one more tied to rationalist principles, and another that sought to reinvent traditional images with the aim of fostering neighborhood relations. The first approach is exemplified by the buildings of Vítor Figueiredo and Costa Lobo, and the team formed by Costa Martins, Hernâni Gandra and Nevez Galhoz. Thought as autonomous buildings, easily repeatable in other places, they replaced a relationship with the immediate exterior with the intention of transporting social relationships to the heights, through access galleries that recall the celebrated “streets-in-the-air” of Alison and Peter Smithson. But it was the second route that was primarily pursued, through the creation of outdoor living spaces that could function as an extension of the home, places for meeting and appropriation, with the aim of satisfying a need for participative civic involvement and a social life after work. Particular efforts were made to satisfy the needs of residential groups in which the lower categories predominated, whose residents, due to traditional cultural habits, sedentary lifestyles imposed by their own economic condition, and the exiguity of housing, would most appreciate them. As Carlos Duarte explained¹⁰, in a search for “neighborhood life”, which meant streets, paths, intimate town squares and plazas, places traditionally found in a city of commerce, meetings, and gatherings, architects attempted to recreate traditional images of sociability and,



Figure 3. Abel Manta, housing block (category IV), *Olivaís Norte*, Lisbon, Portugal, 1960. © Left: *Olivaís-Norte*, Lisboa, GTH-CML, 1963. Right: *GTH Boletim*, vol. 5, n. 30–33, 1976–77.

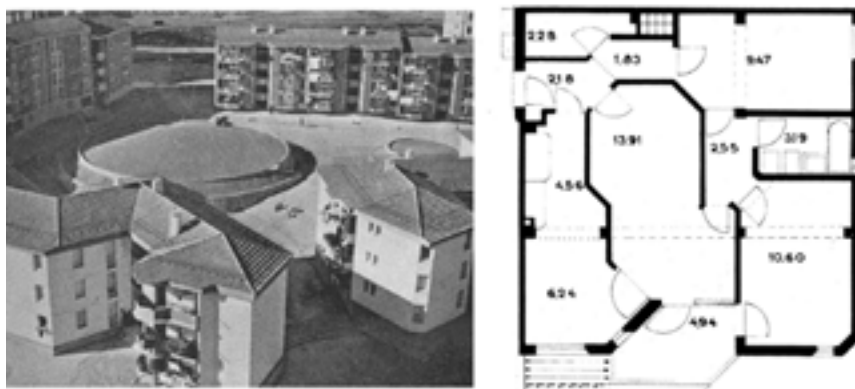


Figure 4. Nuno Portas and Bartolomeu Costa Cabral, linear housing and tower (category II), *Olivaís Sul*, Lisbon, Portugal, 1963. © Left: *GTH Boletim*, v. 3, n. 20, 1971. Right: *GTH Boletim*, vol. 5, n. 30–33, 1976–77.

in the architecture, sought to incorporate features of Mediterranean life, such as balconies and washing lines facing the street. The developments designed by the teams of 1) Vasco Croft de Moura, Justino Morais, Joaquim Cadima and João Matoso; 2) Costa Cabral and Nuno Portas; 3) Chorão Ramalho, Santiago Pinto and Nuno Simões; and 4) Nuno Teotónio Pereira,

Freitas Leal, Silva Gomes and Correia Rebelo, were paradigmatic of this approach. In different ways and to varying extents, solar orientation ceased to be a primary factor, while the relationship between the interior of the dwelling and the public outdoor space was given a pivotal role. This resulted from the articulation of the various buildings – even in the case of towers – which were arranged in different shapes and configurations to define squares, plazas, and gardens of predominately irregular geometry, in the spaces between them. At the same time, the volumetric modulation of the façades was intended to avoid “the monotony of continuous façades and blind gables, often observed in buildings with limited budgets”¹¹. The use of exposed brick and sloped tiled roofs – “building traditions and craftsmanship [that were] an unusual option for an architecture rooted in modernism”¹² – sought to respond to the budget, to thermal comfort, to durability, and to establishing visual continuity between the façades and the urban space. As Nuno Portas explains¹³, these concerns had affinities with the experiences of the Italian INA–Casa neighborhoods (Ludovico Quaroni, Carlo Aymonino, Mario Ridolfi, Giancarlo De Carlo, and Mario Fiorentino) and with the work of Francisco Oiza and his disciples in the social housing developments of Madrid.

In terms of the internal organization of the apartments, both in *Olivaís Norte* and *Sul*, the most modern solutions were found in the buildings intended for the lowest categories. The buildings provided for the wealthier families remained closely tied to a logic of compartmented space: a “Babylon of house parts”¹⁴ inherited from the past that also preserved a clear distinction between family and servant areas, including a room and bathroom for the maid, with independent access doors. In the buildings for the lower categories, their considerably smaller areas and lower quality finishes contrasted with their more varied internal layouts that prioritized communal life¹⁵, through the design of fluid spaces, that communicated freely, and promoted an idea of simultaneity and versatility of uses and circulation. Plans renouncing orthogonality promoted more varied ways of living. The grouping formed by the living room, kitchen, and sometimes the children’s room, functioned as a permeable arrangement, promoting a communal experience, greater spatial fluidity and family communication. The balcony was often seen as a living space or as a link between different spaces. Many of these solutions enabled future adaptation. Some architects even dared to design small spaces with no particular designated function, because they considered it essential that residents were able to actively participate in and, thereby, appropriate the space, as Henri Lefebvre so well identified in his *Le droit à la Ville* (1968).

Olivaís became a reference for its capacity to innovate in industrialized construction and developing architectural typologies in line with new standards of comfort and social engagement, and for its ability to act as a vehicle for new urban ideas.

4. A laboratory for housing development in Lisbon

Bringing together a catalogue of architectural tendencies, the series of projects developed in Olivais demonstrated a tremendous structural, formal, and spatial experimentation, which revealed the architects' concerns and search for "housing for the greatest number". *Olivais* was a Portuguese paradigmatic case of the search for modernity in building design, as an attitude that values universality, rationality, and a fair and effective response to new social and technological orders.

Olivais have been assimilated and, today, are a consolidated part of the city. Designed and occupied in just over fifty years, their consolidation as urban territories, developing their own character and a recognizable identity, is evidence of their coherent conceptual frameworks. Their ability to embody a spirit of place – in contrast with the anonymity of many of the mass housing developments commonly located on the outskirts of large cities – are, in themselves, a sign of success.

Incorporated in the broader ideology that we call the Modern Movement, *Olivais* constituted an important step in the highly-complex path of producing the city, through a humanized approach to architecture and urbanism.

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S17

Modern Movement, the case of Iberia and its particular cultural identity

Susana Landrove Bossut

DOCOMOMO IBÉRICO

When the architectural production of the Modern Movement in Spain is addressed, it must be viewed in its own particular context. This differs from the generally accepted European context, with regards to the development and the chronology of the Modern Movement. Aspects such as economic development, social conditions, political conflicts, the implementation of new technologies, the evolution of industry, etc., around which architectural modernity was to be built in Europe throughout the 20th century, were different in the Iberian reality. Their influence was altered by the specific conditions of our territory.

The Spanish Civil War was a turning point in the development of modernity. Its consequences lasted until the 1970s and determined the specificities of Spanish architectural production and its particular identity.

In Spain, Modern Movement architecture is divided into two very different periods. The Civil War (1936–1939) represented the point of change, not only in politics and economics, but in cultural developments as well. Like any artistic expression, architecture was affected by these dramatic circumstances.

Before the Civil War, we find numerous buildings in Spain that followed European parameters regarding Modern Movement architecture. Some of them fully adhered to the new ideas of the European avant-garde with pioneering buildings such as those produced under the umbrella of GATEPAC in Madrid and the Basque Country, or GACTPAC in Catalonia. Other relevant works were the result of structural research on new materials such as concrete, pioneered by engineers like Eduardo Torroja or Ildefonso Sánchez del Río. But modernity also extended beyond the capital cities through numerous architectures that embraced the rationalist aesthetic of simple volumes, metal railings and flat roofs in urban environments, with new cinemas, schools and housing. Other approaches, sometimes less audaciously expressed, explored how to articulate the new needs and programmes related

to minimum housing, education, or health. In the same way, exterior spaces and gardens began to incorporate the language of modernity.

But, when the Civil War reached an end, this did not continue. Spain was devastated by a war which was more about ideology and less about conflicting national interests. This had serious consequences for architecture, which always responds to the balance of power at any one time. The winners could not acknowledge any of the values held by the defeated side, to the point of violently rejecting them. Therefore, all modern architecture of the 1920s, which could be identified with the Republic, was automatically excluded. The architecture that was established was based on radically different ideas and circumstances – international isolationism, the scarcity of materials and a shortage of building programs. The focus of this architecture was rural, ideologically rejecting the challenge of urban renewal.

Beauty sneaked in between the interstices of the job, sometimes understood to be the extension of the religious engaged with the social in which nothing was superfluous. Alejandro de la Sota, Antonio Bonet Castellana, Juan Antonio Coderch, Miguel Fisac, Fernando Moreno Barberá, José Antonio Corrales, Ramón Vázquez Molezún or Rafael de La-Hoz, just to mention a few of the many notable architects of the Spanish Modern Movement from the period that started with the end of the civil war and ended with the instauration of democracy in Spain, responded basically to those common ideas through their own projects. The result is an extremely personal architecture, with a strong identity, in which the search of a new architectural expression is moulded and improved by the difficulties of its materialization. Whether this slower and more progressive introduction of modernity allowed for a better integration of local techniques and construction methods in modernity or whether it increased the depth of the reach of modernity, is something that should be considered through a deeper analysis.

If we turn to design of interiors, furnishings, lights and other objects related to architectural design we can find a similar path, where handicraft solutions coexist with the slow introduction of more industrial based elements. In the same way that architects had to think of innovative solutions to formalize the architecture they had in mind with the available means, they also often had to design the elements that would furnish their interiors. Again, this led to very personal results which add to the quality of the architecture.

Papers included in this session analyse different aspects of Iberian modernity. María Villanueva Fernández and Héctor García-Diego Villarías deal with the spatial strategies of furniture design in two different projects and explain how the relationship between furniture design and architecture helps understand Spanish cultural identity at that time. Maria Anton-Barco focusses on a specific case, the EXCO Exhibition for Modest Housing, and on how it contributed to the modernization of Spanish design. Alessandra Tosone approaches corporate design through the successful establishment of the Olivetti company in Spain. Finally, Fernando Jiménez Parras analyses paper cutouts as a vehicle for the dissemination of Modernist architecture and as an instrument for a better understanding of the buildings through a direct relationship with the assembly process.

Furniture Design as a Spatial Strategy and Modern Identity in the Interwar Period: Design Contributions by Spanish Architects

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During the interwar period, architects began to create a new kind of more appropriate furniture to equip their modern interiors. In this context, Spanish architects not only tested these new ways of design but went beyond stylistic patterns to draw on furniture design as a spatial strategy to be applied in their own architectural projects. This research addresses this specific issue through the study of two furniture projects carried out by Spanish architects between WWI and the Spanish Civil War that reveal a cultural identity towards modernity: the Studio's cabinet in San Sebastian by José Manuel Aizpurua and Joaquin Labayen (1927), designed to articulate the space; and the multifunctional piece of furniture of the Residencia de Señoritas in Madrid by Carlos Arniches (1933), conceived to define the space.

By analysing these examples and their influences, this research sheds new light on this little-known chapter of Spanish interior design history. Therefore, this paper will show how furniture design was a project strategy in Spanish architecture during the interwar period. Moreover, it will delve into the details of each specific project to present the interpretations of an own cultural and modern identity about the relationships between architecture and design formulated by Spanish architects and reveals the connection between Spanish furniture with modern shapes and international debates. This document, based on comprehensive research about the furniture published in architectural journals between 1925 and 1936, discloses information from the architects' archives and graphic analysis made by the authors.

1. Introduction

After the First World War, architects began to experiment in the field of furniture to create new models that would adapt to modern space. As a result of formal experimentation, with innovative material resources and advances in production processes and techniques that were within their reach, standard furniture (produced in series and suitable for the new architecture) turned into the image of modern space. Paradoxically, many of these pieces, which would later be produced in series, were created for specific works of architecture and some of them as part of a furnishing project that would become a design strategy for space.

These ideas penetrated Spain through both foreign and national publications. From the articles published in the Spanish architecture magazines analysed¹

on interior projects that incorporate furniture as a spatial tool, two projects carried out between the First World War and the Spanish Civil War have been selected. These works offer two different strategies for approaching the design of space through furniture and reveal a cultural identity towards modernity: the 'Studio' in San Sebastián by José Manuel Aizpurua and Joaquín Labayen (1927) and the Pavilion of the Residencia de Señoritas of Madrid by Carlos Arniches (1933).

This research aims, on the one hand, to shed new light on the modern cultural identity of Spanish architects, through connections with trends developed abroad to check whether or not these are homologous in their modernity; and, on the other hand, to delve into each of the projects to analyse the work of the architect as a designer of elements on different scales and study the way in which each one assumes modernity and develops a project strategy, both for furniture and for its relationship with architecture.

2. Articulation of space

In 1927, José Manuel Aizpurua and Joaquín Labayen inaugurated their Studio in San Sebastián; the first work built by the recently graduated young architects.² The project, widely published both in Spain and abroad, was characterized by being a miscellany of modern trends, among which neoplasticism stood out. Orthogonal compositions through coloured planes and linear elements (vertical and horizontal), were present both outside (on the façade) and inside the workplace (on walls and on the central piece of furniture in the space: the shelving). Beyond the character of the Studio's artistic work linked to the formal and theoretical universe of Mondrian, the project by Aizpurua and Labayen proposed a modern spatial strategy, through an artifact, resulting from the union of the façade and the shelf, which organized the inner space³ (Fig.1).

The cabinet, as an extension of the façade, was attached to it orthogonally through the only blind spot it presented, standing in the centre of the place and dividing the space into two parts: the

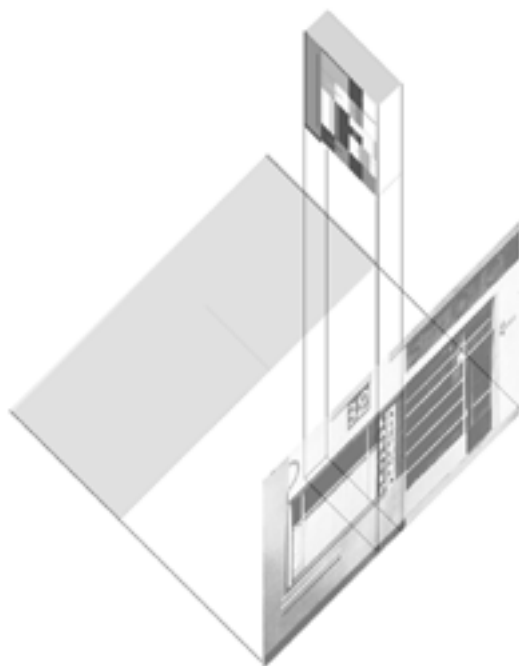


Figure 1. Drawing made by the authors of the Studio Labayen-Aizpurua, San Sebastián, 1927. © M.Villanueva and H.García-Diego.

entrance, which in turn was an exhibition area, and the workspace of the architects. The cabinet was joined by a metal bar to the other wall of the Studio. The piece of furniture was thus embedded in the width of the office. From the bar hung a curtain that provided the space with a certain intimacy when extended and continuity when withdrawn. This technique was already being implemented in Europe, as the magazines of the time showed; examples of this are the projects of Rudolf Fränkel, Schöpler and Kornfeld, or Fritz Gross.⁴

The square-shaped cabinet was made up of the sum of several parts, following the ideas of Le Corbusier and his *casiers*.⁵ It did not reach the upper wall, making the space potentially reversible and flexible. It was not an element of separation but of articulation, because in this way the space was perceived as continuous. This was one of the elementary principles of modernity and a topic addressed by De Stijl, with a position closer to the figure of Van Doesburg, who highlighted in his writing *Towards a plastic architecture* of 1924 the importance of space associated with time, formulating the possibility of plasticism in four dimensions, and further from Mondrian, who limited it to two.⁶

This strategy of articulating the space through a piece of furniture was launched in that same decade on several occasions by other international architects. In 1925 Le Corbusier introduced an office piece of furniture in the *L'Esprit Nouveau* Pavillon that divided the space into two areas. This same system of separation was used in other later projects that the Swiss architect carried out together with Pierre Jeanneret and Charlotte Perriand, such as *L'équipement de la maison* for the 1929 Paris Autumn Salon. Another of the pieces of furniture created in 1925 and revealed in the magazines, which bears a certain resemblance to the work of the Studio, was the bookshelf designed by Marcel Breuer for László Moholy-Nagy's home in Dessau.

The cabinet, beyond a functional piece of furniture and due to its composition based on colour planes and orthogonal lines, could be understood as a neoplasticism canvas, located in the centre of the room. The inclusion of avant-garde works of art in the architecture was another characteristic of modern space. Le Corbusier, during his visit to Spain in May 1928, addressed this issue in the first of the two conferences he gave at the Residencia de Estudiantes, 'Architecture, Furniture and Works of Art'. In avant-garde interiors, the need to create an image that 'contains an unequivocal message of modernity'⁷ became widespread, according to Jaume Freixa. This type of message could take the form of pictorial representations, by artists such as Léger, Miró, Le Corbusier or other contemporaries, of popular objects and of standard furniture, such as the Breuer and Mies van der Rohe chairs that equipped the office, as shown by the numerous photographs of the Studio taken by Aizpurua.⁸

This fact was analysed in 1935 by GATEPAC in the article 'The evolution of the interior' published in the A.C. magazine: 'In these interiors, animated by a new spirit, the works of art will occupy strategic places, neuralgic points of the

room; the architect must foresee its location when creating the architectural work'.⁹ Although these words were enunciated seven years after the realization of the Studio, they are linked to the trajectory of the architects who had belonged to the group since its creation in 1930. The Gipuzkoan architects endowed the space with the aforementioned 'unequivocal message of modernity', placing the cabinet in a 'neuralgic point' of the office, but also gave it qualities typical of architecture, in addition to those of the furniture itself. Located between two environments, it became the visible and identifying element of the premises, the work of art of a modern space that articulated it (Fig.2).



Figure 2. José Manuel Aizpurua and Joaquín Labayen, Studio, San Sebastián, Spain, 1927, (Photomontage made by the authors from photographs of Aizpurua and found in magazines). © AGUN/2033.

3. Definition of space

The New Pavilion for the Residencia de Señoritas Estudiantes, carried out by Carlos Arniches¹⁰ in 1933 was part of the large-scale avant-garde operation carried out by the Junta para Ampliación de Estudios, in the female Residencia de Estudiantes, among other areas. The pedagogical system defended by this institution was committed to the integral formation of the students. For this reason, Arniches considered as essential the creation of a total project in which everything –from the architecture to its furniture– was designed,

providing each housing cell and individual with the necessary elements for the correct intellectual and personal development of its resident.¹¹

The furniture design was in accordance with the modernity of the educational project. It was a single continuous element, as the plans show,¹² which was adapted to the architecture in the form of a baseboard and contained the necessary elements for the development of the daily activities of each resident.¹³ From the baseboard emerged a cupboard, a bookcase and a table for study. In front of this part was a sofa-bed or divan, which had two auxiliary pieces of furniture: a small bookcase built with different planes – three horizontal and two vertical that joined them– and a chest of drawers that emerged perpendicularly from the wall, separating the bed from the sink space. The operation allowed the space to be organized with a single gesture, a perimeter 'U' that contained the necessary elements in the room (**Fig. 3**).

Arniches's design was not only a form, but also gave shape to space, configured the room in three dimensions and, as a container for furniture that was placed on the perimeter, freed up the interior space of the bedroom. The piece of furniture embraced the space in which the user came to stand in the centre of the room. This idea was in line with the theories of the Institución Libre de Enseñanza and the Junta para Ampliación de Estudios proposed by Giner de los Ríos and Manuel Bartolomé Cossío,¹⁴ in which they highlighted the relevance of the resident in the work. The furniture made by Arniches, in

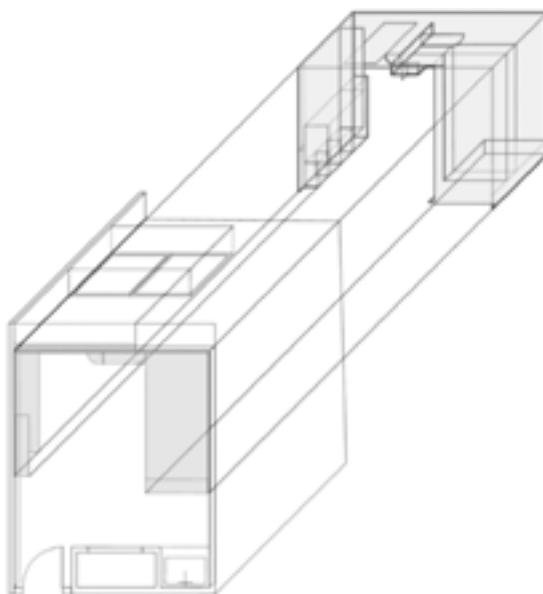


Figure 3. Drawing made by the authors of the Pavilion room of the Residencia de Señoritas Estudiantes, Madrid, 1933. © M.Villanueva and H.García-Diego.

addition to allowing the correct development of the activities according to the philosophy of the Residencia de Señoritas, was part of the spatial definition of each of the rooms.

Without ornament and built with orthogonal shapes of wood, the furniture had been conceived as a piece that was repeated in each room. A standard that, despite its modern idea both in terms of the formal definition and the vocation of serialization, was built by hand according to the requirements of the project itself by several furniture companies, such as Onrubia and Olmos and Art and Style Furniture.¹⁵ It is interesting to analyse, through the correspondence between Arniches and María de Maeztu (director of the residence), the process of the adjudication and construction of the furniture, since it reveals the vicissitudes of the process and shows the great involvement of both. Despite its artisan character, this proposal was an innovation, considering that this type of furniture was generally made for unique spaces and not for reproduction, like the contemporary patterns developed and spread throughout Europe that were collected by the magazines of the time.

Among them stands out the work published in 1932 by Ginsberg and Lubetkin¹⁶ in an apartment at number 25 Av. Versailles in Paris. The architects placed a baseboard containing a divan, a small chest of drawers and a bookcase; the last two, arranged perpendicularly to the plane of the wall to organize the space. Among the contemporaries, some Spanish ones stand out, such as the Bar Chicote and the Aquarium café by Luis Gutiérrez Soto, or the Negresco café by Jacinto Ortiz.¹⁷ Interestingly, it was also a piece studied by Luis Feduchi in his book *La Casa por Dentro II*.¹⁸

Therefore, the Arniches baseboard–furniture not only presented a modern formal composition of flat planes and orthogonal intersections, but also its conception as serial furniture and its relationship with space. While the serialization lost its modern condition due to the construction system –because it was not possible to carry it out with ‘modern’ means of production– the connection of each piece with the space kept its modernity in force, as well as that of the pedagogical project of the Junta para Ampliación de Estudios. Adherence to architecture allowed the baseboard furniture to be a container that defined the space (**Fig.4**).

4. Modern spatial strategies

In the first place, as has been analysed in this article, beyond the modern standards of metallic tubular furniture Spanish architects proposed another type of equipment that obeyed different avant–garde precepts. Both projects, the cabinet for the Studio and the furniture for the Residencia de Señoritas, propose two different attitudes toward the relationship between furniture and space, addressing two spatial strategies: articulation and definition.



Figure 4. Carlos Arniches, Pavilion for the Residencia de Señoritas Estudiantes, Madrid, Spain, 1933, (Photomontage made by the authors from photographs published in magazines).

These strategies are adapted to the characteristics of each project of scale, programmatic typology, and character.

Secondly, the analysed projects exemplify some of the defining guidelines of Spanish furniture. Each case study presents a different and representative 'attitude' when facing a furniture project. This attitude shows the close link between furniture and the architectural project. In this way, the furniture project is understood as a fundamental part of spatial generation in architecture.

Finally, to provide their works with the desired modernity, the architects allude to different 'images' in each case, different references that they process and apply from their own point of view, formulating their own discourse and taking an integrating position regarding these debates of the moment. These pieces of furniture present a very particular modernity that has been manipulated in a personal way. These 'attitudes' begin with a process of homologation of an 'image' of modernity in which architects assume models and filter them to shape their own 'image' of modern furniture, which shows the cultural identity towards the modernity.

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New domestic interiors: 1961 exco's exhibition for modest housing

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The serious Spanish housing crisis of the 1950s was addressed by Franco dictatorship through a series of National Housing Plans. The debate on the housing problem and how to adapt this new neighbourhoods to the needs of rural population was not only faced from the point of view of its architectural form, but also an attempt was made to resolve the problem of its furnishing.

In this context, in March 1961, the EXCO published a competition call named: "Furniture Competition for Modest Homes". Its objective was to foster Spanish industrial design while developing furniture catalogues that could allow the public to furnish their new homes following the principles of the Modern Movement.

The contest was held in two phases: a first one in which only drawings were submitted and a second one that required the development of prototypes. With these samples, EXCO held three exhibitions at its headquarters in Madrid: one with the winners of the first phase, a second one with the prototypes, and a third and final one in which the pieces were part of different environments to illustrate different possibilities of modern domestic organization.

These governmental efforts to promote modernity were possible thanks to key figures such as the architect Carlos de Miguel, who curated these initiatives and published them in the pages of *Arquitectura*.

Thus, architecture magazines have been the primary source of information for this research, as they foster and portray this message of modernity.

1. The spanish post war housing problem

During the Spanish post war period, one of the main challenges faced was to relocate the hundreds of thousands that emigrated from the countryside to the cities. Through a series of *National Housing Plans (Planes Nacionales de Vivienda)*, new neighbourhoods were built with the mission of integrating migrating rural population into the urban world through housing models indebted to the rationalism of the 1920s. From 1949 Governmental interventions crystalized thanks to the work of the architects that worked for the OHS – *Obra Sindical del Hogar* and the *Instituto Nacional de la Vivienda (National Housing Institute)*. They took the challenge of designing a new housing stock following European premises that proposed to establish minimal housing models.

The debate on the housing problem and how to adapt this new neighbourhoods to the needs of rural population was not only faced from the point of view of its architectural form, but also an attempt was made to resolve the problem of its furnishing.

Thus, various catalogues of furniture such as those developed by the *Instituto Nacional de la Vivienda*, the so-called “INV-type furniture” were developed, and occasionally architects would built not only the architectural projects but also the interiors and their furniture as Fernando Ramon Moliner did in 1956 in Carabanchel Bajo Slum–Absorption Development (1).

Until that moment the only attempt previously made to help these new inhabitants to furnish their new urban homes were the trousseaux distributed by the *Sección Femenina* (Women’s Section). These trousseaux were a copy of traditional Castilian furniture and the best example of the urgent need to modernize the equipment of these social housing units (2).

In consequence, in this quest for modernization, governmental support was essential. Surprisingly some spheres of the Spanish dictatorship regime, were committed to promote or even to legislate in favour of modern design. Architects’ Professional Associations, such as COAM or COAC, promoted a series of furniture competitions and private companies such as Huarte Construction Company, who had their own department dedicated to interior design, played a major role with its 1961 *H Furniture Competition*.

Although this article focuses on the work of EXCO at the beginning of the 1960s, other organizations that preceded it were fundamental in the development of Spanish design. It cannot be ignored that efforts to modernize domestic interiors already were made before the Spanish Civil War. In 1923 Spanish decorator Santiago Marco promoted a furniture design contest “For the humble house”. This was intended to mark a turning point in the development of modern furniture, which however did not crystallize until the post-war period. Marco was also one of the founding Fathers of FAD Society – Fomento de las Artes Decorativas (*Promotion of Decorative Arts*). Plus, in 1954, the FAD would resume its interest in social housing and would promote another contest “For the Dignification of the Popular Home”. The winner was the Catalan architect Antoni de Moragas who opted for mass production furniture by using two materials that were easily accessible at that time: tubular steel and wood

In 1957 SEDI (Spanish Society of Industrial Design) was founded by Carlos de Miguel, Javier Carvajal and Luis Feduchi, and collaborate with companies such as Loewe, Darro or Roca.

Specialized magazines had also a major role in this change, pre- and post-war. Publications such as *Arquitectura*, *Temas de Arquitectura*, *Hogar y Arquitectura* or even *Muebles y decoración* were crucial in the dissemination of the ideas of the Modern Movement around domesticity. As well as AC –GATEPAC’s magazine (Group of Spanish Artists and Technicians for the Progress of Contemporary Architecture)–. GATEPAC even had its own store – MIDVA –Mables i decoració per a la vivienda actual) (Furniture and decoration for current housing)– that set an example for future attempts.

2. EXCO and its role fostering spanish modernity

In this context, the work of the EXCO is fundamental. The EXCO, *Exhibición Permanente de la Construcción* (Permanent Construction Information Exhibition) was founded in 1932 by a group of architects led by Mariano García Morales. Its main goal was improving and modernizing the construction sector in Spain. Although it disappeared after the Spanish Civil War, it resumed its activity in 1960 associated to the newly created Ministry of Housing and its *Dirección General de Arquitectura* (Directorate-General of Architecture). EXCO offered three fundamental services: curating exhibitions, foster new designs (mainly through the promotion of competitions) and informing about new products and materials. Carlos de Miguel, prominent architect, critic, and editor was appointed Head of the Temporary Exhibitions Service of EXCO.

Right at the beginning, de Miguel launch two projects that were key to evolution of modern design in Spain. The first one is the "Exhibition of Home Environments and Domestic Equipment with which, on May 24, 1960, EXCO resumed its activity. An extensive report on the exhibition was published in *Arquitectura*, that, at that time, was also under the direction of de Miguel. Its number 21 was entirely dedicated to the design of domestic interiors. The magazine also echoed and published the series of lectures that accompanied the exhibition: *The need for beauty in everyday objects* by Miguel Fisac, *The house that is not seen* by Mercedes Ballesteros, *Ugliness: seed of boredom* by Carmen Castro, *In legitimate defense of good taste* by Mercedes Fórmica, and *From the caves to happiness* by Ramón Escohotado (3).

The 1961 Competition

Its other mayor initiative was the 1961 "Modest Housing Furniture Competition", which was held in two phases: a first one, in which drawings were anonymously submitted and and a second phase in which the prpopsals selected were developed into prototypes. The goal was that these elements of furniture were not exclusively manufactured for singular projects, but to aim for mass production without losing the so-called Spanish identity.

As the reports of the *Dirección General de Arquitectura* show, three exhibitions were held: one with the results of the first phase, another with the prototypes of the second phase and a third and last one, in which the pieces formed part of different domestic environments to make the public aware of the different possibilities of domestic organization (4). The objective was to seek the integration of furniture in housing proposals following the postulates of the Modern Movement. The interesting thing is that this last exhibition included plans, different lighting options and information on the use of colour and different construction materials.

Spanish Architects eagerly participate in the competition. Juan Cuenca, Angel Duart and Agustín Ibarrola in partnership with the furniture brand Darro; Enrique Nuare also with Darro; Alberto Lopez Asiain; Tomas and Salvador

Díaz Mayo; Ignacio Garate; Vicente Sánchez Pablos and Ismael Solaz, Juan Corominas; Rafael Moneo together with H furniture – whose competition he had just won – or Biosca were awarded with prizes.

In fact, two of the most fruitful partnerships in terms of production quantity were those formed by Carlos Picardo and the Darro house and by Javier Carvajal and Biosca. Unfortunately, the results of these collabs were, in general, focused on a public with a higher income than those who lived on social housing.

In the first competition round, "Projects", a total of 290 pieces of furniture and 144 contestants were presented. The winners were, among others, Rafael Moneo, José Dodero and Javier Carvajal. The armchair designed by Equipo 57 in collaboration with Darro was the one which received the grand prize in the second phase of the competition, the one corresponding to "Prototypes" (**Fig. 1**).

In the "Ensemble" category, the first prize of 150,000 pesetas was divided into three, and the one presented by Equipo 57 obtained again a first runner-up prize of 50,000 pesetas. Other winners were Javier Carvajal and Biosca, the Díaz Mayo brothers or Alberto López Asiaín (**Fig. 2**). The jury included, among others, the architects Oriol Bohigas and Francisco Cabrero.

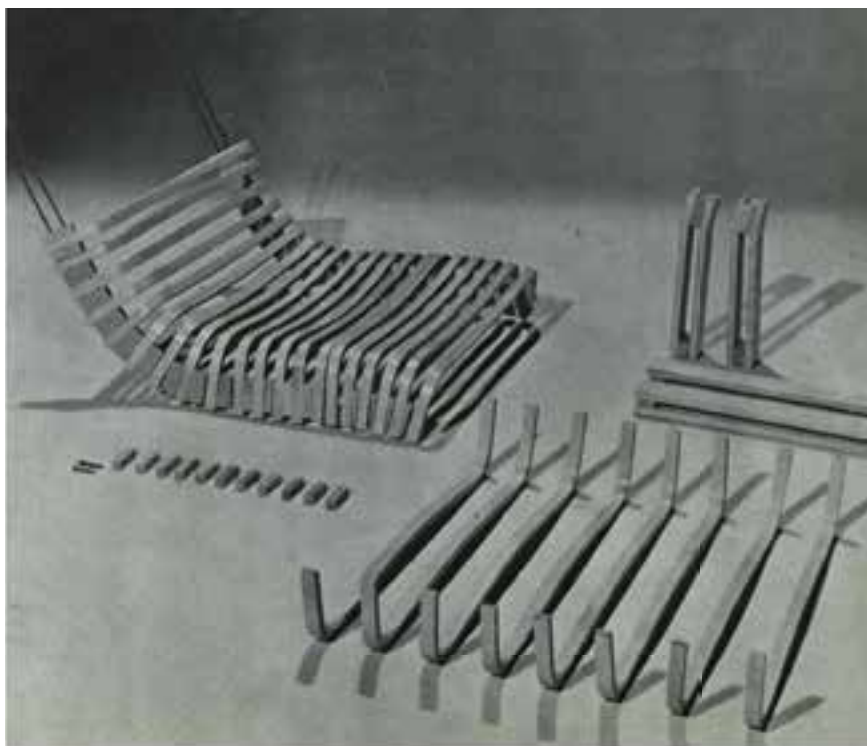


Figure 1. Equipo 57, Armachair, as published in EXPOSICIÓN. "Exposición del mueble doméstico." *Arquitectura*, no 39 (Marzo 1962):33–39 © Colegio Oficial de Arquitectos de Madrid (COAM).



Figure 2. Juan Cuenca, Angel Duart, Agustín Ibarrola, DARRO, Set in EXCO 1961 exhibition, Madrid, Nuevos Ministerios. As published in EXPOSICIÓN. "Exposición del mueble doméstico." *Arquitectura*, no 39 (Marzo 1962):33–39 © Colegio Oficial de Arquitectos de Madrid (COAM).

It is important to point out that it was very difficult to adapt the formal ambitions of the contestants to the real production conditions. Only the simplest pieces of furniture were ever manufactured, and even the winning chair from Equipo 57 showed a fragility that discouraged its mass production and that later an attempt would be made to correct it by means of a running foot. That is, curving chair legs forming an U.

A young Rafael Moneo was also awarded in the "dining room table" category. His proposal consisted of a set of table and four chairs that exploited to the maximum the minimum dimension of the table by placing the chairs at the end of each side as in the H muebles competition.

Javier Carvajal was another of the winners. In his recurring collaboration with the Biosca house, he received a first prize for this light-toned embero wood sideboard with fabric-lined sliding doors and leather handles. His collaboration with Biosca also includes a chair and an armchair. The chair, that won a special mention, was also made of embero wood, and had a reed seat with an upholstered rubber cushion. The armchair was even more successful and won a second prize. It was a piece of embero wood with nickel-plated metal screws and a leather seat and back. This proposal was completed by

a dining table, some shelves that completed the sideboard, some bunk beds with storage, a studio couch, and a dressing table.

The 1961 Exhibition

An essential point of the exhibitions held by EXCO in 1960 and 1961 is that the furniture was displayed creating rooms or environments that followed the blueprints of the housing units that were built in Madrid between the 1950s and the 1960s ". These interiors were commissioned to architects, sculptors, painters, and decorators such as José Luis Sánchez, Carlos Flores, Juan Satrustegui, Carlos Picardo, Vicente Viudes, José Serrano Suñer, Pedro Capote, María Jesús Lampreave, José Antonio Corrales, Elena Santonja or Javier Carvajal.

Photographs of the different spaces were published in *Arquitectura and Hogar y Arquitectura* and allow us to understand how these pieces of furniture were essential for fostering new ways of living. (5).

This first environment showed the winner of the contest, an armchair made by Equipo 57 using plywood and steel. Formed by ribs of curved laminated wood that held together as they were linked by a steel cable. Its industrial utility model shows how the seat-backrest arises in this way, with an anatomical shape thanks to intermediate wedges and the post-tensioning of the cable. The piece rests on two front feet and two rear feet, also made of laminated wood, which rise and curve to fit, like the front ones, in the axis of the steel cable. The piece is highly plastic and follows the path of applying their research on the "interactivity of plastic space" to design, resorting in this case not to the paraboloid structure of its bench but to the juxtaposition of curvatures with different inflections (6). The influence of Nordic organicism and Alvar Aalto's furniture is obvious in the piece.

As encouraged by the contest bases, the armchair was part of a set, along with a chair, an extendable dining table, a low table, a sofa, and a bedroom set. The beds, as well as with the chair and the armchair show the constructive research carried out by the group. The original "union system by means of tensioning rigid elements to form flat, curved or mixed surfaces" was registered by Darro in January 1962 as an invention patent. As explained in the patent specification, the pieces "the same, of any material and shape", "are joined together by a tensor element that imprisons them at their ends by means of perforations made in them".

Another of the award-winning environments was the one that had furniture by the López Asiain brothers and an ambitious installation by José Luis Sánchez that connected with the Spanish vernacular tradition by showing false ceilings made of reeds and murals that alluded to popular architecture (Fig. 3.).

They used as a reference Two-, three- and four-bedroom flats of Madrid's Gran San Blas. Each one of these prototypes was awarded a full furniture value



Figure 3. Alberto López Asiain, Furniture. José Luis Sánchez, set design in EXCO 1961 exhibition, Madrid, Nuevos Ministerio, As published in EXPOSICIÓN. "Exposición del mueble doméstico." *Arquitectura*, no 39 (Marzo 1962):33–39 © Colegio Oficial de Arquitectos de Madrid (COAM).

of 17,500 pesetas for the two-bedroom house, 23,800 pesetas for the three-bedroom house, and 32,500 pesetas for the four-bedroom house "

The furniture set proposed also recalls Spanish tradition by proposing slender metallic structures, formed by welded round steel painted in black on which traditional reed seats are woven.

In *Temas de Arquitectura* magazine, the architect himself describes his proposals for EXCO:

Our main concern was to create a current and useful Spanish piece of furniture

for mass production, and at the same time, pleasant for the user, in this case, the modest family. For easy transport and assembly, the different pieces are attached with simple screws or just fit together. To achieve an economy in conservation, the elements that must resist the most effort are made of metal, the upholstery is limited to rubber cushions covered in fabric and the wood is used for boards. To give flexibility of use and adaptation to small homes, extendable tables, easily expandable modular shelves, beds with the possibility of overlapping becoming bunk beds... And above all, the different pieces of furniture are light and small, which allow their mobility adapting to create environments according to the needs of each moment". "They must be removable and light, because today the furniture travels, not with its owners, but packed, before being sold anywhere in the world. They must be clean and simple, as is all the expression of current art, since man needs a calming environment. They should be not very bulky but comfortable, because the houses are small and are filled with little, and today it is not about decorating, but about decorating. They must be resistant and durable and economical to maintain. And finally, they must be traditional; but, be careful!, that the tradition is to be consistent with the time and with the available materials, and not to imitate, more or less stylized, what our greater. (7)

Once again, the set is completed with a shelf storage unit that looks up to similar models developed in Europe those years clear.

Bedrooms are key in these exhibitions, and Lopez Asiain and the Diaz Mayo brothers stand out with his proposals. Both proposed bunk beds following a "Nordic style" using plywood and embero wood (**Fig. 4.**). They seek to solve the problem of large families in which children must share a room, and they also address the storage problem by incorporating cabinets. This was a huge improvement as many of these minimum homes did not include carpentry as it was quite expensive.

4. The aftermath

Although the competition was far from being a success, as the pieces designed were not mass produced and most of them remains as prototypes, a crucial path for Spanish design was reopened. While it is true that the absence of a strong industrial fabric conditioned this initiative, after seeing these proposals and understanding the context in which they were developed there is no doubt that the role of the architect as a furniture designer has been essential in the consolidation of modernity during the 20th century. At a time when the historicist and the false vernacular prevailed, these architects took on the challenge of creating contents and continents linked to the European avant-garde.



Figure 4. Tomás y Salvador Díaz Mayo, Furniture. Carlos Flores, bedroom set design in EXCO 1961 exhibition, Madrid, Nuevos Ministerio, As published in EXPOSICIÓN. "Exposición del mueble doméstico." *Arquitectura*, no 39 (Marzo 1962):33–39 © Colegio Oficial de Arquitectos de Madrid (COAM).

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Approaches to modern architecture through paper cutouts

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DIMOMO ARCHITECTURE CULTURAL ASSOCIATION

Models are an instrument of dissemination of architecture with a high potential based on three-dimensionality, unlike the two-dimensionality of drawing or photography. Among the diversity of existing model typologies, the architectural cutout is presented as a modality with undoubted advantages, such as its versatility and accessibility: the pieces drawn on paper or cardboard are cut, folded and glued constituting the final model. Through the study of cases, this communication proposes an approach to the cut-out of architecture as a typology of model especially suitable for the dissemination of architecture, particularly modern architecture. The study of two cutouts designed and edited by the author and their relationship with the architecture represented is proposed: the Ucelay House, designed by Matilde Ucelay in 1970 and the Stella Maris church and convent, the work of José María García de Paredes in 1961. In an eminently graphic way, through the images and photographs of the assembly process, it will be shown how these models (and their assembly) can facilitate the understanding of the buildings studied, being configured with an important informative tool.

1. Introduction, objectives and methodology

"I demand from my students models in which they can study how light passes through and tenses space (...) You can't put a computer under the sun to see what happens, but a model, yes.". Alberto Campo Baeza¹

Models are instruments of architectural representation with a significant historical journey and application for the dissemination, research, development, transmission, project and analysis of architecture: "model shares with the drawing that great expressive synthesis, which may well make it an accurate instrument of knowledge of that network of ideas that underlie the architectural form²". Techniques, scales, sizes and materials are very different, but in many cases they are unique pieces, created with a specific purpose and for a specific occasion, without the will to repeat or seriate.

The perception and valuation of the model have two fundamental points of view: the builder / assembler (understood as the person who builds / produces the final model) and the final observer. In this way, some of the architectural models are made exclusively from the point of view of the builder (project models, for example), while others are essentially transmission objects (competition or exhibition models): "The decline in the use of models for project purposes relegates models to a role of objects of didactic use."³

However, there is a typology of architectural model in which the assembly process overlaps with that of observation, this hybridization being its main objective. They are serial models designed to enable the dissemination and knowledge of architecture through a direct relationship with the model itself: the process of construction (assembly) of the model, such as the process of drawing or writing, involves a greater involvement and therefore a greater understanding and knowledge of the constructed object. Therefore, the design process of the model is carried out in such a way that the final builder/ assembler has the necessary elements (pre-produced) that allow him to carry out the assembly based on specific instructions in a didactic and playful way.

The paper cutout is presented as a particular modality of architectural model that facilitates its dissemination and understanding with undoubted advantages, given its versatility and accessibility: the pieces drawn on paper or cardboard are cut, folded and glued together giving rise to the final model. There are several varieties of use of the material, with different uses, as can be seen in Van der Meer (*The architecture pack*).

This study, eminently graphic, addresses the knowledge and dissemination of modern architecture from the paper cutout, with the aim of validating this as a method of analysis.⁴

The methodology used is the case study: the Ucelay House, designed by Matilde Ucelay for her sister in Long Island (New York), and the Stella Maris church and convent, designed by José María García de Paredes in Malaga. After a brief description and analysis of the building, the cut-out model and its assembly process will be studied. Both cutouts, published in *cortaypega* collection (cut'and'paste), they stand out for their simplicity of assembly, few pieces and mostly cut.

It will explore not only the informative capacity of the model but also the image of them:

*Paper models made by students in the Preliminary Course (Vorkurs) that Josef Albers taught at the Bauhaus proved to be especially photogenic, and their pictures have since become part of the modernist iconography*⁵.

2. Case study 1: Ucelay house

Matilde Ucelay Maórtua was born in Madrid in 1912. She began her studies at the School of Architecture of Madrid in 1931 and concluded them, with an advance course, in June 1936, being the first Spanish woman architect.

She was secretary of the Board of the Official Association of Architects of Madrid between August and October 1936, which is why she was sentenced in 1942 to five years of disqualification from the private exercise of the profession, and in perpetuity for public office. Despite this, she soon began to

work with the help of some friends, especially Aurelio Botella, who signed her projects in the period of time she was disabled.

His professional activity focused entirely on the private sector, developing both residential and commercial projects, highlighting the Oswald House in Puerta de Hierro (1952), the Utray House in Somosaguas (1960), the Hispano-Argentina Bookstore in Madrid (1967) or the Claudio Barcina Ships in San Fernando de Henares (1974), in which the influence of his friend Félix Candela is appreciated.

A rigorous and tireless worker, she retired in 1981. In 2006, at the age of 94, he was awarded the National Architecture Prize by the Ministry of Housing, and died on November 24, 2008.

In the house designed for his sister Margaret in Remsburg, Long Island, New York, Ucelay was able to explore new formal issues closer to the Modern Movement and the International Style, without departing from the care of interior spaces so characteristic of his residential projects.

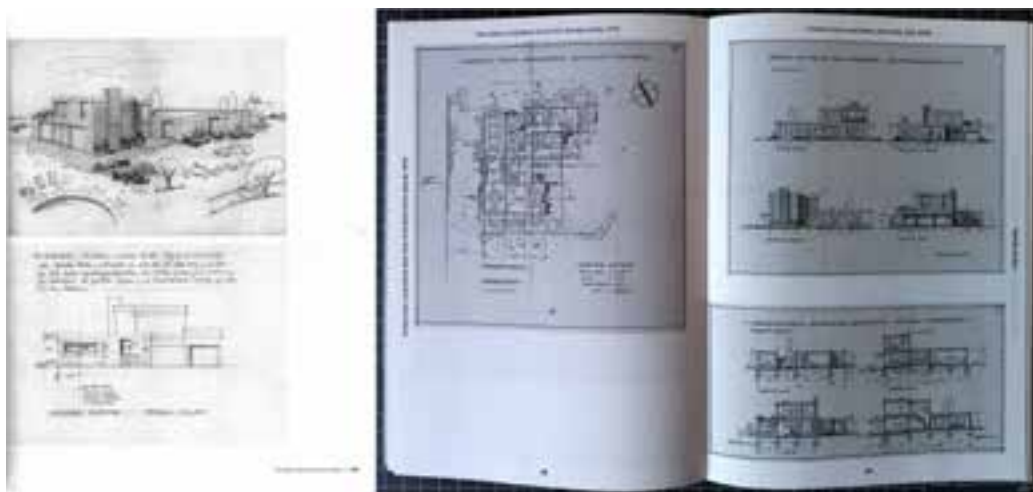


Figure 1. Planimetry of the Ucelay House (Sánchez de Madariaga, *Matilde Ucelay Maórtua, una vida en construcción*, 159) and (Sánchez de Madariaga, *Matilde Ucelay, The first spanish woman architect*, 58).

The house is organized in a series of prismatic volumes whose dimensions and arrangement respond to the functional program, with a great formal and material containment.

Another of the fundamental conditions is to enjoy the sunset and the best view that is that of Poniente, for which it is necessary to place the house ahead of the one that the adjoining one has built, so that the living room, dining room and terrace are free of this obstacle; for this same reason the master bedroom is taken to a second floor, in order to save the height of the house of said adjoining.

The garden will be a very important complement. The entrance from the street is located on Tuthill Lane, with a separation from the square that allows the planting of tall trees on both sides, which accompanied by shrubs clearly mark the access, (...).

The pool is placed with all intention, outside its usual place at first sight (...), to get on the one hand to separate from the adjoining one and on the other to incorporate the set located between the house and the square, even more important reason. By using the circular shape, a logical transition is also achieved between the house, the aforementioned square and the curved road, softening in a certain way the cubic shape of the building.⁶

The main block is south facing and contains the living room, dining room and master bedroom on the top floor. In a block of lower height, to the north, the garage and the kitchen are located. In the center is the staircase, while an L-block contains two bedrooms, toilet and bathroom.

Ucelay house cut-out

This cutout, published in 2019 with the collaboration of the Junta de Extremadura and the Official Association of Architects of Extremadura, is developed in two A3 sheets. One of them contains the base on which to mount the cutout, as well as informative texts. The other contains the parts needed for assembly, as well as instructions.

The model, 1:150 scale, is structured in the following parts: BLOCK A (living-dining room and master bedroom); BLOCK B (fireplace), BLOCK C (staircase), BLOCK D (kitchen and garage), BLOCK E (bedrooms) and CANOPY. All the pieces are die-cut (pre-cut), so the use of a cutter is not necessary. In addition, tabs and grooves have been arranged that fit and glue is not necessary either.

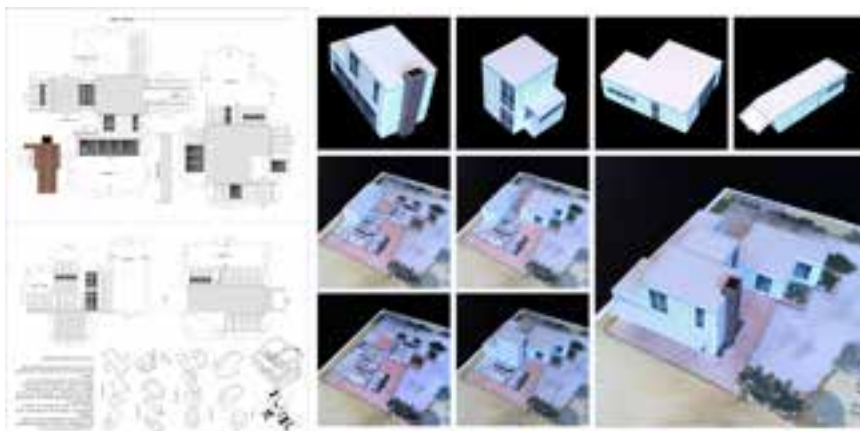


Figure 2. Photographic series: Cutout sheets and pictures of the assembly process (© Fernando Jiménez Parras).

The proposed process involves the separate assembly of each of the blocks. In this case it is not necessary to follow a predetermined order, so it is interesting to start the assembly by the simplest block, a simple prism (D) to acquire the necessary skill and then continue with the blocks E, C until completing the most complex, the A (with B and CANOPY).

3. Case study 2: Stella Maris church and convent

José María García de Paredes (Seville, 1924 – Madrid, 1990) concluded his studies at the School of Architecture of Madrid in 1950. His travels in Europe allowed him to approach the architecture of the time, which would become a reference for his work. After a scholarship at the Academy of Spain in Rome, he built the churches of Vitoria, Almendrales and Málaga, which together with the Manuel de Falla Auditorium in Granada constitute an important part of his work. He collaborated punctually with architects such as José Antonio Corrales, Ramón Vázquez Molezún or Alejandro de la Sota, and his work is part of the most significant of modernity in Spain.

The Stella Maris church and convent is a remarkable exercise in functional stacking: on a plot of small dimensions and elongated proportion. The

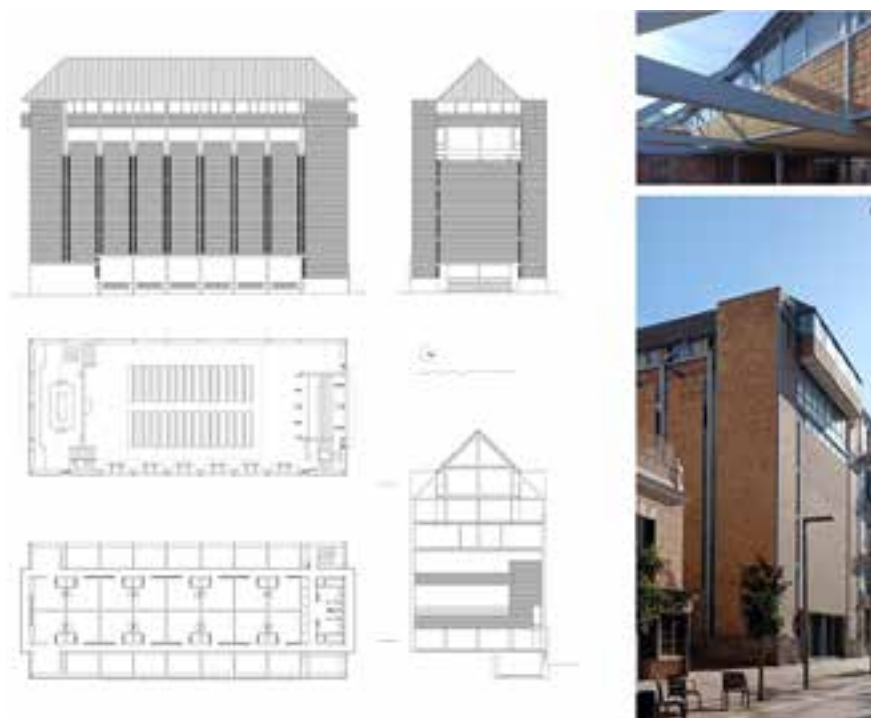


Figure 3. Planimetry of Stella Maris church and convent (© Ángela García de Paredes) and pictures of the building (© Sebastián del Pino Cabello).

commission involved the construction of a small urban convent with its corresponding cloister, as well as a church with its parish dependencies.

In a natural way, García de Paredes located the convent on the upper floors, with the cells under the roof and the cloister on the roof. Under it, with a large diaphanous floor, the church itself was located:

This type of functional stacking, carried out contemporaneously by (...) Alejandro de la Sota in his gymnasium Maravillas (...), occurs (...) as a result of an optimization in the use of the plot by superimposing a set of diverse uses at different levels, thereby transforming the meaning of the relationships between the different elements.⁷

With an exemplary simplicity and great compositional clarity, it is configured and developed with criteria of functional and material austerity, with a great expressiveness of the material (brick, steel) in the composition.

Stella Maris cut-out

This cut out, published in 2021 with the collaboration of the City Council of Malaga and the Official Association of Architects of Málaga, it is developed in two sheets. One of them contains six die-cut pieces that form the overall volume of the building. In the other are the instructions, the metal structure of the cover and the support box.

The pieces that make up the cut-out, at 1:250 scale, are: FLAT ROOF, PARTY WALL, ROOF, CONVENT FLOOR, CONVENT BLOCK, FAÇADE, TRUSSES 1 and TRUSSES 2. As in the previous case, the pieces have been die-cut to facilitate assembly, with the exception of the trusses, due to their dimensions. It is necessary to use glue to join the pieces.

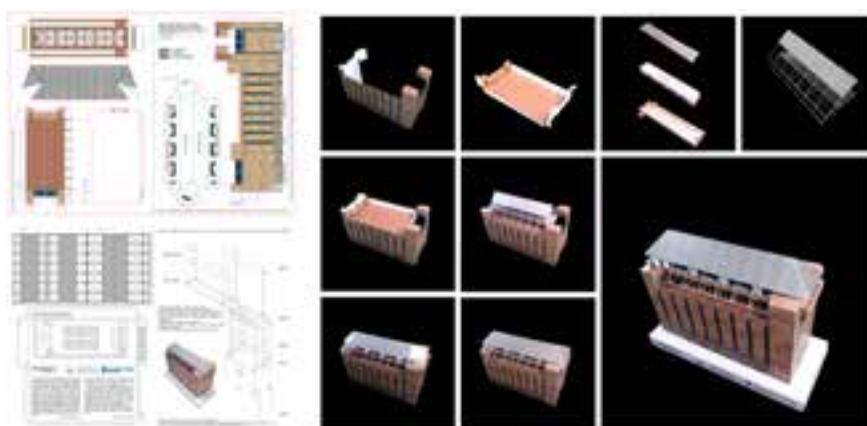


Figure 4. Photographic series: Cutout sheets and pictures of the assembly process (© Fernando Jiménez Parras)

The non-die-cut sheet includes a detailed assembly scheme as well as truss cutting instructions.

The assembly process of this cutout does require a specific order: first of all FAÇADE and FLAT ROOF will be mounted and glued together. Once the TRUSS pieces are cut, they are placed in their location on FLAT ROOF.

On the other hand, the pieces COVENT FLOOR and CONVENT BLOCK will be assembled, and glued together, it will be carefully fitted under the trusses, from south to north. Finally the piece FOOF will be arranged on the set, this one on SUPPORT BOX, and will be closed with PARTY WALL.

The organization and assembly process of this cutout facilitates the understanding of the functional organization of the building. In fact, its formalization allows the design of an additional phase that will include the interior of the church itself.

4. Conclusiones

The dissemination of modern and contemporary architecture needs to be equipped with instruments that facilitate access to different levels in a didactic and, why not, playful way.

And although the design process itself implies the knowledge of the architecture represented, its capacity for dissemination is particularly manifested in the subsequent assembly process, as has been analyzed in this text.

The assembly of an architectural model allows its formal and volumetric analysis. The technique of the paper cutout, slow pace, encourages the attention and observation of the different pieces that make up the set.

The use of series of images that describe this assembly process allows to identify and understand each of the phases and therefore the building.

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Cheste Workers University's Textures: materiality as a quality in modern design

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Moreno Barberá's built work offers the possibility of investigating to what extent materiality is fundamental to achieving the idea of integral design characteristic of modern architecture.

At the Cheste Workers University is particularly perceptible the principle of material unity which is characteristic of all his work and the large scale and the functional diversity of the buildings, too.

Despite this large scale, there is a unity as a consequence of a restricted number of materials and construction solutions that have been used there. Using only three economic materials –concrete, brick concrete, and pine wood– the ambience is also characterized by austerity. This option offers economical and functional solutions, as is explained in the project documentation.

The ensemble is also characterized by a particularly strict geometry, a functional and topographical organization, and a surface finish that synthesizes industrial material and craftsmanship.

We put special attention on the modern design of the Auditorium – Paraninfo building, as an icon, that has been awarded by a Getty Foundation Keeping It Modern Grant Award, awarded to a project of the Polytechnic University of Valencia.

1. INTRODUCTION

Workers Universities

Workers Universities are a Francoist project inspired by the Belgian model of the Charleroi Labour University of 1911, aimed at the vocational, technical and human training of workers. Cheste Workers University was conceived as a "Workers Universities Orientation Center" constituting a real school city, with a capacity for five thousand inhabitants.

It was the obligatory gateway to the school system of the labour universities, channelling all new pupils between the ages of eleven and fourteen, so that they could subsequently join one of the other centres. In this way, it was possible to homogenise the educational level of pupils throughout the State.

Fernando Moreno Barberá

Fernando Moreno Barberá (Ceuta 1913–Madrid 1998) stands out as an example of Spanish Modernity. In the Cheste Workers University he displays the assimilation of the architectural culture of Le Corbusier as a reference, which is manifested in the vigorous plasticity of the expressive possibilities of

reinforced concrete and in the powerful identity of an image associated with different systems of protection against solar incidence.

Likewise, in the Cheste complex there are modern keys that are immediately recognisable: the open plan of numerous constructions, the segregation of pedestrian traffic away from road traffic, and the coexistence of architecture with nature, with the buildings scattered among the vegetation.

2. Cheste Vorkers University: from the saler to the new site

The original project to build a Workers University in Valencia was based on a plot located in El Saler. From the outset, Moreno Barberá noticed that, according to rational criteria of modern architecture, the group of buildings was too concentrated, even for an urban site. On the other hand, it was also a flat piece of land, lacking in perspectives, which forced a solution where some buildings hid the views of others. In addition, its location next to the Albufera lagoon caused other health problems, due to the humidity of the area and the large number of mosquitoes. From a technical point of view, the poor quality of the subsoil meant that a costly pile foundation had to be built, as well as an extraordinary amount of earth to drain the site".

A new location for the future educational centre was sought through a competition organised by the València City Council in November 1967, the winner being the proposal of the Cheste City Council.

With little time to develop a new project, it was adapted the previous Saler proposal, which was considered efficient in terms of functionally. Among the new advantages, the most significant was the increase in the surface area of the site from 24 to 156 hectares and from 5.10 m² per student to a standard of 32 m². On the other hand, its increased height above sea level, from 160 to 232 metres, was also considered an advantage, in this case in terms of health. In addition, the site had steep slopes and promontories over most of its length, with sweeping views over the surrounding landscape.

With regard to the buildings, the main design change affected the Teaching blocks and Workshops, which were split up and separated. In the rest of the buildings, the initial project remained practically unchanged.

3. Designing from materiality: aesthetic unity and textures diversity

At the Cheste Workers University, Fernando Moreno Barbera offers a master class in integral design, combining function, materiality and the creation of the most appropriate atmospheres for each case. In order to functionally incorporate the different uses required by the programme, 45 buildings of varying configurations were constructed, but the criterion of unity that presided over the project is immediately apparent. This is a quality which, to a large extent, lies in the use of a reduced number of construction materials: reinforced concrete, "cement" bricks and pine wood, as stated in the report, in pursuit of the objectives of economy and functionality.

The selection of materials also tends to homogenise the architectural ensemble chromatically and aesthetically, as the "cement" brick – made in situ with small gravel and cheaper than traditional ceramic bricks – has a colour similar to that of the concrete of the structures, enhancing the perception of unity. It can also be seen that all the materials chosen have surface finishes with very significant textures, offering very different compositions for the facades of the buildings, depending on the different combinations: in the reinforced concrete, for the execution of the formwork, the wooden planks are intentionally cut into pieces, introducing a compositional resource that consists of an expressive play of textures; the "cement" brick offers a rough appearance and different treatments, using a conventional rigging of wide joints and vertical butt overlaps on the enclosing walls, which reinforce the horizontal lines of the slabs, and laid with butt joints and without locking on the interior walls; the wood provides naturalness in contrast to the concrete. Finally, the unitary perception of the educational complex in Cheste is due to the strict modulation of the project, which also facilitated the construction work and the reduction of costs, achieving greater speed in the construction.

The large spans for workshops and gymnasiums

The workshops are a group of four buildings which, together with the eight Teaching blocks, were the foundational argument for the Workers University. They location form a fragment of a double arch which present a hierarchical composition emphasized by the huge central Department building. (**Fig. 1**)



Figure 1. Fernando Moreno Barberá, Cheste Workers University, Spain. Teaching blocks and workshops general view
© Instituto del Patrimonio Cultural de España, Archivo Pando. Juan Miguel Pando Barrero, 4th August 1970.

The workshops required a special solution with a larger space and a specific type of lighting. All this was optimised in single-storey, high-rise constructions which, in addition to the workshop space itself, also housed the printing press, the physics and chemistry laboratories, the psycho-technical office, the biology laboratories and classrooms and the language laboratory. The workshops were equipped with mechanics' and carpentry benches and drawing and modelling tables designed by the architect.

The following structural solution was used to resolve the complex section of the workshops: the concrete pillars, strategically incorporated in the line of the facades, support the wide beams on which the windows and doors open. At the ends of these beams and symmetrically support dwarf pillars supporting the roof ceiling. This particular design minimised the cost of the construction with the best possible use of light, while also facilitating direct access to the roofs for maintenance purposes.

However, the most characteristic image of the workshops is produced by the repeated use of horizontal sunshades on the southern façades. As we know, the use of concrete to the limit of its plastic qualities and the *brise-soleils* refer to the imprint of Le Corbusier and represent the hallmark of Moreno Barberá's university architecture, and could serve to summarise his career if we had to choose a single modern resource from among those he built.

The two gymnasiums are located in the upper part of the educational complex, next to the sports fields. They are sized so that each of them can accommodate a basketball court plus a perimeter of 2.50 m. The grandstand is located above the toilet and storage areas.. (Fig. 2)



Figure 2. Fernando Moreno Barberá, Cheste Workers University, Spain. Gymnasium, exterior view
© Instituto del Patrimonio Cultural de España, Archivo Pando. Juan Miguel Pando Barrero, 4th August 1970.

The large spans required were resolved with reinforced concrete ribs between which lightened prefabricated beams were placed to form the roof.

The walls are made of brick and are completely blind at the ends, opening up only for the double access and the high lighting of the grandstands on the north façade. The south front, raised above a large grandstand, is connected to the outside space by a set of sliding doors that allow the facade to be almost completely open, creating the pleasant sensation of being able to play sport in the open air. This elevation is protected by a double system, with the horizontal sunshades that are reiterated throughout the Cheste complex and, on a perpendicular plane, the openwork lattices of reinforced concrete.

For the interior of the gymnasiums (**Fig. 3**) the solution used was to wall off the two walls with a second sheet of acoustic concrete brick, which prevents reverberations. The acoustic treatment was complemented by large openings in the northern façade to achieve a playful atmosphere with physical activity, allowing a direct relationship with the exterior and at the same time enjoying the landscape and the open air.



Figure 3. Fernando Moreno Barberá, Cheste Workers University, Spain. Gymnasium, interior view
© Instituto del Patrimonio Cultural de España, Archivo Pando. Juan Miguel Pando Barrero, 4th August 1970.

Graduates' Hall: materiality and atmosphere from the design of the ceiling

It is located in the Rectory Pavilion and, together with the Cafeteria building, forms a single-storey L-shaped complex. The building is made up of two large rectangles physically separated by porches overlooking the landscape. They are arranged on a podium and are covered by an openwork roof which unifies the whole and recreates a certain Californian atmosphere through carefully studied effects of light and shade, vegetation, ponds and lattices. The site is characterised by transitional spaces with alternating porches, canopies, patios and porticoes defined by a concrete grid on which trees and palm trees stand out.

The Graduates' Hall is one of the most emblematic spaces of the Cheste complex. It is a large meeting space with a capacity for 225 people in an English-style assembly hall where the seats are arranged in two long opposing fronts.

The same materials were used for the design as in the rest of the project, but in this case, the architect focused on the entry of natural light and the prominence of wood. The natural light is projected from two upper and side slits. In addition, a concrete grid composition is used on the ceiling to create the impression of a suspended skylight. This effect is reinforced by artificial lighting from fluorescent tubes placed under the roof and complemented by numerous lamps and bulbs whose different brightness contributes to the optical deception of zenithal light.¹ (**Fig. 4**)



Figure 4. Fernando Moreno Barberá, Cheste Workers University, Spain. Graduates' Hall
 © Instituto del Patrimonio Cultural de España, Archivo Pando. Juan Miguel Pando Barrero, 4th August 1970.

As for the wood, it is arranged as Oregon pine wood panelling, in the Nordic manner showing the Aaltian influence. All the walls of the room were clad with this material, except for the back wall, where concrete brick –arranged with shiner bond masonry– was used with specially designed hollows for acoustic purpose, as a necessary element for acoustic absorption and to avoid reverberations.

A notable example of design is the treatment given to the walls of the foyer, as a transition element, where the same use of concrete brick is employed as in the Graduates' Hall interior. On the other hand, we should also consider the dimensional regularity of the brick, a characteristic that had a decisive influence on the expressiveness of the walls as modulators of space. Thanks to the precise manufacture of the brick, the enclosure could be modulated according to the rhythm of the structure, manifesting its flatness and executed with an exact number of pieces, without cuts or waste.

Parainfo: uniformity vs. uniqueness

It is the iconic piece of the Cheste complex. It is located on a small hill, close to the entrance, presiding over the view of the teaching complex from any point.

At the time of its construction it was to be the largest auditorium in Europe with 5,234 seats.² The idea of the project, despite its large dimensions, was austere and adjusted to the same criterion of minimum cost, common to all the constructions of the educational centre of Cheste.

It is characterised by an enormous volume built with powerful structural ribs that support the roof. The image it offers is broadly indebted to the 1931 project for the Palace of the Soviets by Le Corbusier and Pierre Jeanneret, although Moreno Barberá cites the Aula Magna of the University of Caracas (1952–53, Carlos Raúl Villanueva) as a reference point in his project.

Concrete is the protagonist material in the image of the auditorium, configuring both the load-bearing structure of large beams and the forceful lateral walls, where the sunlight slips through, marking the break-up of the formwork. The design of the formwork had been drawn piece by piece by the architect himself, intentionally marking the wooden planks to introduce a compositional



Figure 5. Fernando Moreno Barberá, Cheste Workers University, Spain. Auditorium - *Paraninfo* © Instituto del Patrimonio Cultural de España, Archivo Pando. Juan Miguel Pando Barrero, 4th August 1970.

resource consisting of an expressive play of textures based on the vertical and horizontal rotation of the construction module. The solution of reinforced concrete porticoes with post-tensioned ribs, defining a singular image, is also a large structure of colossal dimensions and impeccable execution. (Fig. 5)

In addition to the seating capacity, the main conditioning factors for the architectural design of the auditorium were its special academic purpose, which required a study of the acoustic conditions, visibility and the necessary circulations for the large and noisy audience. It must be said that good weather conditions mediated the solution of enclosing only the

large hall, so that all the staircases, corridors, accesses and galleries were built in the open air. This decision also allows us to speculate on the expressive possibilities that the architect valued in terms of the image of the built complex and its consequent visual impact.

With these premises in mind, the auditorium is organised into two parts, the hall itself and the amphitheatre which extends laterally to the stalls that reach the stage, avoiding the need to establish categories among the spectators. In view of the acoustic requirements, an insulating material was used inside the auditorium to cover the concrete walls. It is the only building in the entire Cheste complex where concrete bricks were not used, probably because of the particular acoustic requirements and the complex execution due to the large scale. Therefore, an acoustic false ceiling was designed on the inside, whose studied design provides the necessary sound reflection to all the seats, mainly reinforcing the back rows of the amphitheatre.³

One of the biggest acoustic problems, given the large dimensions of the assembly hall, is echo and, given that this is produced by unwanted sound reflections on the vertical walls, they were treated with a low-density absorbent material. It was left exposed and is made up of cork panels painted white so that the irregular play of their encounters with the roughness of the surface creates an interior skin of great plasticity, the effect of which is enhanced by the grazing lighting of lateral lamps that highlight the shadows of the small cavities, recalling the concrete treatment of the facades.

4. Outcomes

The relationship between materiality and adaptation to the programme are two important premises for investigating the architectural design of Fernando Moreno Barberá's Cheste Workers University. In turn, this relationship allows us to find affiliations with the author's university architecture, Cheste being a paradigmatic. The criterion of material austerity and constructive efficiency governs the architectural design of Cheste, which together with the strict metric modulation constitute one of its main formal hallmarks.

In the workshops and gymnasiums, it will be the large lights required together with the solar control elements, made of concrete bricks, which characterise the image and remind us of the façades of the Valencian faculties of Law, Philosophy and Letters or the School of Agricultural Engineers⁴ located in the Paseo al Mar university area.

In the Graduate's Hall, the acoustic requirements conditioned the use of concrete bricks laid in shiner bond with a brickwork butt joint and without any locking for the wall cladding, due to the necessary acoustic absorption of the lecture room. In fact, the particular design of these pieces absorbs the reverberations as if it were a costly acoustic insulation wall, offering a play of shadows allowing a particular surface finish that is completed with the atmosphere of great warmth provided by the wooden cladding.

In the Paraninfo, the use of concrete and its particular system of alternating formwork, which refers to the work of Le Corbusier, creates a vibrant surface that enhances the already powerful structural form.

By means of four significant examples – Workshops, Gymnasiums, Graduates' Hall and Auditorium – with different functional requirements, it can be seen that the author gradually qualifies the architectural solutions by including parameters that will be decisive in achieving the desired image. Among them, Le Corbusier is the reference that is manifested in the vigorous plasticity that is entrusted to the expressive possibilities of reinforced concrete and in the powerful identity of an image associated with different systems of protection against solar incidence.

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Notes

- 1 According to Carmen Jordá, the use of false zenithal lighting could have its origin in the difficulty of darkening or the significant thermal load provided by this type of skylight.
- 2 The project report included a list, with data from 1962, of the main venues where the Cheste Workers University Paraninfo was only surpassed by the Music Hall at Purdue University Lafayette in Indiana -6,107 seats-, the Tanglewood-Lenox Music Hall in Massachusetts -6,000- and the Aire Crown Theatre in Chicago -4,281 seats-.
- 3 In the project there is a detailed section of the Auditorium-Paraninfo where the architect studies the hall acoustics taking into account the inclinations of the acoustic beams.
- 4 The School of Agricultural Engineers together with the former School of Technical Agricultural Engineers formed a university complex of great architectural value. In December 2020, the warehouses of the Agricultural workshops were demolished for reasons of public interest, without attending to the social demands for a new future for this building. This action is an example of the lack of appreciation that exists in some Valencian institutions for modern heritage.

S18

Utility, discipline and a common language

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Because architecture is in fact both autonomous
and purpose-oriented, it cannot simply negate men as they are.
And yet it must do precisely that if it is to remain autonomous.

Theodor W. Adorno¹

Architecture does not fit into the grand aesthetic schemes of modernity. It is no coincidence that the most relevant theories have dealt with architecture as an exception, as a particular case in art, recognizing its differences, yet always subordinating them to the general theme. In fact, architecture, ever since modern art was conceived, has had to face a series of internal tensions that have led to often uncontrollable impulses. So much so one can state, without fear of contradiction, that architecture somehow resists full access to aesthetic modernity. On several occasions I have defended the idea that the nucleus of this stubbornness arose between the end of the eighteenth century and the beginning of nineteenth century, and boils down to the difficulty of applying the necessary criterion of aesthetic autonomy that justifies the very existence of modern art as such. A series of limitations to the autonomy of architecture, essential characteristics for architecture, therefore, deserve special attention as they shed light on a series of crucial paradoxes and, needless to say, on the much-appreciated texts included in this publication.

In the first place, and perhaps the most obvious of its limitations, the formal autonomy of architecture has to deal with the fact that architecture is oriented towards fulfilling a function. Everyone knows that buildings, cities, gardens... are, above all, places where human activities take place, places that respond to human needs. They allow them to be fulfilled. In as much as the

product of architecture has to respond to this prior and external condition, its form is already predetermined to a greater or lesser extent. It goes without saying that, with this, no mention is made of determinism in an aesthetic sense –which would mean the renunciation by architecture of its artistic condition–, but rather, that to some extent its form must be conditioned by the function that underlies it. The unique characteristic of architecture when compared to other arts –which, in fact, has led it to being compared to exclusively technical disciplines– is its instrumentability. If, in literature, sculpture or music, cases of pieces or works with a function can be found, they will be of an incidental nature, i.e. this is not a condition of possibility, the consideration of such a work as artistic not being subject to the need to satisfy that said function. Or, to put it the other way around: just as in the rest of the arts the creation of an aesthetic object is unavoidable, in architecture the construction of a building devoid of any aesthetic quality is perfectly conceivable, as a purely utilitarian product.

In fact, it is not true that architecture can “oppose”, “yield to” or “vindicate” its functional inclinations. Architecture is of necessity functional, or it is not. That is why the usual terminology is so confusing to designate that doctrine that associates architectural beauty with the balance between the form and function of the architectural object, i.e. so called “functionalism”, a modern interpretation of classical utility. Strictly speaking, all architecture is of necessity functionalist. Forcing the terms a little, it would be more accurate to speak in this case of “adaptationist” architecture as a unique attempt to resolve the unstable relationship between content and form in architecture. This would be the case in the most naive and radical versions of Viollet-le-Duc², Sullivan³ or certain representatives of the Modern Movement⁴, where the functional is held up as an aesthetic category, as a necessary truth. But the truth is that it would be as absurd to reduce architecture to this radical adaptationism, as that would overlook the fact that the value of a building is conditioned by its usefulness. On this, and about a particular moment of rationalist cohesion between production systems and architecture, i.e. about a particular synthesis between form and function, Diego Inglez de Souza, from Lisbon University Institute, speaks in “Tuna architectures in the Iberian South”.

Moving on to the second limitation, that which affects the autonomy of the discipline: Just as the distinction between the arts gradually disappeared with the dissolution of aesthetic categories during the 19th century, in architecture there have been cases of transgressing the limits imposed by the architectural tradition as “art”. Francisco de la Torre Oliver and Eduardo Serrano González, both from the Polytechnic University of Valencia, write about this limitation in their “Artistic practice as a tool for conserving the memory and essence of Modern architecture. The case of the Luis Vives Residence Hall in Valencia. Spain”. The attribution of sculptural values to architecture would be proof of this. But not the only one. In fact, architecture is clearly an all-embracing art: one cannot speak of architecture as an art form independent of the other forms. Perhaps the most immediate transgressions of its limits as a discipline

are the incorporation of skills involving urban planning, gardening, decoration or industrial design. And as architecture is a contextual art, it cannot be removed from its environment or from society. What is more, unlike other arts, architecture incorporates developments in other disciplines that are often not even driven by aesthetic concerns. Teodoro Sánchez-Migallón Jiménez, from the College of Architects of Castilla-La Mancha, expands on this issue in "Influences and context in the furniture of Miguel Fisac".

Moreover, the social character of architecture, i.e., the exceptional characteristic among the arts of necessarily imposing itself on its environment means that architecture has to assume a third limitation. Being public, architecture cannot claim a private language, as arts such as music or literature can. It has to make use of something similar to a "common language". A good example of this is the tension between architecture and craftsmanship, very opportunely pointed out by Ivo Eliseo Vidal Climent, Fernando Usó Martín and Ciro Manuel Vidal Climent, from the Polytechnic University of Valencia in "Approaches on furniture in the integral design of Moreno Barberá". Tradition or styles do not have the same relevance as in other arts.

These three limitations, and there may be more, to the autonomy of architecture are, in fact, essential qualities of architecture. In other words, it is an inescapable part of architecture to assume these restrictions on its autonomy, both on a formal level (due to its functional nature) and on a disciplinary level (as collective and public art). Moreover, beyond the obviousness that architecture, of all the arts, is in a broad sense the one that has the most tortuous access to the ideal of autonomy, little can be firmly stated in this regard. Studies like the ones that these words head indicate, therefore, frictions, internal tensions in architecture, which are – as paradoxical as it may sound – its very essence: a kind of resistance to modernity that ends up radically linking architecture with modernity, perhaps like no other art does.

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Notes

- 1 Adorno (2008, "Funcionalismo hoy", 101: 342).
- 2 The idea that the form of architecture "expresses" the function was later taken up as a fundamental aspect of architectural modernity. This thesis –very close to the idealists– was defended by Viollet-le-Duc in *Entretiens sur l'architecture* in 1863 by referring to load bearing functions, structure and construction and not so much to "activities". With this approach, constructional rationalism, on the one hand, is related to Venetian rigorism on the other.
- 3 In connivance with the current Anglo-Saxon pragmatists, the ever-present "form follows function" has been interpreted by authors such as Morrison as the pledge of the Modern Movement (Morrison, 1952). Sullivan, for his part, defends it in Kindergarten Chats in 1901, without the vehemence that was later attributed to him in reference to theories of natural sciences. It would be too complicated here to attempt to untangle all the gossip and rumors in avant-garde architecture in order to clarify those so-called "functionalist" positions. Suffice it to say that it is a thesis of much less presence than later historiographic analyses have awarded it. For more information, see De Zurko (1970).
- 4 During the formalist debates at the beginning of the 20th century (Vischer, Lipps, etc.) and acceptance by the Gestalt (for example, Arnheim) a certain boundary was established, despite being inevitably confused, between architecture and sculpture.

Artistic practice as a tool for conserving the memory and essence of Modern architecture. **The case of the Lluís Vives Residence Hall in Valencia. Spain**

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This communication is based on a reflection on the events that occurred on the occasion of the restoration of the Lluís Vives Residence Hall (1935) in València, a rationalist work by the architect Javier Goerlich and owned by the University of Valencia. A question related to memory –historical, artistic or architectural– as a reflection of a society in time and in space. This idea of memory, associated with the preservation of Modern architecture, leads us to study the possibility of a recovery of the non-melancholic space –preservation of its uses, experiences and stories– the invisible but real part, which avoids a manipulated conservation and fiction of space. We propose as a means to respond to our hypothesis the artistic practice based on the photographic and documentary as a possible complementary tool that allows preserving the memory and essence of Modern architecture, without compromising the real viability of the spaces and their new uses.

1. Introduction

This communication draws on a reflection motivated by the conflict arising from the restoration of the Lluís Vives Hall of Residence of the University of Valencia.

The interpretation of the building's degree of protection has led to a disagreement between the various institutions involved, which reveals the following question: How can the essence of modern architecture be defined in order to preserve its memory?

We will try to tackle this issue with the following objectives in mind. First of all, we will analyse the rehabilitation project and the different positions adopted by the actors involved. From the exposition of the case, we will address the concept of the building's identity by studying the value of memory in architecture and the risk of heritage musealization. Through the study of different contemporary proposals, we will then present artistic practice as an alternative for the conservation of architectural memory, concluding with the contributions of the authors in reference to this case.

2. The case of the Lluís Vives hall of residence

The construction, included in the Iberian DOCOMOMO Register since 2009, is involved in a conflict caused by the questioning of the reform project proposed by the University of Valencia as the owner in 2012. The Lluís Vives Hall of Residence (**Fig. 1**) built between 1935 and 1957 by Javier Goerlich Lleó (Valencia, 1886–1972), in addition to being the witness of an era and a true exponent of valencian university life, is one of the few remains of Spanish rationalist architecture—with its characteristic boat style— and a key element in 20th century Valencian architecture (Llopis, 2018, p. 64).

In defence of culture and its legacy, in 2013 the Goerlich Foundation appealed the proposed intervention for its adaptation as a residence for researchers. In its allegation report, it pointed out that the emptying of the building constituted a serious attack on the heritage. For its part, the local council refused the building permit, backed by the municipal heritage commission and fire service's reports (García, 2013).

The works, announced for the year 2022, will follow the new rehabilitation proposal signed by the architect Tomás Llavador (**Fig. 2**). The new proposal¹ interprets the maximum level of intervention allowed to work in coherence with the listed values defended by the Foundation, thus, respecting the defining elements of the architectural structure. In this case, the interior open spaces, the heights and frameworks, the hierarchy of interior spaces, the main staircases, the façade, and the rest of the building's features. All the singular elements will also be preserved, such as the exterior locks, the wooden joinery in the main hall and the decorative false ceiling on the ground floor.

3. Memory and architecture

In view of the issues posed by this case of architectural rehabilitation, it is worth questioning the operations of emptying architectural interiors in



Figure 1. Original project cover of the Lluís Vives Residence Hall by Goerlich.



Figure 2. Beginning of the restoration works in the Lluís Vives Residence Hall, February 2022 © De la Torre, 2022.

order to adapt them to new functions, as well as assessing the relevance of preserving their identity and memory.

Therefore, in order to define the overall identity of the building, we will review the relationship between form and function as key to the project developed by Goerlich. Adolf Loos (1972) broke with historicism by promoting modernity based on technical advances that allowed the forms and spaces to adapt to the needs of a studied and preconceived function. In rationalist architecture, form thus follows function (Sullivan, 2017, p. 4) and, hence the hall of residence should not renounce to its architectural programme if its identity is to be preserved.

If the utilitarian becomes aesthetic, relegated to a “museum relic” within a new space, it becomes a commodity in a capitalist world where design is complicit in a circuit of production and consumption where the packaging would replace the object itself. And the façade of the building would end up replacing its own identity, converted into an empty consumer product endorsed by its author through “a redemptive project of reunion and reanimation” accredited by the history of art (Foster, 2004, p. 71). The recovery of a historic building, with the aim of preserving our architectural heritage, would show us the danger of falling into its musealization as a witness to this redemptive will that attempts to maintain and revive the breath of a memory lost in another time.

4. The preservation of memory

In the case of modern architecture, we would be faced with an avant-garde style, historically misunderstood by citizens and politicians (Arean, 1995, p. 25), poorly built under obsolete rules and object of real estate speculation. The DOCOMOMO foundation reveals how to safeguard it by awarding rehabilitation projects, such as the one carried out by David Chipperfield Architects in the Ludwig Mies van der Rohe's Neue Nationalgalerie in Berlin. For its part, the institutional alternative is to grant legal protection managed by the city councils or to classify it as an Asset of Cultural Interest. The current urban museography is committed to a musealization of the gentrified city as a tourist attraction, converted into a location for travellers' selfies to be exhibited as trophies on the walls of social networks (Augé, 2003, p. 66).

It is in this context that the so-called *façadism*, a practice based on the emptying of buildings and, by extension, of their memory, would triumph. It would be enough to maintain the architectural façades as the scenography of a set that fulfils the function of a theme park; a simulacrum that identifies a city that protects itself from globalisation by constructing a particular Disneyland, where architectural styles intermingle in a world of simulation (Baudrillard, 1978, p. 25). But we must not forget that rationalist architecture is more than just part of the heritage of the museum-quarter, turned into the unified spectacle of the economy of abundance (Debord, 1999, p. 68–69). It constitutes the testimony of a revolution, the failure of a utopia set out at the beginning of the 20th century, when creators thought that art could guide humanity towards a brighter future (Marchán, 1986, p. 24).

This conservative will of historiography, in Panofsky's words, would not be faced with the task of stopping what would otherwise disappear unnoticed, but of reviving what would otherwise remain dead (1983, p. 32). This idealistic reanimation of the past would clash with the materialist perspective of Walter Benjamin, who reverses this question in the *Thesis on the Philosophy of History* by arguing that "to articulate the past historically does not mean to recognise it as it really was (...) it means to seize a memory when it flashes in a moment of danger" (1968, p. 255). In this way he challenges Panofsky's approach, by emancipating the fragments of history from a dependence on the ritual re-enactment, allowing them to be aligned with political purposes.

History would therefore be a problematic and incomplete reconstruction of what no longer exists, as opposed to memory, which, as Pierre Nora points out, "is an ever-present phenomenon, a bond lived in the eternal present", while history is "a representation of the past" (1984, p. 21).

The commitment to the prevalence of these spaces, understood from phenomenology as spaces of memory, would be inextricably linked to their identity. In our case, both Goerlich's architectural conception – taking into account its form and function – and the life of the building itself – the experiences and memories of those who lived in it – would form the totality of its identity as a space. Memory, beyond dates, documents or images, would

encompass a sum of intimate and collective stories that take place in an indeterminate time in the rooms of a specific space; matters of art and poetry that would form an essential part of the preservation of its identity.

Memory, understood as a vital human activity that defines the way we relate to our past, as Andreas Huyssen (1993) puts it, also defines us in the present. The Past, the building's memory, is necessary to establish its identity and to find a vision of its future.

If we take up the function of this building as a residence, as a home for the generations of students who inhabited it, we will then understand that their memories are also linked to it's identity. This leads us to ask, with Bachelard (1965), "What was, has been? Have the facts had the value that memory lends them?" (p. 90). The hall of residence, after us, would come back to us, turning the whole reality of the souvenir into phantasmagoria. Memory would not be a solid, unique or absolute image, but would instead be shaped collectively by the memory and experience of its inhabitants, finding in artistic practice the means to reveal itself.



Figure 3. De la Torre, Paco. *Vitreous humor*. 2008. Stills from the audiovisual essay © De la Torre, 2008.

5. Contemporary artistic practice

By conceiving the Lluís Vives as an anthropological place (Augé, 2004), we are preserving a singular place where socio–pulsional trajectories converge. But let us not forget that in preserving heritage, we run the risk of falling into monumentalization, establishing a continuous timeline in which events, inaccurate memories, history and the experiences of a community, are mixed, as Fernández Mallo points out, far removed from the local reality of a present time (2018, p. 101).

As an alternative, contemporary artists propose through their practices a recovery of the non–melancholic space –via its uses, experiences and stories– as an alternative to this manipulated and fictionalised conservation of space. With the transition from object art to concept art (Marchán, 1986), the artist resorts to techniques from history, anthropology or the social sciences, giving a fundamental role to the archive (Guasch, 2011).

Below, we present some significant examples of artists who have worked on “the construction of the city in time” (Rossi, 1992, p. 60), reflecting on memory through archival practices to generate conceptual discourses about a new way of thinking about space, the past and the present, and their relationship with art (Guasch, 2021, p. 13).

For our case study, we highlight the objective photography used as a resource to transform the fragmentary or marginal material of a hidden fact, based on accumulation, sequentiality and series (Guasch, 2021, p. 206). This conception was advocated by Bernd and Hilla Becher in the 1960s. Their use of the photographic archive as a legitimiser of cultural history proposes a perspective that breaks with the linearity of the historicist study of cultural memory. Their works are based on the repetition of the architectural icon, photographed through a strict frontal perspective and a wide shot of the object represented. The register of old German industrial architecture under the singularity of the object presents a clear anthropomorphic reference that would bring it closer to August Sander’s portraits. The images are organised according to typological series that respond to the premise of “accumulating and classifying a part of the collective memory based on the concept of repetition, typical of the hypomnemic archive” (Guasch, 2011, p. 52).

Bernd Hilla held the chair of photography, together with Hilla as assistant, at the Kunstakademie in Düsseldorf, where he transmitted his interest in documentary photography and architecture to the artists of the New Photography movement. In relation to our study, we have selected the work of Thomas Struth, in which we can appreciate the frontal perspectives and detailed observation of the passage of time and the traces inscribed on the buildings as a reflection of the ghostly human presence; an urban archaeology that, through the relationship between the individual and architecture, reveals the impact of historical processes on the collective memory, placing the spectator as co–responsible for his or her time and space.



Figure 4. Serrano, Eduardo. *Reservat Col-legials*, 2022 © Serrano, 2022.

Qualified as an “anarchitect”, Gordon Matta-Clark uses his artistic and architectural training to develop his interventions in buildings, called building cuts, where he manifests a critical activism against speculation and the capitalist use of architecture. Of this futile act of artistic resistance, carried out on buildings in the process of demolition, all that remains is the testimony of a memory on the verge of disappearing, registered in drawings, photographs and recordings. The work with these abandoned structures stems from his concern for the life of the city and the metabolization of old buildings (Moure, 2006, p.120). In *Conical Intersect* (1975) he made a complex cut-out of circles in a residential building, next to the Georges Pompidou Art Centre under construction, reflecting on the memory of a city that is disappearing in the face of the advance of progress.

Chisto and Jeanne-Claude develop their work around the space manipulated by mankind, offering a new vision of architecture and urbanism from

the perspective of artistic practice. Particularly significant to us are their installations based on *Wrapped*, where, through this transforming principle, he creates a new vision of architecture. By wrapping the construction in his packages with his fabrics, he confronts us with the wrapping, the façade, preventing us from knowing its interior and its identity. A poetic image that drastically breaks the relationship between inside and outside, with which Christo claims the indivisibility of the space built in the architect’s mind. The image of the building hidden under the sheet questions the superficial gaze of the contemporary subject, demonstrating our inability to recognise a space that has lost its identity, reactivating our perception and thought: “revealing an object by concealing it” (Chiappini, 2006).

The Labyrinth Project collective, in collaboration with experimental artist Pat O’Neill, realised the project *The Decay of Fiction* (2002). An archaeological exploration of the role in Hollywood’s story of the famous Ambassador Hotel at the onset of decadence, evoking the feeling of nostalgia coupled with the notion of loss. Its Coconut club, from the opening in 1920, had been the stage for the nightlife of the city of Los Angeles. The complex was demolished in 2008, due to the technical impossibility of preserving part of its structure as a

testimony. However, it would be preserved in the interactive DVD-ROM where the piece is presented, allowing users to access its memory through multiple layers of reality in the form of fiction and non-fiction structured through the use of architectural elements and a database-narrative.

To conclude with the exhibition of proposals put forward by artistic practices for the conservation of architectural memory, we present the contributions of the authors with reference to the Lluís Vives Hall of Residence.

Paco de la Torre will work in his audiovisual essay *Vitreous humor* (2007), which addresses the memory of his stay in the facilities of the residence as a student during his Fine Arts studies in the eighties. The study of pictorial space has been present in his work since the beginning of his career, with painted architecture acquiring an autobiographical role from the time he tackled the work of the rationalist architect Guillermo Langle. Years later, the discovery of Goerlich as the author of the school and its rationalist style led him to reflect on the place he had lived in. Based on the film *Last year in Marienbad* by Alain Resnais, discovered in the residence television room, he establishes a filmic parallelism between the main hotel and the Lluís Vives. Through the insertion of still images from his pictorial series based on his school experiences, he elaborates a personal vision of an architecture destined to lose its memory.

In *Reservat Col-legials* (2022), Eduardo Serrano reflects on the memory of architectural space through archive images. In his work, furniture is presented as a silent witness of memory, as well as a reflection of an era in the present, given its capacity to become a container of stories. As he has proposed throughout his research and artistic career, through the dialogue between images and signs, he develops events that took place in an inaccurate time that return to offer us a new story. These keys are present in works such as *Biting the dust* (2020) or *Futures that became present* (2019), which make up this graphite on paper where he investigates the memory associated with the Lluís Vives building.

6. Conclusions

Having carried out the development based on our objectives, we can respond to our hypothesis in a positive way by the prior identification, in the studied artistic proposals, of alternative keys for the conservation of the essence of modern architecture.

The role of memory in this preservation process would be inextricably linked to form and function, shaping the building's identity. Therefore, as an alternative to the musealization or extinction of these spaces, we propose a preservation of their memory through interpretation and collective experience; a matter that is object of study in contemporary art through archival practices and interdisciplinary techniques coming from history, anthropology or social sciences.

We will conclude by pointing out that the identity of the architectural space is shaped as much by its function as by its form and its memory, and that artistic practices represent a possible way of projecting this legacy into the future.

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Notes

- 1 Accessible on the University website. Accessed February 10 2022. <https://www.uv.es/uvweb/servicio-contratacion-administrativa/es/novedades/publicada-licitacion-obra-rehabilitacion-del-edificio-col-legi-major-lluis-vives-universitat-valencia-1285923355675/Novetat.html?id=1286125960945>.
- 2 Architecture subject of study by the Docomomo foundation

Influences and context in the furniture of Miguel Fisac

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Fisac, industrial design, furniture, interior architecture,

In this article I will analyze the proposals in furniture design made by Miguel Fisac during the 1950–60 period, highlighting his influences and relating his designs to those of other Spanish architects.

The context of openness, experimentation and innovation in which Spanish artists, sculptors and painters are immersed, provokes intense relationships between architecture and art, which reaches into furniture design, reaching domestic furniture. The influences of foreign art magazines, and the addition of the first initiatory journeys in the trajectory of Miguel Fisac, create a favorable context for the incorporation of Nordic languages to the designs born of the popular tradition, where matter and roots mark the modern and rural furniture at the same time, from Fisac and other colleagues. The magazine *Domus*, Gio Ponti, the IX Trienal of Milan, the magazines *Ars Sacra*, *Das Munster*, *Hogar y arquitectura*, *Revista Nacional de Arquitectura* y *Arquitectura* of the COAM

The exhibitions of artists in the Hall of the Ateneo of Madrid, during this decade, years 1954–59, a total of fifty exhibitions, disclosed through the corresponding catalogs, drawn up by other colleagues, among which Miguel Fisac, presents two artists, Jose María de Labra and Francisco Farreras, collaborators in its architectures. The relationship with the best and most innovative national artists, places Fisac in a privileged position to design suitable furniture at the moment.

The analysis of their designs would be carried out in comparison with those of other architects, Coderch, Sota, Correa, Carvajal, Feduchi, Corrales, Molezún, Curro Inza and others.

The “bull” and “chicken leg” chairs will be reviewed and their stylistic origin and context will be reflected upon.

With sketches, original plans, vintage and current photographs, some Fisac homes and their furniture will be reviewed.

1. Introduction

The artistic and architectural context between 1930–1947 in Spain would not be the only framework of influence in Miguel Fisac’s furniture design. In the first place, the year 1947 stands out as the date of the first sketch of his most popular armchair, the “Toro” armchair, the first design that breaks with the strict tradition, made for the Library of the Hispanic–German Foundation Göerres, at 117 Serrano street, Madrid, as part of a furniture program called “Structural Series”. This furniture was made by the cabinetmaker La Navarra, one of whose businessmen, Germán Larragueta, settled in Madrid.

Also popular were the “chicken leg” chair (1958) and the chair and table for the CSIC scientific bookstore at 4 Medinacelli street, Madrid (1950). Other lesser-known pieces of furniture would be the Sevilla armchair, the Bilbao armchair, the Granada chair or the BA-4 stool.

Prior to these designs, the first years of Fisac as a designer were spent working for the CSIC headquarters, between 1943–47, where the companies Aurelio Biosca, Corberó and La Navarra, manufactured all the furniture, within a classic style, the first steps of the young architect.



Figure 1. Bull chair. © Ministry of Education, Culture and Sport. Institute of Cultural Heritage of Spain. Pando Barrero; Juan Miguel (1915–1992) Model of furniture, three chairs with backs and arms joined] 1959

2. Influences

Therefore, the possible influences, comparisons and relationships that Fisac could have to create the design of its structural series of furniture will be analyzed.

Fisac's apprenticeship as an architect was framed between his arrival in Madrid in 1930 and his graduation in 1942, with the parenthesis of the civil war.

In these early years at school, through the architecture magazines *AC Documents of Contemporary Activity of Barcelona*, *Arquitectura*, *Cortijos* and *Rascacielos* by Fernández-Shaw, and already in the 40s, as a professional, he was inspired by the magazine *Reconstruction* and *RNA*.

German or Italian influences are more difficult to prove, especially in the period 1939–1947, since it coincides with the 2nd World War, but *Das Werk* or *Domus*, may be within your reach, at the School and in the offices, where he worked with Muguruza or Vallespín.

In his private library, kept by the Fisac Foundation, there are issues of *Das Werk* 1948–1951, *Architectural Review* 1946–1949, *RNA* 1943–1945, and other sacred art and architecture magazines from the 50s and 60s, during which it is easier to acquire them.

The references of the Spanish rationalist architecture of the thirties, had to be known, analyzed and largely rejected by a novel Fisac, very critical of Le Corbusier, taking up the classical tradition and the stylistic principles of the Regime, with a neoclassical architecture, and a furniture design forced by the absolute lack of a furniture industry that offered a design according to the demands of the project.

In his first works he looked at Italian models between modernity and classicism, he should know the works of Marcello Piacentini, Mussolini's favorite architect, and who would be liked by the new Spanish postwar regime and its simplified neoclassicism, such as the Rectorate of the University of La Sapienza in Rome and the Palace of Justice in Milan.

Although he would also know the rationalist work of Gruppo 7 and MIAR, with Terragni, Luigi Figini, Gino Pollini, Guido Frette, Sebastiano Larco, Ubaldo Castagnola and Adalberto Libera, with Pagano and Ridolfi, together with the aesthetic budgets of the group of architects Novecento (Muzio, Lancia, Gio Ponti).

However, Fisac is looking for other paths, different from the historicist and neo-traditional pastiches, or the disappointing Modern Movement, of which he would say that it is only a translation of the pictorial plastic of the avant-garde.

And so Fisac declares in his 1981 article in *Quaderns* about Asplund, following his trip in 1949, where he discovers the Nordic neo-empiricist examples, such as the extension of the Göteborg City Hall and the Stockholm Library, which will be his references.

He learns from Asplund to join the neoclassical and contemporary styles, with great sensitivity, this architectural current being the path found by the architect from La Mancha to continue experimenting with his architecture during the 50s.

Asplund designs an armchair for the Paris Exhibition of 1925, with a sensual curve, a large back extended with the seat and close to the floor. It also has an armchair for the waiting room of the Chapel of Faith, and another for the meeting room of the Swedish Society of Arts and Crafts, in 1931, which will be used in the Stennas House in 1937, with a vertical chopsticks between backrest and fabric covered seat. The Göteborg 1 and 2 chairs used for the

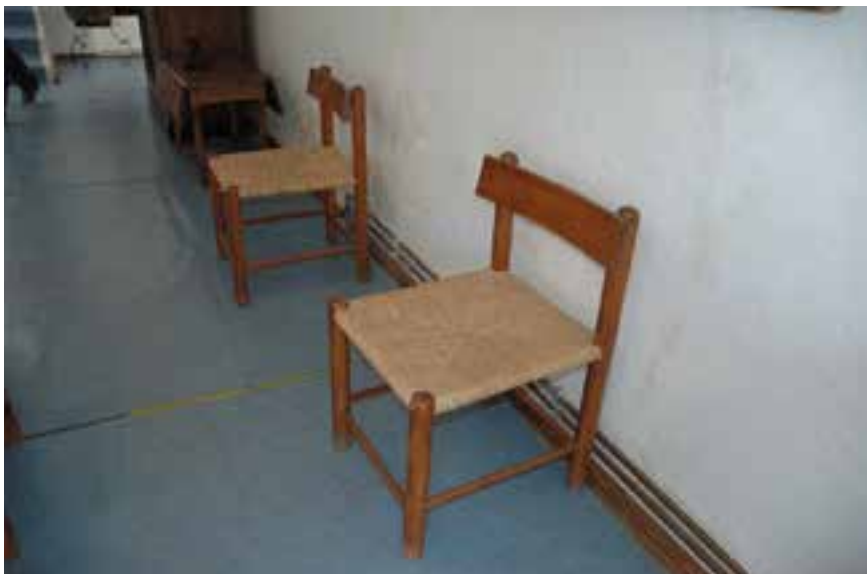


Figure 2. Chair of House Pozuelo brothers in Daimiel. Author's originals

City Hall in 1937, use curved and cylindrical wood, in light and natural tones combined with dark seat and back linings.

Follow this analysis with the possible Influences of Jacobsen, with the sofa and armchairs of the HIK Tennis Club, 1938, or those of the St. Jorgen Bank Branch, 1935.

The finnish Alvar Aalto did not travel to Spain until 1951, but he designed a chair with a curved beech wood structure for the Paimio Sanatorium, completed in 1933, and for the Viipuri Library in 1935.

Fisac supports these trends, incorporating traditional plant fibers in seats and backrests in a very notable example, in the CSIC Bookstore, with clear vernacular influences.

During the 1930s, the *Arquitectura* magazine published Luis Martínez Feduchi's furniture for the Capitol Building in 1930, made of beech wood, as well as the tubular steel furniture for Gutierrez Soto's Pub Chicote and the Sacha bakery, and modern buildings were identified with those that had this furniture, with only a minority of these designs being used. The Spanish war truncated the evolution of this design, maintaining in the 40's the classicist, traditional and imperial style in public buildings, image of the new order.

Before that, *AC* magazine (1931–1937), a GATPAC publication, directed by Sert, Torres Clavé and Subirana, was cited as a very influential medium in Spain, disseminating rationalist architecture, and seeking furniture design in accordance with modern architecture. (in the recurring expression

“gesamtkunstwerk”, coming from the end of the 19th century)(1), materials, techniques and aesthetic concepts opposed to other decorative styles that included the modernist tradition, and that were very criticized, as in the article in number 15, of AC , entitled “A false concept of modern furniture”, and which says:

“This “modern” “furniture” does not respond to either of the two concepts. It was fashionable after the Paris exhibition in 1925. Today, they abound in our country with a pitiful profusion. In France they are known as “Styl Art Deco” (decorative art) by the name of that exhibition.

Today’s furniture must be, above all, light, easily cleaned and transportable”.

They will also divulge the vernacular constructions of the Mediterranean, and in relation to the design of the furniture, it is said in number 19, (1935), page 14:

“Popular furniture, without stylistic pretensions, is like popular architecture, a good example of the spirit that should animate the construction of today’s furniture. The emotion of popular furniture comes from its human proportion, from its simplicity, from not pretending to be something transcendental. This spirit with another technique is worth imitating....

The popular furniture, which repeats “standard” types for centuries, never loses its good sense. When in the cities a chair becomes something complicated and inhuman, in popular housing a chair continues to be the most perfect and comfortable thing that can be achieved with the technical means available”.

In addition to linking the essence of rationalism with that of popular architecture, and linking modernity with the Mediterranean, Berlin with Ibiza, this group from Barcelona, (which also promotes the works of Mercadal and Aizpurua, the first modern architects in Spain), detects the coldness of modern European furniture, and writes:

“The new furniture goes through a dangerous period around 1926–1930, due to the excessive diffusion of certain elements, such as the chromed and curved steel tube and others, the abuse of which came to give certain interiors a cold and not very human aspect. The work of the machine must be as perfect as possible,

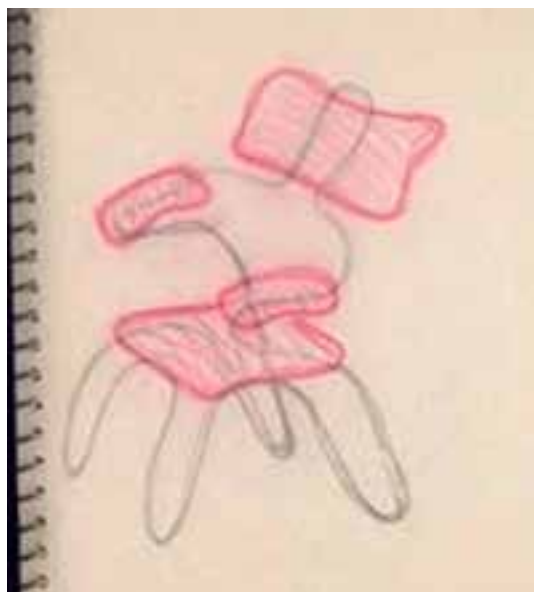


Figure 3. Drawing of travel notebook to the nordic countries of Fisac 1949. AFF

but without necessarily having the spirit of the machine, because our body needs objects with which it is in daily contact, to have a certain affinity with it. Between the human machine and man-made machines, there is a matter of degree difference. The fashion for tube furniture, completed with other elements of the same spirit, marks a moment of "exaltation of mechanics" and "functionality", which has fortunately evolved. The interior of a house today, past this moment of rigid functionalism, can be something alive, personal, intimate and cheerful, against the wrongly luxurious, full of pretensions and made for appearances and against the rigid, cold and Germanic".(1)

Starting from this thought that Jose Luis Sert reflected in the furniture design of his home—studio in Barcelona in 1935, Fisac ten years later continued this vernacular essentialism in his interiors. And it could be linked with the gentle rupture that the shape and structure of the "Toro" chair means, and the interior of the Daza Valdés National Optical Institute, already with a direct Nordic influence.

The three Milan triennials of 1951, 1954 and 1957, especially the last one (where Carvajal selected the Toro Chair and the Barceloneta lounge designed by Correa and Milá, and used by Coderch), represent the maturity of Spanish furniture design, although still close to handcrafted manufacture and still far from industry.

This explosion and opening of design has the year 1957 as a reference, since the SEDI (Industrial Design) is created in Madrid, animated by Gio Ponti, and



Figure 4. Sert's studio house in Barcelona 1935. Magazine AC n° 19

sponsored by Carlos de Miguel from the direction of the RNA magazine, a society formed by the architects Inza, Corrales, Molezún, artists like Labra, Gabino and Díaz Magro.

The fifty art notebooks published by Ateneo with each exhibition it holds on avant-garde artists from 1954 to 1959, and the creation of the museum contemporary art and the first abstract art exhibition in the black room, create the ideal environment for the architecture and art to share spaces, and maintain intimate relations.

In Barcelona Antoni Moragas created the IDIB (Industrial Design Institute) this same year, later creating the ADI-FAD with the Delta awards, among architects Oriol Bohigas, Coderch, Gili, Sostres and Martorell.

In 1960, the Permanent Exhibitions and Construction Information (EXCO) and the furniture competitions for affordable housing were resumed.

3. Conclusion

These pieces of furniture do not follow the modern principles of chromed steel tubes (popularized in the 30s by Mies and Breuer, among Hispanic rationalism of the MAC company), nor do they follow the national style of the regime, nor are they reflected in the Italianate lines of the 40s. If there are relationships with Nordic furniture, in terms of the use of curved wood, and the comfortable ergonomic seats, adapted and curved, with textiles and leather.

Wood with solid sections and the study of body position are starting ideas for these designs, in which the structure is analyzed and gives shape to the piece, separating from the seat and backrest.

Unilateral experiments of thick, violent, energetic lines, with the hand of a craftsman, replace the shortage of designer furniture, having to go to the workshops for its manufacture, in the face of a Hispanic void. Later, the companies with the first pre-industrialization processes, Darro, Rolaco and H-Muebles, will emerge, which will extend industrial design in Spain.

Despite this official stylistic drift and the scarce design furniture industry, Fisac reveals itself and in a handcrafted way manages to get out of the script, and opens the door to colleagues from the 1st and 2nd post-war generation, such as Sota, Coderch, Cabrero and Carvajal, who designed furniture with great success in the 1950s and 1960s.

The chairs and tables for the Ciudad Real Pavilion at the Madrid Country Fair in 1953, continue with a resounding gesture of wood, but with a long, soft curve, which supports the mesh of natural fibers of vernacular nature.

He used the Toro armchairs, among other designs, in the home of the Larragueta brothers in 1954, and the chicken leg chair in the following projects

since 1958 in the session room of the Ciudad Real Provincial Council, with the incorporation of curved steel.

In the house of the Pozuelo Brothers in Daimiel in 1957, still in 2013, some original furniture remains, possibly selected by Miguel from the catalogs of Darro, Rolaco or H-Muebles.

The bull chair represents the synthetic image of Spanishness in Milan, (ten years after its creation) the Mediterranean, a proto-industrial design that could aspire to mass production; expresses current concepts through traditional materials, still with a permanent tension between craftsmanship and industrial design, tradition and modernity, authorship and anonymity.

Fisac is ahead with furniture designs at the end of the 40s, and distances itself from the "modern" style of steel tubes, collecting the popular and Nordic tradition, with an essentialism and a functionalism, which surprise at this time, and that will influence the Spanish design of furniture of the 50s and 60s.

Influences from the most mediterranean rationalism, from the Italian post-war period, from hispanic artists, from the spanish popular tradition and from Nordic neo-empiricism have been analysed, but in the end an essentialist, singular design by Miguel Fisac emerges.

This search ends with the definition of Fisac that Espuelas leaves us:

"... poet of nudity and efficiency, poet of inquiry and rationality, he has been a forerunner of something that is beginning to gain strength: the reunification of art and science..."(3)

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Notes

- 1 Walter Gropius, Manifesto "gesamtkunstwerk", Weimar 1919
<https://www.goethe.de/prj/hum/es/dos/bau/21394277.html#:~:text=Permit%C3%A1monos%20todos%20juntos%20desear%2C%20concebir,cristalino%20de%20una%20nueva%20fe> 27/04/2022
Manifesto "gesamtkunstwerk", overall work of art by Walter Gropius. Founding manifesto of the Bauhaus school 1919:
"Architects, sculptors, painters, we must all return to craftsmanship. For there is no art as a profession. There is no essential difference between the artist and the craftsman. The artist is a perfection of the craftsman. The grace of heaven makes it, in rare moments of inspiration, beyond his control, art is born unconsciously from the work of his hand, but the basis of a good craftsmanship is essential for every artist, where the first source of creative imagination is found.
Let us therefore form a new guild of craftsmen without the class pretensions that wanted to erect an arrogant barrier between craftsmen and artists! Let us all wish, project, and create together the new

structure of the future, in which everything will form a single whole, architecture, plastic arts, painting, and that one day it will rise to the sky from the hands of millions of artists as a crystalline symbol of a new faith".

Bruno Taut, 1919, "Architektur Programm", Publisher: Arbeitsrat für kunst, Berlin
In the 1919 program of the Arbeitsrat für Kunst group, of which the architects Bruno Taut and Hans Scharoun were members, among others, it can be read: "Art and people must form a unity. Art must no longer be enjoyment of a few, but happiness and life of the masses. The aim is the integration of the arts under the wings of a great art of construction". The unitary language of the arts was a premise in the creation of the world, the integrated style means of transformation of collective life.

- 2 Sert, Jose Luis. "La evolución del interior en los últimos cincuenta años (1880–1930)". *Revista AC* nº 19. Barcelona. 1935. p 14
- 3 Espuelas Cid, Fernando. "Laudatio". *Formas de Arquitectura y Arte*, nº 13, Colegio de Arquitectos de Ciudad Real 2006. pág. 24–27.

Tuna architectures in the south Iberian peninsula

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Tuna has been fished in the Iberian peninsula southern coast since ancient times, following the predictable movement of schools entering Mediterranean sea to breed. Portugal and Spain shares multiple connections on fish, fishing techniques and capitals, constantly circulating through the borders along centuries, but specially since the invention of canning in early 19th century. Analyzing two pairs of settlements in both countries, designed in the 20th century in a planned fashion to host the workforce dedicated to fishing and processing activities, we pretend to establish parallels and search for connection points between these tuna-fishing architectures, built between 1920 and 1940's in direct relation to the Almadras.

Sharing fishing spaces and historical affinities with Spain, Portugal didn't transformed tuna in a national symbol as did with cod and sardines. Spain captured this identity element for its nationalistic driven economy and propaganda through a monopolistic consortium on tuna fishing, while in Portugal private initiative prevailed on canning, under strict surveillance of the corporatist state.

The dimensions of the towns designed to host fishermen families during the fishing season are directly related to the fish traps scale, positioned in relation to the fishing sites, contributing to rise the fishing pressure over a *sui generis* specie and building the landscape. Even if contrasting to the image of vanguardist modernity, these settlements, realized under different economical schemes, shows some degree of industrial rationality, aligned with productive expectations, resulting in effects on built environment and marine ecosystems. The similarities between the architectural imprints of fishing on land suggests other perspectives that overpass the national borders and direct relations between architectural history and marine biology to understand the socio-ecology of a fish.

1. introduction: Tuna fishing and the Almadras

In the southern Iberian coast, *Thunnus thynnus* – or bluefin tuna, has been systematically caught since ancient times by traps known as almadras. The history of tuna fishing is intertwined with the occupation of the Algarve and Andalusia coastlines. Tuna fishing in the south Iberian peninsula combines the dimensions of fishing gear with the built expression of the dynamics involved in capturing and processing a *sui generis* specie, related to its biology and particular environmental conditions.

Tuna's structure implies constant movement: it can reach speeds of up to 90 km/h when migrating across the Atlantic. The eastern population – or "stock", of bluefin tuna follows defined and predictable routes towards the



Figure 1. Ruins of the Nueva Umbría's fishing village, between Cartaya and Lepe, in Huelva, built by the Consorcio Nacional Almadrabeto (CNA) in 1928 and expanded in 1940's. © (Archivo Histórico de la Junta de Andalucía / IES Rafael Reyes).

Mediterranean Sea, crossing the Strait of Gibraltar between spring and summer to spawn.

The *almadravas* are traps designed to intercept this instinctive trajectory along Algarve and Andalusia's coast, specially at the Gulf of Cádiz. The biological dynamics of the tuna and their instinct explains the built environment in the south Iberian peninsula, combined with the transformation of fishing and processing techniques through the last two centuries.

The setting up of the large maritime constructions to catch tuna in their migratory movement led to the construction of settlements along the coast. The *arraiais* of Algarve and the *pueblos almadrabetos* in Andalusia were seasonal camps that accompanied the setting and the operation of the traps, assuming variable positions. At the end of the 18th century, an important technological transformation in the tuna fishing took place: from the *almadravas de tiro*, popular across Andalusia, launched and collected from the shore, the *almadrava de copo* became widespread, combining fixed and mobile nets that concentrated the tuna in the death chamber formed by boats on the sea. There, the fish were captured on board after fatal blows of hooks and pikes operated by dozens of fishermen during the *copejo*, a truly blood ritual depicted in Roberto Rossellini's *Stromboli* (1950).²

The fish was delivered from the boats to ports, processed by brineries and canneries and exported, mainly to Italy, where tuna persisted as a consumption habit after the fall of the fisheries in Sicilia and Sardegna decades before.

In Algarve and Andalusia, almadravas almost disappeared in early 1970s, as a result of the economical impacts of overfishing. Recently, the raw fish market associated with Japanese cuisine gave a new boost to tuna fisheries in the region. The socioecological transformations involving men and tuna can be observed through the architectural remnants of the fishing settlements built during the expansion of the canning industry.

2. Tuna Architectures in Algarve and Andalusia

In Andalusia, after the fall of the dynasty Sidonia–Medina that had the monopoly of tuna fishing since medieval times, this activity was explored by several different families and investors during 18th and 19th century. As in other Atlantic and Mediterranean countries, canning industries flourished in Spain from late 19th century, opening new markets through international shipping and raising the demand for the natural resource. During the Miguel Primo de Rivera y Orbaneja³ dictatorship (1923–1930), the organization of the Consorcio Nacional Almadrabeto (CNA) in 1928 represented an initiative to arrange private interests and nationalist strategies, expanding this activity fostered by canning industry.

New settlements were built by then to support tuna fishing, materializing cultural practices and economical expectations into coastal imprints of fishing that would lead to impacts on marine ecology. The Nueva Umbría and Sancti Petri *pueblos almadrabetos*, build under CNA's rule, are examples of the social dimensions and pragmatic organisation involved in fishing operations in different moments. Designed to shelter fishermen and other professionals involved in other activities related to fishing, these settlements occupied strategic positions on the coastline in function of Almadrava's positions on the sea, articulating both spaces.

Their locations combined access to traps' positions with port facilities to deliver the fish as quickly as possible to canneries but also with the *hinterland*, source of workforce and essential supplies for everyday living in the *Pueblos* during the tuna season. In Barbate, one of the most productive tuna ports in Andalusia, this economy gave place to early modern architectural achievements such as the fish market designed by the architect Casto Fernandez–Shaw in 1940.⁴

Nueva Umbría's settlement is structured by 8 aligned and identical blocks of housing for fishermen, combined with more comfortable installations for graduated employees in a articulated U-shaped block, a detached house for the captain with a tower and strategic view to the settlement and to the waterfront. A linear warehouse is placed between the housing blocks and the inner shore at the mouth of Piedras river, dedicated to store and repair boats, cables, nets, buoys and anchors related to the trap.⁵ Its organization is telling of a pragmatic and rational design to enhance the production, inaugurated in 1929 and later expanded. Close to former rural settlements on the coast and

connected to Ayamonte and Huelva, by then flourishing canning and exporting ports, Nueva Umbría mainly supported temporary housing during the fishing season, offering no more than shelter and support to explore a seasonal natural resource.

Sancti-Petri, initially settled in 1929 but greatly expanded in 1940, immediately after the end of the Spanish civil war, shows clearly not only the support that Francisco Franco (1892–1975) and the new regime gave to Rivera's monopolistic organizations but also reveals shifts in the scale and in the rhetoric involved in these state-controlled official architectures.⁶

Built over one of the islands of the estuary of the Guadalete river, at Chiclana de la Frontera, between Cádiz and Gibraltar, Sancti-Petri was a self sufficient village composed of equipments to face other needs beneath shelter as support to fishing activities, like cinema, church, market, stores and social club and other collective equipments dedicated to the scarce free time of fishermen and their families. As result of a more sophisticated architectural project, the settlement incorporated one large canning factory, offering work to the fishermen's wives and children, transforming Sancti-Petri into a permanent village.

Observing both Spanish and Portuguese settlements, we can infer that architecture followed the fish, ignoring national borders, even if the economical and political structures of both countries under fascist dictatorships are not exactly the same.

The remnants of the fishing villages that still exist today in Algarve, built in the first half of the 20th century, also represents attempts to rationally



Figure 2. Aerial Photography of Sancti Petri pueblo almadrabeto, built by the CNA in Chiclana de la Frontera, close to Cádiz, between 1928 and 1940. © 1977, (Archivo Histórico de la Junta de Andalucía).



Figure 3. Fishermen hauling boats at Barril *arraial* at Tavira island, eastern Algarve. © Artur Pastor, 1965 (Arquivo Fotográfico da Câmara Municipal de Lisboa, PT/AMLSB/ART/050720).

organize housing and work involved in fishing and tuna processing. The radical transformation of fishing techniques propelled by the expansion of the canning industry during this period dramatically changed the landscape of the coast. These attempts sought to overcome the deficiencies and precariousness of the primitive villages, which were fragilely built on the beach sand and frequently destroyed by coastal erosion, fires and storms.

New *arraiais* were built to replace the improvised agglomerations of shacks made of natural materials, tending to disappear, according to the book published by the Center for Ethnological Studies on “primitive constructions”.

Their disappearance was a consequence of industrialisation that fostered transformations on fishing techniques, related to the expansion of canned fish exports, propelled by corporative state policies, mainly focused on sardines.

Although the ethnographers’ gaze focuses on rural activity and the relationships between agricultural systems and building cultures (an orientation of the gaze towards land that is even more evident in the architects’ survey), they do not fail to underline the connections between fishing traps and informal settlements. While noting the disappearance of these “primitive constructions”, they underline the continuity between some of these places and contemporary construction, as in the case of what is

now Cabanas de Tavira, then Cabanas da Conceição or Cabanas da Armação, where *“only vestiges remained, lost in the midst of the stone and lime houses of the current settlement”*.

Fishing is indeed recurrently mentioned in the celebrated Inquiry into popular architecture in Portugal, published in 1961, a product of a vast field research carried out by the National Union of Architects teams who recorded and analysed the multiple types of dwellings and constructions related to material and cultural conditions found on the Portuguese territory. However, there is practically no mention of the productive and marine biological chains associated with these ‘ecologically adapted’ architectures. Even if focusing on identifying roots and paths to modern architecture, underlining the shapes and expressions of formally elaborated constructions employing simple means, repetition of standards and embodying some kind of rationality on building, the transformation of the canned industry and fishing techniques was apparently ignored by the inquiring architects, converting these signs of inflections into ahistorical types.

The *arraiais* built around 1930 in the Tavira Island dunes, seem to follow the logic of the company towns built around factories and mines in Europe after the industrial revolution. Specific fishing companies offered to their workers minimum infrastructure and services that were essential for work and a life dedicated to it.

This industrial sense is perceptible in some of the villages which, built in the 20th century, follow a patronal model somewhere between the factories and mines of the European Industrial Revolution and the Alentejo’s *monte*. These were small units which bound the workers to a particular company on the basis of family unity, with clusters of dwellings complemented by some minimal services essential to work and daily life, such as the bread oven and the fresh water well. This paternalistic model is very evident in the arraial of Barril, which corresponded to the homonymous frame active between 1867 and 1963 and was rebuilt between the end of the 19th century and 1930. There are two parallel lines of brick construction, with interlocking walls that mark the structure of the building and the rhythm of the compartments. Each interior space, which is called an *apartado*, has two compartments facing the inner courtyard and the dune, with only one door in each direction. The whole has associated small extensions that serve both as a classroom, bread oven, barber shop and a fiscal guardhouse. The owner’s house, with space for a clerk and other officials, occupied a prominent position in the complex, not only because of its size and accessibility to the kitchen garden and the roof terrace.

The destruction of the settlement associated with Medo das Cascas almadrava by coastal erosion and wind storms between 1931 and 1943 gave rise to the Arraial Ferreira Neto, which was designed by engineer José de Sena Lino in 1943 for the Algarve Fishing Company. The Arraial was conceived as a self-sufficient village idealised to house the families of 150 fishermen, fishing

gear and fish processing activities, comprising a chapel, school, maintenance workshops and warehouses for the deposit of materials and boats between fishing seasons, in addition to facilities for staff involved in daily life of the settlement such as doctor, teacher, priest and barber.

Organised into *'two squares and five streets'*, it initially consisted of *'52 houses, a warehouse for the collection of materials, the thread house, washing house, three cisterns and five warehouses in corrugated sheet metal.'* A watchtower, a church and a school were later added. According both to the promoters of the initiative and to contemporary historians that focused tuna fishing in Portugal, the Arraial Ferreira Neto materialised an ideological, productive and social project designed to mediate conflicts between capital and labour *'the two indispensable elements of national production and wealth'* (Galvão, 1948, p.143). The *'constructive programme'* of the Arraial Ferreira Neto *"allies the past to monumentality and joins the austere air to the classical plan, undoubtedly showing total empathy, whether ideological or artistic, with the architectural taste advocated by the Estado Novo regime"* (Lopes, 2008, p.55).

Built by a private company and designed by an engineer closely involved with emblematic Estado Novo's realizations such as the National stadium in Lisbon's outskirts and ports' infrastructures, the Arraial Ferreira Neto is a pragmatic response to the the canning industry expansion, based on ancient and limited fishing techniques, but also to the political situation, defining precisely coordinates to the collective organization of work and sociability under state control in order to avoid class struggle.

Perhaps this identification with the fascist regime explains the lack of interest on the part of both architects and ethnographers, who largely ignored the venture. Although the Arraial Ferreira Neto was promoted by a private company, the settlement clearly expresses relations between fishing, politics and construction, despite the stereotypes it mobilizes. Beyond the *'português suave'* style, the official architectural aesthetics of the regime that combined new building programs and techniques to regional and rural stereotyped architectures, the Arraial Ferreira Neto is a telling expression of the junction of a pragmatic construction and an rhetoric and nationalistic realization. One dedicated to the support of fishing, devoid of ornamentation, organized according to the sequence of activities related to the installation and maintenance of the almadrava. The other devoted to the temporary housing of the workers of this company, designed to materialise the hierarchies involved in the division of labour, according to strict political guidelines.

Despite its meticulously planned organisation, the Arraial Ferreira Neto was relatively short-lived, if the long duration of tuna fishing on the Algarve's coast is considered. In 1971, last season of activity, Medo das Cascas caught a single tuna and some other smaller fish. In Andalusia, tuna fishing yield kept high through the first half of 20th century, possibly due to the control of sardine's fishing. In Portugal, sardine canning and fishing prevailed, fostered by



Figure 4. Arraial Ferreira Neto shortly after its inauguration in 1945. © Andrade Family, Tavira, 1965 (Private collection).

corporative state's policies, affecting tuna fisheries (Gonzalez and Acevedo, 2012). The correlation between different species populations seems to be as straightforward as the connections of the "stocks" over the borders along the trophic chain in an unstable dynamic, menaced by fishing pressure's rise related to the expansion of canning industry.

3. An epilogue or requiem for an fish

The decline in tuna populations on the Iberian peninsula southern coast makes explicit that the continued expectation of fishing after the construction of the Arraial Ferreira Neto was unsustainable for ecological reasons. In Andalusia, some almadras resisted to our days, redirecting their activity to Japanese gastronomy, fostering the exploitation of a resource whose population was on clear collapse.

The dimensions of the rationally designed company towns designed to host fishermen families during the fishing season are directly related to the fish traps scale, positioned in relation to the fishing sites, contributing to rise the fishing pressure over a *sui generis* specie and building a particular architecture. Even if contrasting to the image of vanguardist modernity, these settlements, product of different political arrangements, shows some degree of industrial rationality aligned with productive expectations, resulting in effects on built environment, landscape and marine ecosystems. These Almadras also share a common history, collapsing rapidly during 1960's, consequence of the pressure over the ecological limits of the fish populations. The transformations of its architecture are expressions of the expansion of the fishing pressure but also of the disconnection between processing and consumption sites, made possible by freezing, air shipping and new logistic chains and habits. The similarities in their function, scales and shapes shows can reveal connections between these architectures over national borders, following the fish. Nationalistic, stylistic or ideologically driven histories of

architecture seems to be limited on describing and understanding the coastal imprints of fishing from the built environment perspective, with evident impacts over marine ecologies.⁷

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Notes

- 1 Instituto Universitário de Lisboa (ISCTE–IUL), Centro de Estudos sobre a Mudança Socioeconómica e o Território, Lisboa, Portugal (Project UIDB/03127/2020).
- 2 Also documentaries such as *Almadrabas* by Carlos Velo (1933) and *Costas del Sur* (1956) or *La pêche du thon*, by Leitão de Barros (1939), *Almadrava atuneira* by António Campos (1963), *Almadrava* and *Copejo* by Hélder Mendes (1968), are significant sources of information on the technologies and sociological aspects of tuna fishing.
- 3 Primo de Rivera (1870–1930) was born in Jerez de la Frontera, close to Cadiz, a traditional tuna fishing port since ancient times.
- 4 Listed by Docomomo in 1996 as one of the emblematic works of the modernity in Iberian peninsula and as cultural heritage by Andalusian authorities. See Diego Climent and María Dolores González: "La antigua Lonja del río Barbate" in *Actas del Cuarto Congreso Nacional de Historia de la Construcción* Madrid: I. Juan de Herrera/ SEDHC/ COAAT Cádiz, 2005.
- 5 Carrasco, Pablo Campoy. *El viento y la ruina, centro de investigación de la Pesca de Almadraba en el Real de Nueva Umbría, Huelva*. Universidad de Sevilla, 2017.
- 6 Barroso, Sara Melgar. *El puerto fluvial de Barbate y su relación con el Consorcio nacional Almadrabeto* Master en Urbanismo, Planeamiento y Diseño Urbano. See also https://www.juntadeandalusia.es/institutodeestadisticaycartografia/didactica/eltiempovuela/entregas/sancti_petri/index.htm
- 7 This work has been developed under the research's projects "The Sea and the Shore, Architecture and Marine Biology: The Impact of Sea Life on the Built Environment" (PTDC/ART–DAQ/29537/2017), coordinated by André Tavares (Universidade do Porto) in the Lab2PT (Universidade do Minho) and under the "Project ReARQIB – Built Environment Knowledge for Resilient, Sustainable Communities: Understanding Everyday Modern Architecture and Urban Design in the Iberian Peninsula (1939–1985)", European Research Council Starting Grant – Ref. GA949686 (2021–2026), coordinated by Ricardo Agarez in ISCTE–IUL (Lisboa).

Approaches on furniture in the integral design of Moreno Barberá

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Moreno Barberá's built work, a synthesis of the values of an era, offers the possibility of investigating to what extent furniture design is fundamental to achieving the idea of integral design characteristic of modern architecture.

The principle of unity is characteristic of all his work. At the Cheste Workers University this is particularly perceptible and praiseworthy, both because of the scale of the intervention and the functional diversity of the buildings it houses, particularly in its iconic Auditorium: the *Paraninfo*.

The sensation of unity that it transmits is to a large extent the consequence of a restricted use of materials and constructional solutions, but also of the manufacturing details of the furniture, shaped almost exclusively from tubular steel profiles and solid pinewood boards. With the aim of expressing a language of combined manufacture, the definition of the drawings shows us the use of measurements from the catalogue of materials used in the workshop.

The dimensional rigour of Moreno Barberá's objects made for the Cheste educational complex reveals a concern for their maintenance and durability that has proved effective over time, both in terms of their obvious usefulness and the elementary nature of their repairs. The strict geometry, the formal composition and the care for the finishes of their surfaces translate into a synthesis between material and craftsmanship in which human work prevails. The respect and recognition of the craft of its protagonists leads to formal efficiency and to the interpretation of shared construction codes, not only as the consistent legacy of an earlier time, but as a praxis still in force today, a way of working that contributes to maintaining the thread of architecture over time.

1. Introducción

This communication is developed under the Research Project "Conservation Management Plan: Cheste Worker University Auditorium-Paraninfo", of the Universitat Politècnica de València, directed by the awarded Professor Carmen Jordá and financed by the Getty Foundation of Los Angeles in its international programme "Keeping It Modern" Grant.

The main objective is to interpret the furniture in the integral design concept developed in the work of Fernando Moreno Barberá. In addition, the Paraninfo

building, a paradigmatic piece of the Cheste Workers University, has the singularity of preserving the original interior designs intact, becoming an outstanding reference in the conservation of modern heritage.

In order to determine the types that make up the furniture heritage as a whole, as well as their characteristics and contribution to the idea of unity of the architectural project, an exhaustive cataloguing of the preserved pieces has been carried out, with a detailed planimetric and photographic survey. The resulting formal, compositional and constructive analysis allows conclusions to be drawn about the characteristics of this furniture, as well as determining the involvement of other factors that characterise the architectural work of Fernando Moreno Barberá.

These empirical considerations have been contrasted by means of the available archive documentation, as well as by establishing comparisons with similar contemporary works by Moreno Barberá himself. A wealth of knowledge that allows us to identify the essence of the ethical, functional, compositional and aesthetic values of an era, reflected in the design of the interior architecture, in its forms and textures.

2. Moreno Barberá's interior architecture

Moreno Barberá's cosmopolitan background

Fernando Moreno Barberá (1913–1998) has deserved being considered a point of reference in Spanish modernity through large-scale projects. In his assimilation of architectural culture, both the great masters of modernity, Mies van der Rohe and Le Corbusier, and several Latin American references of great repercussion in specialised publications will have a prominent place. All of them will be a constant influence in his interest in bringing together architecture and art, a recurring theme for modernity since the avant-gardes established solid interdisciplinary links.

Interior architecture in the work of Moreno Barberá

The scant archival documentation preserved on the execution of the works at Cheste makes it necessary to search for complementary sources of information on the design of the furniture and interior architecture based on the analysis of contemporary works designed by Moreno Barberá himself and with a similar functional programme.

The university campuses designed by the architect on the old Paseo de Valencia al Mar are a reference point for study:

The former Faculty of Law (1956–59) is one of Fernando Moreno Barberá's finest works and is still a manifesto of professional practice at the highest level.¹ In addition to the magnificent conservation of the original finishes and protective

elements, the assembly hall accommodates its 309 seats in armchairs with a design which is very close to that of Cheste, which the provenance and manufacture of which have been documented. The benches in the foyer, built using three solid wooden planks measuring 2000x85x280 mm and a metal substructure, are also common to the other two neighbouring faculties.

The outdoor benches that endow the green spaces, made of 1800x40x200 mm wooden planks and metal T-profiles, will be the same ones that are deployed in the landscaped courtyard of the School of Agricultural Engineers (1958–67, Valencia), presided over by a pond made of reinforced concrete with details identical to those executed in Cheste. In addition to the structural display of the two hanging metal staircases – a theme experimented with on other occasions on a smaller scale and which here attains great monumentality, recalling the work of Jacobsen² –, the vestibule treasures the sculptural panel made in concrete by the Madrid artist Javier Clavo (1913–1998), who was to become a regular collaborator of Moreno Barberá, also in the Cheste educational complex.

In the Faculty of Philosophy and Letters (1960–70), the palette of materials of the Faculty of Law is reproduced with subtle variations. Designed in bands parallel to the street, the large foyer covers the entire height of the building, presided over by a mural and with a particular section of great spatiality, which serves different parts organised as independent volumes.³ The helicoidal staircase that gives access to the space occupied by the Valencian Design Archive is resolved with a solution of metal plates and wooden steps that bears an obvious similarity to the service stairs of the Cheste Auditorium and may refer, among others, to Melnikov's designs for the Makhorka Pavilion (1923, Moscow).

Although in more distant locations, other works by Moreno Barberá have merited special analysis due to the coincidence of the time of their execution with the construction of Cheste or due to their notable compositional and functional similarities.

The Escuela de Maestría Industrial de San Blas (1964–68, Madrid), although its interiors have been greatly altered, still preserves the railings and protections of tubular metal profiles with square sections and plank handrails almost identical to those made in Cheste. The modern Miesian construction is magnificently preserved, leaving the metal structure visible behind the glass façade, and where the sinuous landscaping of the courtyard makes the organicism of Burle Marx⁴ felt, insisting on concrete ponds and planters that will be reproduced in the Cheste Workers University.

Similarly to Cheste, the evident influence of Le Corbusier is displayed in the Faculty of Geological Sciences (1964–68, Madrid) as a splendid reference, manifesting itself in the vigorous plasticity entrusted to the expressive possibilities of reinforced concrete. Although also much transformed, the concrete bricks arranged in a tambourine pattern that make up the walls of the classrooms are still visible, with the intention of improving the acoustic

conditions of the teaching space in a solution identical to that used in the Valencian complex. The meeting room conserves, as the last vestige of original furniture, the red armchairs characteristic of Moreno Barberá's works which, with differential features, have a clear reflection in the pieces of the Cheste Assembly Hall.

Finally, the Escuela de Ingeniería Técnica Industrial (1968–69, San Blas, Madrid), illuminates the great central void that runs the full height of the building through skylights on a concrete grid. This same solution, although open to the sky, can be found colonising the terraces of the Cheste Workers University in a Mediterranean and Californian appropriation of the outdoors. Once again, the austere and functional bench furniture in the foyer will be resolved with resistant wooden plank designs, although here with a greater degree of elaboration.

Connecting elements and variations

In all the buildings analysed, the common thread running through them is the characteristic design unity that seeks to integrate each part of the project into a coherent whole. This is a natural offshoot or resonance of the well-known Gesamtkunstwerk, the principle of total art which formed part of the Bauhaus objectives. Interior architecture, and in particular furniture design, makes a decisive contribution to this unifying effort.

The synthesis of materialities and the formal purification of the designed pieces end up establishing a visual discourse that unifies the project's response in a significant way. The textures and relative proportions between the parts, linked to the modular metric that governs all the architectural solutions, establish elements of visual connection that, in the manner of compositional echoes, reverberate in the interior spaces until a harmonious balance is achieved.

By meaningfully blending these characteristics, the architectural object acquires significant richness and depth. In the words of Peter Zumthor, "the properties introduced into the project merge without contradiction with the constructive and formal structure of the building. Form and construction, and appearance and function can no longer be separated; they belong to each other and form a whole. Everything refers to everything".⁵

As counterpoints, singular pieces with variations in colour, touch and scale, sometimes appear and create protagonist figures in strategic locations. With their potential visual attraction, these elements of notable sculptural intentionality break the monotony without altering the aesthetic concordance of the whole.

3. Cheste workers university and its auditorium

Cheste Workers University was designed in 1967 and built in 1969 as part of the Mutualidades Laborales plan, whose official propaganda boasted of the

magnitude of the Cheste project, executed in the very short space of little more than a year.

Initially planned for another site close to the Albufera, the ambitious Cheste project would have to be the result of an adaptation, with the urgency that dictated an immediate start-up of the works in a different location, gently hilly in an inland municipality with better physical conditions: a 160 ha dry land site that would be transformed into a small town of more than 5000 inhabitants, higher than the demography of 88% of the Spanish municipalities of the time.

The different parts built, grouped by function, were placed in steps on the slope of the hill, adapting the blocks to the topographical irregularities according to a radial layout.

From the south, the view of the Universidad Laboral amidst the pine forest is marked by the paradigmatic piece of the complex: the Auditorium (or Paraninfo), whose capacity of 5000 spectators placed it among the top five in the world.

This representative area of Cheste is not only emphasised by the unique volume of the assembly hall, but also symmetrically colonises a large area of the exterior by doubling its functions with an open-air auditorium presided over by a decidedly sculptural loudspeaker. The radial structure is a reference to Le Corbusier's design for the Soviet Palace competition and becomes an outstanding expressive resource by revealing the fan-shaped ribs which contrast with the image of the rest of the buildings.

4. Constructive keys to furniture design

The architect's great constructive expertise is evident in his meticulous study of all the details of the work and is supported by his knowledge of modern techniques of industrialisation and seriation, within the framework of an execution that is still necessarily handcrafted and under criteria of economic restraint.

Materiality and metric rigour

The sense of unity conveyed by the building as a whole is largely the result of the use of a strict selection of materials and construction solutions – such as the concrete waffle slabs or the concrete brick walls – but also of the furniture solutions, which in the Paraninfo are reduced to tubular profiles and solid pine boards manufactured in a workshop.

The entire project is regulated on the basis of a 1.60 m module. The rigour of the sizing of the objects designed by Moreno Barberá indicates a concern for their maintenance and durability that has proved effective over time, both in terms of their obvious usefulness and their lack of need for repair, despite its loss of use due to socio-political changes.

Combined manufacturing and craftsman co-authorship

The strict geometry, the formal composition and the care taken in the finishes of its surfaces form a synthesis between material and craftsmanship in which human work prevails as a transfer of ethical reality to an aesthetic meaning based on a Vitruvian idea of complementarity: symmetry as order and eurythmy as proportion or relationship between the parts.

The definition of the design of the manufactured furniture is based on the measurements of the workshop's own catalogue of materials, as can be seen in the cold-formed tubular steel profiles and the squareness of the wooden slats from the north. Combined manufacturing, as a specific way of constructing architecture, uses on-site trades specific to the construction site and other external manufacturing workshop trades.

With designs developed on site, the decisive contribution of the collaborators was recognised by Moreno Barberá as co-authorship of a collective work united by an unequivocally architectural thought. The integration of the different arts and crafts and the respect and recognition of the work of its protagonists is a pleasant task that leads to formal efficiency and the natural understanding of shared construction codes. Showing the work of the co-author is a principle of modernity that Moreno Barberá assumes with the awareness of shared responsibility.

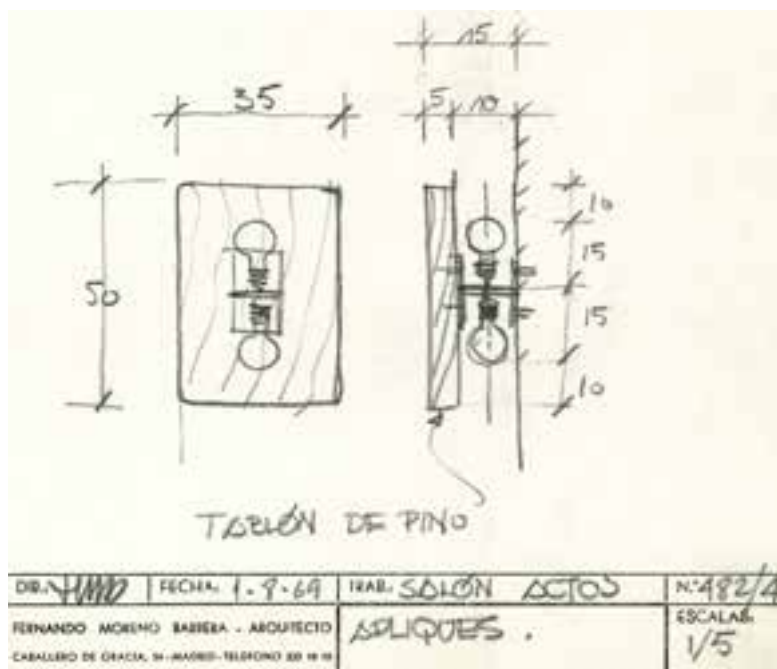


Figure 1. Fernando Moreno Barberá, Chestre Workers University Auditorium, Spain, 01/08/1969, Wood and Light Bulb Auditorium Luminaire Freehand Sketch. © Archivo Histórico del Colegio Territorial de Arquitectos de Valencia, Drawing 482/4.

5. The most significant pieces

Outdoor furniture and signage

The outdoor furniture is made up of highly resistant and adaptable pieces, such as the litter bin on concrete feet that allow the object to be anchored to the ground, without the need to anchor it to a fixed place. From the concrete bases emerges a steel frame made of 50x80 mm steel tube on which a steel basket is suspended by means of a simple pivot mechanism.

This solution is repeated in the wastepaper basket-poster, with a dimensional variation in the steel frame to allow the poster to be placed at a suitable height. In this item of furniture we can see the drilling of holes in the tubes to allow the flexible placement of posters, a solution that will be used in the posters that from the open galleries of the foyer of the auditorium hall indicate the accesses to the amphitheatre stands, now belonging to the interior furniture.

These access signs, like those of the stands themselves, will use the solutions already seen in the wastepaper basket, but with a variation in the size of the tubular steel profile which, in the case of the access signs, will be 40x80 mm, while in the case of the stands signs it will be 30x60 mm. The collaboration of the graphic designer José María Cruz Novillo (Cuenca, 1936) in the definition of the signage of the Cheste Workers University is noteworthy.

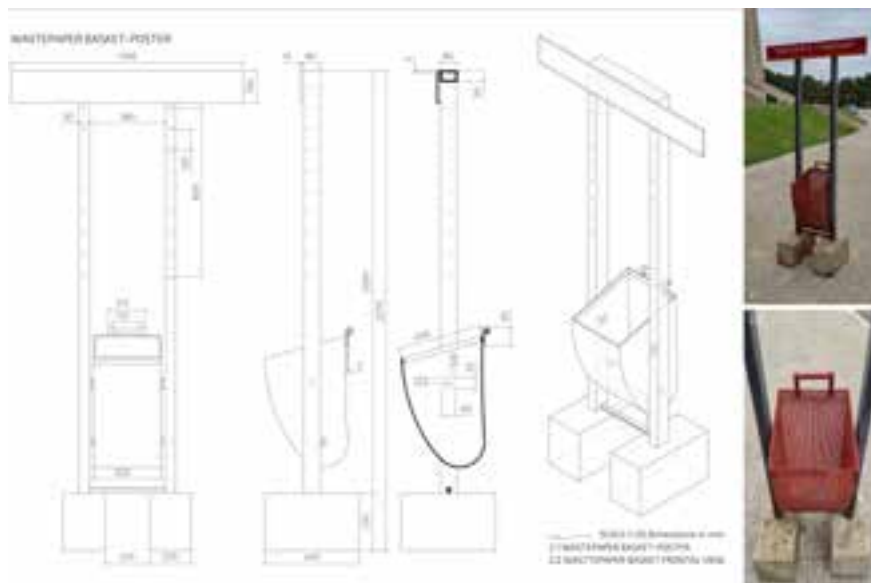


Figure 2. Fernando Moreno Barberá, Cheste Workers University Auditorium, Spain, 1969, Wastepaper Basket-Poster Planimetric Survey. © Drawing and photographs: Ivo Vidal Climent, Ciro Vidal Climent and Víctor Martínez Escobar, 17/05/2021.

Protection and special delimitation

This steel profile solution is used again in the stair and step railings, again adapting the dimensions of the steel profiles to the dimensional requirements, reason why a 40x60 mm steel profile is used. The handrails contain another construction element to materialise, a continuous 3x20 cm wooden plank which functions as a handrail and which, together with the use of steel profiles, gives the whole a visual unity which, as can be seen, provides us with the keys to understanding the concept that the master Moreno Barberá had of architecture. Thus, within the large room, we can appreciate the importance of the wooden handrail made of 3x20 cm wooden planks, which runs along both sides. These handrails, together with the wall lights, the different types of staircase railings, the horizontal railings and the sloping railings, as well as the wooden benches, underpin the concept of the uniqueness of the large-scale space designed by Moreno Barberá.

A wood and light bulb luminaire

The austere lamp that provides the ambient lighting for the hall is made from a small wooden plank measuring 345x40x 500 mm and seems to be no coincidence. Its repetition along the vast walls of the hall makes it, together with the wooden handrails and benches, a very present element in the interior of the auditorium and, furthermore, manages to materially transmit a link between the interior image of the building and the exterior: the wooden board seems to act as a recurring element, whose warm, veined texture is imprinted on the concrete surfaces as a constructive trace of the formwork, imbuing the work with expressiveness.

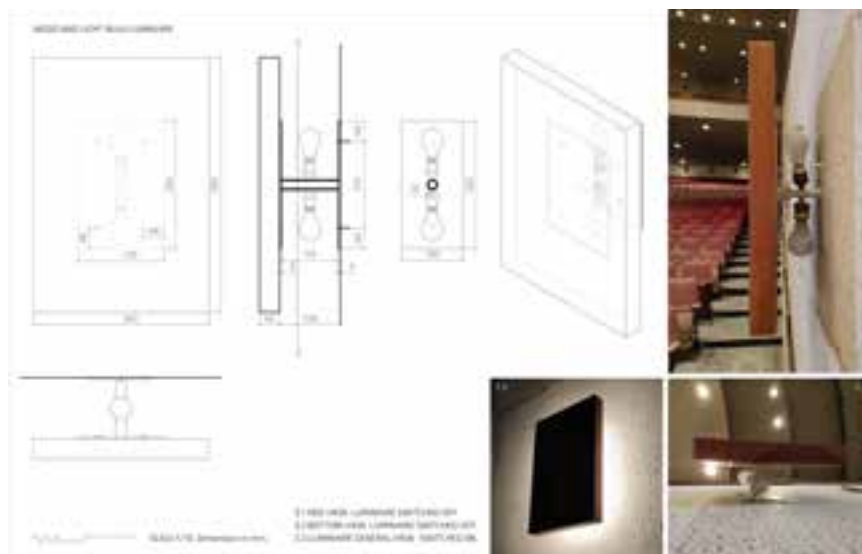


Figure 3. Fernando Moreno Barberá, Cheste Workers University Auditorium, Spain, 1969, Wood and Light Bulb Auditorium Luminaire Planimetric Survey. © Drawing and photographs: Ivo Vidal Climent, Ciro Vidal Climent and Víctor Martínez Escobar, 17/05/2021.

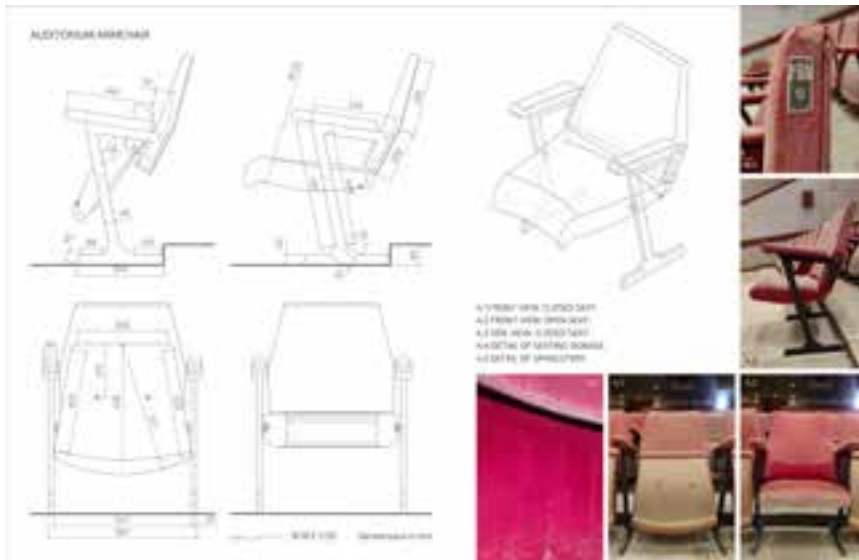


Figure 4. Fernando Moreno Barberá, Cheste Workers University Auditorium, Spain, 1969, Auditorium Armchair Planimetric Survey. © Drawing and photographs: Ivo Vidal Climent, Ciro Vidal Climent and Víctor Martínez Escobar, 17/05/2021.

The armchair and the impact of colour

The armchairs in the Auditorium, made with a 40x20 mm tubular steel profile structure, with a seat and backrest upholstered in red, but with wooden backs, once again show the architect's need to create all the furnishings with just a few materials, which are chosen to express his particular architectural atmosphere.

This precise search for an overall volumetric and spatial concept through the compactness of means (linked to the procedure of combined manufacture) is inherent to the profession. What is more, it is necessary in order to be able to transfer the discourse from simple constructive appreciation to the domains of architectural consistency.

6. Outcomes

The Cheste Workers University was built with an economy of means still inherited from the autarkic period and the limited resources Moreno Barberá had available for the execution of the project also conditioned the manufacture of the furniture. His approach to the design of the furniture is necessarily akin to or eurythmic with that of the architectural piece, that is to say, the architect's thinking follows the same expressive thread for the different scales that make up and define the complete work.

This constraint imposed by the means of production, combined with the desire to achieve an integral and complete design, in line with the principle of the

Gesamtkunstwerk, generates a series of solutions for the interior finish, for the interior furnishings and for the urban development, revealing the architect's pragmatic drive for a coherent integration of all the scales of the project and allowing any part or fraction to resonate harmoniously with the whole.

The intimate correspondence between architecture and furniture helps to generate a strong sense of identity and makes it very difficult to dissociate one from the other. This mutual dependence also fixes both productions in their historical moment^{6VI}.

It is necessary to clarify that the productive capacity based on artisan work is a coexistence forced by the necessity and opportunity of the historical moment: it is necessary to know very well the means of production available to be able to build a work of the dimensions of the Cheste Workers University in the time frame in which it was made and with the economic endowment assigned. Modernity is indebted to material production systems and, despite the limitations imposed, Moreno Barberá's work is unequivocally and genuinely modern.

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#06

New materials
and innovative
technologies

S19

“Material imagination”: on the changing meaning of the MoMo's materials and technologies

Zsuzsanna Böröcz

DOCOMOMO BELGIUM

It has long been stated that modernist architecture was driven by an innovative design aesthetic based on two main factors: functionalist rationality and a desire to apply industrial processes and new materials. In recent years however, historical research and preparatory investigations for restoration projects have suggested a much broader scale of involvement. Innovations in engineering and production went hand in hand with the rethinking of the regional, the local and/or the private domain – or introducing aspects from these – in design methods as well as in the use of materials and technologies. This constituted a larger contribution than hitherto suspected to widening the compositional potential, diversifying the morphology and enriching the symbolic language¹. The commitment to improve the quality of life, work and leisure which erupted after WWI, appears to have been stimulated not only by a desire for a new era but equally by past experiences and the availability of materials and technologies in a period of scarcity. The five contributions to the session on New Materials and Innovative Technologies illustrate in varied ways this fresh understanding of the Modern Movement's architectural history.

The first paper by Sara Di Resta deals with the aspirations of Mussolini's Italy regarding the use of domestic materials and products aimed to make the country economically independent. Starting in 1926 with the first legislation, the shift towards autarchy intensified following international sanctions imposed after Italy's invasion of Ethiopia in 1935. The scarcity or sheer lack of certain building materials, among which steel for reinforced concrete, very much pushed a search for new construction methods and a new aesthetic to match. Focusing on the exhibitions and trade fairs organized in Rome and Milan between 1932 and 1940, Sara's paper provides valuable insights into the increasing application of domestic materials in public and private buildings throughout the country. The newly discovered documentation on

these exhibitions is relevant for architectural historiography but even more so because they lay bare incorrect durability estimations. This source material is therefore invaluable to devise specific intervention strategies for the pathologies present in this group of buildings. It will not escape the reader's attention that this topic resonates unto the current calls for a regionalist sourcing of materials, whether it be for ecological or geopolitical reasons.

Meanwhile, the conservation field is confronted with the challenge to protect Modern architecture's global heritage, threatened by sustainability issues, real-estate and other developments². In this context, the identification of and the endeavour to save the initial concept and materiality should go hand in hand with an assessment of how the original content has accrued throughout time. In particular, this requires a combination of thorough knowledge on both original and contemporary materials and technologies. It implies a greater role for expertise in the material and the practical, which reminds us of the term 'material imagination', which Nathaniel Coleman proposed in response to Gaston Bachelard's 'formal imagination', arguing that *the substance of specific materials is as much a matter of matter as of individual and cultural memory*³.

The second contribution, by César Bagues Ballester in collaboration with Chandler McCoy (Getty Foundation), may serve to illustrate the consequences and complexities of this shifting focus toward the 'material imagination'. It presents the Eames House (1949) in Pacific Palisades, California. The meticulous conservation management plan showcases among others the conservation plans for the Cemesto panels, a significant component of the building's exterior envelope. Once a promising new building material boasting many qualities such as structural strength, thermal insulation and aesthetic appeal, it lost credibility due to the hazardous asbestos content. A thorough product analysis of the Cemesto panels reveals the technical challenge of finding a suitable and effective way to encapsulate the remaining panels to prevent the further deterioration of exposed asbestos surfaces. In a holistic approach the authors treat the Cemesto panels as a manifestation of the Eameses' entire design philosophy, thereby demonstrating its topicality: an open minded use of mass-produced industrial construction materials in an effort to humanise industrial modernism, incorporating craftsmanship and colour in the design concept.

Yet, enduring relevance does not equal absence of change. The question is not only how to identify the original concept but also how the meaning of architecture, interior and design has changed through the decades, and in what way they remain meaningful. How to detect today's relevance of the materials and techniques applied in an historical project? Certainly through study and research of the past, but also through the investigation of our contemporary use of, and relation to, the building? How to understand and to formulate the 'meeting' between user and materiality? In his book, Coleman stresses the importance of such bodily experience through contact with the materiality of architecture, and states that it is the sum of (local) relations, in which material plays the leading role, supported by form and

detail. As place-identity is not an autonomous given but is constructed, such meaning(s) proceed(s) in time and are *situational*, sensible to local features and conditions⁴.

This holds true for concrete, brick or wood, but a more ephemeral material such as light may have an even greater impact on the 'sense' of architecture. Even though light is a primary element in modernist architecture, it has often been neglected in later research. From the very start, modernists embraced transparency⁵ and with it the role of light in all manner of spaces and programmes. The Eames House too, with its composition of fixed and operable sashes filled with glass and opaque materials, can be considered a device tailoring the Californian daylight to the home. It is therefore fitting that the session presents no less than three contributions which involve concerns with light, combined with new technological solutions and local developments. Various elements such as window, façade or artificial light fixture can be considered as instruments with which to manipulate the material light. This manipulation can be considered to have great influence on the 'meeting' with architecture and the 'meaning' it acquires through physical and sensorial experience⁶.

The avant-garde search for adequately illuminating interiors and securing the relation with the exterior was facilitated by the separation of load-bearing structures from non-load-bearing façades. This allowed the application of much larger glass surfaces using relatively cheap steel-framed windows. The development of new window frames and mechanisms became a major field of investigation. One such innovative steel-framed window type, invented by machinist Ármín Krausz, is the topic of Henrieta Moravčíková's paper. Characterized by an unusual opening mechanism and a clever system of ventilation openings, the Krausz Windows were exhibited at the 3rd CIAM Congress of 1930⁷. The windows were promoted as a fine example of modern engineering and applied in the most important projects of Czechoslovak functionalism. Describing the context, evolution and technical details, this paper discusses how attempts were made to study, restore or replace original Krausz windows, pointing out their weaknesses and possibilities for a sustainable restoration, while defying climatological demands with varying results.

While glass enclosures offer a distinctive appearance as well as substantial qualities to interiors and exteriors of Modern Movement buildings, they face huge challenges because of their poor environmental performance⁸. The authors Giuseppe Galbiati, Franz Graf and Giulia Marino focus in their contribution on the façade of the first Olivetti corporate building in Ivrea Italy, built between 1960 and 1963, and part of the Ivrea World Heritage site (architects G. A. Bernasconi, A. Fiocchi and M. Nizzoli). The two kilometres long façade is constructed as a continuous glass curtain wall of high technical quality, presenting a rare and spectacular folding opening mechanism. The retrofitting project of the assembly serves as a case study for the development of a meticulous methodology, considering environmental and

cultural sustainability criteria, with the potential to guide future restorations of similar façades. The 5-stage research culminating in a multicriteria comparison aims to allow evidence-based decisions from a holistic viewpoint, which in Ivrea secured the conservation of the original façade. The combined approach of heritage preservation together with energy improvement rather than unilateral energy retrofiting is in line with the mission of the volume *Reglazing Modernism. Intervention Strategies for 20th-century Icons*⁹. The Olivetti project serves as an addition to the iconic case studies in this book.

Through the example of the church of San Francesco al Foppo in Milan by Gio Ponti (1961–1964) in Milan, Giulio Sampaoli explains how the bodily experience of lighting in interiors, very much intertwined with the generated meaning, can change through time. Pointing out the modification of the essence of the Catholic church interior following the Second Vatican Council in 1965, the paper focuses on the recent alteration of Gio Ponti's pre-Vaticanum Gesamt-concept on (artificial) light. While the original, discreet and subtle light fittings in San Francesco had been designed for experiencing private religious sensitivity, the new concept required brighter church interiors to allow active participation in the service. As a consequence the original fittings had been pragmatically supplemented in order to increase lighting levels in the church interior. Thanks to combined efforts of different parties and the use of archival material, the handcrafted and non-standard chandeliers could be reconstructed according to their specificities. As the contemporary use of the church still does not match with Ponti's original concept, the restoration of the original light fittings was supplemented by a carefully considered new lighting system. It makes this 'light restoration' to a best practice example not only on artificial light but as a holistic, 'material imagination'-based approach delivering an excellent and integral result.

All papers of the session New Materials and Innovative Technologies thus not only demonstrate the original and innovative character of the MoMo, but how advanced research and excellence can bring about holistic solutions for this extensive and important patrimony.

Notes

- 1 Kudryashova, I, et al. "The Influence of Traditional Architecture on the Design of Social Housing by Masters of Modernism", *IOP Conference Series: Materials Science and Engineering*, vol. 907, no. 1, 2020, p. 12004.
- 2 Two other aspects are: tourism and war as a rapid threat. Conservation Challenges of Modern Architecture and Materials, online lecture by Uta Pottgiesser, May 3 2022 6 pm CET, Cycle de Conférences. Project, histoire, construction. Regards croisés sur le patrimoine récent, organised by Docomomo Swiss in collaboration with TSAM.

- 3 Coleman, Nathaniel, *Materials and Meaning in Architecture: Essays on the Bodily Experience of Buildings*, London: Bloomsbury Visual Arts, 2020, p. 23.
- 4 Coleman, op. cit. p. 452.
- 5 E.g. Walter Benjamin in Coleman, op. cit., p. 402
- 6 Coleman, op. cit., p. 428 and further.
- 7 The Krausz Windows were one of 25 models presented at the congress.
- 8 Angel Ayón Uta Pottgiesser and Nathaniel Richards, *Reglazing Modernism. Intervention Strategies for 20th-century Icons*, Basel: Birkhäuser, 2019, p. 14.
- 9 Idem.

Krausz Patented Steel-framed Windows: from remarkable phenomenon to huge obstacle

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Large steel-framed windows were among the most important innovations and, at the same time, form-shaping elements of Modern Movement. In 1920s and 1930s several famous architects experimented with the design of such windows. Some of these experiments were even patented and mass-produced. In the 1920s, Bratislava based architect Friedrich Weinwurm together with the owner of the metal-working company Kraus tested the possibilities of new construction of folding window with steel frames. The product of this process, the patented steel-framed windows Kraus, not only significantly shaped the architecture of what was then Czechoslovakia, but also the rest of Central Europe. With their slender steel frames, these windows were marked by an unusual method of opening, in that the individual casements could be shut horizontally by sliding them in the runner integrated within the metal frame. Also worthy of mention was the clever system of ventilation openings placed in the upper section of the frame, allowing for the circulation of air through the simple manipulation of a control mechanism installed directly in the frame. During the era, these windows were used by a number of modern architects, such as Bohuslav Fuchs in the Masaryk Dormitory in Brno (1930) or Jaromír Krejcar in the Machnác Sanatorium in Trenčianske Teplice (1932). Nevertheless, once the key visual traits of Czechoslovak modernist architecture, Kraus steel windows have never been properly reflected in architectural historiography and are now disappearing also from buildings. Based on new archival findings, the paper describes the development and the technical parameters of the innovative Kraus window and compares it with other steel-framed windows that were relevant at that time in an international context. At the same time, the weaknesses, and possibilities of a sustainable restoration of the Kraus window are discussed.

1. Introduction

A major issue pursued by the avant-garde was how to illuminate interiors adequately and join them with exteriors, something they sought to accomplish through the development of new window panel shapes, forms and construction. Records archived at the European Patent and Registration Office show the first major historical upsurge to have come in the 1930s, specifically in 1932 and 1938, when in those years several hundred patents were filed for steel-framed sliding, tilting or folding windows and for glass walls. Innovations in this area had been undertaken since the mid-1920s by architect Friedrich Weinwurm and machinist Armin Krausz, both based in Bratislava. They tested the limits of ever larger dimensioned steel window frames and the opportunities of experimenting with more sophisticated methods for opening windows.

2. Development of steel-framed windows in Bratislava

Architect Friedrich Weinwurm used steel-framed windows for the first time in 1927. In the office and residential building in Bratislava that housed West Slovakia Power Plants he used seven separate windows 3,3 m wide by 1,9 m high to illuminate the main meeting rooms in the mezzanine. Contemporary photographs of the recently completed building show the horizontal windows divided vertically into three parts. The wider central part is partitioned across the middle by a horizontal rail. The mechanism that opens the window allows the lower part to slide along the middle part of the glazing. Because all of these windows were removed in the 1990s, it can only be presumed from photographs that they were truly the first ever use of steel-framed windows locally produced. Evidence comes from the similar approach Weinwurm took when he designed the Phoenix office and residential building later in 1928. Here, large horizontal windows 3 m wide, matching the rooms' width, let the sun light the mezzanine offices. These were large double hung bi-fold windows with a steel frame and upper ventilation grille. A detail of the window published in contemporary press clearly shows the mechanism used to open the windows. Sliding the main sashes along guide rails opened them. There was a mechanism mounted on the left jamb of the window that operated the upper ventilation grille.

The research of the villa of the Bratislava lawyer Árpád Lengyel, which was also designed by the architect Friedrich Weinwurm in 1928 and whose construction lasted until 1929, brought the most light to the beginning of the production and use of patented steel-framed windows originating in Bratislava. All of the rooms in the building would have steel-framed windows. These are not uniform, industrially manufactured windows, but rather products individually machined for each and every application. The villa has ten different types of these windows, ranging from the 4 x 2,6 m glass wall that joins the hall and the balcony and the largest horizontal windows in the hall and dining room, each measuring 3,8 x 1,8 m, to the smaller 2,1 x 1,4 m horizontal windows in the living room, 1,6 x 1,6 m windows in the bedrooms and 1,1 x 2,5 m vertical windows in the staircase. All of them differ in the system for opening them and the composition of the frames. While the large horizontal windows are opened with a sliding mechanism, the smaller windows in the bedrooms and the staircase have hinges. However, the smaller windows in the master bedroom's bathroom and the dressing room can also be slid open. All of the living room windows and the windows in the communicating and service areas are equipped with a ventilation grille located in the upper part. The windows were designed by a partnership of architect Friedrich Weinwurm and Bratislava machinist Armin Krausz, and it is obvious that Villa Lengyel had been a laboratory for them to test new construction techniques such as setting technical specifications and concern about practical operation. (Fig. 1)

In February 1929, Armin Krausz applied for his first patent, a window with a steel frame, at the Czechoslovakia Patent Office. In the summer of the same year, he applied for three more patents and in July 1930 for his fifth and final



Figure 1. Friedrich Weinwurm, Villa Lengyel, Bratislava, Slovakia, 1929. Photo: Olja Triaška Stefanovic 2014

patent in the country. In the same time he was also turning to patent offices in other countries, too. His first patent was published in Austria in January 1930, followed by France, the United Kingdom, Switzerland, Ireland and Denmark in the same year, Canada in 1931, Finland and the United States in 1932, and finally by Germany in 1933.¹

All the patents Krausz filed were developments and improvements to the first patent that had been issued in Czechoslovakia as Number 38234, which pertained to a double hung bi-fold window. Subsequently, double and triple hung windows were added, where two or three sash panels could be opened by sliding them along a guide rail and folding them. Krausz positioned the vertical axis around which the window sashes would rotate and also worked out the composition and shape of the window frame profile and where the operating mechanism would be located.

The most widely used steel-framed window Krausz had patented was one that pivoted and slid with no counterweight and came in either single or double glazing. It was characterized as a new method for mounting the pivoting sash's axis, where one side was movably articulated with the sliding sash for it to move automatically when the sash pivoted. Depending on how the sash's axis of rotation was positioned, the window's sashes could be moved either horizontally or vertically. When the window was opened or closed, the pivoting sash would act as a two-arm lever, greatly facilitating the movement of the sashes. A sliding ventilation rail at the top of the window easily adjusted it for abundant ventilation. Krausz window frames all consisted of rolled-steel profiles with oak joint fillers. The windows were fitted with glazing bars fixed

in place with screws and an invisible putty groove. The standard was to use three-millimetre-thick crown glass in the glazing.² (Fig. 2)



Figure 2. Krausz Window promotional leaflet. Source: Moravia Provincial Archives

3. Steel-framed windows proliferate in Czechoslovakia

Starting in 1929, Krausz steel-framed windows saw wide use at construction sites throughout Czechoslovakia. By the mid-1930s, the windows had featured in dozens of examples of modern architecture. The best known are the Bank of Moravia (Bohuslav Fuchs, Ernst Wiesner, 1930), Masaryk student home (Bohuslav Fuchs, 1930) and the Vesna Professional School for Women's Occupations (Bohuslav Fuchs, Josef Polášek, 1930), all in Brno; the headquarters of the Považská agrárna banka (Váh River Valley Agrarian Bank) in Žilina (Friedrich Weinwurm, Ignác Vécsei, 1930); the provincial worker's insurance office building in Bratislava Alojz Balán and Jiří Grossmann, 1932); and the iconic Machnáč Sanatorium in Trenčianske Teplice (Jaromír Krejcar, 1932).

In 1929, Armin Krausz opted to invest in a new manufacturing plant, anticipating the growing demand for windows. The building was designed by the architectural firm Weinwurm and Vécsei. During the summer of 1930, both the production plant and its administrative offices were built on one of the main city streets radiating from the centre of Bratislava, in the immediate neighbourhood of the Filiálka train station. Krausz's business had already taken

the name A. Krausz – Steel Frame Window Factory by this time. Production successfully rose and by 1931 the company's annual sales turnover was estimated at ten million Czechoslovak crowns.³ This was quite a lot, as the average salary of an official at that time was 1300 crowns and the exchange rate was 33,75 crowns per 1 US dollar.⁴ Armin Krausz was able to cope with the increased demand for his windows by signing a licensing agreement for the manufacture of them with the Rosice Mining Company, which operated an iron and steel works plant near Brno. This enabled him from March 1932 to cover the demand for windows in Bohemia, Moravia, and Czech Silesia. Although Krausz's company was not the only producer of steel windows in Czechoslovakia during those years, it was no doubt the most successful. When the Rosice Mining Company took an inventory during the autumn of 1936 of all the manufactured steel-framed windows in its portfolio, Krausz windows emerged as the most successful product in its stock.⁵

Krausz windows found themselves in the most important architectural examples of Czechoslovak functionalism. The Rosice Mining Company's accounting records showed them to have been supplied for the construction in Prague of the French School (Jan Gillar, 1934) and of the Karel Balling villa in the city's Baba housing estate (Hana Kučerová Závěská, 1932). Krausz steel-framed windows were also used in the building of the grammar school in Český Těšín (Jaroslav Fragner, 1935), the City Savings Bank building in Rokycany (František Libra, 1933) and the functionalist building complex housing the Electric Companies of the Capital City of Prague (Adolf Benš, Josef Kříž, 1935).

In the second half of the 1930s, interest in steel-framed windows steadily plunged due to the rise in the price of steel driven by the armaments industry. Falling orders in conjunction with the dramatic change in Central European society forced Armin Krausz to seek deletion of his registered patents.⁶ As the decade came to a close, he was planning to move both his factory and family to England. All of the machinery was supposedly sent to London and at the same time he fled Bratislava with his family. However, one of the members of the family fell ill and, instead of London, they found themselves in Budapest. When the Krauszes were finally ready to travel again, war had broken out and any travel to London consequently seemed infeasible. So, the family opted for the risky journey in the opposite direction and headed southeast to Palestine. Though they were eventually successful in arriving there, they lost everything and had to start from scratch. In April 1944, Armin Krausz filed his last patent concerning the improvement of a steel-framed window, now as a Czechoslovak national residing in British-run Palestine. Although the United Kingdom patent office recognized it in June 1946, the Krausz family firm, by then operating in Tel Aviv, never resumed the production of steel-framed windows.

The culmination of what had been a successful pilgrimage of Krausz windows after they were first produced in Czechoslovakia could hardly be more symbolic. These windows were used for the last time in a residential and office building of

a mining and metallurgical company located in Bratislava that was completed in 1939, a matter of weeks before the outbreak of the Second World War. Architect Friedrich Weinwurm was involved in the design of the building.

3. Krausz windows and CIAM

The promotion of Krausz windows by CIAM undoubtedly played a major role in their proliferation in the early 1930s. It was in 1930 that CIAM General Secretary Sigfried Giedion sought to organize an exhibition of sliding steel-framed windows at the 3rd International Congress of Modern Architecture, to be held in Brussels that year. He invited representatives from different countries in the Committee for the Resolution of Problems in Contemporary Architecture (CIRPAC) to participate in the exhibition and also approached some architects personally. Swiss architect and CIAM founding member Rudolf Steiger at the time “called for different approaches to be documented at CIAM and it seems that twenty-four models of sliding windows were exhibited.”⁷ Karel Teige, a modernist critic and journalist, reported on the sliding window exhibition and Czechoslovakia’s contribution to it. As a Prague native, he had already known about the windows Armin Krausz was designing, drawing attention to them in a book he had written about modern architecture in Czechoslovakia.⁸ Teige wrote that the Czechoslovak members of CIRPAC had arranged for the Krausz Company to display two models of its steel-framed sliding and tilting windows at the exhibition, and that these had attracted considerable attention.⁹ Teige also included a photograph from the exhibition in *The Minimum Dwelling*, a major work on architecture theory, although he paid little attention to the steel-framed window itself in the book.¹⁰ Armin Krausz immediately capitalized on his company’s presentation at the Congress and promoted the windows as what he described as the International Congress of Modern Architecture having seen them at its convention in Brussels as the most perfect type for contemporary modern architecture.¹¹

How much the window had really impressed the international competition of the 1930s is subject to conjecture today. The memories of those architects participating at the CIAM in Brussels vary, and some even claim the exhibition to have finally taken place only later in Zurich. At a meeting on the board of *Patris II*, the Greek ship that was the venue of the 4th International Congress of Modern Architecture in 1933, Sigfried Giedion reported on the “horizontal sliding window” having been exhibited in Zurich and not able to travel to other cities due to “insurmountable difficulties” in the organization.¹²

4. Krausz windows in contemporary monument protection: obstacle or added value?

Increased interest in the steel-framed openings of the functionalist buildings that had been constructed in former Czechoslovakia came with the research

associated with the restoration of Villa Tugendhat in Brno at the turn of the 21st century.¹³ Therefore, it is not surprising that the first restoration of the Krausz steel-framed windows, or their replacement by copies, took place in the same city. The issue of restoring the Krausz steel-framed windows was first comprehensively addressed when the Masaryk Student Home was going to be restored. Double-hung, sliding-sash windows had been installed there which could be tilted on to a vertical axis. Research by professional restorers had shown that, the steel profiles and wooden infill of the window frames remained intact. The windows were refurbished, carefully repainted and fitted with thermal insulating glass, whose use was made possible by how the window was constructed. However, even this procedure failed to remove the thermal bridge, which causes significant leakage of heat through the window frame.¹⁴ (Fig. 3) The original windows have recently also been restored at the architect Eduard Žáček's own house in Brno from 1935. The house's double-hung, horizontal tilt-in windows had a more complicated design that provided better thermal insulation than the simpler designed windows found at the student residence.¹⁵ A different methodology was applied in the restoration of the former Bank of Moravia, where copies were produced in the 1990s of the original windows which had not survived. Here the windows from the Žáček-designed villa served as the model. The objective was to maintain the profiles' subtlety while complying with current safety regulations and requirements for heat and water transfer. In producing the sample pieces, drainage proved to be the most intractable problem. Despite enormous efforts, no copy could exactly match the original, given the regulations in force today, which did not exist in the 1930s.¹⁶

While the Krausz windows are acknowledged in Bohemia and Moravia as having significant monumental value and a number of successful attempts



Figure 3. Bohusla Fuchs, Masaryk Student Home, Brno, Czech Republic, 1930. Source: National Heritage Institute, Brno, Czech Republic

have been made to save them, the situation in Slovakia has been diametrically the opposite. The end of the 20th century saw the first wave of a massive replacement of the original windows with new. In this wave, Krausz windows were either completely or partially removed. This was often done with the consent of conservation authorities. The only two buildings left in Slovakia where the original window panels can still be found intact are the Machnáč Sanatorium in Trenčianske Teplice and the Villa Lengyel in Bratislava. But the sanatorium has been out of operation for several years and the building is slowly deteriorating, which is also affecting the condition of the steel-framed windows. Seeking to save this architecturally unique building, the Jaromír Krejcar Society has petitioned for its expropriation, which is currently winding its way through the courts. If the building can be expropriated and subsequently restored, as planned, there could be an unprecedented extensive restoration of the Krausz windows, too. However, the development of this case cannot be predicted. (Fig. 4)

Villa Lengyel in Bratislava is an example of a completely different situation. The current owner treats the windows with extreme care. Some have been refurbished, all others are regularly maintained. Architectural and historical research carried out in the villa by DOCOMOMO Slovakia members since the summer of 2020 has confirmed that all windows are still fully functional.

The above examples show the Krausz windows to be extremely sophisticated products manufactured with excellent quality materials and a high level of craftsmanship, which, with appropriate maintenance, can partially meet current demands and thus be sustainable in the long term. Nevertheless, only



Figure 4. Jaromír Krejcar, Machnáč Sanatorium, Trenčianske Teplice, Slovakia, 1932. Photo by the author

few representatives of the monument care and very few owners are prepared to go through the complex process of their refurbishment. Therefore, Krausz's unique windows are still disappearing.¹⁷

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Notes

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New Materials on Show.

Legacy of the Italian Fascist Exhibitions

between Autarchy and Innovation (1932–40)

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Following the sanctions imposed by the international community to Italy after the invasion of Ethiopia (1935), fascist regime radicalized its aspiration to be economically self-sufficient shifting to an official autarchic regime. The idea was raised since 1926, year of the first laws for the use of national resources and products which entailed an acceleration in the research for new building materials.

The autarchy generated serious problems in the supplying of iron for reinforced concrete structures, but, at the same time, it gave rise to a season of innovation and experimentation with new products derived from local raw materials.

The battle against the anti-autarchic nature of a great number of common building materials addressed the debate on the affirmation of new architecture from a constructive and aesthetic perspective.

The industrial development put on the market innovative technologies that defined original features of Modern Italian architecture: the use of mixed construction in masonry and weakly reinforced concrete; wood particle boards and vegetable fibres for insulation and interior surfaces; ceramic and lithoceramic claddings; glass brick structures; natural polymeric coverings; factory-tinted plasters; aluminium alloy profiles and surfaces; etc.

The most important mediums for knowledge, dissemination and testing of new materials were the exhibitions and trade fairs organized in Rome and Milan between 1932 and 1940. These events involved teams of Modern architects and artists to show the new possibilities for design and furnishing.

Although barely recognized by professionals involved in conservation works, the autarchic materials are still present in many buildings of Modern Italian heritage. Despite the idea of durability inherent in the promotion of these products, they show today pathologies which require specific intervention strategies. Documenting this season of innovation allows to deepen the knowledge on that heritage, and to raise open issues for its conservation.

1. Introduction

In 1935, following the sanctions imposed by the international community to Italy after the invasion of Ethiopia, fascist regime radicalized its aspiration to be economically self-sufficient shifting to an official autarchic regime. This wasn't a sudden choice: the idea has been already raised since 1926, year of the first laws for the use of national products and resources which entailed an acceleration in the research for new building materials.

The choice of autarchy generated indeed serious problems in the supplying of iron for reinforced concrete structures, but, at the same time, it gave rise to a season of innovation and experimentation with new products derived from local raw materials.

The battle against the anti-autarchic nature of a great number of common building materials addressed the debate on the affirmation of new architecture from a constructive and aesthetic perspective. The industrial development led to the creation of new local companies specialized in the manufacture of autarchic materials, releasing products and technologies that would have defined original features of Modern Italian architecture. Among them, the use of mixed construction in masonry and weakly reinforced concrete, wood particle boards and vegetable fibres for insulation and interior surfaces, ceramic and lithoceramic claddings, glass brick structures, natural polymeric coverings, factory-tinted plasters, aluminium alloy surfaces and profiles, etc.

The most important mediums for knowledge, dissemination and testing of new building materials were indeed the exhibitions and trade fairs organized in Rome and Milan between 1932 and 1940. In the fascist propaganda, these events represented opportunities for sharing new ideas of living and building the future society. The exhibitions involved teams of architects and artists in designing modern spaces, experimental pavilions, promotional buildings and visionary structures erected to show the new possibilities opened by new materials in building and furnishing.

The study focuses on five main events of great social and promotional relevance: Mostra della Rivoluzione Fascista, Rome, 1932 (*Exhibition of the Fascist Revolution*, architects: A. Libera, M. De Renzi, G. Terragni); VI Triennale di Milano, 1936 (*Milan Triennial VI*, architect: G. Pagano); Mostra Campionaria di Milano, 1938 (*Milan Trade Fair*, architects: G. Pagano, et al.); Mostra Autarchica del Minerale Italiano, Roma, 1938 (*Autarchic Exhibition of Italian Mineral*, architects: A. Libera, L. Quaroni, M. Nizzoli, et al.); Mostra Nazionale di Materiali Autarchici per l'Edilizia, Roma, 1940 (*National Exhibition of Autarchic Building Materials*).

The paper examines the influence of fascist exhibitions in the spreading of autarchic materials for the construction of a great number of public and private buildings of Italian Modern heritage. The study is part of a broader research aimed to recognize the most significant materials produced during the autarchic season, and to identify their principal alteration and decay phenomena¹.

Despite the idea of durability inherent in the initial promotion of these products, they show today pathologies which require specific intervention strategies. Documenting this period of innovation allows to deepen the knowledge on that heritage, and to raise open issues for its conservation.

2. Autarchic materials on show

The new scenarios developed by the national products is one of the main topics of the regime's propaganda. Creating opportunities for the promotion of these materials is indeed part of the broader communicative strategy which frequently looks for popular involvement through the setting up of exhibitions—events and patriotic rituals.

In 1931, while the great exhibition of Modern German building "Deutsche Bauausstellung" was hosted in Berlin, another significant exhibition "Casa Minimum" was inaugurated in Milan. It was dedicated to social housing intended both as a building and as a collective issue. The exhibition was based on the documentation produced during the II CIAM (the International Congress of Modern Architecture dedicated to the theme "Existenzminimum" held in Frankfurt am Main in 1929). The Milanese exhibition consisted of about one hundred technical drawings with design, construction and furnishing subjects.

Starting from the Exhibition of the Fascist Revolution, the regime developed an exhibiting model based on the representation of thematic paths and sections. Ideated in 1928 by the fascist politician Dino Alfieri and set up in the Palazzo delle Esposizioni in Rome, the exposition was opened for two years, registering about four million visitors.

Artists, sculptors and painters such as Mario Sironi, Achille Funi and Enrico Prampolini were involved to create heroic and impressive atmospheres through the artistic and decorative features of the rooms. In the report published in 1933, the art critic Margherita Sarfatti described her experience as a visitor who witnessed, at every step, the translation of each content into a symbol: "what is opened in Rome isn't just an 'exhibition', it is much more, it is the 'demonstration' of the Fascist Revolution"².

In such context, photography represented one of the main tools for spreading contents and messages. Photomontages and blow-ups were combined with architecture as an integral part of the exhibition design, representing a further expression of modernity:

The bold and aggressive setting-up of the Exhibition of the Fascist Revolution, which seems to give rise from the walls together with a plastic and architectural use of photography, is astonishing, fascinating and absolutely new in our country, and helped to formulate an official language that had to represent the grounds of the fascist revolution³.

Mario De Renzi and Adalberto Libera were the designers of the show. The architects covered the façade of the Palazzo delle Esposizioni with an outstanding red envelope used as a propaganda tool to recall the blood of the martyrs of fascism. The solution represented an effective example of the regime's image policy: a system of panels surrounded the original façade, framing the entrance with a triumphal arch and shaping the building like a

large parallelepiped marked by four lictorial fasces realized in Anticorodal⁴ and burnished copper.

The materials chosen for the exhibition were aimed at praising the autarchic policies as well as at promoting the new possibilities provided to design and furnishings: the floor area, approximately 4,000 square meters, was entirely covered by Linoleum⁵; silk and other cotton-based fabrics were used for the 8,000 square meters of canopies and light diffusers; iron, copper, aluminium, Anticorodal, zinc and brass were used for staging elements and other finishes.

Fascist exhibitions also embodied an ideal competition between the two Italian poles of Rome and Milan. Among the Milanese exhibitions, the VI Triennale in 1936 (International Exhibition of Modern Decorative and Industrial Arts and Modern architecture) on the theme "Community – Continuity", represented an important occasion for the diffusion of the idea of design and architecture based on the use of local products. The stage management was entrusted to Giuseppe Pagano, Mario Sironi and Carlo Alberto Felice. Each section introduced the visitor to an aesthetic experience and experimental realities. In the pavilion dedicated to "Construction systems and building materials", products like Faesite, Securit⁶, Linoleum, Anticorodal and reinforced glass blocks were displayed to provide modern ideas and original solutions (**Fig. 1**). Those materials not only represented substitutes



Figure 1. VI Triennale di Milano, 1936. Exhibition of Building systems and building materials, vault in reinforced glass blocks © Triennale di Milano Photographic Archive

imposed by autarchic policies, but they were also all presented as intrinsically functional and hygienic products.

The setting-up of the exhibition spaces was a vehicle for promotional and celebratory messages built around new materials. Giuseppe Pagano, one of the architects who best contributed to give body and image to the potential of new products, designed the pavilion of the "International Housing and Architecture Exhibition" – unfortunately demolished after the damages caused by the bombings of WWII – and the entrance building to the exhibition area.

The modernity of the pavilion didn't lie in the structural solutions (the building was still made of a mixed structure in reinforced concrete and load-bearing masonry, while the slabs were realized by wooden beams) but rather in its shape and surfaces. The exteriors were covered by different colours of lithoceramics: red tiles towards the Palazzo dell'Arte, yellow-orange and green-blue tiles on other surfaces. Waterproof plaster lurasite⁷, produced by S.A.I.P.I. Milan, was used for the light grey surfaces, while the floorings were almost entirely realized in striped brown Linoleum. The most polished paving were made by glass mosaic tiles produced by S.A.R.I.M in Venice. The windows were made by Termolux⁸ panes, while the glass bricks wall were realized by S.A. Fidenza.

In 1938, the Milan Trade Fair represented a new occasion for the promotion of autarchic products. Among others, the architects Marcello Nizzoli and Angelo Bianchetti (Montecatini Pavilion) as well as Franco Albini and Mario Palanti (FIAT Pavilion) were involved in the exhibition.

Giuseppe Pagano designed for Piccinelli company a lithoceramic⁹ tower which became the attraction of the Pavilion of Building Materials (Fig. 2). The tower was itself an experimental architecture, the demonstration of the technical possibilities of a material particularly suitable for geometric linearism:

With the impressive Lithoceramic stele consisting of two half cylinders tangentially connected like an 'S', Pagano had to face the difficult comparison with himself for his memorable Klinker arch built in 1933; and he gave it a beautiful successor. The arch was built in large hollow tiles, twenty meters high and twenty-five meters chord, twenty centimeters thick. It looked like a steel spring¹⁰.



Figure 2. Milan Trade Fair, 1938. Pavilion of Building materials, Lithoceramic tower © Fondazione Fiera Milano Historical Archive

The qualities and the potential of raw materials extracted, produced and employed within the national borders were at the center of the Italian Autarchic Mineral Exhibition set up at the Circus Maximus in Rome from November 1938 to May 1939 (**Fig. 3**). The exhibition showed the outcomes of the economic independence policies in the mineral sector. Such human and intellectual effort was reflected by the presence of important personalities who contributed to the realization of the event. Among others, the architects Franco Albini, Giuseppe Palanti and Giacomo Minoletti (Lead and Zinc Pavilion), Mario Paniconi and Giulio Pediconi (Liquid Fuels Pavilion), Francesco Fariello, Ludovico Quaroni and Saverio Muratori (Minerals for Aluminium Production Pavilion).

The exhibition documented the self-sufficient activities through the celebration of strategic national industries such as the Montecatini company, directly present “in 8 sectors, and indirectly in other 4 of the 14 total sectors”¹¹. A further section was dedicated to metals, and particularly to zinc, whose alloys allowed to replace many imported metals. Probably the most interesting suggestion was dedicated to alumina, described with

*a spiral diagram of the Italian production [...] which immediately gives the impression of the rapid progress of the Italian aluminium industry. The exhibition of the numerous products manufactured in aluminium and its alloys shows the autarchic potential of this metal, and underlines how it has practically already replaced, and it can still replace, significant quantities of imported metals*¹².



Figure 3. Autarchic Exhibition of Italian Mineral, Rome, 1938. Aluminium Pavilion, aluminium cladding façade
© Montecatini Photographic Archive, Centro per la Cultura d'impresa

The National Exhibition of Self-sufficient Materials for Building, set up at the Circus Maximus in Rome in 1940, is generally excluded from the studies dedicated to fascist exhibitions. Organized in 11 sections, it reflects the national industry at the end of a decade. Like other exhibitions held in that place, the event transformed the archaeological site into an experimental place organized by ephemeral pavilions. Its contents are documented by the catalogue edited by the National Fascist Union of Engineers, the organizer of the exhibition, printed in the first edition with the title "Guida Autarchica del Costruttore"¹³ (Builder's Autarchic Guide). The volume represents an orientation tool "for all builders and for all those who wish to have a useful and handy reference to learn about special building materials and their manufacturers"¹⁴. The choice to leave the stage to the latest Italian industrial products caused the exclusion of all materials already considered traditional, such as cement, lime, gypsum and any type of bricks.

Between 1932 and 1940 fascist exhibitions were the expression of an architectural policy that supported political autarchy, and represented a unique training ground for the research in the construction field. These events would have laid the foundations for the creation of the E42 (official abbreviation of the "Exposition of 1942"), the last fascist exhibition. Due to the outbreak of the WWII, it unfortunately remained an interrupted experience that couldn't fully achieve the goals of the "beautiful spring of the Italian architecture"¹⁵ hoped for by Giuseppe Pagano.

3. Decay and durability of autarchic materials: scenarios for further researches

Autarchic products and related technologies deeply influenced Italian Modern architecture. Nevertheless, only a small part of 20th century heritage still preserves them intact. A reason of this ongoing loss lies in a significant contradiction inherent in such materials: although durability has often emerged as the key theme of the advertising campaigns, their experimental and innovative nature supported instead the idea of temporariness and unceasing replacement¹⁶.

Autarchic materials show today pathologies and durability problems which require specific investigation strategies and consequent repair methods (Fig. 4). Nevertheless, the lack of knowledge represents the most significant risk for their preservation. Many of these products aren't identified on buildings by professionals involved in conservation works. The consequence of non-identification is often their removal from the original building: preserving autarchic materials then means to maximise the possibility to gather informations from primary sources represented by modern architecture itself.

Temporariness of these products finally lies in the race for replacement and enhancement by those who don't understand cultural significance of modern



Figure 4. Autarchic materials, alteration and decay processes. From the top: artificial stone, corrosion of reinforcement and cover ejection; grès stoneware tiles, detachment and lacks; Terranova plaster, exfoliation and lacuna; Linoleum, hair cracks and burn; Eraclit panels, delamination and exfoliation; Lithoceramics, lacks and detachment of fragments; Termolux glass, exfoliation; Anticorodal, oxidation and corrosion. © Sara Di Resta 2022

building materiality. For that matter, understanding the aging processes represents a path of cultural appropriation of 20th century legacy. The documentation of this particular season of innovation seeks to contribute to the knowledge on that heritage, and to raise open questions on its conservation.

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Notes

- 1 Sara Di Resta, Giulia Favaretto and Marco Pretelli, *Materiali autarchici. Conservare l'innovazione*, Il Poligrafo, Padua 2021.
- 2 Margherita Sarfatti, "Architettura arte e simbolo alla mostra del fascismo", *Architettura*, XII, no.1 (January 1933): 1 (English translation by the author).
- 3 Antonella Russo, *Il fascismo in mostra*, Rome, Editori Riuniti, 1999, 8.
- 4 Anticorodal is an alloy of aluminium, silicon, magnesium and manganese. Silver colour, the material is used for roofs, drainpipes, frames and other furniture accessories.
- 5 Linoleum is a material consisting of 80% linoleum (obtained from linseed oil), 15% rosin (pine resin) and 5% Kauri copal. The dough is worked with cork and colouring substances, and then spread on a jute fabric. Produced in a wide range of colours, Linoleum is supplied in rolls.
- 6 Faesite is a material based on wood fibres mixed with lignin. It has a high insulating power, both thermal and acoustic. It is generally used for cladding, ceilings and flooring. This product is also used in furniture.
Securit is a tempered safety glass. It can show a transparent and glossy appearance, or opal, coloured and mirrored variants. The panes can reach considerable dimensions, high mechanical strength and good elasticity.
- 7 Iurasite (or Jurasite) is a plaster obtained from pure white quartz with 99% silica, iron and chromium oxides, and an hydrophobic powder. Characterized by a shiny appearance due to the presence of quartz elements, it was produced in different colours with natural pigments.
- 8 Termolux is an opalescent laminated glass consisting of a layer of Vetroflex (insulating material based on glass fibres) inserted between two sheets of transparent glass. It is thermal and acoustic insulating, and uniformly spreads the sun's rays inside the rooms.
- 9 Litoceramica (or Italklinker) is a compact ceramic product characterized by high homogeneity and hardness. It represents the Italian reinterpretation of klinker. Its structure guarantees good characteristics of water and fire resistance. Produced in many colours and glosses, it is generally used for external wall cladding. It is also used for flooring or decorations.
- 10 Mario Labò, "La XIX Fiera di Milano", *Casabella-Costruzioni*, no. 127 (July 1938): 14 (English translation by the author).
- 11 "Il gruppo «Montecatini» alla Mostra Autarchica del Minerale Italiano", *Dopolavoro Montecatini*, y. 2, no. 5 (1938): 8.
- 12 Cit., 10.
- 13 Sindacato Nazionale Fascista degli Ingegneri, *Guida autarchica del costruttore edile: catalogo della I Mostra nazionale di materiali autarchici per edilizia*, Rome, Edizioni Mercurio, 1940. See also, Montepaschi M., "Uno sguardo alla Mostra dei Materiali Autarchici per l'Edilizia al Circo Massimo", *L'industria Nazionale*, no. 1, (January 1940): 27–28.
- 14 Cit., 1.
- 15 Pagano G., "L'Esposizione Universale di Roma 1941–42", *Casabella*, no. 114 (June 1937): 7. See also, Pagano G., "Parliamo un po' di esposizioni", *Casabella – Costruzioni*, no. 159–160 (March–April 1941): IX–X, Bianchetti A., Pea C., "Architettura Pubblicitaria", *Casabella – Costruzioni*, no. 159–160 (March–April 1941): 97–98.
- 16 Strength and stability are parameters usually considered in technical literature and in advertising to describe the features of new materials. Cf. Enrico A. Griffini, *Dizionario nuovi materiali per edilizia: elencazione descrittiva per categorie di oltre 1000 nuovi materiali per edilizia*. Milan, Hoepli 1934.

Retrofitting UNESCO's heritage: the first Olivetti office building in Ivrea (1960–1963)

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The first Olivetti office building in Ivrea is one of the most emblematic realizations of the international administrative architecture. Conceived by the architects Gian Antonio Bernasconi, Annibale Fiocchi and Marcello Nizzoli in the years 1960 – 1963, it is part of Ivrea, industrial city of the 20th century, recognized by the UNESCO World Heritage Committee. Building with a «full technical consistency» and an «appropriate design concept», it stands out for the innovative solutions adopted. Two kilometres of continuous windows, with a peculiar book-opening system, run in three different positions along the facades. Today, after a period of semi abandonment, the building has the urgent need for a retrofitting project. For this reason, its history and refurbishment solutions deserve to be studied. In particular, this contribution aims to delineate a useful guideline in perspective of future renovations, demonstrating how it is possible to reach high energy standards, while fully respecting, at the same time, the architectural values. The starting point is the historical, architectural and technical analysis, based on a meticulous survey and on a widely inedited archival documentation. A detailed building energy simulation is proposed and different improvement scenarios are considered. A multicriteria comparison finally allows to identify the most appropriate design solution. The suggested intervention is mainly focused on the external facades, providing an internal insulation and limiting the thermal bridges impact. The windows' glasses are partially replaced, while the original aluminium frames are totally preserved. Finally, the retrofitting solution ensures about 55% of energy savings, fulfilling the main thermal standards imposed by the current regulations and conserving at the same time its character-defining elements. Starting from these results, for high-quality or recognized post WWII building stock, combined energy-saving and heritage preservation is justified and proposed, instead of the sole energy retrofitting commonly applied today.

1. A dream destination

Ignazio Gardella used to remember that Ivrea represented for many years the dream destination, a sort of *Mecca*, for many Italian architects¹. According to Alberto Galardi “working for Adriano Olivetti was like working for the Pope”². This almost religious cult towards one of the most famous typewriter producers in the world clearly explain the Olivetti dominant role in enriching the Italian culture: from literature to fine arts, from social sciences to architecture.

Founded in 1908 by Camillo Olivetti, the industrial city of Ivrea started its major development from the 1930s, when his son Adriano called the two Milanese architects Luigi Figini and Gino Pollini to design the old factory’s extensions³, opening the company towards the Modern Movement theories.

Adriano’s leading role was fundamental, not only in characterizing the *Stile Olivetti*⁴ and the design aesthetics, but also in delineating an absolutely innovative relationship between the man and the factory, where the workers’ well-being and social needs became the main issues. For this reason, after the hard time of the Second World War, new buildings for manufacturing, administration and social services were constructed, making of Ivrea a unique *company town* in the world, which still today reflects the pioneering ideals of the *Movimento di Comunità*⁵.



Figure 1. Gian Antonio Bernasconi, Annibale Fiocchi, Marcello Nizzoli, Olivetti office building, Ivrea, Italy, 1960–1963.
© Associazione Archivio Storico Olivetti, Fondo Lastre.

A vulnerable heritage

On the 1st of July 2018, the UNESCO World Heritage Committee and the ICOMOS recognized the outstanding universal value of Ivrea, inscribing the site in World Heritage List. In particular the city has been considered as “an exceptional experimentation model of industrial town, [...] a laboratory of modern society, [...] where the functional city concepts drawn up by the CIAM concretely took shape”⁶. Covering a span that goes from the early 1930s to the turn of the 1970s, the 27 buildings of the site form a remarkable series of well-preserved realizations, designed by the most famous Italian architects of that age.

Today, after the Olivetti crisis and business failure of the 1990s, “44% of the former industrial and corporate buildings are vacant or underused, and there are short-term needs for maintenance strategies”⁷. Even the ICOMOS notes that “the future of many buildings is uncertain” and states that “vacant buildings could constitute a threat if no strategy of rehabilitation is put in place. [...] ICOMOS has strong concerns on the uncertainty about the conservation, adaptive reuse and sustainable use of this property”⁸.

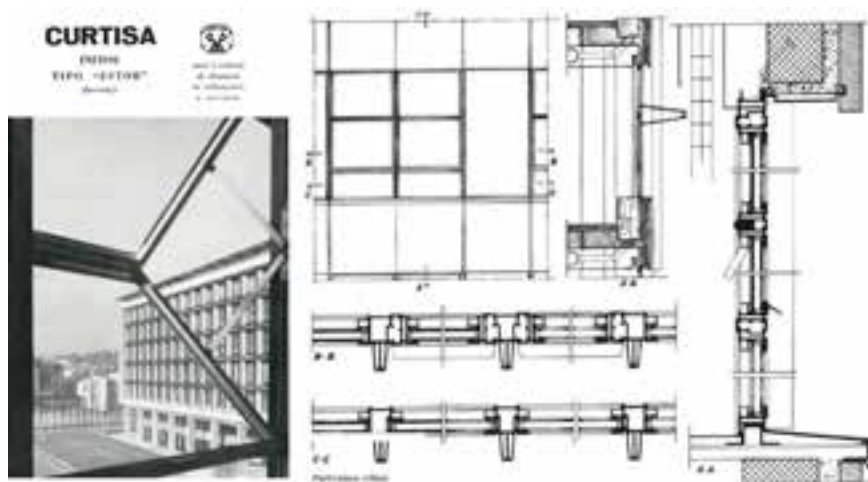


Figure 2. Gian Antonio Bernasconi, Annibale Fiocchi, Marcello Nizzoli, Olivetti office building, Ivrea, Italy, 1960–1963. © Advertisement Curtisa (left), Renato Pedio, “Palazzo della Direzione Olivetti ad Ivrea”, *L’architettura: cronache e storia*, n. 130, 1966, 220–233 (right).

2. “Modernity, high efficiency and great precision”

Corso Jervis “is the street where the Olivetti buildings arise, grown up in a fifty-year period of great progress. [...] They do not impose an exclusive presence, [...] but, on the contrary, they are successful in keeping with the natural surroundings and with a human history”⁹. At the end of this street the

first Olivetti office building was erected between 1960 and 1963. The building, the last one wanted by Adriano Olivetti, before his unexpected death, had to gather the new headquarters of the President, the Operating Officer and the company administrative services.

The project was commissioned at the end of the 1950s to the architects Gian Antonio Bernasconi, Annibale Focchi and Marcello Nizzoli, the same team that in 1950–1954 designed the Milanese Olivetti headquarters in Clerici Street. But while in Milan the challenge was to be “representative, without being monumental”¹⁰, in Ivrea, “using the same *Stile Olivetti*”¹¹, the architects succeeded in “expressing the new European and international dimension”¹² achieved by the company in the 1960s. “It dealt with demonstrating a change of scale”¹³, done again without looking for a banal monumentalism, but focusing on “technique, modernity, high efficiency and great precision”¹⁴. Thanks to its “full technical consistency”¹⁵, recognized for the “appropriate design concept”¹⁶, the building is considered one of the most meaningful examples of the international administrative architecture. Once again, the Olivetti had the merit of “writing the last page of a great chapter of modern architecture”¹⁷.

The building is “star-shaped, with three wings arranged at 120° consisting on nine stories each one, seven of which aboveground”¹⁸. In the middle a hexagonal element act both as the wings’ physical connection and the vertical distribution system. It is conceived as a full-height space, where a magnificent hexagonal wooden and steel stair is located. At the top, a transparent roof in Murano glass elements allows the zenithal lighting.

All the building is composed starting from a constant module of 1.20 x 0.90 meters. The main structure is in reinforced concrete apart from the central stair steel structure.

The architects paid particular attention to the facade design, which clearly demonstrates the high technical level of this building. The transparent part consists of huge continuous windows, which run at different levels for two kilometres as a whole. According to the different facade exposition, the frames are posed inside or outside the concrete structure. On the south and west facades, the windows’ edge is set back from the pillars and the horizontal slab acts as sunshading device, guaranteeing the optimal solar radiation, controlling the thermal gains and assuring the right quantity of light. While on the north and east facades, the *curtain wall* constitute the most external building skin, since the glasses are placed about 50 cm ahead of the structure. The entire window system was developed by the Curtisa company using the *Estor* type, which presents a very rare and spectacular folding opening mechanism.

The protection system

Listed among the 27 buildings inscribed in the UNESCO site and after a period of semi abandonment and partial decay, the offices urgently need

a retrofitting project. Protections come not only by the World Heritage recognition, but also at national, regional and local level, thanks to the Cultural Heritage and Landscape Code¹⁹, the Regional Landscape and Cultural Heritage Code and the Ivrea Land Use Plan. The common objective is to avoid “intrusive and/or inappropriate development”²⁰, preventing disruptive actions. The Ivrea Council, following the national law for the heritage protection, is also in charge to define intervention guidelines and prescriptions “for the protection, safeguard and enhancement of Olivetti’s settlements”²¹.



Figure 3. Gian Antonio Bernasconi, Annibale Fiocchi, Marcello Nizzoli, Olivetti office building, Ivrea, Italy, 1960–1963. © Giuseppe Galbiati (left), Renato Pedio, “Palazzo della Direzione”, 220–233 (right).

3. Between architectural preservation and energy retrofitting

Latest European Union programs related to energy efficiency underline the need for retrofitting existing buildings, which are responsible for 40% of EU total energy consumption. Accounting for almost 45% of the existing stock, the architecture of the second half of the twentieth century represents one of the main targets, becoming a vulnerable category²². For this reason today it is imperative to evaluate both preservation and energy economy issues. In Ivrea even the ICOMOS warns about the “many issues associated with the adaptation of the buildings to modern regulations for safety, energy consumption, surfaces, window/floor surface ratio, etc. that could have an impact on the architectural and decorative characteristics of the attributes”²³.

Starting from the last two decades, researchers have raised and analyzed the topic of combining architectural safeguard and energy retrofitting, assessing the benefits of historical conservation and energy improvement through a single intervention. Considering Modern Architecture, an example comes from the joined assessment of energy efficiency and architectural safeguard for the Cité du Lignon in Geneva (1963–71)²⁴, using a methodology based on the multicriterial approach and the comparison of different project solutions.

So, aiming to find the right balance between these two issues, the research developed at TSAM in the last 15 years has been applied²⁵, opportunely

adapted to the specificities of the Olivetti building²⁶. A multidisciplinary method, capable of integrating thermal improvement with architectural safeguard, has been developed. It is specifically tailored for Modern Architecture and focused on the building facades, since in retrofitting projects they are too often sacrificed in favour of energy improvement, without being recognized as representative elements of the aesthetics and architectural value of modern buildings.

The overall process is structured into five major phases: architectural inquiry; technological analysis, thermal diagnosis, variants proposition and multicriteria comparison. The method allows "to rank different intervention scenarios, to finally select the most effective and appropriate actions"²⁷.

Architectural Inquiry

The first step starts with archival research. The Olivetti Historical Archives – AASO, the archives of the Museum of Modern Art of Rovereto and Trento – MART and the Study Center and Communication Archives in Parma – CSAC were visited, to acquire a complete knowledge about the building's original design and history. Then, a complete geometrical survey was done, accompanied by the conservation of the constructive elements' diagnosis, investigating the origins, the causes, and the possible solutions for the founded alterations. This also allowed to identify the original, the added and the replaced elements.

The conclusions is that, over the years, the building has maintained a high authenticity level both in materiality and composition. Very few envelopes parts were altered, remaining close to the original project. The only significant alteration consists of the replacement, on the west facade, of the original and transparent *Thermopane* glasses (U-value: 3.0 W/m²K) with bronze reflecting glasses, type *Infrastop* (U-value: 1.5 W/m²K), for thermal reasons²⁸.

Among the elements that contribute to define the building's heritage value the windows book-opening system is assessed to be one of the very few in the world, being considered unreplaceable by the Cultural Heritage and Landscape Code²⁹.

Technological Analysis

In this phase the envelope materials were classified according to their physical and chemical properties. This step allowed to define the U-value of the whole building elements, such as external walls, roof, floors and transparent components.

Furthermore, significant sections of the building have been redrawn from scale 1:20 to 1:1, to understand the adopted technology and the construction processes. Form a methodological point of view, it is a key passage for

proposing the most appropriate intervention, in terms of materials and dimensions, according to the required performances.

Thermal Diagnosis

The energetical analysis was carried out following the Italian and European legislation, which imposes a series of threshold values, typically concerning the transmittance. In general, its evaluation is particularly useful, because it allows to define a scale of priority interventions, based on the heat losses through the building components.

Thermal bridges were also considered. They are mainly linear and generated by geometry, such as in the case of the intersection between the external walls and the type floor.

Another adopted tool is the thermal camera, which made it possible to assess the absence of thermal insulation under the first floor (porch), the discrete insulation of the walls, and the high quantity of thermal losses caused by the original and unreplaceable aluminium frames.

Finally, the energy demand for space heating in the current state is 81 KWh/m²y. This value, particularly low if compared with contemporary realization, is considered reliable and very close to the owner data (76 KWh/m²y). The major heat losses are caused by the windows (62%) and the uninsulated porch slab (26%). The high losses and the impossibility of any frame replacement represent the true challenge for the following restoration process.

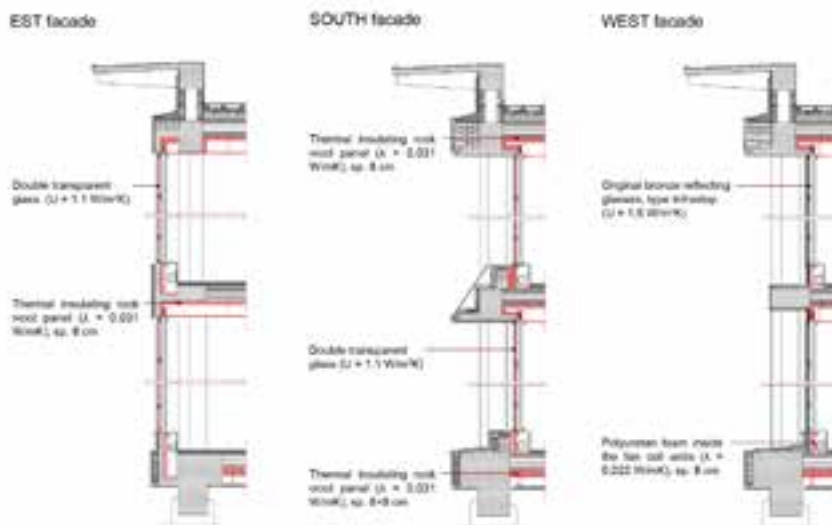


Figure 4. Gian Antonio Bernasconi, Annibale Fiocchi, Marcello Nizzoli, Olivetti office building, Ivrea, Italy, 1960–1963, Variant 2. © drawing Giuseppe Galbiati.

The variants proposal

In this phase four improvement scenarios are considered and designed in a 1:20 scale. The objective is to improve the building's thermal behaviour, trying to bring it to meet the current energy standards (even if it is not compulsory by law).

The common base for the different propositions is the internal insulation, with each time more invasive solutions. The reconstruction of a new and identical facade is not considered for multiple reasons: the low sustainability level, the high intervention costs and the imposed legal restrictions.

Variant 1 consists of the addition of internal thermal insulation in correspondence with the hidden facade parts, the porch slab, and the roof. The simulated energy demand for space heating is 54 KWh/m²y, with an Energy Demand Reduction (EDR) of –33%, if compared to the actual state. This strategy is used as the starting point for the definition of the other three design variants.

Variant 2 is based on the internal insulation coupled with the original transparent Thermopane glasses replacement (U-value 3.0 W/m²K) in favour of a more efficient double transparent glass (U-value 1.1 W/m²K).

In this case the energy demand for space heating is 36 KWh/m²y, with an EDR of –55%.

Variant 3 is intended as an implementation of the previous one: all the glasses are now replaced with the double transparent glass of Variant 2 (U-value 1.1 W/m²K). This choice helps to understand the energetical impact of the bronze reflecting glasses on the global thermal needs of the palace.

For Variant 3 the energy demand for space heating is 32 KWh/m²y, with an EDR of –61%.

Variant 4 has the objective to study the best retrofitting solution from an energetical point of view. It is based on the total replacement of the windows' glasses with a high-performance double glazing system type HeatMirror passive (U-value 0.55 W/m²K).

In this last case the energy demand for space heating is 27 KWh/m²y, with an EDR of –68%.

Multicriteria Comparison

The multicriteria comparison is based on the definition of an estimation matrix. It presents on the lines the four project variants and in the columns the evaluation criteria. Among them: energy demand, architectural quality, heritage respect, technical and economic feasibility. The fundamental aspect of this approach is the possibility to consider in a single evaluation process, both the quantitative (energy demands, costs, technical feasibility) and qualitative

(architectural quality and heritage respect) aspects. The latter are evaluated starting from restoration theories and shared deontology. The scores are assigned according to the commonly shared principles in the field, based on the Venice Charter and the Nara Document. International standards in heritage conservation, coming from UNESCO, as well as national guidelines from the MiBACT (Italian Ministry of Culture) are also considered.

Finally, the decision-making matrix shows that the optimal project solution consists in the choice of the Variant 2, which gets the highest total score. In addition, it allows the building to meet the thermal standards imposed by the Italian legislation. Any risk of condensation or mold presence is also avoided.

Variant 3 is excluded because the bronze glasses replacement does not have such a relevant effect on the energetical optimization, while Variant 4 is excluded because the HeatMirror glasses are considered excessively reflecting, affecting the original aesthetics of the building.

4. Shared guidelines for the site

This research demonstrates that it is possible to ensure the Olivetti office building about 55% of energy savings while preserving its character-defining elements. From the meticulous knowledge of the existing situation and the redesign of the technical details, the most appropriate solution emerges. The objective the main standards required by the norms is achieved, even by admitting the presence of the historical aluminium frames.

Thanks to its general framework, the method developed by the TSAM laboratory can be easily applied by analogy to cover the specificities of different retrofitting projects. As demanded by the UNESCO Committee, this research aims to delineate practical and shared guidelines to be followed for future interventions on the site of Ivrea and, in a wider scale, on Modern Architecture. Moreover, the ICOMOS states that “there is a need for elaborating short-term strategies for maintenance work as part of the management and conservation processes”, but “an overall sense of the strategic outcomes sought for these buildings is not yet in place”³⁰.

As demonstrated, this methodology does not aim to drastically change the existing building to reach NZEB performances, but to find the right balance between heritage preservation and energy improvement, as the two are mostly complementary to each other. In this sense, the presented approach, thanks to its multi-disciplinarity and inclusive strategy, can be regarded as a practical tool capable of considering conservation principles, promoting minimal intervention, looking at the stakeholders’ needs and being sustainable from an environmental and cultural point of view³¹.

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The Relighting of San Francesco al Fopponino. The lighting Project in a church by Gio Ponti, and the Importance of its Restoration

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After the end of the Second World War, Gio Ponti opened in Italy the debate on the importance of artificial lighting as a basic element for designing a building, one that cannot be added to a work of architecture later on, but that must be planned at the same time as the general project. Furthermore, in interior spaces it has multiple meanings: both natural and artificial lighting have the property of being able to create the conditions of liveability necessary for those who use the space. These concepts are also found in the church of San Francesco al Fopponino, built in Milan between 1961 and 1964 by Ponti, Fornaroli and Rosselli. In the San Francesco church, a soft, natural light filters into the interior through vertical windows which punctuate the external walls. Above the entrance, diamond-shaped openings are set that create an effect of spatial expansion. In the church, lights-as-objects constitute an emotional component of the liturgical space, also of a symbolic nature. Light, seen as a real building material, is a feature of liturgy, taking on fundamental importance both from a functional and an aesthetic point of view. In the 1980s, the 20 light fittings suspended in the central nave designed by Ponti were replaced, in order to install other luminaires that would increase light output. Starting from 2018, a restoration of the original fittings made it possible to rediscover the perceptual characteristics desired by the architect. This paper, based mainly on an analysis of unpublished archival documents and articles from the period, interviews with architects, companies and technicians involved in the restoration, explores the theme of lighting comfort in interiors. The paper seeks to demonstrate how specific knowledge of the materiality of architecture can be gained through an analysis of the use of light. This can lead to a design approach capable of totally or at least partially reconciling the need for preservation of lighting with the main standardised issues regarding the restoration and re-use of 20th-century buildings.

1. Introduction

Electric light represents one of the elements that most led to changes in architectural production in the 20th century. While at the beginning of the century it was first only added to existing buildings, it was later increasingly integrated into new works of architecture.¹ Starting from the 1920s and 1930s, throughout Europe the idea of electric lighting, seen as a real building material, stimulated research, prompted debate, and led to an inevitable modification of design thinking and therefore of built architecture. In Italy, after the forced blackout due to the Second World War, one of the people who gave new prominence to the theme of the importance of electric light as a fundamental

building material was Gio Ponti, who never missed an opportunity to reiterate that artificial lighting should be thought about from the early design stages of a new building. While in external spaces he used lighting to alter the perception of an architectural complex, conceiving the need to design one project for daytime and one project for night-time, in internal spaces he associated multiple meanings with light, both functional and aesthetic. He believed that both kinds of lighting, natural and artificial, have the property of being able to create the conditions of liveability necessary for those who use the space. The problem therefore arises of finding a solution to integrate the two types of light into a single effective control system, as evidenced by some of the works presented in those years in the magazine *Domus*, including the Garzanti foundation in Forlì (1954–1957), Villa Planchart in Caracas (1955) or the Pirelli skyscraper in Milan (1956–1960).² For his part, his interest in tackling the subject of lighting is also fulfilled in sacred architecture, a design theme which he devoted himself to on several occasions. Worthy of note among these is the church of San Francesco d'Assisi al Fopponino in Milan, the church that stands a short distance from his house in via Dezza, designed in 1961 in collaboration with Antonio Fornaroli and Alberto Rosselli.

2. The use of natural light in the church of San Francesco al Fopponino

The church of San Francesco is part of a group of 22 ecclesiastical buildings commissioned by Cardinal Montini, who in the early 1960s launched the “22 churches for 22 Councils” plan, promoted to celebrate the opening of the Second Vatican Council. With this project, in collaboration with representatives of the Italian architectural avant-garde, the Cardinal set out to provide the suburbs of Milan with new churches, with the aim of making them become the hub of the community's social life. After several design proposals for the same site that were not realized, put forward by the architects Giovanni Muzio and Luciano Dolce, the Curia Diocesana, the client, and the Unione Commercianti Milanese, which partly financed the work, decided to entrust Gio Ponti, a local parishioner and former professor at the Milan Polytechnic, with the planning and design of this new church. Because of the dense urban context chosen for the project, he proposed isolating the sacred building, placing a small public square in front of it, to act as a parvis (a church forecourt). This allowed him to set the front of the church back from the street. One of the distinctive elements of the project is this façade towards via Giovio which, extending beyond the confines of the building proper, joins the actual church to the adjacent parish buildings, creating a sort of urban stage for religious rituals. The architect proposed an asymmetrical hexagonal plan for the building that recalls the concept of a finished shape, already adopted for the Pirelli Skyscraper, that is, “a shape that does not allow, outside its profile, the possibility of extensions, repetitions, or superimpositions”.³ This is one of the first examples where he expressly puts into practice his theory on the structural and architectural conception of

religious buildings, whereby the hexagon is the fundamental geometrical figure, suitable for a place of worship.⁴ Inside, the spatial layout already adopted in the Milanese church of San Luca (1955–1961) is re-proposed: a large central nave flanked by two smaller aisles, from which it is separated by a row of pillars with variable section in reinforced concrete which, tapering upwards, join the beams of the gable roof. Here too, the spaces for parish activities are located on the lower ground floor. The use of reinforced concrete, the exposed trusses, and the ceramic tiles that cover the exterior link this building also to the other church designed by Ponti in Milan, the church of Santa Maria Annunciata at the San Carlo Hospital (1964–1966), and anticipate his most important religious work: the Concattedrale Gran Madre di Dio in Taranto (1964–1970). In San Francesco, as later on in the cathedral of Taranto, the use of light has a particular connotation both inside and outside. The main façade has four open windows that frame the sky, the so-called wind facade, which in their arrangement reproduce the shape of a diamond. This shape is also used to make the central openings created in the thickness of the wall, adorned by stained-glass windows designed by Cristoforo De Amicis in the 1970s, placed above the three main entrances of the church. Externally, these thin vertical slits generate an interesting play of light and shadow on the entire façade, accentuated by the diamond-tipped ceramic tile cladding, which gives rise to numerous reflections. The motif of the openwork windows also extends to the façades of the parish annexes, creating a successful effect of spatial expansion. Inside the church a soft, natural light filters into the interior space through further hexagonal and quadrangular splayed openings that adorn the perimeter walls along the entire main nave, and which make the internal space uniformly bright, while in some points the light is directed by concrete screens. At the two ends of the transept there are also two stained-glass windows by De Amicis set in hexagon-shaped openings to which Ponti associates internally painted wooden doors that can be closed, blocking the view towards the outside. To underscore the symbolic value of the church's eastward orientation, Ponti initially created a large window in the wall of the apse, for which he also designed an elaborate artificial lighting system that was never created⁵: this oculus was subsequently hidden with a painting by Francesco Tabusso that covers the entire wall: *Il Cantico delle Creature* (1975). The other internal walls are also decorated with a series of wooden panels by Tabusso facing the central nave which narrate episodes from St Francis' life and accompany the faithful to the altar, and other stained-glass windows by Padre Guido Bertagna representing St Stephen and St Cecilia. Ponti also provided the church with a crypt below the celebrant's area, so that the altar is raised above the main nave. Finally, he designed two altars at the end of the aisles for minor celebrations, and a baptismal font which was initially placed next to the main entrance of the church, and which was later repositioned in front of one of the transept windows.

The composition of the church building takes its cue from the ideals of the religious order to which it is dedicated: to express its Franciscan vocation, this sacred building is essential and simple, but at the same time it is

representative and expressive, and the spatial dimension given by natural light allows these characteristics to be emphasized. Indeed, the religious theme and the biography of St. Francis, who belonged to a mendicant order of preaching monks, whose main motto is *ora et labora*, were an invitation to the architect Ponti to choose cleanliness and simplicity in the forms and materials used. As the architect himself wrote: "Behind the façade, which will be adorned with a diamond window, the main section of the church will appear in the perspective created by its successive doorways and the motifs that will decorate it along the other walls. As on the outside, so on the inside, the architecture will express its Franciscan vocation through the simplicity of the white walls. The devotion that was desired and inspired by dedicating it to St. Francis will reveal its full degree in the solemnity of the dimensions."⁶

3. The artificial light project

In the church, lamps, as objects, constitute an emotional component of the liturgical space, also having a symbolic nature. Light, used as a building material, is a feature of liturgy, taking on fundamental importance both from a functional and an aesthetic point of view. Twenty brass light fittings are suspended overhead inside the nave by means of ledges and metal chains (FIG. 1). These luminaires, produced by the Candle company, are reminiscent of other fittings previously used by Ponti for the Gallini Centre in Voghera. With their direct-indirect light, they highlight the longitudinal design of the nave, marking the two routes towards the altar, and providing a soft and suffused ambient lighting that is helpful to worshippers in silent prayer. In addition, there are round and flat ceiling lights, featuring a brass cross in the shape of the sun, in the two chapels next to the entrance, and brass candelabras with incandescent bulbs carefully placed in strategic positions of the church, such as beside the two side altars, and at the entrance to the crypt. The semi-underground position of the crypt means that, when this is internally lit and the church is dark, it may seem

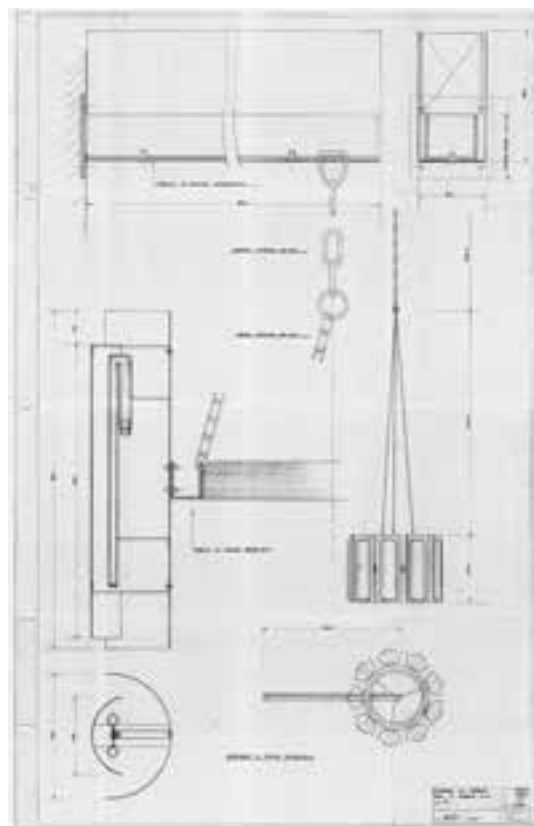


Figure 1. Project drawing of the light fitting used by Gio Ponti in the church of San Francesco in Milan. © Credits Archive of the parish of San Francesco al Foppino, Milan.

that the altar is floating above the light. In addition, a luminous crown was designed above it, as expressed by the architect's design sketches, but this was never implemented.⁷ An important thing to remember is that this church was conceived, designed, and built between 1960 and 1962, that is before the Second Vatican Council, which began in 1962 and ended in 1965. The close relationship between pre-Council liturgy and architecture is reflected in the building's shape, and in the light present inside it. The building's purpose was to allow worshippers to gather in prayer. For this reason, Gio Ponti decided to create a space with a diffused but soft brightness, permitting the faithful to follow the Mass, but not allowing them to actively participate in it, since for example it was not necessary to read, unlike in the current liturgy. It was that brightness that allowed one to be in a place where people could see each other, but which remained essentially semi-dark, because, listening to the Mass, they were not to be distracted. The Council, from the liturgical point of view, introduced two major innovations, and one was the use of the national languages instead of Latin. The second new feature, much more interesting for the architectural design of a church, is the fact the altar faced the people, so that the priest no longer turned his back, but looked at the faithful. Before, people only attended Mass, but after the Council they participated. The new liturgy thinks of the celebration as a dialogue, spoken, sung, and made up of actions and silences. These innovations led to the participation of worshippers, and therefore to the need to have a greater amount of light that would allow them to intervene more actively. For this reason, Gio Ponti's twenty light fittings, that produced a discreet, distributed but subtle light, were soon added to with other luminaires to increase the lighting of the assembly.

The restoration of the lights, and the new general lighting system of the church

In the 1980S, the twenty hanging lights were first accompanied and then replaced by metal halide projectors to increase the internal lighting (**FIG. 2**). The light fittings designed by Ponti, once turned off, remained present in the interior, but, now deprived of their original function, they were kept in the church only for their aesthetic value as decorative objects, also losing their shiny appearance due to oxidation of the brass. The new and powerful light fittings, pointing downwards and placed at the end of the ledges on which the original hanging lights were suspended, totally revolutionised the spatial concept, and the welcoming and cosy atmosphere originally desired by Ponti. The new down-light solution led to a manifest differentiation between the upper and lower hemispheres of the church, assuming as a demarcation horizon a virtual plane passing through the optical centre of the installed luminaires. Therefore, as an overall result, there is semi-darkness towards the top, and an excessive glow towards the bottom. In 2008, upon the arrival of the new parish priest, Don Serafino, the problem of the internal lighting was evident, also due to subsequent replacements of the bulbs, that produced



Figure 2. The church of San Francesco illuminated by metal halide lamps. © Credits Archive of the parish of San Francesco al Foppino, Milan.

non-homogeneous light colours.⁸ Only between 2017 and 2018 did a chance event make it possible to restore the initial fittings, allowing us to rediscover the perceptual characteristics originally intended by Ponti. In 2017, the Olivari company wanted to present its new graphic design, and asked the parish priest to be able to do it on the church's premises, an important location for the company's history. Indeed, Gio Ponti had previously collaborated with Olivari in the design of three types of door handles: Lama, Anello and Cono, using the last of these in the church of San Francesco. As compensation for the use of the site, the priest did not want a cash payment, but asked for help with some work to be done in the building. The most urgent work was to restore the old, oxidized light fittings. Therefore Antonio Olivari,⁹ head of research and development, decided to commit his company to the restoration and reuse of these devices, taking care of both technical components and the metal casing, with the commitment that everything should be completed by the 2018 Easter celebrations. The architect Marco Strina,¹⁰ who has often collaborated with di Olivari, also participated in the work. With the architect Stefano Suriano, he found in the parish archive the original paper documentation of the construction of the church, including the drawings of the lights, as well as a wealth of correspondence between the parish priest, the Curia and the architect. Starting from an analysis of the documentation, Strina directed the operation by acting as an intermediary between the company and Don Serafino. All design decisions were made in agreement with the Superintendent of Cultural and Artistic Works of the Diocese of

Milan, Carlo Capponi, who was asked step by step for all authorisations. This was not just an intervention aimed at solving the problem of relighting the luminaires, indeed they also wanted to understand in depth how to address the church's lighting design. After having made a technical proposal, installed the prototype, and found it to work, they proceeded to arrange all the other 19 light fittings with the same logic. Each fixture was brought to the company, taken apart piece by piece, and the pieces numbered because they were not standard chandeliers, but handcrafted, so each grille was different from the other. After carrying out this major work of cataloguing, to be able to reconstruct them exactly in the same way, each piece was re-polished, repainted and reassembled. The bulbs previously present in the lamps, U-shaped fluorescent tubes probably produced specifically for the luminaire, were therefore replaced on the advice of a lighting technician, with technologically more advanced LED strips. These were more durable and long-lasting, more useful, and less expensive in terms of energy consumption, and were fitted in a reversible way, with strips of Velcro. The new bulbs produce the same colour temperature but also greater luminosity, because the lamps had to be suitable both to provide ambient light and to allow reading inside the church (FIG. 3). After this restoration operation, given the excellent result achieved, Don Serafino, again in agreement with the Superintendency,

decided to modernise the general lighting of the church, choosing to replace the unsuitable metal halide floodlights. The architect Strina was again the main figure in this phase of the project, identifying what the church's lighting needs were, and coordinating the implementation of the new fixtures. To this end, a technical committee set up specifically in 2007 within the AIDI (Italian Lighting Association), in collaboration with the National Offices for Cultural Heritage and Religious Buildings of the CEI (Italian Episcopal Conference), drew up guidelines clarifying how to use artificial light inside an existing church, according to the various lighting needs: one lighting system for the day, one for the evening, and one for important ceremonies, thus proposing multiple combinations of lighting scenarios. Similarly, in the case of this project, it was decided to build the luminous volume in events, using new LED devices that supplement the use of the existing chandeliers. The new appliances were supplied by the iGuzzini



Figure 3. The church of San Francesco after the restoration and implementation of the lighting system. © Credits Giulio Sampaoli, 2022.

Illuminazione company which also participated in the project with Riccardo Rocco¹¹ as technical consultant. Using the Dialux lighting design software, a virtual prototype of the lighting idea was created, to assess the various design proposals, relating the original project and the current needs of the building, both from a functional and an architectural point of view. Initially a larger project was proposed, but this was not feasible, due to the fact that the original electrical ducts were too small, and could not be replaced, to raise the wiring to a height of 18 mt. The new luminaires are sited along tracks on the perimeter walls of the aisles, and provide direct or indirect, ambient or accent lighting in each span, depending on liturgical needs and lighting combinations, controlled from the sacristy. To complete this new lighting system, there are projector devices hidden in the rear pillars, which serve to concentrate light on the presbytery area, in the direction of the altar and the ambo (pulpit). Once the internal set-up was completed, they moved on to the external lighting of the main façade. Here it was decided to illuminate the three glass hexagons of the façade on the perimeter with hidden linear LED devices, replacing the fluorescent fixtures, installed in 2010 on the occasion of a particular event in the city, which provided only partial illumination of these windows. Today this lighting, which comes on at sunset and is turned off at midnight, causes an interesting aesthetic effect and enhances the main façade by emphasising the concept of the importance of night lighting of buildings, declared in many of his writings by Gio Ponti (FIG. 4). As proof of this, this idea was already present in the project drawings kept in the architect's collection at the CSAC in Parma. The next project phases will involve the illumination of the crypt and the external side elevations of the church, which have not yet been put into effect.

Conclusion

The "light restoration", supplemented by the new lighting system, which has taken place in the church of San Francesco, is an excellent example of the design approach that should be taken when working on buildings where the theme of light is so significant. It is necessary to remember the importance of this theme in the process of studying a work of architecture, since lighting systems, more than other aspects of construction, are the features that help to create a building's spatial and optical qualities,



Figure 4. The current night lighting of the church façade.
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and which represent what defines the characteristics of use, distribution, and comfort, bringing with them the cultural values of architecture. An analysis of this type of building therefore requires reflections on the importance of the conservation of lighting systems during restoration phases. Indeed, unconscious changes made to them can destroy the formal and perceptive meaning of a work of architecture, given by light. By contrast, a specific study of a building, and the meaning of the use of lighting, leads to the advancement of ideas to safeguard the qualities that its use gives to the built work. For this purpose, a lighting expert could be consulted: with their background of knowledge, they could identify the functional and expressive qualities of the building given by artificial lighting systems, and would therefore be able to suggest how to restore, renovate, enhance, or replace the building's existing lighting system. This expert would have to be able to perform further tasks in addition to their technical knowledge alone, reconciling the historical-critical and historical-technical analysis of the built work, based on prior bibliographic and archival and documentary research, with the direct survey of the building or of the site, and therefore with the investigation concerning plant engineering and construction techniques, thus reconstructing the necessary framework to outline a building's functional and expressive characteristics, also defined by the use of light. Bearing in mind the need to always proceed on a "case-by-case" basis, since each building is different from the next, and there is no ready recipe on how to intervene, these pre-planning phases make it possible, by means of a critical analysis, to draw up considerations on the methodological approach applicable in the lighting project on those buildings that are testimony to, or even the symbol of, a new way of designing, which originated and developed in the course of the 20th century, which includes intangible electric light as a fundamental building material. If, by analysing these buildings, this design approach was to become part of standard practice, this could lead to an understanding of how to develop new restoration and reuse interventions based on the experience of the past, in the sense of cultural heritage, as well as new technology and current design processes, in a perspective that is attentive to the values of historical testimony that architecture possesses, and in a way that is more respectful of materiality and memory.

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Notes

- 1 This work is part of a postdoctoral research study entitled “The Restoration of Electric Light in Twentieth Century Architecture” carried out at the USI – Academy of Architecture – Mendrisio, in the Construction and Technology area, directed by Prof. Franz Graf.
- 2 Ponti Gio, “Architettura per la notte”, *Domus*, no. 292 (1954): 1–4; Ponti Gio, “Il modello della villa Planchart in costruzione a Caracas”, *Domus*, no. 303 (1955): 42–43; Ponti Gio, “‘Espressione’ dell’edificio Pirelli in costruzione a Milano”, *Domus*, March, no. 316 (1956): 1–35.
- 3 (anon.) “Analisi di un progetto: la nuova Sede Pirelli”, *Edilizia moderna*, n. 55 (August 1955): 25.
- 4 The elongated hexagon in fact comprises a central square and two triangles, one above and one below, and if flattened it can be contained in a circle. Ponti therefore believed that in a hexagon it is possible to contain the three main geometrical figures, allowing this form to express something that leads to perfection.
- 5 CSAC Parma Archive, Gio Ponti collection, Cartella Tempio votivo di San Francesco a Milano.
- 6 Ponti Gio, “Sarà degna dello spirito del grande santo”, *Il Fopponino*, no.4 (May 1961): 12–14.
- 7 CSAC Parma Archive, Gio Ponti Collection, Cartella Tempio votivo di San Francesco a Milano.
- 8 Interview with Don Serafino Marazzini – February 15, 2022.
- 9 Interview with Antonio Olivari – February 22, 2022.
- 10 Interview with the architect Marco Strina – February 25, 2022.
- 11 Interview with Dr. Riccardo Rocco – February 25, 2022.

Cemesto: A Twentieth-Century Structural Insulating Material. Conservation Challenges

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In 2011, the GCI began a partnership with the Eames House Preservation Foundation, at the Eames House (1949) in Pacific Palisades, California, designed by Charles and Ray Eames. The project sought to demonstrate the practical application of internationally recognized conservation methodologies to a modern-era site. It also sought to understand and assess the condition of the residence and studio, its contents, and the landscape to develop a conservation management plan (CMP). Also included in the field project was technical research and assessment of some of the modern materials used by the Eameses. This paper focuses on the GCI's study of the Cemesto panels, a significant component of the building's exterior envelope.

Cemesto is a brand name for a structural insulating panel developed in the 1930s in the US by the Celotex Corporation. It consists of a core of laminated fibreboard surfaced on both sides with thin asbestos-cement sheets bonded with a bituminous adhesive. Cemesto gained tremendous popularity during and after World War II, which witnessed an unprecedented need for factory-made products that would speed construction, especially for large housing developments, often associated with the war industry. Cemesto was marketed as a material with sufficient structural strength, thermal insulation properties, and aesthetic appeal for both interior and exterior walls, even when left unfinished. Its popularity waned as increased awareness and litigation related to asbestos toxicity led many companies to file bankruptcy, including Celotex. Historical research and a condition survey were undertaken for the Cemesto panels at the Eames House, followed by the development of treatment options. The paper will present the complex challenges of conserving the Cemesto panels which was shaped by both their composite and hazardous nature as well as by the experimental installation that the Eames developed and presents how the GCI has approached a solution to their deterioration.

1. Introduction

Situated on a coastal bluff in the Pacific Palisades neighbourhood in Los Angeles, California, the Eames House, also known as Case Study House no. 8, was the home Charles and Ray Eames designed for themselves. Among other manufactured materials of the 20th century, they chose Cemesto panels, a key component of the building envelope, installed within a light steel framework. Despite its high level of integrity, the building material has aged and deteriorated after over 70 years of service. The continued partnership with the Eames Foundation has provided the Getty Conservation Institute

(GCI) with an opportunity for a closer study of the material and means to address its conservation.

This paper provides a brief overview of the building material, its significance in the context of the Eames House site, the conservation challenges, and the approaches currently explored for replacement and management in situ, balanced with its hazardous nature and the site users' safety.

2. Overview of the material: its manufacture and use

Although the commercial application of asbestos goes back to the mid-nineteenth century, the first patent for manufacturing an asbestos–cement material in the United States was issued to Austrian industrialist and inventor of the process, Ludwig Hatscheck, in 1904. Appreciation for its improved fire resistance, durability, and mechanical properties, along with a relatively low cost, minor maintenance requirements, and the lack of awareness of its hazardous nature, seemed to guarantee that asbestos–cement products would have a bright future. This was reflected in a myriad of asbestos–cement materials developed throughout the 20th century, including Cemesto.

Cemesto, manufactured by the Celotex Corporation, was one of several insulated panels that entered the American market in the 1930s, which included standalone materials, such as Transite encased insulating board, or as a part of prefabricated house systems, such as the Motohome by American House Inc.

Trade catalogues presented Cemesto as a composite building material that could be used for walls, roof decks and partitions, providing structural strength, insulation, and an appealing maintenance-free finish with its smooth, light grey speckled appearance. The panel itself consisted of a laminated fibreboard, called Celotex, surfaced with thin asbestos–cement sheets bonded with a waterproof bituminous adhesive (**Fig. 1**).

The fibreboard was manufactured by felting bagasse fibres, which is the dry pulpy fibrous by-product left from the stalks of sugarcane after the sugar had been extracted. The fibres were chemically treated to gain some water resistance and prevent decay. This treatment was widely advertised as Ferox, an integral treatment toxic to termites and fungi developed about a decade after introducing Celotex in the market.

Laboratory tests of the period supported the advertised claims pertaining to Cemesto's fire resistance. They also revealed properties that help us better understand the causes of deterioration. For instance, rain would penetrate the asbestos–cement sheets to, but not through, the bituminous adhesive layer, which demonstrated its function as a moisture barrier. Testing also showed that the bond created between the asbestos–cement and the bagasse by this adhesive was stronger than the internal bond of the core, which would break within itself under tensile load.¹

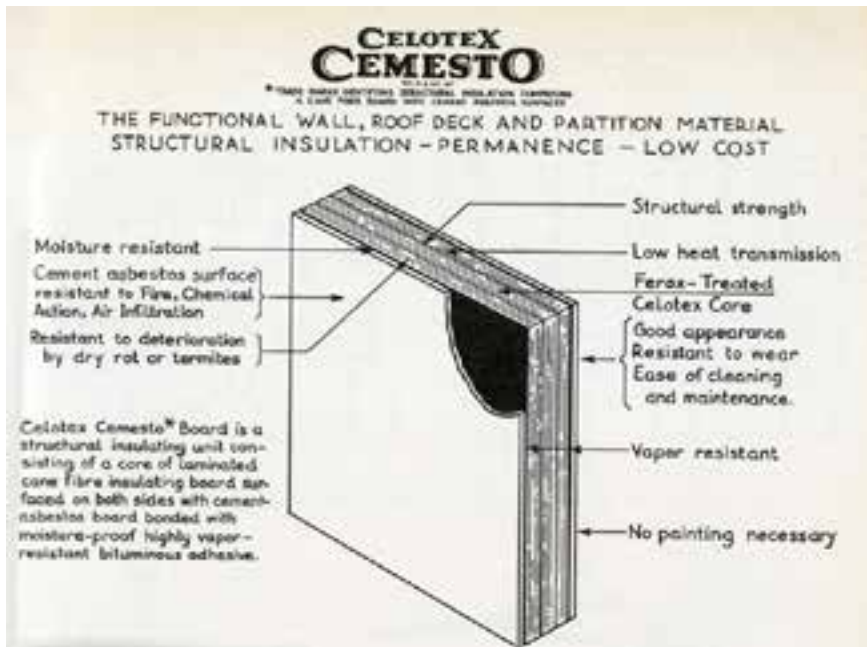


Figure 1. Cemesto: a diagram of its composition. The Celotex Corporation. Cemesto Design and Construction Application Data, AIA File No. 19-D, Form No. 7413, page 1.

Counterintuitively, one may think that both the insulation core and the asbestos–cement sheets were formed separately as finished products and then bonded together under pressure. Instead, the patent suggests the asbestos cement sheets, still wet and newly formed, were directly applied to the insulation, including the adhesive, and pressed together under pressure and left to cure.²

By the late 1940s, the panel was commonly manufactured in a standard 4–feet by 8–feet (1.22 by 2.44 meters) size. Its ultimate thickness, ranging between 11/16 inches and 2 inches (1.74 cm to 5.08 cm), weight, and insulation values varied depending on the number of layers of Celotex sheets which formed the core. Typical panels were faced with 1/8–inch (3.175 mm) asbestos–cement sheets, but 1/4–inch–thick (6.35 mm) boards could be obtained as well.

The Second World War's production demands created an unprecedented need for speed and innovation in construction, and reinvigorated prefabricated, factory–built house systems.³ This development placed the Cemesto company in a fortuitous position. Perhaps its best–documented use was in defence–related housing developments, linked to its partnership with the John B. Pierce Housing Foundation. Examples include Aero Acres in Baltimore, Maryland, and Oak Ridge, Tennessee, both built during the war (Fig. 2). In addition to these large, quickly built housing tracts, Cemesto was used in one–off residential projects by notable architectural figures such as Frank Lloyd Wright.



Figure 2. Aerial View of Oak Ridge housing development, Oak Ridge, Tennessee, USA, designed by Skidmore, Owings, and Merrill in 1945. James E. Westcott. U.S. Corps of Engineers, Manhattan Engineer District, Oak Ridge, Tennessee.

3. Cemesto panels at the Eames House

The Eames House consists of a residence and studio of rectangular plan and form connected by a landscaped courtyard. The building complex is nestled into a steep slope with an 8-foot-high (2.44 meters) retaining wall of reinforced concrete that extends beyond the south end of the residence to line an open court and a concrete planter, and the south end of the studio, to accommodate another court, populated with garden plants, and a carport. A vast array of potted plants surrounds the building complex, and its setting includes a wide meadow with views of the Pacific Ocean, a distinct row of mature eucalyptus along the east elevation, and other mature eucalyptus trees around the site.

The structure selected by the Eameses for the building envelope is a modular steel assembly typically used for industrial buildings consisting of an interplay of structural and non-structural light steel frame elements, using large sections of a window-wall assembly consisting of both fixed and operable sash. The Eames filled this gridded steel window system with a mix of glazed and opaque materials (**Fig. 3**). In areas where the window-wall systems are not used, larger sections of solid wall are created using either Ferrobord profiled steel decking mounted vertically or framing with a stucco finish.

The Eameses had considered sheets of stainless steel bonded to a core material and waterproofed plywood panels for the opaque elements. However, their final choice was Cemesto. The only disadvantage was that the panels,

once trimmed to fit the various configurations of the steel frame, were about $\frac{1}{4}$ inch too thick, which required further customization by rabbeting the inside face of each panel. Installation was simple; the panels were held in place with the aid of glazing putty, wood shims, and common nails driven into the bagasse core through holes drilled in both in the upper and lower steel frame depending on the location. Outdoors, the Cemesto panels were sometimes left natural and sometimes painted, and in two instances, above the main entrance, covered with gold leaf. Indoors, all the panels remained unpainted.⁴

This use, customisation, and treatment of the Cemesto panels demonstrate the Eameses' design philosophy of using innovative, industrial construction materials in a residence, and their interest in the honest expression of

materials and structure. It is also an example of the Eameses' interplay between craft and machine work and evidence of their humanisation of industrial modernism by customising mass-produced materials and incorporating craftsmanship into the construction process.⁵ The panels on the exterior of the buildings also provided an important canvas to incorporate colour into their design.

Beginning in 1975, records show that Charles and Ray Eames had selected a different product, Transi-top, as a replacement material for deteriorated Cemesto panels. In 1977 Ray Eames prepared a condition assessment of the panels, and recorded successive repair campaigns in 1977, 1981 and 1982, mainly affecting the lower part of the north elevation of the residence and the lower part of the east elevation of the studio. In the late 1990s or early 2000s, a few Cemesto panels were repaired by replacing their deteriorated fibreboard core with an extruded polystyrene foam board, and, in 2012, four infill panels were

replaced with plywood. In addition, the painting campaigns that took place in 1958, 1966, 1974, 1976–78 (various spot painting), 1989 and 2003 might have also included replacing or repairing sealants between the steel frame and the infill panels.⁶

The GCI undertook a condition assessment in 2015, whose results were updated in early 2022, including visual inspection and limited lab testing. The visual inspection revealed that the condition of the infill panels and



Figure 3. The Eames House, clad in a complex array of materials, including the opaque Cemesto panels, 1950. Julius Shulman, ©J. Paul Getty Trust. Getty Research Institute, Los Angeles (2004.R.10).

surrounding steel frame varies considerably. Yet, the team is aware some conditions remain concealed. Despite the high level of intactness, the original Cemesto panels or their later replacements are quite vulnerable due to their exposure to the exterior environment. A major cause of decay is moisture infiltration into the fibreboard core and the surrounding steel frame that ultimately may cause the saturation, expansion and disintegration of the bagasse fibreboard and detachment. This issue can be traced to the installation and detailing of the Cemesto panels into the steel frames, which differs from the manufacturer's recommendations, and the thickness, detailing, and profile of the steel frame that may contribute to moisture accumulation. In addition, the deterioration of sealants around the perimeter of the panel compromises its water tightness. The perimeter frame exhibits paint chipping, and minor surface corrosion, with some areas showing a more advanced state of corrosion. In addition, several windows are difficult to operate.

Other conditions include soiling, staining, discolouration, surface erosion and localised impact damage that vary significantly across the various panels and between the outdoor and indoor surfaces. A few of the panels exhibit a fungal biofilm in the form of small dark spots, which appear to spread from nearby Eucalyptus trees.

Despite their age, the asbestos–cement sheets appeared overall to be in good condition at a microscopic level. Petrographic analysis revealed that surface deterioration was manifested mainly as leaching, localized cement paste erosion or loss, resulting in exposure of chrysotile asbestos strands that could potentially be a health hazard. These conditions were more severe on the outside surface of the panel, consistent with harsher environmental exposure. Discolouration and surface staining appeared to be mainly related to soiling, biological growth, differential surficial leaching, formation of carbonate and low–calcium, bio growth high–silica gel, and presence of iron oxides/hydroxides on the exposed surfaces. The limitations of obtaining additional samples prevented the team from extrapolating the results to all the panels, yet they provide a good understanding of the deterioration mechanisms.

4. Response and remaining questions

The information provided above is the result of a first phase of the project that included historical research based on product literature and other publications by industry, investigation of the installation, maintenance, and physical conditions. Concurrently, and during the preparation of the CMP, the team developed an understanding of the significance of the Cemesto panels.

Both the Eames Foundation and the GCI, in its advisory role, have been guided by the Eames House CMP to favour an incremental approach to the conservation of the Cemesto and the steel, allowing for retaining as much of the culturally significant material of the building envelope in secure and

weathertight conditions as possible, thereby sustaining the Eames House's significance.

From the start, the GCI team knew this was a complicated conservation challenge stemming from the building enclosure design, the hazardous nature of the material, legal constraints, the limited availability of in-kind replacements, and very little information on how the asbestos-containing materials of cultural importance can be conserved, maintained, and repaired.

The infill panels serve both as an enclosure and architectural finish material. There is no redundancy. Failure of one component may lead to the loss of the unit.

Chrysotile fibres are present in the Cemesto's fibrocement and the bituminous adhesive. Although asbestos fibres are considered relatively stable in their bonded form, they can pose a health risk in the case of weathering, ageing, or disturbance such as cutting, drilling, or accidental breakage. In addition, due to its chemical treatment, the bagasse contains arsenic compounds.

Government and institutional-issued regulations and guidance typically lean toward leaving, encapsulating, or removing asbestos-containing fibrocement rather than engaging in activities that may disturb the material, such as repair and reuse.

Cemesto panels or similar materials are no longer produced in the United States. Cemesto was available until the 1980s when increased litigation related to asbestos toxicity and its grave consequences led the Celotex Company to cease operations. Bagasse production halted due to the impacts of Hurricane Katrina and the collapse of the construction industry in early 2007.

In responding to the technical challenges described above, the GCI team seeks to identify a possible surface treatment to allow for retention and management of asbestos-containing materials in situ while ensuring site users' safety, as well as developing a suitable replacement system for those infill panels exhibiting severe deterioration.

To do this, it was necessary to identify a fibrocement product that could be used as a Cemesto replacement that could be integrated seamlessly, minimally altering the visual integrity and architectural detailing of the original design while ensuring long-term performance and a practical installation. Working with the Eames Foundation, GCI identified a compressed, flat fibrocement sheeting reinforced with mineralised cellulose fibre whose texture and colour could match the historical panel. With a carefully selected fibrocement product in hand, a customized, insulated panel with a core of expanded polystyrene rigid foam and bonded with a one-part urethane adhesive was fabricated for a mock-up program. The replacement panel used a typical production process that the selected manufacturer could guarantee.

Using this custom-fabricated fibreboard panel, mock-ups were installed into two different frame settings on the east elevation of the studio, previously infilled with plywood, and one location on the west elevation of the studio, previously infilled with a deteriorated Cemesto panel. A fourth location was selected on the roof of the residence facing both north and south. Installation involved further customization on site to ensure proper fit into the various steel frame configurations, following cleaning and treatment of the steel. After installing the replacement panel, the perimeter joint was filled with two alternative products – a glazing putty and a silicone-based sealant (**Fig. 4**).



Figure 4. Architectural conservators dry-fit the panels into the steel frame and hopper window sash before final installation and sealant application, 2021. Drew Barnhart, ©J. Paul Getty Trust.

Mock-up panels will remain in place for at least one seasonal cycle for evaluation as the material remains exposed to natural conditions. This monitoring will be complemented with accelerated ageing tests on material samples and will also include an additional study of how to improve the sealant and fastening system.

In addition to finding a suitable replacement panel for damaged panels, one of the biggest technical challenges is finding a proper way to encapsulate the remaining Cemesto panels, understanding that the inevitable effects of weathering that will worsen the condition of exposed asbestos surfaces.

Encapsulation will extend the panels' service life while ensuring future safety for site users. In the US, encapsulation or sealing involves coating the asbestos-containing material with a permanent protective film that is either a bridging or a penetrative covering to encapsulate the asbestos fibres in a resilient matrix, thus preventing loose fibres from becoming airborne. There are many types of encapsulant products suited to specific applications that can be grouped in four general types: adhesive sealant, mastic compounds, foam encapsulation and encapsulating coatings that appear to have evolved from the paint industry. Encapsulating coatings that are clear coatings would very likely have an unwanted visual impact by conferring some degree of gloss and sheen. Because of this, the GCI team is currently investigating the use of inorganic consolidation treatments that would have less visual impact on the Cemesto. The aim of this research is to find a suitable stabilisation method that preserves the current appearance of the Cemesto panel as much as possible, while understanding the limitations and risks of its application.

Acknowledgements

The authors wish to thank Laura Matarese for her significant contribution to the study of the Cemesto panels while she was a member of the Conserving Modern Architecture team from 2014 to 2017.

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- 1 The Celotex Corporation, *Cemesto Panel Tests*, 26.
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S20

Concepts, Processes, and Realization: the tangible and intangible values of innovation in modern heritage

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The rapid advancement of technology is one of the defining characteristics of the modern age, transforming the lives of individuals and society at large. The impact of technological innovations and new materials was profound and far-reaching, giving rise to new forms of energy use, transport, and communication systems. Medical advances led to improved health care, which extended human lifespans and stimulated population growth. Mechanization of agricultural production met growing food demands. Despite the many societal benefits and the improvement to the quality of life for millions around the world, innovative technologies also paved the way for new weapons and methods of warfare with devastating consequences and contributed to today's unsustainable levels of consumption of the earth's finite resources.

Advances in all forms of engineering led to new innovative building forms, construction techniques, materials, and production processes, resulting in a vast array of extraordinary new buildings. These advances met the demands for expanded building typologies to meet new uses that accommodated modern life. The papers in this session invite readers to consider technology in its broadest sense, considering how it manifests conceptually, physically, and socially.

Technology encompasses not only physical tools and materials but also the skills, methods, and bodies of knowledge that humanity leverages to fulfil its collective needs and aspirations. In fact, all technological progress inherently stems from conceptual innovations later materializing as new instruments, resources, production methods, and other processes. Twentieth century

architects, engineers, and designers sought to overcome both old and new social challenges by developing systematic methodologies for researching and implementing solutions. Applying the principles of the scientific rationale to design, these theorists pursued technological advancement not just in the form of materials and engineering, but also in the definition and standardization of methods for framing and addressing problems. While these immaterial forms of technology have profound effects on the material world, the tangible outcomes of their application rarely convey the conceptual labour and innovation that made such results possible. This conundrum is all the more challenging when the physical manifestations of conceptual progress have deteriorated, are demolished, or never materialised in the first place.

Deniz Hasirci, Zeynep Tuna Ultav, and Melis Örnekoğlu Selçuk grapple with the challenge of recognizing the link between systematic methods as technological innovation and its broad physical influence, examining the legacy of Önder Küçükerman, a key figure in Turkish modern design. While they touch upon modular design, standardization, and mass production, the authors highlight Küçükerman's practice of defining systematic processes for design and documentation being essential to his contributions to modern design, enabling him to break with convention and share his knowledge to others in the field. Due to the loss of Küçükerman's historic interiors, the authors rely on oral histories and archival information for their analysis. In doing so, they showcase the importance of such resources in understanding the intangible design processes that are embodied in physical construction.

David Hernández Falagán and Mohammadamin Ziaiebigdeli also draw attention to innovation in conceptual technology, using a provocative research method to understand experimental design processes that, while influential, never directly materialized physical structures. By applying computational analysis to the research documents of Alexander Klein and Cedric Price, two twentieth century architects concerned with the optimization of housing, the authors suggest that these researchers' methods exhibit characteristics of parametric design, broadening scholarship on the history of parametricism. Their analysis also demonstrates the challenging link between technology and the pursuit of societal progress. While Price and Klein had similar objectives — to provide efficient solutions for quality housing — their prioritization of different values and processes resulted in very different suggestions for innovation.

There are, however, rare examples of physical sites of the modern era that demonstrate not just the results of technological advancement but also the conceptual labor and experimentation that enabled it. Francesca Albani, Alessandro Cavallo and Carlo Dusi address the significance of such sites through their examination of the values embodied by the "Mushroom Field," where Dante Bini tested prototypes of his "Binishell" system, a type of thin shell concrete structure constructed with pneumatic formwork. This structural system's efficient construction method resulted in its prolific application across a variety of contexts and uses. In drawing readers' attention to the consequences of the Mushroom Field's abandonment, the authors

highlight the importance of recognizing and conserving sites that embody experimentation with and refinement of new architectural technologies.

Sanket Mhatre and Chaitra Saharad address the influence of new building technology on a human rather than societal level. Through a philosophical discussion on the nature of innovation and the impact of modern materials on architectural design, they emphasize the ways in which modernist spatial organization responded not only to functional requirements but also human psychological needs. Their focus on individuals' experiences of space, light, and other forms of sensory stimulation links scientific advancements in material technology, the creation of new possibilities for aesthetic expression, and the artistic drive to elevate quality of life through elegant design.

There is more work to be done to fully recognize the impact of the technological and material innovations of the modern era on the built environment. This session's collection of papers illustrates the myriad ways new technologies and materials influenced modern life and reveals a range of values, both tangible and intangible, inherent in the places discussed, beyond the typical historic and architectural. Whilst there is a reasonable body of scholarship for modern architecture as a historic phenomenon and the materials commonly used, we have a lesser understanding of technology as a conceptual process and how it shaped the use and production of materials as well as building design and construction. Archival research, oral histories, and analyses of other forms of documentation on the process and theory behind the making of places, can reveal additional values that are less well understood but need to be integrated into our approach to conservation — both in terms of what we preserve and how we do it. Better recognition of all the values of a place, including those related to process and production, provides opportunities for greater understanding of modern places and, potentially, a broader range of conservation options.

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From A. Klein to C. Price.

The parametric search for quality of life

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Parametric thinking has been used as a valuable tool in order to respond to housing necessities since the 20th century and should be considered among the innovative and experimental techniques in evidence since the very beginning of modernity. While computational design has enabled many advances in housing, a lack of design regulation has prevented the technology from reaching its full potential. This paper examines two case studies of 20th century residential architecture that illustrate the pioneering use of parametric thinking in architecture: Alexander Klein's plan analysis model and Cedric Price's research on housing through his concept of the 24-hour economic living toy. By using contemporary parametric tools to digitally reproduce the results of the architects' analog diagrams, it is possible to recognize and visualize each case's specific parameters, demonstrating an evolution in housing research throughout the two periods in which both study cases occurred. While Klein's model exhibits a focus on the efficiency of form, Price's research emphasizes the adaptability of the architecture in pursuit of optimal usability. Thus, one can assess the impact of the two architects' concepts and parameters in the field of housing design and evaluate the current balance between the tendencies towards user-centric design and rationalist principles emerged during modernity.

1. Introduction

Parametric thinking in architecture has achieved a certain degree of popularity as a mechanism for investigating new constructive forms. A sequence of queries to determine the variables of a design and a computational definition that may be used to facilitate a variety of results can be defined as parametric design. To specify a certain behavior, parametric thinking establishes quantifiable components of rule-sets. These rule-sets may be found in architecture and include program, location, exposure, views, floor to floor heights, and, in the case of this study, a floor plan analysis. Parametric models are created by connections between the factors that configure them, parametric design makes it possible to interactively adjust the ultimate output of a project.[5] [1]. Consequently, the goal of parametric design is the definition of a relationship system, and form is only a manifestation of the result. This article explores how parametric thinking—also called algorithmic thinking—was applied by researchers in residential architecture during the interwar period

and the period following World War II housing policies through analyses of two case studies: Alexander Klein and Cedric Price.

Since the beginning of the early 20th century, parametric thinking has been considered an innovative experimental technique that has been used to address challenges to new housing demands. While recent advances in computational design have permitted substantial developments, such as the form-finding process in housing, there are still a number of methods to fully exploit the technology's potential. With the help of current parametric tools, this essay investigates the works of Alexander Klein and Cedric Price, two renowned architects of the 20th century whose work illustrates the early application of parametric thinking. Klein was building mathematically and geometrically defined structures with minimum ornamentation to meet the most basic needs of the users (rationalist principles). On the other hand, Price employed a collection of techniques that focused on putting users at the center of his designs and innovations (user-centric design) to reach more qualities in the daily use of the dwellings.

This essay presents an analysis of these architects' concepts and parameters using current parametric software, facilitating an assessment of their impact and the field's current balance between user-centric design and rationalist principles [2].

2. Objectives

The proposed research has three fundamental objectives:

- First, the verification of the genealogy of parametric thought in 20th-century architectural research is evidenced through the work of especially influential key figures.
- Second, the comparison of scientific approaches to housing optimization in a Western context during two periods: the interwar period and the period following the post-World War II housing policies.
- Third, the demonstration of contemporary parametric design tools' ability to address theoretical issues beyond those of architectural forms — in this case, the quality of life provided by residential typologies.

The research engages with a specific body of literature related to design and parametric thinking. Its origin is in the work on patterns by Christopher Alexander, a pioneer in the approach to generative design models whose conceptual approach enabled a focus on algorithmic pattern registration [3]. The scope of algorithmic thinking in architecture has been extensively studied by Professor Mario Carpo, an observer of the notions of repetition, copying, and variation implicit in the design of systems and typical parametric thought [4]. Authors such as Patrick Schumacher revised the concept of parametricism and incorporated it into the contemporary debate through its relation to the

definition of a possible new style, the successor of modernism [5]. In this sense, there is an abundant discussion not only of parametric design's form production capacity but also its ideological and political implications. Finally, special attention has been paid to the previously established relationships between computational design and the authors considered as case studies, such as the dialogue between, Cedric Price and Christopher Alexander, [6], or the relevance of cybernetics in the particular case of Cedric Price [7].

3. Alexander Klein and Cedric Price

3.1. Alexander Klein

Alexander Klein (Odesa, Ukraine), 1879–New York, 1961) worked during the interwar period, a time of exploration into architectural developments including new standards and grouping models for housing typologies; new conditions for the rationalization of spatial qualities like ventilation, sunlight, and orientation; and innovation in construction related to prefabrication and modular coordination. Working in this context, Klein approached problems scientifically, minimizing the subjectivity of the Modern Movement by incorporating methods for evaluating the quality of living provided by the homes.

His great contribution—and focus of analysis in this paper—is his 1928 method for evaluating housing plans [8]. The method proposes a sequence of operations through which certain qualitative values of homes could be verified, while also quantifying comparable indicators. The ultimate objective was the determination of the minimum dwelling (*Existenzminimum*) that could serve one's needs. To achieve this, he proposed a workflow consisting of three phases:

- First, he proposes the use of a questionnaire that addresses two types of questions: dimensional and functional. Dimensional questions can be answered numerically, while functional questions—directed to aspects related to hygiene, habitability, and comfort—are answered in binary (yes or no). This questionnaire produces four metrics for evaluation: *Betteffekt* (the relationship between the built area and number of beds), *Nutzeffekt* (the relationship between useful area and built area), and *Wohneffekt* (the relationship between living spaces and bedrooms and built area), and a cumulative score of positive responses to the qualitative questions.
- Second, Klein proposes a method to standardize the scale of buildings to facilitate comparative analysis across structures, accounting for building width and depth. The various scales are represented in diagrams that show various uses of space, adapting the houses to the

determined dimensions of depth and width. This comparison enables the identification of the most favorable values for the Betteffekt coefficient, and, therefore, the determination of the most efficient dimensions for a house with a given number of beds.

- Third, he develops a graphical analysis that validates the results obtained in previous stages checking the achievement of specific qualities. These include the ordering of zones for corridors and circulation routes; concentration of free surfaces; relationships between the elements of the plan; etc.

3.2. Cedric Price

Cedric Price's (1934–London, UK 2003) approach to the housing analysis must be framed in the context of British society in the 1960s, the stage immediately after postwar housing policies. The effort to eradicate slums and increase the affordable housing stock through massive blocks and new towns had met neither the existing demand nor the expectations for quality architecture. During this time, the architecture department of the Greater London Council (GLC) was striving to incorporate industrialized production methods and new parameters for flexibility in housing, while the National Building Agency (NBA) aimed to streamline construction through standardized plans. In contrast, Price's work sought to provide home users with the flexibility to choose how to make the most out of their available living space.

His research on housing enjoyed great popularity in the early 1970s thanks to its publication in the magazine *Architectural Design* between 1970 and 1972. In his research, he developed a conceptual speculative housing model called the Short-Life House based on the indeterminate uses future occupants could make of different spaces. It evaluated a housing system model based on the diversity of choices, rather than on a definitive product. In this way, the system accounted for the autonomy of future inhabitants to decide how to optimize their home, as well as potential changes in the composition of the living unit. In his own words, "the house is no longer acceptable as a pre-set ordering mechanism for family life".

Price addressed the fundamental concepts of this proposal in three previous works, specifically the residential component of his Potteries Thinkbelt proposal; his Steel House project; and finally, his essay on housing as a 24-hour economic living toy [9], which informs this analysis's understanding of the determinant factors that shaped Price's concerns.

Apart from previous work for the Potteries Thinkbelt project, in which Price developed housing typological and constructive variables for different situations, the Steel House project is important for understanding his ideological approach to housing. The Steel House was designed as an entry for a contest sponsored by the ECSC (European Coal and Steel Community), an

entity that sought to systematically collect models for both pre-industrialized steel houses and demountable modules. In collaboration with Milles Park, Douglas Smith, and Frank Newby, Price developed a design for interior spaces that could be reconfigured in response to changing hourly needs by adjusting the positions of the walls and other features. In this way, he responded to ideas articulated in his essay "Towards a 24-Hour Economic Living Toy," which he wrote while developing the Steel House project. The essay's fundamental message is the realization that the house can no longer be considered a predefined mechanism for family life. Price questions the existence of a single predetermined family model and raises the need for the typological plan to be adaptable to its occupants' changing needs. While the Steel House schematics show a changing pattern of house occupancy capable of technically adapting to these changes, the essay approaches the problem critically, considering hypothetical patterns of use in different apartments and the need to accommodate these potential patterns through modifications. Therefore, it is again a parametric approach to design conception, in which the determining factors of the configuration of the house are related to the inhabitants' occupation habits.

Therefore, the occupational scheme applied to one of the typologies tested in the "Towards a 24-Hour Economic Living Toy" trial will be reproduced with computational means to make illustrate the parametric nature of Cedric Price's analyses of a home system.

4. Parametric translation and visual algorithm

Considering the concept of "parameter" as a catalyst element in the design process implies the identification of a series of variables whose absolute values determine a specific result. A parameter is an element of the system—one of the factors that determine the result—and its value allows the design to be quantitatively evaluated. Consequently, modification of its value results in design variations dependent on the parameter. A geometric modeling process is determined through systems expressed as equations that feature unknowns in the form of parameters. The assignment of different numerical values to these parameters results in system outputs in the form of varying models. In short, parametric modeling—and therefore parametric design—is a mathematical system that facilitates the generation of design variations and, consequently, design optimization gave a certain set of conditions [10]. Through parametric design, the shape of an object or structure is determined by the relationships defined between variables. To achieve this form, a defined and finite sequence of operations must be followed as a computational method—called an algorithm—in which the variables respond to corresponding parameters.

This research employs algorithms construction for dual purposes:

- First, to verify the parametric nature of Alexander Klein's methodology by using parametric design tools to reproduce his comparative diagram of project variations and his evaluation of the Betteffekt coefficient.
- Second, to verify the parametric nature of Cedric Price's methodology by applying a parametric algorithm to partial reproduction of his 24-hour economic living toy test scheme. Ultimately, this facilitates the identification of the character of the parameters Price used in his housing proposal.

In both cases, Grasshopper digital application is used to undertake the modeling work. This is a graphical algorithm editor built into Rhinoceros 3D modeling software. As an algorithmic modeling tool, Grasshopper allows the creation of generative shape algorithms using visual parametric nodes. This enables a direct translation of Alexander Klein's generative diagram to his graphical algorithm, obtaining a visual scheme that demonstrates the determining parameters of the form. The same approach enables the demonstration of the factors that determine the occupation of the home in the 24-hour cycle through the construction of an algorithm that recognizes the activity patterns of the inhabitants in the example by Cedric Price.

The objective of both algorithmic translations is to compare the nature of the parameters and variables involved in each case. The contrast between these variables demonstrates the evolution of housing concerns throughout the 20th century from the perspective of two architectural figures that adopted scientific perspectives in the design process.

The comparative observation of the results allows us to identify the character of the parameters that are used as variables in both cases. Alexander Klein makes use of dimensional and purely quantitative parameters. However, it should be clarified that this observation refers exclusively to the second phase of his analysis methodology, specifically the standardization of project scale, in which Klein identifies the variables that best adapt to the Betteffekt parameter. The third phase of his methodology completes this purely quantitative work, qualitatively validating the graphic selection (**Fig. 1** and **Fig. 2**).

In the case of Cedric Price, the parameters necessary for the reproduction of his thought mechanism make it necessary to use both quantitative and qualitative factors. It is necessary to incorporate the classification of occupants' characteristics, age, and activity patterns within the home and to construct a matrix determined by the time variable that demonstrates each occupant's use of the space. (**Fig. 3** and **Fig. 4**).

Using the parametric reproduction of both cases determines that in Klein's method, more quantitative parameters made his final analysis. In Price's analysis, the parameter of time and age emphasizes his approach. In one algorithm, dimensions of the house and the number of rooms have been used, but in another algorithm movement of a person inside the space has been used. By designing an algorithm in both cases, we can have multiple results and understand the comparison quickly instead of drawing each

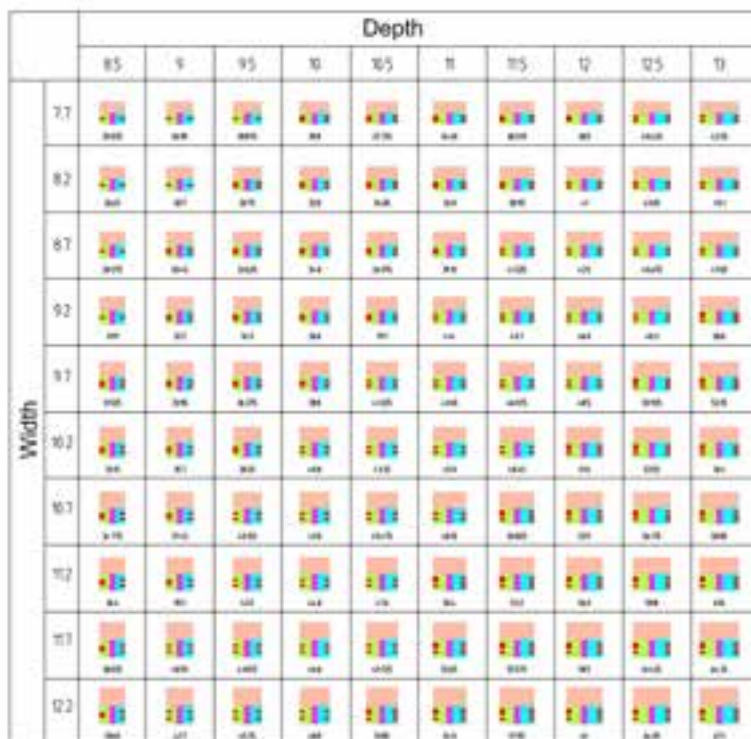


Figure 1. Method of the successive increments (Klein). © David H. Falagán, Mohammadamin Ziaiebigdeli.

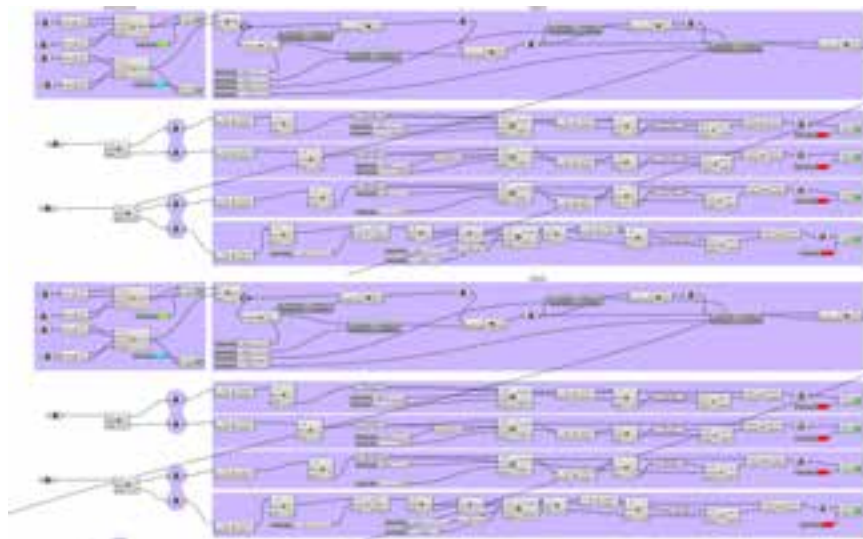


Figure 2. Algorithm for the method. © David H. Falagán, Mohammadamin Ziaiebigdeli.



Figure 3. Square grid plans (Price). © David H. Falagán, Mohammadamin Ziaiebigdeli.

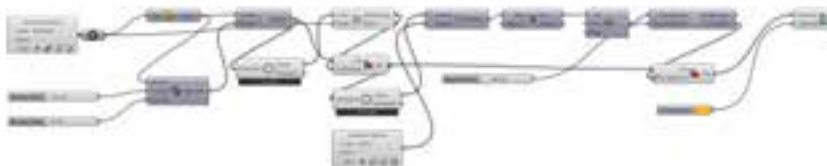


Figure 4. Algorithm for the grid. © David H. Falagán, Mohammadamin Ziaiebigdeli.

variation separately. Also, by changing an input (in both cases are floor plans), we can see their research in various forms of floor plans. This explains how parametric design significantly influences both cases while their results are distinct and how we can apply the same methodology (parametric design) to answer the housing necessities of today.

It should be mentioned that Price's work has faced criticism for its predetermination of change parameters, which anticipates predictable architectural solutions, limiting the ideal of flexibility and user freedom that Price promotes. In that sense, his proposal has become associated with neoliberal paradigms from a contemporary perspective [11]. However, his work is oriented above all around the visibility of the need for change, giving inhabitants the ability to obtain useful information and therefore facilitating decision-making in anticipation of future changes.

While Klein's work results in a baseline of dimensions and proportions against which one can evaluate usability qualities, Price's work does the reverse: It recognizes each user's patterns from the activities in the home themselves to identify which spaces require certain qualities due to their density of use and potential of currently underused spaces.

As a result, both architects were concerned with designing efficient forms, but they defined efficiency differently: Klein defined efficiency in terms of space, whereas Price defined it in terms of user demands. . The geographies of occupation described in Price's are the premise for future spatial modifications and, therefore, presuppose the capacity of the domestic space to self-configuration based on use. In other words, Price applies the same thinking parameters in a domestic context as well, in which cybernetics endowed architecture with a capacity for data collection, machine learning, and technical mobility necessary to facilitate its own formal evolution. In conclusion, the exploration of the house through parametric systematization facilitates the incorporation of the conditions of uncertainty and contingency as factors that influence design processes, demonstrating their diffuse nature [12].

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Construction Site of Prototypes of Binishells. From Innovation to Abandonment

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During nineteen fifties and sixties structural research, particularly into thin concrete shells achieved results that are still unsurpassed. New materials, techniques and methods of construction supported this typological and expressive innovation characterized by a synthesis between structure and architectural expression. All these researches adopted a highly pragmatic approach to the industrialization of construction systems and optimal use of materials. This paper intends to investigate the case of a construction site of prototypes realized between 1965 and 1967 by Dante Bini in San Cesario sul Panaro near Modena in Italy. After the construction of the first real scale prototypes of concrete thin shells in Crespellano, Pegola and Abano Terme, Dante Bini tested his patents in this place called "Mushroom Field" by Mario Salvadori. He built more than 10 concrete shells where he tested different patents of Binishells system which will be used for thousands concrete shells all over the world. During 1990s the prototype site was turned into a dump and now it is a state of serious abandonment. Even the local community has lost memory of the meanings of this place that represents the innovation and experimentation of the Binishell systems (mix designed, rebars, types of concrete, insulation, forms) and his research in the field of industrialization of the construction process with pneumatic formworks. Highlighting the values and meanings of these structures is the first step to avoid their loss and demolition.

1. Introduction

In the two decades following the Second World War, research into thin-shell concrete structures, the final result of the evolution of vaulted structures, achieved results that are perhaps still unsurpassed today. Structural, technological and constructional innovation was combined with research conducted in the typological and expressive fields to make it possible to experiment with a radical renewal of ways of living and working¹. This utopian outlook combined with an extremely pragmatic approach led to research, through the rationality of the construction process, into forms of cheaper building and ways of optimising the use of materials with a view to finding new solutions for a globalised mass society². The result of these experiments



Figure 1. Dante Bini, The Mushroom field, San Cesario sul Panaro, Italy, 1965–66, The building site, domes L, I, A
© Brochures from Binishells SpA

were lightweight concrete shells that were extremely efficient in structural terms, being used to cover large spaces with a minimal use of material³. As part of this development, Dante Bini, an Italian architect and entrepreneur, patented an innovative process for the construction of reinforced concrete domes based on pneumatic formwork, without centring or other temporary structures. In just over 10 years, more than 1500 domes were built with the Binishell system worldwide, creating housing, sports halls, schools, tourist and commercial amenities, warehouses and factories⁴. The goal of Dante Bini's research was to combine standardisation, mass production, monolithic concrete construction and typological research. His work aimed to eliminate from the construction process everything that was still artisanal, in the first place centring and temporary structures, whose cost in those years accounted for more than 50% of the budget for the whole construction work. The basic principle was to use a pneumatic membrane to raise the materials – reinforcement and concrete – from the ground, by inflating it and at the same time shaping the materials. But the fundamental innovation lay in transferring the logic of the industrial process to the construction site, defining a procedure based on a fixed sequence and a few components selected from the materials available at the time⁵. Dante Bini's work, like that of the great builders of the modern age, was a synthesis of intuition, method and entrepreneurial skills. Its beginnings were completely empirical. By combining and synthesising the structural and technological available current knowledge

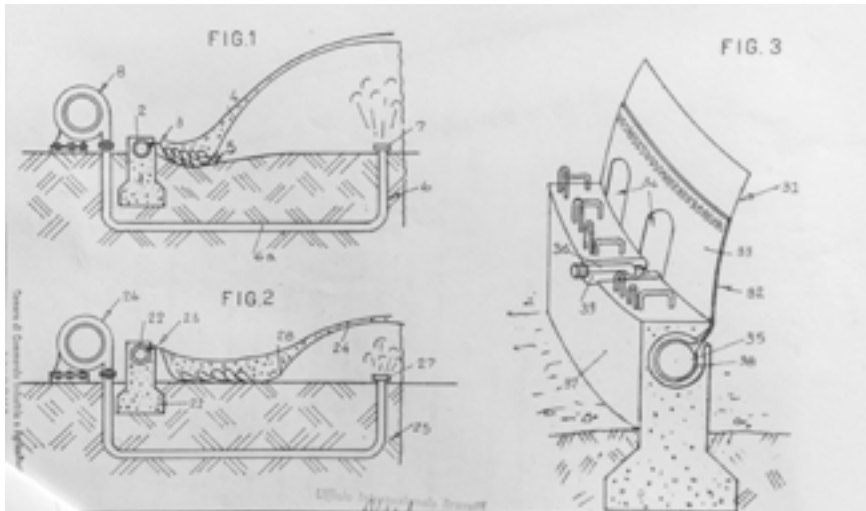


Figure 2. Dante Bini, the Mushroom field, San Cesario sul Panaro, Italy, Patent n. 827562. Anchorage system, inflating mechanism and foundation ring section detail. © Archivio Centrale dello Stato, Roma.

on reinforced concrete shells and pneumatic membranes, Bini created his first prototypes.

2. Concrete domes and pneumatic formwork

Dante Bini's experiments represented a synthesis of two areas of research: the adoption of the pneumatic membrane as reusable formwork and the invention of an expandable reinforcement mesh⁶.

As early as 1916, the benefits of using pneumatic formwork had been realised in the United States by Normand W. Mohr. For the Golden Gate Bridge architecture competition in San Francisco Bay, he glimpsed the potential of using the pneumatic system during the construction phase to reduce the time and costs of carrying out major engineering works. The first application of Mohr's insight can be found in the experiments conducted by Wallace Neff in the early '30s. These eventually developed into the work of the Airform Construction Company that Neff founded in 1945 and directed until its transformation into Pneumatic International in 1961, in which he consolidated the systematic use of his patent for pneumatic formwork applied to the construction of detached housing⁷. In particular, a constant frame of reference for Bini was the "Airform" system that Neff patented in 1944, a response to the strong demand for rapidly built low-cost housing in the United States after the slump of 1929. This patent was based on the study of the structural integrity of the concave forms of seashells and molluscs as found in nature, applied to prolific experiments on synthetic materials resistant to tension. In particular, the plastic materials used to manufacture the envelopes of airships provided

a fundamental model for reusable formwork for the construction of reinforced concrete shells⁸.

Research in the field of pneumatic formwork was continued through the 1950s with the experiments in Israel by Raphael and Haim Heifez, who made further technical and executive improvements to Wallace Neff's patent. It was then Dante Bini, with his patents in the sixties, who managed to synthesise the innovations by Wallace Neff and James H. Marsh to achieve a construction system based on "formal and structural self-definition".

3. Dante bini's italian patents and the mushroom field

In 1965, following the success of the first prototypes, built thanks to occasional construction opportunities, Dante Bini, the engineer Alberto Michelagnoli and Giorgio Cappellini founded the company Binishells S.p.a. At the same time, it became necessary to establish a development centre to conduct experiments and make improvements to the idea. They started carrying out experiments in a plot of land belonging to the family in the San Gallo quarter of San Cesario sul Panaro, in the province of Modena. Up until 1967 they produced numerous prototypes, eight of which still exist today, although in a state of abandonment. The distinctive appearance of this plot of land, as a site for the construction of experimental prototypes, led to it being dubbed the Fungiaia or Mushroom Field, evoking the form of the buildings and speed of construction⁹.

When work began in the Mushroom Field the first three patents had already been registered. The experiments started from a consolidated state of knowledge in terms of feasibility of the idea. The purpose was to solve procedural problems and systematically study issues of statics together with technical and technological factors¹⁰. It relied on testing variations on forms, geometry and dimensions. A major difference between the domes constructed at the Mushroom Field at San Cesario and those at Crespellano or Pegola near Bologna is the geometry of the built form. The first domes, built between 1963 to 1964, had a hemispherical profile, while the later prototypes were elliptical. The reason for this was the need for greater control of the form and adherence of the concrete to the membrane during and after erection. The membrane was preformed to match this geometry. The problem of keeping the concrete firmly in place during construction was a constant challenge for all the construction experiments. However, this was never made explicit in the patents, in order to maintain the control of the realization of the shells, difficult to execute without their direct advice. These methods ranged from arranging the concrete on the ground, to the variable conformation of the foundation ring (height, thickness) intended as a support base and to contain the raised casting all the way to the application of an external membrane. Research in the field, serving to register new patents, continued until the end of 1967, when construction methods and procedures achieved a mature form adapted to commercial needs. In three years, the building procedures and

components were fine-tuned in every detail. Studies of the Binishells came to an end in 1976 in Australia, but the experiments conducted at the Mushroom Field between 1965 and 1967 were the most significant phase for defining the salient points of the system. Not all the technical solutions tested on the site were validated or patented and the prototypes at San Cesario bear witness to this.

Among the test prototypes we find: domes with large apertures (Domes I, F); domes with coil-spring reinforcement (Domes C, D, F, H and domes G and E, demolished); Domes built with lightened aggregates or elements chosen for the dual function of lightening and sound absorption (Domes A, E, the latter demolished); Domes built with the use of fibre-reinforced materials and/or the application of thermal and acoustic insulation to the intrados (Domes C, D and L); a dome with the intersection of solids of revolution (Dome H); a structure on a square base (Dome B). The domes built in 1966 are those marked by the letters A, C, D, F, G (demolished between 1997 and 1998), I, L. Those built in 1967 are domes B, E (demolished after 2002) and H. Domes I and L were the first experiments built at San Cesario and correspond in part to the solutions registered in the fourth patent, no. 827562, presented on 19 April 1966¹¹. The dome F and, above all, the H, were the functional prototypes to the registration of the sixth patent, n. 853736 presented in 1968, containing the most mature definition of the inventive and constructive process experienced at that date and adopted in subsequent commercial achievements¹².

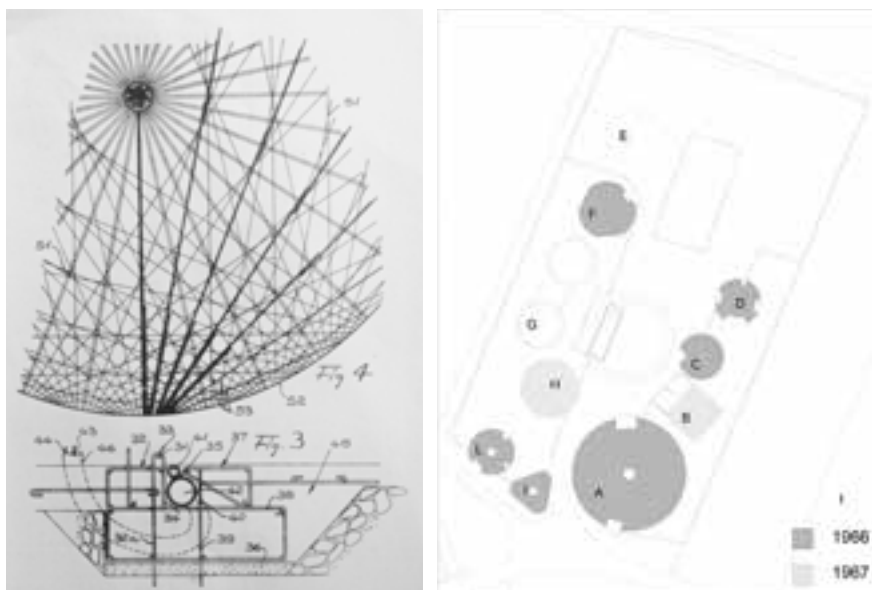


Figure 3. Dante Bini, the Mushroom field, San Cesario sul Panaro, Italy, Patent n. 853736, Expandable reinforcement design and foundation ring section detail. © Archivio Centrale dello Stato, Roma.

4. From prototype building site to scrapyard

With the end of constructional experiments at San Cesario in 1967, the Mushroom Field underwent alternating phases of use and dereliction. It was the subject of a proposed development project, never built and then the site was abandoned in the early 2000s. The ten experimental prototypes dating from 1967 were initially erected without a building permit on a family-owned plot. On 8 February 1968, Binishells S.p.a. submitted an application for retrospective planning permission for the work carried out, described as “warehouses for storage of construction and agricultural equipment, mainly temporary structures for the purpose of exhibiting the applications of the patented Binishells technology”. The application, however, applied to only five of the prototypes, namely domes A, G, H, I, L. Because of their openly experimental nature, a provisional licence was granted, provided the structures were demolished five years later, in 1973. At the end of the concession, an application was made to use the domes as warehouses and thus avoid demolishing them. It could not be approved, given the temporary validity of the previous license, and the application was refused. In 1986 a preliminary project was proposed for restructuring the site and converting it into a service area for storing heavy transport vehicles. The proposal followed the entry into force of Law no. 47/1985, Rules on the Control of Urban-Building Works, Sanctions, Recovery and Retrospective Permission for Building Works, which meant the buildings could again be given retrospective planning permission¹³.



Figure 4. Dante Bini, the Mushroom field, San Cesario sul Panaro, Italy, 2021, The abandoned site. © Alessandro Cavallo, 2021.

In 1987, the complex was leased for six years. During this time a series of alterations were made by the lessor to adapt the structures to the function of a centre for scrapping and trading in metal materials recovered from end-of-life vehicles and machinery. Since 1992, Dome I (not demolished), has been used as accommodation, with the addition of a bathroom, a kitchen and a new doorway (and equipping the structure with an electrical system and running water). In 1998 the Technical Office of Private Construction, Urban Planning and Mining Activities of the Municipality of San Cesario sul Panaro ordered the demolition of all the unauthorised building work done by the lessor and of the works lacking planning permission (domes I and L). Dome G had meanwhile been demolished by the lessor between 1997 and 1998. The site remained in use until about 2002 as a centre for the disposal and recovery of scrap metal. Today it is abandoned and overgrown with vegetation.

5. Concluding remarks

The Mushroom Field was the culmination of the constructional, architectural and typological research, but at the same time the starting point for the professional work that Dante Bini conducted by combining various ideas and bringing them to maturity by building thousands of units in various parts of the world. In the framework of research on double-curved structures with a thin shell, the contribution made by a new empirical and entrepreneurial approach outlines a decisive profile in the debate and redefines the role of the site among the significant testimonies. This construction site of abandoned prototypes tells the story of evolutionary research carried out with limited means and a lot of intuition, known only in part by the local and scientific community, which recognizes only in part the measure of the innovation it possesses. Even the local community has lost all memory of the significance of this place, which represents the innovation and experimentation of the Binishell systems (mix designed, rebars, types of concrete, insulation, forms) and Dante Bini's research into the field of industrialisation of the construction process with pneumatic formwork. Highlighting the values and meanings of these structures is the first step to prevent their loss and demolition. The Mushroom Field, to date, is in danger of being demolished. Bringing the complexity and richness of this site to the attention of the local community and the bodies in charge of conservation is the first step to defining specific strategies for their preservation and reuse that should take into account the dynamics and interests of the local community.

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Systematic Modern: Önder Küçükerman's Holistic Approach to Turkish Interiors

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The modern interior space is strikingly expressive in terms of reflecting its users' lifestyle, products, and materials of the time. However, there has been a lack of recognition of the significance of Turkish interiors and a need to record them. In the absence of surviving modern interiors, a combination of literature surveys, oral history methods, and other cultural products such as literary books, films and popular magazines are the most effective ways to obtain a comprehensive story of the day and informed this study through an analysis of the holistic works of a pioneer Turkish designer. Historically, the Turkish interior developed organically, expanding according to new requirements, being carved out from inside to out. This was different from the planned and systematic approach to designing modernist interiors which was not only a matter of a new way of space creation for designers, but also a new way of living for inhabitants. This paper focuses on one of the primary forerunners of systematic thinking regarding Turkish design; Önder Küçükerman, a Turkish modern interior architect and industrial designer academic who has highlighted the modernist rationale and the connection between academia and industry. His work has directly and indirectly shaped and set criteria regarding modern design in Turkey, which have had lasting influences. The paper is framed by four areas of practice that illustrate Küçükerman's influence and impact. First, the design process as it relates to interiors, second his process and production in relation to furniture design and distribution and third his holistic approach to design, be it interior, furniture within an architectural context'. The fourth and last area of interest is Küçükerman's particular process and practice in of documentation, from his book writing practises to his archival methods.

1. Introduction

The definition of technology at the heart of modernism includes both "the application of scientific knowledge for practical purposes" and the "machinery and equipment developed from the application of scientific knowledge."¹ The definition suggests a particular occurrence of change as well as a planned process within a systematic approach. New materials, techniques, and approaches developed within modernism and that characterise the movement cannot always be readily and directly observed in the physical

manifestations alone, however can be indirectly considered through a careful analysis of products, writings, and other evidence like oral histories that reflect these changes.²

While a *system* is defined as; “a regularly interacting or interdependent group of items forming a unified whole”; something that is *systematic* is categorised as a thought, approach, and effort relating to a system”, “methodical in procedure”, and “marked by regularity”.³ These definitions apply to Küçükerman’s modernist approach, but parts of a system do not create meaning, nor form a story.⁴ Küçükerman’s unique and systematic approach to traditional and modern aspects of both international and Turkish culture enables connections that would otherwise not exist, and it is this amalgamation and commuting between form, technique, and culture that distinguishes his approach.

2. Method

Thus, in this paper, modern Turkish interior architect and industrial designer Önder Küçükerman’s (1939–...) systematic approach to design is discussed from various aspects relying on a thorough archival⁵ and literature review and oral history work conducted with nine interviewees including Küçükerman himself, his wife, his colleagues, and students. About the introduction of the term, “tasarım” (design) in the Turkish language; Küçükerman states that, during the foundation of the industrial design profession in Turkey in 1970, there was no word coinciding with design. Previous terminology in Turkish included, “sanat” (art) and “tezyinat” (decoration), not equivalents of design. Meanings reveal particular characteristics of the act of designing. A word meaning contemplation, derived from law terminology, such as in the “contemplation of crime”, the term “tasarım” in Turkish was appropriated in the field of design, as a noun, verb and process.⁶ Thus, naming, validating, and redefining discussions in the field of design has had long standing and continued importance in standardising and systematising the field.

3. A modern systematic approach

Systematic Interiors

The first contribution comes from Küçükerman’s approach to the field of his diploma degree, interior design (as opposed to what he is known for, industrial design). This can best be observed in the Gima Supermarket project (1966, Ankara), a pioneering building in Turkey. The four-storey Gima store was situated in the first skyscraper in Ankara, and it was a store with no shop windows, as Küçükerman believed that the modernist building itself already functioned as the shop window. A model of the building was displayed in the

window, showing the rich complexity of the interior, bringing design to the forefront.

Among other examples, completed with a partnership with architect Utarit İzgi, his mentor, Gima used a modular system of planning to create spatial definition and used a spacious central staircase as a way to provide visual connection between the store's different floors.⁷ The store became an exemplar for several others that followed. As Özkaraman Şen states; "In this interior, İzgi and Küçükerman were able to introduce industrial design, furniture design, display design, as well as furnishing designs specific for the cashier area..."⁷ The same approach can be observed in his other interior designs such as, Expo and other fair spaces, İstanbul Bridge booth design (**Fig 1**), and even mobile interiors such Sümerbank mobile store concept vehicle design, and Turkish State Railways train wagon designs, which were quite different from the traditionally used organic spatial planning culture⁸.

Systematic Furniture Design

The second contribution of Küçükerman is related to the search for systematisation of furniture design, in order to achieve easier production, lightness, and assembly of parts. His furniture designs, especially the ones made for Kelebek Mobilya, a growing home furniture company in the 1970s carried the characteristics of being mass produced quickly and shipped easily and using the newest materials of the day, such as plywood, metal, and plexiglass.



Figure 1. Önder Küçükerman, İstanbul Bridge booth design, Turkey, 1981. © Önder Küçükerman and DATUMM [datumm.org] Archives

For Küçükerman, interiors have always been in constant connection with the way people live and furniture in these environments should be designed in line with changing needs and wishes of individuals.^{9,10} Küçükerman points out the importance of taking a holistic view: "I have always considered my interior architecture background as a great advantage. Without knowing about that, I could not have designed automobiles, lamps, or vases. I could not have done that. You cannot put something you know in a place you do not know."¹¹

Küçükerman's design works are representations of his systematic and holistic approach, through the design of furniture from its smallest joint details to interaction with space and users (**Fig. 2, 3**). Furniture designed for Taksim Pamuk Pharmacy and Hannover Fair Turkey Pavilion design can be seen as other examples to this holistic approach, which connects to the next aspect.

Systematic and Holistic View

Küçükerman's third contribution involves connecting the components of interior design from inside out rather than the opposite. Regardless of scale and field, and within the convention of architectural hegemony of the time in Turkey, this was a genuinely refreshing approach. Combining all requirements of culture and human behaviour was important for him to understand the intricate relations between them as he designed everything from delicate glass plates to industrial design products such as, ovens, and complete interiors in a user-centered way.



Figure 2. Önder Küçükerman, Pamuk Pharmacy, Turkey, 1968. © Önder Küçükerman and DATUMM [datumm.org] Archives



Figure 3. Önder Küçükerman, İzmir International Fair Pavillion Design, Turkey, 1966. © Önder Küçükerman and DATUMM [datumm.org] Archives



Figure 4. Önder Küçükerman: (1) 'Bahar Dalı' (Spring Branch) glass plate design, 1980, (2) Hannover Fair Turkey Pavillion gift, 2000, (3) Sphere lamp design, 1973, (4) Cube lamp design, 1974, (5) Kelebek Plywood Furniture chair with metal legs, 1970, (6) Souvenir design, 1982, Turkey. © Önder Küçükerman and DATUMM [datumm.org] Archives

As İsmail Süha Erda exemplifies;

When we were his students... we designed an executive desk and made the prototype. However, we were first required to visit the office, analyse the type of work, interview the user, and then design and produce the desk. Therefore, for the first time, I understood that furniture design would begin with the

needs of the human being, and then reflect those to design... As can be seen in his designs, he was always trying to make this connection of interior with life functions and furniture as an integrated system...¹²

Küçükerman's colleague, architect Jülide Edirne Erdiñç adds to this, discussing the "one-ness" of the product with the space it was created and even produced in.¹³ She states that Küçükerman would not segregate the product because it is continuously interacting with its environment. This interaction is reflected through historical value and cultural ingredient or value.

Systematic Documentation

The last issue refers to Küçükerman's system of documentation, from his book writing practises to his archiving methods. The significance he placed on documentation of design can be observed in his vast photographic archive¹⁴ and other documents, reflecting a collection of both modern design and traditional Turkish handcrafts. As Küçükerman's former colleague and co-author Kenan Mortan states;

"Since 1955, including his amateur years, the Professor has digitised 250000 photographs slides. These are in a small studio in his home... And, I am a witness of this; if I ask for any photograph on any topic, he will bring you that photograph in five minutes, smiling and exclaiming; "I found it! Oh, you were lucky..."¹⁵

His wife Gözen Küçükerman who is also a practising interior architect elaborates;

"He has a very unique skill in ordering and collecting. He continuously collects, and views everything with a question of "Where can I use this?"¹⁶

Küçükerman's colleague, industrial designer Suha Ural explains his unique book writing technique;

"He said, "Take as many shoe boxes as you can find and put them on your bedside. Label them according to whatever you are interested in. Whenever you find a picture or text on that topic, put it in that box. In time, that box will fill up and your book will be ready..."¹⁷

On writing, Küçükerman states;

"I felt that I must definitely write what I know... This is why I always say; "Acquire knowledge well and share this knowledge in the future".¹⁸

Having written about a wide variety of topics from shoe manufacturing to carpet factories, Küçükerman realises a connection between the systematisation of these fields and the value of this approach in all areas of design from furniture, to interiors to architecture. With over 80 books full of research, photographs, and personal drawings, he is a unique example of Turkish design historians providing documentation of critical products and materials of the day, shedding

light and expanding the understanding of modern Turkish furniture and interiors. As Küçükerman's friend well-known Turkish photographer Gültekin Çizgen compassionately mentions; "'Önder' [meaning 'leader' in Turkish] is a real leader and beacon to our science and design world. The contemporary design environment owes much to Önder. He is the one who has opened that roadmap. He is a sensitive man and a generous friend."¹⁹

4. Conclusion

The attempt here was to provide an understanding of Küçükerman's influence in Turkish modern design, interiors more specifically, although it was not possible to discuss the full extent of this effect within the limits of this paper. The focus was on systematisation in Turkish modern interiors, modern experimentalism and designs through oral history, literature and archival investigation, and the transfer of systematic approaches and effects, exemplified by Küçükerman's approach. The issue was discussed under four subheadings; interiors, furniture design, holistic design, and documentation, reflecting Küçükerman's body of work, and contributions to Turkish modern design history at the national as well as at the international scale, with possible lessons for the future for all.

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Material inventions leading to innovation in the quality of space

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Material has always been a vital element of architecture, and the two have been in dialogue across history, shaping each other's use in creative expression. However, their relationship fundamentally changed at the beginning of the 20th century when innovative spatial compositions supplanted the psychological function of ornamentation, rendering it unessential. Around this time, new materials and systems freed architecture from its previous structural constraints, facilitating new possibilities for open and otherworldly expressions of space. In this context, architects combined functional considerations with the desire to impart a sense of amazement through their design, pursuing these joint objectives through methods that challenged traditional notions of physics.

This paper explores the ways in which material and technological innovations enabled modern architecture to achieve new spatial qualities. First, it approaches this topic philosophically by examining the nature of innovation, the psychological function of architecture, and the melding of interior and exterior spaces in the twentieth century. It then addresses steel frames as a key innovation that did not immediately revolutionize stylistic expressions but eventually facilitated profound advancements in the design and experience of architectural spaces.

1. What is innovation?

Vitruvius makes an interesting distinction between a carpenter and an artist. He says that while a carpenter builds columns and beams and walls, an artist creates an even surface with vertical grooves and paints them in an endeavour to achieve exceptional beauty. This, essentially, is the gist of innovation.¹

"To discover anew means discovering something new. Translate this into architecture and you will get new architecture – real contemporary architecture. Architecture implies a constant rediscovery of constant human quality translated into space" (Smithson)
Aldo van Eyck (1962)

In music theory there is a notion, diminution; it is an embellishment breaking down the complex structures to allow the listener to fully grasp the composition. It creates a hierarchical structure that allows the steady unfolding of an underlying grid. The same can be true for any innovation,

the underlying order allows for a gradual unfolding of new stylistic patterns.²

Essential and Embellishment

Visual expression is an indispensable part of architecture. Aesthetic expressions of material and decoration are an outcome of the stylistic and fundamentally philosophical standpoint of the architect and the user respectively. While the earliest built forms were essentially providing for rudimentary function of shelter over time social and cultural expression resulted in more complex buildings. While one may see the add-ons as mental needs; a psychologist might argue that all needs are mental, functioning to ensure the survival of a species. Occupants seldom make the distinction between what is meant for protection from harsh weather, the quality of light, the sense of balance between the horizontal and the vertical, colours, shapes etc that bring the space to life.³ Architects operate across this distinction, catering to many needs that extend beyond a building's function as shelter.

Early pioneers of Modernism were greatly influenced by the classical form of architecture. While Modernists claimed that function dictated the form of their architecture, their style was not devoid of aesthetic expression. The honesty of structure and truthfulness of bare materials, as well as the ease of movement that brought a sense playfulness to the underlying grid, facilitated a new kind of 'necessary' ornamental expression during this era.



Figure 1. Lobby at the Ahmedabad Textile Industry's Research Association designed by Achyut Kanvinde.
© Credits: Sanket Mhatre

Spatial Innovation

While space has different definitions across disciplines, an architectural space can be defined by its content. Physical boundaries, contained objects, and light are especially impactful to the spatial quality of architecture. Specifically, space can be seen as the 'interior' quality contained within a structure. Collin Davis in his book *Thinking About Architecture*, has observed that the twentieth-century architect set out to completely eliminate the idea of 'interiority,' creating a novel space that was neither exterior nor interior. He quotes the example of the Barcelona Pavilion:

*"...has no doors or windows to close. Its walls of glass and polished stone, its slender chrome-clad columns and its thin flat roof plane do not so much enclose space, keeping it locked up in a box, as let it wander around freely, never having to commit itself to be either internal or external."*⁴

The boundless appearance of space evokes a sense of freedom. Interestingly, despite modern architects' experiments with boundless space, the concept was not completely new.

This phenomenon is common to many tropical countries that are home to a range of pavilions. While these detached and semi-detached open spaces feature perceivable physical boundaries, they pose no barriers to visual freedom except the necessary structural modules. However, the material innovation in the late nineteenth and the early twentieth century allowed for even more transparency, lightness, and transcendence. The material innovation created opportunity for the creation of light structure and fewer barriers.



Figure 2. The pavilion or Baradari at Nagaur Fort, Rajasthan © Credits: Chaitra Sharad



Figure 3. Barcelona Pavilion by Mies van der Rohe, © Credits: Martin D - Own work, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=4731283>

2. Structure & freedom

In the final lecture of *The Classical Language of Architecture*, historian Sir John Sommerson addresses the relationship between classical and modern architecture. Acknowledging that architectural practice changed markedly in the first half of the twentieth century, he describes an “architectural revolution” that began prior to World War I, reached its apex in the 1920s. After the World War II, he writes, “[q]uestions of form in architecture [tended] to recede, giving place to questions of technology and industrialization, planning and mass-production for social needs – questions of building rather than architecture.” This observation leads Sommerson to consider the place of the language of classical architecture in a modern world, where pragmatic concerns appear to supplant traditional design.⁵

Sommerson responds to this inquiry by introducing Abbé Marc-Antoine Laugier’s theory of the primitive hut, the hypothetical structure that represents the most “principle” of classical architecture. Sommerson writes that while such a structure, consisting of posts and beams, would have been “an expression still well within the classical language of architecture,” it more importantly illustrates the “rational” or the classical style, “the germ of architecture from which all decorative and plastic expressions were removed and which... was strictly an affair of solid geometry.”⁶ While the primitive hut is a purely hypothetical concept, the ideal of a pure essence of architecture that it conveys would become a new goal of architectural design. Sommerson traces this impulse back as far as the eighteenth century, but it was only after centuries of stylistic, technological, and material innovation that it was able to be achieved through the Modern Movement.⁷

NAME	1700 (Space Type) Legend	1750 (Reading Space) Bibliothèque Sainte-Genève	1800 (Workspaces) Glasgow Building	1850 (Industrial Space) Turbine Hall	1900 (Living space) Villa Savoye
GEOMETRY OF SPACE	Space Boundary				
CONSTRUCTION SYSTEM	Structural Skeleton				
OVERLAP OF SPACE AND STRUCTURE					
BREAKING THE GRID	Structural Skeleton Flexible Differentiated Continuous Space				

Figure 4. A comparative chart analysing space and structure (late 19th century to early 20th Century)

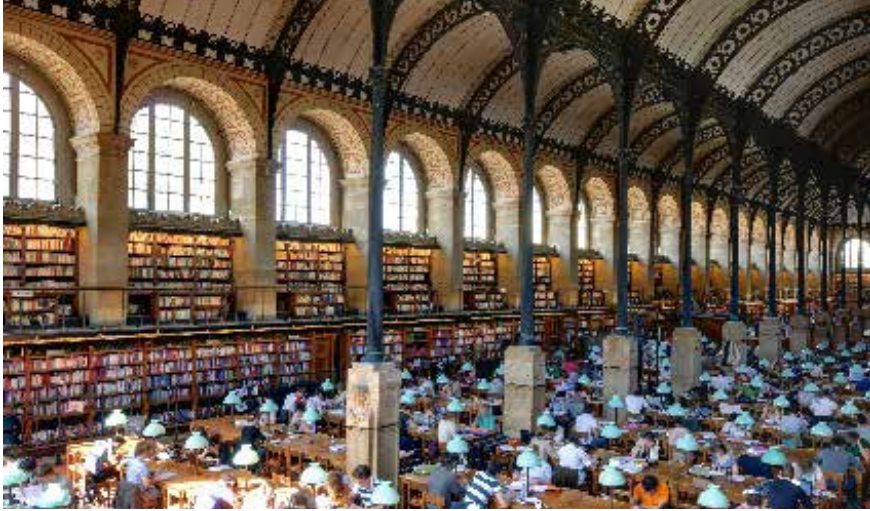


Figure 5. Reading room at Sainte Genevieve library © Credits: By Marie-Lan Nguyen – Own work, CC BY 2.0 fr, <https://commons.wikimedia.org/w/index.php?curid=15363228>



Figure 6. The facade of Sainte Genevieve library © Credits: By Jastrow – Own work, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=996629>

System of construction

The nineteenth century was a time of change, progress, and evolution. Industrialization had led to the development of new materials like glass, steel and RCC in building construction, yet many designers remained under the influence of classical styles. This led to the design of buildings with

structural systems based on the use of new materials but stylistic expressions rooted in tradition. For example, the interior space of Labrouste's Bibliothèque Sainte-Geneviève is constructed in a steel frame, a new feature for libraries as a typology. However, its sectional proportions, as well as the stone-clad façade, express graphical antiquity.

Appointed as architect and artistic advisor to the Allgemeine Elektrizitäts-Gesellschaft (A.E.G.), a German electrical company, Peter Behrens was faced with the challenge of designing an industrial building with a prestigious appearance in order to satisfy his client's expectations. The resulting Turbine Hall, constructed in 1908, features steel stanchions that represent a classical colonnade, culminating in a portico with a multangular pediment following the outline of the factory's roof rather than a classical triangular pediment.



Figure 7. AEG Turbine factory by Peter Behrens © Credits: By Doris Antony, Berlin – photo taken by Doris Antony, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=3639080>

Breaking the grid

The plan-led development of the structure took place via steel frame with its ability to withstand tensile and compressive forces in slender thicknesses. It rapidly evolved from the 1880s with an intricate steel grid system that allowed for larger scale of buildings. The three-dimensional frame consists of uniform horizontal and vertical divisions, and early steel-framed buildings conformed to this rectilinear pattern. There were attempts to break away from this monotonous form. For example, Louis Sullivan developed a programmatic solution to achieve categorically varied expressions for the façade of the Wainwright Building. It was here that he articulated for the first time his theory of functionalism. He conceptualised the lower ground floor for the building services, followed by the stores and banks on the ground floor with freedom

of access and beyond that a number floors housing offices in honey comb like compartments. All this came together with extensive mechanical equipment and rational synthesis built up in a steel frame.⁸ Neil Levine notes that the distinction of major functional areas was achieved through scale and material treatment on the façade. Sullivan understood the emotive aspects of the program and their contemporary cultural meanings and used the material expression as an exemplar of a type.⁹



Figure 8. Villa Savoye, Poissy, France, 1929 by Le Corbusier; Ground plan (left), first story (centre), atrium and roof garden (right)

NAME	1850s (Space Type) Legend	1870s (Reading Space) Bibliothèque Sainte-Genève	1900s (Workspaces) Wainwright Building	1910s (Industrial Space) Turbine Hall	1920s (Living space) Villa Savoye
DAYLIGHT	Enclosure Boundary				
SPATIAL AFFORDANCES	Space Extends Structural Units				
SPACE IDENTITIES	Physical Boundary Boundless Space				
SPATIAL INNOVATION		Spaces begin to develop an image independent of the built form	The material helps to stack spaces of earlier times on multiple levels	Structural systems permanently used in the development of large spaces	Detachment of facades from supports redefining the space boundaries

Figure 9. A comparative chart analysing innovations in space as a result of material evolution (late 19th century to early 20th Century)

In Villa Savoye, the structural grid and the layout of spaces seem completely independent of each other, thus freeing the plan. The interior, thus seem dynamic and free-flowing with ample sunlight and natural ventilation. The

slender pilotis turn into elements within the seamless interiors. Only after architects treated wall partitions separately from the structure could both the façade and the individual spaces within a building become free from the insistent grid of the new conventional system.

3. Innovating daylight

Being able to control and bring in the right amount of light into the structure has always been of utmost importance to an architect. The light that streams into the building or the sunlight that illuminates the structure from the outside casting shadows and highlighting the form are important for the perception of architecture.

The architectural form shares an intellectual relationship with the light. The architecture of Louis Kahn is by far the most versatile example of demonstrating this act. He confirms that 'Architecture comes from the making of a room; a room is not a room without natural light.'

The lightness of material and structure allowed for experimenting with the ways the light entered the built form. The architects extensively innovated and moulded the structure to contain light. Extensive structural systems and material malleability was used to the best advantage to direct and control the light within the structure.

Light as Panorama

Structural modernisation and innovation allowed for a change in the way the openings in buildings were envisioned. The lightness of the structural grid allowed for continuous frames enabling the novel ribbon window. The horizontal, almost panoramic visuals, that ribbon windows enabled changed interior spaces completely. They allowed for a seamless connection with the outside and the creation of a visual link with nature.



Figure 11. Interior overlooking the terrace, Villa Savoye
© Credits: By Netphantm - Own work, CC BY-SA 4.0,
<https://commons.wikimedia.org/w/index.php?curid=72843167>



Figure 11. Farnsworth House by Mies van der Rohe
© Credits: By Victor Grigas - Own work, CC BY-SA 3.0,
<https://commons.wikimedia.org/w/index.php?curid=42288805>

The Divine Light

Since the classical period, light has played a very important role in shaping architecture. In Pantheon or the many temples in India dedicated to the Sun, light creates a sense of sacred reverence. Today, light remains an important element within architecture, interacting with space in varying ways. Light can be contained within space, wash over space, and even create space.



Figure 12. Notre Dame du Haut by Le Corbusier. © Credits: By Valueyou., CC BY-SA 3.0, <https://en.wikipedia.org/w/index.php?curid=27947621>

This sacredness of light is used in many forms and variations by the architects of the twentieth century. For example, at Notre-Dame du Haut in Ronchamp, France, Corbusier uses the apertures in the wall to bring varying degrees of light into the church. It adds a layer of playfulness and exquisite experience, rendering a unique sculptural quality within the space.

Jørn Utzon used light to create form in the Bagsværd Church in Copenhagen, Denmark. Here the unusual, almost cloth-like, curving concrete roof camouflages the source of light making it seem like the filtered light itself is creating the varying forms.

4. Spiritual affordances

Spatial experiences engage all the senses, not just sight, and, in doing so, they affect both physical and psychological well-being. Each experience is rooted in the collective combination of the conscious and the unconscious, the analytical and the emotional. For example, the consciousness of urban space is made through the sound of vehicles, and the sensation of a forest or park

can be evoked by the sound of distant whistling wind.

There are many examples of how sensory input shape one's perception of their environment. The sound of a stream passing underneath the floor in absence of direct sight can even create the sensation of floating on water. This may be an experience shared by some visitors to Frank Lloyd Wright's Fallingwater.

Beyond the visual senses, what sensitizes a whole physical and mental receptivity is the experience of the space. In each experience, what one finds is the collective combination of the conscious and the unconscious, the analytical and the emotional. The consciousness of urban space is made by the sound of transport vehicles; the sensation of a forest or park created when a whistling wind is heard from far away; there are many examples that set human notions into the recognition mode. The sound of the stream passing underneath the floor in absence of direct sight almost creates a feeling of floating over the water. This perhaps may have been an experience of the many visiting the living



Figure 13. Bagsværd Church in Copenhagen by Jørn Utzon.
© Credits: By seier+seier - jørn utzon, bagsværd kirke - bagsvaerd church, copenhagen 1967-1976, CC BY 2.0, <https://commons.wikimedia.org/w/index.php?curid=66142230>

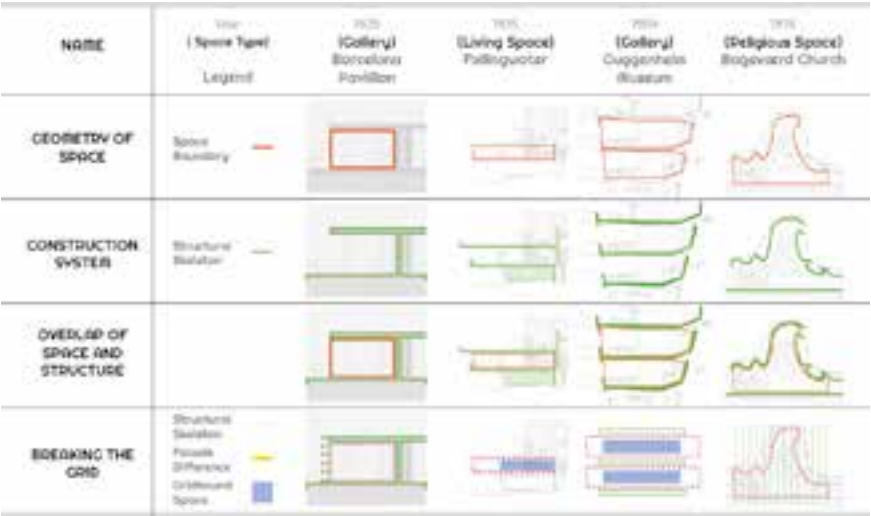


Figure 14. A comparative chart analysing space and structure (20th Century)



Figure 15. Interior spaces of Falling water by Frank Lloyd Wright. © Credits: By Lykantrop – Own work, Copyrighted free use, <https://commons.wikimedia.org/w/index.php?curid=3678244>

room of Wright's Fallingwater, which he described as "an extension of the cliff beside a mountain stream".¹⁰

A fifteen feet cantilever of this floor is partly supported on three brackets which projected up from the rock edge. A feat which led the architect achieve not just the formal language but also structural process established during the avant-garde movement, was accomplished by using reinforced concrete. The combination of this material with stone in contrast to the other structural systems of the time was intended to have a representational effect. Wright would often use a nature inspired – muscular, tactile analogy, to acknowledge the working of a cantilever, as if the way a waiter's tray would rest on his upturned fingers.

About the crucial achievement about the metaphorical value of Fallingwater's interior space is its continuation and the development of the concrete parapet that contains the fluid space within. According to Wright, they were supposed to "carry the floors" and flow into one another as if water is poured from one pot to another; invoking the phenomenological nature of the site being the waterfall itself.

"The transparency and autonomy of the open, volumetric composition relies heavily on a dynamic asymmetry and looseness in planning that Wright appears to have evolved in relation to his younger contemporaries. The bold

scale of unrelieved surfaces was new, as was the sense of almost complete dematerialisation aided by the use of paint, flat roofs, and the continuous bands of steel-sash windows. The appearance of hovering above the ground, or rather being suspended in space, almost as if on pilotis, gives Fallingwater, despite its intimate connection to the site, a pneumatic quality quite odds with the earlier sense in Wright's work of rootedness to the earth."¹¹

Similar achievements by architects during this period drew their spiritual inspiration supported by the affordances of the new construction materials.

Dynamism

Modernist architects were fascinated with creating and being able to achieve ephemeral, flexible and diversified spaces. The challenges arose due to the established norms and standard practices. Most of them that failed to overcome preceding normative practices remained static and were unsuccessful to address the temporal expectation of modern thoughts. However, there are a few examples from the modern movement that express dynamism not only conceptually but also through elegant execution. The Guggenheim Museum in New York City is such a case. Here, Wright made very efficient use of a helical movement to create a functional exhibition space. Neither the spiralling circulation nor the fractional exhibition space were new concepts. However, the integration of the two design elements moves the observer subconsciously along an encompassing three-dimensional path. The dynamic quality of the helical direction works as a continuous space within an undefined large cylindrical volume. All elements of the space, the floor, the



Figure 16. Interior spaces of Falling water by Frank Lloyd Wright. © Credits: By Lykantrop – Own work, Copyrighted free use, <https://commons.wikimedia.org/w/index.php?curid=3678244>

ceiling, and the wall produce a fluid experience while dissolving the threshold between the conventional museum rooms.

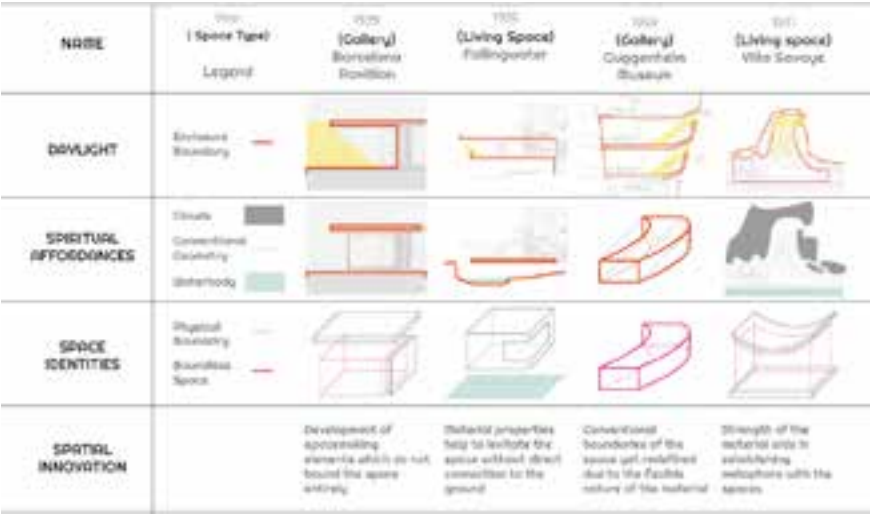


Figure 17. A comparative chart analysing innovations in space as a result of material evolution (20th Century)

5. Conclusion

The examples and observations explored through this paper illustrate how new expressions of architectural space came into being during the modernist period of late nineteenth to mid twentieth centuries, uncovering its previously unimagined potential, through the development of new materials. The relationship between materials and space changed due to the industrial revolution and later saw a metamorphosis especially in the post–war periods. Previously, materials and the spaces they created shared an analogous relationship, whereas the architecture of the early twentieth century shows the anomalous, atypical, and sometimes incongruous yet harmonious association between space and innovative materials.

Notes

1
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3
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4
Davies, Colin. 2011. Thinking about architecture | An Introduction to Architecture Theory. London: Laurence King Publishing., 68

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Sommerson, John. 1963. The Classical Language of Architecture. Cambridge: MIT Press., 40

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Levine, Neil. 2009. Modern Architecture–Representation & Reality. Chicago: Yale University Press., 170–173

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#07

Urban design
and quality of life

S21

The place of the community in the crossroads between the global and local modernization processes

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Modern architecture, which primarily established itself in Europe and the United States, was spread around the world advocating the principles of rationality and universality as the ground for a developing modern society. However, when arriving to non-Western countries, this ambition confronted itself with different cultures. The first two papers on this session asks to confront us with the question of how to reconcile nationality and local cultures remained critical throughout the processes of modernisation in non-Western nations. At the same time, in the Western world, the opportunity to rethink the urban and architectural reconstruction under ethical values after the traumatic Second World War led to a profound revision of the abstract and orthodox modernity suggested by the Johnson & Hitchcock exhibition (1932). Generally speaking, the 1960s marked a paradigm shift towards a tendency of developing architecture connected with the physical and social circumstances of each place. The majority of papers presented in this session are somehow framed at this period of history.

The first contribution is from Azar Mohammadpanah, PhD candidate at the Faculty of Architecture of the University of Porto, Portugal. In her paper, "From Abadan to Shushtar New Town: The Heritage of Company Towns in Iran", Azar puts into comparison the urban principles that gave origin to two different oil company towns in Iran: Abadan, designed by the British architect James Wilson, in the 1930s, under the influence of British Petroleum, and Shushtar New Town, government-funded, designed by the Iranian architect Kamran Diba in the 1970s. Azar uses these two examples to analyse different attitudes towards modernization of a developing country, from imported western ideas applied to a land without pre-existing infrastructures to a new town designed as an extension of Iranian tradition of inhabiting.

The second paper, by Maria Manuel Oliveira and Manuela Palmeirim from the University of Minho, Portugal, is entitled “Considering Plurality and Miscegenation: the case of Michenzani Blocks, in Zanzibar”. It presents the project to redesign Ng’ambo, a large residential area in Stone Town, Zanzibar, by the German Democratic Republic architect Hubert Scholz, in 1968, and later redefined under the direct intervention of President Karume until 2008. The project, based on western civilizational ideas, proposed high-rise housing and big avenues overlapping the pre-existing organic fabric that followed endogenous rules where colonial and western concepts interpreted “disorganization”. Families who were used to live in vernacular single-storey compound dwellings expanding horizontally according to the co-habitation needs between generations, used to share domestic activities in communal private-public spaces as courtyards, need to suddenly live in closed and independent apartments. Through an interdisciplinary approach between architecture and anthropology, this paper reveals the adaptations and transformations Swahili families made over the last 40 years to adapt their ways of living to the Michenzani blocks.

These two papers reveal the almost caricatural consequences of making cities and architecture without knowing the culture and ways of inhabiting of the populations for which they are intended: Abadan in Iran looking like “a pretty sleepy suburb in post-war Florida, the idyllic scenery only complicated by the refinery smoking in the background”, while in Zanzibar, people who were used to live on the basis of community relationships enhanced by outdoor spaces of sociability, in extension with the dwellings, were put between four walls, in apartments far from the ground. Even these actions have often had political and “civilizational” intentions, society has revealed its cultural resilience, most of the times, as the metamorphosis that took place in the Michenzani blocks exemplifies.

The third contribution, by José António Bandeirinha, Gonçalo Canto Moniz, Luís Miguel Correia and Vítor Leite from the University of Coimbra, Portugal, and Paulo Fonseca de Campos from the College of São Paulo University, Brazil, explores participatory housing practices. Entitled “From Siza and Erskine to URBiNAT: participatory architectural design and the European social housing co-production”, this paper explores the dialogue practises between technicians (architects and sociologists), the citizens and the institutions regulating the housing processes in two projects: São Vitor neighbourhood, in Porto, designed by Álvaro Siza in 1975, and Byker Wall, Newcastle, designed by Ralph Erskine in 1968. The first was conducted within the SAAL operations, a local ambulatory technical support service created in Portugal after the Revolution to provide support to the hundreds of thousands of people who were living in dwellings with no basic standards of comfort. The second emerged from a Newcastle policy of massive replacement of its old Victorian terraced houses. Both examples reveal how the community consultation enlightened the project decisions. Finally, this paper explains how the participatory project methods of these two cases are informing the EU

Horizon 2020–funded research project (2018–2023) called URBiNAT (Healthy Corridors as Drivers of Social Housing Neighbourhoods) that is involving communities in the processes of regenerating the public spaces of social modern housing neighbourhoods.

The fourth paper, by Lidwine Spoormans, Wessel de Jonge, Darinka Czischke and Ana Pereira Roders, from Delft University of Technology, compares five examples of midrise residential neighbourhoods constructed in The Netherlands in the 1970s–1980s, focusing in building typology and visual language: Bergenbuurt, in Capelle aan den IJssel, designed by Benno Stegeman in 1978; Woondekken, in Zoetermeer, designed by T. Alberts in 1975; the design of Atelier Pro and others for Bijlmerplein in Bijlmermeer built in 1987; the project of ABBT for a building in Almere–Haven completed in 1979 and the project of Rijnboutt en Soeters for the Hoptille neighbourhood in Bijlmermeer completed in 1981. These projects were developed within an experimental housing programme launched in 1968 as a reaction to the broad dissatisfaction with the monotony and uniformity of the post-war housing reconstruction programmes. The goal was to create environments able to represent the growing range of personal situations and preferences.

Finally, the last paper, by Jaime J. Ferrer Forés, from Universitat Politècnica de Catalunya, Spain, titled “Erik Gunnar Asplund. Landscape and civic identity”, presents the work of the Swedish architect Erik Asplund as a chronological movement moving from the modern avant-garde to a modernity step by step more closely tied to the vernacular, cultural identity and social values of each place.

The five cases presented in this session, even presenting distant situations from each other, geographically and culturally, critically share the distance or approximation of modern architecture to the target community which, especially in housing, is of crucial importance for the development of a sustainable habitat capable of withstanding the challenges of a world in constant transformation. I hope this session may contribute for valuing the dialogue between architects and communities in the construction of our shared world.

Considering Plurality and Miscegenation: the case of Michenzani Blocks, in Zanzibar

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Ng'ambo was, until the mid-19th Century, an agricultural area adjacent to Stone Town, Zanzibar. With the city's development, Ng'ambo became progressively residential, revealing typologies of urban, residential and constructive settlements typical of the Swahili culture. Its apparent 'disorganization' made this territory a fertile field for international urban planning models, and Ng'ambo became a laboratory for a political program aimed at a post-colonial and socialist city. Within the scope of international collaboration, plans and projects designed in the German Democratic Republic (GDR) brought an interventionist vision disconnected from the local culture, a condition considered indispensable to the ambitious modernization. Living standards would be increased through an urban organization based on western logic, and apartments would replace Swahili dwellings. Under the direct intervention of President Karume, Michenzani underwent the heaviest intervention through the construction of apartment blocks bordering extensive avenues that overlapped the pre-existing organic fabric. Over time Zanzibari families redesigned the domestic space, adapting it through various occupancy strategies. Thus, the Michenzani neighbourhood has incorporated activities that enrich its mono-functional fabric, often recreating public-private relations and sociability areas. Yet, despite this apparent socio-urban acceptance, the buildings function as extensive dividing walls. It seems necessary, along with the qualification of the surrounding space, to find strategies that *perforate* these barriers, transforming Michenzani "Trains" into a catalytic and porous membrane.

1. Ng'ambo, a Swahili city

Stone Town is the historical centre of the capital of Zanzibar. Together with the largely residential area named Ng'ambo, it forms one of the cities that most expressively represents the Swahili urban universe, which spreads along the East African coast between Mogadishu and Sofala. Materialising a process of confluence and miscegenation of Bantu, Shirazi, Arab and Indian cultures, this cosmopolitan city was the main *entrepôt* of an important trade route of the Indian Ocean. Having developed from a fishing village of the 12th century, it underwent significant growth in the 19th century, thanks to the rising productive and commercial development of the island and the establishment of the Omani capital there in 1841. Zanzibar was a British protectorate (1890-1963) when it became independent. The Zanzibar Revolution in 1964 overthrew the sultan, and



Figure 1. Aerial photography of Ng'ambo. © Maria Manuel Oliveira, 2019.

the city witnessed the arrival of a strong contingent of people from rural areas and a very significant increase in its population.

Ng'ambo ("The Other Side", in Kiswahili) was, until the mid-19th century, an area of agricultural plantations, mainly of spices, added to Stone Town.¹ In 1858, on his approach to the island, Richard Francis Burton wrote: "We distinctly felt a heavy spicy perfume (...). The night breeze from the Island is cool and heavy with clove perfume".² As the city developed, Ng'ambo became progressively residential, and at the turn of the 20th century covered an area larger than Stone Town itself. Yet, whereas the latter was home to primarily Arab, Indian and European citizens in an urban fabric defined by narrow and winding streets, "The Other Side" mainly welcomed the African working population, with a strong presence of descendants of former slaves.³

Separated from Stone Town by a creek that ebbed and flowed with the tides and crossed by a single bridge, Ng'ambo was characterised by types of urban, housing and constructive settlements typical of the Swahili culture. The buildings were organically implanted along sand paths, frequently lined with palm trees. In the 19th century, it was described as a more organized and cleaner area than the overcrowded Stone Town.⁴ With a configuration that remains to this day, the houses, rectangular and single-storied, were built using local materials, in mud or with walls in mango wood structure filled with coral fragments connected by a mortar of lime or earth, and a hipped roof covered with tiles of woven palm leaves (*makuti*). Over time, the wall material was progressively replaced by cement blocks and the *makuti* by corrugated metal roof sheets, giving rise to the Swahili dwelling that we mostly find today.

The building conforms to the Swahili extended family. Inside the house, the bedrooms are located along a corridor connecting the entrance door to a small back walled-in courtyard. Families mainly live in this courtyard, where outhouses facilities are located: cooking and a large part of the daily life of women and children takes place there. The front of the dwelling overlooks the street, and traditionally it houses a covered area where there is a *baraza*, a bench always present in contact with the public space and a significant locus of social life in the Swahili community.

The organic urban tissue does not obey geometric plans but endogenous rules that guide its distribution. The progressive densification of Ng'ambo and its apparent "disorganization" – how it was interpreted from colonial and western concepts – made this territory vulnerable to the imposition of international models in an attempt to eradicate previous vestiges that were considered stigmatizing.

During the 20th century, two urban plans sought to redesign Ng'ambo, one of colonial origin ('Zanzibar town planning scheme', 1958, by Kendall–Mill⁵) and the other after independence, in 1968, with a strong post-colonial ideological assumption. If the first tried to regulate the urban fabric without necessarily destroying its spatial matrix, the second envisaged the total suppression of autochthonous urbanism.

With the Revolution of 1964, Zanzibar adopted a policy of approximation to socialist countries, finding the German Democratic Republic its most relevant partner in urban and architectural terms. This collaboration materialised in the archipelago through a housing programme tested in several neighbourhood urban plans that integrate stylistic and technical innovations advocated by the modern international doctrine. In this perspective, intentionally disconnected from the local circumstance, living standards would be enhanced with a spatial organization based on austere geometry, where apartment buildings replace Swahili dwellings. Even if only small parts of the plans were implemented, Ng'ambo, Karume's vision for a Zanzibar New Town epicentre, became a laboratory for a political programme aiming at building a socialist city that would reflect post-colonial African society. Urbanism and Modern architecture emerge here as instruments of the Revolution.

2. The revolutionary approach to the *New city*

The 1968 master plan, designed by the GDR architect Hubert Scholz, was aimed at creating a new city that would reflect a civilisational advance, endowing the whole area of Ng'ambo with a spatial structure rationalised under western logic, which included non-existent infrastructure networks (namely water supply, sewage, electricity and street lighting).

This standardised urban approach had a substantial impact on the family sphere by introducing a radically different frame for everyday life and some



Figure 2. Michenzani blocks insertion over the existing urban fabric (© superimposed on an extract from ca. 1927 Zanzibar Town survey and GoogleEarth 2022; Maria Manuel Oliveira).

absolute novelties in Zanzibar: multifamily housing, serviced by a system of collective access points, representing “territorial” management unknown to families until then; high-rise housing, preventing direct extension to the outside, and imposing that all family life takes place indoors; inappropriate layout of the internal space for the extended family; and detachment from everyday life from the public space, in the distance marked by the lack of elevators. But also new construction technologies were introduced, bringing to Zanzibar, where until then building was almost exclusively based on insular products, materials such as reinforced concrete and cementitious mortars with direct consequences in the reduction of the house’s thermal comfort and in the local constructing ecosystem.

During a process that lasted from 1964 to 2008, the Michenzani neighbourhood, whose design was redefined under the direct intervention of President Karume, represents the most extreme expression of this strategy. Contrary to the proposals of the GDR architects (that recommended 3 or 4 floors, with a maximal length of 70 and 110 metres), Karume radicalized the urban transformation programme by imposing the construction of apartment blocks 300m in length with six to eight floors.⁶ Approximately 1102 apartments were distributed across ten blocks, bordering the two grand perpendicular avenues, *cardo* and *decumanus* of the “New City”, which overlapped the pre-existing organic fabric, cutting across it without contemplation.

Michenzani “trains”, as vertical housing designed for Western family and domestic structures, poses various challenges to the Swahili/Zanzibari extended family organization, which found its ideal space mould in the vernacular single-storey compound dwellings. These indigenous houses, which constitute the dominant urban tissue of Ng’ambo, spread horizontally, allowing for the co-habitation of multiple generations who share domestic activities and communal spaces. Zanzibari extended family units are

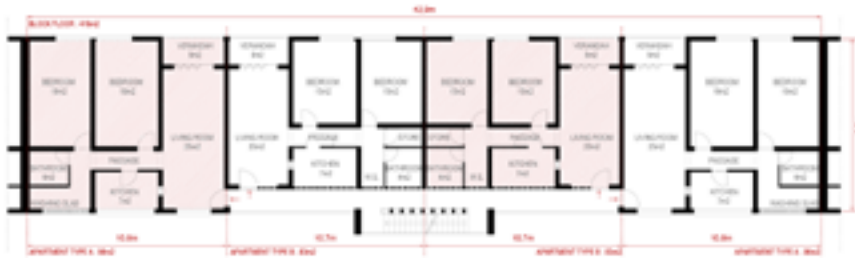


Figure 3. Plans of 3 room apartments (from the original plan, May 1970). © Maria Manuel Oliveira, 2022.

in constant expansion and find a mesh of great ductility in this type of architecture. A tension thus arises between this compound culture and the vertical and somehow static architecture of the so-called “German blocks”.

In the 1990s, Garth Myers analysed the adaptations and transformations which had occurred in two decades of inhabitancy in the Michenzani blocks highlighting the inappropriateness of its space to fit local families and their domestic culture (scarcity of bedrooms, no courtyard for cooking and communal activities, no neighbourliness and conviviality with relatives, among other reasons). Such an uncooperative architectural frame led residents to use it most commonly for investment, for families of unusual composition such as childless or newlywed couples, bachelors, housing for co-wives or mistresses and, on the lower floors where transport is more accessible, for older people.⁷ This aspect of Myers’s work has been considerably extended and complexified by de Annelies de Nijs’ comprehensive case study of the processes underlying the occupancy strategies adopted by the dwellers of the Michenzani buildings, then counting around 40 years of existence. Through a series of interviews, she shows how this apparently static and awkward frame of two or three-bedroom flats (as well as its surrounding grounds) was re-conceptualized, re-worked and re-read by its inhabitants to become a dynamic lived-in space and architecture.⁸

De Nijs recognises three main dwelling strategies adopted by families who rented or received these flats as a resettlement compensation trying to deal with the inaptness of this new space to suit the pattern of their lifestyle: (1) The subdividing of rooms to create sufficient bedrooms for the size of the family, in this way ensuring privacy as well as gender and generational separation; (2) The “stretching” of one single-family by various flat units in the same or different blocks using one of the flats as a space of sociability and shared domestic activities and the remaining flats as dormitories. This solution replicates the vernacular dwelling pattern but in a vertical setting. Expansion of the family can also stretch out to the neighbouring low-rise tissue. In both these inhabiting strategies, the traditional courtyard-kitchen ensemble is replaced by the balcony, the staircase, the corridor or the outside area in the interface between the blocks and the single-storey urban fabric that coexists behind them. A third solution for the occupancy of the blocks, thoroughly

described by Myers before, is the usage of the flats to install families of “odd” composition, students, etc.

Further transformations to this given frame include the use of rooftops for clothes-drying, children playing and some illicit activities. Michenzani blocks have also incorporated commercial activities and informal businesses (namely shops, hairdressers and beauty salons, rental of rooms, classrooms, and prostitution) that enrich its mono-functional structure. In the surrounding area or at the bottom of the stairwells, following a prominent local feature of Zanzibari architecture, meeting and sociability benched spaces called *barazas* were created. Some gardens and kiosk shops thrived in the border area linking the Michenzani blocks to the low-rise vernacular fabric.

While it becomes clear from de Nijs’ interviews how this new and unbecoming architectural mould is conceptually re-shaped and converted to shelter a different lifestyle, a lot less is said, and little data is gathered to elucidate the ways in which Michenzani blocks can induce or contribute to the transformation of Swahili family and domestic structures or affect the logic of public-private relations which characterise this Muslim society. Additional interviews would have to be conducted targeting precisely this other transformational effect. We are indeed facing a biunivocal movement in which both inhabitants and architectural frames shape one another, the latter having no doubt repercussions on the processes of change occurring in the “traditional” family and domestic organization in Zanzibar.

A solution to soothe the changing effects of this architecture upon local lifestyles is, in our view, to increase the porosity between the two sorts of urban tissue which live side by side at Michenzani. One way of achieving this would be issuing housing policies that would grant priority of rental to people who had already relatives living in the same or neighbouring blocks (and could thus reproduce the logic of communal domestic organization in a vertical axis) or had family links in the low-rise compound fabric adjacent to them (horizontal porosity). This strategy would also benefit from intensifying the relations of neighbourhood and neighbourliness (*ujirani*), already pointed out as crucial in local ethos and indigenous street planning by Myers.⁹ By increasing the overlapping and interaction between the two kinds of urban tissue, compound culture could be more easily recreated and maintained, contributing to an emic approach to urbanisation based on the “local frame of awareness”.¹⁰

3. *Embodying Michenzani*

More than 50 years after its construction began, and despite its spatial newness, Michenzani is already integrated into the city’s life, also incorporating the huge avenues that the blocks shaped. Throughout the week, the heavy and noisy car traffic dominates the ambience, the generic daily life occurring mainly among the pre-existing Ng’ambo’s fabric. But at the weekends and



Figure 4. Cross-section of Michenzani blocks with photos (2019) montage © Maria Manuel Oliveira, 2022.

on holidays, the avenues become a wide-ranging stage for markets and celebrations, life taking over the design in a rich and complex process of reverse acculturation.

However, despite this apparent socio-urban acceptance, the buildings function as extensive dividing walls, hindering the articulation that should take place within the city that continues vibrant around it. Therefore, it seems necessary, along with the favouring of the rental policies suggested above, to increase the spatial flexibility and diversification of the use of apartments in order to find strategies that pierce these barriers, amplifying their tiny crossing points. This evolution should occur through new tears and uses that will transform the Michenzani “trains” into a powerful catalytic and porous membrane.

Contact with the ground emerges here as a fundamental key to this hypothesis by reconnecting structuring pedestrian links that were lost with the autistic establishment of the blocks; qualifying transitional and interchanging areas; recognizing the spaces adjacent to the buildings as spaces of conviviality and potential meeting places; stimulating new urban toponymies, such as those of the various *maskani* (popular meeting places for men) who since have emerged;¹¹ and encouraging the resurgence of public spaces for women, so vehemently requested by the organization Reclaim Women’s Space,¹² thus supporting female empowerment.

Directly related to lifestyles that are progressively acculturating as globalisation and tourism become increasingly influential in Zanzibari society, new questions arise whose answers can only attain their full meaning if constructed in active interaction with the Michenzani blocks dwellers, as well as their surrounding inhabitants.

In this tense and even paradoxical situation, but undoubtedly in the process of metabolization by the citizens, one wonders how the modernist architectural

ideas could absorb the local texture, with both morphologies keeping their best characteristics? How to integrate this plurality, amplifying and exploring the urban potential that the Michenzani neighbourhood represents? How can it consider and promote contemporary urban ideals based on social and environmental justice?

Apparently, and in some way contrary to the expectations that were had until recently, the rigidity of the modernist blocks is responsive to readjustments in the face of the various family ecologies that cohabit in Zanzibari society and are available to contamination by the intense sociability, shapes and colours that the development of Swahili culture maintains. To foster such a metamorphosis will be imperative to generate alliances and collaboration between political determination, social will and architectural design.

In this process, it is believed that rescuing the ground, redesigning it, recovering and creating spatial transversal continuities – that furthermore have always been invoked by the Modern Movement – would immediately be a strong stimulus in this urban colonisation movement, driving a virtuous cycle that will transform the alien body of the Michenzani set into a powerful device in favour of a renewed urban landscape for Ng'ambo, as the New Zanzibar Town City Centre.

Notes

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- 3 Garth Myers, "Making the Socialist City of Zanzibar", *Geographical Review* 84, n.4, 1994, 451–64.
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- 8 Annelies de Nijs, "Lessons from The Other Side. Post-colonial Ideals and Everyday Inhabitation in the Michenzani Blocks, Zanzibar". *Planum, the Journal of Urbanism* 26, n.1 (2013):1–15. Also, Viviana d'Auria, A. de Nijs, "Crossover modernisms: life and afterlife in Michenzani, Zanzibar", in *Cities To Be Tamed? Spatial Investigations Across the Urban South*, eds. Francesco Chiodelli, et al. (Cambridge: Cambridge Scholars Publishing, 2013), 38–65.
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Exploring visual language and typologies in Dutch midrise residential neighbourhoods

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Dutch residential neighbourhoods built after 1965 (Post 65) are characterised by a varied range of housing and living environments. As a reaction to the post-war Reconstruction period, architects and urban designers focussed on quality of life and identification with the living environment. Midrise housing was the compromise between high-rise and low-rise, combining quality and efficiency. Today, Post 65 residential neighbourhoods are not recognised as valuable architecture or cultural heritage. Although academic interest in Post 65 architecture is increasing, attributes of midrise typologies are understudied. Research is necessary to document and assess them, to inform stakeholders and contribute to decision making in renovation processes. The central question in this paper is: What are the urban and architectural attributes (tangible and intangible) of Dutch midrise residential neighbourhoods built after 1965? The paper discusses a comparative analysis of five residential midrise examples, focussing on building typology and visual language. The research applied mixed methods and integrates fieldwork, archival and literature research and uses 2D-matrices, juxtaposing urban and architectural attributes. Results show a variety in terms of typology and use of visual language. Two spatial organisational concepts are identified. A 'snake' shapes the urban space, and creates a front. It refers to a formal urban model in which the urban form is the starting point and the development of the building block a means to that end. A 'mesh' arranges housing units and urban space in a sprawling structure, in which a human scale living environment is the starting point. Regarding visual language, the projects show referencing to various architectural movements. This pluralism applies to the 'collection' of Post 65 midrise complexes but also to single neighbourhoods. The urban and architectural attributes are diverse, with diversity as the common denominator. Following Jencks' definitions, the Post 65 midrise neighbourhoods can therefore be regarded as Post-Modern.

1. Post 65 midrise neighbourhoods

Housing construction in the Netherlands built after 1965 (Post 65) is characterised by a turn away from the urban planning and architecture of the post-war Reconstruction period. The housing shortage had become less

acute and rising prosperity allowed for more attention to quality rather than mere quantity. In 1968, the Minister of Housing and Spatial Planning set up an experimental housing programme. Its aim was to promote innovations that would contribute to a better quality of life through a varied range of housing and living environments that reflected the increasing diversity in personal circumstances and preferences. This development was sparked by a broad dissatisfaction with the monotony and uniformity of housing construction in the Reconstruction period [1].

Post 65 Architectural Movements

Already in 1959, the new board of Forum-magazine accused architects and planners of making The Netherlands 'unliveable' and called for a new architecture that would create 'liveable cities' and coherence between people and things. It was a reaction to CIAM Functionalism, in which the separation between living, working, recreation and traffic was an important starting point [2]. The new movement, in the Netherlands led by protagonists Van Eyck and Hertzberger, was related to Team X and later termed Structuralism. Structuralism proposed inclusive and social space and is recognised by open structures, composition of small units and mixed functions [3]. By the end of the 1970s, new frontrunners like Weeber protested against the small-scale participatory architecture of Structuralism. Weeber advocated a rational and formal urban model with clear hierarchy. This Neo-Rationalism was based on modernist traditions and restored the distinction between urbanism and architecture [4]. In the same period Post-Modernism was internationally propagated by Venturi and Jencks, assuming that architecture is a language of symbols and codes communicating to its users [5]. Post-Modernism uses 'double coding' in which links are established between the present and the past, between new and old techniques, between the elite and the popular [6]. The general picture is that 20th century Dutch architecture is strongly rooted in Modernism, explaining why Post-Modernism and Classicism, did not catch on in the Netherlands. However, it is stated that this refers only to the stylistic tradition of form and not to the ideological tradition of Modernism [Van Dijk in: 7]. Soeters, who is often called the only Dutch Post-Modern architect, refutes the claim that the Netherlands has no postmodern architecture. He states that discussing Post-Modernism, actually Post-Modern Classicism is meant. "In the 1980s, there was a Post-Modern condition to which many were trying to respond. (...) I did play a more explicit role in the postmodern circus that experimented with forms that had a kind of cliché-like meaning [Soeters in: 8].

Midrise Alternatives

Almost a third of the Dutch housing stock dates from 1965–1985 [9]. Although low-rise is the dominant urban typology in numbers (69%) [10], midrise residential typologies embody an essential change in ideology. In 1976, an

article announced the revival of midrise typology in alternative forms. Its title “Stacked low-rise buildings: multi-family houses, but cosy” expressed the idealisation of low-rise and the resistance to stacked housing. The development of new midrise models is explained from a re-valuation of the urban and natural environment, decrease in the quantitative housing shortage, and increase in land costs and land use. The objectives include an increase in density, commercial and community facilities, public transport, a mix of living and working, and opportunities for social contact [11]. In the Post 65 period, various forms of midrise have developed, which can be found in central areas of suburban new towns and satellite towns, as well as in renewal areas of 19th century inner cities.

Research approach

Today, Post 65 residential neighbourhoods are not yet recognised as valuable architecture or cultural heritage. In recent years, academic interest in Post 65 architecture is increasing and heritage institutes have started its exploration. The Dutch Cultural Heritage Agency has defined 1965–1990 as the Post 65 period and identifies the urgency for its research from the upcoming energy transition and demographic changes [12]. Studies on low-rise ‘woonerf’ neighbourhoods have been published [13, 14]. However, not many evaluations of midrise typologies are available and especially their architectural attributes are understudied. Research is necessary to document and assess them, to inform stakeholders and contribute to decision making in renovation processes.

The central question in this paper is: What are the urban and architectural attributes of Dutch midrise residential neighbourhoods built after 1965? This paper presents and discusses the results of a comparative analysis of residential midrise examples, to reveal the characteristics, ideologies and influences. The emphasis in this paper is on identifying building typologies and visual language. To this end, the objectives of midrise alternatives and the Post 65 architectural movements described in the introduction serve as an analytical framework.

This research applied mixed methods derived from the 1976 exhibition ‘Signs of Life: Symbols of the American City’ by Venturi and Scott Brown. The method for data collection integrates fieldwork, archival and literature research. Data visualisation uses 2D-matrices, juxtaposing urban and architectural elements. First, the cases will be described, highlighting their main characteristics and design motives. Secondly, the cases will be compared on building type and visual language. Finally, analysis results are related to the theory and the research question.

2. A range of midrise typologies

The examples share functional and social objectives and present midrise as model for urban and architectural quality as promoted by the architectural

movements. But taking a closer look at each neighbourhood and midrise complex, one can observe differences in urban structure, building type, articulation of form, façade composition and use of elements and materials. These attributes are illustrated in this paper by discussing and comparing five case studies (Fig. 1)



Figure 1. Matrix of urban and architectural physical attributes.

De Bergen

Against the backdrop of high-rise blocks, this midrise complex 'De Bergen' in new town Capelle aan den IJssel, was designed by the architect Benno Stegeman and completed in 1978. It comprises 878 dwellings in 65 residential towers of 3 or 4 layers on an elevated deck. Centrally placed lifts in every tower connect the ground floor parking and pedestrian zone to the dwellings of a variety of sizes and shapes. De Bergen exemplifies a design strategy to create a larger whole by putting together small parts. The external space and built form of the complex is derived from linking geometric shapes [15], which is typical for Structuralism. The façades and balconies echo the octagonal design of the floorplan and are made of reddish-brown brickwork with a serration at the corners as ornament. The craftsman-like appearance and the plasticity of the brick facades are reminiscent of the Amsterdam School. The architect aimed for recognisability and an environment where residents can feel 'whole', in contrast to flat façades with identical doors assuming that people are all the same [16].

Woondekken

Also in new town Zoetermeer, the rejection of high-rise gave way to a testing ground for new forms of living. The project Woondekken, designed by architect Alberts and completed in 1975, applies the principle of dual land use. It contains 239 dwellings in three types. Split-level units are situated on the edges of semi-underground car parks, bordering both the deck and the ground. In the central area on top of the deck are smaller patio houses. Surrounding these complexes, regular terraced housing has been arranged [17]. The dual land use with parking under the residential deck was intended to achieve a high housing density at low cost. The architect strives for mixture of urban and rural character by stony, busy narrow streets on the deck with broad, peaceful green areas on the outer edges. Craftmanship, exposed masonry, irregularly staggered façades, large and small sloping roof surfaces are applied to create a differentiation of spaces and to give each house its own identity [18].

Bijlmerplein

The architectural design by Atelier Pro includes 137 dwellings, 8.000 m² of retail space, a district library (today a supermarket), 5.500 m² office space and a parking garage. The buildings were completed in 1987 as part of the larger entity 'Amsterdamse Poort' which is the main shopping area of satellite town Bijlmermeer, now called Amsterdam Zuidoost [19]. Its urban designers Van den Broek and Bakema aimed at an 'urban' spatial experience, meaning that it should correspond more to traditional city centres than to the CIAM based design of the high-rise part of Bijlmermeer. The offices along the edges of the scheme are located on elevated highways that give access to elevated courtyards where the entrances to the housing units are located. Within the urban fabric, there is a varied alternation of pedestrian streets and squares

with buildings up to five storeys with dwellings on a plinth of shops [20]. The blocks have flat roofs and feature white brick facades with white–yellow patterns. The facades are characterised by a strong relief due to canopies, balconies and alcoves of different shapes.

Centrum Almere–Haven

Almere–Haven was the first neighbourhood of new town Almere, built on reclaimed land. Almere–Haven was designed as a suburban area with mostly low–rise neighbourhoods. The urban plan for its centre refers to the traditional Dutch city with characteristic urban attributes like canals, canal houses and narrow street profiles. The architecture firm ABBT designed a main building block that was completed in 1979 and contains 125 dwelling units of different sizes on a plinth with 40 shops and office spaces. This mixed–use model was based on old city centres. The volumes are shifted in position and vary in height, each being articulated by a gabled roof [21]. The front of the block borders on a pedestrian area and the block encloses a car park and shipping area at the back. The facades feature red brick with white ornaments and the entrances to the dwellings are indicated by concrete arches. By carefully constructing a continuous ‘wall’ that bends a few times, following the canal profile and forming the main square, the architects aimed at providing guidance in the multitude of spatial forms and accents [22].

Hoptille

The Hoptille neighbourhood in Bijlmermeer was completed in 1981 and has 333 homes of various types, ranging from studios and two–room flats accessed from an internal corridor to five–room duplexes at ground floor level. The architects Rijnboutt en Soeters were allowed to introduce a novel urban typology that was presented as a ‘correction’ to the prevailing high–rise. Hoptille not only represented a different type of building, but created a new image for the Bijlmermeer [20]. The ten–storey building height prescribed in the zoning plan was divided, at the same density, into a 300 m long wall of five storeys with small–scale low–rise buildings sheltered behind it. Also architecturally, Hoptille is a reaction to the high–rise buildings. Based on an observed lack of identification possibilities pertinent to common high–rises, the architects were looking for new symbols for the home and living environment. The ‘wall’ has a contrasting front and back façade, explicit use of colour, a top floor designed as a cornice, gates that are accentuated by volumes with a pink–painted arch and expressive concrete slabs with round holes dividing the rounded balconies [23].

Comparison

Hoptille and Centrum Almere–Haven are elongated buildings with a complex section involving various housing types. The wall–like structures can be

identified as a 'snake', shaping the urban space, separating environments and creating a front. It refers to a formal urban model in which the urban form is the starting point and the development of the building block a means to that end. De Bergen and Woondekken are compositions of repetitive smaller elements into larger structures. They also include a variety of housing types, but organised around an elevated deck. The deck character varies from semi-private outdoor space in De Bergen to extended public space in Woondekken. These sprawling complexes can be identified as a 'mesh' in which housing units, spaces, transitions, greenery, vistas, stairs, entrances and passageways are arranged. The human scale living environment is the goal and the building form the result.

Bijlmerplein is a hybrid of 'snake' and 'mesh'. The building blocks are shaped to form a sequence of squares and streets. On the other hand, it has ingredients of a 'mesh', such as the elevated deck that provides a human living environment, collective outdoor space and infrastructural connections to the surroundings. De Bergen and Hoptille are most autonomous, turning away from their urban context as fortresses. Also in terms of architectural expression, however different, they contrast with the surrounding architecture. The other cases rather mediate between human-scale residential qualities and the larger scale of an urban area.

Comparing the projects on visual language, the palette is very diverse. The expression and materialisation of De Bergen was inspired by both Structuralism and the Amsterdam School of the interbellum. Also in Woondekken, irregular Structuralist form is an attribute, although the implementation is more functional, drawing on traditional craftsmanship. In Bijlmerplein and Centrum Almere-Haven archetypical features have been applied, such as a shopping arcade supported by columns alongside the building and the arches marking entrances, linking Classical codes with new techniques as means of communication and identification. Centrum Almere-Haven shows codes of the traditional Dutch town, both in its architecture and urban attributes, whereas in Bijlmerplein has both Classical and Modernist formal attributes. Both cases reintroduce the traditional city in terms of mixed use and sequences of urban spaces. In Hoptille the expression of Post-Modern codes is more explicit, using clear shapes, colours and archetypical attributes as gate, tympanum and arch as symbol for identification. Regarding visual language, the projects show referencing to various previous architectural movements and related elements, resulting in a diversity of attributes at an urban, building, or material level or combinations thereof (**Fig. 2**). This applies to the range of examples and to the individual cases. There is no dominant style but a plurality of visual languages.

3. Conclusions

The examples have shown a range of building types and visual languages. Their objectives are identical, focussing on quality of life and identification



Figure 2. Collage of archetypal attributes

as a reaction to the repetitive and uniform architecture of the post-war Reconstruction period, but the means to achieve them differ. For example, the need for identification has been responded in De Bergen and Woondokken by an irregularity of spaces providing individual shelter and identity, while at Hoptille and Centrum Almere–Haven it is by recognition of symbols. However,

the traditional brickwork and the gabled roofs in Woondekken are also symbols of the archetypical house, while Centrum Almere–Haven also has alcoves for shelter. Regarding building typology, the ‘snake’ and the ‘mesh’ are identified as alternatives of traditional midrise. These typologies make use of a diversity of functions and housing types and dual land use, while still providing a high–quality living environment. In many cases typological and visual means are combined.

This mixing can be named ‘Pluralism’ in the sequence of the –isms discussed in the introduction of architectural movements. However, Pluralism was not a preconceived ideology but the result of harking back to earlier ideologies. This pluralism applies to the ‘collection’ of Post 65 midrise complexes as a whole but is also identified within the context of one neighbourhood. The urban and architectural attributes are diverse, with diversity as the common denominator. The statement by Charles Jencks that ‘Pluralism is the Post–Modern ideology above all others (...) there is simply no dominant cultural style or ethos’ [5] is reflected in the stock of Post 65 midrise residential buildings. Following Jencks’ line, and based on the cases discussed in this paper, the Post 65 midrise neighbourhoods can be regarded as Post–Modern.

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From Abadan to Shushtar New Town: The Heritage of Company Towns in Iran

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It was only in the early years of the twentieth century when industry and urbanization arrived in Iran coincided with the discovery of oil in the country's southwest. The emergence and expansion of oil cities such as Abadan and Masjid–Suleiman mark an epoch in urban modernization in Iran, where the Modernization of Oil and industry shaped a cosmopolitan built environment.

The essay discusses the evolution of the company towns of Abadan (in the 1920s) as the first thoroughly modern city in Iran under the influence of British Petroleum and Shushtar New Town, a government–funded workers' town (1975–85). Through the lens of the critical history of company towns, the paper contributes to the discourse of urban modernization as a physical expression of a society in transition between imported modernism and local modernism. From Abadan, as an absolute virtual creation of the oil industry without any pre–existence of urban infrastructure, to Shushtar New Town as an extension to the dwelling areas accommodating labor forces in enlarging agriculture industry, spans nearly 70 years of practicing the universal logic of modernization in a local field of development.

While both these cases have been criticized either for their successes or failures, the essay aims to unfold the weight and the impact of initial and prominent divergent attitudes involved in the establishment and extension of the towns which cause the diversity from the western–based Utopia of “green oasis of Abadan” to Shushtar New Town with influences of vernacular architectural and Iranian tradition of inhabiting.

1. Introduction

In company towns, as a term that first appeared in Europe and North America with the industrial revolution, working and spatial arrangements followed the logic of production. Still, they were always influenced by power relations, socio–occupational hierarchies, and the ethnic, racial, and gender composition of managers and the working population.¹

In Iran, modern urbanization started with the emergence of the first company towns in the country's south. This initial episode of modernization is inextricably tied to the activities of the Anglo–Persian Oil Company (APOC). The oil cities of Abadan, Masjed–Soleyman, were the first modern and industrial towns in Iran and the Middle East. Over time, these cities came to occupy a special place as a model and inspirations for this type of urbanization. Other large industrial conglomerates (primarily state–owned) replicated this segregated and hierarchic urban design in the company towns they built.²

The essay discusses the history and experience of the two company towns of Iran, both located in the southern province of Khuzestan, Abadan (the oil city established by the Anglo–Persian Oil Company in the 1920s) and Shushtar new town (a government–funded Agro–industrial Company town built during 1975–85). Narrating the cases of these two company towns investigates the divergent attitudes toward modernization of a developing country. Moreover, it would lay the foundations of a comprehensive perspective on a never–stopping tension between “Global” and “Local.”

2. Abadan, modernization of oil

It was only in the early years of the twentieth century when industry and urbanization arrived in Iran when large quantities of oil were struck in Khuzestan. The emergence and expansion of oil cities such as Abadan and Masjid–Suleiman marked an epoch in urban modernization in Iran, and oil shaped a cosmopolitan built environment.

Indeed, the oil refinery was the pre–eminent fact of life in Abadan and the reason why urbanism had come to this salty infertile and by the late 1940s turned it into the largest refinery in the world.³

From the 1920s until 1951, Abadan might best be described as a collection of urban forms gathered around an oil refinery. Early maps show a simple



Figure 1. Abadan, Iran, 1951, Aerial view of urban districts and the refinery. (The Illustrated London News, London, September 8, 1951)

distribution pattern with the refinery as the heart of the physical development at the side of the River. Labourers lived in tents and mud huts in the barrack-like 'coolie lines' located to the southeast. The 'bungalow area,' also known as Braim for senior European staff, bordered the refinery to its southwest. By the early 1920s, Braim had developed from a sprinkling of buildings to an extendable pattern of roads, including a specialist bachelor barrack. These maps illustrate the aggregative logic in spatial development. The "town," a compact area in the east, was separated from "Barim" by the refinery as a curtain or cordon sanitaire in the middle. The only contact between these ill-matched twins was made via servant intermediaries.⁴

The first professional design skills in both architectural scale and urban planning were used in Abadan after 1933. The architect who became involved in town planning and design of numerous public and residential buildings was the British architect James Mollison Wilson (1887–1965). Wilson designed the master plan, including housing for British employees and refinery workers and urban facilities such as hospitals, schools, restaurants, clubs, and sports fields in an abstracted or absorptive version of local styles. His master plan relied on the principles of the British Garden City organized around an urban centre and creating outward-looking facades with windows toward the streets.⁵

Braim consisted of large villas and bungalows on green lawns and surrounded by parks and gardens lined with English hedges. Workers' neighborhoods were row houses with high walls and tiny courtyards, built in straight lines and wall to wall. Indeed, racial segregation was exerted through habitation patterns.



Figure 2. Abadan, Iran, 1950's. Staff Quarters in Barim Neighborhood. (Image courtesy of Abadan Times)

Besides the urban segregation, the formal public space of Abadan differed from the historical models in several important respects. Each house was distinct from its neighbours and separated from the neighbourhood, intimate street life, and ultimately, workers' society. Abadan's neighbourhoods were built apart and separated by vast stretches of open terrain, wide roads, pipelines, administrative and industrial facilities, and the enormous bulk of the refinery.⁶

Abadan witnessed the introduction of the first western category of urban public area to the Iranian society.⁷ The segmentation approach of the wide boulevards and the grid pattern that characterized the formal space of Abadan distinguished it from other Iranian cities at the time.

Later Abadan inspired many Iranian modernist architects, although the modernity of Abadan was the modernity of division and alienation translated to urban forms and orders. With little history of urbanism, built to create a settlement for assorted immigrant workers, and based on design ideas imported from elsewhere, the company town seemed incapable of making an integrated sense of place even if the modernity of Abadan established its unique tradition into an outstanding quality of place consist of borders, zones, and gated communities.

3. Shushtar new town, toward a regional modernism

After The White Revolution (the modernization program implemented in Iran in 1963 and continued until 1979), the emergence of new company towns was a consequence of population displacement from rural villages to larger cities and towns in industrial regions.

Meanwhile, as modernization escalated over more cities in the country, the western approach to architecture and urban planning dominated Iran's new architecture and urban planning. At the same time, the emergence of new debates focused on the paradigmatic shift in the approach to housing and dwelling, and new towns were the inevitable trends.⁸ These debates, which were driven by tensions between the universalizing ambitions of high modernism and the comprehensible resistance of local traditions, mainly concerned the local aspects of the context manifested in two significant events as consequences of the White Revelation within the Iranian architectural society. First, The International Congress of Architects was inaugurated in 1970 in Isfahan to exchange perspectives between local and international architects and theorists concerning the relationship between tradition and modernity. The second event was the Second International Congress of Architects held in Persepolis, Iran, in 1974, entitled Towards a Quality of Life– the Role of Industrialization in the Architecture and Urban Planning of Developing Countries. in which authenticity practitioners debated the issues on regional culture, social identity, human habitat, and internal economic migration.⁹

Addressing this paradigmatic shift, the company town of Shushtar New Town was the most prototypical project within the context of government-funded

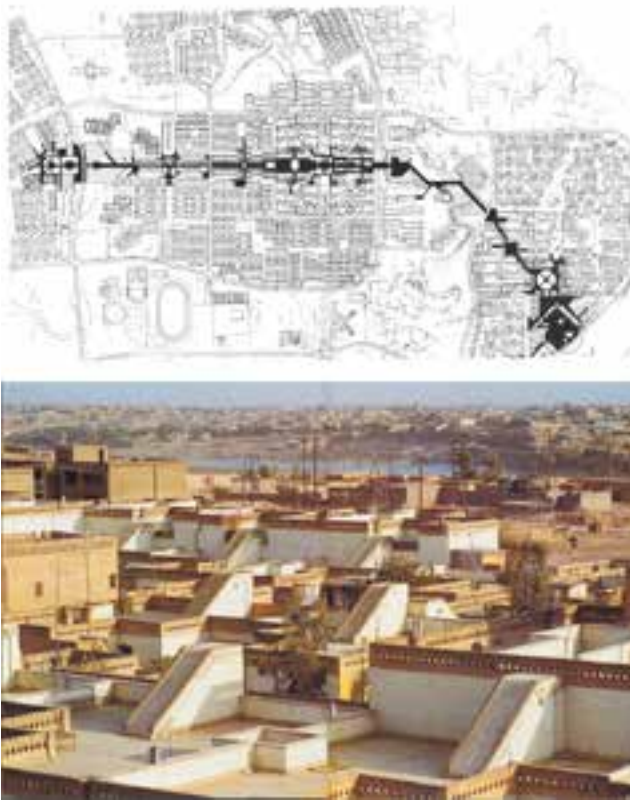


Figure 3. Top: Shushtar New Town, Kamran Diba, Shushtar, Iran, 1975, General master plan. (Diba and DAZ Architects). Down: Shushtar New Town, Kamran Diba, Shushtar, Iran, 1975, Aerial view. (Diba and DAZ Architects).

communities. The project synthesizes the two modes of tradition and modernity in quest of a 'local style' and to promote a "social agenda".¹⁰

In 1974 Karun Agro-industrial Company decided to build a satellite city; Located only a few kilometers from the old town of Shushtar and connected by the bridge over a river in between, Shushtar New, unlike Abadan, the had significant consideration on the connection to the pre-existing old city as the origin of the identity of the place. The architect in charge of the project was the Iranian Architect Kamran Diba. Diba belongs to the second generation of Iranian students educated in the West and brought their knowledge of "modernism" to Iran. He is notable for the way he understands the West, observes the Iranian culture, thinks about the human dimension of the built environment, and resists the wishes of the dominant technocrats and officials.¹¹

Referencing Kenneth Frampton and the fundamental strategy of Critical Regionalism is to mediate the impact of universal civilization with elements derived indirectly from the peculiarities of a particular place¹² (Frampton 1983), Shushtar New Town was an attempt to reinterpret the appearance and structure of traditional towns in the region and, specifically, the old city of Shushtar. The central idea of this regional attitude was the notion of "community." Opposite to Abadan, as a semi-colonial company town, the core concept in the design and development of Shushtar New Town was place and continuity with the old city in terms of both urban forms and concepts. The architect stated later: "In short, I don't want a company town. I want to make a town that is integrated into the old Shushtar."¹³

In designing the new town of Shushtar, as a reaction to the homogenizing effects of globalizing attitude in Modern architecture and urban planning on local communities, in an attempt to position place, identity, and the region

as significant factors in the reformation of a modern, and ethically motivated architectural practice.

“Palimpsest planning” featured Diba’s design practice for creating new residential communities. For Diba, context, terrain, and pre-existing elements were central sources of inspiration for his architectural interventions.¹⁴

He also proposed building a cultural centre in the new town as an attraction to the settlers of the old city to create meaningful commuting traffic between the two towns. He even allocated some open space to provide local farmers the opportunity of selling their vegetables to overcome the city’s aggregation from the small villages surrounding agricultural zones.

The idea of an integrated urban community translated into an extensive pedestrian boulevard oriented east–west, articulated in gardens, squares and resting spaces, porticoes, bazaars, and water pools in a horizontal density.

A covered street bazaar culminates in green public space as the heart of the central residential quarter. A commercial centre is located in the middle, with spaces arranged around a courtyard. This neighbourhood has its local bath as well as its local mosque. The main axis continues with the community and cultural centre and continues with a pedestrian square and then a park, and finally culminates in the town square, with dimensions of 100×100 m, connected to the old city through a pedestrian bridge and working as the principle urban space unifying old and new town.¹⁵

The region’s traditional and vernacular architecture was the main inspiration source for the architect.

The narrow streets of the dense urban fabric repeat the character of Iran’s historic cities, where the space of the walk is also an enclosed space, yet

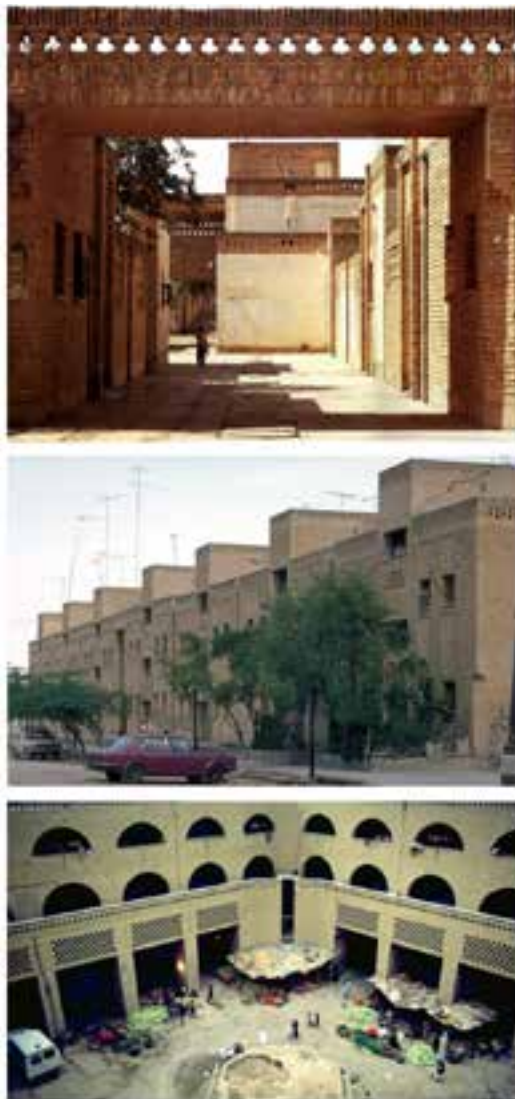


Figure 4. Shushtar New Town, Kamran Diba, Shushtar, Iran, 1975, (Diba and DAZ Architects).

alive, shaded by walls and vegetation of the courtyards of the houses, where children can play, the inhabitants to meet and communicate, and sit on the steps of the entrances to the houses. The project foresaw a clear separation between pedestrian and transportation roads with parking areas concentrated at strategic points outside the boulevard.

Although Shushtar New Town ended up only housing a minority of the intended inhabitants and thus failed to fulfill its original role as a company town and model community¹⁶, in an ambivalent way, the project succeeded in pursuing what Diba tried to obtain: the concept of a new community corresponded to the existing cultural spectrum.¹⁷

4. Conclusion

Company towns of Abadan and Shushtar New Town are the epoch points that mark seventy years of Iranian Modernization. These cases illustrate how the notion of society and place through a regional critic substituted the notions of the company's benefits and segregations. As a town treated like a fragmented place divided by race, Abadan was the first Modern town in Iran, consisting of several segregated neighbourhoods. Unlike Abadan, the high sense of belonging to a unique community in the formal and social structure made the company town of Shushtar not merely an exiled satellite town but the continuation of the adjacent old town. Besides any discourse of styles, the emergence and development of these towns reflect the driving thoughts in architecture and urban design of the time. Later both juxtaposed neighbourhood of racial islands of Abadan and the integrated spatial structure of Diba's design (with traces of a Nostalgic mentality toward the idea of the place) left their heritage of success or failure for future architectural experiences in Iran as a country in transition between tradition and modernity.

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From Siza and Erskine to URBiNAT: participatory architectural design and the European social housing co-production

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Considering the post-1960s reforming context, this article intends to revisit the social housing projects of São Vítor (1975) in Porto, by Álvaro Siza, one of the projects carried out under the SAAL programme (Serviço de Apoio Ambulatório Local – SAAL), and of Byker Wall (1968) in Newcastle, by Ralph Erskine, to understand how the dialogue between technicians (architects and sociologists), the citizens (individuals and associations) and the intuitions that regulated the process was instituted and developed, minding the correlations between them, the debates and resolutions which were experimented and the impact they had on the evolution of both processes. From São Vítor to Byker Wall the text covers the main stages of these participatory practices and identifies the projects' *method* and recognize how politicians and civic society got involved in these urban scale housing programmes, addressing new forms of co-design and co-governing.

Finally, the text explores how URBiNAT H2020 project (Healthy corridors as drivers of social housing neighbourhoods for the co-creation of social, environmental and marketable NBS, 2018–23) is taking advantage of take the inspirational lessons of both case studies and, following the new UNESCO agenda for "Sustainable Cities and Communities", is co-developing urban regenerative processes on 7 European cities.

1. Introduction to participatory architecture

The ideological and counter-cultural revolution of the 1960s was a time in which the rationalist excesses of previous decades were rejected and reformed. A turning point had been reached, one which would be consolidated

towards the end of the 1970s. In short, the *modern city* gave way to what we consider today to be the *contemporary city*.¹

In different parts of the world, an interdisciplinary search was taking place to find ways of improving the *process*: the way of doing architecture. The “techniciens du logement”² of the 1960s undertook this search in subject areas and contexts that were less developed, usually those that were less visited. It is considering the post-1960s context, that we would like to revisit the social housing projects of São Vítor (1975) in Porto, by Álvaro Siza, and of Byker Wall (1968) in Newcastle, by Ralph Erskine.

From São Vítor to Byker Wall, we examined the main stages of the participation practices that were used, and we identified the *project method*. It is important to recognize and systematize the tools used in these projects, as well as the manner in which political and civil society, particularly citizens and local authorities, involved themselves in these housing programmes with an urban scale.

In the conclusion of this article, we observe that the URBiNAT project has appropriated the project method tried in São Vítor and Byker Wall, but in accordance with the UNESCO 2030 agenda: “To make cities inclusive, safe, resilient and sustainable.”

2. Saal – São Vítor – Porto: a different way of looking at participation...

The SAAL – *Serviço de Apoio Ambulatório Local* – was a technical support service created in Portugal immediately after the military coup that took place in April 1974, and which brought to an end the dictatorship that had lasted almost half a century. The purpose of this service was to provide technical and financial support to the hundreds of thousands of people who were living in extremely poor conditions, in dwellings that lacked washing facilities, privacy, comfort or access to the city. Although the service had been established with the bare minimum of regulations and by simple ministerial order, it set out a series of methodological principles to be followed. One of the most important was, without a doubt, the participation of future residents in the process of constructing housing that could be considered appropriate and dignified. Although not explicit, this step was made necessary by the need to engage the interested populations in “internal organisation” and to encourage the development of “self-directed solutions”.³

Amongst the approximately 170 SAAL operations that took place throughout the country, the ones in Porto were known for being different in character. From the beginning, the team in charge of SAAL-North had the clear intention of involving the Architecture school (ESBAP – Escola Superior de Belas-Artes do Porto) in order to make use of the experience in the field that some of its students had acquired, as well as strengthening dialectically the process of

opening up the school to society. It was for this purpose that Alexandre Alves Costa had joined the team.

We are going to focus on the work developed in one of those operations, in a neighbourhood of the city of Porto, the Bairro de São Vítor, in the eastern part of the city, more precisely on a hillside over the Douro River. Near Porto architecture school (ESBAP – Escola de Belas-Artes do Porto) there was a plot of land which was familiar to the students as they had already looked at it as part of their studies. The architecture students already knew the site very well, when the SAAL opportunity arose, some of them also decided to propose an operation on the ground. These students included Eduardo Souto Moura and Guilherme Castro, as well as Adalberto Dias who worked in the studio of Álvaro Siza. They identified the housing needs, contacted the residents and decided to speak with Siza to ask him to coordinate the operation.⁴

Given the proximity and the knowledge of the place, the design project starts simultaneously with the intense and permanent discussion with the inhabitants. The relationship to the desires of the future residents is dialectical, their wishes interact with the plans, but the plans are not ruled by those wishes. In other words, there are not two moments, that of listening and that of responding. The project and the models that are being developed immediately motivate discussion. Participation is doubly dialectical – i.e. – it interacts with residents, but also interacts with the conditions of the city in which they live and with the proposals for its transformation, and that interaction needs to be balanced. That balance had to be struck on a scale that had blind followership at one end and technical arrogance at the other. In the case of São Vítor, concessions to populism, to the taste and aspirations of residents, were completely ruled out, however attractive such intentions might have been. This was a condition for the quality of the work, well expressed in the accompanying texts.⁵

Siza was well aware that, despite the condition of autonomy of the design activity, there is a territory of contact between political action and architectural practice. This territory is called the city and it was undoubtedly what he was primarily interested in focusing on. In this sense, the proposal already carried with it a device that struck a sharp blow at the heart of politics: it opened up the interior circulation spaces of the *ilhas*,⁶ previously semi-private, to public space. It turned inside out the interiors of the bourgeois city blocks, previously hidden and marginal, and transformed them into protagonists of the urban project. This intention involved assuming an attitude that, for two essential reasons, had huge political implications. Firstly, because it was the architectural proposal itself, that is, it was architecture that revolved the sense of class of organised space. The organisation of space is fought with the organisation of space, the fight is in the same ground, it does not take refuge in the grounds of technology, science, ecology or sociology. Secondly, because it makes the city the fabric on which the aim is to reinforce or smooth out the folds that embody the political problem, inequalities, alienation, control and repression. The city emerges – or would emerge if the



Figure 1. Álvaro Siza. First row houses built in São Vitor. © Credits Alexandre Alves Costa.

operation had gone ahead – renewed, not as a result of the need to renew the stocks of the real estate market, but rather as an architectural rescue of the political sphere.

If we take as circumstance the territories of reality, that is the most credible possibility that Architecture has of acting politically, to emerge from within and act. To act not on the city, but with the city and for the city.

3. The modernist dissent of Byker Wall

When talking about participation as part of a process within determined social and political contexts, connections can be made between projects such as Byker Wall (1969–1982) in Newcastle, England, and the experience of SAAL (1974–1976) in Portugal, as presented previously. This provides the opportunity to carry out an exploratory study about the role of the user in the planning design process.

Towards the end of the 1960s, Newcastle Council decided upon a policy of massive replacement of its old Victorian terraced houses, which led to plans for the construction of the participative project of the Byker Wall.⁷ In 1968, the project for the reconstruction of the old area of working-class neighborhood was given to Ralph Erskine.

Erskine's idea was to hold consultations with the community in order to promote interventions that would humanize the housing itself and the

landscape around it. Erskine and his team purposefully set up their office at the site of the future housing estate, enabling immersion into the life of the community so as to maintain a connection between the future inhabitants of the new houses and the project itself.

The project was launched with the pilot scheme in Janet Square at the extreme south-east of the area, with residents being consulted at all stages of the initial process.

The main guidelines adopted by Erskine⁸ and his team were:

- To maintain ties between neighbours in the old Byker community;
- To construct the buildings of the new estate in stages, gradually demolishing the old, terraced workers houses;
- A third guideline was defined in agreement with the community, which was to preserve some of the old buildings in the Byker neighbourhood, including a Victorian church. It was also decided that families with children would be housed in ground-floor dwellings with gardens.

Following on from Janet Square, construction began on what is to this day the symbol of the estate: the Wall, set into the northern perimeter of the estate on a stretch of unbuilt terrain.

The Byker Wall is nothing more than a sequence of large blocks of buildings, contiguous and interlinked, varying in height from between three to eight floors and laid out in an organic and sinuous form which follows the conditions of the terrain and its surroundings. The interior façades of the Wall are south facing, with horizontal access decks leading to the flats. This orientation arose from the need to favour exposure to the sun and to reduce as much as possible the noise from the motorway to the north of the estate.

Apart from the flats in The Wall, the estate is made up of 1-to-4-bedroom houses, maisonettes, flats and a small number of bungalows. The two-storey houses are predominantly built using a system of load-bearing masonry with internal structures in wood, and make up 80% of the dwellings.

The team led by Erskine demonstrated that they were interested, above all, in developing a process in which the community would have the opportunity to express their needs, aspirations and feelings, as part of a user-focused designing approach.⁹

Despite this, myths relative to the participatory process of the Byker Wall project have arisen over time, which may have led to the idealized notion that this project represented a perfect collaboration between architects and residents. In an interview given in 2015, Roger Tillotson, one of the architects who worked full-time on the project between 1970 and 1985, stated that much of the information on the participatory process had been incorrectly interpreted: "What we did at Byker was not to ask the residents how the design should be, but to involve them in order to extract the experience of living in community in Newcastle".¹⁰ Tillotson concluded by saying that

perhaps the role of the architect, in that particular situation, was that of interpreting and incorporating the ideals of the residents into the housing plans.

Finally, to the extent that we are seeking to understand and to highlight the more relevant aspects of the participatory process of the Byker Wall project, the relationship between this process and the current situation must be noted, in which perceptible ties of neighbourliness and support have arisen among its residents, both old and new.



Figure 2. Children with Ralph Erskine in his office located in Byker, Newcastle upon Tyne, England, UK, 1977.

4. Citizen involvement in the urban regeneration of modern public space

The aim of the URBiNAT project is to involve communities in the process of co-creation of the public space in social housing neighbourhoods that were built on principles of modernist design. This action-research project aims to give continuity to the methodologies of the participated projects which were put into practice in the two references of city construction referred.

Both the team led by Álvaro Siza as well as the one led by Ralph Erskine took care to involve the local community in a permanent dialogue on project decisions, without abdicating from their responsibilities as architects: that of “interpreting and incorporating the ideals of the residents in the housing project”, in the case of Byker Wall, and taking into account that “the relationship to the desires of the future residents is dialectical, their wishes

interact with the plans, but the plans do not submit to them”, in the case of the SAAL São Vitor project.

The URBiNAT project takes inspiration from these innovative experiences to design a process of participation that involves a diverse range of local actors, namely the citizens who live, study and work in the territory, the municipality, institutions, associations and local businesses, and finally, academia, including researchers from different areas.

In this case, the community is involved in dealing with the urban space – a space which came about as a result of modern planning but which left those areas disconnected from the parts of the city where work, education, services and quality public spaces are easier to access. The intention is that the material and immaterial construction of the healthy corridors, made up of nature-based solutions (NBS), will act as a driving force in the resolution of the challenges identified on the areas of each seven European communities involved in the URBiNAT project.

A Living Lab was set up in each city to take the co-creation process to the community, providing the conditions needed to enable communities to co-lead the processes of transformation of their territories in accordance with their needs and aspirations. In this respect, URBiNAT co-creation methodologies are flexible and open so that they can be adapted to the local cultures of participation, planning and government.

This evolutive methodologies have permitted the participants to share their co-creation processes, thereby creating a community of practice. Common barriers have also been identified which will help with the review of the methodologies tried out so far: the difficulty in promoting a process of democratic decision-making; the difficulty in involving minority groups; the difficulty in involving citizens at all the stages; the slowness of planning procedures; the need to carry out concrete actions to motivate participation; the need to promote participation on a local scale as well as closer contacts with the communities.

From co-diagnostic to co-design, the three front runner cities have promoted a set of actions that combine architectural tools with those of the social sciences in order to engage citizens while also achieving design outputs. Given



Figure 3. Physical model workshop, Porto, 2020; ideation workshop, Nantes, 2021; exhibition, Sofia, 2021.
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that the context is the public space, the teams are using several actions to help citizens think about the territory they inhabit, through the design tools described in this table:

Porto	Sofia	Nantes
walkthroughs collective mapping collective drawing physical model 3D modelling <u>PhotoVoice</u> online collective collages proximity interviews	walkthroughs collective mapping physical model 3D modelling exhibition with project discussion	walkthroughs online walkthrough collective mapping <u>Superbarrio</u> (online digital game)

Figure 4. Table describing the design tools used on the three front–runner cities.

These three front runner cities are each following and developing along different tracks. In the case of Porto, participants decided to work together in the same intervention area, co–creating NBS related to public space and nature, education and environment, culture and sport, and social economy and solidarity practices. The urban plan for the healthy corridor became more of a park, with several corridors connecting three social housing neighbourhoods. The park is currently undergoing a tendering process, but citizens are already testing the immaterial NBS such as the solidarity market for local producers and craftsmen, the cultural and communication platform (Campanh’up), and the heritage routes and yoga classes. In the case of Sofia, it was decided to create a pathway that passes through four social housing neighbourhoods, and to develop four main locations, each with its own theme – Green Assembly, Aqua Vita, Healthy Energy, Co–Place. The four clusters include NBS such as an open–air amphitheatre and a thermal–water swimming pool. In Nantes, URBiNAT took part in Project *Globale*, a master plan for Nantes Nord developed within the framework of the citizen dialogue strategy. Among other NBS, the co–creation of the Green Loop – a circular pathway through several social housing estates – and green urban gardens aims to transform the quality of life and the use of the public space.¹¹

While municipalities and private owners are dealing with the renovation of their modern housing, URBiNAT is focusing on the renovation of the public space. The task that the URBiNAT project has set itself is to continue rethinking modern values related to nature, mobility and functionality, complementing them with contemporary principles of inclusion and human rights, solidarity, circular economy, and health and well–being.

Notes

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Erik Gunnar Asplund. Landscape and civic identity

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The intense relation between architecture and landscape is analysed in the work of Erik Gunnar Asplund (1885–1940). His humanistic approach emphasizes the public condition and provides an environment for civic life. For Alvar Aalto, “in all Asplund’s works the same connection with a nature that includes man is clearly perceived.” With the integration of the classical with the vernacular, his early works are ascribed to romantic naturalism. Reconciling the classic with the vernacular, the processional itinerary of the Woodland chapel (1918–1920) is reconciled with the common beauty of primitive architecture and evokes his trip to the classical world. The Villa Snellman (1917–1918) reinterprets the “*architettura minore*” [minor architecture] and constitutes the recovery of the elementary language of traditional construction. In a synthesis of contained expressiveness, the Stockholm Library (1920–1928) organizes an emphatic sequential itinerary. The formal sequence of buildings and public spaces orders the composition of the Stockholm Exhibition (1930). The aesthetic and social manifesto conceived by Asplund at the Stockholm Exhibition is the beginning of the Scandinavian architectural renovation and reflects the incipient constitution of the welfare society. After the Stockholm exhibition Asplund published the manifesto *Acceptera* (1931) where aesthetic and social proclamations are vindicated. Synthesis of tradition, modernity and context, the contextual extension of the Goteborg Law courts annex (1913–1936) harmonizes with the old palace. Asplund’s architectural renovation is rooted in cultural identity and civic values. Taking into account the local conditions, the landscape, the climate and the tradition in the Villa in Stennäs (1935), the identity traits of the vernacular construction emerge. Asplund moves away from the modern avant-garde and approaches the so-called Nordic empiricism. Expanding the scope of architectural modernity, the Woodland Crematorium (1935–1940) condenses Asplund’s landscape sensitivity. The geographical assessment, the tangential and indirect organization of the routes and the intermediate architectures intensify the relationship with the site.

1. Introduction

Erik Gunnar Asplund was born in Stockholm in 1885. After studying at the KTH Royal Institute of Technology between 1905 and 1909, he completed his training, as a reaction to academic conservatism, at the Klara Skola architecture academy (1910–1911) with the masters of the Swedish National Romanticism Ragnar Östberg, Karl Westman, Ivar Tengbom and Karl Bergsten approaching the values of natural materials, traditional construction and craftsmanship. In his holidays he travelled through the landscapes of his childhood analysing the vernacular roots of traditional construction and the importance of the landscape¹ and in 1910 he travelled to Germany and Belgium

to study the new artificial stone cladding and reflect on the material condition of architecture. He began his professional career as an architect in 1912 with the unbuilt projects for Ivar Asplund's Villa in Danderyd (1911) and Rosenberg in Kalrshamn (1912), combining inflections, asymmetries and volumetric obliquities that evoke the work of Ragnar Östberg² and anticipate motifs that he would develop in his later works. The constructive realism of National Romanticism is expressed in the wooden walls and mansard roofs of the Villa Ruth in Kuusankoski, Finland (1914) and in the use of brick in the Kalrshamn Secondary School project (1912–1918) characterized by the integration in the urban landscape, the complexity of routes and the emphatic volumetric articulation.

In 1913 he won the first prize in the competition to enlarge Gothenburg Courthouse (1913–1937) and between 1913 and 1914 he made his Grand Tour of Italy and Tunisia touring Tuscany, Veneto, Rome, Naples, Pompeii, Sicily until reaching Tunisia on a journey that will mark the evolution of his work. Moved by the beauty and vitality of urban environments, in this initiatory journey he analysed the architecture of the past, the built environment and the treatment of surfaces, colours and details of traditional construction. In the annotations, watercolours and drawings of his travel notebook, landscapes and rural constructions also predominate, giving rise to a series of reflections on the relationship between architecture and nature.

2. Classic and vernacular

On his return to Stockholm, he visited the 1914 Malmö Baltic Exhibition where Sigurd Lewerentz (1885–1975), a fellow at Klara Skola, presented a project for the Helsingborg crematorium chapel that combines architecture, landscape and ritual, evoking a Mediterranean imaginary. In 1915 Asplund and Lewerentz decided to enter the competition for the Stockholm South Cemetery and in their project identified with the motto *Tallum*, which won first prize, they conceived a romantic and primitive landscape. A network of paths and funerary archetypes that evoke the Mediterranean and Nordic landscape tradition enters the pre-existing forest of an old quarry. The “way of the cross” recalls the Pompeian *Via de los Sepulcros* and the tombs in the forest allude to the archaic primitivism of the burial mounds and the identity of the Scandinavian landscape.

The exedra that configures the access, in a clear allusion to the Propylaea, formalizes the ritual of entering the Cemetery. The opening that channels the itinerary constitutes a means of transition between the urban space and the cemetery. The ritual ascent is intensified by a passage delimited by stone walls with an irregular texture, partially chiselled, and by a porticoed niche containing a fountain. The perspective between the two walls that define the path generates an intense perspective depth and produces a sequential vision (**Fig. 1**). At the culminating point of the passage, the view encompasses



Figure 1. Erik Gunnar Asplund, Sigurd Lewerentz, Stockholm Woodland Cemetery. © Jaime J. Ferrer Forés.

the central void of the cemetery where the paths fork and specialize. The road circulation borders the open landscape where the hill of meditation crowned by birches and the way of the cross that ascends flanked by the low wall towards the crematorium that moves off axis stand out. The symbolic dimension of the hill of meditation is complemented by the stairway with risers that reduce in height as you go up and the upper plateau that acts as an interval in the landscape for contemplation of the whole. The route continues through the path of the seven wells that leads to the portico of the Resurrection Chapel (1920–1923) built by Lewerentz.

Inside the Cemetery, Asplund built the first mortuary chapel, the Forest Chapel (1918–1920). Reconciling the classical with the vernacular, the processional itinerary of the Forest Chapel reconciles with the common beauty of primitive architecture and evokes both his journey to the classical world and his bicycle trip through Denmark on his honeymoon discovering the purification Liselund's simple and vernacular³. Asplund formalizes a frontal itinerary with the manipulation of perception through scale, topography and light, combining architecture and nature. As Stuart Wrede points out "the building and the landscape are conceived as a whole"⁴ and the Forest Chapel "is built in the forest and modestly seeks to subordinate itself to it"⁵. Located in an enclosure of the Cemetery, a small aedicule, as a threshold, formalizes the front entrance that leads, through the open antechamber in the forest next to an earthen mound that houses a funerary crypt, to the portico of twelve Tuscan columns of wood that support the pyramidal cover (**Fig. 2**). The transit between the compressed and gloomy portico and the luminous interior of the

chapel, characterized by the dome of seven meters in diameter subtracted from the volume of the pyramidal roof and illuminated from above, determines a recurring spatial sequence in Asplund's work of "dramatic preparation and serene conclusion. The interior space of the chapel adopts the classicist refinement with the dome supported by eight Doric columns. The irregular breakdown of the flooring with a subtle concavity and the craftsmanship of the furniture give the space the character of a family commemoration in a simultaneously classic and rustic atmosphere.



Figure 2. Erik Gunnar Asplund, Forest Chapel, 1918–1920 at the Stockholm Woodland Cemetery. © Jaime J. Ferrer Forés.

The Villa Snellman in Djursholm (1917–1918) reinterprets the "*architettura minore*" and constitutes the recovery of the elemental language of traditional construction. The articulation of the main building and the service pavilion to adapt to the topography evokes traditional construction and the landscapes and environments of the buildings that he studies in his Grand Tour. The human, the refined and the subtle are present in the obliquity of the pavilion, the inflections of the hall and the staircase, the ambivalence of the access doors and the displacement of the window axes that introduce a refined tension in the garden façade. Inside, the articulation of the itineraries and the oval shape of the living room on the first floor, which concentrates the domestic, stand out.

The tense corner articulation of the two bodies is developed in the Carl Johan school in Gothenburg (1915–1924) linking the main block with two classroom bays and a central corridor with the gym and services pavilion. The volumetric

articulation configures an access space characterized by the monumentality of the pediment and the tympanum with the sculptural group by Ivar Johnsson. A sequence of areas articulated by curved loggias forms the interior circulation and contributes to enriching the treatment of the intermediate spaces, giving them their own value and identity.

These curved loggias as recollection spaces are very present in the work of Asplund, in the Villa Snellman, the Skandia Cinema, the Stockholm Library or in the access passage to the Forest Cemetery and in the Forest Chapel.

The frontal itinerary and the axial development of the Lister County Court in Sölvesborg (1917–1921) emphasizes the progressive revelation of the rooms, underlining the public condition. The monumental vaulted doorway in the classical pediment contrasts with the domestic character of the windows. Asplund takes up in the Lister County Court the theme of the circular plan inscribed in a rectangle that he had already tried in the Forest Chapel (1918–1920). On the rear façade and in the vestibular space, the volumetric juxtaposition of the monumental main hall with a circular floor plan twelve meters in diameter and double height is presented with the vernacular and domestic volume with a gabled roof. The stairs surround the central cylinder of the five-meter-high courtroom illuminated from above by a central skylight in the flat ceiling.

Inside a pre-existing building, Asplund builds the Skandia Cinema in central Stockholm (1922–1923). The transition from the lobby to the interior of the cinema generates a gradual itinerary and the sequence of articulated areas establishes a network of events and relationships. In the perimeter corridors of the main hall, the access doors to the boxes with their outstanding inflection and classical decoration evoke a Pompeian street. Both in the lobby and in the distribution elements, it introduces cavities in the walls with benches as rest rooms. The circular loggia or rotunda next to the vestibule provides a recollection area where the immaterial condition of the ceiling is rehearsed with a false lantern or blue dome without lighting, where a dark nothing appears⁶.

Asplund conceives the main room with a festive atmosphere under a starry night sky that evokes his visit to Taormina in 1914: "It was the last day of the carnival: up at night with coloured lamps, the fun and motley people and the great orchestra under the starry sky; below the deep roar of the sea"⁷. By painting the intrados of the barrel vault in an intense blue colour and hanging a series of lamps, the sensation of being outside is created. On his trip to Tunis he writes: "above us, a sky so clear and so deep blue, with a hue in colour such as I had never seen, giving the permanent impression of the sky as a vault, a grandiose blue dome". This illusory architecture is complemented by the red velvet fronts of the boxes, the profuse classical ornamentation of the rear amphitheatre and the symbolism of the curtain with the figures of Adam and Eve by Ivar Johnsson and the moon-speaker on the ceiling by Gunnar Torhmann.

3. Classicism

The project for the Swedish pavilion at the Exposition of Decorative Arts in Paris (1924–1925) illustrates the stylistic purification of Nordic classicism. Asplund adopts classical language to form the representative character of a refined pavilion supported by Tuscan columns and a two-flight staircase that gives access to a gallery with Corinthian columns that opens onto the Seine. The itinerary of obliquity and frontality that culminates in a balcony over the Seine develops a recurring theme in Asplund. The roundness and elementality of the pavilion and the motto of the proposal "*Vers the Seine*" begins to express the new interests and assimilate the principles of Modernity.

After his trip to the United States in 1920 to study the characteristics of public libraries and test different proposals for urban planning, he made the first draft of the Stockholm Library (1920–1928) with an emphatic neoclassical composition. A large compact block with a similar treatment on the facades formed by a portico of Corinthian columns, houses a unique central space with three staggered levels of shelves and a dome whose coffered ceilings filter the lighting evoking the Pantheon in Rome. Asplund also conceives from

the section a processional access that reinforces the condition of centrality and the rotunda of the plan refers to Asplund projects such as the Lister County Court.

In a synthesis of contained expressiveness, he reworked the project in 1922 and replaced the central dome with a cylinder with tall windows. The central space is clearly articulated with the specialized wings of the reading rooms.

The Stockholm Library organizes an emphatic sequential itinerary (**Fig. 3**). Built into the hillside, the library sits on a commercial platform. An Italian ramp crosses the commercial plinth and gives access to the portal whose Egyptian motifs are taken from the Bindesbøll's Thorvaldsen Museum in Copenhagen. Behind the door, an 8-meter-high hall of black stucco with carved passages from the Iliad and the engraving "Know yourself" underline the transition between darkness and light, reinforced with the symbolism of the ascending journey to reach the knowledge. The experience of approaching and accessing the central space is gradually discovered through a



Figure 3. Erik Gunnar Asplund, Stockholm Library, 1920–1928.
© Jaime J. Ferrer Forés.

long ascent that culminates in the library's loan room, evoking his drawing of the staircase to the crypt of San Giovanni in Syracuse, 1913 in his *Grand Tour*.

Through the commercial plinth, it subordinates itself to the city in an important urban confluence and projects a landscaped area in front of Sveavägen that underlines the natural condition of the Observatory Hill. The library's 5-degree turn from the urban grid signals Asplund's subtle inflections to accommodate the building in its surroundings.

Asplund conceives a landscaping project on the Observatory Hill to define a civic and public area. Next to the Library he designed the Odenhalle market which "arises from the desire to unify the Library building and its terraces with the area and the terrain behind it"⁸.

The unadorned surfaces of the library and the rhythmic composition of the market project signal a process of change in Asplund's architecture and reveal the crisis that precipitated his turn to modern architecture.

4. Functionalism

Sensitive to the spirit of the new times and after visiting the Weissenhoff, Asplund adopts the formal language of the Modern Movement to conceive the Stockholm Exhibition (1930). Asplund combines the strict logic of functionalism in the pavilions with an attention to place in the ordering of the formal sequence of buildings and public spaces. The ephemeral and festive condition is expressed in the modernity of the light construction, in the transparency and in the wide cantilevers of the pavilions. With the new style of modernity, Asplund proposes a traditional urban arrangement with streets, esplanades and passages that produces a sequence of urban spaces and a multiplication of visual axes in the circular route around the lake.

The aesthetic and social manifesto conceived by Asplund at the Stockholm Exhibition marks the beginning of Scandinavian architectural renewal and reflects the incipient constitution of the welfare society. After the Stockholm exhibition, the representatives led by Asplund published the *Acceptera* manifesto (1931) where the aesthetic and social proclamations were vindicated.

In the social housing competition in Norra Mälarstrand (1932) Asplund resorts to the language of functionalism to compose two staggered blocks characterized by large terraces and expressive galleries that reflect Asplund's modern desires. His non-awarded proposal for the Bromma Airport competition (1934) also illustrates the formal audacity of the approach with a transparent bridge over the aircraft runway.

Formal and social renewal accommodates cultural identity and context. The Bredenberg commercial building (1933–1935) is located in a marked historical context in the centre of Stockholm and its materialization adapts to the

urban landscape, modulating the international language. On a small corner plot, he organizes the open space of the store on different levels through the spatial continuity that he introduces through a triple height next to the main staircase. The metallic structure, the transparency of the commercial plinth, the slanted windows, the illuminated signs and the clock, the artificial stone and polished travertine walls are examples of the experimentation in the details and construction systems that he would later develop in the Goteborg Law Courts.

5. Empiricism and modernity

In the State Bacteriological Laboratories in Stockholm (1933–1937) the reaction to the International Style is illustrated. Asplund combines tradition with modernity in the construction of this asymmetrical complex organized around the landscape. The refined landscape sensitivity and the layout of the access road to the complex intensifies the spatial relationships. Asplund takes up the planimetric scheme of the Stockholm Exhibition and places the laboratory building on a mound and organizes the set of pavilions that house laboratory animals from obliquity and perpendicular to the road. As a *propylaeum*, the access pavilion with the porch establishes the entrance to the enclosure.

Synthesis of tradition, modernity and context, the contextual extension of the Goteborg Law Courts (1913–1936) harmonizes with the old courthouse. For Erik Gunnar Asplund, the spirit of the place is more important than the spirit of the time. The new facade harmonizes with the historical atmosphere.



Figure 4. Erik Gunnar Asplund, Stockholm Woodland Crematorium, 1935–1940. © Jaime J. Ferrer Forés.

Taking into account the local conditions, the landscape, the climate and the tradition in the Villa in Stennäs (1935) the identity features of the vernacular construction emerge. Asplund moves away from the modern avant-garde and approaches the so-called Nordic empiricism.

Expanding the scope of architectural modernity, the Bosque Cemetery Crematorium (1935–1940) condenses its landscape sensibility (**Fig. 4**). The geographical assessment, the tangential and indirect organization of the routes and the intermediate architectures intensify the relationship with the site. As a reaction to functionalism, Asplund's architectural renewal is rooted in cultural identity and civic values. Asplund's conviction for egalitarian civic identity is manifested in the set of works analysed and in the values they claim: the importance of collective spaces in relation to nature.

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S22

Modern Urban Design and the challenge of improving people's quality of life in the industrial metropolis

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The strong industrialization process that monopoly capitalism sparked in the last two decades of the 19th century sank the quality of life in industrial metropolis. Unbearable densities that reached 100.000 people per km², unending peripheries of shanty towns, shortage of parks and public spaces, etc. spread throughout Europe and North America. The working class especially suffered this situation. In horrific housing typologies, such as the Berlin's Mietskasernen or the New York's "dumbbell apartments", families of seven to eight members piled into 15 m² rooms. No wonder that, at that time, the life expectancy of workers was below 40 years.

First attempts to cope with this situation came from some industrialists, who promoted the construction of company towns. In this way, they provided workers with decent housing and social facilities, while controlling and managing them according to the company production needs. In the paper "The Biopolitics of a Company Town: Shaping the Urban, Shaping Identities in Dalmine, Italy", A. K. Almeida Santos presents a good example of these biopolitics: Dalmine, a company town founded in 1906 near Milan. Their inhabitants could benefit from health services such as heliotherapy, and from the economic support of an agricultural cooperative that supplied them food. In return, workers' activities and lifestyles depended on the company choices.

In the 1920s, the first Modern Movement texts and manifests showed how modern architects assumed the challenge of improving people's quality of life. Indeed, it became one of modern urbanism priorities. The Athens Charter (CIAM IV, 1933) tried to cope with this issue focusing on the rationalization of the chaotic industrial metropolis. It conceived cities as living beings which organs performed four different functions: to inhabit, to work, to cultivate the body, and to circulate. Besides functional zoning, modern urbanism prescribed

the provision of green spaces and sport facilities, building arrangements according to solar–thermal premises, housing with sunlight and ventilation, etc. This set of tools had a clearly quantitative direction. It addressed the most essential aspects of human condition, those related to physical and psychological health.

After World War II, however, the qualitative dimension of quality of life prevailed. In Europe and North America, social–democratic policies entrusted urban planning the moral regeneration of society. The goal of the so–called “second generation” of modern architects was the humanization of the industrial city. It required addressing issues hitherto unattended by modern urbanism. The public realm was one of them. The challenge here was creating new types of urban spaces that not only provided green and open places, but also encouraged human interaction. Pedestrianization was considered to be a key objective. Rotterdam’s Lijnbaan, designed by Bakema and van den Broek in 1953, was the first purpose–built pedestrian street in Europe. Monuments were another of the qualitative aspects of urban space that modern urbanists promoted after World War II. In this case, the aim was responding to the representative and referential requirements of the “emotional life of the community”. J. L. Sert envisioned the “heart of the city” as a “civic center”, a pedestrian area where “the noblest human activities” would be put together: universities, museums, concert halls, theaters, stadiums... and monuments.

In the paper “Modern Capitals of the Twentieth Century: Mapping Brasília and Chandigarh”, I. Almeida Furtado and L. Saboia Fonseca Cruz show how Sert’s ideas were implemented in Chandigarh (1953) and Brasília (1960). Both *ex–nihilo* capitals of non–central countries followed Le Corbusier anthropomorphic approach. In the case of Chandigarh, the most noble part of the urban body, the “head”, was occupied by the capitol, the center of Punjab’s political power. This highly symbolic urban realm was conceived as a pedestrian public space dominated by the Open Hand monument. In the case of Brasília, the entire state administrative apparatus was located in the Monumental Axis, a mainly pedestrian east–west axis once again dotted with monuments–such as B. Giorgi’s Os Guerreiros. Almeida and Saboia defend that Punjab and Brazil, two post–colonial states, opted for modern urbanism as an artifice to stage their entry into modernity–an intent to catch up with central countries.

These were some of the strategies used by modern urbanism to cope with the challenge of enhancing the quality of life in the industrial city. As for urban design, this discipline was founded in 1956 at the First Urban Design Conference organized by J. L. Sert at the Harvard Graduate School of Design. Urban design was defined as “that part of urbanism that deals with the physical form of the city”, “the integration of urbanism, architecture and landscaping”, an approach that Le Corbusier and L. Costa had already implemented in Chandigarh and Brasília respectively. This direction should now be taken to the intermediate scales of urban realm. As in the case of post–war urbanists, and also having in mind the moral regeneration of society,

urban designers entrusted the quality of life of neighborhoods and new towns to pre-eminently qualitative aspects. They were convinced that a strategically placed sculpture, a correctly designed pedestrian zone, or a set of facilities wisely grouped together would spread the community spirit.

In his paper "Updating Post-war Neighborhood Mariahoeve", P. Peters shows how in this The Hague's new town the qualitative approach of post-war urban design contradicted the quantitative approach of pre-war modern urbanism. W. M. Dudok's initial plan for Mariahoeve (1949) followed the "air, light, and space" dictate of the Athens Charter. Municipality, architects, and citizens, however, rejected the plan for its low density, the rigid orthogonal grid, and the monotonous repetition of low-height blocks. In 1953, a new plan was commissioned from F. van der Sluijs. He divided the area in six neighborhoods which should function as villages. Each one had a core consisting of a small park, a school, and convenience shops. The district social, work, and commercial functions were centralized in the new town center. In this way, clustering and scaling functions, van der Sluijs challenged the zoning schematism of the Athens Charter. In fact, the overall urban design concept was rich and complex. The edges of the neighborhoods were sealed off by high buildings. Inside, a landscape approach was used to arrange diverse building orientations, heights, and types.

As seen in the cases of Chandigarh and Brasilia, in the 1950s and 1960s Rotterdam's Lijnbaan pedestrianization example was followed by urban designers all over the world. The next decade, however, a new approach to pedestrianization took shape. The futurist projects of Archigram and the Japanese Metabolists inspired the construction of megastructures where the limits between buildings and public spaces blurred. People could roam around a complex network of pedestrian podiums, passages, skywalks, underground tunnels, etc. Hong Kong's central district is a good example of this phenomenon, as S. Liu, B. Jia and Y. Zhou show in their paper "A Study of Urban Morphological Models and Pedestrian Network Regarding Volumetric Podium-Pedestrian Complex in High-Density Hong Kong". The 19th century urban pattern of the area gradually added new physical elements and spatial relation structures. The result was a cluster of developments connected at the podium, above ground, or underground levels via elevated walkways, ground passages, and underground subways. In this multi-layered pedestrian system, a new relationship emerged between architectural indoor spaces and urban outdoor elements.

The biopolitics of a Company Town: Shaping the Urban, Shaping Identities in Dalmine, Italy

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Since the Industrial Revolution, Industrialists promoted and funded the development of housing projects, infrastructures, and social facilities around the production sites, some of them known as company towns. The scope was twofold: the entrepreneur or the company built and managed the community following business and production needs and promoted social harmony and social cohesion, providing services and goods for citizens' consumption to enhance their living conditions urban health, where state services were not yet entrenched.¹ The company towns could be retained as a valuable case study to examine how the urban rationalities and living conditions were shaped by industry politics. For this scope, this paper attempts to discuss the extent of the industry biopower in the context of cities entirely constructed by one company, with the case study of the city of Dalmine, a seamless pipe mill founded in 1906 in Italy. To reach this goal, the company town of Dalmine is investigated through archival research with a subsequent thematic content analysis of the house organ *Conversazioni*, from the company archives collected during two research periods in *Fondazione Dalmine*. The archival and thematic content analysis yields two main findings: (a) the company town was planned as a self-sufficient container environment in which urban planning and welfare policies appear as an instrument to exercise its biopower over the citizens; (b) the industry dictated the rules of working-class housing construction and entered workers' domestic lives with the incursion of industrial governance into the most intimate spheres of citizens was key to moulding citizens' values.

1. Introduction

The narrative of architectural modernism can be properly defined as a project of subject construction as a biopolitical expression.² This expression occurs not only in human bodies but also in the spatial configuration of the urban spaces. Foucault defended urbanization as the search for a new space, "a space of circulation" dominated by an increased flow of people and goods, high levels of informal social control, and a greater connection between the city and the surrounding landscape.³ Standing on Stanek, it is conceivable to assume the "biopolitical project as a project of scalar organization of society, and urbanism as a project of the biopolitics of space".⁴ The same rationale applies to the industrial modern city. Since the Industrial Revolution, Industrialists promoted and funded the development of housing projects, infrastructures, and social facilities around the production sites, some of them known as company towns.

The company towns are defined as cities founded by a single enterprise through social and economic pioneering methods in previously unexplored terrain, with its apogee between the nineteenth and twentieth centuries. The company operated as employers and landlords, as enforcers of security, promoters of social harmony, and as providers of services and goods for workers' consumption to enhance the living conditions and health of production sites and their surroundings. The industry had a primary role in the organisation of productive habitats by monopolising goods and services. The company towns had a plurality of expressions, influenced by the geographical area, economic context, and type of production.⁵ As well, company towns are not merely a twentieth-century phenomenon: they appeared in Europe around the eighteenth century and were diffused in North America thereafter.⁶ This city model spread until today, where it still serves as "pioneering devices" for colonization and market expansion in developing countries.⁷

The pursuit of quality of life in the modern industrial city

In the search for the quality of life, twentieth-century company towns were planned as a self-sufficient container environment to manage social actions, and their modern biopolitical project was twofold. On the one hand, the companies built and managed the community following business and production needs. Its biopolitical project dictates the rules of working-class housing construction and influentially enters workers' domestic lives. Indeed, the industry's choices determined workers' lives, in which different levels of paternalism and corporativism touched the most intimate part of people's lives, showing an incursion of industry biopolitics into the most intimate spheres of modern man.⁸ This biopolitical project moulded citizens' values, so that, the workers tended to reproduce discipline and norms in domestic contexts. Modern industrialization was a process of transformation of the *Homo Faber* in *Animal Laborans*, and of reduction of "social living" in "biological living".⁹ The isolation and alienation of the individual were instrumental in maintaining the community in a state of need,¹⁰ a growing machine that works in favour of regulation of the use of space.¹¹ On the other hand, the biopolitical project was expressed in space, when the company built services and goods for its inhabitants to enhance their living conditions by improving urban health with public hygiene as a new type of fluctuating need of the whole population.¹²

As presented above, the company towns could be retained as a valuable case study to examine how the urban rationalities and living conditions were shaped by industry politics. For this scope, this paper attempts to discuss the extent of the industry biopower in the context of cities entirely constructed by one company, with the case study of the city of Dalmine, founded in 1906 in Bergamo Province, Italy. In the first half of the twentieth-century, Dalmine reflected many characteristics of a company town: (a) it has been settled on an agricultural and unexploited territory; (b) the production site was

surrounded by welfare facilities for the employees, including housing and public and leisure utilities; and (c) this housing policy imposed residential segregation, an instrument the company used to exercise its biopower over the citizens–workers.

2. Study design

Methods

To investigate the industry governability and its spatial rationality applied on the company town of Dalmine, the business archives have proved invaluable in understanding the space rationale behind the industry over the last 100 years. Internationally known as Dalmine¹³, the steel pipe company was established in 1906 between Milan and Bergamo by the German Mannesmann Tube Company with the financial support of Deutsche Bank and the Italian Metallurgical Society. In 1920 was renamed Dalmine S.p.A, under Italian management. When the city of Dalmine became a municipality in 1927, the mayor of the city was also the Manager Director of the industry, reflecting the intrinsic relation between the political power of the industry and the territory. After World War II, and the fall of Fascism in Italy, the industry gradually transferred the ownership of housing and welfare facilities to the city council. However, these transformations did not lead “to a radical discontinuity in its social policy”.¹⁴

To unveil this transition encompassed by the industry biopolitics, two main steps compose the methodology implemented: the archival research and its thematic content analysis, in a systematic procedure. For the archival research, the principal source of historical documents related to the company town of Dalmine is the archives of the Fondazione Dalmine, an entity founded in 1999 by TenarisDalmine to valorise and conserve the industrial heritage. I have conducted two research periods inside the Fondazione Dalmine archives, from May to June and from October to November 2021. The archives records conserve about 140,000 files, 100,000 photographs, 5,800 drawings and sketches, 900 objects, 900 audio–visuals, 2,000 historical volumes, and 6,000 current volumes.¹⁵ Among the records consulted, particular attention was given to a series of house organs, *Conversazioni*, distributed from December 1954 (A. I, No. 1) to October 1981 (A. XXVIII, No. 4). The house organs were presented as an internal newsletter addressed to the workers and committed to supporting cordial discussions between employees and the direction of Dalmine.¹⁶

Subsequently, the analysis of documents gathered from the company archives followed the systematic procedure proposed by Bowen (2009), to individuate the recurrent subjects in the records analysed.¹⁷ The chosen themes sought to identify the two main subjects: the urban space and the implication into the individual identities. Applying the method to the content analysis of the 172 house organ fascicles, two main strands of the biopolitical project in the company town were extracted linked to (a) the spatial aspects and its urban

project, and its implications in (b) the individual aspects, with themes related to the management of life of citizens, with e.g., educational, and recreational programs offered by the industry (Table 1).

Thematic Content Analysis

ASPECT	MACRO THEMATIC	MICRO THEMATIC
a) Spatial	Housing	Workers Managers Visitors
	Urban equipment	Mobility Landscape
	Agriculture	Food provision Land management Water management
b) Individual	Education	Kindergarten Primary School Technical School
	Health	Summer Camps Healthcare Nutrition program
	Leisure	Sports stadium Pool Tennis court Arts concourse

Table 1. The table summarizes the thematic content analysis by aspects, macro and micro thematic found. De Almeida Santos, 2022.



Figure 1. Giovanni Greppi, The Heliotherapy Colony in Dalmine, Italy. Dalmine S. p.A. (1956) *Conversazioni* (extract), Anno III, n.8, August 1957, p. 5. © Fondazione Dalmine Archives.

The house organ worked as a primary source to understand what strategies the industry used to promote the quality of life for its citizens. Divided into monthly fascicles, and with different section subjects, *Conversazioni* was mainly composed of iconographies (such as photos, illustrations, drawings) and texts with different content not only related to the industrial production, but mainly focused on the cultural activities, and the social works the industry.

Findings

The archival and thematic content analysis yields two main findings. First, the company town of Dalmine, through its urban planning and welfare policies appeared as an instrument to exercise its biopower over the citizens. Second, the incursion of industrial governance into the most intimate spheres of citizens was key to moulding citizens' values of the working-class housing construction and entering workers' domestic lives.

Two timeframes on the analysis were observed, regarding the past actions of the industry and promoting the new developments made by the company. Some articles in *Conversazioni* promoted the past legacy of the industry and its architecture and urban infrastructure and the different activities promoted by the industry from its beginning while other articles addressed the current and future inauguration of architectural, urban projects and welfare services (from 1954 to 1981).

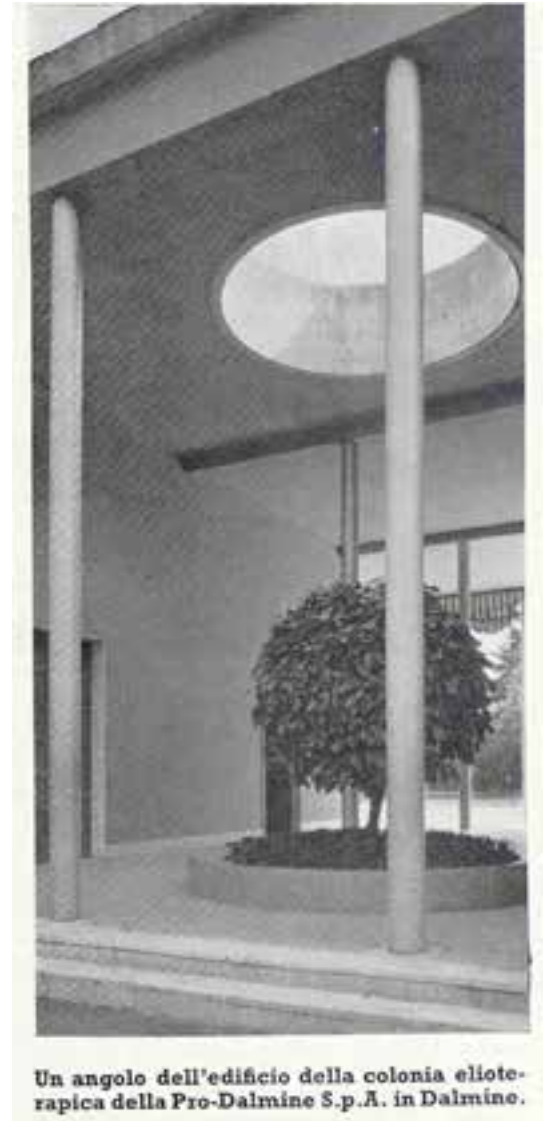


Figure 2. Giovanni Greppi, The Heliotherapy Colony in Dalmine, Italy. Dalmine S. p.A. (1961) «Conversazioni» (extract), Anno VIII, n.9, August 1957, p. 9. © Fondazione Dalmine Archives.

Power spatialities in architecture and urban scale

In Dalmine, almost all the buildings constructed between 1920 and 1959 commissioned by the industry are the work of the same Milanese architect: Giovanni Greppi (1884–1960). By wisely using the pipes produced by industry



Figure 3. Giovanni Greppi, Planimetry with the urban development of Dalmine, Italia, 1955.
© Fondazione Dalmine Archives

as building ornaments, he managed to express an architectural style of Dalmine's industrial hegemony. In Dalmine, the industrialised product assumes another meaning: the seamless pipe became a column, a railing, an enclosure. Many of the *Conversazioni* articles that have dealt with the architectural and urban projects developed by Dalmine point to the rationality of the project as a fundamental factor. I give as an example, the heliotherapy colony, where the ornamental materials of the buildings use their own tubes produced within the industry (**Fig. 1**). The accurate description provided by the article from 1957 presents indicates that the building was constituted of "a central body and two side wings connected by a large, covered atrium with a 32-column Dalmine tubular frontal porch" (**Fig. 2**).¹⁸ The company produced pipes inside the factory, and reproduced them outside, with the ornaments used in most of the architectural works designed by Greppi.

Dalmine was designed in two hierarchical residential neighbourhoods situated at opposite extremities of the city. Rents were strictly linked to the stability of the job and totally subject to the power and logic of the company (**Fig. 3**).¹⁹

However, the two neighbourhoods designed by Greppi had one thing in common: the private garden for each housing unit, and boulevards, both inspired by the garden city.²⁰

The entrance to the factory was the centre of everyday life: a converging point marked by the geometric and totalizing centrality of the factory.²¹ The localization of different functions in distinct areas, the adoption of hierarchical residential building typologies, and the purpose of relative control of the transformation process of the territory reveal an urbanistic culture.²² From 1955 to 1963, the company “built more than 590 buildings, supported by a public–private partnership in the framework of Ina–Casa and the European Coal and Steel Community”.²³ It denotes how Dalmine ranges from consolidated models of social works (*le opere sociali*) to public–private combinations in social housing until an “institutionalised urbanity” (Fig. 4).²⁴



Figure 4. An institutionalised urbanity: the company's social works are reflected in the architectural projects in Dalmine, Italy. Dalmine S.p.A. (1955) «Conversazioni» (cover extract), Anno II, n.10, July 1955.
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Leisure and quality of life

To put in practice its social project, the company founded in 1935 the Pro Dalmine, a cooperative for management, trade, health, and leisure activities outside the factory, provided an articulated system of activities that constituted “a real connective tissue of a strategy of consensus–building and community creation”.²⁵

Among the activities of Pro Dalmine for ensuring the quality of life in the company town of Dalmine, are mainly the maintenance of food and leisure time. In the company canteen and the town market, the industry itself produced the food to be consumed by the workers and their families on the land under its management (Fig. 5). Workers and their families enjoyed leisure facilities, such as tennis courts, swimming pools, boccia courts and different championships promoted by the C.R.A.L. (Workers’ Company Recreation Centre) in the town (Fig. 6). The children were provided with various ludic activities, from kindergarten and primary school to health clinics and treatments to improve the respiratory conditions of the little ones (Fig 7).



Figure 5. Production, humans, and non-humans cohabited under the health governance of the industry. The agricultural business led by the industry itself used the rural areas around the plant for food production. Dalmine S.p.A. (1962) «Conversazioni» (extract), Anno IX, July – August 1962, p.13. Special edition in colour. © Fondazione Dalmine Archives.



Figure 6. Different leisure activities offered by the company. «Conversazioni» (extract), Anno VIII, n.7, 8, July–August 1961, p.14. © Fondazione Dalmine Archives

3. Conclusions

Even assuming a secondary role, the company contributed to the fact that the city still lives today between production and the legacy of the modern industrial city. While most Italian company towns have suffered decline and

the consequent cessation of activities in the 1970 and 80s, the company in Dalmine still plays the role as is an important driver of the economic growth and development of the city and its surrounding territories.²⁶

Unlike most of the writings about Dalmine's case, through *Conversazioni*, it is possible to conclude that the biopolitical project did not end with the transfer of the municipality to a democratic government in the late 1950s. On the contrary, it maintained social and architectural projects for a much longer period. The industry as a regulator of territory doubled the space in favour of production, with the awareness that the space outside the factory was also essential to guarantee quality inside the factory. This demonstrates why in 2022 the municipality still functions in the municipality building, the poly-ambulatory in the poly-ambulatory, and the kindergarten still houses the same activities designed by industry. The Dalmine case is a shred of evidence that the policies applied in social control and general welfare continue as a living legacy of the modern biopolitical project.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 754354.

Acknowledgments

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 754354.



Figure 7. The rationality model is a premise for the Dalmine quality of life, Italy. «Conversazioni», Dalmine S.p.A. (1957) *Conversazioni* (extract), Anno IV, n.7–8, August 1957, p. 12. © Fondazione Dalmine Archives.

Notes

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Modern capitals of the twentieth century: Mapping Brasília and Chandigarh

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The twentieth century staged unforeseen political contexts, reshaping borders and new territorialities, resulting in the inauguration of *ex-nihilo* capitals. Chandigarh (1953), the capital of Punjab and Haryana provinces in India, and Brasília (1960), capital of Brazil, emerged from different geopolitical backgrounds, but share similarities in means and ends. In order to emancipate from a subaltern past, both countries intended to recreate their origins through the act of building ideal cities, projects of total urban design. At present time, Chandigarh and Brasília are stated as the largest experiences of modern planning, both acknowledged as UNESCO's world heritage sites.

Chandigarh was designed by Le Corbusier, who had previously worked with Lucio Costa, the author of Brasília's master plan. Thus, both projects materialise essential concepts of modern urban planning first narrated in the Athens Charter (CIAM IV, 1933). The option for modernism, a eurocentric lexicon, as a symbolic overlay for emancipation purposes, will be examined. By the agency of landscape as a medium for understanding the constructed environment, the analysis lies first at a larger scale, on identifying similar infrastructural patterns present in the two territories; then, on investigating parallels inherent to both capital's modern urban form.

To help evidenciate the underlying political discourse in both Indian and Brazilian landscapes, the study is illustrated with critical cartographies informed by analytical categories that traverse the intra-urban and macro-territorial scales. The cartographic visualisation of urban phenomena allows the comparison of both cities according to the *pattern-matching* methodology in order to consider social and urban landscapes in a continuum process of configuration.

The modern movement was an artifice to communicate a modernization goal that exceeded the inauguration of new capital cities and encompassed a national plan of socio-economic development – an intent to meet the standards of central countries. At a macro-territorial scale, large infrastructure was implemented. Simultaneously, the composition of the capitals mirrored the national developmentalism politics, translating the will of modernity in the national realm through urban design and architecture.

1. Post-colonial modern capitals

The twentieth century staged unforeseen political contexts, the dissolution of empires reshaped borders and new territorialities, resulting in the inauguration of *ex-nihilo* capitals. Chandigarh (1953), the capital of Punjab and Haryana provinces in India, and Brasília (1960), capital of Brazil, emerged from different

geopolitical backgrounds, but share similarities in means and ends. Built during the governments of Jawaharlal Nehru and Juscelino Kubitschek, both cities represent an intention to recreate the historical narrative and emancipate from subaltern patterns by forging a new genesis through the construction of ideal capitals. Chandigarh was designed by Le Corbusier, who had previously worked with Lucio Costa, the author of Brasília's master plan. Thus, both projects materialise essential concepts of modern urban planning first narrated in the Athens Charter (CIAM IV, 1933), translating the will of modernity in the national realm through city design. Currently, the two are acknowledged as UNESCO's world heritage sites.



Figure 1. Word map showcasing the twentieth century's independences and their respective past-colonizer. Note that Brazil is filled differently because it became independent in 1822. (Own authorship, 2021)

The first and second world wars defunded western countries such as England and France. So, maintaining colonial power overseas turned out unsustainable. Gradually, as territories became free, there was a need among the post-colonial countries to reestablish or create a national identity. Some opted to rewrite history through the act of building a new capital city. As well as neoclassicism was the architectonic language of enlightenment capitals in the nineteenth century, modernism was elected amongst belated independences to symbolise modernity. Besides Chandigarh and Brasília¹, Ankara in Turkey (1923), Islamabad in Pakistan (1960), Dhaka in Bangladesh (1971) and Abuja in Nigeria (1976) are examples of post-colonial capitals that had their political centre along modernist lines. It is important to note, however, that Brazil's

independence occurred earlier in the eighteenth century but Rio de Janeiro, the former imperial capital, remained the political centre from 1822 to 1960 in the republican era.

Modern architecture and urbanism, although idealised in Europe at the beginning of the twentieth century, are not seen in European political centres. In fact, the largest built expressions of modernism are present in the global south, mainly in the cited postcolonial capitals. This central–peripheral dissociation opens fissures for post–colonies to claim modernism as their own expression and heritage².

The apparently contradictory choice for the modern movement, a eurocentric lexicon, as a means to achieve decolonization is discussed. By the agency of landscape as a medium for understanding the constructed environment, the objective and structure of the paper lie first at a larger scale analysis, on identifying similar infrastructural patterns present in the two territories; then, on investigating parallels inherent to both capital's modern urban form.

Landscape is a complex subject to grasp since it refers both to the object being analysed (and/or operated) and to the method of analysis. The linguistic promiscuity surrounding the term is strategic to its theoretical potency³. Hence, landscape is understood here as the multiscalar amalgam of layered constituents that actively configure space, from politics to riverbeds. As Michel Collot expresses: 'Landscape appears as an exemplary manifestation of the multidimensionality of human and social phenomena, of the interdependence of time and space and the interaction between nature and culture, of economics, of the symbolic, of the individual and of society.'⁴

To help evidenciate the underlying political discourse in both Indian and Brazilian landscapes, the study is illustrated with critical cartographies informed by analytical categories that traverse the intra–urban and macro–territorial scales. The cartographic visualisation of urban phenomena allows the comparison of both cities according to the *pattern–matching* methodology⁵ in order to consider social and urban landscapes in a continuum process of configuration.

2. The macro–territorial scale

India's independence conflicts had a direct influence on the decision to build Chandigarh. The Indian subcontinent was colonized by the British Empire from 1858 to 1947. During the last efforts towards independence, the muslim leadership's pressure for partition increased. Jawaharlal Nehru, leader of the Indian National Congress and Muhammad Ali Jinnah, leader of the Muslim League, agreed to separate India and Pakistan according to religious lines.⁶ The process was violent, it is estimated that one million people died and fourteen million became refugees.⁷ As a result of the partition, two provinces were divided between countries: Punjab and Bengal. Punjab's capital, the ancient

Mughal city of Lahore is given to Pakistan, leaving the Indian Punjab in need of a new capital city. Jawaharlal Nehru, then prime minister of India, sees this hiatus as an opportunity to build a national symbol.

The land for the new capital was chosen for its beauty, access to transportation routes, water supply and distance from the Pakistani border.⁸ P.L. Varma, Chief Engineer and P.N. Tharpar, chief administrator were both in charge of the construction of Chandigarh. Their choice was attributed to the geographical and ecological qualities of the terrain: a plain with a slight slope from northeast to southwest at the foot of the Shivalik hills, part of the Himalayas. The terrain is bordered on the east by the Ghaggar River, on the west by the Patiala ki Rao and at the centre, it is crossed by the seasonal stream N-choe.

Brasília, on the other hand, is the result of a longer process. Since colonial Brazil, there was an intention to move the capital to the interior of the territory. The idea was included in the first Constitution of the Republic, in 1891. In 1892, the then president, Floriano Peixoto, determined that the Cruls Mission would explore the Central Plateau in search of a suitable region to house the new Federal District. The intention to relocate the capital from Rio de Janeiro to the interior of Goiás had strategic bases, the occupation of unexplored territory and the creation of a national identity distant from the Portuguese heritage – typically related to the occupation and exploration of the coast.



Figure 2. Map of India with all hydroelectric dams built during Nehru's rule (marked with an *). The lines estimate roads improved, based on analysis of several historical maps available at www.oldmapsonline.org. (Own authorship, 2022).

In the 20th century, there are two studies to survey physical–environmental qualities: the Polli Coelho mission (1948) and the Belcher Report (1955).⁹ The Belcher company, through an aerophotogrammetric survey, detailed technical information about topography, hydrography, transport and energy supply. Since the Cruls Mission, studies point to the environmental qualities of the region: the smooth topography and the fact that it is the headwater of three major hydrographic basins.

Brasília was built as a symbol of a modern Brazil in opposition to the agrarian past. Comparable to Chandigarh, the project represented a desire to break colonial socioeconomic molds. Jawaharlal Nehru's actions during his first term – as prime minister (1952–1957) are organized in a *Five Year Plan*.

The plan was Essentially focused on food production – a concern from the great famine during the partition – and on promoting the strategic apparatus necessary for economic development: energy and transport. Likewise, in 1956, with the election of President Juscelino Kubitschek, the plan to build Brasília becomes the 'synthesis' of his *'50 years in 5'* plan. Essentially focused on socio-economic development, JK's plan was based on energy and transport as its main goals.

Efforts were made to equip the territories with strategic infrastructure to allow economic progress. In order to industrialize the countries, it was necessary to transport goods through an efficient system, and, to power the development process, a robust energy system was needed. The construction and renovation of highways and the damming of rivers for hydroelectrics became protocol. In Brazil, during the JK period, the Três Marias and Furnas hydroelectrics were built. In India, during the government of Jawaharlal Nehru, the Bhakra–Nangal, Hirakud, Chambal, Tungabhadra, Nagarjunasagar and D.V.C. were constructed. These were, in Nehru's words 'The temples of modern India'. This magnitude of alterations in the physical space marked the Indian and Brazilian landscapes definitively and influenced the flows of capital and migration in the territory.



Figure 3. Map of Brazil with hydroelectric dams (marked with + on the map) and highways built during the JK government, based on Getúlio Vargas Foundation data (FGV). The dotted line shows the opening of the Belém–Brasília highway, which was only paved in the 1970s. Source: Own authorship.

3. The intra-urban scale

The urban configuration of the capital's landscape reflects the national aim of socio-economic development on an intra-urban scale, articulated in space according to modern precepts, as a simulacrum of the national operations observed on a territorial scale. The projects by Le Corbusier and Lúcio Costa show commonalities: modular neighbourhoods, wide roads and public spaces articulated by a system of green areas.

It is important to outline the canons of modernism in order to understand the architectural languages that configure the capitals and construct a common vocabulary. In 1933, the IV International Congress of Modern Architecture (CIAM) takes place, with the 'Functional City' as its main agenda. Its guidelines are compiled in the Athens Charter¹⁰. It manifests against the post-industrial

urban centres and envisages a new mode of urban planning based on the sectorization of urban functions. The city, conceived as an organism, must fulfil its functions according to the needs of modern man: living, working, recreation and circulation. Housing, considered the most important element, should be close to essential services and workplaces. The buildings should be arranged in large green areas: 'the city becomes a park equipped for the various functions of urban life'¹¹. In opposition to the traditional corridor street, the roads must be separated according to speed and modals, releasing large lanes for cars and preserving the pedestrian and the cyclist in separate paths that wander through the urban park.

In Chandigarh, Le Corbusier places the Capitol, his true design effort, in the north of the site; organizing the city through a road network that divides it into sectors, which work as a module to accommodate all the functions – a uniform frame of 1200x800 meters; reserves the valley of the seasonal



Figure 4. On the left column: Brasilia; On the right column: Chandigarh; On the upper line: Cities at a 1:100000 scale; On the lower line: cities at a 1:10000 scale. This is an example of the cartographies juxtaposed for the visualization of the pattern matching methodology. (Own authorship upon Google Earth's satellite associated with GIS data. 2022)

stream as a linear park. Bearing in mind the precepts of CIAM and the anthropomorphic logic of Le Corbusier, the city is designed to function as a body: The capitol, *Civitas*, in the highest part of the land, to the north, represents the head – the place of political decisions. The body of the city, *Urbs*, is cut by its veins and arteries, the road system. Sector 17, the heart of the city, the downtown area. The network of fields and parks serves as the lungs. To the west, the intellect is represented by the university. To the east, the industrial zone symbolizes the viscera.

The circulation works according to the 7-V's system designed by Le Corbusier, organized by speed. V1 are the expressways that connect Chandigarh to

other cities; V2 are arterial roads; V3 are fast roads that cut the city from north to south and set the limits of the sectors; V4, are commercial streets, with an organic layout, crossing the centre of the sectors; V5 are the streets inside the sectors that lead to the V6, with access to the houses; V7 are pedestrian paths and cycle paths that meander in the green areas of the sectors. Chandigarh, along with other mega infrastructure projects, such as hydroelectric dams and highways, were part of a dominant narrative in the landscape in post-colonial India.

In Brasília, Lucio Costa's project won the 1956's contest because it was an elegant synthesis of the urban debate of the time¹². The city's *Plano Piloto* is organized along two axes that represent *Civitas* and *Urbs*. *Civitas*, its capital qualities, are seen on the Monumental axis, aligned from east to west, which displays the state's apparatus. The residential axis arranges *Urbs*, its urban qualities, from north to south according to the principles of CIAM and previous experiences of neighbourhood units. The project manages four scales: residential, monumental, gregarious and bucolic. Along the residential road axis, arranged from north to south, the neighbourhood units are displayed, each consisting of four superblocks:

'large quadrilaterals', whose dimensions constitute the graphic entities ordering the urban grid through the correspondence of the parts to the whole. In line, they make up the wings of the eixo rodoviário-residencial in a proportional way to the complementary road, that is, with equivalent value to the Eixo Monumental; being a fundamental part of the urban composition, and not residual or hierarchically subordinate. (Gorovitz, 2009)

This urban module is planned to meet the needs of everyday life by providing the necessary basic services and equipment. Within the superblocks, the housing complexes are configured as parallelepipedal buildings on pilotis, freeing the ground for the passer to wander through the large park.

4. Chandigarh and brasilíia: urban fractals of modern landscape

The modern movement was appropriated by post-colonial countries as an artifice of communicate and legitimate its entrance into modernity. During the process that preceded Indian independence, it was conceptualized by Nehru and Gandhi that modernism and colonization were antithetical and that decolonization was a prerequisite for the development of an independent national identity.¹⁴ Brazil, similarly, develops a culture that appropriates modernism and elevates it as the state's architectural language. Modernism was chosen by peripheral countries as a symbolic language of power and emancipation during the mid-twentieth century. This phenomenon is observable throughout belated colonies as a way to narrate, through landscapes, a new genesis.

The effort to reconfigure the landscapes seen in the sites of Chandigarh and Brasília also took place on a national scale. Large implantation of logistic infrastructure is the territorial counterpart of the modern urban planning seen in the capitals. The construction of the landscape was one of the means used by Kubitschek and Nehru to raise Brazil and India to the levels of development seen in central countries. Overall, Chandigarh and Brasília have much higher quality of life ratings in contrast to neighbour cities of similar demographics.

In methodological terms, understanding similar realities, and comparing them through critical cartographies, can be a key to understanding and solving urban issues. When conceptualizing landscape, Anne Cauquelin speaks of the perception of reality external to ours as a 'fabric of firm but fragile certainties', stating that it is simpler to identify the patterns present in what is foreign:

when it comes to foreign cultures, we easily imagine the relationship between spaces and the ways of life, the uses and the ways of seeing and the ways of saying, in such a way that we come to perceive a kind of seamless fabric, without inside or outside, in a single piece. But for us, in our own culture, we have great difficulty in imagining that our relationship to the world (to reality, say) can depend on such a fabric that the properties attributed to the spatial field by an artifice of expression – whatever be it – condition the perception of reality. (Cauquelin, 2007)

It is understood, therefore, that dissociating oneself from the environment in which one is immersed can help to elucidate patterns and enable developments in the field of urban analysis. The comparison of such similar realities – although culturally and physically distant – can prove to be extremely powerful for the formulation of new paradigms in the field of landscape and urbanism. The understanding of a particular case study as part of a global process – making evident, through the contrast between existing phenomena, the intersections that both share, to associate and identify the parallels in order to learn from the interstices – can be potent and unveil future practices.

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Notes

- 1 Brazil's independence happened in 1822, but Brasília is only inaugurated in 1960, which will be discussed in greater depth later in section 2.
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Updating the Post-war neighbourhood

Mariahoeve

Peer Peters

BUROPPOSSO

Mariahoeve is an after-war district in the northeast of The Hague, designed in 1953 by municipal urban designer F. van der Sluijs for 25.000 inhabitants. The design is marked as one of the thirty after-war mass housing districts of national importance. The urban design is a reaction of the municipal planners on the modern mass housing development plan Southwest The Hague, by Dudok, 1949. The straight long streets, high repetition of blocks of low height were subject of critic by the municipal council, architects and inhabitants.

The municipality wanted more variety and a mixed incomes district, in order to create an not divided city. Some municipal urban planners went on excursion to Sweden, it was considered an exemplary inclusive and technically more developed society. The planning department organised a competition for the design of Mariahoeve in 1953. The design by F. van der Sluijs was chosen.

Mariahoeve is characterised by the specific design principles leading to a higher quality of life than previous after-war districts. A division in 6 neighbourhoods by lanes. The edges of the neighbourhoods are sealed off by higher buildings, an landscape approach is used to design a vivid allotment, with a big differentiation of building types, orientation and heights. The amenities are clustered and scaled per neighbourhood and district importance.

Mariahoeve was fully developed half way the '70's. The district shopping centre was developed very differently. Around the 00's the district became dilapidated and a masterplan with redevelopments was developed in 2009. Some are still in development or executed differently. Currently there is a vast housing shortage and vacant commercial space. New redevelopments are being proposed and the municipality has appointed the district as a pilot for the energy transition. Past decades there was twice a municipal discussion to propose it as an 'conservation area'. How to update Mariahoeve and keep the design character?

1. The objectives, methodology, achieved outcomes

Objectives

The objectives of writing this paper are the same as the goals of Docomomo itself. The paper should raise the knowledge of the uniqueness and design principles, the quality of life of Mariahoeve. Citizens, politicians, civil servants and architects/ urbanists are the target group. The objective is to create the urgency to think about Mariahoeve, and discuss how to conserve and update it.

Methodology

Being a municipal urban planner for five years, guiding new developments in Mariahoeve, I collected a lot of information and discussions. Mariahoeve has been subject of some publications by culture historicists, architects, and recently citizen initiatives. This paper summarizes the design principles and gives a historical oversight of the development stages of Mariahoeve as a background to think about the future. The chapter Discussions provides a starting point for discussions to be held.

Achieved outcomes

Past five years guiding redevelopments were done in order to fit them as well as possible into the urban tissue of Mariahoeve. By this paper a summary of the design of Mariahoeve and developments is provided.

2. The design of mariahoeve

Design discussions of '50's-'60's

Mariahoeve was designed in an era with some after-war districts realized conform CIAM principles. The municipal council, citizens and planners were allied by their dissatisfaction. The CIAM functional approach was a rational noncontextually method dividing areas into areas by the four functions: dwelling, work, recreation, and transportation. The newly built Southwest The Hague, designed by Dudok in 1949, were characterised by 'air, light and space'. But it was also characterized by anonymous places, long straight lines, monotonous repetition and low architectural features.

The municipality was planning to expand into the north-eastern swampy meadows of the polder around the farm 'Mariahoeve' and the villa garden village Marlot since 1908. Berlage sketched the district in a city plan. The trainline diagonally crossing the area, the troubles of the pre-war and war-period, led to several new plans by Dudok, in 1936 and in 1948.

He planned it according the 'district principle' ('wijkgedachte'), meaning it was a semi-autonomous part of the decentralized city. The plan proposed a district centre and consisted of neighbourhoods with subcentres. The Province rejected the last Dudok-plan because of too low density and too low percentage houses for middle and high incomes. The last plan was considered completely outdated in 1953 when suddenly the train line was called obsolete by the national railways.

Scandinavian inspiration

Some municipal urban planners had been on excursion to Sweden in 1953 as it was considered exemplary, socially inclusive, more natural landscape-inspired

and technically more developed. The main designer (F. van der Sluijs) also participated. Among the visited sites were the exemplary neighbourhoods Gröndal, Stockholm and Kortedala, Gothenburg. In 1953 a design competition for Mariahoeve was held in the department. The design by F. van der Sluijs became the winner. He used quite literally what he had seen in Sweden. The plan elaborated by the department and was established by the council in 1956.



Figure 1. architect ir.F.van der Sluijs, urban plan Mariahoeve, The Hague, The Netherlands, 1953.
© Credits Gemeentewerken, municipality The Hague

The design of plan Mariahoeve

Context and programme

The contextual approach considers the surroundings and landscape features. On the west side, it is more chic because of the forest, villa park Marlot and the dense Bezuidenhout district. The landscape is structured by southwest undersoil sand ridges, mediaeval canals and roads. Perpendicular on this water ditches drain the peat and infrastructure is located, creating and orthogonal structure, typical for The Hague and its surroundings.

Again the the starting point for programme and ordering is 'the district idea'. The district consists of neighbourhoods which should function as villages, mixing programmes into them. The housing program is varied and offers space for a balanced distribution of low, middle and high income groups. The last ones are proposed to be located more on the northwest side and located in houses with gardens. The planned district centre contained city and district functions in addition to the more daily functions in the neighbourhoods.

Spatial and functional organisation

Mariahoeve is characterised by the following design principles. A division in 6 neighbourhoods by lanes. The edges of the neighbourhoods have higher buildings, an landscape approach is used to design a vivid allotment, with a big differentiation of building types, orientation and heights.

Mariahoeve is characterised by the following design principles. The new district should be a parkish landscape. A division is achieved by extending the typical The Hague lanes and creating two perpendicular roads. The grid creates six neighbourhoods. The edges of the neighbourhoods are sealed off by series of higher, mostly four storey-buildings. An landscape approach is used to design a vivid allotment with many serrated or hook-shaped structures. The allotment uses a big differentiation of building types, orientation and heights. The plan and district was supposed to be subject of experimenting with new building and housing types.

Every neighbourhood has a core consisting of a small park with high towers of almost 40 meters, a school and a village square with shops. The district centre is located in the middle of Mariahoeve, along the Kleine-Loo-lane. It consists of a community centre, a open air shopping centre, schools, a district park, churches and sport fields.



Figure 2. architectural historians SteenhuisMeurs, axonometric perspective of neighbourhood Haverkamp, The Hague, The Netherlands, 2005. © Credits SteenhuisMeurs

The realisation

The building started in 1958. In 1970 most was built, sometimes in a different typology compared to the original urban design. Some typical typologies were considered too expensive and difficult or not in accordance with building requirements. Along the central lane of the Kleine Loo a tramline was built to

the new train station Mariahoeve which opened in 1966. The architecture of the new buildings was quite plain, mainly concrete and clad with bricks or panels, especially the high-rise towers. The proposed Reigersbergenweg connection to Voorburg over the train tracks was not realised.

The shopping centre was only built in 1968. The design was, again inspired by shopping centres in Sweden. It had a parking on top and escalators leading to a pedestrian internal route. The district centre was radically built differently than the designed plan for an open air shopping centre located parallel to the central Kleine Loo lane. An open parkish landscape connecting the Kleine Loo with the facilities and public spaces situated northwest of it became impossible. The introvert mall was already in 1975 extended to the south. This was done together with a long flat instead of the planned parkish route to the community centre at the Reigersbergenweg.

3. Updates

The previous updates

Ad-hoc planning

The designed edge of Mariahoeve at the open Schenk strip could be built after the cancellation of the planned provincial road. Aegon built an office integrated into the Mariahoeve station in 1985. More offices and housing followed. The edge of Mariahoeve became diffuse near the train station.

At the end of the Kleine-Loo-lane an urban ensemble (Ingenieur-van-der-Sluijsplantsoen) was built in 1991 thus preventing the sight to the sport terrain.

In 2003 again an landscaped edge changed when the Noordelijke randweg was opened creating a barrier between the district and the meadows to the north. Also a small trailer park was developed in the green edge.

Around 2000 Mariahoeve showed signs of physical decline, socio-cultural differences between residents and a depreciation of the commercial spaces. The social housing corporations and the municipality started redevelopments of redundant schools into houses with gardens like Hongarenburg or care housing at Denenburg.

In 2004 the municipal department of Monument preservation started a procedure to give Mariahoeve a preservation status and determine which aspects were to preserve. Despite the from-the-plan-deviating shopping mall was again expanded in 2005. The same year the city established a structural vision to densify the whole city. Due to the fear of blocking the redevelopments in Mariahoeve the preservation procedure was stopped.

District vision Mariahoeve

In 2008 a comprehensive vision for Mariahoeve was established. The vision was developed with stakeholders, citizens, developers and cultural historians.

The vision proposed to add more houses with gardens by demolishing 4-storey-flats, workshops, schools and sport facilities. A densification of the zone along the central Kleine Loo lane was suggested. The unbuilt part of the Schenk strip was to be a location for housing.

Due to the financial crisis projects became effected. For instance the terraced housing at Finnenburg was built in 2009 without the planned apartment tower. At the Amethysthorst 18 terraced houses and at the Biancaland sport terrain 50 private-commissioned-houses were finished in 2015. At Ursulaland, in the neighbourhood park, a care house was built in 2017. A terraced housing block at Haverkamp was finished in 2017 and the duplex houses were demolished. A four-storey apartment building was realised only in 2020.

The same period the Boekweitekamp development on both sides of the Schenk canal was designed. One side Boekweitekamp has semidetached houses which relate to the pre-war New-The-Hague-School-style. The other side corresponds in allotment and appearance with Mariahoeve, making the edge of the district deliberately more diffuse.

The proposed densification of the central zone stalled after 2011. Only the school at Amethysthorst was demolished for a new school in 2019. The planning for an apartment building on the corner Kleine-Loo-Hofzichtlaan started in 2021. In 2022 at Walenburg a garage is redeveloped into a small apartment building.



Figure 3. Rijksdienst voor Cultureel Erfgoed (RCE) with Must, Toonbeeld van de wederopbouw, Kernkwaliteitenkaart Mariahoeve, The Hague, The Netherlands, 2016. © Credits Rijksdienst voor Cultureel Erfgoed (RCE) with Must

Preservation status

The planning law was changed in 2012 obliging the municipality to include in a zoning plan a description of the cultural-historical values and how they are taken into account, even if there is no Preservation status. In 2013, a new zoning plan for Mariahoeve was established, which prevented undesirable developments from taking place. Later deviations of the zoning plan should be accompanied by a cultural-historical analyses and a fitting urban proposal.

In 2016 Mariahoeve was included in the 30-after-war districts of national significance. With the national government a letter of intention was signed to take the cultural-historical values into account when changing the zoning plan for developments until the new Environmental planning law was implemented in 2021. This new law was to integrate this aspect into a new integral procedure.

In 2016 a city vision De-Agenda-voor-de-Stad was established. Mariahoeve was to be restructured, possibly with high-rise around the train station. Also the district was to be a pilot for the energy transition. Insulation refurbishments like along the Finnenburg, Catharinaland were changing the appearance of the buildings.

Again in 2018 an Alderman restarted the preservation-status-procedure but in a discussion with the Aldermen it was withdrawn out of fear for interference with projects. At the same time a number of buildings were designated as municipal monuments: the primary school Diamanthorst 10, the church Onyxhorst 5 and a house at Suzannaland 3.

In 2022 the council of The Hague cancelled a Protected status of an after-war district in Southwest The Hague, in order to redevelop and densify it.

The coming updates

New Quality of life

Mariahoeve should adapt to contemporary wishes for the quality of life. The growing population and one-person-households leads to huge demand and densification. New economic changes lead to vacancy and different use of the commercial spaces, offices, workshops, especially in the neighbourhoods centres. The energy transition can drastically affect the building's interior and exterior and public spaces. The mobility transition offers less space consuming and cleaner methods of transport and densification around station Mariahoeve. The municipality promotes healthy urbanism by improving recreational and ecological qualities of the Schenk strip and the recreational Loo-zone between Huis ten Bosch and Voorburg. All neighbourhood centres and the district shopping centre are subject of redevelopment proposals.



Figure 4. urban designer P. Peters, Map of previous (deviations) and coming updates for Mariahoeve, The Hague, The Netherlands, 2022. © Credits BUROPPOSSO, The Hague

4. Setting the discussion

Waiving a Preservation status?

Twice the Preservation status was waived. A Preservation status asks for stronger argumentation as to why redevelopments are fitting the values. As written in this paper the original urban plan for Mariahoeve contained experimental typologies and philosophy. The realisation was in some cases differently as planned. After 1980 many developments already changed the district itself and its edges. A thorough analysis should be done and discussed to have consensus on the values which should be protected.

Preserving the architectural image?

Most ordinary people consider the after-war-architecture negative. In contrast, the Aesthetics committee's current policy is that new developments must fit in with the environment. Only in case of changes in the whole district an architectural policy can be established. The energy transition has effect for the whole district. The discussion to keep the current aesthetics policy or change it should be held.

Vision Updating Mariahoeve?

The current district vision is outdated. When one reads the discussions above and takes in consideration the realized unexpected previous updates and the coming updates then a comprehensive process is needed on the scale of the district. It should lead to guidelines for desirable developments not affect the values but enhancing them.

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A Study of Urban Morphological Models and Pedestrian Network Regarding Volumetric Podium–Pedestrian Complex in High–Density Hong Kong

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Amid Hong Kong's extreme high density, the compact urban form with multi-layered pedestrian system emerged as a manifestation of capitalist economy and land policies. Unique to the vertical spatial structure of a city such as Hong Kong, the podium–pedestrian complex is defined as a cluster of developments connected as the podium level, above ground level, underground level or hill slopes, via elevated walkways, on ground passages and underground subways. This study contrasts with conventions of urban morphological studies developed in European old towns that focus mainly on planar figure–ground relationships and physical elements. This paper attempts to develop a methodology for understanding and decoding the podium pedestrian compound and the composite elements of vertical high–density urban form. Empirical cases will be selected from the latest reclaimed coastal tissue filled with mega podium–pedestrian compound and old conventional tissues occupied by small scale plots and buildings in urban core areas in Wan Chai, Hong Kong. In addition to the relationship between urban morphology, the differences of pedestrian networks of the two types of urban forms will be identified.

The study finds that along the incremental reclamation phases, the later formed urban patterns gradually added new physical elements, such as the podium compound, and spatial relation structures, for example the new relation between indoor and outdoor elements extending from the relation of outdoor spatial elements. These new elements and structures in the urban patterns are expressed by the altered arrangement rules embedded in the hierarchical relation between of streets, plots and buildings in Wan Chai. By attending to the application of urban morphology on decoding the podium–pedestrian compound, this study extends existing theoretical methods of understanding the spatial structure and patterns in Hong Kong. In so doing, it aims to add to future studies of urban form in high–density cities in the Global South and contribute to urban design guidelines.

1. Introduction

The compact and high–density of urban form in Hong Kong is generated by the land value–driven policies of British colonial government after the first ceding of Hong Kong Island from 1841. There was not a long–term planning proposal implemented as the colonial government always considered the short–term profit making and rejected long–term investment due to the cost (Bristow,1984). Nevertheless, the first Surveyor–General of Hong Kong,

A.T. Gordon made the planning and mapped the land parcels, although such proposals later became the reference of land development under the fundamental policy of laissez-faire instead of statutory document. The urban form at Wan Chai is a result of land development and piecemeal-by-piecemeal urbanization along a series of processing land reclamation.

Each phase of pattern formation shows varied but unified spatial structures and morphological components. The consequent urban pattern of each phase may have different implications in the use and interrelation of route, plot and building in a trinity. Land parcels in the street grids which embeds the multiple human activities are usually subdivided along the emergence of streets at the formation phase. The study aims to understand the subsequent newly emerged urban pattern after several reclaimed process, identify the basic types of new forms in turns of the composite elements and hierarchical levels in spatial structure, and then the relationships between these generic in urban core area of Hong Kong. Cases is consisted of three sites and located in Wan Chai.

Firstly, the street blocks composed of mega-scale plots with podium-pedestrian complex built from 1970s to 1990s is selected as case in Wan Chai North. This generation of urban tissue are categorized into podium-pedestrian complex, consisted of podium and elevated walkways, ground streets and underground subway corridors in three layers: above ground, at ground and underground connected by horizontal footbridges and underground tunnels, as well as vertical lift and escalators, which is the main focus in this study. Their driving forces such as capitalism and government control will be generally specified. Then, a research methodology based on the theory of urban morphology will be conceived to identify the hierarchical structure and generic types of volumetric urban form of high-density Hong Kong in contrast to the dominated low-density western. The hierarchical access relation between the physical elements and their territorial order of each model is to be discussed.

This study will provide methods for urban form study in high-rise and high-density areas, guide and evaluate the urban design schemes based on morphological and pedestrian pattern of the comprehensive building-pedestrian complex at neighbourhood scale. Moreover, the study can support and provide a guideline to the practitioners and planners to make changes of urban design strategies towards abundant street activities.

2. Ideology of podium-pedestrian compound

The pedestrian podium complex could be related to the notion of return to the street emerged from the Modernist Movement after World War II in the 1950s and 1960s for the purpose of quality of life. Street was regarded as the most important elements in the urbanism and urban design. In 1922, Le Corbusier in his renowned monograph "Contemporary City for Three Million

People” mentioned the streets as a link or covered passageway to form a small network connecting commerce and business. Elevated walkways or called ‘streets in the air’ were induced and distributed at the periphery of the spacious Redent housing blocks. Later in 1987, Le Corbusier proposed the fast motor tracks on below-ground layers to separate the vehicular traffic from pedestrian traffic on the ground level and thus to allow vehicles move rapidly. The ideals conceptual street proposals of Le Corbusiers laid the Foundation of the theoretic tenets and proposals on the street in the 1933 and 1951 CIAM Conferences. The 16th article of the Athens Charter showed the ideologies on the separated traffic system:

“Traffic will be separated by means of a network of footpaths for the slow-moving pedestrian and a network of fast roads for automobiles. Together these networks will fulfil their function, coming close to housing only as occasion demands.” (The Athens Charter, 1973, p. 57). The urbanism principles of the two important conferences were inherited in the practice urban design after WWII. The segregation of motor tracks and pedestrian path in the multi-level structures had already been implemented in the service infrastructure, such as Le metro de Paris and the New York Grand Central Railroad.

In the 1970s, however, the proposal of streets even broke the limit between outdoor and indoor and became an element of buildings which means a new approach to pedestrianization took shape. The futurist projects designed by groups such as Archigram or the Japanese Metabolists inspired megastructures where people could roam around a complex network of pedestrian podiums, passages, skywalks, underground tunnels, etc. In these pedestrian megastructures the limits between buildings and public spaces vanished. Archigram, formed from 1960s inspired by the boom of technology and consumer culture, showed their position of street through hypothetical projects. They opposed that the cities of one-layered horizontal circulation around bunch of skyscrapers serves as the future city. In their projects, the streets in future cities are conceptioned with diagonal multi-level links and “movement tube” creating the connection networks at the higher layers among and via buildings.(Cook et al. eds, 1999, p. 29).

By the 1970s, the trend of pedestrianization spread and post-war urban design considered pedestrianization as a key element to enhance people’s quality of life in cities. Rotterdam’s Lijnbaan was the first purpose-built pedestrian street in Europe. Hong Kong’s elevated podium-pedestrian complex were also initiated from 1970s. The insertion of elevated walkway between podiums and between sidewalk of streets at the early stage is the product of collaboration of the private sector as well as the public sector in Wan Chai (**Fig. 2**). The footbridge constructions were implemented by the government initially. Later, privately owned and publicly used smaller scale walkways were funded by private developers. The incrementally increased walkways together with existing podiums or new building projects gradually formed a second-layered space for pedestrian traffic.



Figure 1. Podium–pedestrian compound of Wan Chai. © Drawn by author on the digital maps of Lands Department. The Government of HKSAR, 2022.

3. Formation of podium–pedestrian compound in Wan Chai

Along the third reclamation carried out and launched the street grids from 1967 to 1975, the function zoning and vehicle–oriented street planning promoted by the Modern Movement was put into practice in Wan Chai (**Fig. 2**). As a result, new gridiron blocks were laid out in a larger size bounded by much wider streets and thus formed a sort of sparse grid. Buildings were individual larger scale bulks independent between each other with wider spatial intervals, some of which even occupied the whole block. The relationship between street, plot and building is much looser and not clearly articulated and defined as in the old urban tissues.

The commerce of MTR construction in 1975 and the economic boom brought by the manufacture industry in Hong Kong together created large land redevelopment activities in Wan Chai. An increasing number of office and commercial buildings extending from Central replaced four to five–story tenements in old area and sprung up at new reclaimed land with a corresponding demolition of tenement buildings. The land use transformed from the purely residential one to a highly mixed land use consisted of office, commercial, residential and governmental buildings. The lower land price and rent in Wan Chai than in Central resulting in a rapid urbanization and transformation, which heavily intensified the area through the redevelopment within the existing land as well as the new projects on the reclaimed new land.



Figure 2. Aerial Photos of Wan Chai 1972. © Credits Lands Department. The Government of HKSAR, 1972.

The elevated podium–pedestrian complex became the third strategy for urban development in addition to the urban renewal and new land reclamation in the heavily populated urban cores like Wan Chai. The multi-layered grounds created through air reclamation are products of volumetric urbanism in Wan Chai, which eased the vehicle traffic congestion on the ground and extended as an integral part of some buildings connecting the podium and elevated walkway level. The land shortage for not only building plots but also congested streets together with commercial investment led to the formation of new physical element – extensive elevated podium–pedestrian complex and the new spatial structure – its relationship with other elements. Based on such land policy and economic context, the urban morphology of Hong Kong created a type of its own, which may not fall within the ideologies of western urban conventions and whose model needs to be studied.

4. The generic structure of podium–pedestrian compound

One of the core concepts of urban morphology is the identification of basic elements and their relationships and position in a hierarchy of urban structure. According to MRG Conzen (1969), the intricate morphological manifestation of different periods mainly showed in a hierarchical structure composed of three form complexes, namely the town plan, the building fabric and the land and building utilization pattern, in a containment relationship between lower level and a-step–higher level. Each form complexes presents various time

responses, duration and resistance to the changing community needs on functions along the successive morphological periods. An alternative hierarchy of urban structure proposed by Caniggia and Maffei (2017) is based on an aggregation relationship of four basic elements, i.e., buildings, tissues, districts and towns.

Principles of the two hierarchies are similar, which both are an aggregative relation between different elements. The entity in a given level is composed by the parts in the lower-level domain and in turn is the constituent of the entity in the upper level. Based on the analysis of Kropf (2014), the aggregative relationship between different elements shows like: Solids (enclosure) + Voids (space) = Entities in the upper level, that means the plot open area and building are coextensive and form the plot and further the simple tissue (Fig. 3). Within such an aggregative hierarchy, there is one special subtype of relations, i.e., single element composition in coextensive form. The single physical element occupies more than one hierarchical level at once, for instance a plot at a large-scale consists of a whole block.

Based on the urban tissue formed from 1970s and the referred theory of urban morphology, three issues are proposed:

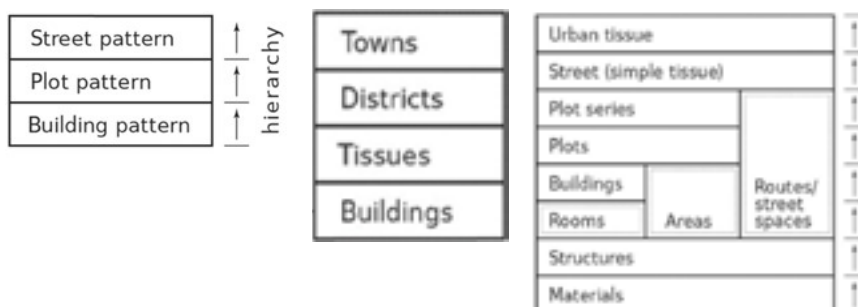


Figure 3. Hierarchical generic structure of Conzen (left), Caniggia (middle) and Kropf (right). © Credits Karl Kropf, 2003.

1. How to define Podium–Pedestrian Complex in the Conzen's and Cannigia and Maffei's compositional hierarchy of conventional urban morphology?
2. How to refine the core elements of Podium–Pedestrian Complex in the generic structure defined by Conzen as well as Cannigia and Maffei?
3. What is the hierarchical relation of the Podium–Pedestrian Complex in different horizontal levels?

So, the question podium–pedestrian complex is formed by which parts and of what it is a part need to be solved. Thus, pedestrian–podium complex is equivalent to the simple tissue or street, podium is represented by solid building elements, pedestrian is similar to the void route space. The definition of circulation in the Podium–Pedestrian Complex is referred to the conception of Cannigia and Maffei's Street/Simple Tissue, in contrast to Conzen's

conception of “street”. It is not an independent “void” or “space” just for pedestrian movement no matter at indoor or outdoor, but a kind of glue to tie together the elements (the plots outside or the rooms inside) along each side and make up the upper level in the generic structure.

The selected case is pure commercial complex linked by footbridges in Admiralty and Wan Chai North (**Fig. 4**). The reason why chooses it is because such complex represents the emergence of the interiorized and multi-layered public pedestrian network in Hong Kong. The first multi-layered pedestrian transportation diverting in a three-dimensional direction appeared in Hong Kong Island. They feature as interiorized, privately owned and publicly accessible “public space” or “semi-public space”: the hall and concourse in the podium and MTR station shoulder the tasks of urban plaza and street, serving as node of pedestrian transport as a part of indoor street network and providing place for social life and activities, opened for 24 hours, air-conditioned and lit environment and free from automobiles and bad weather. The pedestrian in the Podium-Pedestrian Complex not only has physical form but also has social control as a sort of “space” with “territorial depth” from internal, private space, external, private/ semi-private space to public space referred as Habraken (1998).

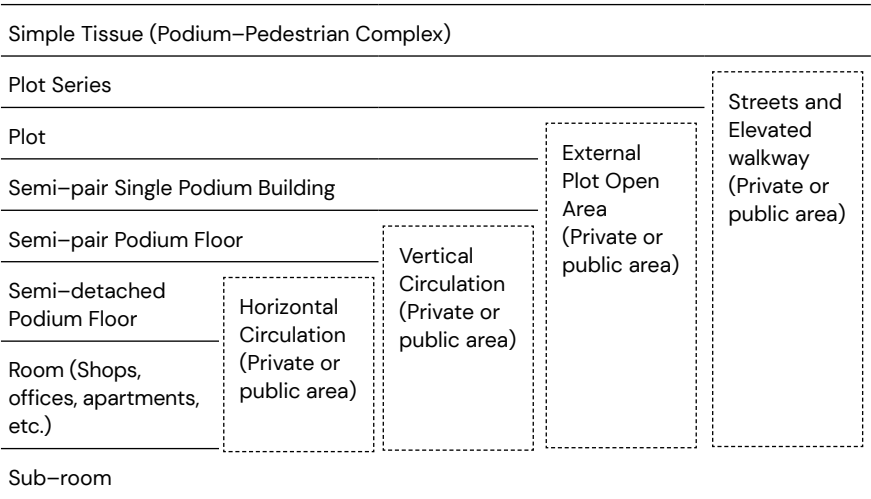
The pedestrian occupies at least three types of “void” spaces, i.e., internal areas, external/ semi-outdoor areas and pedestrians/ routes, and incorporated into “solid” to compose generic types of elements such as buildings, plots of individual development, plot series of podiums and simple tissue of Podium-Pedestrian Complex. Podium-Pedestrian Complex is an entity providing access and movement towards rooms, buildings, plots, and plot series ranged along



Figure 4. The 1st floor layout of Queensway Plaza and Towers. © Drawn by author on the image of Frampton, Adam, Clara Wong, and Jonathan Solomon, 2012.

each side, as the basic unit of high-density and high-rise development in Hong Kong, and also a combination of 9 levels of elements in the hierarchy and belongs to levels of buildings, plots, plot series and simple tissue.

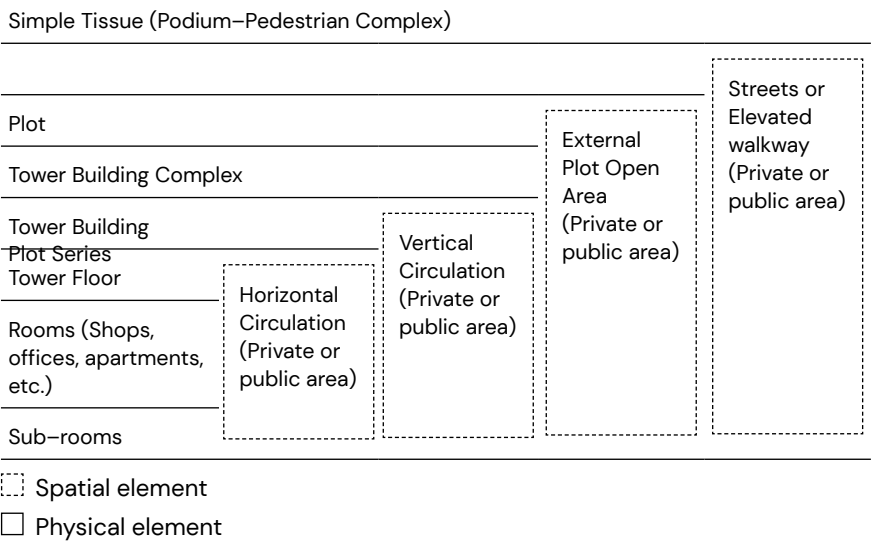
An improved generic structure and hierarchy for podium-pedestrian complex tissue at podium levels:



☐ Spatial element

☐ Physical element

An improved generic structure and hierarchy for podium-pedestrian complex tissue at tower levels:



5. Implications of generic structure and hierarchical relation of podium–pedestrian compound

The podium–pedestrian compound of the site is abstracted in accordance with the logic of containment hierarchical rules defined as the generic structure. The generic structures can be classified through the types of physical elements, such as blocks/tissues, and their relations with components. The hierarchical structures of podium–pedestrian compound are greatly different from the conventional simple tissue structures. As each type of block/tissue is the product of the corresponding time phases, the type of structure can either reveal different temporal traditions of the abstracted urban form based on its correlation with types of block/tissue or generic structures. Thus, the new podium–pedestrian compound structure can serve as a tool for easily recognising the constituent elements and embedded relation of mega–scale plot and block tissue generated under the ideology of Modernism Movement.

Some relation of levels and elements keep constant from the conventional structure to the later podium–pedestrian structure, for example at the plot and tissue level, or at the room and building levels. This implies that there is a continuity and inheritance from the old tissue pattern to the later formed tissue pattern. The series of block/tissue have partially same relations between components in essence. In the above case, simple tissue is constituted by the podium–pedestrian block, thus it is not surprised that the conventional and the new structures have the same plot to block aggregative relations.

Moreover, the sub–structures at the building level can also distinguish the tower and podium building types from tenement housing and large commercial mansions, as the type of access sub–structure of tower and podium building usually has more hierarchical depth and a greater number of room elements listed below the ground floor level. Thus, the types of access structure indicate the physical element types and their composite relation in the built environment via a more abstract way rather than via geometry display.

Substructures are the modules to constitute the supra–module of the urban tissue in an urban form. Two or more structures have a co–existent relationship between each other and together constitute the supra–structure at a larger scale and in turn each contains sub–structures at a smaller scale contemporaneously. The containment relation between sub–structures at different levels is hierarchical and co–existent, which follows the containment relation between physical elements and void spaces in the generic structure. For example, serial modules of plot substructures aggregate to form a supra–module of block structure at a higher level and in turn block substructures repeated to comprise a supra–model of tissue structure in a repetition and modularity manner. Here the serial element is represented by the pedestrian–podium structure.

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Acknowledgments

The author very appreciates the supervision of Dr. Beisi Jia and Dr. Ying Zhou as advisors of paper research. Thanks very much for the suggestions given by Dr. Carlos Gabriel Garcia Vazquez on this paper. Thanks to Zhejiang Jianyuan Architectural Design and Urban Planning Institute for support in research on housing environment. The authors would like to thank the Graduate School of University of Hong Kong for providing the fund on the project.

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Urban design and quality of life: Acknowledgment, Generosity, and Care

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Discussion about the protection of modern urban and landscape designs has only recently emerged. From the very beginning, there have been several difficulties associated with the complexity and interdisciplinarity of urban and landscape designs, specifically with ownership and the way public space is perceived and used today. The dimensions and abstract configurations of modern urban and landscape designs do not correspond to the general idea of intensification and densification of urban structures that dominates discourse about the cities of tomorrow. The generous open areas provided in modernist housing estates are destined to become a target when it comes to rehabilitation that is interpreted as replacing old structures with new buildings and redesigning what had previously been public space. The same goes for leisure-scape. Many of the generously accessible natural areas that were part of the resorts built in the era of welfare states have recently been turned into fenced and guarded private property. However, it is more than a question of scale, accessibility, and aesthetics. Modernist urban and landscape designs are related to former, then contemporary ideas of social inclusion and community life. Therefore, it is also a question of a mind-set that makes modern urban and landscape designs extremely fragile.

In his remarks on the city of Brasília as a UNESCO site, Rem Koolhaas asked "How do you preserve that, which is modern or in other words, how do you stop modernity in its tracks?"¹ But who wants to stop modernity in its tracks? And what does "modernity" mean and what kind of "track" is it following? When speaking about preservation of modern urban or landscape design, what needs to be preserved? Is it just form or is it also social content? In his essay *Modernity: An Unfinished Project*, Jürgen Habermas advocates modernity as a project worthy of development. For him, it is precisely the social dimension of modernity that needs to be continued and developed.²

What should be learned from his considerations in relation to modern urban landscapes? Should projects be abandoned that have allegedly lost their social legitimacy? Or should there be a look back at their social content and an attempt to build on it? The argument for the demolition of Robin Hood Gardens was the estate's negative impact on social behaviour. But it was rather insufficient maintenance, the general public's lack of interest and economic pressure to replace it simply with new housing more attractive to the real estate market that led to its demolition, starting in 2017. February 2022 saw the demolition of Slovakia's largest House of Culture, built in 1981 by the Communist-era national trade union. While the current private owner had advocated it because the complex had become obsolete and a new "modern" centre was needed, even though it was clear that the main reservation was the generous and "unnecessary" outside open to the general public. In March 2022, information appeared about the planned demolition of the unique "urban experiment" in the centre of Cumbernauld. The North Lanarkshire Council reasoned that the centre did not correspond to the vision of its residents of what they need from a modern town centre.³ Arguing against the demolition, critics commented about the council's inability to take proper care of the slowly dilapidated centre. Nonetheless, a well-known strategy of intended non-maintenance and controlled decay seemed to have taken hold at all of these sites, to be followed by a proposal to demolish and construct something else. Jorge Otero-Pailos supplied yet one more important reason when he commented on Rem Koolhaas's lecture at Columbia University in September 2009: "For Koolhaas, the deregulation of the market economy initially made it impossible to practice this sort of socially committed architecture, and now, more disturbingly, it is eliminating evidence that such architecture ever existed, as this legacy falls victim to development pressures to demolish it."⁴

This may be the very core of the problem, the political will of today's elites to erase evidence of modern achievements because of their ability to recall the memories of socially committed design. "If aesthetic experience is incorporated into the context of individual life histories, if it is utilized to illuminate a situation and throw light on individual life problems – if it communicates at all its impulses to a collective form of life – ", wrote Habermas, "then art enters into a language game which is no longer that of aesthetic criticism, but belongs, rather, to everyday communicative practice."⁵ Therefore, it has become extremely important to extend the field of protection beyond the technical conservation of buildings. The public interpretation of the complex heritage of modern architecture, town-planning and landscape design is becoming more and more relevant. This interpretation is also needed in the context of the climate crisis, such as the warming of cities, where modern urban and landscape solutions provide opportunities for more high-quality greenery. Part of this necessary interpretation is also the contributions in this section, which analyse the values of modern urbanism in Brazil and Canberra, compare the values of modern housing estates in Madrid and analyse the qualities of the university campus in Valencia.

Although there is only a marginal reference to the modern urban landscape in the UNESCO declaration on Historic Urban Landscapes of November 2011, it can still be referred to the principles set out therein,⁶ taking into consideration modern urban and landscape designs as an important layer of the historic urban landscape. French architect Jean Philippe Vassal likewise pointed this out when he talked about the importance of recognising and understanding “what qualities and characteristics modernism has provided in comparison and addition to the older moments of the city, and that need to be explained, adapted, and extended to the maximum.”⁷

In a comprehensive holistic approach to urban landscape, evaluation of all layers and their importance for the identity of the urban landscape is taken for granted. Therefore, the goal should be to explore and explain the values of modern concepts more than ever before. There is a need to clarify their impact on the concept of the local community and make it understandable to the public. Because, as Otero-Pailos put it, “the total demolition of any historic building to make way for new architecture seems unthinkable, even barbaric”, where he sees “the old as more culturally relevant than the new.”⁸ The same attitude has been expressed by Anne Lacaton and Jean Philippe Vassal, winners of the 2021 Pritzker Prize. Instead of inventing new forms they suggest maintenance. They have demonstrated that the rediscovery of care, of taking care of architecture, public space and nature works in all scales of architectural design, urbanism, and landscape design.

Notes

- 1 Rem Koolhaas, “Brasília”, *Revista Centro*, n°0+. <http://revistacentro.org/index.php/koolhaaspt/>. Accessed on 6th April 2022.
- 2 Jürgen Habermas, “Modernity: An Unfinished Project,” *Habermas and the Unfinished Project of Modernity: Critical Essays on “The Philosophical Discourse of Modernity,”* ed. Maurizio Passerin d’Entrèves and Seyla Benhabib, Cambridge, MA, MIT Press, 1997.
- 3 Lizzie Crook, “Demolition of Cumbernauld’s brutalist town centre “a complete outrage”, *Dezeen*. https://www.dezeen.com/2022/03/14/cumbernauld-brutalist-town-centre-demolition-outrage/?li_source=Li&li_medium=bottom_block_1 Accessed on 6th April 2022.
- 4 Jorge Otero-Pailos, “Supplement to OMA’s preservation manifesto”, *GSAPP Books*, New York, Columbia University, 2014. <https://www.arch.columbia.edu/books/reader/6-preservation-is-overtaking-us> Accessed on 6th April 2022.
- 5 Jürgen Habermas, “Questions and Counterquestions”, *Habermas and Modernity*, Cambridge, MA, MIT Press, 1985, 202. Ref. according to Gili Kliger, “Art and Emancipation: Habermas’s “Die Moderne – ein unvollendetes Projekt” Reconsidered”, *New German Critique*, 2015, No. 124, 214.
- 6 <http://www.historicurbanlandscape.com/index.php?classid=5352&id=29&t=show> Accessed on 6th April 2022.
- 7 “Designing the Brief. Jean Philippe Vassal in conversation with Philipp Oswald”, *Projekt Bauhaus: Can Design Change Society?* Berlin, Arch+, Birkhäuser 2019, 73.
- 8 Jorge Otero-Pailos, 2014.

Brasília's Historic Urban Landscape: The Paranoá Park Condominium's case

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In this paper we will explore the implementation of Paranoá Park Condominium (2014), located on the edge of Paranoá basin, used by the National Historical and Artistic Heritage Institute (IPHAN) as boundary for the surroundings of Urban Ensemble, classified as World Heritage site by UNESCO (1987). To advance toward new approaches as the Historic Urban Landscape (HUL), we will seek to explore the different layers that compose this landscape. It is noted that there are still difficulties in the management of urban landscape in Brasília, mainly due to lack of dialogue and understanding between managers and key stakeholders in urban preservation and development of the city. In addition, the notion of urban heritage preservation persists as an isolated discipline among experts in the field.

1. Introduction

The implementation of the Urban Ensemble of Brasília took place in a geographical unit with unique landscape, environmental and topographic characteristics, all considered favourable by the scientific committees that conducted earlier studies in the territory (Cruls Report – 1894 and Belcher Report – 1954) (AMARAL et al, 2020). The Paranoá Hydrographic Basin defined the urban layout of Brasília's Plano Piloto project (the original design).

Veríssimo highlights Brasília's outstanding position in the Paranoá Basin, due to the implementation of Plano Piloto on its dome relief, allowing a privileged view of the horizon, inside–out, from various angles; and also, from different urban locations neighboring the city, outside–in, focusing on the heritage site (VERÍSSIMO, 2005).

The landscape of Brasília's horizon has been part of the city's identity construction since its implementation: "We then sought to adapt to the local topography, to the natural flow of water, to the best orientation..." (COSTA, 1957). In his report "Brasília Revisitada" (1987), Lucio Costa emphasizes the presence of the sky: "As an integral and omnipresent part of the urban conception itself – 'the voids' are filled by it; the city is deliberately



Figure 1. Appears on the third topic, on page 1019. Here are the subtitle and credits of the image that is missing: Brasília, Brazil, 2021. © Credits: Geo Portal of the Secretary of State for Urban Development and Housing (SEDUH) with changes by the author.

open to 360 degrees of the horizon that surrounds it" (COSTA, 1987, p.10), demonstrating concern with the preservation of the Plano Piloto landscape.

Brasília was inaugurated in 1960 and by the end of the 1970s, when the Brasília Work Group (GT-Brasília) was created, was facing a great period of growth. The group was formed by members of SPHAN/Pró-memória, from the former Department of Culture of the Government of the Federal District (GDF) and also by members from the Institute of Architecture of the University of Brasília, adopting a format that sought to reflect the Brazilian capital condition, both nationally and locally. This participation of different stakeholders seems to be extremely current, with great similarity to the methodology proposed by UNESCO in 2011 to think about a dynamic preservation of urban space, the Historic Urban Landscape (HUL).

Classification as a World Heritage Site was achieved with the "Brasília Dossier", prepared by GT-Brasília. This group understood Brasília as the entire DF territory and sought to study and understand the existing and modified landscape, from the first occupations to the natural landscape. However, according to the city's historiography, the difficulties faced by the GT-Brasília were many, including the attempt to integrate preservation actions and urban planning (RIBEIRO, 2005).

The GT studies served as groundwork for the World Heritage classification, but the preservation proposal concentrated in Lucio Costa's Plano Piloto prevailed:

federal legislation (Ordinance IBPC nº04/90 later replaced by Ordinance IPHAN nº314), and the local legislation (Decree nº10.829/87) were based on the Plano Piloto project and are attached to the Plan report by Lucio Costa (1957) and the report “Brasília Revisitada”. In 1990, the Urban Ensemble of Brasília was listed as a heritage site by IPHAN, also contradicting the studies undertaken by the GT, which defended dynamic preservation through urban planning.

It is important to understand and problematize how the management of urban heritage is carried out in Brazil, specifically in the case of Brasília, a modern city that was given heritage status after only 27 years of existence and still is, therefore, unfinished. For this, we will adopt as a case study the implementation of Paranoá Park condominium and its consequences in the Brasília Historic Urban Landscape. The Condominium maintains visual, social, and cultural relations with the modern ensemble, in addition to being located within the buffer zone implemented as criterion for its preservation.

We will discuss the fact that, despite strengthening the preservation of urban heritage, this continues to be an isolated field from the processes of city development. What are the criteria used by the field of preservation to manage urban heritage today? Seeking to find solutions, we will use the Historical Urban Landscape (HUL) approach. Based on this analysis, the aim is to advance in the understanding of tools to work holistically with measures of preservation and urban development, using Landscape as a methodology.

2. Historic urban landscape

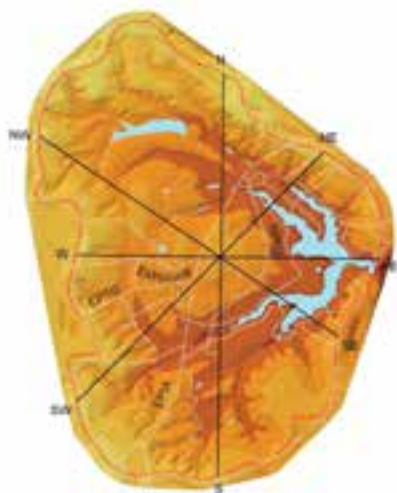
Currently, there is a growing understanding among preservation specialists that some standards need to be revised to achieve a more integrated view of urban management, combining the preservation of historic centers with the process of urban development and regeneration (BANDARIN; VAN OERS, 2012). The latest international documents of the 21st century have brought constant concerns about global transformations, migrations, mass tourism and the preservation of urban heritage in the face of the growth of large cities (MELO, 2020; VELDPAUS, 2015).

According to the UNESCO report “Culture: urban future” prepared within the scope of the UN Habitat III conference to discuss issues on housing and sustainable development of cities, urban heritage has been acquiring increasing importance in international discussions (BANDARIN, 2019). The quality of the urban environment has become a local, national, and global concern, as cities will be the main living place of society in the 21st century.

It is expected that the preservation of urban heritage will be seen as an integral part of cities’ development strategies, which requires an understanding of each site inherent values.

The landscape-oriented approach encompasses notions of intangible heritage, surroundings and context, urban and sustainable development, and the city's social and economic functions (VELDPAUS, 2015).

The concept of Historic Urban Landscape (HUL) is established as an approach that deals with the landscape and bases its management in an integrated way towards a larger structure of socioeconomic development. It addresses specific characteristics in the context of cities, which leads to different specificities for each context.



The publication "The HUL Guidebook. Managing heritage in dynamic and constantly changing urban environments" (UNESCO, 2016), defines an action plan with six steps, as management tools, indicating a path that would facilitate the implementation of the approach and that are adaptable to each city:

1. To undertake comprehensive surveys and mapping of the city's natural, cultural and human resources;
2. To reach consensus using participatory planning and stakeholder consultations on what values to protect for transmission to future generations and to determine the attributes that carry these values;
3. To assess vulnerability of these attributes to socio-economic stresses and impacts of climate change;
4. To integrate urban heritage values and their vulnerability status into a wider framework of city development, which shall provide indications of areas of heritage sensitivity that require careful attention to planning, design and implementation of development projects;
5. To prioritize actions for conservation and development; and
6. To establish the appropriate partnerships and local management frameworks for each of the identified projects for conservation and development, as well as to develop mechanisms for the coordination of the various activities between different actors, both public and private. (UNESCO, 2011)

Figure 2 and 3: Must appear together, on page 1020, after this paragraph: "According to the "Visibility study of the urban ensemble of Brasília" (2017) developed by technicians from GDF the north and south axes of the Plano Piloto develop longitudinally at the base of the semidome, with an average elevation of 1050 m, featuring full visibility in the east direction, on the other hand, it presents visual blockage in the west direction." Here are the subtitle and credits of the image that is missing: Figure 2: Topographical profiles. Visibility study of the urban ensemble of Brasília developed by technicians from SEDUH. SEDUMA was the former name of SEDUH by the time the study was made (2017).

© Credits: Secretary of State for Urban Development and Housing – SEDUH. Figure 3: Topographical profiles. In the West East direction.

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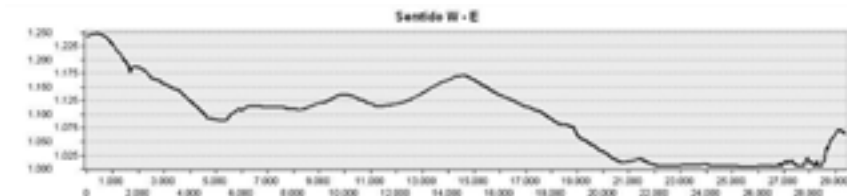


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Figure 4. Must appear on page 1020 after this paragraph: "The implantation of the Condominium took place in an area of intense visual interaction with the urban complex due to the topography of the land. A lack of care with the analysis of the implementation of this enterprise resulted in a great later interference." Here are the subtitle and credits of the image that is missing: Figure 3: Paranoá Park Condominium, Brasília, Brazil, 2021. © Credits: Mariana Freitas Priester.

Seeking to analyze the present changes that have been taking place in the landscape of Brasília, we will verify how the management of urban heritage took place in the chosen case study compared to current preservation policies.

3. The paranoá Park Condominium

Tired of this never-ending battlefront, UNESCO is developing a new definition for "Historic Urban Landscape": heritage is no longer seen as a single object or urban ensemble, but as all natural and historical layers of an area; voids, infrastructure, social, cultural, and economic processes. **Perhaps Brasília is one of the biggest tests for this new definition** (KOOLHAAS, 2011).

Paranoá Park Condominium is located on the hills that form the eastern limits of the Paranoá Sub Basin and frame the Urban Ensemble of Brasília. It is located, according to the Master Plan for Territorial Ordering of the Federal District (PDOT), in the *Territorial Planning Unit – UPT East*, in the *Administrative*

Region of Paranoá – RA VII. According to the zoning of the PDOT, the area is in the *Controlled Use Zone I*, with a maximum utilization coefficient of 4.5.

The area is also part of the *Environmental Protection Area – APA* of the Central Plateau, being included in the APA management plan in the *Sustainable Use Zone* (areas of land occupation matrices with predominance of rural production, but which have special importance for conservation of soils and water) and the *Environmental Protection Area of Lake Paranoá – APA do Lago Paranoá, Special Occupation Subzone of Paranoá – ZOEP* (area designated for the expansion of Paranoá Region).

The Ordinance n°68/2012 published by IPHAN in February 2012 defines and regulates the area surrounding the urban ensemble of Brasília. All interventions in this area must accompany the following guidelines: I – Guarantee the reading of the original trace and the preservation of the spirit, conception, and ambience of the Plano Piloto; II – Guarantee the visibility of the horizon from the protected area; III – Guarantee the visibility of the Plano Piloto from the existing natural viewpoints.

At the time the condominium was submitted for approval by IPHAN (on July 2012), Ordinance IPHAN n°68 had already been published, but only archaeological issues¹ were analyzed by the Institute. According to the Ordinance, this area is defined as *Surrounding Sector (05), Controlled*



Figure 5. Must appear on page 1021 after this paragraph: "The main attribute identified by the conservation agency (step 2) would be the summit of the Paranoá Hydrographic Basin, which makes up the landscape of the Plano Piloto and along with the urban scales compose the values that are intended to be protected and transmitted to future generations." Here are the subtitle and credits of the image that is missing: Brasília, Brazil, 2021. The condominium changed the landscape that makes up the modern complex, with the building mass being clear on the horizon line formed by the limits of the Paranoá Basin. The arrow indicates the location of the condominium. © Credits: Mariana Freitas Priester.



Figure 6. Must appear on page 1021 after this paragraph: "The federal preservation agency....". Here are the subtitle and credits of the image that is missing: Figure 5: Brasília, Brazil, 2021. The arrow indicates the location of the condominium. © Credits: Mariana Freitas Priester.

Occupation Sector II. The urban parameters of occupation are that any project that exceeds 9 meters in height must be submitted for approval by IPHAN. In the district legislation, even though the area was included in protection areas with an indication of care for the use of the soil and water resources, it was also considered an area of expansion of Paranoá, which allowed the Condominium to be implanted there, with 6,240 housing units divided into blocks of 04 floors. In 2019 it already had a population of 25,000 inhabitants².

According to the “Visibility study of the urban ensemble of Brasília” (2017) developed by technicians from GDF, the north and south axes of the Plano Piloto develop longitudinally at the base of the semidome, with an average elevation of 1050 m, featuring full visibility in the east direction, on the other hand, it presents visual blockage in the west direction.

The implantation of the Condominium took place in an area of intense visual interaction with the urban complex due to topography. A lack of care with analysis and implementation of this enterprise resulted in great later interference.

A new request for a subdivision area next to Paranoá Park was submitted to approval in 2021. This new instalment plan proposed commercial lots to offer places that could generate employment and income for the local population, three lots destined for institutional use, for religious purposes, seeking meet the demands of residents for this³.

At this time the national cultural heritage preservation agency opposed the implementation of the new subdivision (IPHAN, 2021). Arguing that from the point of view of preserving the ambience and visibility of the Urban Ensemble of Brasília: “it is important to perceive the presence of the “Horizon Line” on the east side of the site where the Plano Piloto was implemented” (GOMES, 2021, p.08), which is already hampered by the implementation of the Condominium.

The main attribute identified by the conservation agency (step 2) would be the summit of the Paranoá Hydrographic Basin, which makes up the landscape of the Plano Piloto and along with the urban scales compose the values that are intended to be protected and transmitted to future generations.

The national cultural heritage preservation agency requested that the template for the new buildings should be revised, from 15.5m to 12m in maximum height, and that a vegetation planting proposal should be made for the new subdivision and for the Condominium.

The federal preservation agency still maintains its analysis based on aesthetic and visibility criteria, centred on height urban parameters. In a landscape-oriented approach, all layers that make up the urban landscape should be considered. The Federal Constitution of 1988 expanded in its articles 215 and 216, the notion of Cultural Heritage, recognizing the existence of Material and Intangible Assets. To comply with this regulation, IPHAN created appropriate

instruments for the recognition and preservation of intangible assets⁴. However, in institutional practice, these two policies continue to be treated separately, with no room for evaluating immaterial aspects in analyses that deal with material heritage, such as isolated heritage properties or urban complexes, as is the case of Brasília.

4. Final considerations

The Historical Urban Landscape approach is a tool that intends to manage the transformation of the urban landscape, helping to improve the quality of life of the local population. It is a powerful tool, and if methodologically well structured, it can establish a communication bridge between managers, the community and agents interested in urban preservation and development.

Comparing the case study of Paranoá Park Condominium implementation in the landscape that surrounds and protects the Urban Ensemble of Brasília with the six steps defined by the HUL methodology, we can point out some failures in the site management process.

- I Although the preservation legislation identifies areas that require greater care for occupation, the urban parameters of urban development do not dialogue with this concern.
- II The values to be protected in the landscape that makes up the surrounding area are not properly identified in the legislation.
- III The threat of occupying territory in a way that does not qualify the environment and life quality of the population is increasingly present with the densification around Plano Piloto area.
- IV A preservation plan for the Brasília Urban Ensemble surrounding area should consider the character of each sector, dividing them into landscape units, categorized through landscape values, activities and processes, landscape visualization paths, and other criteria, as general guidelines to further interventions (SCHWERZ, 2017).
- VI And finally, measures and actions, as well as occupation proposals should follow the guidelines provided in Landscaping Occupation Plans that consider all the dimensions that make up to the Historic Urban Landscape of Brasília.

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Notes

- 1 A study was carried out with the objective of conduct a survey of the prehistoric, historical–cultural archaeological heritage and heritage education in the area impacted by the implementation of the Paranoá Park Condominium, in compliance with Brazilian legislation that considers archaeological sites as Brazilian cultural heritage.
- 2 According to an article published in the periodical *Metrópoles*. Available at: <https://www.metrópoles.com/distrito–federal/paranoa–parque–o–condominio–que–tem–problemas–de–cidade–grande>. Accessed on: 09 Oct 2021.
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The Vera Campus of the Polytechnic University of Valencia. Public space and modernity

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The UPV campus started its historical journey in the 70s with modern contributions in the formalization of its architecture and the relationships established between interior and exterior spaces, which offers unique values in the quality of the shared spaces.

In 1970, the narrow railway line which connected the city with the port served as a support for the first temporary installations of the new university campus. Its first construction phase was the Higher Polytechnic Institute of Valencia complex.

The Institute was established as a unitary building based on modular pavilions to which landscaped cloisters were added; these were destined for students' recess times and collective recreation. Its functional contributions and organizational clarity, together with its way of understanding modernity's visual and aesthetic values, favoured its effectiveness.

The second phase of the Campus construction was based on the same guidelines and occupied an area almost five times bigger, of around 14 hectares. Once again, the modulation criteria predominated, reflected in the preliminary plans and execution project of 1973.

The complex had explicit references to modernity regarding traffic separation in different levels, building compositions free from road alignments, rhythms of full and empty spaces within a continuous and homogeneous area, and creating a nucleus of collective activity.

The paper proposal also raises the evolution in garden design with the added interest of comparing the initial modern proposals with the development of the latest treatments. The informal conditions of creating green areas, the relief and the groupings of trees in the original project were new components in our latitude. Elements associated with very strict architectures in its formalization, not trying to be opposed but adding complementary aspects of modernity, which were orientated to naturalize the environment.

1. A first historical process common to other european experiences

The Campus of the Universitat Politècnica de València has a first historical overview from 1968 with the approval of Decree–Law 5/1968, of June 6, which specifies: “The Higher Polytechnic Institutes of Barcelona and Valencia are created”.

The first intervention is indebted to modernity in the configuration of its spatial structure and the materiality of its architecture. But also, in the choice of location, the relationships established between interior and exterior spaces and in issues shared with other projects typical of the cultural currents of the moment. Pierre Merlin¹ described the implicit influences of the Robbins plan of 1963 and the proliferation of polytechnics, later converted into universities in the United Kingdom, on new university facilities in France since the university reform law of 1968 and the dissemination in peri–urban areas of the so–called new “French–style” campuses² (Fig. 1).

The exterior–interior spatial relationship

Although the university centres throughout the history of our country had been housed in the cities, removing them from the urban centre in the 60 and 70s brought advantages. Economic advantages, due to the price of the land and space needs that the central city no longer had. Conditions such as contact with a healthier rural environment, the need to have land reserved



Figure 1. Higher Polytechnic Institute of Valencia, Valencia, Spain, 1968, Drawing of the original project. Source: Archive of the Technical Office of the UPV.



Figure 2. Own elaboration, Higher Polytechnic Institute of Valencia, Valencia , Spain, 2015, two currents photo of the courtyards. Francisco Javier Carvajal Ferrer and Rafael García de Castro Peña, University School of Business Studies of the UB, Barcelona, Spain, 1961, comparative image of the interior of the courtyards and access floor. Source: Arxiu Històric of the COAC.

for future extensions for the installation of new pavilions for laboratories and teaching classrooms, and having facilities for access with the vehicle, avoiding congestion in urban centres. Conditions indebted to the modern postulates.

The Higher Polytechnic Institute of Valencia joined these currents and became a benchmark for a new modality of university space located outside the urban perimeter. The image of its implementation (**Fig. 2**) gives a clear compositional idea with flexibility to articulate pavilions, creating a single built body that stood on a green environment, without precise limits, drawn as natural spaces.

Open spaces provided a necessary complement to the scale and the geometric rationality of the built area. And by completing the lateral gaps left by the structure of the modular pavilions, they could be understood as exterior courtyards since they were integrated into the building and opened to the landscape.

The unique open spaces were the interior gardens, strategically arranged within the network of modules and passage areas. Built as glazed patios (**Fig. 2**), added fluid and bright spaces where it was easy to orient oneself and produce encounters.

The contact of the internal spaces with the courtyards consolidated them as fundamental areas. At first, it was the central courtyard, the largest, the true centre of unregulated activity with landscaping functionally versatile. It was a relevant space in many ways, providing free spaces to a built structure of an approximate area of three hectares and constituting a significant ingredient in the design and legibility of the project and as a binder of activity. Everything concurred in it: the spaces of greater affluence (library, assembly hall, restaurant, concierge) arranged around it; and the long views due to its permeability in the direct perception of the internal space through that glassed box.

Interior–exterior, exterior–interior, a very close relationship that every building of the modernity, in general, had as a fundamental predicate to attract air, light, views and greenery, and therefore health, to its essential functions, in this case to the university.

The evolution of the original complex was transformed over time. Historically in the first monastic schools the tradition configured these spaces as cloisters. In this case with similar functions, the relationship between the classical cloisters and this type of courtyard is not direct. Landscaping was informal and somewhat anecdotal, leaving the ground plane clear without being sectorized. Above all, no precise limits were marked by porticos and interior facades because they were one-storey courtyards. Moreover, by having a glazed closure, the experience was associated with other forms of use and a wider and more open perception of space. Something that was multiplied by the dialogue established by the different patios among themselves or concerning glazed façade walls, achieving an interior–exterior relationship of greater intensity.

The first reference models

References to spatial resources used in the dialogue between open and built spaces find similarities with other projects carried out simultaneously (**Fig. 3**), which are cultural references of the Higher Polytechnic Institute but include other programs. In the same way authors with university projects, such as Georges Candilis³, use the same articulated system of full and empty spaces.

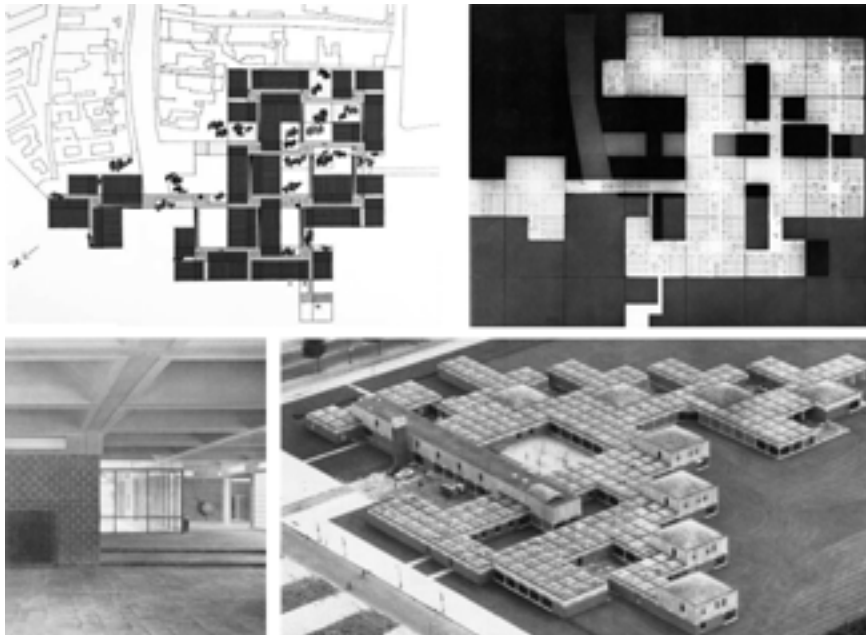


Figure 3. Le Corbusier, Venice Hospital, Venice, Italy, 1964–65, Figure–Ground plans. Source: Complete Works of LC vol.8, Zurich : Les Editions d'Architecture, 1995. And Aldo Van Eyck, the Amsterdam Municipal Orphanage, Amsterdam, Netherlands, 1955–60, Interior view and model. Source: Open UPCommons, AMSTERDAM ORPHANAGE, Bardí Milà, Berta; García-Escudero, Daniel, 2011.

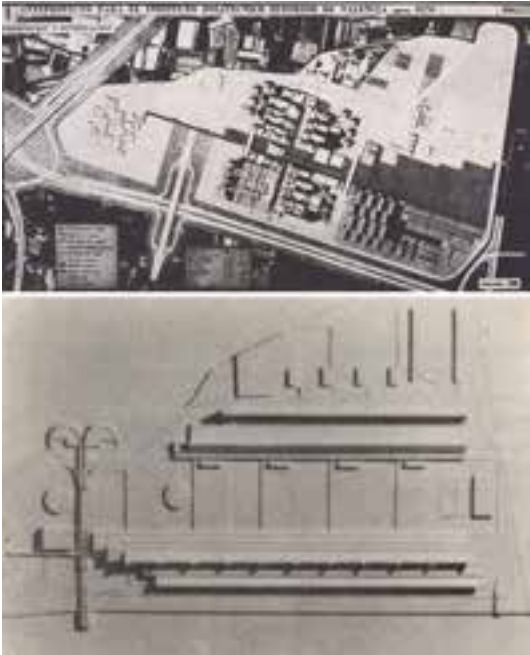


Figure 4. Top: Winning proposal of the L35 study winner of the Preliminary Project Contest, 1970. Down: Proposal Accessit of the Competition: Author: J. Seguí, collaborating with J.L. Gisbert, F. Noguera, J. Otegui and other architecture students.

These references share urban aspects such as locations in contact with the city limits, arrangements based on orthogonal meshes agglutinating figures and grounds, a certain freedom in the form of aggregation and the ultimate definition of its edges and solutions implied with its environment.

Projects with different scales and configurations are structured from an aggregation of modules that, as a matrix, multiply or merge to form a continuous body. But we must not forget the qualities that the landscape, the environment on which they are based gives them. Exterior open spaces penetrate between the grooves that define its perimeter, thus forming an indissoluble part of the whole.

It should be noted the poor compatibility of this project with the new architectures that have been added in successive decade which have little or no relationship with their modern image. The

outdoor spaces have not been consolidated either under the prerogatives of amplitude and generosity of open areas that dictated their original physiognomy.

2. The process of consolidation as the upv campus

The Ministry of Education and Science⁴, called for a competition in 1970 for preliminary projects to construct a new UPV campus⁵. The studio L35⁶ won the competition (**Fig. 4**); however, the official draft was not approved until 1972. The necessary restructuring for the Higher Polytechnic Institute of Valencia to acquire university rank in March 1971, and the expropriation of the land needed for the construction of the project, among other issues, forced to readjust the proposal of the contest to the new regulated parameters.

The proposal was undoubtedly influenced by the competitions of the Autonomous University of Madrid and the University of Barcelona and maintained the inspiration based on the French experience linked to the polytechnic institutes, with clear rationalist influences.

The preliminary drafts of September and November 1972

As the Report on the Remodeling of the Preliminary Project points out⁷, the modifications refer mainly to aspects of the political and legal level. The functional criteria are structurally the same, but the transformations at the physical and economic urban level are essential, not because there are changes in the urban context, but because of the opportunity that arises with the beginning of the expropriation of new land. These acquisitions made it possible to carry out a much more complex urban proposal, with expansion phases higher than current ones at the UPV.

There are two versions, dated September and November 1972, modified due to the available land (**Fig. 5**). There are significant urban changes from the first version to the second.

The Higher Polytechnic Institute gravitated around the interior courtyards that articulate the rest of the building. The proposal for the construction of what would be the new Campus of the Universitat Politècnica de València, proposes a complex urban structure that incorporates the university uses the predominant ones of the modern city: accommodation, green areas, sport, cultural facilities and tertiary.

The Report states: *"The project is therefore understood as a functional, constructive, typological and urban structure open to change and susceptible to several alternatives of use". "On a general scale, what characterizes the solution is the fact of posing it not only as a set of architectural elements harmoniously related but as an urban typology of concrete relationships in a civic infrastructure."*

"At the level of 12,000 students, it is not possible to conceive the solution as a building framework in the architectural field, but as a true city, with all its dynamic characteristics of exchange and communication of information, services and products. Therefore, the civic system of relations acquires its own identity with a certain independence from the cells of the urban fabric."

The narrow-gauge train layout is used as a reference in both versions. This direction is parallel to Avenida Blasco Ibañez and Avenida del Puerto configuring one more parallel, which the project assumes and reinforces by creating an orthogonal and parallel structure.



Figure 5. Proposals of September 1972 and November 1972.
Source: UPV Archive.

The overall urban structure defined from the modulated system will articulate the building of the Higher Polytechnic Institute with the new proposal and with access from the city. The solution is a figure with double symmetry centred on the singular space that is called an agora. The centre is configured in volume, both as a piece of articulation of the upper level and the ground floor plane and a space covered with structures that were never executed.

Two perpendicular axes were the directions of the mesh that originated the project. In the preliminary project, these elevated axes have as their final point four elements, which, combined with road links, articulate the complex and allow ground-level access. At its southern end, the access platform from the train stop allowed the primary connection with the city. To the west, the elevated platforms connected with the area destined for the direction of schools, called the Seat of Government, were displaced from their classrooms and laboratory areas, to link them with the Rectorate. At the eastern end, a similar system connects with the other side of the horizontal axis in which dining rooms and access to the residences are arranged. The area for accommodation of teachers and students, developed in the subsequent proposal of November 1972, will reach a critical complexity. The northern limit will be configured with another elevated knot that will articulate the platforms with access spaces to the orchard.

The general distribution plan of the September Preliminary Project proposes a differentiated spatial structure. On the ground floor, we find a floor plan that assumes the role of channelling road traffic flows, from a reticular system in rings and parking lots in cul-de-sac. The ground-level pedestrian network is carried out through a mesh of pedestrian channels 6 meters wide, with the possibility of using it as an emergency road, completing the floor plan with the landscaped green areas. The gardens have an informal landscape configuration, as they assume a particular topography and a picturesque composition of the trees. The dialogue between the strict order of the building and the naturalized ground support design again articulates it with modern proposals such as the free space of some projects by Le Corbusier, bringing greater complexity and richness to the whole.

Superimposed on this level an articulated platform structure will serve as pedestrian circulation and relationship spaces. A free and modern interpretation of circulation transformed into a public space that moves pedestrians to a higher level. The section, therefore, will be stratified, the ground floor destined mainly to the parking lots, laboratories, service spaces and the platforms on the top floor to pedestrians and the main accesses to the buildings.

The lattice frame of the whole is based on a structural module of 3x3m and a constructive module of 1.5x1.5m. The Report includes the series of the modulation of the project⁸: *"on the modular plot multiple of 3 meters, based on two orthogonal series of 6,6,6 ... 36,6,36,6,... 6,3,6,3,6,3,... 6,6,3,... the prefabricated construction system is organized in all its elements."*

The November 1972 plan has a more complex urban program that includes many more uses. A complete urban proposal, with possibilities of expansion, aligns with the proposals of the American campuses⁹, in which students, professors and their families live together in a shared space.

Over time, the last proposal will be developed only in part linked to the agora, the four initial schools (Architecture, Civil, Agronomists and Industrial Engineering), the Library and the Rectorate losing all the urban complexity of the global proposal. Green areas, sports, facilities and tertiary areas were gradually incorporated into the Campus in different locations from the initial proposal.

Public accommodation¹⁰ was never present and remains pending, both in its format of student residence and apartments for guest professors or staff stays linked to the university world.

3. Conclusions

Far from the initial modern proposal of the previous construction phases, the Institute and the Campus, subsequent urban development were articulated only around a longitudinal park, and with a less legible proposal, more focused on the buildability of the resulting parcelling than defining an articulated urban structure. Without new centres defined, and typologically different buildings it grew to fill its enclosure.

While these last developments were consolidated, a whole series of actions were carried out to transform the transition spaces between the exterior and interior, without the imperative of different levels for the traffic of the second phase.

The original modern proposals will no longer have such a prominent presence on the campus, although representative elements remain, such as some original platforms and porches that still correspond to the main access to most of the schools. Nor has an ingredient of the modern project been neglected: the natural green plane as the majority support that frees and multiplies spatial relationships, supporting an active and permanent dialogue between full and empty spaces and with the exterior landscape.

Therefore, the Campus has become a landscaped urban space, with intense activities in public spaces, where the first stages of its construction still continue to provide the most representative and innovative identity in the relationships between their built space and free space.

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Notes

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New Capital Cities of the 20th Century: Urban project and landscape (Brasília Brazil and Canberra Australia)

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The 20th century modern capitals built "ex nihilo" imposes itself as a medium between urban design, landscape and public space. The landscape reconfigured over the decades bears witness to the urban premises and cultural conditions, whether from their inauguration periods or from the conflicts and social appropriations that followed them. The landscape composition of Canberra (1913), the Australian capital, takes the designed water body as defining element of its "water axis", one of the three main axes that perpendicularly organize the base design of the pre-modernist capital. Furthermore, in Brasília (1960), the Brazilian modernist capital whose urban design also comprises two main axes, has a landscape configuration where the lake serves as a containment edge for the projected urban core. These considerations are the motto for studying landscape composition strategies and the "locus" depiction of this element (lake) in planned capital landscapes. Through a strategy of pattern comparison and analytical cartography, contents are evaluated and systematized in a comparative analysis of these changing social landscapes. The greatly valued water bodies on those capitals served not only as an element of landscape enjoyment, but also as inducing elements of territorial planning and occupation. As their urban projects came to fruition, they met the landscape expectations of the pre-modern (Canberra) and modern (Brasília) plans and transformation of the urban territory. Today, despite contrary thrusts and as testimony that good design resists through time, this work suggests the resilience of such compositional places, "Lake Griffin" as center not only of the "postcard landscape", but of the multiple landscapes of the Australian capital; while "Lake Paranoá" still stands as frame or border, at a figurative distance from the "city", resting in its own bucolic landscape and outlining the ideal image of a postcard. Keywords: Modern Capitals; 20th century Urbanism; Landscape; water bodies; Brasília; Canberra.

1. Capital landscapes – lakes and “locus”

In the spectrum of “ex nihilo” 20th century planned capitals, covalence between architecture and landscape is imposed. Therefore, planning and implementation of new capitals reflect an important historical milestone in their states/nations, since they seek to reflect, also through the transformed landscape, the political and socio-cultural structure that they aim to represent as a capital. The initial urban projects of Canberra, Australia (1913) and Brasília, Brazil (1960) result from public competitions for urban designs where composition among previous influences guided the winning design interpretations. In addition to accommodate regional disputes and transfer of capitals inland, those designs introduced a lake body as an integral element of the proposed landscape.¹

The landscape composition of Canberra (1913), the Australian capital, takes the designed water body as defining element of its “water axis”, one of the three main axes that perpendicularly organize the base design of the pre-modernist capital. Furthermore, in Brasília (1960), the Brazilian modernist capital whose urban design also comprises two main axes, has a landscape configuration where the lake serves as a containment edge for the projected urban core. These considerations are the motto for studying landscape composition strategies and the “locus” depiction of this element (lake) in planned capital landscapes.

Certainly, sites chosen for the new capitals directed the landscape treatment of such water bodies, considered as requirement in both urban competitions for new capital landscapes. Brasília had the contours of the lake established at the design competition, bordering the regions of more pronounced slopes, directing laterality the urban center to an area of lower gradients, at a high plateau. The Australian capital, otherwise, took site in more rugged terrain, of valleys and hills, leaving flatter areas on the banks of river “Molongu” the combined capacities both for damming waters for a lake, as well as for the urban center.

In present work, we intend to investigate, with water bodies as focal elements, the echoes of previous demands on those new capital designs and the influence of such urban proposals on the reality further experienced.

Professor Peter Hall² classifies the cities of Brasília and Canberra as “political capitals” because they are created to convey national values and hold government offices, with political function prevailing over others. Such typological classification reflects, in fact, the moment of creation of such capitals and even their early years. It is therefore necessary to deepen studies on the process of structuring such cities, their initial projects and relations with their future lakes, as relevant issues in the configuration of their landscapes.

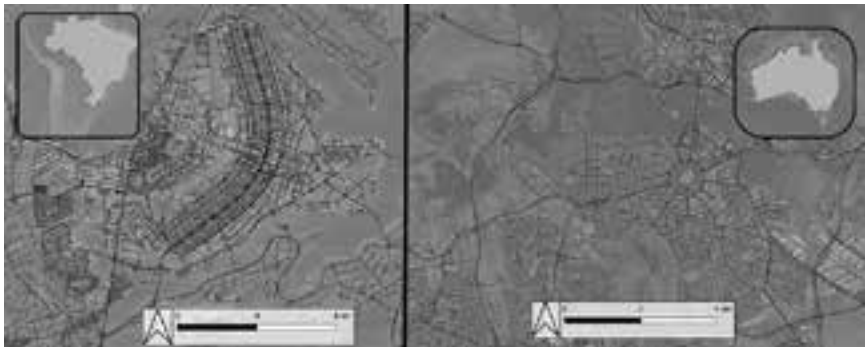


Figure 1. Left: Brasília, Brazil; Right: Canberra, Australia.

2. The landscape construction

Lake Incorporation – Landscaping Capital Cities

The establishment of a capital city in Australia arises from self-determination impulses of six different English colonies against the British metropole. Therefore, the Commonwealth of Australia Constitution Act (1901), has already predicted the approximate location of the new country capital, south-eastern, in equivalent proximity to the then largest cities (Sydney and Melbourne). However, the specific location and the predicted “Australian Capital Territory (ACT)” contours were not defined at the time.

The first impulse to locate the new capital preceded the Constitution Act and was entrusted to Alexander Oliver (1900), who visited potential sites for the future “ACT”, aided by recommendations of a site that, preferably, contain elevations of gradient sufficient to adequate drainage, as an amphitheatre and being contiguous to a river bed sufficiently capable of providing “ornamental waters”, as well as supplying the future city needs.³

The specific site would only be pointed out by Charles Scrivener’s topographical survey, commissioned in 1908 with direct instructions on the future landscape, which should “value the scenic and picturesque capacity of the place, for a beautiful city that could evolve in time”, also including clear references to abundant and perennial water capture⁴. In 1909, Scrivener indicated the site where Canberra is now located, describing it as an amphitheater of hills, with scenic beauty and noting that the Molongo River could be dammed for the creation of an ornamental lake.⁵

In fact, the competition for the new capital urban design indicated the possibility of damming the river⁶, without, however, expressly indicating any contours of such a lake. The winning proposal was the one presented by american architects Walter and Marion Griffin whose practice had been influenced by their work with Frank Lloyd Wright⁷, the ideals of “beux-arts” and the english “garden city”.⁸ The winning proposal was very precise to

the idea of national identification with picturesque landscape⁹, as well as positioning the capital in an amphitheater of valleys, with ornamental waters formed by a dam on the Molongo River¹⁰, the future "Lake Griffin."

As early as 1877¹¹, a study published by Porto Seguro Viscount for the site of a new Brazilian capital mentions the special importance of places with bodies of water that could be dammed, also indicating this potential on the central region of Brazil, and even suggesting the surroundings of Formosa, which is a city as near as 50 kilometers from actual Brasília.¹² In fact, both the indication of this central region of Brazil and the relevance of a lake element permeated the years that followed, remaining as beacons until the period of the Belcher Report Study(1955)¹³, which supported the President Juscelino Kubitschek (JK) site indication for the new Brazilian capital.¹⁴

Initially not expected on the original competition call for design proposals¹⁵, lake contours were somehow defined in a letter sent by Oscar Niemeyer¹⁶ that notified candidates the future damming of waters at quota 997m¹⁷, thus outlining the contours of the future "Lake Paranoá".¹⁸

The winner design, presented by Lúcio Costa, already recognized as a beacon of Brazilian (Carioca) Architecture¹⁹, took advantage of the site topographic conditions and positioned the urban center adjacent to the lake whose contours could already be assumed.

Implementation And Topography

Formally, the winning design for Canberra parti arises of a triangular spatial structure with vertices corresponding to small hills that accommodate important public buildings. That triangle is crossed by a chain of artificial lakes along the Molongo river and the scenic structure is completed by larger topographic elevations, which make up the urbanized valley with mountain ranges in the background²⁰. When presenting the winning project, Walter Burley Griffin²¹ mentions as steps that led to the formal landscape described, the establishment of three axis: the first, which starts from the national parliament and is called "earth axis"; and the other two, which perpendicularly cross the "earth axis", are named "municipal axis" (the base of the triangle) and "water axis", which marks the position of the lake²².

Therefore, about Canberra, it can be said that the lake has a landscape structuring function, or as mentioned by Peter Hall, in a theatrical arena, the lake is the space that precedes and visually values the stage (proscenium)²³. It would be the center of the landscape composition, not specifically the representative icon of the capital landscape, but the space that preceding it, coordinates and values the iconic elements of the capital landscape.

In Brazilian case, Lúcio Costa's urban proposal for Brasilia states that monumentality and mobility would conform the urban parti launched from the intersection of axes at the highest point of the city plateau. The axes "names"

would indicate the program, “Monumental” and “Rodoviário” axes should extend linearly in observance to the best use of the topographic conditions of the region. However, at Brazilian competition²⁴, regarding the winning project, was pointed out the long distance between the lake and the urban center. Therefore, in 1983, Lúcio Costa himself recognized the importance of approaching the urban center to the lake shore, as noted by English juror Wilian Holford²⁵, adding that, to preserve the function reserved for the lake in the landscape, that approximation could not be excessive.

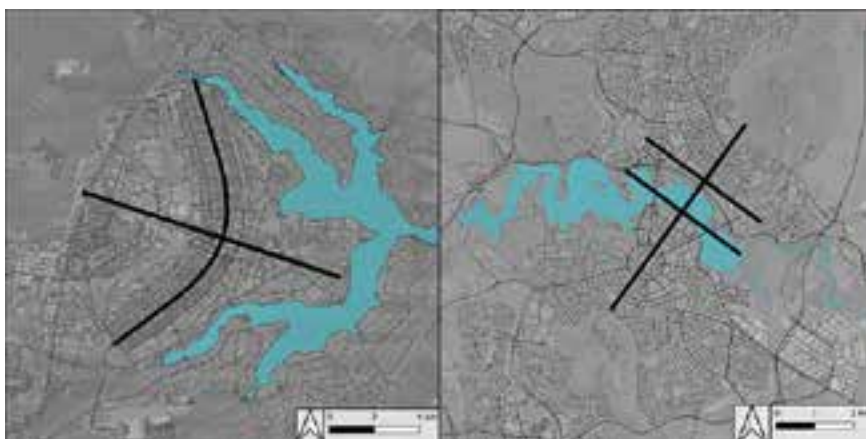


Figure 2. Axial study – Left: Brasília; Right: Canberra.

Landscape Evolution

Canberra implementation only gained momentum in 1957²⁶, with efforts for the development of the capital such as hiring Sir Willian Holford²⁷, when, despite the original project, few would imagine a lake in Canberra²⁸. Again, Willian Holford participated in the composition of a capital landscape by advocating the construction of a water body.

Lake “Walter B. Griffin” was then inaugurated, in 1964²⁹, and the Australian Prime Minister pointed out that the advent of a lake construction did not divided, but unified the landscape, giving it a centre, just as it did representatively to Australia, by contributing to the creation of a true national spirit.³⁰

Unlike the Australian capital, Brasília is known by its rapid implementation. Obviously, difficulties were faced between the beginning of the works in 1957 and the inauguration of the city as early as 1960. Among those difficulties, the construction of the dam for the “liquid frame of the capital”³¹ and it’s filling up in time for the inauguration. The prairie like ideals proposed by Lúcio Costa to “Lake Paranoá” in the landscape composition of the Brasília was named by the

author when revisiting the city in 1983³² and establishing the lake borders as the prevailing area of Brasília's "bucolic scale"³³.

Despite difficulties in public access to lake shores in the past, today newly built spaces are reinforcing initial concept and ideals with great public attendance. Therefore it is not considered as a "central"³⁴ element of the capital landscape, with a noticed programmatic distancing due to the differentiated function, defined by Lúcio Costa as the "bucolic scale".³⁵

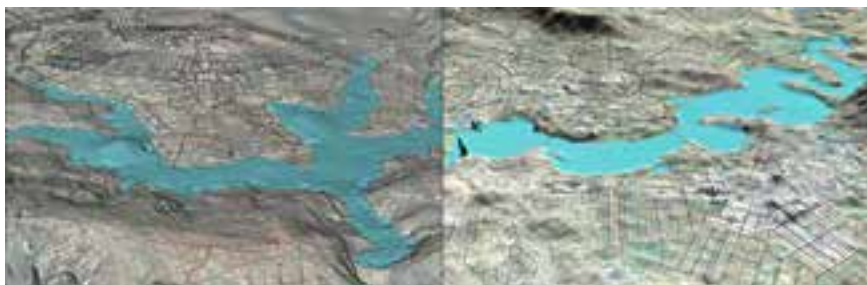


Figure 3. Actual lakes – Left: "Paranoá" (Brasília); Right: "Walter B. Griffin" (Canberra).

3. Lakes and their landscapes

Since first efforts to create the illustrated capital cities landscapes socio-political demands were well addressed in the winning design proposals. In the Australian case, the intermediary city site allocation indicates the demand for a non-competing, conciliator, centrality for the new Country. In this sense, Griffin's landscape proposal addresses the central lake in deep integration to the proposed site, also predicting a certain rational monumentality of the modern movement. Despite the long period until the damming of Molongo river (1911–1963), today "Lake Walter B. Griffin" is very similar to the 1911 proposal. It is, in fact, a central element, establishing itself as the emptiness that potentializes the capital landscape, the pre-stage of the main attraction.

On the other hand, the Brazilian capital and its countryside positioning demonstrates the exploratory, active, expansion and exploration of the territory. The functional ideals in Lúcio Costa proposal, intend of presenting Brazil as a player on the trumpeted "modernity" and places "Lake Paranoá" in a different position. It is not the center of the city or of the daily routes between activities, as well as it does not serve specifically to functions that defines "Capital cities"³⁶. In fact, the "Paranoá" laterally appropriates from rustic space and naturalistic features to functionally enrich moments of rest and leisure, inaugurating the "bucolic scale" of Brasília. To present day, remains faithful to the initial urban proposal, diverse without being distant, such as an edge or bucolic frame to complement and value the central modern capital.³⁷

* All images are authorial maps made on free software Qgis.

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Notes

- 1 Elected winners: the project presented by Walter and Marion Griffin, for Canberra competition (1912); and the one presented by Lúcio Costa, for Brasília competition (1957).
- 2 HALL (In: Gordon), 2009, 9.
- 3 OLIVER, 1903, 1.
- 4 "the researcher should keep in mind that the Federal Capital should be a beautiful city, occupying a position of command, with extensive perspectives and with different characteristics that lead to the possibility of evolution of the design not only in the present but for all the time. Consequently, the potentialities of the place require more care from the scenic point of view, to ensure the picturesque, besides enabling beautification and expansion." (AFFAIRS, 1911, 4).
- 5 LING, 2011, 9–11.
- 6 AFFAIRS, 1911, 9.
- 7 For whom they worked earlier.
- 8 VERNON, 2009, 135–136.
- 9 As indicated in 1909 to the surveyor C.R. Scriverener before his studies for the location of the new Capital. (VERNON, 2013, 310).
- 10 As noticed by surveyor C.R. Scriverener in his final report of the work for localization of the new capital. (LING, 2011, 9).
- 11 PORTO SEGURO, 1877, 13.
- 12 The publication of Porto Seguro Viscount in 1877 (Vienna, today Austria) suggested the location of the future capital in a region extremely close to the one at which effectively came to be. In popular culture, though, the location is credited to Don Bosco, a priest of northern Italy, which six years later (1883) allegedly had a premonitory dream of the Brazilian inland capital.
- 13 Newly elected President Juscelino Kubitschek ("JK") promised, in his government plan, the foundation of a new capital in the interior of the country. (KUBITSCHKE, 1990, 5).
- 14 PÚBLICO, 1957, 8.
- 15 COSTA, 2014, 18–23.
- 16 Director of the New Capital Urbanizing Company at that time.
- 17 TAVARES, 2014, 88.
- 18 Differs from the Australian case, in which the competition call only demonstrated interest but did not required or even established the contours of the so-called "ornamental waters".
- 19 Commissioned for the designs of "Capanema Palace" (1936) and "Brazilian Pavilion at the NYC Expo 1938", to which brought collaborations from Oscar Niemeyer (his trainee, at the time) as well as others renowned Brazilian architects.
- 20 Back in 1955, Canberra City Planning Director said: "In Canberra, buildings become important because of their location." And added: "The city is not an architectural composition, but landscape." (VERNON, 2013, 312).
- 21 GRIFFIN, 1911, 4–5.
- 22 By understanding this landscape approach, it's noticeable the similarity of "crossing axes" parti between the winning project for Canberra (1913) and the winning project for Brasília (1957).
- 23 HALL, 2016, 273.
- 24 COSTA, 2014, 46.
- 25 COSTA, 1987, 13.
- 26 By the middle of the 20th century, Canberra, despite already hosting the Australian parliament (since 1927), consisted of small and disconnected suburbs, with only 39,000 inhabitants and very little of the original plan (Griffin) having been implemented. (LING, 2011, 54) and (VERNON, 2012, 10).
- 27 National Capital Development Commission (NCDC) was established in 1957 and led by Sir John Overall. It is worth noticing that the arrival of William Holford in Canberra took place less than three months after the trial of the proposals for the Brazilian competition at which he suggested to Lúcio Costa the approximation of the city to the lake (HOLFORD, 1958, 2).
- 28 As pointed out by Robert Overall at the lake inauguration ceremony. (MENZIES, 1964, 1).
- 29 Four years after Lake "Paranoá" in Brasília.
- 30 It is interesting to note that, according to the speech given by the Prime Minister, Canberra, until that time, had been suffering criticism similar to those made to Brasília on its first years as (an sterile place, arisen from government vanity and overspending) and that the construction of Lake Walter B. Griffin would put an end to such criticism (MENZIES, 1964).
- 31 President JK narrates that he would refuse to inaugurate the city without its "liquid frame". States that inauguration delay was only avoided by the innovative and adventurous "spirit of Brasília" (KUBITSCHKE, 1990, 279).
- 32 COSTA, 1987, p.8.
- 33 "Brasília Scales" subsidized the inscription of its urban framework as a UNESCO World heritage site, as well as its local protection. The Bucolic scale is represented by "native green fields" characteristics, idealized as transitional areas, between scales predominancies, and is itself predominant at the "Lake Paranoá" vicinal areas (COSTA, 1987). It's worth notice that areas represented by one of which four "scales" of protection on heritage maps does not means that those scales do not interact with each other. Oscar Niemeyer's "Alvorada Palace" (President's house) is an example of a "monumental scale" beacon in the lake shore.
- 34 This work states the Lake as a very important element in Brasília landscape composition, just not formally centered.
- 35 COSTA, 1987, 8.
- 36 HALL, 2009, 9.
- 37 COSTA, 1987, 8.

Urban dimension of social housing.

Planning and quality of life

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The issue of housing and its relationship with the other elements of the habitable space became in Europe, during the first decades of the 20th century, the central nucleus of the research carried out in the disciplinary field of Architecture. Since the 1970s there has been a proliferation of criticism of the forms of residence in modern architecture and the urban models that it had generated. The urban dimension of these housing estates shows the weakening of the historical links between housing and the city, until the order became a consequence of the definition and aggregation of the building type, with the consequent repercussions on public space. The study of the morphology and urban dynamics of modern housing complexes in Spain is necessary to diagnose them and draw up strategies that improve their habitability and integration.

This research addresses the urban challenge of evaluating the composition of the intermediate spaces typical of these estates, which are located on the border between architecture and urbanism, by studying their configuration in order to discover their conditions of habitability and biodiversity, and their capacity to form city. Two case studies designed and built with the same premises and means as part of the Social Emergency Plan of Madrid, which gave rise to opposite situations, are analysed. These are two Programmed Estates, Orcasitas (1956–1963), a continuation of the theoretical and open models of Ludwig Hilberseimer, and Caño Roto (1957–1963), projected in accordance with the proposals of Ernesto Nathan Rogers on the experience of the place.

1. Introduction

From the beginning of the modern city, collective housing has been the fundamental axis of urban planning. Since the proposals of utopian socialism, advocated throughout the nineteenth century and the Marxist criticism expressed by Friedrich Engels¹, the issue has been central. The study of collective housing, as one of the engines of the evolution of architecture and cities, is part of a broad tradition that began in the interwar period with rationalist experiments such as the *Existenzminimum* and emblematic operations such as the Viennese *Höfe* and the German *Siedlungen*, with continuity in the *New Towns* set up in Great Britain and the *Grands Ensembles* built in France². The objective was to provide accommodation to a working mass that, as a result of industrialization, constituted a growing problem.

The study of the morphology and urban dynamics of these housing complexes is necessary to diagnose their condition and draw up strategies that improve their habitability and integration in the city. Their configuration

shows the weakening of the historical links between housing and the city, to the point that planning became a consequence of the aggregation of housing units³. By basing the process on them, the projects acquired an urban dimension, with repercussions on the public space that came to be subordinated to the definition of the building type. The construction of open blocks was favoured, with care for technical aspects such as the play of volumes, modulation or orientation⁴. These modern opinions were undermined by economic limitations and the tendency to unify construction, which could lead to a homogeneous urban landscape that was difficult for the population to assimilate⁵. Since the 1970s, there have been sociological studies that have denounced the negative effect of this type of architecture on its inhabitants, attributing the failures of public housing to the International Style⁶, in which they place the origin of situations of uprooting, delinquency and poverty.

In Spain, the policy developed by the State during the two decades after 1939 attended to the actions and theoretical debates developed in Europe, framed in a post-war context that was prolonged due to the depressed economic condition. As a strategy, it combined emergency measures with plans for the development and extension of the urban structure, under a new housing policy. Taking as reference the Italian Fanfani Plan and the German Federal Law of 1949, the Limited Rental Housing Law of 1954 guided the policy until 1975⁷. In this context, the Programmed Estates (Poblados Dirigidos) were built in Madrid. These are sets that proposed alternatives to ways of living, advancing in the definition of minimum housing and its urban environment. With them, alternatives to the avant-garde models were sought based on functionality, not from aesthetic or formal considerations, but from necessity.

Two paradigmatic cases are Orcasitas and Caño Roto, due to the radical nature of their urban approaches and the complexity of their typological solutions. Both start from the building typology to generate with it an urban morphology, in such a way that each one of the types plays a specific role in the urban structure. Orcasitas is the example of a place without references that facilitates an absolute degree of freedom, following the continuous and open theoretical models of Ludwig Hilberseimer⁸. Caño Roto, on the other hand, shows a dialogue with the historical and physical environment, volumetrically differentiated, bounded and discontinuous, in line with the proposals of Ernesto Nathan Rogers on the experience of the place⁹.

2. The programmed Estate of Orcasitas

The Programmed Estate of Orcasitas (40.27 Ha) was built according to a project by Rafael Leoz de la Fuente and Joaquín Ruiz Hervás (1956–1963). It consisted of a total of 2,964 dwellings, organized in an internal nucleus of regular geometry that contained the residential building and a perimeter of land planned theoretically for urban equipment and green spaces. It was conceived as part of a series of four twin settlements, independent of each

other, planned as ideal and self-sufficient forms and surrounded by green areas. The Programmed Estate of Orcasitas, the only built nucleus, maintained its independent character with respect to the context until, due to structural problems, it had to be demolished and renovated (1976–1986).

The conception of the town attended to post-war rationalism, with a plastic and refined nuance, as pointed out in 1960 in the journal *Hogar y Arquitectura*¹⁰. Its composition was positioned in the debate on urban planning, current at the time, by reproducing almost literally Hilberseimer's herringbone scheme for Chicago¹¹ and generating links with the residential developments of Jan Van den Broek and Jaap Bakema in Netherlands.

Its location on a regular and practically flat plot allowed total freedom in the layout of the different building typologies, achieving a highly abstract reticular layout, also present in Francisco Javier Sáenz de Oiza's Fuencarral A Integration Estate (Poblado de Absorción). The ground plan, practically square, has a rational reticular planning (**Fig. 1**). It is organized by means



Figure 1. Rafael Leoz de la Fuente and Joaquín Ruiz Hervás, Programmed Estate of Orcasitas, Madrid, Spain, 1956–1963. General plan. Source: Drawing by the author.

of a longitudinal north–south axis and six crossways, which delimit large terraced blocks, to adapt to the uniform slope to the north. The circulations, instead of bordering the pedestrian route, as occurs in a Radburn–type block, are inverted to distribute from the central axis. This configuration, which the architects considered ideal for land with these characteristics, also contributes to a clear zoning, for which the central nucleus for residential use was in the project bordered by urban equipment and green spaces, with the idea of avoiding interference and economizing the organization of service and traffic networks.

The experimentation present in this planning is also palpable in its buildings, which were arranged freely in parallel and perpendicular bands to the streets. It was developed both in height, with 44 blocks of six floors and facing south or east west, and in surface, with 1,257 single–family row houses, responding to a total of eight housing types. In the project, a variety was established between the blocks, those facing south had four floors and those with a double east–west orientation had six, forming a neoplastic composition with the row houses. The theoretical approach, far from assuming a reflection on the place, was conceived as a formal and geometric exercise, close to the theories of Theo Van Doesburg¹². With him began an investigation in which Rafael Leoz started from the “HELE module”, born with a typology of the set, to develop a systematic pattern of spatial growth.

The residential blocks were configured in a structure of rectangular modules measuring 100 x 260 m, with free layout of the building inside, leaving intermediate spaces for pedestrian access to the dwellings and recreation for residents. Diversity was sought in these interior spaces, more accentuated in the project when the blocks offered different heights, giving rise to areas of different scales. The larger spaces were open to the road, or in interior squares, to cause swelling with an appropriate proportion to the height of the blocks. The fronts of the building could contain some access to the dwellings or premises on the ground floor, although their location responded more to a compositional purpose. The adaptation to the slight slope of the terrain was carried out with terracing that defined areas and routes. With smaller dimensions, the separation spaces between the single–family houses defined pedestrian streets of 4 m. wide and up to 100 m. in length, leaving aside functionality and safety in favour of composition.

The streets had a road, made at the beginning of the work to ensure the infrastructure throughout the execution, and minimal concrete sidewalks in intermediate positions with respect to the building, which performed the double function of a road and pedestrian distribution inside the block. Although the project included paving, stairs, gardening, and infrastructures, the budget limitation forced the actions to be reduced to a minimum, leaving most of the public space without any type of treatment, which made it difficult for the population to use it (**Fig. 2**).



Figure 2. Rafael Leoz de la Fuente and Joaquín Ruiz Hervás, Programmed Estate of Orcasitas, Madrid, Spain, 1956–1963. Intermediate spaces. Source: Archivo Regional de la Comunidad de Madrid. Fondo Cristóbal Portillo. Código de referencia: 67834/4

3. The programmed Estate of Caño Roto

The Programmed Estate of Caño Roto (19.46 Ha) was projected by José Luis Íñiguez de Onzoño and Antonio Vázquez de Castro (1957–1963) under the idea of forming, in continuity with the next Integration Estate, a neighbourhood unit with self-sufficient operation.

The set of 1,606 dwellings is located on a highly complex irregular terrain, conditioned by a broken topography ascending to the south, which saves a difference in elevation of 24 m. It is structured in four large blocks delimited by a perimeter road. The organization of the orthogonal building, which is set back and rotated with respect to the alignment of the street, was proposed under the criterion of adaptation to the place, which entailed a review of the CIAM postulates. Its layout, with references as diverse as Italian neorealism, English brutalism, or the Spanish southern tradition¹³, gave rise to free areas limited to the scale of man that remembered popular spaces.

The material uniformity and volumetric variety of modern construction provided a high degree of abstraction. Its typological development, of mixed character and Anglo-Saxon influence¹⁴, consists of 70 linear blocks and towers of four and six heights, and 398 single-family row houses, with a total of twelve different types of housing. With them, an alternative was offered to the participatory process of joint design with the users that was initially proposed, without neglecting the understanding of physical and social reality (**Fig. 3**).

The free public space implied a minimal manipulation of the terrain, a dialogue with the geography and a control of perceptions. The linear blocks of six

heights are arranged in the lower and outer areas, delimiting the distant vision and the large leaks, to make the public space independent of the environment. The single-family homes are grouped into compact sets with an interior situation, from where the visuals are conditioned by blocks of four heights, which establish an intermediate scale filter, and towers of six, which are arranged in the highest areas favouring permeability and acting as perspective background. This variety of pieces achieved the generation of diverse intermediate spaces, with the amplitude of some areas compared to the densification of others, maintaining a close relationship between the scale of the built volumes and the free spaces¹⁵.



Figure 3. José Luis Íñiguez de Onzoño and Antonio Vázquez de Castro, Programmed Estate of Caño Roto, Madrid, Spain, 1957–1963. General plan. Source: Drawing by the author.

These intermediate areas are called by Antonio Vázquez de Castro¹⁶ “measured free spaces”, because with them bounded and controllable scales are handled. The blocks and towers open up to wide expansion areas that, in addition to their function of separating the building, have a character of meeting and exchange for the population, similar to that of the traditional Spanish square. These are dynamic spaces of variable size that, depending on their position on the slope, can be folded to form benches. They are partially delimited by the different building types, which form fragmented and staggered backgrounds, and by the commercial volumes that open up to them. In front of these dilated spaces, the accesses to single-family row houses are produced through narrow streets, 3 and 4 m., and lengths that vary between 30 and 75 m. They can be developed at a constant level or take the lines of maximum slope, which forces them to be staggered, just like the houses, giving the model a vernacular character.

In the free spaces, the transit is carried out through in-situ concrete walkways, which are connected and reduced to a minimum. The living areas are sectors of rammed gravel on the ground or traditional pebbles

on cement mortar. Among the scarce furniture, there are highly abstract children's games designed by the sculptor Ángel Ferrant. The containment of land in the changes of elevation is carried out by means of masonry walls of draining cyclopean stone, which are complemented by the materials of the vertical walls, sand-lime brick and concrete formwork with large tables. The vegetation is an important part of the set, with the presence of trees that alternate between evergreen and deciduous species, and small garden areas. It is conceived with the intention of separating the living areas from the blocks and towers, closing off perspectives, providing protection and shade, and accompanying the circulation layout. These resources contribute to the composition of the whole by establishing a set of scales and mark an intermediate point between the hardness of the materials and the sensation of comfort, in spaces that adapt freely to the needs of the population (**Fig. 4**).



Figure 4. José Luis Íñiguez de Onzoño and Antonio Vázquez de Castro, Programmed Estate of Caño Roto, Madrid, Spain, 1957–1963. Intermediate spaces. Source: Centro de Documentación de Medio Ambiente y Ordenación del Territorio de la Comunidad de Madrid. Código de referencia: IVI 00381_004.

4. Conclusions

The exceptional nature of the Programmed Estates, unrepeatable as an abstract exercise in architecture within the complex social experience, makes them heirs to the most formalist modern way, the one that, with Van Doesburg, believed in social evolution oriented and motivated from plastic arts.

Orcasitas's theoretical proposal was based on an absolute degree of freedom given by the elimination of any contextual reference. In these fifties, it was beginning to be thought that these theoretical models, heirs of Hilberseimer, were beginning to run out. All of them had a common premise, for the development of radical proposals in contexts without pre-existing references. The rigidity of the approach, the lack of definition of specific uses for each of the free spaces, the scarce resources that prevented its completion and the indeterminacy of who was responsible for its management, hindered its development and appropriation by the population, showing with the evolution of the set the overcoming of the city celebrated by the CIAM.

In Caño Roto, the specific consideration of the place and its ability to stimulate social interaction provided an integrating function of the intermediate spaces. The connection with the place, which Christian Norberg-Schulz proposed as "existential space", gives meaning to the whole that evolves from universality to individualization, specificity and complexity. The urban and environmental diversity allow a functioning similar to that of the compact Mediterranean city, with a specific biodiversity, which provides control of sunlight and prevailing winds, and improves air quality and thermal conditions. If the social role of free spaces is taken into account, the comfort conditions and the variety of activities that it is capable of hosting, favour the good use and physical and emotional well-being of the community.

Therefore, the urban form was decisive in the relationship of the inhabitants with the estate. In this climate of revising modernity, Ernesto Nathan Rogers opened a new avenue of research by understanding the past as the continuity of a certain tradition, rethinking the dialogue between architecture and the physical, social and historical contexts. To this new vision was added the so-called critical regionalism of Kenneth Frampton, which counteracted the dislocation and lack of meaning of modern architecture, typical of the international style, through the use of the contextual forces present in the places where it was projected. The great success of the Caño Roto project consisted of putting in crisis the models inherited from the modern movement to convert the place, the scene of the abstract composition that its architecture supposes, into an integrating element, both from the urban point of view, as environmental and social.

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Notes

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S24

On the Modern Urban in Challenging Times

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It is an honor to be chairing the session, “urban design and quality of life” at Docomomo International 17. The title of the session links urban design, a cultural creation, to quality of life, a social ideal to be reached. The insightful studies in this session dwell upon significant issues related to the core values of Docomomo; from connecting past societies to today, to adaptive reuse of modern buildings.

With political unrest and the challenges of the COVID–19 pandemic, the current times continue to be quite demanding and pose new questions in terms of the preservation and future of modern heritage around the world. Urban design is adapting to the global events in two distinct ways. The first inclination one can observe in times of unrest is the cherishing of the past and forming stronger bonds with what appears to be a connection to roots, a reliable back story from the past (Harari, 2015; Shafak, 2021). However, the other direction is to cut ties with preceding times, looking to forget and begin anew. As I write these words, cities in Ukraine are being destroyed, with large urban territories being erased from history. Unrest continues in other parts of the world, with scarce remnants remaining from cultures that have established over centuries. For cultures who have forgotten the multiple meanings of modernity and submerged to collective amnesia, and especially where cities are being adapted to current needs, various forms of documentation are the only reserve for understanding today and illuminating tomorrow (Tuna Ultav, Hasirci, Borvali, Atmaca, 2015; Hasirci and Tuna Ultav, 2020).

When one looks at the etymology of “urban”, it is derived from place, *urbanus*, relating to a city, but also carries a refinement, courteous and polished context. From the early 1600s, the word carries the meaning of having the refined manners of townspeople (Etymology, 2022), and thus the city brings its own mannerism alongside it. While “quality” comes from; Latin *quails* (what

kind, character or disposition, nature), but also a degree of goodness and excellence, nobility and gentry. In the late 1500s, *quality* has been defined as a distinguished characteristic, and today, *quality of life* refers to; the access to quality, life enjoyment, health, and comfort (Cambridge, 2022).

Parallel to this holistic view, in 1970, in the beginning of his book, *The Urban Revolution*, Henri Lefebvre states;

“An urban society is a society that results from a process of complete urbanization. This urbanization is virtual today, but will become real in the future” (2003: 1).

Known for his perceptive observations on the urban interpretation of modern life, Lefebvre sees the term “urban society” as a society that is a natural result of industrialization, and its implications involved in modern life such as, estrangement, disillusionment, and distancing from rural traditions, alongside the quality of life (2012). This comment can signify much more than what it originally meant; in terms of, what defines a complete urbanization in addition to what characterizes the virtual and real. In any case, it is clear that it means the requirement and the realization of a large-scale collective vision, materializing in each intricate corner of a quite complex structure.

Although surfacing in much different ways around the world, the urban scale appears to suggest a committed vision and strengthened connection to modernity. Moreover, it has a more extensive lifespan compared to the interior or industrial design scale. This could mean that the message is more readily preserved although politics and economy as well as social life have incredible power over shaping urban environments. The papers presented in this session are quite elaborate and high quality and provide various approaches and methods to the modern movement around the world.

The first paper (34) by Verdiana Peron (Politecnico Di Milano) and Giorgio Danesi (Università Degli Studi Di Udine) is titled; “Valdagno, ‘Città Sociale’ (1927–1937): urban design and quality of life from past society to future development”, and discusses the planning process carried out between 1927 and 1937, for the new neighbourhood in Valdagno (Vicenza), the “Città Sociale”, that they state is considered one of the greatest Italian examples of social commitment in urban design. Built by Gaetano Marzotto, following Francesco Bonfanti’s architectural design, the district provided housing, welfare, and recreational facilities associated with the textile industry in the area. The authors explain the origins and characteristics of this project, its progress and transformation over time, leading up to today, with a significant discussion on preservation with regards to changing needs in the social, architectural, and urban scale.

The second paper (195) by Fatemeh Hedieh Arfa, Wido Quist, Barbara Lubelli, and Hielkje Zijlstra (all authors from Delft University of Technology), and is titled; “Effectiveness in Adaptive Reuse of Modern Heritage Buildings”. The paper dwells upon effective adaptive reuse of modern buildings, including

industrial buildings from the late 19th and 20th centuries, and their influences on the surroundings and local community. The focus is on the main criteria used to assess the effectiveness of adaptive reuse projects and reflect these principles in the preservation and reuse of modern buildings. Using UNESCO's definition of modern heritage buildings, 13 modern buildings were selected and analyzed in detail. The potential of modern buildings is emphasized in urban revitalization.

The third paper (234) by Ana M. G. Albano Amora and Rafael Barcellos Santos (both authors from Universidade Federal Do Rio De Janeiro) is titled; "Two modern monumentalities in Rio de Janeiro Central Area: distinct ways of designing within the historical city". This paper discusses two special hospital buildings in the historic area of the Rio city center within discussions of the modern aesthetic; Cancer Hospital, a 1953 project by Jorge Ferreira and Souza Aguiar Hospital, a 1961 project by Ary Garcia Roza. The authors discuss the significance of these buildings, still fulfilling their social function until today, and their preservation as urban heritage by the municipality. An emphasized point is that architecture acts as an environment housing people's intimate activities and is a significant element of a larger, more holistic message contributing to the discussions on heritage through function, typology, volumetric relations, up to the finishing.

The fourth paper (203) by Zeren Önsel Atala and Yıldız Salman (both authors from Istanbul Technical University) is titled; "Modern Times in West Anatolian Cities: Continuity Issues in Urban Planning". The paper focuses on the emergence and institutionalizing of modern urban planning in Turkey and typologies created with the development of railways. The coexistence of traditional and modern landscapes in Western Anatolian cities is discussed through case studies showcasing local interpretations with the intention conserve and enable the continuation of the urban landscape. The discussion of contemporary approaches and laws regarding preservation of modern urban planning and architectural cases contribute to the necessary underlining of their significance and continuity.

As an interior architect who is used to working at a smaller scale, I must state that the the urban context appears to be distinct, however, the modern aesthetic is continuous and is the same message interpreted at various scales. Thus, it is my great pleasure to chair this session in the urban scale. The significance of Docomomo International is that it remains as a powerful international institution that continues to successfully stress the importance of respecting and preserving the modern heritage and facilitate the documentation of increasing amounts of sites and cultural products with great sensitivity. The research collected in this session sheds new light on modern heritage as well as new methods and insightful approaches that enable reading a story that is in existence only partially. It depends on the voices that are heard, the story that is written, the decisions, vision and methods of scholars today that will set the tone, character, and most significantly, the

quality of life, providing the connection of the modern message to today as well as tomorrow.

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Valdagno, “Città Sociale” (1927–1937): urban design and quality of life from past society to future development

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Carried out between 1927 and 1937, the planning process for the new district in Valdagno (Vicenza), named ‘*Città Sociale*’, is considered one of the greatest Italian examples of social commitment in urban design. The district was built by the pioneer of textile industry Gaetano Marzotto, following Francesco Bonfanti’s architectural design. The aim was to provide a housing and welfare system near the factory, devised to improve the workers’ quality of life. The essay explores the genesis and features of this modern urban form, as well as transformation processes and its current state of conservation. The goal is to assess its present role in the city by investigating what has changed, what remains, and if it is still valid in contemporary society. The paper will also discuss whether this district could still provide healthy places and urban comfort. Another topic is the connection between urban form and identity of the city, in order to preserve and re-interpret them for future lifestyles. Beginning with the analysis of Bonfanti’s drawings, kept in the *Archivio Progetti* at the *Università Iuav di Venezia*, the research identifies the socio-political circumstances and the criteria of modernity on which the project was devised. Both a general and a case-study approach are used to present its emblematic buildings and urban spaces. The results are compared with what has come to light through site-visits, in order to highlight the main reasons why the urban fabric has been transformed over time and the current state of its facilities. The comparison between past and present helps to understand the role now played by the district in the contemporary socio-cultural environment of Valdagno. Valdagno continues to be a valid synthesis of landscaping, urban planning, and architectural design as Marzotto and Bonfanti imagined, suitable for the welfare needs of a society which has changed¹.

1. Architecture, welfare, and public spaces of a built utopia

In the 1920s the textile industry owned by the Italian pioneer Gaetano Marzotto was at the peak of its economic expansion. With the purpose of providing a housing, welfare, and recreational system for more than 4000 workers, he decided to create a new urban district located near the factory in Valdagno, a small rural town in the north of Italy, close to Vicenza (Veneto region).

In order to achieve his utopian idea of '*Città Sociale*' – later called '*Città dell'Armonia*' (City of Harmony) – he hired Francesco Bonfanti, a young Italian engineer and architect, born in Sicily and graduated from Rome². This challenging urban project took almost ten years to be completed in its most significant buildings (from 1927 to 1937) and gave him the occasion to experiment on a topic that was, in those years, at the centre of the CIAM's interests (*Congrès Internationaux d'Architecture Moderne*): the relationship between urbanism and industry³.

The project was built on an area of 54 hectares of land, previously used for agricultural purposes, located between a hill and the river Agno. The river was both the limit of the 18th century core zone of the town and the edge of the industrial area owned by Marzotto in the first half of the 19th century (**Fig. 1**).

The concept was modern and rational: it can still clearly be appreciated in the current plan. The district is arranged on parallel and orthogonal axes along the river Agno. In this long and relatively narrow urban fabric, the architect organised the residential settlements and many facilities to allow everyone to enjoy recreational activities: after-work clubs, a school of music, a gym, a stadium, an Olympic size swimming pool, and a huge cinema-theatre for 1860 people. There was also space for high quality services for workers of any company level: a well-organised school area (from kindergarten to high

- LEGENDA:
1. Marzotto factory
 2. Old Town core zone
 3. Houses for clerical workers
 4. Houses for executives
 5. Apartment buildings for workers
 6. "Rinascenza" building (shops and apartments)
 7. Theatre
 8. Clerical workers' club
 9. After-work Club; Music School, indoor swimming pool, gym and "Casa del Balilla" (now S. Gaetano Church)
 10. Stadium
 11. Social institutions
 12. Primary school
 13. High school
 14. Outdoor swimming pool
 15. Hospital
 16. Villa Favorita gardens (now public park)



Figure 1. Plan of Valdagno, graphic elaboration, 2022, ©G. Danesi.

school), a health centre, a nursing home, and shops with good prices for Marzotto's employees.

The 'new Valdagno' represented the fulfilment of a modern utopia in which every worker could feel completely included in the society. Nevertheless, every choice was focused on adapting the social and economic structure to the needs of the industrial system. The rigid hierarchical organisation is clearly visible in the residential areas: huge mansions for the company executives in the core of the district surrounded by green boulevards; detached and semi-detached houses with small private gardens for clerical workers and, finally, four floor apartment buildings with common courtyards for the factory workers.

Industrial logistics influenced the urban form in its functional subdivision which makes Valdagno similar to other contemporary experiences in Italy⁴ but, despite this, Bonfanti's district could be considered a unique urban experiment. The typical 'Company Town' was based on the "logic of ruralization of the urban shape"⁵. The new villages were usually built in rural areas, quite far from the cities, with the purpose of being totally independent from pre-existing urban settlements. In Valdagno the new urban district was designed to be an extension of the old core zone: Agno River is at the same time the limit and the connection of the two parts of the city, facing each other. For this reason, it can be assumed that the so-called '*Città dell'Armonia*' opposes the anti-urban ideology. It was not an independent village: it was thought of as an essential part of the city, able to liven up the ancient centre. The project did not seek total autonomy. On the contrary, it established a dialogue with the 18th century town, giving it new functions and meeting places open to everyone and not only to the factory's workers.

In this process, the design of public spaces had a central role, still crucial today. Three bridges connect the district to the east side of the Agno River: two of them go to the city centre, extending existing routes, while the third is directly connected with the factory. At the entrance to the main bridges, there are two squares with gardens in the urban road network; a green boulevard alongside the river gives the possibility to observe the city on the other side. A Footpath system completes the definition of the urban form. Most of the public buildings are equipped with long pedestrian porticoes, paved with modern mosaics representing textile-work tools (mainly scissors and hanks) and fascist symbolism. The Porticoes were created with the role of replacing the aggregative function of squares on rainy days.

The outcome is a new district, well connected to the old centre and, at the same time, an expression of modern shapes that coexist with more traditional aesthetic details. Bonfanti's architecture mixes traditional materials with post-industrial ones: bricks, natural stones, and wooden frames, with concrete, cement based artificial stones, and aluminium frames. In Valdagno the quality of urban design is defined by the multiple styles of the facades. The language used is midway between the Modern Movement and 19th century

Monumentalism, even if the general approach reveals greater adhesion to the criteria of Rationalism. Linear volumes, portholes, ribbon windows, and semi-circular balconies in the school buildings and the workers' apartment buildings clearly refer to the International Style. At the same time, these elements coexist with the eclectic mansions of the executives, and with the more lavish brick and stone decorations of the after-work clubs or the 'Rinascente shops' buildings (Fig. 2).



Figure 2. F. Bonfanti, first version of the project for the Città Sociale, 1928, ©Archivio Progetti luav, fondo Bonfanti.

2. The core zone of a modernization process: social and urban transformations over time

In 1962 Gaetano Marzotto wrote: "All my activities were hinged on social welfare (...) I built dignified houses in a period in which everyone was talking about 'minimum standards' (...) The Marzotto Social Institutions, which have survived throughout the years as a great Italian example, are more significant if you think about the time in which they arose"⁶. In the '60s, almost 30 years after the construction of 'Città Sociale', the social policy of the project was deemed to still be valid, and to guarantee a high-level quality of life.

In Marzotto's original idea, the social town inhabitants obtained benefits far beyond their payment as workers: schools, sports, and leisure time activities were guaranteed by a whole welfare system⁷. In addition, the over dimensioned size of services offered, enabled the extension of their use to the other inhabitants of Valdagno. This was clear to Plinio Marconi, the architect who was in charge of the Urban Plan (P.R.G.) of the city in 1950. He understood the potential of Bonfanti's district and used his urban fabric and criteria to design the expansion of the city: he extended the streets and populated the still-empty urban areas between the social district and the ancient town, strengthening the link between them⁸. This made Marzotto's utopian project

the core zone of the whole city modernization process. Simultaneously, at the end of World War II, all the schools were donated to the Municipality and became public buildings. In the 1970s, after Gaetano Marzotto's death (1972), the socio-economic role of his textile industry was reduced and the Company's heirs decided to sell many housing units to the inhabitants, through instalment payments.

Despite this, the strengthening of the district's role within the social dynamics of Valdagno continued in the following decades with the 2004 Town Plan (P.R.G.) by architects Dolcetta and Dal Cengio. Since this Plan, Marzotto's district has been classified as a 'Historical centre', definitively recognizing the cultural value of Bonfanti's urban design and architecture.

3. Urban and architectural qualities for the contemporary dwelling

The socioeconomic background has changed completely since the construction of the district. The neighbourhood was built for Marzotto's workers, who made up almost all of the inhabitants of Valdagno. Nowadays, the labour market has completely changed and people who live in the '*Città Sociale*' usually don't work for the Marzotto Company. In order to understand whether this model of city is still valid, it is necessary to explore how the community experiences the Marzotto and Bonfanti legacy today. The data collected through on-site surveys and interviews⁹ with the citizens has provided an overview of the advantages and disadvantages of residing in buildings and spaces designed almost a hundred years ago.

Although the close relationship between the industry and the district has been loosened, the qualities of the urban fabric are increasingly acknowledged by the locals. Since the morphology of the valley does not allow for the building of new neighbourhoods near the city centre, the real estate market is based on dwellings in the historic core of the town, houses or apartments in the '*Città Sociale*', or new constructions on the outskirts. Dwellings in Bonfanti's district rarely remain on the rental or sale market for a long time and prices are generally higher than those in new neighbourhoods, despite being old buildings which need to be renovated. The awareness that they have a particular value is steadily increasing because people perceive that they can guarantee a good quality of life, even better than that in the historic centre.

The main strength of Marzotto and Bonfanti's project is to have devised a system in which residences and spaces for public services (schools, cultural and sport facilities, health care assistance) are inextricably connected. This aspect of the '*Città Sociale*' is still valid today and it represents an attractive proposition for young couples and families. The neighbourhood can guarantee the proximity of all sorts of services, thereby providing a better urban experience than the historic centre.

The urban design of the '*Città Sociale*' is certainly one of the values acknowledged by the community. The presence of a single client allowed Bonfanti to plan a vast and uniform system equipped with common outdoor spaces (the boulevards, the riverfront, the squares) that are now considered of great quality because they are wider and greener than the historic core. Furthermore, the courtyards of the former workers housing buildings are hybrid spaces (public–private) encouraging social interactions in the neighbourhood, which would be difficult in other types of settlements.

The municipality has also invested resources to improve the qualities of the public space. In the 2000s, through an agreement between Marzotto company and the municipality, a huge private area was restored and given to the citizens as a public park¹⁰. The green space was part of Marzotto, Bonfanti and Gio Ponti's project for a large master's villa named '*La Favorita*', surrounded by a huge garden and a farm. Although the construction of the main building had been interrupted due to the outbreak of World War II, the area continued to serve as a farm, mainly for the supplies of the canteens of the social institutions. Since its opening through the demolition of 2 metres–high walls, the park has become one of the most favourite public spaces for the locals, who often prefer to spend their free time there than downtown.

The quality of life is not only ensured through a well–structured urban design, but also by the architectural features of the housing buildings (Fig. 3). The apartments have not generally been unified or parcelled. They are characterised by high ceilings and feature wider and lighter spaces than the dwellings of the historic centre or the more recent housing units. These characteristics are highly appreciated and comply with the requirements of the contemporary lifestyle. Moreover, since these buildings were built with thick local stone masonry, they can guarantee a good thermal inertia. Therefore, although interventions of energy improvement are usually required, these constructions are generally more efficient and sustainable than those built in subsequent decades. On the other hand, the problems highlighted by the inhabitants relate to the lack of corridors and the need for a second bathroom in the apartments, which requires adapting the inner spaces to the current needs. Even though the inhabitants cannot benefit from a private garage and garden, they feel that the



Figure 3. Workers' housing buildings, in the 1930s and in 2022. ©Archivio Progetti luav, fondo Bonfanti; ©V. Peron.

'Città Sociale' can offer a lot of advantages in exchange, like the proximity of the services, and the ease of undertaking social interactions.

Another valuable aspect of the 'Città Sociale' is the medium density population rate of its housing buildings. In contrast to the typical urbanised areas of Veneto region, characterised by low density but highly parcellised urban fabric, this feature facilitates environmental sustainability because all the services needed by the community are ensured, but, at the same time, the impact of the built-up areas is reduced. Bonfanti's district is therefore still a valid synthesis of landscaping, urban planning, and architectural design also for the needs of contemporary society.

4. The legacy of marzotto's social commitment

The quality of life of a place is not guaranteed only by the features of its buildings and spaces, but mostly by the presence of a rich system of social services. In 1959 Gaetano Marzotto founded the '*Fondazione Marzotto*' and donated to this non-profit organisation movable and immovable assets with the purpose of carrying out projects in support of his employees and their families. The social purpose of the foundation and its openness towards the community was established even in its statute, since representatives of the municipality, the prefect and the local bishop were included in its governing body. Social care services, like the nursery and the retirement home, had been started in 1934 and located in a building specifically designed by Bonfanti. Marzotto's heirs have continued to support these welfare pursuits. Nowadays, their care services are not only for the former or current employees of the company, but have become an asset of the entire territorial community. The same buildings built little less than a century ago continue to house functions connected to elderly medicare and child service. The requirements of a contemporary retirement home have entailed the modernisation and adjustment of the spaces. However, Bonfanti's project is still appreciated for the brightness of the rooms and their relationship with the outside.

Gaetano Marzotto was also particularly interested in promoting cultural activities for his workers. In 1932 a music school was built for the '*Complesso Bandistico V.E. Marzotto*', the wind orchestra founded by his father in 1883. In 1928 the industrialist had already constructed the after-work club 'DAM' (*Dopolavoro Aziendale Marzotto*), a building which hosted all the other recreational activities and has become partly unused over time (**Fig. 4**). A gradual grassroots process of appropriation of private space is currently ongoing, since the community feels that music, culture, and socialising are essential for a better quality of life. Through an agreement with the owners of the 'DAM', the association '*Progetto Musica*' is currently fundraising to reuse part of these abandoned spaces, setting up rooms for music classes, halls for martial arts, dance and theatre courses, and an auditorium for more than 200 people.



Figure 4. DAM building, in the 1930s and in 2022. ©Archivio Progetti luav, fondo Bonfanti; ©V. Peron.

Marzotto knew his territory and was sensitive to his workers's needs. He wanted to build a city tailored to the people, and not a mere worker village for the company's interests. The connection between the urban form and the identity of the city lies in the fact that Marzotto had a well-structured opinion about the society, that he built with the architecture he liked. How his idea can be both preserved and re-interpreted for the life of tomorrow? Its legacy lasts in the welfare services that are benefiting the fifth generations and continuously adapt to the new necessities of the contemporary lifestyle. An idea can be updated when the community takes possession of it and shares it with the institutions, like the cases mentioned. This is the greatest form of acknowledgement of its value and gives this idea the chance to persist over time.

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Notes

- 1 G. Danesi is author of section 1 and 2, V. Peron of section 3 and 4.
- 2 Bonfanti was an engineer when he started working for Marzotto. He became architect in 1940, studying in Rome with Gustavo Giovannoni. Marzotto built other Company Towns in Italy: Manerbio, Mortara, Portogruaro.
- 3 Comune di Valdagno, *Valdagno: patrimonio industriale e città sociale*, Ufficio di Piano, Valdagno, 2006, 60.
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- 5 Ferrari G., "La città sociale di Gaetano Marzotto a Valdagno (Vicenza)", *Archeologia industriale nel Veneto*, Cinisello Balsamo, Silvana Editoriale, 1990, 237.
- 6 Erseghe A., Ferrari G., Ricci M., *Francesco Bonfanti architetto. I progetti per la "città sociale" di Gaetano Marzotto 1927–1946*, Electa, Milano, 1986, 75.
- 7 In Valdagno Gaetano Marzotto built new facilities for Institutions previously created by his father (e.g.: the hospital, the school of Music, etc.).
- 8 Marconi P., *P.R.G. di Valdagno*, 1950.

- 9 The data collected through archival research and on-site visits were discussed with some inhabitants, professionals, and associations' directors (Dec. 2021–Feb. 2022), with the aim of establishing a dialogue with those who daily live in '*Città Sociale*'. We would like to thank, in particular, Enrica Mattiello (architect), Marta Penzo (Valdagno Public Library), Massimo Gonzo and Daniela Fattori (Progetto Musica Association). We are grateful to Veronica Marzotto, president of Fondazione Marzotto, for her kind support.
- 10 "Il parco La Favorita", Comune di Valdagno, accessed February 23, 2022, <https://www.comune.valdagno.vi.it/citta/vivere-valdagno/la-favorita-4>.

Two modern monumentalities in Rio de Janeiro Central Area: distinct ways of designing within the historical city

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Two modern buildings configure urban situations in Rio de Janeiro downtown, close to historical public places. Cancer Hospital, a 1953 project by Jorge Ferreira (1913–2007), located at Cruz Vermelha Plaza; and Souza Aguiar Hospital, a 1961 project by Ary Garcia Roza (1911–1999), located in front of República Square. Such iconic buildings fulfil their social function until today, and are located in an area preserved as urban heritage by the municipal administration. However, its architectures are not individually classified due to their design characteristics, that precede current recommendations for the implementation of new forms in historical sites, and which contribute to qualify the urban space. Both authors graduated in Architecture from the National School of Fine Arts (ENBA), cradle of what has come to be called Carioca School, whose ideas combined classical compositional principles with European avant-garde ones, especially those from Le Corbusier. These projects presented here, however, depart from different perspectives on the city, although both cases do not think of it as *tabula rasa*, and even dialogue with preexistences, whether respecting the urban form and other buildings, or creating designs articulating the building to the place.

1. Introduction

This paper analyses two modern hospital buildings in Rio de Janeiro city centre, in sites preserved by the municipality administration and delimited by two sectors of APAC: “Cruz Vermelha” and “Corredor Cultural”. It reflects on how these buildings, designed before the APAC, were thought in dialogue with the surroundings and reflects on the condition of urban heritage as superposition of historic periods, in a palimpsest in constant updating.

The buildings also evoke concepts of the Carioca School² in two moments. As a counterpoint to the common sense about modern architecture as something produced from *tabula rasa*, there are traces of how their designers looked at the city when responding to functional demands, but also aesthetical and historical.

Unfortunately, these buildings are preserved only in their use as health institutions and not for their architecture, which makes them relevant as objects of analysis. Although their authors were from the first generation

of the pioneers of Carioca School, they do not appear among the most well-known, as were those architects in the project team of the Ministry of Education and Health³ (MES). Nevertheless, they demonstrate their virtues when designing in historic areas, and with ideas probably originating from their training at the National School of Fine Arts (ENBA), in the ambit of the dilemmas between renovation and tradition, and the possibilities provided by modern architecture.

In this context, stands out a text written by architect Lucio Costa, presented at the Symposium *In the search of a new monumentality*, with themes published in 1948 by The Architectural Review⁴. The event sought a contemporary architecture in which functionality would not suffice; or the development of a considerably rich and flexible language to express all the ideas that architecture – especially the representative – should be able to express.

Costa then presents a script for designing a new monumentality, referring to the integration of three problems: the technical issue of functional construction and equipment; the sociological issue of urban and rural planning; and plasticity in architectural expression, in its broader conception, including its relationship with the arts. He considered as necessary the commitment of architects with issues related to architectural expression and an active participation in the artistic debates to understand the common fundamentals of all arts. Thus, a work in the functional ambit could be appropriated in plastic terms too. In Costa's understanding, these ideas would be extended not only to civic centres, but also to buildings by means of dimensions and volumes, as well as plasticity. In this vision, monumentality would be inserted in urban planning and would also be related to subjective issues of the architectural work's signification, expression and representation.

In both cases analysed in this study, these points were at times taken into account, and other times ignored. Nevertheless, both buildings demarcate the modern aesthetics in the historic area of the city centre in a dialogue with the surroundings.

Methodologically, historical documents on the development of the city, such as urban plans, texts and iconographies were used as source, as well as more recent documents on urban preservation. Theoretical production from the time of the analyzed buildings, as well as that of current researchers are also references. Not to mention the drawings and projects of the authors and their peers.

2. Buildings location

The two buildings are situated amid historical urban centres. One of them is Cruz Vermelha Plaza, a roundabout that articulates the avenues Mem de Sá and Henrique Valadares, which since 1992 is part of the APAC of Cruz

Vermelha⁵. The flat area was created from demolishing the Senado Hill as a result of the initiatives of urban renewal by Mayor Pereira Passos (1902–1906). The roundabout was built for the moderate traffic from the early twentieth century and for pedestrians to walk through and around it. Presently, it is an urban area with a traditional typology, with blocks of narrow and deep plots. The buildings ensembles have façades in continuous rows, producing a frame for the streets.

Around the plaza, there are buildings that are highlighted in relation to the ensembles, such as the Cruz Vermelha Hospital, after which the plaza was named. Designed by architect Pedro Campofiorito, it was built in the period of 1919–1924 and has been recently listed⁶. The eclectic volume has four storeys and follows the street curvature, in a tripartite composition with symmetry axis and central element standing out in height.

Through time, the area went through several changes, such as those caused directly and indirectly by Agache Plan⁷. In its conception, the city's architecture was seen in a continuous⁸ way, with the buildings producing public spaces, streets, blocks, patios and galleries⁹. Buildings projecting over sidewalks with covered galleries in several parts of the city and the opening of some avenues are examples of the plan's heritage.

A highways trend had imposed to the city centre greater circulation of vehicles, with the setback of street alignments and street widening, and allowing the verticalization of buildings. As a counter-position to so many renewal phenomena, appear incentive proposals and actions of heritage protection and preservation, as the creation of APAC, arising from the embryo of Corredor Cultural¹⁰ and indicating a new trajectory for the area.

The historical República Square dates from the period when Brazil was a Portuguese Colony and it was situated on the outskirts of what was then a town; now it is located on the limits of Corredor Cultural area. In the nineteenth century, the plaza received the intervention of French landscape designer Auguste Glaziou. In the twentieth century, it was reduced for the works that resulted in the opening of Presidente Vargas Avenue, comprised in Agache Plan, but actually built in 1942 due to the modernization works proposed by the City Plan Commission, which partially incorporated the guidelines of that Plan¹¹. In the same period were built Duque de Caxias Palace (1935) and the railway Central do Brasil main station (1936–1937), both facing the avenue in a traditional conception of monumentality, followed by other buildings from successive epochs, demarcating different moments of the urban history.

3. The Cancer Hospital

The main building of the National Cancer Institute (INCA) complex, the HC-1, known as Cancer Hospital (1953–1957), is located at Cruz Vermelha Plaza and

was designed by architect Jorge Ferreira (1913–2007). Ferreira was born in Paris and graduated in Architecture from ENBA in 1937¹². In 1938 he became an employee at the Works Division of MES, where he worked until 1970. He was Secretary of IAB¹³ (1946–1948), representing the category, in 1947, at the Architecture Congress in Grenoble and Milan Triennial VIII. Despite his activity in architecture, with rewarded projects and published works, he did not receive due recognition.

Its building presents a certain ambiguity, by joining the modern language with the implantation that recalls the preserved eclectic ensembles, like the Cruz Vermelha Hospital building, located on the opposite side of the plaza, implanted as to comply with the urbanistic requirements. The formal typology is a monoblock with capacity for 350 beds in 11 storeys. The main façade is on the Cruz Vermelha Plaza, in a concave format resulting from the circular shape of the street. Although the characteristics of the building provide it a modern aspect, it dialogues with the preserved ensembles and with the Cruz Vermelha building, due to a classical tripartite composition, followed by a symmetry axis that marks this façade with the entrance of the building at the basement, which has solid aspect with few openings, denying the fluidity of pilotis.

The free ground plan enables a flexible organization for technological changes in the health area and favours the treatment of the façades. The adoption of glassed verandas, which simulate continuous openings and project over the sidewalk, provide lightness to the volume. Its crowning, which used to house a garden terrace, has sinuous shapes in a reference to Carioca School. The northeast façade is protected from the strong insolation by brise-soleils made of aluminium.

4. Souza Aguiar Hospital

The architect Ary Garcia Roza (1911–1999) designed projects in the public health area when Rio de Janeiro was no longer the capital of Brazil, during Governor Carlos Lacerda's administration (1960–1965). Among those projects are Souza Aguiar Municipal Hospital (HMSA) and the Institute of Haematology, both built in the same urban area and constituting a hospital complex.

Roza graduated in Architecture from ENBA in 1934, three years before Jorge Ferreira. He too was not among the founders of Carioca School, but had contact with it during his studies, and with Lucio Costa and Professor Gregori Warchavchik; and he was present at Le Corbusier's lecture held in the city in 1929. It is noteworthy that he maintained professional relationships during his presidency of IAB (1956–1959), having Oscar Niemeyer as vice-president. During his career, he designed public and private works¹⁴ and dedicated himself to urban planning by working on master plans¹⁵.

The history of HMSA (1961–1965) goes back to the former Public Assistance that was located elsewhere and moved to the current address in 1910, to a

larger and more robust building with a classical language similar to that of the neighbouring eclectic buildings, until it was demolished for the construction of the present one.

Today, the main hospital building of the complex is more vertical in relation to its neighbours and occupies a significant part of the plot, hence providing for more beds than the previous one, besides having a contiguous emergency facility. Regarding its dimensions and functionality, this complex has a monumental and referential character in relation to the surrounding historical ensembles of eclectic architecture buildings with narrow façades and low height, predominantly used for commercial activities.

For the construction of the new hospital, the previous building was demolished, except for part of the side wall limiting with the Palace of Health of the Ministry of War (**Figure 1**).



Figure 1. Remaining wall with gardens by Burle Marx. © Collection LABLugares/PROARQ/FAU/UFRJ.

On a project's perspective presented¹⁶, there was a wall on that limit of the plot, from which derives the maintenance of the old wall. However, the neighbouring buildings were not represented, suggesting that the project intention did not articulate with the constructive reality, but the final construction did and prevailed, taking into account the place's preexistences (**Figure 2**).

The participation of landscape architect and artist Burle Marx in the project resulted in the utilization of the remaining wall as support for a vertical garden.



Figure 2. Relation of the building with the neighbouring elements. © Collection LAbLugares/PROARQ/FAU/UFRJ.



Figure 3. Architectural path: Vertical garden(1), Chapel(2), Stones mural(3), Inner-patio vertical garden(4).
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This garden marks the beginning of an architectural path that welcomes the user at the building's entrance, in a T-shape over a rectangular base, hence demonstrating the objective of allying basic functional precepts in communion with art works. This architectural promenade occurs from a modular matrix, contemplating specific spaces that transcend the design and constructive formatting adequate for functionality. These are the spaces: the vertical garden; the patios, one of them with another vertical garden; the hall, where there is a semiprecious-stones mural; and the chapel (**Figure 3**). From these singular spaces and art works, the path brings protagonism to the ground floor, which is the place of physical link between the vertical "T" and the base, and is at the same time the apparatus to evoke sensations and connections with the historical surroundings.

5. Final considerations

The fourth point of the Nine Points on Monumentality¹⁷ approaches the devaluation of the idea of monument and the incapacity of constructed buildings to represent "the spirit or the collective feeling of modern"¹⁸. It considers that architecture should physically demarcate and house the environments for the most intimate activities of people, and that buildings are not isolated, but are part of the whole that is the city.

In this sense, the HMSA seeks to respond to the surroundings that result from successive changes, with the creation of the promenade that incorporates part of the old building and protects itself from the programme's rigid functionality, adding greater meaning, or searching for "the reconquest of the monumental expression"¹⁹. In the context of a city that has its past continuously erased for the construction of new temporalities, this building demarcates the present time in shape, volume and functionality, articulating connections with the city and the region, and presenting to the population its institutional role as a reference in public health. The place is connected to the areas most in need of the municipality and the metropolis by mass transportation, corresponding to the seventh point on monumentality, about people's desire for "buildings that represent their social and community life"²⁰ (ibid. p.49).

In the case of the Cancer Hospital, at Cruz Vermelha Plaza, its condition of monument that stands out in relation to the neighbours benefits from the union of several narrow plots that when joined enabled the construction of a larger building than what was foreseen with the planned division in smaller unities. A similar procedure had been experimented on the opposite side of the square by the Cruz Vermelha Hospital, using the same principles of traditional implantation over the joining of multiple plots, without frontal or side distances, which typologically marks the surrounding older constructions, whether large or small.

Benefiting from the extension of the maximum height allowed, either because of special uses or simply due to changes in the legislation regarding building-height restrictions, first the Cruz Vermelha Hospital, later Cancer Hospital, could be built higher than their existing neighbours. However, regarding implantation and volumetry, typologically the Cancer Hospital, despite being higher, shares and multiplies principles analogous to the traditional ones seen on Cruz Vermelha Hospital and other buildings around the plaza. Its condition of a modern work and a monument that stands out from the original surroundings is provided by the typology of new constructive and structural techniques, and updated architectural elements and details without the characteristic eclectic ornamentation that prevails on the neighbouring buildings (**Figure 4**).



Figure 4. Cancer Hospital at Cruz Vermelha Plaza. © Collection LAbLugares/PROARQ/FAU/UFRJ.

The simultaneous observation of distinct typological principles in an architectural work, which in terms of volumetry and implantation can evoke a type of language, at the same time that in terms of structure and finishing can suggest other types of values, is at the centre of the debate about the complexity of the architectural typology concept, which can be a valuable analytical tool through which apparently hidden relationships and similarities between buildings and places can be found.²¹

Notes

- 1 Cultural Environment Protection Area (Área de Proteção do Ambiente Cultural – APAC).
- 2 The term – Carioca is the name attributed to people born in the city of Rio de Janeiro – was initially used by Mario de Andrade in his text *Brazil Builds*, indicating the existence of a modern style school led by Lucio Costa.
- 3 Carlos Leão, Oscar Niemeyer, Affonso Eduardo Reidy, Ernani Vasconcellos and Jorge Machado Moreira, led by Lucio Costa, under consultancy of Le Corbusier.
- 4 THE ARCHITECTURAL REVIEW. “In search of a new monumentality”. London: EMAP, september 1948. Also participated were in the Symposium Gregor Paulsson, Henry–Russell Hitchcock, William Holford, Walter Gropius and Alfred Roth.
- 5 Decree nº 11,883 of December 30, 1992, established the Cultural Environment Protection Area of Cruz Vermelha and surroundings.
- 6 In 2021 the first phase of the administrative process of listing by the Historic and Artistic National Heritage Institute (Instituto do Patrimônio Histórico e Artístico Nacional – IPHAN).
- 7 Urban planning for the city of Rio de Janeiro (1930) conducted by French architect and urbanist Alfred Agache (1875–1959). With a view to the city’s modernization, the plan introduced issues of the industrial city, like mass transportation, water supply and social housing. Its implementation was suspended in the administration of Mayor Pedro Ernesto (1931–1934) and resumed in the administration of Henrique Dodsworth (1937–1945).
- 8 This idea was retrieved in the 1960s by Aldo Rossi in his book *L’Abitazione della città*, whose first Italian edition was in 1966.
- 9 CZAJKOWSKI, J. org. *Guia de arquitetura art déco no Rio de Janeiro*. Rio de Janeiro: Casa da Palavra/PCRJ, 2000.
- 10 Law nº 506 of January 17, 1984, that recognizes “Corredor Cultural” as special zone in the historical centre of Rio de Janeiro city.
- 11 REZENDE, V.; RIBEIRO, F. “A arquitetura e o urbanismo modernos no Distrito Federal, escolha ou consequência na Era Vargas?”. In *Anais do VIII Seminário Docomomo Brasil*. Rio de Janeiro, 2009. <https://docomomobrasil.com/course/8-seminario-docomomo-brasil-rio-de-janeiro>.
- 12 VASCONCELOS, E. M.; COSTA, R. G. “A arquitetura de Jorge Ferreira”. In PESSOA, J. et.al. *Moderno e nacional*. Niterói: EDUFF, 2006.
- 13 Institute of Architects of Brazil (Instituto de Arquitetos do Brasil – IAB).
- 14 Government Departments Building, Vitória (1951); Banco do Brasil headquarters building, Brasília (1958–1962); Hospital Complex: HMSA, Blood Bank, Institute of Haemotherapy (1961); Premolded housing developments: Housing Development Padre José de Anchieta (1964); Housing Developments for Guanabara Housing Cooperative, Rio de Janeiro, at Estrada do Porto Velho and at Avenida Brasil (1965); Sergio Pacheco Square, Uberlândia (1973–1976) (DE LIMA, 2012).
- 15 Among others, for the municipalities of Teresópolis and Resende, in Rio de Janeiro State; Vitória, Guarapari and Cachoeiro do Itapemirim, Espírito Santo State; Uberlândia, in Minas Gerais State; Paranaguá, in Paraná State (DE LIMA, 2012).
- 16 DE LIMA, J. W. “Ary Garcia Roza, um arquiteto moderno brasileiro”. In *Arquitextos* n. 150.06, Vitruvius, ano 13, 2012. <http://www.vitruvius.com.br/revistas/read/arquitextos/13150/4556>
- 17 Text written in 1943 by Josep Lluís Sert (1902–1983), Fernand Léger (1881–1955) and Sigfried Giedion (1888–1968), which shook the bases of modern architecture orthodoxy.
- 18 GIEDION, S. *Architecture, You and Me: the diary of a development*. Cambridge: Harvard University Press, 1958.
- 19 Ibid. p.27.
- 20 Ibid. p.49.
- 21 Cf. ARGAN, G. C. “On the Typology of Architecture”. In *Architectural Design* n.33 (1963).

Effectiveness in Adaptive Reuse of Modern Heritage Buildings

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Adaptive reuse (AR) of modern buildings, including industrial buildings from the late 19th and 20th centuries, is a complex process as it involves many actions and actors, which influence the result of projects. Effective AR can provide many advantages for societies. This paper aims to provide an overview of the three most highlighted criteria, mentioned by previous researchers, for assessing effectiveness of AR of modern buildings.

This research followed seven steps: 1.Reviewing the criteria of “effectiveness” in AR projects in the literature 2.Collecting the data (jury reports of NRP and Europa-Nostra awards) 3.Distilling the reports related to modern heritage buildings 4.Translation of Dutch reports in English 5.Analysing and coding the texts following the criteria mentioned in the literature 6.Analysing the role of effective AR of modern heritage buildings in providing sublimation and social value 7.Formulating some conclusions/recommendations.

This review indicates despite the attribution of the effectiveness of AR of non-modern heritage buildings to the attraction of tourists, the effectiveness of AR in modern buildings is often attributed to positive effects on the surroundings and local community. Moreover, in modern buildings, compared to non-modern buildings, qualities provided by new interventions are highlighted more. This can be related to open space plans, stronger materials, wider spans, and spacious urban settings providing a higher tolerance for acceptable change.

By revealing the aspects of effectiveness within these two criteria, this study contributes to the broader understanding of the AR potential of modern buildings. Though this review is useful for encouraging the reuse of modern buildings, the methods/tools to be used to achieve effective results need more investigation in future research.¹

1. Introduction

During the DOCOMOMO 2020+1 conference in Tokyo, Japan, the DOCOMOMO Rehabilitation awards were presented.² This confirms that adaptive reuse (AR) has become a more and more common practice when dealing with heritage buildings³, including traditional, modern, etc. However, not all AR interventions are similarly effective in terms of providing benefits for societies.⁴

Different research has investigated the criteria of effectiveness in AR of heritage buildings. For example, Arfa et al. proposed several criteria and many aspects for

considering a reuse project as effective.⁵ They emphasized the role of effective AR in improving the social values and sublimation (architectural and cultural aspects) of heritage buildings. They mentioned these as the most highlighted criteria by the juries of two important awards. However, while their criteria and aspects are comprehensive, the authors did not specify the role of different typologies or periods (e.g. modern) in enhancing the effectiveness within societies.

In 2003, UNESCO defined modern heritage buildings as the “architecture, town planning and landscape design of the 19th and 20th centuries”.⁶ These buildings are the representatives of the past and are defined by the rapid and unparalleled technological and socio-economic developments in the 19th and 20th century. The ubiquity of the design and structures of these buildings has made their value recognition difficult, especially in non-European countries.⁷

Figure 1 shows the proportion of AR projects of modern and non-modern heritage buildings among the NRP and Europa-Nostra winners. This suggests that there might be a lack of attention to modern buildings at the European level; the DOCOMOMO rehabilitation awards might fill this gap.



Figure 1. The proportion between modern and non-modern heritage buildings among the winners of the NRP and Europa Nostra awards. Own illustration.

This research aims to provide an overview of the most highlighted criteria for considering AR of modern heritage buildings as effective. The ultimate aim is to translate those into guiding principles for effective AR processes and to raise awareness for the potential of preserving and reusing modern buildings.

Arfa et al. mentioned three criteria as the most highlighted ones by the jury to describe the effectiveness of AR projects.⁸ Based on the validation of this for modern buildings, which is explained in section 3, this paper is structured based on these criteria:

- Social value creation
- Sublimation– cultural aspects
- Sublimation– architectural aspects

2. Materials and methods

The methodology used in this research has been adapted from the research conducted by Arfa et al.⁹ with some amendments and it is outlined in **Figure 2**. The NRP and Europa-Nostra awards have been selected due to being among the most well-known awards for AR at the European and Dutch levels and having access to their jury reports.



Figure 2. The procedure of conducting the research. Own illustration.

Following the definition of modern heritage buildings provided by UNESCO¹⁰, 13 modern buildings have been selected to be analysed among the 48 winners (**Figure 3**).

3. Criteria of effectiveness in ar projects

The most highlighted criteria that Arfa et al. proposed are “social value creation”, “sublimation-cultural aspects” and “sublimation-architectural aspects”.¹¹ Splitting the results into modern and non-modern buildings indicated that those criteria are also the top-ones mentioned for modern buildings. The number of reused modern buildings covering a group of aspects within each criterion is represented in **Figure 4**. Hereafter, these criteria and groups of aspects (marked in **Figure 4**) are further discussed.

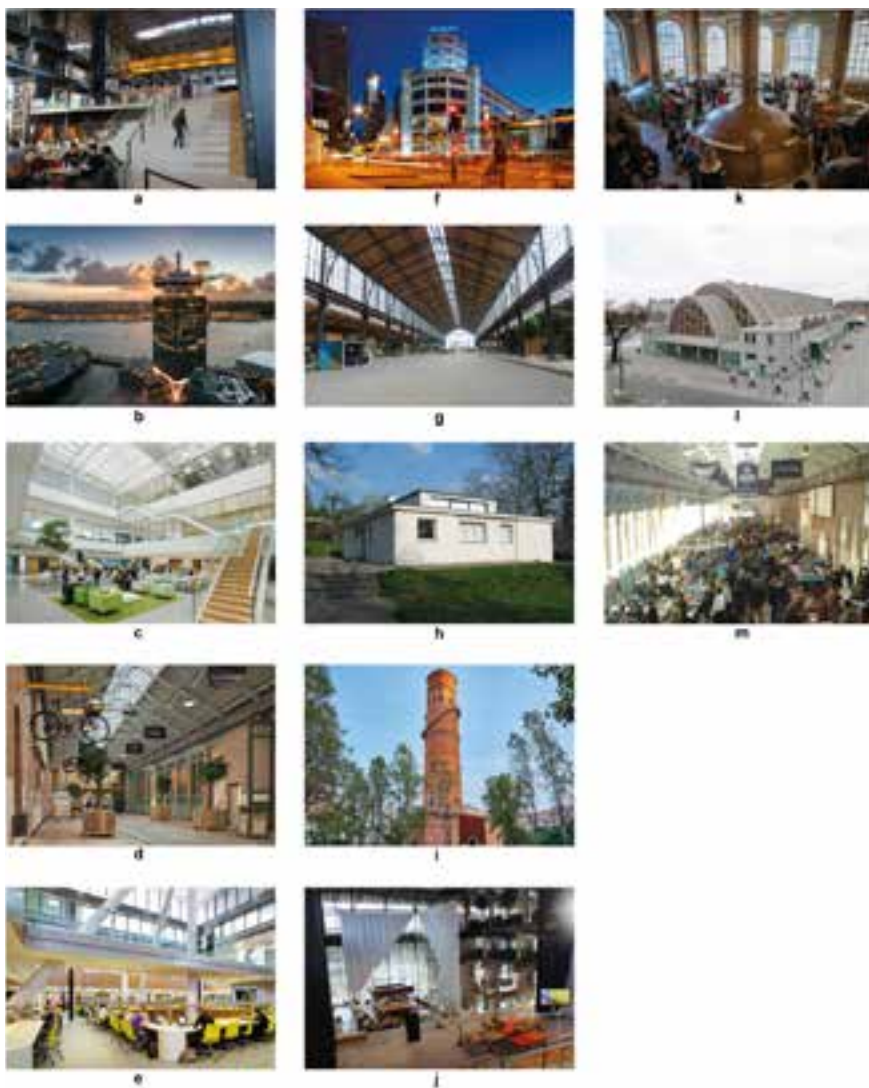


Figure 3. List of the selected cases among the NRP and Europa Nostra Awards; the NRP award winners: a. LocHal, Tilburg, The Netherlands, © F.H. Arfa; b. A'dam Tower, Amsterdam, The Netherlands, © M. Kort; c. The Carpentry Factory, Schiedam, The Netherlands, © M. van der Burg; d. The Halls, Amsterdam, The Netherlands, © Bright Light Photography; e. MetaForum, Eindhoven, The Netherlands, © Dynamobel; f. Light tower, Eindhoven, The Netherlands, © vastgoedmarkt; the Europa Nostra award winners: g. Gare Maritime, Brussels, Belgium, © F.H. Arfa; h. Haus Am Horn, Weimar, Germany (CC BY-SA 3.0); i. Barcelona, Spain (CC BY-SA 3.0); j. LocHal, Tilburg, The Netherlands; k. De Hoorn Brewery, Leuven, Belgium, © B. van der Perren; l. Boulingrin, Reims, France, © C. Weiner; m. The Halls, Amsterdam, The Netherlands, © D. van den Berge. The photos in this figure are either own photos or are licenced under Attribution-ShareAlike 3.0 (CC BY-SA 3.0).



Figure 4. The number of reused modern buildings covering the groups of aspects within the criteria. Own illustration

Social value creation

Heritage buildings provide social values for their surrounding communities. The “groups of aspects” and “aspects”, proposed by Arfa et al.¹² (see **Figure 4**), have been used to analyse the influence of modern heritage buildings in social value creation.

Landscape quality and atmosphere

The continuation of the city dynamics and becoming a vibrant environment is among the most emphasized aspects by the juries. For example, the LocHal¹³ (Tilburg, the Netherlands) was a no-go area in the years before its reuse. Thanks to the AR of this building, it became the beating heart of Tilburg.¹⁴ In the cases of Carpentry Factory¹⁵ (Schiedam, the Netherlands), LocHal¹⁶ and Boulingrin¹⁷ (Reims, France), the AR of the building contributed to the revitalization of the entire neighbourhood.

The creation of more quality and space for social and cultural entrepreneurship and joint new initiatives is another point mentioned for improving the atmosphere within the reused modern buildings. For example, the reuse of A'dam tower¹⁸ (Amsterdam, the Netherlands) transformed an inaccessible place into a lively workplace for entrepreneurs.

Wider community

Modern buildings have the potential to attract wider communities. For example, the A'dam Tower¹⁹, the LocHal²⁰, and the Carpentry Factory²¹ have attracted many international visitors, not limited to tourists. The Carpentry Factory houses a top engineering firm hiring many alumni from educational and research institutes such as TU Delft²². Based on the jury report published by NRP, the A'dam Tower receives around 3500 visitors daily, consisting of users in different sections such as catering, hotel, and employees of leading music companies such as Sony Music.²³

The Europa-Nostra jury appreciated the increment of tourists via reusing modern buildings. In the reports of the NRP award, nothing has been mentioned about attracting tourists. This focus on attracting various groups of users rather than tourists in the Netherlands is common in their practices and can have many beneficial lessons for other countries.²⁴

Local community

The role of modern heritage buildings in improving different aspects related to local communities has been clearly mentioned in the jury reports of both awards. For example, the AR of the Light Tower²⁵ (Eindhoven, the Netherlands) has transformed this building into a place where the local community lives, works, meets, and relaxes. Enrichment of the quality of life for citizens has also been mentioned in the jury reports of the LocHal.²⁶ Europa-Nostra does not highlight this impact for modern buildings in local communities. The reason might be the severe attention of this award to non-modern buildings.

Well-being and Health

The attention of both awards to well-being and health provided by these buildings is noticeable. For example, the LocHal²⁷ and the Besòs Water Tower²⁸ (Barcelona, Spain) provide a vibrant cultural, educational, and social centre for different groups of people, resulting in positive effects on their mental health. Acoustic comfort and visual peace is the other aspect, contributing to the health of users.

Sublimation-cultural aspects

This criterion concerns the effectiveness of AR projects to preserve and enhance the cultural values of heritage buildings. While historic and cultural values of modern buildings have not been fully recognized at a global level²⁹, reviewing the jury reports indicates the juries' appreciation of modern buildings in several groups of aspects, which are as follows:

Authenticity and integrity / Intrinsic value

The jury emphasizes the recognition of the intrinsic qualities and values³⁰ of modern buildings, by preserving and restoring them to their original shape and transferring them to the future. Having full-respect for the authenticity of the building and its fabric and landscape is highlighted. For example, this has been mentioned in the jury reports of the Haus am Horn³¹ project (Weimar, Germany), in which even the components of the terrains have been kept following the original concept in 1923.

Local identity / Cultural and knowledge capital production

These two groups of aspects have only been briefly mentioned in the modern buildings winners of the Europa-Nostra award. For example, in the report of Besòs Water³², the jury mentioned the role of this building related to the Spanish industrialization era in recalling the local people on their identity and forming their collective memory. The original function and temporary exhibitions in the Boulingrin³³ project provided new cultural dimensions and produced knowledge for visitors. Both of these two groups have received more attention in the jury reports of the non-modern buildings.³⁴

Mutual cooperation

The cooperation between different stakeholders in the AR process has been recognized by the juries to contribute to the increment of the cultural values. For example, in The Halls³⁵ (Amsterdam, the Netherlands) most of the tenants were actively involved in the process before the implementation phase and the cooperation between different stakeholders is exemplary. Similarly, the contribution of the previous workers in the Besòs Water Tower³⁶ project and providing oral testimonies for the museological parts of the project have many lessons for other AR projects.

Cultural vibrancy

The AR of modern buildings has a significant role in initiating and bringing cultural activities within their surrounding environments and even the wider contexts. While the non-modern heritage buildings have also been appreciated for this, the vibrancy provided by modern, especially industrial buildings, is more evident. This will be due to their design and spatial composition (e.g. dimensions and flexibility of their layout), which can provide space for a wide range of cultural activities within these buildings.

Sublimation–architectural aspects

The effectiveness of heritage buildings, in terms of their architectural qualities, is a less-discussed topic.³⁷ However, interestingly both awards have emphasized this, especially NRP with describing the architectural qualities of the reused modern buildings. The mentioned aspects have been grouped accordingly.

Spatial quality and zones

The open space plans and wider spans of modern buildings enable architects to use and emphasize their spatial qualities. For example, in the case of the LocHal³⁸ or the Carpentry Factory³⁹, the provided spaces are open, simple, and offer tranquillity, having positive impact on the health and well-being of users.

Joinable/divisible and multi-functional spaces

Some modern buildings, especially industrial buildings, have enormous sizes. In the winner cases, the jury have appreciated bringing the scales of these buildings to a human scale, while preserving their spatial qualities. Moreover, the redesign of several modern buildings is appreciated by the juries when the spaces are joinable and divisible to be flexible and able to accommodate various functions. For example, in the LocHal⁴⁰, the architects with the guidance of a sustainability company⁴¹ divided the space into six zones: while the spaces have different functions, some of them can temporarily become more enclosed or open.

Complementary redesigns

Highlighting the values by adding new additions has been addressed as positive by the jury of the Europa–Nostra award. A noticeable point is that the jury of the NRP award considers effectiveness as improving the spatial qualities within the reused heritage building as an integrated complex. However, the jury of Europa–Nostra award does not consider this integration and always mentions the “new parts” and “old parts”. Though they emphasize these “two parts” should be in balance, this distinction is rather visible in their reports.

Multiple access points

Due to the specific characteristics of heritage buildings, it is not always feasible to consider all different groups of users in the redesign. However, the

Europa-Nostra jury has highlighted this for visitors or users with disabilities and also the capacity of modern buildings to be altered for satisfying this demand.

4. Discussion and conclusions

This paper provides an overview of the three most highlighted criteria for effectiveness of adaptive reuse (AR), mentioned in previous research: social value creation and sublimation (cultural and architectural).

Following UNESCO's definition of modern buildings, the number of modern buildings among the winner lists in the Europa-Nostra award is minor. Only around 18% of winners are modern, whereas over 75% of the NRP winners can be considered modern. However, reviewing the reports and the aspects mentioned for assessing this limited number of buildings showed the attention of the jury in both prizes to the creation of social value and sublimation.

According to the jury reports, the spatial characteristics and layout of modern buildings provide numerous opportunities for their reuse. Designing multi-functional spaces, created with temporary elements, cause them to be flexible. Modern buildings can be places in which people conduct a wide range of activities, such as working, meeting, eating, and living. The studied cases act as a quality booster within their environments. Effectiveness of AR of non-modern buildings has usually been mentioned as acting as places where many tourists come and visit the buildings. Among the award winners, these buildings mainly had single-focused functions (e.g. churches or non-interactive museums).

This paper shows that the contribution of different groups of stakeholders and local communities to the AR of modern buildings, the life of those buildings can be prolonged. According to the jury reports, the initiation of their reuse process might be hindered by the different interpretation of the traditional concept of "heritage values" and the "age-values". In several winner cases, listing modern buildings as young monuments secured them from demolition and now they play a significant role in the revitalization of their surroundings.

This paper reveals the outstanding effects and benefits of reusing modern buildings and encourages different authorities to pay more attention to them by preserving, reusing, and assigning them various functions needed within societies. It can be observed that, by reprogramming and reusing modern buildings, parts of the cities (often no-go areas) have been tremendously revitalized.

Though this review of jury reports of award-winning projects is useful for encouraging the reuse of modern buildings, the methods and tools to be used to achieve effective results need more investigation in future research.

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Notes

- 1 Ongoing PhD research by Fatemeh Hedioh Arfa at the Delft University of Technology under the supervision of Dr. Hielkje Zijlstra, Dr. Barbara Lubelli, and Dr. Wido Quist.
- 2 "First Docomomo Rehabilitation Award."
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- 5 Ibid.
- 6 UNESCO, "Identification and Documentation of Modern Heritage."
- 7 "The Modern Heritage Buildings and the Challenges Ahead."
- 8 See above, 4.
- 9 Ibid.
- 10 See above, 6.
- 11 See above, 8.
- 12 Ibid.
- 13 "LocHal."
- 14 Ibid.
- 15 "Timmerfabriek."
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- 17 "Europa Nostra Awards Magazine (Laureates)."
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- 19 Ibid.
- 20 "LocHal."
- 21 "Timmerfabriek."
- 22 Ibid.
- 23 "A'DAM Toren."
- 24 Arfa and Pottgiesser, "Roundtable VII: Time and Unlisted Heritage."
- 25 "Lichttoren."
- 26 "LocHal."
- 27 Ibid.
- 28 See above, 17.
- 29 "The Modern Heritage Buildings and the Challenges Ahead."
- 30 Quist and Stroux, "Design with History: The Redevelopment of the Industrial Area Oostenburg."
- 31 See above, 17.
- 32 Ibid.
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- 34 See above, 4.
- 35 "De Hallen."
- 36 See above, 17.
- 37 See above, 4.
- 38 "LocHal."
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- 40 "LocHal."
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Modern Times in West Anatolian Cities: Continuity Issues in Urban Planning¹

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The architectural structure, planning concept and administrative principles of a modern city in the 20th century is mainly affected by mutual interactions between cities. The 1930s was also a period in which the spatial organization of modern cities was discussed in Turkey as in Europe. The urban planning studies carried out primarily in Ankara were later institutionalized in 1930 by making it compulsory for all cities. The main cities in which the theoretical framework of city planning were implemented are mostly located in Western Anatolia. The region consists of cities that were already started to be urbanized in the 19th century. From the second half of the 19th century, railway constructions mostly used for the transportation of agricultural products led the urbanization in the region and train stations became dominant urban spots. By the 1930s modern urban plans transformed these spots to the “new hearts” of the cities having a typological setting. The square created in front of the administrative buildings and highlighted with a monument, a city park designed for recreational purposes in the immediate vicinity, the widening of Istasyon (Station) Street that connects this square to the station, residential blocks with gardens and sports fields which are especially important for raising a healthy generation, can be listed as common components of these plans. However urban planning practices in West Anatolia were completely different than tabula rasa planning of new capital city.

This paper aims to analyse the characteristics of modern urban structure and the co-existence of traditional and modern city landscape in Western Anatolian cities as a basis for the conservation approach. The case studies represent urban patterns where the local reinterpretation of modern global urbanism models is predominant.

1. Introduction

As a part of the nationalization program, a comprehensive and holistic development policy was followed by the new government after the foundation of the Republic in 1923. The main ideology and ideas clarified in the Izmir Economic Congress in and put into practice with development plans. This policy aimed at liberating the peasants, developing and integrating agriculture and industry in Anatolia. In this period, the goal of establishing a new planned country and creating a national landscape was adopted. The national landscape has been redesigned with the arrangements made in rural, urban, production and transportation issues. The planned cities, railways, state factories, village institutes and state farms ensured rural–urban integration

and the progressive effect of industry on agriculture was utilized. The selection of Ankara as the capital of the Republic was the most important spatial strategy of the nation state². So Ankara was the model city of new Republic's modernization project. In this period, the urban planning activities were mostly concentrated in Western Anatolia that was already had connection with Ankara through railway network constructed in the second half of the 19th century. Beginning from the second half of the 19th century, railway construction in the Ottoman Empire in order to transport agricultural products of West Anatolian cities to Izmir Port. Railway projects carried out by foreign companies were concentrated in Western Anatolia which made the region accessible.³ The shrinking of the Ottoman Empire by losing land after the First World War caused population movements and rapid migration of those people living in the lost lands, thus revealing the housing problem of new incomers. Another problem encountered in urban planning and arrangement of urban areas in this period was the redevelopment of urban textures severely damaged by wars and fires. Atça, which is a part of Sultanhisar District of Aydın, is one of the settlements re-planned in radial form. A development plan was prepared for the city, which was destroyed after the fires in 1922, by Engineer Abdi Hıfzı Bey and Science Officer Halil Efendi in 1924 and this plan was approved in 1926.⁴ The radial form proposed by the plan is defined by 8 main streets, each 9 m wide and approximately 500 m long. These roads converge in Atça City Park in the centre. The areas behind the main axes were arranged according to the grid system, as in other Western Anatolian settlements planned after 1920. Investments in the field of transportation and industry accompanying the planning studies were also concentrated in the region.⁵

2. Modern planning practices in West Anatolian Cities

The theoretical approaches and practices of city planning in Europe between the two world wars highly affected the planning activities in Turkey. These theories of 20th century modernization become recognized in Turkey with the translation of foreign publications on urbanism and later paved the way for the formation of a new perspective in planning practice by inviting experts on the subject to Turkey. In 1920s, under the leadership of the mayor of Istanbul, the efforts to create the first Turkish urban planning literature gained momentum. In 1924, Turkey's first municipal journal, "İstanbul Şehremaneti Mecmuası" (Istanbul Municipality Magazine), was published, and in 1926, Camillo Sitte's "Der Städtebau nach seinen künstlerischen Grundsätzen" was translated into Turkish with the name "Şehir Mimarisi" (City Architecture).⁶ New trends, tendencies and developments in architecture and urban planning in Europe and the United States have been closely followed in Turkey. International projects, translated essays and the information on conferences were published in *Arkitekt Magazine* which played a fundamental role in the establishment of the modern architectural movement in Turkey.

The manifestos and practices produced by CIAM congresses that aimed to discuss and disseminate the principles of the modern movement, which is effective in urbanism, architecture, industrial design and many other fields, were also announced after their publication in Europe through the same magazine. Housing settlements built in other countries, especially in Germany, have been closely followed in Turkey. For example, Burhan Arif, in his article published in *Arkitekt Magazine* in 1932, examined the development works in the cities of Berlin, Frankfurt and Cologne in detail. Burhan Arif described the examples of residential settlements built in those cities as masterpieces, as the communities' resistance to economic and social difficulties.⁷ As part of the modernization program of the new Turkish Republic, many German and Austrian professionals were invited to work in Turkey. These experts have made a great contribution to the realization of city planning in Turkey with a scientific perspective. So the theoretical background of city planning in Europe between the two world wars also constitutes the framework of the planning studies carried out in Turkey at that time. These experts had different backgrounds in the fields of urban planning and architecture. The experiences of German architects and planners, most of whom were experts in the planning of "Siedlung" in particular, were used in the construction of Ankara and in the redevelopment of Anatolian cities (**Fig. 1**).

The borders of Western Anatolia are geographically determined by the Black Sea on the north, the Mediterranean on the east and south, the Aegean and the Marmara Sea on the west. The area is defined by rivers flowing into the Aegean Sea. Culturally, the region also includes the islands of the Eastern Aegean Sea. The cities in this area have a similar background in terms of planning history and they are socially, culturally and economically related to each other. These cities can be considered as the first experiences in the field of urban planning.⁸ There are three main factors behind this fact: the settlements were demolished at the end of the Turkish War of Independence between the years 1919–1923 and severely affected by the fires; they were subject to the population exchange⁹ and they hold fertile land appropriate for industrial production of certain crops (**Fig. 2**).

The development plans prepared for the West Anatolian cities approached the existing urban fabric with a distance and made limited interventions to the traditional city centres. The general approach in the new plans was to preserve the existing traditional texture and not to make any additional interventions other than preparing a new road system in these areas, and to define the functions in accordance with the zoning principles.¹⁰ Rehabilitation of existing structures and areas has been at the forefront in the planning of traditional texture. In this context, monumental structures such as bridges, mosques, baths, fountains, masjids and inns in the existing texture were given as a list and the monuments to be protected were also marked. For example, according to the development plan of Izmir–Bergama, which was prepared in 1940 and approved in 1941, it was proposed to protect the traditional trade axis of the city, in addition to the monumental buildings.¹¹

Settlement	Planner	Plan Date
Adana	Hermann Jansen	1939
Adana Ceyhan	Hermann Jansen	1939
Ankara	Carl Christoph Lörcher	1924-1925
	Hermann Jansen	1928-1930
Balıkesir*	Ernst Arnold Egli	1938-1939
Bursa*	Carl Christoph Lörcher	1924
	Henri Prost	1936
Bursa Gemlik*	Van Den Berg	1939
Bursa Mudanya*	Van Den Berg	1938
Çorum	Gustav Oelsner	1940
Denizli Çal*	Ernst Arnold Egli	1939
Denizli Kızılcaböyük*	Ernst Arnold Egli	1939
Edirne	Ernst Arnold Egli	1939-1940
Erzurum	Jacques H. Lambert	1939
Gaziantep	Hermann Jansen	1938
İçel Mersin	Hermann Jansen	1938
İçel Tarsus	Hermann Jansen	1935
İstanbul	Henri Prost	1936
İzmir*	Henri Prost, Rene Raymond Danger	1923
	Le Corbusier	1938
İzmir Dikili*	Gustav Oelsner	1940
İzmir Menemen*	Gustav İzreau	1938
Kocaeli İzmit	Hermann Jansen	1935
Kocaeli Gölcük	Van Den Berg	NA
Kocaeli Adapazarı	Van Den Berg	1935
Niğde	Ernst Arnold Egli	1937
Trabzon	Jacques H. Lambert	1938
Zonguldak	Van Den Berg	NA
Zonguldak Karabük	Henri Prost	1940

*West Anatolian settlements.

Figure 1. Settlements planned by foreign architects in Turkey between 1920–1950. ©Authors (Data driven from the Ministry of Public Works' Magazine)



Figure 2. Borders of West Anatolia and planned cities until 1940. Reproduced on ©Keskinok, Çağatay, 2010.

In these plans, where the organic street texture is preserved, it is read that the secondary axes are formed in accordance with the grid system around the areas reserved for public functions and recreation services and the city square is the focal point of the new city added to the existing one. In the case of Burdur, the development plan prepared by Kemal Ahmet Arû and approved in 1948, preserves the existing residential areas, the organic street pattern and the historic city centre (**Fig. 3**). The buildings and areas that will host new functions are shown in dark colours or by hatching, the roads to be opened and the main transportation axes of the city are expressed as avenues. This plan foresees an urban growth towards two main axes: Istasyon Street starting from train station, and another one perpendicular. These roads intersect at the Square of Republic that becomes the new centre of the implanted modern city as a new layer which will house various public and administrative facilities in the following years.¹² This common typological character can be easily seen in all planned cities of that period.

3. Contemporary issues of preservation and continuity

The development plans, which were produced in accordance with the nationalization ideal of the New Republic, were also used as a tool in the realization of this ideal. The designed spaces, which are components of these development plans, reflect modernist and local values. The first step in expanding the conceptual borders of preservation from monumental buildings



Figure 3. Burdur development plan of Kemal Ahmet Arû, 1948. ©ITU Rectorate Environment and Urban Planning Practice and Research Center.

to urban scale was taken with the revision of the Zoning Law in 1972. This law underlined the necessity of preserving fountains, streets and squares, which form a unique context with monuments. The Superior Board was responsible in the determination, maintenance and preservation of those historic areas.¹³ The term “preservation area” was used for the first time in the Antiquities Law dated 1973 and numbered 1710. In the planning studies carried out between the years 1973–1983, traditional city centres were defined as protocol areas and were not included in the development plans. By the end of 1978, the Superior Board took the decision to protect urban sites, all including just the traditional centres in about 30 cities.¹⁴

Particularly after the WWII, historic centres were globally subject to preservation however the modern city layers are started to be accepted as heritage only after 1990s in limited countries. On the other hand, the legislative frame in Turkey has never been updated as to cover the 20th century heritage. This lack of acceptance and legislative measures led to the ignorance of modern layers which represent a unique continuity value and spatial character for those cities. None of the current conservation plans aim to preserve the modern urban landscape values instead they still follow the understanding of 1980s preservation and planning approaches.

The destructions caused by this understanding can be discussed over various case studies. Recent three examples from Western Anatolia show the loss of modern urban places of Burdur, Afyon and Uşak basing on similar urban renewal attitudes. The main tendency causing the threat is the decentralization of urban functions like sport facilities, schools, administrative buildings etc. determined by city plans of the 20th century (**Fig. 4**). The area in the city centre of Burdur, which was designed as a defined square in the development plan prepared by Kemal Ahmet Arû in 1948, was shaped by the Republic Monument, the Municipality Building and the Municipal Cultural Centre, which were built after 1963. The renewal project for Republic Square was announced and the demolition of the Municipality Building and Cultural Centre was added to agenda in 2014. The buildings, which were first abandoned and left without function, were demolished in the summer of 2021. The Afyon City Stadium first designed by Paolo Vietti-Viola in 1934 and redesigned by Nizamettin Doğu¹⁵ in 1937, finally constructed in 1938, has been demolished in 2018 since the site was designated as housing area with plan revisions. Uşak Government Square, a component of the urban plan prepared by Şakir Kılıç in 1936 and re-planned in 1953, housed Government Office Building (1956) as well as Courthouse (1970s). The Square is on the main İstasyon Street and it defines the governmental centre of the period with other buildings such as, Uşak City Stadium (1952), Industrial Vocational High School (1940s), Provincial Directorate of National Education (1925), Provincial Directorate of Meteorology (1964), Girls' Arts Institute (1956), Girls' Vocational High School (1975) and Provincial Directorate of Environment and Forestry (1958).¹⁶ The area including all these buildings are announced to be transformed in an urban park by demolishing the unlisted buildings such as,



Figure 4. Demolitions occurred in Burdur, Afyon and Uşak because of urban renewal projects.

Provincial Directorate of Meteorology (2017), Girls' Vocational High School (2017), Courthouse (2017); the Government Office Building has been officially announced to be demolished.¹⁷

These demolitions were legally possible while these areas were not included in the boundaries of urban conservation sites and the buildings had no legal protection as single entities. Moreover, the lack of an holistic conservation planning approach caused the sacrifice of cultural heritage places for urban renewal and decentralization projects despite the efforts of chambers of architects and planners, academicians and local NGOs.

4. Evaluation and general discussion

Modern architecture still tends to face a global lack of appreciation. In Turkey this situation is more evident in the future planning of state owned properties that define the core of the implanted modern city layers. Decision making processes need a comprehensive guidance underlining the significance and cultural values of the designed modern urban landscape. Although the main guiding tool is the conservation planning, the neglect of the 20th century urban layer and relatively young buildings in conservation approaches, become as one of the main problems. The existence of various values specific to each heritage place bring along strong challenges for the preservation of these areas.

The 20th century city layers shaped by modern planning principles are being destroyed with current trends, which leads to the loss of modern urban areas that should be evaluated as an historic layer to be preserved. At this point, it is necessary to emphasize the importance of the participatory planning process and to adopt approaches that can include each stakeholder on a common discussion ground. The state is an integral part of this participatory process, which must be followed and carried out in partnership with all actors in the preservation of the 20th century heritage. UNESCO's Recommendation on Historic Urban Landscape (2011) is a very important document in the conservation planning decisions to be taken in multi-layered cities. It was underlined that states should include their urban heritage protection strategies in their national development plans in accordance with the historical urban landscape approach and that local governments should prepare urban development plans that take into account cultural heritage values and land values. By accepting the 20th century as a part of the historic city and adopting a bottom-up approach, paves the way for the preservation of all layers including the recent past. Thus will keep the continuity of urban landscape by adopting a balanced assessment for both traditional and modern spatial characters next to each other.

Notes

- 1 This paper has been developed on the ongoing Ph.D. dissertation titled "Conservation of The Modern Heritage Values of Multi-Layered Western Anatolian Cities Planned in 1920-1960" of Zeren Önsel Atala under the supervision of Yıldız Salman within İstanbul Technical University.
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- 17 Industrial Vocational High School (1940s) and Girls' Arts Institute (1956) buildings are listed on the national inventory. However it is a risky contradiction that the other buildings from the same period have no legal preservation status.

#08

Landscapes
and gardens

S25

Landscaping and the relationship with nature in Spain in the 1930s Changes brought about by the influence of the Modern Movement

Ana Román Escobar

REDFUNDAMENTOS

The emergence of modern architecture in Spain dates back to the second and third decades of the 20th century. The GATEPAC group (*Grupo de Artistas y Técnicos Españoles para la Arquitectura Contemporánea*), founded in 1930 in Zaragoza, under the direction of Fernando García Mercadal, and the GATCPAC (*Grupo de Arquitectos y Técnicos Catalanes para el Progreso de la Arquitectura Contemporánea*) worked extensively on the promotion of rationalism, incorporating the principles of the Bauhaus and Le Corbusier into Spanish architecture.

The large number of public works and urban planning promoted by the authorities in those years and the incorporation of local architects and town planners into the doctrines of rationalism meant that modern production was very prolific. With this, to a certain extent, these principles began to bring about a change in the vision of landscaping and the relationship with nature.

Researches that form part of this session examine these questions by analysing different cases that highlight these incipient changes, a new vision of green, especially in the urban environment, but also in the rural environment.

Some of the key figures in landscape transformation, mentioned in the session, were Fernando García Mercadal along with the architects and town planners Luis Lacasa, Rafael Bergamín, Secundino Zuazo and Herman Jansen. In terms of strictly gardening, Javier de Winthuysen and Arturo Rigol also stand out.

1. The urban sphere

The first signs, a university park: “Ciudad Universitaria”

In Madrid, at the beginning of the 20th century, the possibility of creating a landscaped university campus following North American models presented itself. The site chosen was the former royal estate of La Florida, a wooded and wild scrubland area. Its proximity to other royal properties, such as El Pardo and the Casa de Campo, would facilitate the integration of the campus into a large continuous natural space for public recreational uses.

In Ciudad Universitaria (1927) functionalism became a constant for the new educational buildings. Although the innovative rational architecture had little to do with the more conventional organisation of the grounds, something new was introduced: the inclusion of the campus, as a green wedge, in the compact urban fabric. Through this buffer zone, the city would be connected to the historic suburban forest areas. Taking on a semi-rural function, greenery prevailed over buildings.

The extension and enlargement of the Avenida de la Castellana

In 1928, an international competition was launched, with emphasis being placed on the extension of Madrid along the south-north axis, as an extension of the historic Paseo del Prado. It was to be the backbone of a modern extension that would eventually bestow the city with its metropolitan flavour. The winners were the German architect and city planner, Herman Jansen and the Spanish architect and city planner, Secundino Zuazo. Jansen had been working on the redefinition of some of Berlin's neighbourhoods introducing various garden cities and siedlungs. Zuazo worked on the planning of the extension of cities such as Bilbao, Zaragoza or Seville.

The slender blocks of buildings adopted an open layout to facilitate ventilation and capture natural light. Between them, vegetation would occupy the interstitial spaces, thus acquiring an unexpected prominence, different from the dated notion of a park. The irregular arrangement of vegetation would have its origins both in Le Corbusier's urban projects and in the siedlungs. The aim was to bring nature into the city.

The garden city “La ciudad jardín”

Jansen and Zuazo's plan included the construction of semi-independent satellite developments in the form of garden cities. Two of these were Parque-Residencia (1931-32) and El Viso (1934-36), the work of Rafael Bergamín and Luis Blanco Soler, respectively. A total of 69 dwellings were built on plots of 250m² in the first case and 242 of about 350m² in the second. The groups of detached and semi-detached houses adopted a rational language in keeping with modern life. Their development and management responded to an

intellectual middle class eager to live in contact with nature. The houses were set in an uninterrupted mass of vegetation.

El Rincón de Goya, the Casa Galobart Garden and the Olarra Garden

El Rincón de Goya, designed by Fernando García Mercadal in 1926 and completed in 1928, commemorating the death of Francisco de Goya, is considered the first rationalist architectural project designed in Spain. In the gardens, after an apparent classical organisation, Mercadal introduced elements which were noticeably modern, distancing it from the classical tendency with which he had always been associated, bringing it closer to the garden model prevalent in the Arts&Craft movement. The architect incorporated geometric breaks that generated tensions in the paths by forcing perspectives, thus creating focal points that produced a symbolic understanding of the design as a whole.

Along with this, it is worth mentioning two other cases which are clear examples of different visions of the evolution of the garden concept. On the one hand, there is adaptation, seen in the work of the Catalan gardener Arturo Rigol, for example, in the garden of the Casa Galobart (1932), designed in collaboration with the architect José Luis Sert. On the other hand, there is the concept of regeneration. This can be seen in the work of the painter and gardener Javier de Winthuysen y Losada in his four proposals for private gardens in the Parque Residencia and El Viso colonies developed between 1932 and 1934. One of them, the Olarra garden is analysed in the session.

Rigol reinterpreted tradition as a key to contemporary design, with a decidedly modern approach. The new architectural principles were incorporated into the design of his gardens: an absence of artifice and ornamentation, disregard for historicism and the assimilation of the present.

Winthuysen reformulated the private garden of the rationalist house as a small space, purely for gardening, whose ultimate function was the aesthetic enjoyment of man and stimulation of the senses.

2. Rural environment

Settlement villages “Pueblos de Colonización”. The cases of Peñuelas and El Chaparral

All these interventions suggest a different vision of urban greenery. The change of paradigm came hand in hand with the adoption of urban theories typical of the modern movement, according to which the city had to reduce its density by giving prominence to vegetation.

Another example of a somewhat later relationship with nature should also be considered: the settlement villages “Pueblos de Colonización” model, to

be dealt with in the session, analysing cases of Peñuelas and El Chaparral. What sets these settlements apart is that they were “urban” models, combining agrarian and architectural structure within a reinterpretation of the understanding of rural life and its collective functioning. This was construction influenced by the modern movement, inserted directly into nature, in the rural environment.

These villages, together with their landscape, represented a multidisciplinary and integral vision of intervention in the territory, following minimum energy criteria to transform and taking advantage of pre-existing elements and infrastructure. The rural alternative was presented as a viable option, comparable in terms of comfort to city life, with the possibility of enjoying a healthier environment, in contact with “nature” that had aroused so much interest.

3. Conclusion

The urban landscaping observed in these interventions reflects the social importance that vegetation acquired from the late 1920s onwards in Spain, with the renewal of cities. In terms of gardens, while specific language for the modern garden did not evolve, rules and formal layouts were used, as well as construction details typical of the Modern Movement.

This interest in vegetation is also evident in the rural alternative, presented as the ideal to remain in contact with nature, without renouncing the comforts of the city.

However, a truly modern vision of landscaping, in all its aspects, was still some time away.

Spanish Colonisation Villages in the Province of Granada (1939–1977). Agricultural Infrastructures Inserted in the Urban Fabric: Tobacco Drying Houses

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The Spanish domestic colonisation of the 20th century was a territorial planning project which followed a policy of recovering agricultural land and making it habitable, according to an innovative collective model for rural exploitation. This colonisation by the Spanish government led to the creation of approximately three hundred colonisation villages throughout the country between 1939 and 1977. The new architecture played a fundamental role because of the relationship it established with the productive landscape. The novelty of this colonisation settlements led to the creation of an urban model that combined the agrarian and architectural structure within a reinterpretation of what rural life and its collective working means.

Exceptionally, there are cases in which collective elements linked to agricultural exploitation were introduced into the urban fabric. This particularity is found in two villages in the province of Granada, Peñuelas and El Chaparral, where a group of twenty tobacco drying houses constituted a singular architectural element of transition between the agricultural and the urban layout. Tobacco drying sheds are part of the agricultural heritage of the fertile plains of Granada and their scattered implantation throughout the territory makes them recognisable landmarks in the landscape due to their scale, construction typologies and formal characteristics. The refined structure of these vernacular constructions houses the tobacco leaves drying for months. Their functional precision resides in the lattice panels that, whilst allowing air and light pass through, constitute breathtaking spaces. This gives them an appearance that unexpectedly creates continuity with the modern architecture of the colonisation villages.

This paper presents a cartographic and photographic research carried out on these two atypical grid layouts of drying sheds, which generate a sequence of transparencies separated by streets as social urban places combined with their productive nature. This exercise of displacement and repetition constitutes an unusual reinterpretation of an agrarian infrastructure that links modernity with the agricultural legacy.

1. Introduction to spanish domestic colonisation of the 20th century

The Spanish domestic colonisation of the 20th century was a territorial planning project which followed a policy of recovering agricultural land

and making it habitable, according to an innovative collective model for rural exploitation of great economic, social, and productive interest which transformed the national rural landscape. This nationwide experience carried out between 1939 and 1977 is widely known internationally, and it falls within several large-scale policies of agricultural regeneration carried out simultaneously in different countries including Italy, Germany, Portugal, Israel, and the United States.

The Spanish agricultural development policy was coordinated by the *Instituto Nacional de Colonización* (INC, 1939–1971) [National Institute for Colonisation] and later by the *Instituto de Reforma y Desarrollo Agrario* (IRYDA, 1971–1977) [Institute of Agricultural Reform and Development], which reworked colonisation plans dating from the early 20th century. This agricultural development policy added to the debate on precarious living conditions and deficient use of the agricultural fields which had begun in the mid-19th century. This led to the reactivation of rural settings, the renewal of agricultural techniques, and the improvement of the habitat, constructing almost three hundred new colonisation villages which become an experimental field for modern architecture at that time.

This colonisation plan involved a complete reform of vast areas of land through the regeneration of barely productive fields by creating hydraulic infrastructures on different scales, from large reservoirs to small irrigation ditches distributed throughout the territory. These infrastructures were followed by other actions such as reforesting mountains, defending hydraulic basins, reallotting agricultural land into smaller plots and new plantations, creating service roads, and constructing villages for the agricultural workers or settlers, named *colonos*, working on the land. This large-scale operation respected the ecological and geographical characteristics of the territory, providing services and infrastructures to improve the working of the agricultural landscape. This was undoubtedly the greatest agricultural enterprise carried out by the Spanish government that combined geography, civil engineering, agricultural engineering, and architecture in a single joint project specifically adapted to each place.

In drawing up this multi-scale and interdisciplinary project, the main agents taking part were the civil engineers and, above all, the agricultural engineers. The civil engineers were in charge of capturing water and building dams and reservoirs, as well as connecting the land to be developed with new means of communication. The agricultural engineers identified estates with agricultural potential and planned the territory according to the distribution of water for irrigation, the agricultural division of land, the selection of crops to be produced, and the ideal location of new colonisation villages which would be designed by architects in the culmination of this multi-scale process.

Those new colonisation villages created soon became the representative image of the new agricultural policy. These villages, along with their landscape, represented a multidisciplinary and comprehensive vision of land intervention,

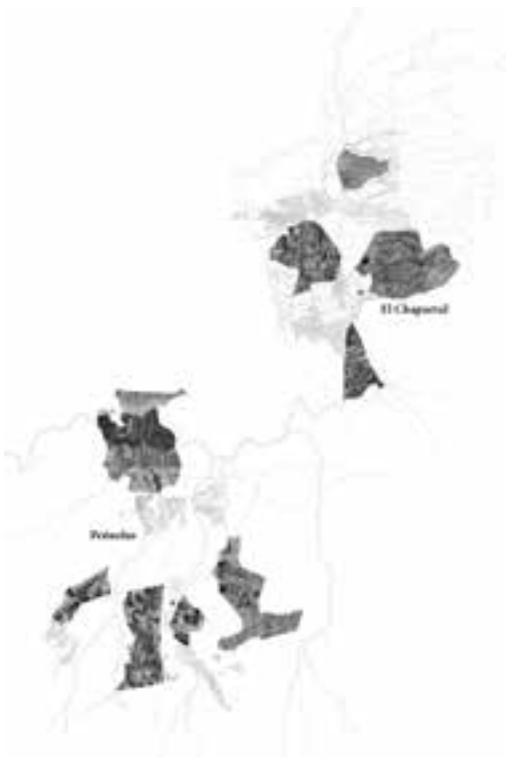


Figure 1. Cartography of agricultural landscape surrounding the colonisation villages of Peñuelas and El Chaparral, Granada, Spain.
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transformed following minimum energy criteria and making use of pre-existing elements and infrastructures.

The use of the term “colonisation” to describe this ambitious project was no accident. It linked both agriculture and architecture with the shared placement within the land of the spaces for work and the homes of the agricultural workers in a modern interpretation of rural settlement with collective facilities. Thus, the term “colonisation villages” highlighted the intrinsically architectural nature of this process of agricultural use of the land, hence its vital importance when creating the image of colonisation as a new form of life in rural settings. The rural alternative was presented as a viable option, comparable in comfort to life in the city and with the possibility of enjoying a healthier setting in contact with “nature” (Fig. 1).

2. Spanish colonisation villages: public spaces, facilities, and infrastructures

The new architecture of the Spanish colonisation villages played a fundamental role because of the relationship it established

with the productive landscape, which took as a starting point traditional rural architecture. There are similarities between the way of life of the new settlers in the colonisation villages and the organisation of existing farmsteads in terms of the relationship between agricultural and domestic uses around the courtyard. The new dwellings can be understood as a fragmentation of the organisation of the farmsteads within a more “urban” context. In addition to the intimate private domestic spaces, public facilities and squares in the village promoted the collective life of settlers around places for leisure, fairs, cultural, educational, or administrative activities.

The novelty of this colonisation settlement, a modern heterogeneous solution between the rural villages and the farmsteads, led to the creation of an urban model that combined the agrarian and architectural structure within a reinterpretation of what rural life and its collective working means.

The design of the urban structure and the architecture of such colonisation villages was carried out by both architects and agricultural engineers. This task followed a program of housing and amenities established by the INC in

accordance to three main issues: (1) size, (2) number of *colonos* (economically independent families to whom a house with a huge backyard was assigned along with agricultural dependencies and an agriculture plot) and agricultural workers (machinists and labourers who helped the *colonos* in the plot exploitation and who were assigned a house with a minor backyard a small orchard for personal use), and (3) the expected growth of the village.

With these considerations in mind, the colonisation villages responded to geometric urban layouts, with streets shaped by the alternate rhythm of the façades of the houses and the walls that delimited their courtyards, along with squares around which the public facilities were articulated. The facilities programme of a medium-sized colonisation village consisted of a generous approach to create self-sufficient nuclei with a church, town hall, social building, medical dispensary, schools, and shops. Larger villages could also have an agricultural cooperative, sports facilities, and a cemetery.

In most of the villages, the spaces linked to agriculture were reserved in the private agrarian outbuildings and courtyards of each settler's house. Exceptionally, there are cases where collective elements linked to agricultural exploitation were introduced into the urban fabric. This particularity is found in two colonisation villages in the province of Granada designed by the architect José García-Nieto Gascón: Peñuelas (1956) and El Chaparral (1957). In both of them, a group of twenty tobacco drying houses constituted a singular architectural element of transition between the agricultural and urban layout (**Fig. 2**).

Peñuelas occupies an area of approximately 11.2 ha with the characteristic geometrical urban layout of the villages of colonisation that is traced parallel to the north-south road next to which it is located and bounded between this road and a ravine with leafy trees. At the core of the village there is a nucleus of facilities concentrated around a square comprising the church, two schools, two teachers' houses, the town hall, shops, and a cooperative centre. The rest of the



Figure 2. Photographic composition of tobacco drying houses in Peñuelas and El Chaparral, Granada, Spain. © The authors, 2022.

village consists of 119 houses for settlers and 10 houses for agricultural workers and the reserved area at the southern end, next to the ravine, that locates twenty tobacco drying sheds.

El Chaparral occupies an area of around 12.6 ha at the junction of two roads that border it to the north and west. The open front to the main north–south road was protected with a leafy plantation of trees behind which most of the public facilities were placed, being the roof of the town hall and the church bell tower particularly recognisable. The facilities are sequenced from north to south in this order: town hall, administrative officer's house, shops, social building, church, two schools, rural home for the women's section, health centre and two other schools. Close to these facilities there were four teachers' houses, two to the west of the town hall and two opposite the schools. To complete the public facilities, the rural home for the youth and the market were located to the northeast of the nucleus. A total of 112 houses for settlers and 43 houses for agricultural workers were built, occupying most of the village's surface area. Within the urban layout, what stands out are the empty spaces of seven squares and the group of twenty tobacco drying sheds located in the southeast corner between the village and the olive grove.

3. Tobacco Drying Houses in two spanish colonisation villages in the province of granada: peñuelas and el chaparral

Tobacco drying sheds form part of the agricultural heritage of the fertile plains of Granada and their scattered implantation throughout the territory makes them recognisable landmarks in the landscape due to their scale, construction typologies and formal characteristics.

The tobacco drying sheds built during the 20th century in the *Vega de Granada*¹, (from the introduction of tobacco cultivation in 1923 until its extinction at the beginning of the 21st century) have responded to different construction typologies and corporeity whose sole objective was to enable the tobacco leaf to be dried in optimum conditions on the basis of simple principles. It consists of a porticoed structure with spans of about four metres that shapes an architecture of about eight metres wide, twenty metres long and eight metres high with a gabled roof on top. This structure is delimited by a perforated outer skin to meet the need for the almost constant ventilation required by the plant once it has been harvested and hung to cure and dry. The layout of the building was also based on the functional logic of favouring cross ventilation, which is why they were oriented in such a way that the prevailing winds would cross the long side of the drying shed.

The great variety and ingenuity in the materiality of the structure (poplar wood, brick, or concrete), the roof (straw or ceramic tile) and the outer skin (straw panels, wooden slats, ceramic latticework, concrete latticework, or movable metal plates) has brought about the most diverse examples. From the most rudimentary to the most refined, all the drying sheds "bear the

essence and logic of the architecture of the Modern Movement”², providing a purified response to a specific need which gives them an image that establishes continuity with the modern architecture of the colonisation villages.

The groups of drying sheds in Peñuelas and El Chaparral were arranged in a grid on the edge of each village, giving rise to an urban street with a mystical character between the drying sheds and the last line of settlers’ houses. Between the drying sheds, from the interior streets that separate them, one can appreciate the large empty spaces reserved to be filled with tobacco leaves and the overlap of the different levels of latticework. Both clusters have in common the number of elements, their dimensions, the distance between them, the exposed structure of reinforced concrete beams and pillars and the gable roof with a wooden structure and flat ceramic tiles. The differences between the two cases are to be found in the lattices, which were made of prefabricated concrete of different dimensions and proportions.

In Peñuelas (**Fig. 3**), each panel of latticework is a single large-format element framed by the structure with small vertical openings. In the drying sheds at El Chaparral (**Fig. 4**), the lattice is the result of pieces of 4x2 and 4x1 square voids arranged horizontally and combined, generating different wefts. In both cases, the result of the merging of the regular structure and the large panels of latticework are surprising interiors due to their height, the qualities of the filtered natural light that bathes the space, and the exterior landscape, both urban and agricultural, that can be sensed filtered through them.

This construction system, which is both functional and industrial, can be found in a similar way in other drying sheds in the *Vega de Granada*. The spatial and material qualities of these drying sheds are enhanced by the fact that they are arranged here as a series of geometrically ordered elements following a constant rhythm. Moreover, as they are annexed to the urban layout of the two colonisation villages, an inevitable relationship is established between the scale of the houses and the scale of the drying sheds, giving them a more habitable, and even domestic, character.

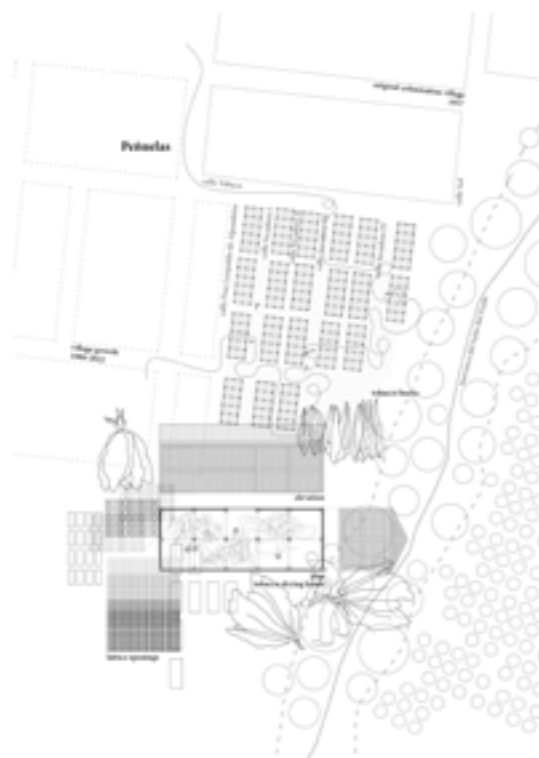


Figure 3. Tobacco drying houses in Peñuelas: graphic composition of structure, architecture, and latticework. © The authors, 2022.

4. CONCLUSIONS

The colonisation villages built in Spain in the second half of the 20th century were conceived within a territorial scale plan whose objective was the regeneration of the agrarian environment and its habitability. The villages were equipped with the infrastructures and the means necessary for the settlers to carry out their agricultural work in a helpful environment to fostering relationships between the members of the community.

Architecture was one piece of the necessary machinery for the agrarian reform. It was conditioned first and foremost by the agricultural programme of colonisation set out by the agricultural engineers. For this reason, although colonisation villages have often been studied from the isolated point of view of architecture, they only make sense in an indivisible connection to their landscape.

In addition to the spaces destined in each house for the courtyard and farm buildings, many of the villages included in their urban structure collective facilities linked to farming. The new architecture

and the public spaces built around it were designed in the language of the Modern Movement of the time, taking into account the heritage of tradition and the rural identity of each place. Its essential design as a response to specific need, with no additional elements, establishes all material, functional and compositional relationships with long-established foundations of the agricultural environment.

Thus, the two sets of tobacco drying sheds in the villages of Peñuelas and El Chaparral (Granada) demonstrate the connections between the new architecture of the colonisation villages and other traditional rural elements, which might have seemed, at first glance, unrelated to one another. Surprisingly, what makes these villages modern relies on its roots and agricultural context. This is a lecture on understanding the value of heritage and culture in the process of creating architecture both today and at that time.

The exercise of displacement and repetition of the tobacco drying shed, an element which is usually found isolated in the territory, constitutes an unusual reinterpretation of an agrarian infrastructure that links modernity with the

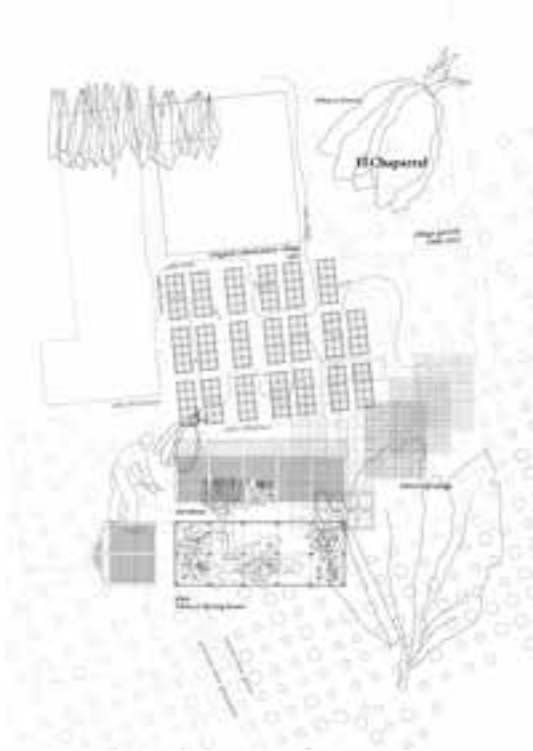


Figure 4. Tobacco drying houses in El Chaparral: graphic composition of structure, architecture, and latticework. © The authors, 2022.

agricultural legacy. These two atypical grid layouts of drying sheds create a sequence of transparencies and streets as social urban places combined with their productive nature. The agricultural cycles determined the relationship that the town established with this singular fragment of its layout. During the time of the year they were empty, they could become leisure spaces, playgrounds. In the tobacco harvesting season, the nearby village streets were bustling with activity and an invasion of the agricultural product that connected the daily urban chores with the work in the fields. During the months in which the tobacco leaves were curing, the clogged drying sheds, which were difficult to walk through, were recognisable as warehouses without any sign of movement around them.

Nowadays, the drying sheds are abandoned and in a state of disrepair. In Peñuelas, they continue to form an edge of the village next to the ravine, while in El Chaparral they have been surrounded by urban growth. Their uncertain future seems to be one of imminent disappearance due to the lack of use and the difficult management of the numerous owners who are the heirs of the first settlers. They continue to define a place where children like to play and people like to gather, and the uniqueness of their interiors, their light, and their temperature, invite to consider other possible fates that take advantage of their singular condition within the urban fabric. Such magical examples of modern architecture, transcendent tokens of heritage, are undoubtedly willing to become places with new, contemporary meanings.

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Acknowledgements

This study is supported by the Spanish Ministry of Universities (FPU program for research and university teaching training), the University of Granada (Own research plan), the International School for Postgraduate Studies and the Department of Architectural and Engineering Graphic Expression of the University of Granada.

Notes

1 *Vega de Granada* is the given name to the fertile plains around the city of Granada.

2 Juan Francisco García, "Los secaderos de tabaco en la Vega de Granada. Una indagación gráfica" (PhD diss., University of Granada, 2017), 313.

Path to modernism. Winthuysen and Rigol's Spanish gardens in the 1930s

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The research in progress investigates the formal characteristics of the Spanish garden in the 1930s. To this end, we study projects by Xavier de Winthuysen (Seville, 1876–1954) and Artur Rigol (Barcelona, 1898–1934) during this period. From Winthuysen, we study Olarra's garden in El Viso colony in Madrid where he established a personal approach to the modern garden. In addition, Arturo Rigol's garden project for Jose Luis Sert's Galobart house (1932). The methodology of the work is the study and analysis of the architectural project based on archival documentation. Comparing two forms of gardening, one linked to the reborn of a conception of tradition and the other committed to modern architecture promoted by the journal A.C. (Documentos de Actividad Contemporánea) are two counterpoints that indicate the first steps of the modern garden project in Spain. Modernity Winthuysen and Rigol introduced into the Spanish intellectual debate, before and during the Second Republic, was the vindication of history, the identification of tradition and the proposal of a disciplinary integration and the break with customs. As a provisional conclusion to the research, we point out that the adaptation of the Spanish garden to rationalist architecture proved the capacity of the architectural order to make the needs of modern life coexist with the historical invariants of our gardening. The hope of reconstructing the Spanish garden concept was born harmonizing the past heritage with the faiths of progress harbored by the epoch. This research aims to situate the work of these two Spanish gardeners in the European context to assess the degree of novelty of their work.

1. Introduction

The origins of the modern Spanish garden are a pending subject of academic research in our country. We ask about the evolution of the modern garden in Spain, specifically the gardens, gardeners, and the aesthetic thought modernity was introduced in Spain. This article is part of in-progress research investigating the gardening practices of the period prior to the Spanish Civil War (1936–39) that began to propose some changes in garden design.

The prevailing thought in those years was a firm idea of regionalism based on historicist models. Any project of this time was unaware of the principles of modern garden design established in 1938 when the garden designer Christopher Tunnard published his book "Gardens in the Modern Landscape." He introduced new thinking inspired by modern art and Japanese aesthetic principles. Tunnard spoke of a new technique in garden design that emphasized the integration of form and purpose. The path towards modernity

that several European countries were experiencing accelerated was gradually in Spain. The progressive transformation driven by the spirit of rationalism through the aesthetic and practical ordering of the units took place at a slow pace, which provided the garden with a friendly and hospitable environment for rest and recreation.

This research focuses on two gardeners and two specific works. The first from the Sevillian painter and gardener Javier de Winthuysen: the unbuilt proposal of Olarra's garden (1932) in the El Viso neighborhood in Madrid. The second is from the Catalan gardener Arturo Rigol: Casa Galobart (1932) garden, which was designed in collaboration with the architect José Luis Sert. Both works show the path that garden aesthetics was following towards modernity. In the works of Winthuysen and Rigol, we appreciate two ways of going towards modernity, one from regeneration, the other from adaptation.

2. Regeneration

Javier de Winthuysen y Losada (1874–1956) was an Impressionist painter by training and profession. He began his dedication to gardening with a study of the classical gardens of Spain in 1919. This work brought him self-taught training, professional recognition, and the opportunity to publish his research in the book "Jardines Clásicos de España" (Classical Gardens of Spain) in 1930. However, Winthuysen was also a person concerned with the future of Spanish landscaping. His theoretical and critical writings, which were scarce and divided between a few specialized magazines and newspaper articles, dealt with various themes of the time that tackled the garden in the modern city, urban planning, and the open spaces of Madrid.

In these years, rationalist architecture and modernization were introduced in public and private gardens in Spanish. Winthuysen developed four proposals for private gardens in the Parque Residencia and El Viso colonies between 1932 and 1934. He introduced its conception of "modernity" in creating gardens in these projects. It did not renounce the importance of the architectural order in a time of general copying of the exterior and submission to the exotic.

In one of these gardens, the house for the publisher José Olarra, a building between party walls, there are two well-differentiated gardens on the plot. The front garden served as a representative space (**Fig.1**). In a small rectangular area, Winthuysen arranged all the vegetation in the perimeter to free up enough area to facilitate passage and access to the house and create living spaces. The defining elements of this part of the garden were two lateralized flowerbeds. The small one next to the garage wall consisted of a rosemary hedge accompanied by wisteria. On the opposite, a larger one delimited by a boxwood hedge ran in and out to form a pedestal with a bust, a stone bench guarded by large marble vases, and next to the house, a small square enclosure enclosed by a curtain of cypress trees. This flowerbed also had two

magnolia trees, an orange tree, several laurels and honeysuckles, wisteria, and rose bushes lining the wall. All this defined an exuberant group of vegetation that characterized this area by its seasonal chromatism and intense perfume.



Figure 1. Colonia El Viso, 1934 © Paloma Barreiro, *Casas Baratas: La vivienda social en Madrid 1900– 1939*, Madrid, Colegio Oficial de arquitectos de Madrid, 1991, 350

The back garden exhibited a more intimate character. It was a square enclosure with a service entrance from the street and a cypress hedge on three sides. The perimeter flowerbed contained santolinas, geraniums, rose bushes, and two shrubs at the ends. A narrow stone path separated the flowerbed from the central esplanade of the garden, in the center of a square brick pool, three meters long on each side, subdivided the terrace into nine quadrants. Each contained a different plant species with a particular color and texture. Next to the house stood a blue conifer and golden euonymus. A weeping willow (*Salix viminalis*) grew in front of a stone bench integrated into the flowerbed on the street side. In the other corner, one pink oleander completed the chromatic ensemble. In the central quadrants, stone and sand occupied the verticals. A tiny frog cast-iron-shaped fountain was surrounded by calla lilies and ivy in the horizontals of the frame. On the other side of the pool, tamarisk provided bright glaucous green and pink flowers in the summer (Fig.2). This small garden was an interpretation of the Andalusian patio that transcended its domestic functionality. Winthuysen reformulated the private garden of the rationalist house as a small space, defined solely by gardening, whose maximum function is the aesthetic enjoyment of man for the delight of his senses.

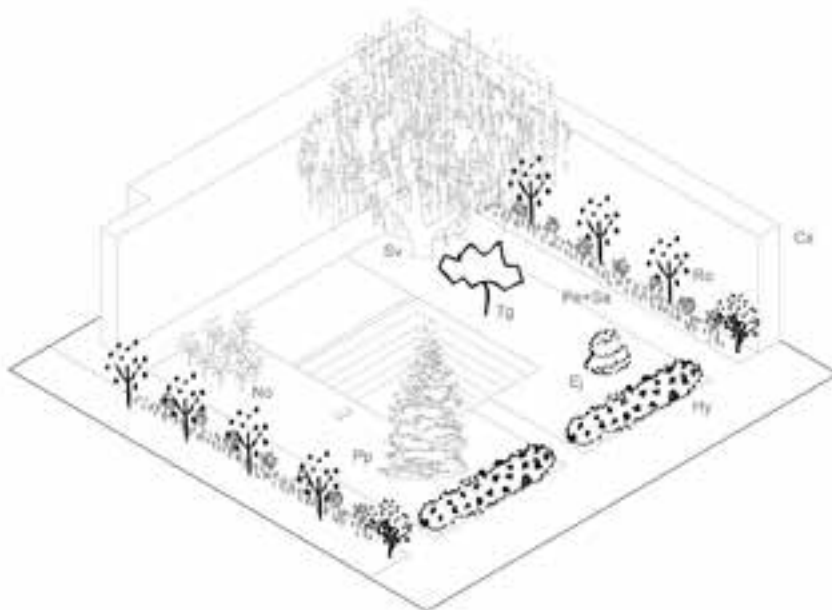


Figure 2. Axonometry of the back garden of Mr. Olarra's residence, Colonia El Viso, 1934 © Drawing by the author. (Cs) *Cupressus sempervirens*; (Sv) *Salix viminalis*; (Tg) *Tamarix gallica*; (Ro) *Rosa* sp.; (Pe) *Pelargonium* sp.; (Sa) *Santolina* sp.; (Ej) *Euonymus japonicus*; (No) *Nerium oleander*; (Pp) *Picea pungens*; (Hy) *Hydrangea* sp.

The gardens proposed by Winthuysen link the ideas expressed by Forestier in his influential blueprint of garden design. The idea of the renewed garden proposed by Winthuysen is that of a simple architectural composition of spaces laid out with "art and science." To achieve this, he combined areas for sitting, indicated by a bench, and others for strolling, with arbors and tree-lined avenues, accompanied by an abundance of annual flowers and shrubs in flowerbeds and flowers next to fountains and gutters. So vegetation and building elements are harmonized in a layout of great simplicity that does not fall into the rigid symmetry of past times. The condition of the new garden sought by Winthuysen requires the architectural order resulting from the "wisdom" of the landscape architect. Forestier referred to this as "only taste and feeling can give a reason for what escapes all rules."

3. Adaptation

Arturo Rigol i Riba (1898–1934) began working in the gardener's house and horticulturist Vicente Aldrufeu as an apprentice at 15 years old. He developed his interest in gardens at the Escola Superior de Belles Oficis (Arts & Crafts School), where he obtained the title of Director of Gardens. His teacher was Nicolás María Rubió y Tudurí. Rigol's professional activity began in 1916.

However, in the 1920s, his professional work intensified as a garden designer, and he began to develop his theoretical thinking.

Rigol published his first writings in the journal *D'Ací d'Allà*. This publication sought to promote Catalan culture by bringing it closer to European culture to educate the incipient local bourgeoisie on Catalan values. He understood the garden as a manifestation of art, culture, and social refinement. Its early writings dealt with floral and gardening themes. They were published between 1920 and 1928. Rigol describes his chronicles as "small pieces of advice without wisdom and available to all, ... that with them the love of flowers and plants, a sign of civilization, may increase." In other writings, he detailed the reader's work in his garden, terrace, or balcony to organize an "intimate garden."

The 1920s were years of his development as "Artistic Director" at the Aldrufeu nursery and later as an independent professional of "Jardíns d'art", as he advertised himself commercially. During this time, he designed several gardens for the Popular Libraries of Catalonia. In these projects, it is difficult to distinguish whether his work was limited to the plant's delivery and placement or whether he was involved in the design. Of these gardens, the Sallent Park in Bages still retains the original structure of Rigol's 1922 project.

We can assess Rigol's creative maturity in his collaborations with the architects of the GATCPAC group. He created two noted gardens, the Casa Galobart with José Luis Sert and those of the University with Francisco Perales Mascaró and José González Esplugas. Rigol's presence in the orbit of the members of this group of architects is an explicit exponent of their historicist distancing.

The article "Jardines" (Gardens) that Rigol published in issue 2 of the magazine *AC Documentos de Actividad Contemporánea* is an explicit exponent of his thinking. He writes about the tendencies of architects and gardeners with a modern spirit. One is the regular geometric structure, the other a continuation of the landscape. "In the former, the garden is a series of paths that leave spaces for planting flowers between them, and in the latter, planted spaces in which there are paths for strolling."² Rigol alludes to the fact that the garden designer must master both formulas. However, he points out that one aspect of the contemporary spirit is freedom, and this in the garden can make it attractive. So, when the living beings are shown as they are, "with their grace and defects," with the plants, it would mean letting them grow freely, letting their foliage or their flowers be the ones to endow the space with beauty.

Rigol also alludes to getting rid of prejudices against certain types of plants. The gardener's job is to distribute the vegetation, placing each plant correctly. Their beauty corresponds to their degree of exuberance: "suitably grouped and in the right places, they are as beautiful as any other plant".

The Galobart house (1932), building and garden, disappeared in the 1970s because of urban speculation. The garden is a collaboration between an



Figure 3. Axonometric of Galobart house and garden, 1932 ©AC

architect and a gardener. The design of the flowerbeds mixes geometrical ingredients with freer ones. In the design, we appreciate lawns with palms and trees, flower borders along the paths, and a set of rectangles of considerable gardening interest at the front of the garden. The alignment of the strips unites modern geometry with old traditions. Paths separate a layout of narrow rectangles as the manifestation of the absence of decoration and essential functionality: paths for passing and rectangles for vegetation.

The Galobart House is a kind of synthesis of Rigol's garden proposals. However, there are some differences between the project (**Fig.3**) and the construction (**Fig.4**). The rectangles of the lawn have been filled in with flowers and

surrounded by a hedge; the planting has been extended with a new larger rectangle and other smaller ones containing a hedge of *Anthocersis*, an unusual plant at the time. The garden is an explicit exponent of Rigol's idea of reading classical tradition in the key of modernity.

Rigol's gardening activity focused between 1918 and 1934 on the gardens he designed and his writings, lectures, courses, and participation in associations and cultural organizations. This civic component was a commitment to social improvement and modernity for him. Rigol's attitude was far from any ideological reductionism in the use of plants in the garden aesthetics. As an opposition to the nationalism that alluded to the use of certain plants, Rigol imposed a global vision based on a committed eclecticism. He opened to foreign trends because he understood that all styles were valid. It is the garden designer's job to adapt them to the environmental conditions and the characteristics of the project. He reinterpreted tradition in a contemporary key, that is, with a decidedly modern approach. The new architectural principles are adapted to the design of his gardens: absence of artifice and ornamentation, disregard for historicism, or assimilation from the present.³

4. Conclusion

The garden Winthuysen designed for the rationalist house was formally eclectic. It was also a result of his time and context in which the garden art and architecture was in republican Madrid, his training, and the influence of Forestier's designs. In this atmosphere of regeneration, the domestic garden



Figure 4. View of Galobart garden, 1932 © AC

has to create a private space outside the home that was a manifestation of a “popular aristocratism” capable of having a differentiating effect on each individual. In the projects for gardens in Parque Residencia and El Viso colonies, Winthuysen gave provisional form to “our nature.” He refined the essential meanings of our historical gardening and presented them as the basis for a type of garden that had to satisfy man’s needs in the modern city.

We can add that Arturo Rigol’s gardens were in the same vein in the sense that they were an attempt to adapt gardening to the new needs and requirements of life in outdoor spaces. However, Rigol’s sudden death made it impossible to develop his gardening thinking through the design and construction of gardens. The small Galobart garden shows us that in the differences between the proposal he drew and the proposal he realized, there is a process of adaptation, a kind of conservation of gardening criteria linked to a living and rich tradition that was being progressively refined through geometry and the organization of the garden space.

The gardens of Winthuysen and Rigol are two essential expressions of Spanish gardening and a beginning of the adaptation and transformation of Spanish gardening towards what a decade later in Europe will be coined as the modern style of garden design.

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Notes

- 1 Arturo Rigol, “Les Flors i el jardí íntim”, *D’Aci d’Allà*, 26 (5), febrero, 1920, 172
- 2 Arturo Rigol, “Los jardines”, A.C. *Documentos de Actividad Contemporánea*, 2 (abril–junio), 1931, 28–29.
- 3 José Tito Rojo, “Arturo Rigol, Jardinero moderno”, *Paisaje Con+Textos*, 95–96.

The Rincón de Goya garden. The first modern Spanish garden

Miguel Ángel Ruano Hernansanz

ETS ARCHITECTURE OF MADRID. VALLADOLID

The Rincón de Goya was a project for a garden designed by the architect Fernando García Mercadal to pay homage to the death of the painter after whom it was named. The exhibition pavilion of which it was a part became what was considered one of the first works of the Spanish Modern Movement.

Although the pavilion was one more element of the garden, no analysis of the whole had been made, and the little existing bibliography of the green space was limited to defining it as a classical garden.

The results of a doctoral research showed that, although the project, including the pavilion in its first version, was designed under academicist ideas, the garden turned out to be the most modern element of the whole, probably the first modern garden in Spain. This garden introduced in Spain the Art&Craft garden model, that is, a garden model that copied the regular structure of the classical garden, but introducing breaks and free displacements of its axes, thus eliminating symmetries. Goya's Rincón would have its origin in Voysey's garden models, transferred to the continent through the book *Das englische Haus* by Hermann Muthesius. It has been demonstrated that Mercadal knew Muthesius' work, probably through the classes of Josef Hoffman or Peter Behrens. The link between the garden and the pavilion has been established and their paths have been deciphered, a symbolic reading, continually confronting the life and death of Francisco de Goya.

1. Project origin

The idea of dedicating a sculpture to the painter Francisco de Goya, has its origin in the order that the City Council of Zaragoza made to the sculptor José Bueno in 1918¹. This commission consisted in the realization of a statue of King Alfonso I the Battler, which was to be built first, and a later one dedicated to the painter Francisco de Goya. The construction of the sculpture of the monarch was postponed several times until it was completed in 1925². The Buena Vista Park project was the most important reason for the delay, changing the original location of the sculpture because it was to be integrated into the layout of the park.³

For the presentation of the new park that was to be built, the city council invited the renowned landscape architect Javier de Winthuysen to give a lecture at the Ateneo Zaragozano in 1924. Winthuysen has been credited with launching the idea of building a monument to Goya, but in reality, he only suggested the location, a secluded corner within the area where the new park was being built, an area of difficult terrain that limited access to it. Given Winthuysen's knowledge of historic gardens, it would not be surprising that the

name “Rincón de Goya” (Goya’s Corner) came from the landscape designer himself when he chose the site.

In any case, Winthuysen’s lecture was one of the events that led to the creation of the “Junta del Centenario” (Board of the Centenary of Goya’s death), an organization that promoted various acts of homage to the artist in 1928, among which was the management of the construction of the Goya’s Corner.

2. First approach: Mercadal’s historicist garden.

Mercadal’s choice of authorship and his historicist project

The construction of the “Goya’s Corner” was commissioned to the sculptor José Bueno, who had designed the new space together with the engineer who designed the park, Mr. Martín Agustí. His project was a garden located in the space indicated by Winthuysen, organized by two transverse axes in the center of which the sculpture of the painter was to be located. (**Fig. 1**).

The breaking of the agreement with José Bueno, and the final election of Fernando García Mercadal, must have been due to the contacts that Mercadal’s family had in the city council, as suggested by the historian Ricardo Centellas⁴.

The dispute between Bueno and Mercadal lasted well into 1927, and was one of the reasons that delayed the construction of the garden. The competition against José Bueno must not have been easy, and Mercadal finally gave the project away and at the same time did not charge any kind of per diem for travel or expenses derived from the commission.⁵

From the first version of the project presented by Mercadal, entitled “Jardín de Goya”⁶, there is hardly any information. Only the image published in issue XXII of *Arquitectura Española*–Spanish Architecture magazine in 1928 has been preserved (**Fig. 2**).

This image shows a great parallelism with the perspectives of the ruins of the Casa del Fauno that Mercadal knew during his time as a scholarship student in Rome. The parallelism with the Roman villas of the Rincón de Goya has already been pointed out by other authors (**Fig. 3**):

The morphology of the garden resembles that of the building and the arrangement of the plant masses draw paths whose contours enclose enclosures similar to the symmetrical projection, on a larger scale, of the pavilion’s ground plan. Also recognizable, as in the main piece, is an articulating axis that links and relates the position of the mausoleum; a longitudinal pond, which, like the impluvium of an ancient domus or Roman villa, catches the reflection of the sky; and a geometric garden subdivided into four flowerbeds surrounding a small fountain⁷.

Mercadal's drawing evokes other projects of the time with references to Roman architecture, such as the garden of the Villa Wiegand by Peter Behrens⁸. In this project, Behrens created a small reception platform at the end of the garden behind a propylon. This space was connected by an axis that led to the house elevated by a plinth, which was enclosed on its right side by an "L" shaped porticoed corridor and closed to the outside of the villa. Mercadal made a solution that was very reminiscent of this organization, both in the approach to the pavilion, as in the right side closure of the platform on which the building was located. He even placed the main plant mass of the



Figure 1. Martín Agustí. Buena Vista Park. 1927. Zaragoza, Spain. Plan of the Buena Vista Park project.



Figure 2. F. García Mercadal. Goya's Corner. 1926. Zaragoza, Spain. Cover of the magazine *Arquitectura Española*–Spanish Architecture, n° XXII. 1928. Madrid, Spain.

garden on the left margin of the access axis, in a similar way to Behrens' project (Fig. 8).

The modern aesthetic pavilion

Mercadal's first proposal, registered in December 1926, was rejected by the city council's technicians because of the high cost of construction⁹. The architect presented a second version of the project a month later, in February 1927, with the name "Rincón de Goya". This name had been widely used by the press since the presentation of José Bueno's proposal, a reason that would have made Mercadal change the name¹⁰.

The lack of documentation of the first version of Mercadal's project has not allowed us to define the extent of the changes he may have made. The similarity of the organization of the space finally built with that published in the journal *Arquitectura Española*–*Spanish Architecture*, as well as the short time elapsed between the two versions, suggests



Figure 3. Pompeii: House of the Faun, Giacomo Brogi. 1870–1880. Städel Museum, Frankfurt am Main. SMF_St.F.1820. Giacomo Brogi. Postcard no. 5058.

that Mercadal did not modify the organization of his project. The changes would have consisted in the elimination of decorative elements, mainly in the pavilion, the most expensive piece, but also in complementary elements of the garden.

In the case of the pavilion, the elimination of decorative elements achieved the pure volumes finally built, giving rise to what was considered one of the first works of the Spanish Modern Movement.

Despite this aesthetic rationalization, the building retained its academic base. Mercadal repeated the system of proportions based on the golden ratio that he used in the project for the Monumental Temple dedicated to Saint Isidore the Farmer, the project with which he won his scholarship in Rome in 1923. (Fig. 4 y 5).

Fernando García Mercadal's article entitled "Horizontalism or Verticalism", published in the magazine *Arquitectura* coinciding with the presentation of the second version of the project, seems to be a manifesto in defense of the transformation he had carried out in the "Rincón de Goya":

We could not affirm if these predilections, this verticalism or horizontalism will be a question of the moment, fruit of fashion, since these transformations are not simultaneous with notable changes of the plants. Plants are the soul of architecture, the essence of any work, and the influence of the same is felt more slowly on them than on the facades¹¹.

This defense of the floor plan against the elevations reinforces the idea that the changes were limited to the facades, maintaining the organization of the original plan, both in the pavilion and in the garden that was finally built.



Figure 4. F. García Mercadal. Monumental Temple dedicated to Saint Isidore the Farmer and the Rincón de Goya Pavilion. 1923 and 1928. Photomontage by the author. Both projects had a proportion based on the golden ratio.

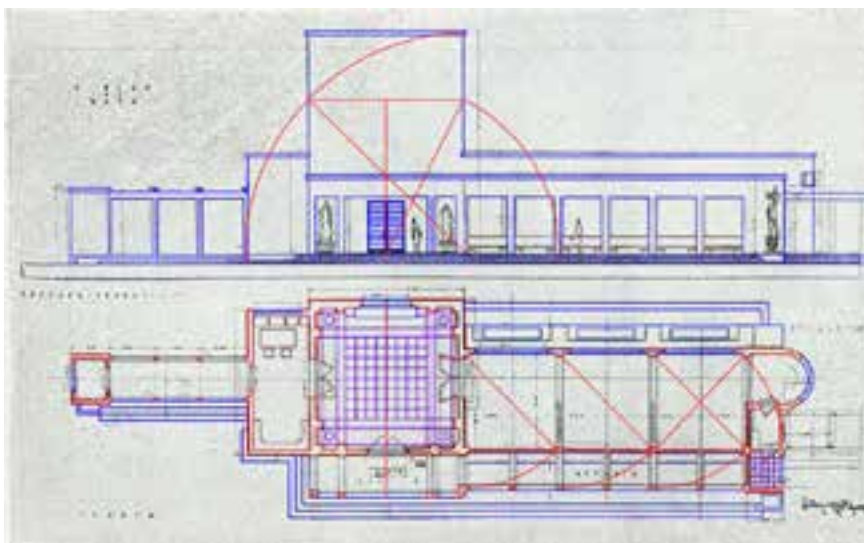


Figure 5. F. García Mercadal. Rincón de Goya Pavilion. 1928. Madrid, Spain. Photomontage by the author. Proportions in elevation and plan of the Rincón de Goya pavilion based on the golden ratio.

The symbolic garden tour

Mercadal pointed out in the magazine *Jano Arquitectura*, that he painted the pavilion with the shades used by Ozenfant¹², probably inspired in turn by the colors he saw in the 1925 L'Esprit Nouveau pavilion¹³. The wall paintings of this pavilion, the result of the research carried out by the architects Giuliano and Glaucio Gresleri and José Oubrierie in the reconstruction carried out in the city of Bologna in 1977¹⁴, show an extraordinary similarity with the colors that the Mercadal building may have had (**Fig. 6**).

The colors of the Rincón de Goya pavilion were included in the model made for the MEAC exhibition dedicated to Mercadal in October 1984¹⁵, model made under the supervision of the architect himself. The statements of the historian Carmen Rábanos Faci¹⁶, as well as Juan Martín Trenor, architect who intervened in the pavilion in 1982¹⁷, corroborated the use of these colors (**Fig. 7**).

In the context of the academic origin of the project, Mercadal organized the garden paths based on a vital reading of Francisco de Goya, turning the pavilion into an articulator of these paths through its colors.

The white was placed towards the Huerva River and at the back of the pavilion, upstream, towards Fuendetodos, the town through which the river flows and where Goya was born. White, in Christianity, is the color of purity, with which newborns are baptized, marking with it, the painter's hometown. Another of the colors used, the reddish tone, is also known as "Bordeaux" (burgundy), which in Spanish is spelled as "Bordeaux", the French city where Goya died.



Figure 7. F. García Mercadal. Model of the Rincón de Goya. 1984, MEAC. Photograph of the model exhibited at the Colegio Oficial de Arquitectos de Aragón at its headquarters in Zaragoza. Miguel A. Ruano.

This color was used at the front of the pavilion, and towards the opposite side of the river, where a cenotaph dedicated to the painter was placed.

Finally, the brick architectural tradition of the city of Zaragoza, whose clays are very rich in iron oxide giving the masonry a characteristic ochre color, configured the third color chosen, representing the nexus of union of the city with Goya. Ochre was used in the central part of the building, between white and burgundy.

With this distribution of colors, when we entered the Rincón de Goya, we saw the pavilion in the background that welcomed us with the burgundy color (death) and the ochre that represented the city of Zaragoza. As we approached the pavilion, the axis was cut and forced us to turn towards the Huerva River (birth), climb some stairs and, visually facing the cenotaph of Goya (death), to finally head towards the entrance of the pavilion.

Upon entering the building, we were greeted by a bust of Goya¹⁸, located in front of a large window that ran the height of the vertical volume of the pavilion.

The garden was planted only with privet, a type of decorative shrub, except at the back, where Mercadal planted cypresses. The verticality of the window and the cypresses that framed the view of it, directed the viewer's gaze towards the sky (death) (Fig. 8)¹⁹.

Under a door with the inscription "Fuendetodos, 1746", one entered, in the direction of the Huerva River, the exhibition room where replicas of Goya's works (life) were to be exhibited. The visit would continue in the opposite

room, which, under the inscription "Burdeos, 1828", would lead to the volume that, painted in burgundy, was to contain a library dedicated to Goya, that is, a collection of everything done by the artist during his lifetime. Leaving this space, the tour finally led us to Goya's cenotaph (death).

3. The modernity of a garden of classic conception. The Arts & Craft model

José Bueno's garden project was based on a nineteenth-century garden model, the creation of a "corner" in its romantic sense. This space was to avoid the stridency of the outside world, introducing the viewer to a new spirituality:

Goya's corner in Zaragoza, the artist's efficient homeland, as is another Becquerian corner, but on an even larger scale (...) something intimate, secluded, like a sanctuary, where the oracle of immortal art, of light, of life; the spirit of artistic beauty, arrogant and strong, which will remain among us as long as the world exists. Goya's corner will have to be a cenacle of high spirituality where the hubbub and the stridency will be exotic; where it will be necessary to enter with the reverence of catechumens or of simple initiates in the sweet mysteries of Art, and where one will surrender or learn to worship the supreme dictator that moved Goya's brush: Nature.²⁰



Figure 8. F. García Mercadal. Rincón de Goya. 1928.
Arquitectura Española—Spanish Architecture/M.A. Ruano. Plan and symbolic tour of the Rincón de Goya.

Under this same idea, Mercadal would have designed his first version of the project, giving rise to the symbolic readings described above.

After this academic design and organization of the garden, Mercadal introduced elements of notable modernity that distanced it from the classicism with which it has traditionally been described. He organized the garden around two perpendicular axes, in the same way as the sculptor José Bueno had done. But unlike the latter, the architect did not draw them symmetrically, but displaced them, generating spaces of different dimensions. The rupture of symmetry, and the breaks introduced in the route, generated tensions that, on the one hand, enhanced the symbolic message of the space, but at the same time, introduced a novel modernity in the Spanish gardens of that time, dominated by a historicist vision such as that of Javier de Winthuysen.

With the Rincón de Goya, Mercadal materialized the garden teachings he had learned in his travels through Europe, the Arts & Craft model.

The garden of the *Arts & Craft* movement was born from the spatial needs of a smaller size of residential gardens, originated by the conjunction of the development of the garden city in England, and models of groupings of workers' housing, whose plot organization, forced to return to the classical geometric order, but without being very orthodox in its application.

Mercadal's bends and displacements of axes, in addition to creating a compositional effect that enhanced the scenography of the complex, facilitated the adaptation of the garden to the shape of the plot.

This rupture of axes is reminiscent of the solutions adopted by Josef Hoffman, whom Mercadal had met during his stay in Vienna:

It should also be noted how the terrain is always present in his [Mercadal's] ideation, since the building is not conceived without studying its relationship with the plot and always through the approach of the garden; this is arranged from an orthogonal geometry, with pergolas, square and rectangular shapes, in the style of those designed by his admired Hoffman²¹.

Not only is this resource reminiscent of Hoffman, but the system of pergolas executed with linteled pillars is very similar to those created in the Stoclet Palace.

Let us remember that Hoffman was one of the architects most influenced by Voysey's garden design work, whom he had met through Hermann Muthesius' book *Das englische Haus*²². Mercadal himself knew and had read the work of Hermann Muthesius:

(...) a work which, like the famous works of Muthesius Herrman, would deserve to find a publisher who would make them known in Spain²³.

There are other similarities between Goya's Corner and Voysey's work. The choice of the color of the pavilion, based on the Ozenfant palette, coincides with the colors that Voysey had used in Haslemere's plan. In this garden we also find similarities with the solutions adopted by Mercadal.

The garden of the Haus Wiegand by Peter Behrens, already mentioned at the beginning of this article, started from a classical villa structure –remember the reference to the Faun's House used by Mercadal–, introducing compositional displacements in which the garden actively participated. This solution was also adopted by the Spanish architect **(Fig. 9)**

The classic base of the *Arts & Craft* model, the first garden model of the 20th century, became a bridge between the academicism with which Mercadal was educated, and the nascent architectural modernity that he had known in Europe. A leap in which Fernando García Mercadal remained aesthetically in the pavilion, but conceptually in the garden, being the truly modern element of the whole **(Fig. 10)**.

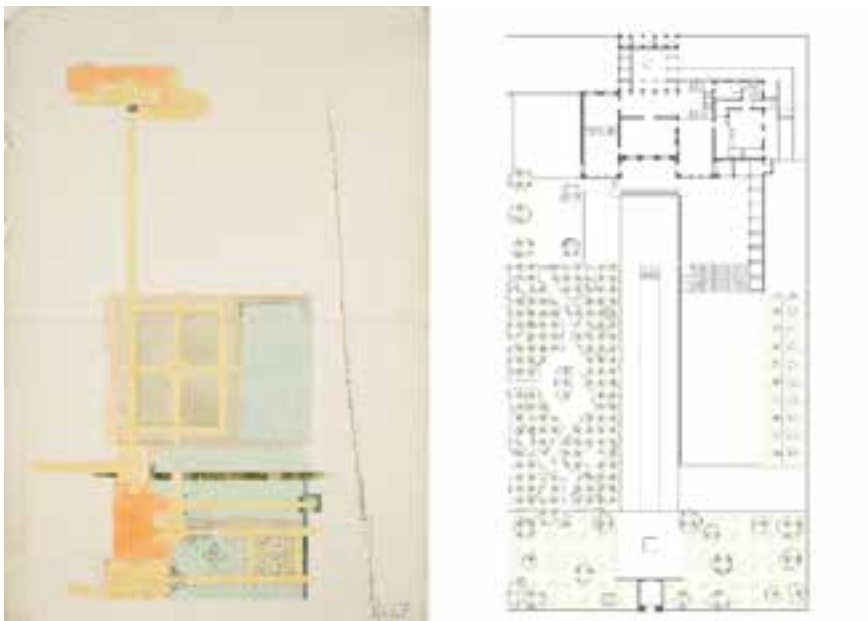


Figure 9. Left. Charles Voysey. New Place Plant, Haslemere. 1897, Haslemere. United Kingdom. ©RIBA. Right, Peter Behrens. Villa Wiegand floor plan. 1912. Berlin, Germany. Miguel A. Ruano



Figure 10. Fernando García Mercadal. Rincón de Goya. 1928. Zaragoza, Spain. Inauguration of Goya's Corner. 1928. Author: Luis Gandú Mercadal. Source: Photographic Archive of the Diputación de Zaragoza.

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- 2 M^o Pilar Fernández Pórtolas. "Parques de la Ciudad. Parque de Primo de Rivera. Cabezo de Buena Vista. Parque de Zaragoza". *Cuadernos de Zaragoza*. Zaragoza, Commission of Culture. Zaragoza City Council. 1979, 31–32
- 3 M^o Pilar Fernández Pórtolas. Op. Cit., 31–32.
- 4 Ricardo Centellas. "La conmemoración del Centenario de Goya en 1928". Zaragoza, Government of Aragon and Zaragoza City Council, *Luces de la ciudad. Arte y Cultura en Zaragoza 1914–1936*. 1995. 179–194.
- 5 Ricardo Centellas. Op. Cit., 191. Ricardo Centellas details that the cost of the project finally built was financed entirely with the state subsidy, so that in the end it did not involve any disbursement to the municipal coffers. This subsidy had been obtained, among other reasons, thanks to the intermediation of José García Mercadal.
- 6 Ricardo Centellas. Op. Cit., 192
- 7 Lourdes Diego Barrado, Antonio Estepa Rubio. "de la tradición a la vanguardia: lenguajes de proyecto y construcción en el Rincón de Goya". *Academia. Annex III*. 2017. Madrid, Royal Academy of Fine Arts of San Fernando. 298
- 8 Mercadal attended classes by Peter Behrens during his scholarship period in Rome.
- 9 Ricardo Centellas, Op. Cit. 190
- 10 Ricardo Centellas, Op. Cit. 192. The only time the name "Jardín de Goya" was published was in the news item that recorded the registration of Mercadal's project at the Zaragoza City Hall.
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The Introduction of Modern Landscaping in Madrid¹

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In parallel to the arrival in Spain of functionalism in architecture and urbanism, a new landscape understanding started to be noticeable in the ambitious urban extension plans projected for Madrid those years. There were not landscape projects themselves, but architects and planners were able to integrate broadly vegetation in urban plans, thus creating distance with respect to the inherited 19th-century public parks. From 1920 and 1936, this approach was especially prolific due to, on the one hand, the large number of public works and urban planning promoted by authorities and, on the other, the incorporation of local architects and urban planners to rationalism doctrines. Incipient urban polices, based on open-building typologies, provided a new perception of the urban space, in contrast to the dense traditional enclosed blocks limiting corridor streets in a continuous section. Some of the most significant projects of the period were the planning and development of the *Ciudad Universitaria*, the extension and enlargement of *La Castellana* Avenue and the development of several garden-towns, such as *Parque Residencia* or *Colonia El Viso*. At its part, among the key figures of this landscape transformation, it stands out Fernando García Mercadal, Luis Lacasa, Rafael Bergamín, Secundino Zuazo or Herman Jansen. This paper would analyze from a landscaping viewpoint those projects associated to the emerging modern urban planning. The research is based on the study of urban extension and reform plans for Madrid during the first decades of the 20th century, as well as the study of associated publications of the period.

1. Antecedents

The irruption of modern architecture in Spain dates back the second and third decades of the 20th century. Indeed, the group GATEPAC (*Grupo de arquitectos y técnicos por la arquitectura contemporánea*) and the Catalan GATCPAC promoted rationalism, incorporating the Bauhaus and Le Corbusier's principles into Spanish architecture. Specific congresses, as those celebrated between 1925 and 1926, addressed the housing problem and the need of new urbanization plans for towns above 5.000 inhabitants². In this context, Le Corbusier came to Madrid in 1928 to give a couple of lectures in the *Residencia de Estudiantes*, with a great effect in contemporary cultural circles³. During the II Republic (1931–39) and under a new capital law, a series of urban projects tried to renovate the metropolitan image of Madrid, as a reflection of the new born democracy.

Trees and vegetation were introduced into the existing dense urban fabric, through specific inner reform plans. Greater impact had the extension suburbs, with larger surfaces for greenery than edification, in a sort of ruralisation and low-density occupancy. Although the explicit aim was not designing landscape, the hygienist and functionalistic considerations behind architectural and urban decisions conducted into an actual landscaping awareness. The formal definition of green areas was vague and less radical generally than the architectural proposals, incapable sometimes to reject tradition. Nevertheless, it was possible to exceed the idea of sectorizing greenery in parks and limited gardens, making them handier and serviceable to citizenship.

2. The university city

The possibility of creating a gardenized university campus following North-American models took shape at the beginning of the 20th century. The location chosen was the former royal possession of La Florida, a forestry terrain and wild scrublands. Its vicinity to other royal properties, such as El Pardo and Casa de Campo, would facilitate the campus integration into a large continuous natural area for public recreational uses. Its periphery position would serve as transitional space between the compact city core and the surrounding countryside. Luis Lacasa participated in the plan from the Municipal Technical Office, paying attention to its impact into the rest of the city. The works management was entrusted to the architect Modesto López Otero, who referring the place said it had to be a refuge for studying and meditation, like a medieval cloister⁴ (Fig. 1).

Functionalism became a constant for the new educational buildings. They distributed in open organic plans linked to the adjacent green, in accordance to the low-density planning. Its landscape turns out to be forestry grounds splashed with educational buildings. However, the main groups of buildings, together with their surrounding open spaces, had formal arrangements. Small low geometrical gardens following a cruciform pattern occupied the semi-enclosed ambits among buildings. Rectilinear tree-aligned avenues connected them. In coexistence with the rigid formality, there were also curved walks and promenades, like in the 19th-century English parks, along which edification set up. Innovative rational architecture had little to be with the more conventional organization of the grounds. Indeed, this consisted of combining formal and informal outlines inset into a semi-natural topography and vegetation. What became new, however, was the campus insertion as a green wedge into the compact urban fabric. Through this buffer area, the city would connect with suburban historical forestlands. In its semi-rural role, greenery prevailed over edification. In the initial plan, the constructed surface could not exceed the 10% of the total. Instead of increasing buildability throughout the time, the idea of an open low-dense campus with buildings among trees have prevailed.



Figure 1. Photography of the Plan of the University City in Madrid, 1929. © Credits (*Memoria del Archivo Universidad Complutense de Madrid*)

3. The extension along the Castellana Avenue

Traditionally the Madrid growth had taken place along its main east-to-west axis, represented by the Alcalá Street. In 1928, an international competition put emphasis in the extension along the south-to-north axis, as a prolongation of the historical Prado promenade. It had to be the backbone of a modern extent that would provide an eventual metropolitan aspect to the city. The winners were the German Herman Jansen and the Spanish Secundino Zuazo. Jansen had been working re-defining some Berlin neighbourhoods by means of several garden cities and *siedlungs*⁵. In parallel, Zuazo experimented planning extensions in cities, such as Bilbao, Zaragoza or Seville⁶.

The ambitious urban plan highlighted infrastructures and services. A railway line would facilitate the mobility along the avenue, connecting the new residential units and small villages at the North. Rational office buildings flanking a strongly geometrized axis would centralized the intervention, articulating the area with the existing city. The composition based on a monumental and representative scale, would be more civic than rhetoric (Fig. 2).

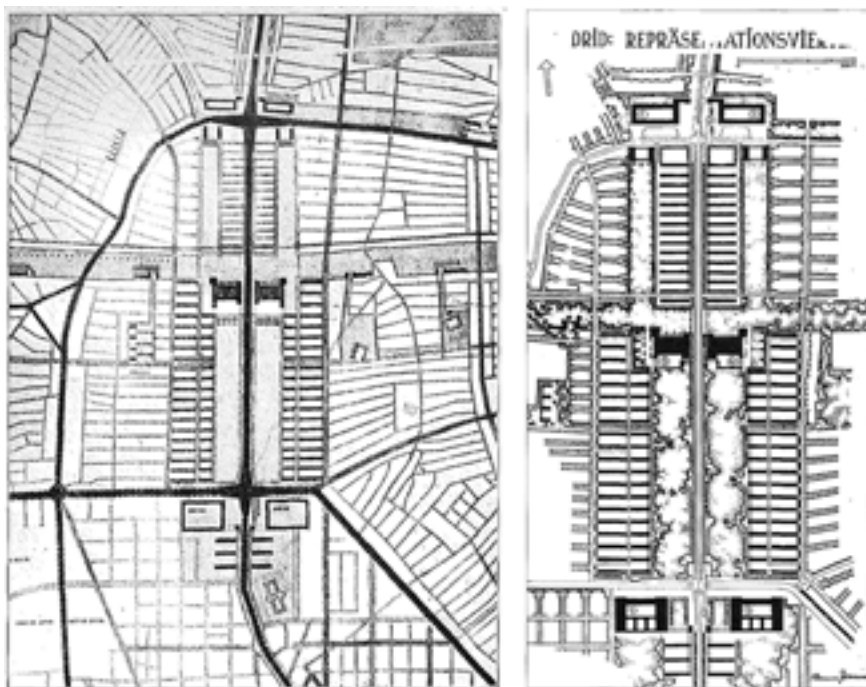


Figure 2. Zuazo & Jansen, proposal for La Castellana extension, 1930. © Credits (left: Ayuntamiento de Madrid, right: TU Berlin n° 21681)

Thin building blocks adopted an open layout to facilitate ventilation and daylight catchment. Among them, vegetation would occupy interstitial spaces, thus acquiring an unexpected prominence, different from the notion of an outdated park. According to plans, there were not specific formal composition for green sectors, but random irregular ones as tree-covered belts. The project, not only set closer greenery to edification at the foremost axe, but also several garden cities accommodated among pre-existent urban structures. Consequently, the area turn out into a series of green neighbourhoods structured by means of functional linear systems.

The irregular disposition of vegetation in the Castellana extension would have origins in both, Le Corbusier's urban projects and Berliner *siedlungs*. Nevertheless, Jansen and Zuazo showed preference for less radical urban proposals than those exposed by Le Corbusier in the CIAM congresses. Overall, the aim was bringing nature to city, under the German urbanistic precepts of the early century. That entailed a new attitude regarding urban landscaping, reflecting likewise the upcoming aspirations for cosmopolitanism.

4. Urbanizations: the cases of parque residencia and el Viso

The Jansen and Zuazo's plan included the construction of semi-independent satellite urbanizations shaped as garden cities. Two of them were the Parque-Residencia (1931–32) and El Viso (1934–36), whose authors were Rafael Bergamín and Luis Blanco Soler, respectively. There were built 69 dwellings with plots from 250m² for the first and 242 of around 350m² for the second. The groups of detached and semi-detached dwellings adopted a rational language in line with modern life⁷. Their development and management would correspond to an intellectual middle-class organized in cooperatives and keen on living in contact to nature⁸. Inserted within an uninterrupted mass of vegetation, the purist and cubic houses were conceived globally and not as the addition of parts. Surfaces for greenery were again larger than the ones occupied by buildings. Internally, the chalets had free plans with flexible diaphanous spaces, while the external aspect was unequivocal: rational simple white volumes with curves in corners and balconies, avoiding any historical or vernacular reference. All of them would enjoy private gardens to satisfy the owners' desires of a healthy life. Javier de Winthuysen⁹ made four of these gardens in El Viso, adjusting invariants of traditional Spanish gardens into the modern aspirations of its inhabitants (**Fig. 3**).

Within the dense vegetated bulk of the urbanization, every garden acquired its own singularity. Outdoor spaces were projected more as useful and enjoyable than evocative, as it was happening in the functional domestic indoors. Gardens organized by means of different intimate ambits articulated through small changeable axe, providing flexibility and variety to the entire layout. The idea of representation vanished and gardens gets their own meaning respect to architecture. Composition, however, was fundamentally architectonic, with vegetal elements set out geometrically with permanent references to classic and Hispano-Islamic gardens. A chromatic treatment characterized plantation, based on a large and seasonal variety, in contrast with the background white volumes.

5. Conclusions

The interventions analysed suggest a different outlook on urban green. The approach to modern landscape became a casual encounter, after seeing the advantages of vegetation participating in urban developments. Landscaping could not sustain a separated discourse from architecture and urbanism. It was the result somehow of profound urban transformations that would marked the Madrid evolution. The change of paradigm came through the adoption of French and German modernist urban theories for its extension. The city had to reduce density, giving prominence to vegetation with the garden-city prototype. This would be possible thanks to the implementation of modern infrastructures and a new railway system. Projects such as La Castellana prolongation or its satellite urbanizations around demonstrate the

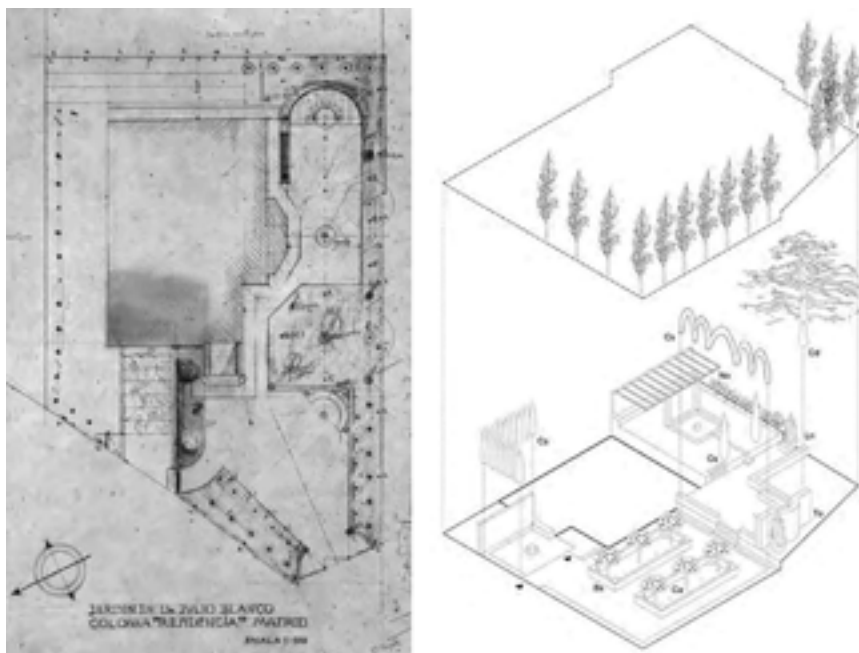


Figure 3. Javier de Winthuysen, left: Location plan, Colonia Parque Residencia, 1931; right: axonometry of Mr. Madariaga's garden, Colonia El Viso, 1934. © Credits (left: Paloma Barreiro, *Casas Baratas: La Vivienda social en Madrid 1900–1939*, COAM, 1991; right: Juan J. Tuset, 2013)

interdependence between architecture and vegetation, as contemporary urban theories were remarking.

Either way, the modern urban landscaping seen in the interventions reflects the social significance vegetation acquired renewing cities. It overtakes its decorative and embellishing aspect, turning into functional and hygienic. At garden–design scale, the most relevant proposals came from the late-romantic Winthuysen, who was able to match legacy with modern demands. And also García Mercadal¹⁰, a vehement supporter of Le Corbusier's ideas, who designed in Madrid the so-called Jardines de Sabatini and the gardens of La Encarnación. Despite not being able to invent a specific modernist garden language, Winthuysen and Mercadal already applied basic formal arrangements and layouts, as well as modernized constructive details. Geometry and rationalism subdued also plants and trees. But despite the simplified and rational outlines, the language and garden forms were mainly Mediterranean, sometimes with eclectic and undeniable romantic echoes.

The modernity arrival to landscapes had a retard regarding other cultural expressions. This was, in part, due to a traditional lack of distinct recognition of landscaping with respect to architecture and urbanism. However, there were novelties, sometimes unconscious, at the time of the general irruption

of modernity. The idea of representation was abandoned and greenery would definitively gain a useful character. The adoption of particular modern features in landscaping would come later and gradually, though never as a self-sufficient artistic value.

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Notes

- 1 This investigation is part of the research Project: "*El paisaje periurbano de Madrid: visiones desde la memoria hacia la nueva ciudad*" (reference PID2019-110693RB-I00), within the *Programa Estatal de I+D+i orientada a los Retos de la Sociedad*. The financial support belongs to the *Ministerio de Ciencia e Innovación y a la Agencia Estatal de Investigación* (DOI: 10.13039/501100011033).
- 2 Architects and critics, such as García Mercadal, Anasagasti, Bergamín or Luis de Sala, participated in heated debates by means of papers and exhibitions.
- 3 Other lecturers were Gropius, Mendelsohn's and Theo van Doesburg. For more information about the period, see: Carlos Sambricio (2003). "Luis Lacasa", 8–15.
- 4 "*Ser un refugio como lo era un claustro medieval de la Edad Media, para el estudio y la meditación, (...) enseñanza en plena naturaleza, (...) durante ocho horas el estudiante debe vivir la vida de una ciudad natural: sin comercios, ni ruidos, ni aglomeraciones públicas*". Chías, *La Ciudad*, 79.
- 5 According to Sambricio (1995), the inclination for a German urban planner had a large support in the contemporary intellectual circles, apparently under the influence of the Germanophile philosopher and cultural animator Ortega y Gasset.
- 6 Zuazo was also the architect of *Casa de las Flores*, erected in 1931 in Madrid, consisting of two lineal residential buildings with a geometrical garden and clutches of trees irregularly disposed in its interior.
- 7 Previous urbanizations, such as Albéniz, Fuente del Berro or Bosque and Mina, incorporated economic concerns in construction and made use of a neo-Basque style, the predominant aesthetics in urbanizations before rationalism.
- 8 Since the turn of the century, middle classes and modern generation of intellectuals took up a new relation to nature. Hiking and walking in the Sierra de Guadarrama, and even within the city limits, considered enjoyable and necessary for mental expansion.
- 9 Javier de Winthuysen y Losada (1874–1956), eclectic self-taught painter and gardener, vindicated Spanish traditional gardens through his 1930's book *Jardines clásicos de España*. He also became the first national inspector of Historic Gardens.
- 10 In his designs, he combined functionalism and a weighty knowledge in Spanish garden culture, as his treatise about history of gardens reflects (1951).

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Modern Human Landscape

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Modern Landscapes have not been given the attention of experts or society, probably because of their youth (all less than a century old) and the lack of critical distance to value them.

Therefore, it is necessary to carry out research on examples with heritage value. This work will help to understand the interrelationship between modern landscapes and the society that sustains them. Analysing the changes of use demanded by society, we must recover and reuse landscapes of relevance that have or have not been damaged. Both are two of the major challenges facing the discipline.

It is very interesting to understand how Modern Landscape has contributed to the pedagogical renewal that took place in the 20th century. The main requirements of outdoor education have been materialised in the new gardens of modern educational spaces.

Therefore, Ning Tsai studies the evolution of Chinese university campus during the 20th century, using two examples that reflect the change towards modernity.

Likewise, Irene Benet analyses the garden of the German School in Valencia (Spain), designed by Rubió y Tudurí. This is an authentic modern garden that favours open-air teaching.

On the other hand, after a long history of interventions and rescue of historic gardens, neither professionals nor society have yet claimed for the vindication and recovery of modern landscapes, if not to their original state, at least so that they can be used again.

In recent years, there has been a growing understanding of the importance of Modern Landscapes as creators of healthier, more useful and beautiful environments for people. The recognition of outdoor living is increasingly seen as one of the most important contributions of the Modern Movement, and the

ability of landscape architecture to organise and enhance this kind of living is one of the tasks currently being pursued.

Due to the passage of time – some gardens and public spaces are almost one hundred years old– many of them have lost their urban and social values. It is necessary to go even further than historical and compositional studies in order to recover and revitalise these spaces of the Modern Movement at the present time.

In this sense, there are three papers submitted to this Session Chair where we find a wide interest in research on the recovery of the landscapes of the Modern Movement.

Thus, Morgane Bos studies Gilles Clément's modern intervention in the model city of Heysel, Brussels (Belgium) and the changes that this new project implies compared to the original.

In the same way, Ana Maria Pellegrini confronts the concept of restoration of the project versus the restoration of the physical material in the revitalisation of Copacabana Park in Rio (Brazil).

Within this group, Gonçalo Canto Moniz, Carolina Quiroga and Ana Maria Reis de Goes Monteiro analyse three cases of reuse of the modern landscape, involving pedagogical programmes for the co-creation of inclusive innovative public spaces.

Reuse Modern landscape: a pedagogical programme on co-creation of inclusive and innovative public spaces

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Landscape architecture has been one of the great contributions of the Modern Movement, both in spatial and aesthetic terms and in terms of its social commitment, which substantially improved the quality of urban life. Today, much of this heritage is affected by the passage of time or requires adaptation to profound contextual changes. In addition, the global health crisis provoked by COVID 19 exposed conflicts – overdensity, social inequality, lack of community spaces – that reposition public space as one of the priority issues on the urban agenda.

In this context, schools of architecture find in the re-use of modern public space an opportunity to integrate in their didactic strategies essential themes of our time: the social, cultural and environmental dimension. However, academic programmes are more focused on the artistic and technical education of the architect and have some resistance to integrate these themes. Instead, concepts and tools such as social participation, gender perspective, intersectional and intercultural approaches, collective memory, nature-based solutions, among others, allow transcending the production of abstract objects to design human and healthy spaces with a true sense of inclusion, equity, diversity and innovation.

In this sense, this paper proposes a common pedagogical programme that addresses the potential of integrating the open space produced according to Modern Movement principles into an inclusive public space that takes in consideration the contemporary urban challenges. Combining perspectives and knowledge from the north and south, this educational network is based on didactic and research projects developed in Europe (Coimbra, Portugal) and South America (Buenos Aires, Argentina and Campinas, Brazil).

1. Introduction to Reuse of Modern Public Space

Landscape architecture has been one of the great contributions of the Modern Movement in spatial and aesthetic terms as well as from its social commitment that substantially improved the quality of life in buildings, neighbourhoods and cities. The value of public space in urban design was one of the basic thoughts of modern architecture which, far from being a one-size-fits-all solution, was approached from divergent points of view such as the ideas of CIAM or Team 10, as well as adapted to local realities. The central role of public activities – civic centre, facilities, recreation – in urban strategies, the search for functional spaces connected with outdoor civic life, the integration of pedestrian streets, communal gardens and playgrounds for children, are some of the landscape themes that define the unavoidable legacy of modernity.

DOCOMOMO since its foundation has promoted and produced knowledge on this subject in international conferences, the registers of works and *DOCOMOMO Journal* publications such as *Urbanism, Gardens & Landscape* (N 16, 1997) and *The Modern City Facing the Future* (N.23, 2000). However, today much of this heritage is in need of rehabilitation and reuse, not only because of the passage of time and its natural deterioration, but also because of the accelerated and vertiginous social and environmental changes that characterise our complex contemporary world.

Likewise, in recent years, the critique of modern functionalist urbanism, or an expert knowledge that determines zoning and abstract morphologies that are completely removed from the real, everyday needs of the people, has been accentuated. The notion of the right to the city or the right to an urban life with places for meeting, improvisation and enjoyment has gained relevance. Similarly, the need to rethink the crucial role of public space in the construction of the image, behaviours and identity of citizens and in the historical structure of the environment. And, as in the case of Jane Jacobs, the critique of the factors that prevent the humanisation of cities – real estate pressure, gentrification – not only from theory but also from appropriation and citizen activism.

In this context, schools of architecture find in the re-use of modern public space an opportunity to integrate in their didactic strategies essential themes of our time: the social, cultural and environmental dimension. In general, academic programmes are more focused on the artistic and technical education of the architect and have some resistance to integrate these themes, which mostly appears as a theoretical consideration or applied to minor activities but not as a true philosophy of learning that puts in dialogue several disciplines. Instead, concepts and tools such as social participation, gender perspective, intersectional and intercultural approaches, collective memory, nature-based solutions, among others, allow transcending the production of abstract objects to design human and healthy spaces with a true sense of inclusion, equity, diversity and innovation (Madanipour, 2018).

From this perspective, students can critically reflect on the conditions that prevent a full social use of public space – presence of the car, mass tourism, lack of infrastructure, abandonment, insecurity, lightning, lack of nature, grey space, lack of local identity. Similarly, they can recognise the processes of exclusion that cities have with minority or minoritised social groups such as women, children, the elderly, LGBTQ+ groups, migrants, specificities, among others. (Falú, 2014) Also, to explore the potential of active and synergic participation between students and users, moving from design thinking to co-creation. The voice, experience and real needs of the community in all phases of the development of conservation and rehabilitation proposals is the basis for just, democratic and healthy public landscapes. (Moniz, Quiroga, 2021) (Goes Monteiro, 2012)

In this sense, this paper proposes a common pedagogical programme that addresses the potential of integrating the open space produced by Modern Movement urban planning into an inclusive public space that takes in consideration the contemporary urban challenges. Combining perspectives and knowledge from the north and south, this pedagogical programme is based on didactic and research projects developed in Europe (Coimbra, Portugal) and South America (Buenos Aires, Argentina and Campinas, Brazil).

2. Experiences from Europe, Argentina and Brazil

Research in action for an inclusive public space

In the case of Europe, the research project URBiNAT (Urban inclusive and innovative Nature) is co-creating nature-based solutions with citizens of modern social housing neighbourhoods to activate a healthy corridor. This is an European research in action project¹ that brings together 28 partners from academia (universities and research centres), local government (municipalities), companies and local associations. URBiNAT aims to develop an inclusive urban regeneration process to transform the public space of modern social housing neighbourhoods built in the post-war period (1950–1970) in the cities of Porto, Nantes, Sofia, Hoje Taastrup, Brussels, Siena, Nova Gorica and Khorramabad.

The modern urban planning of the social housing neighbourhoods generated a territory of exclusion, firstly due to the island effect of the housing complexes planned without an efficient connection to the city urban network, secondly due to the social groups the habits of the houses, with low income, low employment, high criminality, high drug consumption. Most of these neighbourhoods were built in the periphery, in agricultural areas and still, today are “out” of the city, due to several infrastructures that cut the relation with the city, such as highways, railways or rivers. This fragmentation generated open space in between the housing blocks or in between the housing estates that doesn’t enable mobility and open-air activities. Although these urban areas are not modern, it results of the modern urban planning.

The healthy corridor is addressing these challenges in different ways according to the local urban and social context, and the local participatory culture. The participatory process needs to be flexible and iterative in order to be adaptable to different cities and sometimes to different neighbourhoods. Based on the co-creation methodology and tools, each city designed a participatory process in order to activate the four main stages: co-diagnostic, co-design, co-implementation and co-evaluation. In the first moment, citizens and stakeholders are invited to participate by identifying the needs, perceptions and dreams of their territory. At a second moment, a collaborative design process develops ideas and proposals to integrate the healthy corridor strategy and urban plan. In the third moment, the co-implementation of the healthy corridor is divided into the construction of the urban project and the development of the immaterial NBS, which need the commitment of the community. Finally, the co-monitoring and co-evaluation will collect data to analyse the success of the healthy corridor, in terms of citizens engagement, and in terms of citizens use and satisfaction (Moniz et al, 2021)

Researchers are rethinking their urban design and architecture methodologies to introduce the dialogue with the different actors as a design tool, developing critical thinking to the mainstream way of doing and way of arriving at solutions, namely the ones based on nature. Architecture students are also involved in the activities to develop design tools that promote this dialogue in order to better integrate the citizen's experience and to better communicate the architectural ideas and proposals.

The urban plans of the healthy corridor co-created with the citizens are in a tender phase to start the construction but the solutions proposed to activate the public are already being tested by the community that is today more empowered and taking the lead in the process. In the case of Porto, an urban garden was implemented as a community farm where all the citizens involved work in the same plot and take what the plot offers, and an informal market, named Campmarket, is inviting local producers and craftsmen to sell or share their products once a month promoting healthy food and handmade products. These solidarity economic solutions are combined with cultural



Figure 1. Healthy Corridor of Porto, Strategy, Online co-design session with architecture students and citizens, Campmarket fair, URBiNAT, Porto, 2021–2022 © Gonalo Canto Moniz, V torio Leite, Lu s Miguel Correia

activities to increase the sense of community and belonging. While waiting for the materiality of the healthy corridor, the public space is already more connected, more inclusive and healthier. (Fig 1)

Feminist perspective on the modern landscape re-use

In the case of Argentina, the Feminist Architecture Design Studio developed by the Platform LINA (Laboratory Intervention + Architecture) based at the Faculty of Architecture, Design and Urbanism of the University of Buenos Aires is a pioneering programme in addressing the issues of the re-use of public space with a gender approach. The program is an inter-university virtual course that involves 275 students from 15 architecture schools in different cities of Argentina, Bolivia, Chile, Uruguay and Peru during 2020 and 2021.

The course is organised into three thematic laboratories: Registers + Women Architects dedicated to making visible the work of women in urban planning and architecture, (De)Constructed Architecture(s) in housing and gender and (Inter)Sectional Landscapes focused on public space.

The (Inter)Sectional Landscapes Laboratory proposes to reflect and research from a feminist approach on concepts and operations that introduce equity in the rehabilitation of modern collective landscapes. This allows us to deconstruct in the field of design the androcentric, binary – female/male, private/public – and racist criteria that have historically created public spaces, including those of the Modern Movement.

Each group of students selected a modern public space as a case study: urban squares and parks, modern mass housing developments and their own university campuses. First, the characteristics of their original designs were analysed. Secondly, their current state was mapped from a gender perspective by looking at the physical conditions – density, morphology, transport – and symbolic conditions that produced imbalances in the full use by the whole community. On this basis, the students explored how to maintain and preserve the essential aspects of modern design. And at the same time, which new programmatic and spatial decisions allowed to include a women and minority and/or minoritized groups from public space: LGBTQI+, children, elderly, disabled, migrants, aboriginal communities, among others.

One of the most important aspects of the proposals was to recover the political role of architecture. In this sense, some interventions included cultural itineraries to tell the story of the transsexual community, spaces for LGBTQI+ marches or social assistance facilities for gender violence, a severe local social problem.

Democratisation and equitable access to public space were other topics of project research. Although each case study had particular challenges, common themes emerged when defining modern rehabilitation strategies: safety (lighting, signage), accessibility, the creation of areas for all ages and

genders, places for play that favour children's autonomy, among others. In addition to spaces for leisure, recreation and sport, the projects also combined productive landscapes such as urban allotments and community gardens. Especially in low-income areas, these places strengthen the social fabric and the popular economy. (Fig 2)



Figure 2. Reuse of the public space of the Cordoba University Campus, LINA Feminist Design Studio University of Buenos Aires, Argentina, 2021 © Carolina Quiroga

Transforming public space through reuse of a textile factory

In the case of Brazil, the goal is to present the teaching methodology of an academic research study for a final work degree in Architecture and Urban Planning undergraduate course at the State University of Campinas (UNICAMP). The work refers to an intervention for the Prestes Maia Building (PMB), a modernist architecture building, in the downtown area of São Paulo city. It was inaugurated in the 1960's as a textile factory which went bankrupt in the beginning of the 1990's. Since then, the property has been abandoned and experiencing a slow deterioration process. The building is composed of two towers: one with 9 floors and the other with 21 floors. In 2010 it was occupied by some homeless families. It is the largest vertical occupation in Brazil.

One of the first step was to define the didactic–pedagogic strategies and the theoretical concepts. So, the undergraduate student carrying out the TFG would connect the critical thinking about the spatial, social and territorial segregation process existing in the city, the different political, urban and programmatic levels involved, their potentialities, characteristics and particularities. The TFG challenged the project to provide decent housing for the families currently occupying the PMB, taking into consideration the pre-existing conditions. Such a premise would mean a huge effort, especially when observing that, despite being abandoned, this building has kept its original characteristics of factory–designed features.

In order to execute the architectural design, the student visited all the floors several times; interviewed most of the residents; visited some houses and took a lot of photos. The residents told him that there was a building coordinator, a woman, and a coordinator for each floor. It is important to say that all residents are employed. Since all inhabitants must follow a strict behavioral code, beggars are not welcome. There are 242 families in the higher tower and 115 families in the lower one, a total of 939 residents. Out of these, around 300 are children ranging from just–born babies to 12–year old kids. Based on the information of the family composition it was possible to establish the number of apartments on demand – 371 – and to define the area required for each floor.

The next step was to assess the current legislation. It showed that the current average area of each unit (15 m²) did not even reach the minimum area requested by the Sanitary Code of the State of São Paulo for bedroom/living room units. That said, it is safe to say that the two towers did not count on enough area to house all those families. The project proposed 229 apartments to provide a house for a total of 494 people. However, as previously seen, 371 apartments were requested to meet the demand to include its 939 residents. Therefore, an issue urged to be solved: what to propose for those that were not included here?

The answer was just facing the PMB. The metro station left a huge empty area. As regrettable as it can be, in Brazil there is no dialogue between different public agendas and State Bodies. In this case, a dialogue of Housing State Department and the Urban Development Municipal Department would be extremely important in order to propose new housing and leisure areas in this kind of modern spaces. In conformity to that, the student made an intervention in the public space, demonstrating different possibilities for occupation and densification, taking advantage of its modern character.

The architectural concept for this area intended to design three towers of apartments, which could receive the families from PMB and 250 other families. At the ground floor of the buildings was proposed a commercial area, a nursery and a health centre. A huge coverage, like a pergola, above the metro station, could host popular markets which are very usual in Brazil. Although this urban area was uncharacterized, as well as the buildings in its surroundings,

they are the result of modern urban planning. It is believed that with this proposal there is the possibility of rescuing the previously existing sociability, as well as the opportunity to create more liveable and humane cities (**Fig. 3**).



Figure 3. Prestes Maia Building, Sao Paulo, Brazil, 1960–2016, Photograph of the current situation (outside, inside, areal view), reuse proposal, c Gustavo Takatori, 2016, <http://tetraarq.com.br/projetos.php>

3. PEDAGOGICAL STRATEGIES

The pedagogical methodology for an education programme on the co-creation of inclusive and innovative public spaces is based on the following political, cultural and epistemological principles taking in consideration the three experiences mentioned above:

- Right to the city and equity to public space
- Modern landscapes as a common cultural heritage
- Ecology of Knowledge and Critical thinking
- Collaborative knowledge and Practices
- Interdisciplinary (Architecture, Landscape, Geography, Design, Sociology, Economics, Law) and also intersectoral (academia, municipalities, companies, associations) and intersectional approach (gender, age, race, specificities).

From this perspective, the goals are defined as follows:

- Develop re-design strategies to Integrate the contemporary challenges with the modern values



Figure 4. Walkthrough, URBINAT Porto, 2020; LINA Feminist Design Studio University of Buenos Aires, Argentina, 2021; Participatory Design Workshop, UNICAMP, 2016 © Fernanda Curi; Gustavo Takatori, 2016, Carolina Quiroga, 2021

- Recognise the multiplicity of actors involved in the transformation of the city
- Training on participation as a learning tool on modern and contemporary values (awareness)

Explore regeneration of modern public spaces Experiment reuse of modern landscape by all by engaging the local community

- Activate the cultural dimension of the public space
- Incorporate nature as a social enabler

Regarding the methodologies, they are based on a strong idea of understanding the territory as the atelier:

- Engagement of the local communities in the design studios
- Critic reflection on the modern production of the city and its public spaces
- Rethink the urban voids that results from the modern urban planning
- Combining qualitative with quantitative research
- From diagnostic to design to understand reality and develop strategic action
- Living experience close to the communities and out of the atelier

About tools, heritage recording systems and architectural representation models are adapted to include the voice and needs of users:

- Participatory physical models and drawings
- Cultural and territory mapping
- Walkthrough with interviews and questionnaires
- Participatory proximity with an anthropology approach
- Photovoice to activate memories
- Realtime virtual board

This pedagogical methodology aims to learn from the experience developed in Europe and South America and propose a flexible and adaptable structure that can be appropriated by the different local cultures, schools and research centres.

4. Conclusions and challenges

Despite the success of the three initiatives, it is necessary to consider some challenges to be overcome: participation needs time; needs engaging the community in an academic program public expectation and more than anything, it requires the establishment of trust on both sides.

It is also important to say that traditional models and methodologies for architectural education do not answer the complex society demands of nowadays. Furthermore, some of the concepts and answers that students must learn are outside the architectural field, even being complementary to it. It is necessary to consider social agents involved in the process and its uniqueness. Also important is to understand the space where they interact, not as a scenario, but as a result and determination of their social practices. Space and place could and must be changed under its daily appropriation. Therefore, modern landscapes and places can be reinvented by their users. The identity can be built constantly, over the space designed by architects.

In this sense, ecology of knowledge is both geographical and disciplinary, aiming to put architecture students in the reality of the city's complexity and contradictions by learning from the street. Concepts, methodologies and tools from different disciplines are discussed with experts from sociology, cultural studies and landscape architects in order to rethink the architectural design tools. This international educational programme is an opportunity to rethink together the modern landscape towards a more inclusive public space that can have an impact on the quality of life of our cities.

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Notes

- 1 This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 776783

Modernization of Chinese Garden concept in University Campus Landscape Design: From Hua Tung university to Tung Hai university

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This paper attempts to explore the evolution of the campus landscape design of Chinese Christian universities, focusing on the Hua Tung University planning project (1946–1948) led by Walter Gropius and the Tunghai University planning project (1954–1963) led by I.M. Pei, the two campuses have a subtle inheritance relationship in space design.

Facing the issue of how Modernism and Chinese regionalism coexist, “Chinese gardens,” have become the source of inspiration for the campus landscapes of these two Chinese Christian universities. The Hua Tung University adopts a “Regionalization of Modernism” approach, with an artificial curved lake as the heart of the campus, combining the courtyards with various changes, placing the academic sector and boys’ and girls’ dormitory areas around the lake, naturalized landscapes and the modular school buildings represent the dual coexistence of nature and artefact in the West.

The Tunghai University, planned by I. M. Pei, Chi-Kwan Chen, and Chao-Kang Chang, adopts the approach of “transforming tradition into Modernity,” respecting and conforming to the natural topography and view of the special site on the Dadu Mountainside, integrating the campus model of the University of Virginia in the United States, Japan’s shrine access road and the castle wall, as well as the changing scenery of Chinese gardens. Based on the simplified Chinese houses and courtyards as prototypes, and develop the compound and broken-standard courtyards, and then explore the new space landscape by Modernist white-walled courtyards. In particular, the campus landscape leaves blank spaces of different types: boulevards, lawns, trees, and courtyards, thus creating a campus space with rich layers, just like wandering in a Chinese garden space.

Reviewing Hua Tung University and Tunghai University, from paper architecture to actual completion, they were an important milestone in the modernization of the campus landscape of the East university from the 1940s to the 1960s.

1. Introduction

In the late 19th and early 20th centuries, the evolution of the campus landscape design of Chinese church universities reflects how Western churches, as outsiders, established higher education institutions in huge and ancient China, and to deal with the the entanglement between modernization and Chinese tradition: the imagination of the owners in the early years, through the interpretation of Western architects, such as Henry Killam Murphy (1877–1954), pursued the form of imitating traditional Chinese

palatial architecture as a representative, and followed a rigorous central axis symmetry in the configuration of buildings and courtyards. By the time of Hua Tung University in Shanghai in the 1940s and Tunghai University in Taiwan in the 1950s, not only did the owners' imagination of campus space fundamentally overturn, but the architects also turned to Modernism as the text, and launched a series of reinterpretations of Chinese culture: Instead of copying the historical style of Chinese palace architecture, it corresponds to the simplicity of Modernism from the artistic conception of Chinese gardens, and integrates into a fresh and free space atmosphere.

2. The historical background and campuses layout of Hua Tung and Tunghai University

In 1928, The Council of Higher Education in China was determined to integrate the Christian colleges of higher education in China and build a new united university in the east of China, which was stagnant after the outbreak of the Second Sino-Japanese war and the economic depression. After the end of the War, the plan was launched again in 1946. Three Christian universities St. John's, Soochow and Hangchow in Shanghai signed a joint agreement. The new school of the united university was named Hua Tung University, and Walter Gropius, chairman of Harvard's architecture department, is in charge of planning the new campus. The TAC firm of Gropius was also established in 1946, and Gropius' student I. M. Pei, was hired by Harvard University to teach in the summer of the same year, so he was also invited to join the project.

The campus of Hua Tung University is located at the former site of Hung Chiao Airport in the west of Shanghai. It can accommodate 3,000 students and provide dormitories for 1,000 students. The site plan is centered on an artificial lake and revolves around four building groups (**Fig. 1**). There is no obvious axis in the layout, and each group is spatially self-contained. The entrance of the campus is at the southeast corner of the site, the athletic fields and gymnasiums are to the south of the entrance. The academic sector is located on the east side of the artificial lake, there is an obvious entrance axis from the road of the roundabout, leading to the main library and the entrance pool. In the north of the axis, there is a student union near the lake. There are various colleges on the east and south sides, most of them are surrounded by two to three storey single buildings that are parallel or perpendicular to each other to form asymmetric clusters and court yards. The layout of the dormitory area is similar to the academic sector, it is also equipped with a mono-pitched roof building on a grid-like corridor system. The girls' dormitories are more tightly circled around their courtyards than the boys' for close supervision. The staff dormitories are one-story flat-roofed independent buildings with an inner courtyard in the residential area.

Due to changes in China's political situation, the plan of Hua Tung University was ultimately not realized and became the architecture on paper. However, in



Figure 1. TAC, Hua Tung University campus site plan, Shanghai, China, 1946–48. © Interiors, January 1952.

the early 1950s, educators and church members who were enthusiastic about education in Taiwan asked the United Board of Directors of China Christian University to establish an ideal university in Taiwan, named Tunghai University, in order to continue the cause of Christian education in China. In 1954, the United Board commissioned I.M. Pei, who had collaborated with Gropius on the design of Hua Tung University, to preside over the design of Tunghai University. Pei invited Chi-Kwan Chen and Chao-Kang Chang to work together on this project; the core spirit that was not realized at Hua Tung University was reappeared with a new configuration through Tunghai University.

The site of Tunghai University is a gently sloping land in the east of Dado Mountain, which is in the shape of a large trapezoid. The original landform is a dry terraced field, with a wild stream as the southern boundary, the north boundary is the highway from Taichung to Shalu, and a wild stream passes through the site from northwest to southeast. The architects widened the existing paths within the site to serve as the main road that divides the campus into four main areas (**Fig. 2**). The central area is the church and student centre, the education area to the southwest, the athletic field and



Figure 2. I.M. Pei, Chi-Kwan Chen, Chao-Kang Chang, Tunghai University campus planning, Taichung, Taiwan, 1954.11. ©Tunghai University Fifty years of school history, 2016.

boys' dormitories to the north, the girls' dormitories to the south, and the dormitories of faculty and staff to the east. The architect respects the existing wild streams and canals on the site, and naturally forms the external boundary of the campus and the internal division. Since the 1970s, the United Board has reduced funding year by year, and Tunghai University has gradually transformed into an independent university, but the core area still maintains the architect's planning in the 1950s.

3. The natural view of Campus Landscape Design

During his 15 years of teaching at Harvard School of Design, Gropius has taught many Chinese students, such as Zuo-Shen Huang, Da-Hong Wang, I.M. Pei, and Chao-Kang Chang. Although Chi-Kwan Chen did not directly study under Gropius, he joined the TAC led by Gropius in 1951 and worked for three years. These Chinese students studying in the United States promoted the spread of Western Modernism to the colonies and developing countries. The traditional Chinese view of nature and the picturesque aesthetics of Chinese landscape painting were also integrated into the campus landscape design of Hua Tung University and Tunghai University through them.

When Gropius accepted Hua Tung University campus planning, he discussed with his Chinese students I. M. Pei and Da-Hong Wang at Harvard University about the spirit of Chinese architecture. Pei grew up in Suzhou, the hometown of Chinese gardens. The Pei family owns the famous Lion Forest Garden, an architectural mansion and private garden dating back to the 14th century. The modular wooden architecture contrasts with the natural and organic garden landscape. Pei was immersed in such a space as a child, making the spatial poetics of Chinese gardens almost intuitive to him. In 1946, Pei proposed his graduation project "Shanghai Art Museum". The building is a simple box, the interior is cut by the rectangular courtyards, which is similar to the spatial pattern of Suzhou gardens. There were organically shaped pools, Stone and grass in the courtyards provide a visual connection between the exhibition space and the natural environment. And Gropius publicly praised the design work in the magazine: "It clearly illustrates that an able designer can very well hold on to basic traditional features.....without sacrificing a progressive conception of design".¹ Pei's designs demonstrate the close connection between nature and humanity, which is the core value of traditional Chinese architecture.

Regarding the design of Hua Tung University, Gropius once stated that it is the combination of modern technology that focuses on economic efficiency and Chinese elements – balancing volumes and spaces, land and water, buildings and trees.² The shapes of artificial lakes and tributaries, and the arrangement of plants and stone sceneries are all imitating nature as much as possible; the main and the secondary roads are slightly curved to better match the curve of the waterscape. In the plane configuration of the academic sector and the dormitory area, the grid-like roads are used as the skeleton, and the mono-pitched roofs are freely and staggered. The river branching from the central lake naturally passes through the surrounding buildings. In the courtyard, the orthogonality of the artificial road and the meandering of the waterway are superimposed in two contrasting systems to form a richness of space. The campus landscape of Hua Tung University adopts the viewpoints of Chinese people on water, land, nature and planting. The courtyards and corridors of Chinese architecture are used to configure the building groups, and they coexist harmoniously with the nature.

The campus landscape design of Tunghai University also presents the traditional Chinese philosophy of "conforming to nature". The Dado Mountain where Tunghai University is located is a hillside with a slope between 12% and 15%. Chi-Kwan Chen came to Taiwan in September 1957 to take charge of the landscape planning of Tunghai University. The primary work on the hillside is land preparation. Not using excavators to avoid large ridges; the terrain is first formed into a gentle slope, which is conducive to walking, suitable for building construction and conserving soil and water, and the centipede grass is planted.

The approach of the site plan in Hua Tung University is more directly imitated by Chinese gardens: a huge artificial lake is at the center, and the building

clusters surround the lake; Tunghai University inherits the free-plan of Hua Tung University, however, It combines the spatial pattern of American Virginia universities and the landscape vocabulary of Japanese temples access road to form a very diverse landscape space experience. Walking on the campus, you can feel the spatial changes, just like experiencing the sequence of Chinese gardens.

4. The creation of negative space

In the design of Chinese Christian universities in the early 20th century, Henry Murphy's design of Jinling Women's University (1921) and Yenching University (1921) has used the spatial vocabulary of Chinese courtyards. The northern palace layout as the text presents a Chinese style, the hierarchy of the courtyard is strictly controlled by the symmetry of the axis.

Although Hua Tung University has some similarities with Yenching University in its spatial composition, for example, the central lake is surrounded by a group of buildings, it abandons the symmetrical axis and centralized layer-by-layer, but instead has a cluster-type and dynamic balance layout, just like the composition of De Stijl painting, it removes authority and interprets the openness and freedom of the times.

In the courtyard of Hua Tung University, you can see in the perspectives of the dormitory painted by I.M. Pei (**Fig. 3**), the transparent and simple corridors surround the courtyards, the water channels and the trails connect different negative spaces, the trees are naturally planted, and the stone scenery is scattered. The picture shows the artistic conception and aesthetics of Chinese ink painting integrated into the landscape design.

Due to the actual completion of Tunghai University and the continuation of the garden aesthetics of Hua Tung University, the architect's negative space design in the campus is more evolved and refined. Mr. Chi-Kwan Chen



Figure 3. TAC, Hua Tung University campus, Shanghai, China, 1946–48, panorama looking towards residence group. © Interiors, January 1952.

once said: "The real spirit of the design of Tunghai Campus is not in the building itself, but in the empty part between the buildings – the part of the courtyard".³ Its negative space can be specifically divided into: boulevards, trees, lawns, and courtyards.

Boulevard

Wen–Li Boulevard is the most famous boulevard in Tunghai University (**Fig. 4**). It is built along the terrain with a slope of 5%. It is the backbone of the entire academic area and connects the three–sided courtyard–style college buildings on both sides. In the center of Wen–Li Boulevard is a 24–foot–wide green space and slate, and there are 10–foot–wide walkways on the left and right sides. Banyan trees are planted on both sides of the boulevard, and the umbrella–shaped canopy forms a natural roof. In the center of the avenue, the Bell Tower is placed as a visual landmark.

Trees

The site of the Tunghai campus was originally poor soil, and the wind would blow dust. Therefore, in order to conserve soil and water, besides planting grass, another landscape work is planting trees. Chi–Kwan Chen has a unique opinion on the trees in the campus. He believes that a tree with a graceful and penetrating shape should be selected. At that time, he planted Acacia trees widely on the campus, which formed a natural barrier to the adjacent industrial area. The trees at the entrance to Beauson Road are Poinciana, Oil Galli and Casuarina.

Lawn

In the vast woods, there are also empty open spaces, which is another feature of the campus landscape – the big lawn. The concept of lawns does not come from Chinese gardens, but can be traced back to the Picturesque Landscape in England in the 18th century.⁴ When the Baroque geometric gardens were still prevalent in Europe, Hyde Park in England was planted in asymmetrical clusters and left for open lawns form a natural park. In Tunghai University, there are large lawns in many places, such as Luce Church Lawn, Sunshine Lawn, Moonlight Lawn and so on. Between the road and some buildings, there are also lawns, such as the blank grass between the Faculty of Science and Wen–Li Boulevard, the lawn outside the dormitories, etc., which form varying blank in the space experience, and can double as a place for leisure activities.

Courtyard

Inheriting the basic vocabulary of "courtyard" of Hua Tung University, the campus building of Tunghai University has developed a more diverse

courtyard space typology. It can be divided into four types: **simplified courtyard, compound courtyard, broken-standard courtyard, and modern white-style courtyard**.⁵ The "simplified courtyard" is represented by the administration building and the three colleges of arts, science and engineering. It is in the form of a three-section compound, enclosing a green square with strong cohesion. There is a lawn inside, and banyan trees or spherical asparagus are planted. The "**compound courtyard**" refers to the long side rooms on both sides, and the hall room is sandwiched in the middle, so the courtyard is the transition space of the entrance or the inner courtyard of the hall room, such as the old library and the guest house, and the more distinctive one is the entrance of the old library sunken lotus pond. "**Broken-standard courtyard**" is represented by the dormitory for boys and girls and the Oberlin Student Center. It also breaks the traditional central axis symmetry, and is surrounded by scattered windmill-shaped bodies. The courtyard of the girls' dormitory is the most distinctive, with the ground floor empty. The courtyard is enclosed by leaky walls that overlap with the buildings. The courtyard is equipped with plants, trails, seats, and pools, which is full of the artistic conception of Chinese gardens. "**Modern white-style courtyard**" refers to the white-walled buildings created by Chi-Kwan Chen after the 1960s, represented by the Art Center, Methodist Hall, etc. The landscapes of the courtyards have their own characteristics. Taking the Art Center as an example, its courtyard is a concrete floor with three steps of sunken steps. The doors of the small concert hall, which mainly faces the courtyard, can be fully opened, making the atrium a performance place that can be integrated with the interior space, which is very different from the traditional courtyard.

5. Conclusion

Hua Tung University and Tunghai University are the earliest attempts in the history of Chinese university campuses to integrate traditional Chinese culture to design campus landscapes under the principle of Modernism; the concept of taking Chinese gardens as a blueprint gives the campus an intangible artistic conception of traditional Chinese space, but no traditional architectural shape.

The issue of how to maintain self-identity in the process of modernization, taking Hua Tung University and Tunghai University as the paradigm, can be seen from the imagination of outsiders, gradually evolving into the interpretation of the Chinese self: Hua Tung University takes Gropius as the leader, and relies on Pei's interpretation of Chinese culture, adopts the approach of "Regionalization of Modernism", with a man-made curved lake as the center of the campus, surrounded by a variety of unqualified courtyards; rational and modular campus buildings and naturalized landscapes represent the duality of opposites. The Tunghai University, led by I.M. Pei, Chi-Kwan Chen and Chao-Kang Chang, adopts the approach of "transforming Chinese tradition into modernity", respecting to the special natural terrain, waterways



Figure 4. Wen-Li Boulevard of Tunghai University, Taichung, Taiwan, 2019. ©Ning Tsai, 2019.

and view of the Dadu Mountainside, and integrating the Western university campus model with the Chinese garden. Based on the modern simplified Chinese-style buildings and courtyards as the prototype, the spaces of different scales in the campus are encircled, thereby creating a campus space that is full of richness and diversity of positive and negative space.

Although Hua Tung University has not been realized, it can still be read the organizational relationship of the courtyard and building in the subsequent works of TAC, such as Harvard Graduate Center (1949), University of Baghdad (1957–61); I.M. Pei's Fragrant Hill Hotel (1982) and Suzhou Museum (2006) also continued to pursue the modernization of Chinese architecture; and after Tunghai University, Mr. Chi-Kwan Chen planned and realized Taiwan's Central University (1968), Central Police University (1977), National University Preparatory School for Overseas Chinese Students (1984), the courtyards and corridors of Chinese gardens continue to evolve in the core spirit of the campus landscape. Looking back at Hua Tung University and Tunghai University, it was an important milestone in the modernization of the campus landscape of East Chinese University from the 1940s to the 1960s, and it has an important position of inheriting the past and linking the future.

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Copacabana Promenade: design as heritage

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Fresh air became a luxury good in times of Covid-19 pandemic. After lockdowns' stringency is over, former enclosed activities have been adapted to be held in open air spaces, reinforcing the importance of well-designed parks, squares and sidewalks. This paper will address one of the most iconic Brazilian public open spaces: the Copacabana promenade, designed by Roberto Burle Marx. Extending 4,5 kilometers alongside Rio de Janeiro's waterfront, the three sidewalk lanes are a social living spot, housing multiple activities. Appealing to tradition, Burle Marx designed a Portuguese stone mosaic, but innovated by proposing modern and abstract patterns. It is an exceptional case of heritage-valued public landscape combined with social appropriation and very intense use. Unfortunately, Copacabana promenade's integrity has been constantly threatened. Many pubs and restaurants extended their structures over the pavement, ruining both the sidewalk materiality and the landscape; a number of potholes denounce the lack of appropriate maintenance – even if both the stone mosaics and the vegetation designed by Burle Marx are listed as municipal and state heritage. The promenade is also included in the "culture landscape" of Rio de Janeiro, listed as a World Heritage by Unesco, in 2012, highlighted for its contribution to the outdoor living culture. The case of Copacabana Promenade suggests that not always is materiality the real heritage. In some cases – such as some landscape architectures – materiality renovation is a requirement to design conservation and the fundamental document to heritage preservation is the paper and not the stone.

1. Will this kill that?

Elementary and ancestral raw material, stone has been used to build the spaces where human life takes place since ancient times. Often associated with permanence and durability, the most diverse rocky substrates have proved to be very resistant to the passing of time and to the climate, as they are generally the best preserved material evidences of a distant past.

Less old than the stone, paper came to be pointed out by Victor Hugo as its possible killer. "This will kill that", said the Archdeacon at Notre Dame de Paris when he predicted that the newly invented printing (the paper) would surpass the building (the stone) as a means of recording the history of men.

In architecture, the main expedient to register an ideal state of a building is the drawing, not the word. As a graphic piece able to be stored and cataloged, design can become both a consultation source regarding a present building conceived in the past, as a resource for a future materialization of an old idea. Design, therefore, is of interest not only as a prefiguration of a future building, but also as a guide for an intervention in architectures of any past.

As can be seen, contrary to what Victor Hugo's character stated, paper seems to be able to refresh architectures, even in the absence of their author, allowing new architectural operations based on old designs. Graphic recording is fundamental to enable architecture heritage preservation, especially when it is exposed to intense use and to permanent action of the elements, such as in the case of landscape architectures – whose relevance to healthy urban life have been greater than ever. Since the Covid-19 lockdowns' stringency is over, former enclosed activities have been adapted to be held in open air spaces, reaffirming the importance of well-designed public spaces and increasing the need for their proper conservation and maintenance, particularly when they are listed heritages.

This is the case of Copacabana Promenade, in Rio de Janeiro, one of the most popular Brazilian public open air spaces. (Fig.1) Mentioned by UNESCO as part of the *carioca* landscape, that was listed as a World Heritage Site in 2012, the large mosaic made of Portuguese cobblestone is a suitable example to explain the argument that this paper intends to address: the design as heritage.



Figure 1. View of Copacabana's Beach and neighborhood. Rio de Janeiro. Brazil. © Google Earth capture edited by the author.

2. Rocky waves

Portuguese cobblestone origins date back to Antiquity. At least since the first Mesopotamian civilizations, fragments of colored stone have been used as ground paving or as floors and walls cladding. However, it is possible to affirm that, in the case here in question, the greatest influence came from the ancient Romans legacy that – since Olisipo (Roman Lisbon) – already counted with large areas covered by mosaics.

The Portuguese stone pavement as it is known today seems to have emerged in the mid-19th century, in occasion of an urban renovation around the São Jorge Castel. In 1848, another Lisbon important public space was paved

with black and white limestone pieces: the Rossio Square. More than eight thousand square meters were clad with the winding lines of a pattern named Wide Sea, in honor of the Portuguese overseas discoveries. In the second half of 19th century, many other Lisbon squares were cobbled with the same technique and the Portuguese cobblestone spread out, mainly across the Portuguese colonies – the largest of them, clearly, Brazil.

Although Rio de Janeiro is the most remarkable Brazilian city regarding the use of Portuguese cobblestone, this paving technique was adopted at first in Manaus, northern Brazil. In 1901, the square on which Amazonas Theatre stands was cobbled with the same design pattern adopted in Rossio Square. If in Lisbon the Wide Sea waves symbolize the meeting of Tagus River with the sea, in their first use in Brazil, they represent the confluence between Negro and Solimões rivers. Only after a few years the Portuguese cobblestones reached Rio de Janeiro.

Brazilian capital at that time, the city of Rio got its first Portuguese stone sidewalks thanks to Francisco Pereira Passos, a visionary mayor (1902 – 1906). The black and white waves covered the sidewalks along the wide and long former Central Avenue (current Rio Branco Avenue), which was built in 1905, under the hygienist and modern influences of Baron de Haussmann achievements, in Paris.

The Pereira Passos' modernization urban plan also intended to build the Atlântica Avenue, besides a three meters wide sidewalk by the waterfront. As in the Central Avenue, the wave pattern was implemented, but not parallel to the sea, as it can be currently seen. It is certain that originally the waves were arranged transversally to the coast. Nevertheless, it is not possible to be precise about when the curves direction has changed. Many references indicate that it happened probably in the beginning of the 1930s, after a huge undertow, which would have dismantled the former pavement. (Fig.2) However some antique pictures show parts of the boardwalk in which it is possible to notice the coexistence of the two pattern orientations during the 1950s and even during the 1960s.

Thanks to the huge international fame that Rio de Janeiro and its Copacabana Beach reached during the 20th century, the Wide Sea pattern is commonly associated more with Brazil than with Portugal. The bicolor waves have become one of the most popular symbols of the *carioca* beach, appearing on postcards, clothes, souvenirs and so on.

During the first half of the 20th century, the Copacabana neighborhood grew and became elitist. To the mansions built along Atlântica Avenue was added the renowned Copacabana Palace hotel, inaugurated in 1923, which improved the international tourist vocation of the city. Besides being fully served by tramlines, the neighborhood was already prepared for the (still incipient) traffic of motor vehicles, given the duplication of the Atlântica Avenue lanes, carried out between 1918 and 1919.

In the 1930s, Copacabana was already completely urbanized, and the first tall buildings began to arise along the Atlântida Avenue. Gradually, the waterfront had changed its profile.

A new street network encouraged the increase of population, which quickly reached the 130,000 inhabitants – much more than the 20,000 in 1910.

In 1950, the mansions by the sea began to be replaced by skyscrapers of up to twelve floors and sophisticated commerce proliferated, making the district to surpass even the social and commercial vigor of the city Center.

In the 1970s, Copacabana had already more than 230,000 inhabitants, and the growing process began to change. Due to the high density of people and buildings, as well as to the establishment of the Cantagalo slum nearby, the wealthier families began to look for housing alternatives, away from the noise, the traffic and the lack of parking. In this way, neighborhoods west of Copacabana started to be occupied and upscale retail and services were transferred to districts such as Ipanema, Leblon, São Conrado and, later, Barra da Tijuca.

In addition to the loss of prestige, Copacabana was overpopulated, leading the government to think about widening Atlântica Avenue as an alternative to increase space for popular meeting, to improve the traffic and to solve problems caused by the constant undertows, such as the flooding of the waterfront buildings ground floors. The solution was an embankment that would enlarge in more than 50 meters the space between the buildings and the sand strip, which now has 80 meters as average width. The new embanked area also provided for a large underground sewerage that would lead the outfall to the high seas.

3. Architectural promenade

The artist and landscape designer Roberto Burle Marx was responsible for the Portuguese cobblestone composition laid down the Atlântica Avenue's 4.5



Figure 2. Upper image: the antique orientation of the waves pattern and the Copacabana Palace Hotel, in the 1920's, circa. © Available in <http://mosaicodobrasil.tripod.com/id4.html>, access in April 1, 2022. Bottom image: frame from the documentary movie "Rio, The Magnificent", produced by Metro Goldwyn Mayer, in 1932. Notice the waves becoming parallel to the waterfront. © Available in <http://www.youtube.com/watch?v=a7Q1k1TY168>, access in April 1, 2022.

kilometers. The promenade is longitudinally split between three strips: a 10-meter sidewalk along the sand; a 14-meter band separating the two directions of vehicle flows (3 lanes each); and a 28-meter-wide boardwalk next to the buildings.

Alongside the beach, the waves pattern has been kept, despite the new design (with curves resulting of semicircles and not of ellipses) and the bigger scale. There is no consensus in historiographical resources concerning who decided about it. It is not possible to know for sure if it was a Burle Marx's choice or a commission premise. Based on the fact that the original tracing paper sketches show only the two larger bands, it is possible to argue that the narrower one was not under Burle Marx's scope – even though the landscape designer himself had used a very similar sinuous pattern in his design for the Museum of Modern Art's gardens around 10 years before. (Fig. 3)



Figure 3. Upper image: Burle Marx drawings for the eastern sector of the promenade. © Photographed by the author in occasion of the MOMA Exhibition "Latin American in Construction: Architecture 1955–1980", New York, 2015. Bottom image: View of the sector in correspondence with the upper drawing. © Google Earth capture edited by the author.

In order to guide his design decisions, Burle Marx requested an in-depth survey of the buildings' accesses and of the parking areas along the Atlântica Avenue. He also took into account the 32 streets that connect the boardwalk towards to the hills, so that it would be possible to conceive a landscape design suited both to the pre-existences and the pedestrians.

Burle Marx's design main goal was to provide an attractive urban environment for people get around and congregate. In this sense, free spaces should

prevail and adequate paving was priority. Vegetation was sparingly distributed and carefully chosen. The Portuguese cobblestone was very suitable and convenient as it recovered a local tradition and, given the large area to be paved, was effective in terms of soil permeability and maintenance. Keeping the tradition with stone, Burle Marx innovates on paper, proposing a modern design language with abstract and organic forms, in a scale proper to be appreciated from above – a fruition way that did not depend on an air trip anymore, since it could be experienced from the higher floors of the boarder skyscrapers. The chosen colors for this hard gardening were black, white and, later, reddish. Appreciating the paved work of art, however, would not be an exclusive privilege of the upper floors inhabitants, even more so that the pedestrian should be the promenade's protagonist. In this sense, graphic abstraction collaborated, since the perspectives distortions at the ground level did not harm the experience and would add surprise and dynamism to the tour.

Burle Marx sketched the boardwalk in pencil or ink on 10cm wide strips of paper. He initially released general guidelines for the entire project, and later detailed it block by block. The design work process involved at least three stages: after the master's sketches, his team redesigned the composition in scale (although the drafts already took into account the proportions) and passed it on to a draftsman who was responsible for the precise drawing on tracing paper. All this design process should happen quickly, once the decisions were usually taken concurrently with the construction site labors.

The vegetation was defined based on the pavement's design. The species were chosen in order not to hinder pedestrian traffic or the floor graphics observation. Contrary to what happens in most of Burle Marx's projects, there is no vegetation covering the ground, not even shrubs. The landscaper made use of plant species whose height offered a pleasant shade for pedestrians, and whose stem did not imply important visual obstruction for the observer.

Both the position and the design of the urban furniture were defined at last, consisting basically of concrete benches and light fixtures. The gas stations were added after the project was completed, and required modifying the blueprints and remodeling some sections of the central boardwalk band. Another project alteration resulted from the public authorities refusal to close some intersections between the Atlântica Avenue with transversal secondary streets, forcing Burle Marx to tear the former promenade unity, fragmenting the bands more than it was originally intended.

The first drawings of the boardwalk date from April 1970, and the last blueprints are from February 1971. Considering that design work and construction site were concomitants, the building process took practically only one year.

The drawings made on a grid with two-meter modules were scaled up from paper to stone by the workers, who sat first the black pieces that represented the thick lines, and then the white or reddish fillings, according

to the technique adopted by the Portuguese stoneworkers since the previous century. Unlike Portuguese stone patterns with repetitive designs (as in the case of the band next to the sand), the abstract and irregular forms of the two larger sidewalks strips did not allow the use of wood molds, and depended on the precision of the workers that could count only with stakes and wires.

Burle Marx's office carried out all the Copacabana Promenade adaptations until 1992, year of the project for Almirante Julio de Noronha Square, in Leme, at the eastern end of Atlântica Avenue. Subsequent interventions on the Copacabana landscape beachfront, such as the implementation of a bike lane in the area formerly reserved for parking alongside the beach sidewalk, were unrelated to Burle Marx & Cia Ltda.

4. Design and heritage

In 1991, the boardwalk set was listed as heritage by the state of Rio de Janeiro, as a fundamental part of the urban-landscape compound of Leme, Copacabana, Ipanema and Leblon beaches. This should provide for the protection of Copacabana Promenade's sidewalks materiality and vegetation. In 2009, on the occasion of the Burle Marx's birth centenary, all his landscape designs in Rio de Janeiro were listed, reinforcing the safeguard of the promenade. In addition, in 2012, the city of Rio de Janeiro had its "carioca landscape between the mountain and the sea" designated as a World Heritage, as previously mentioned.

Despite the institutionally recognized safeguard intentions, Burle Marx's promenade has been suffered harmful interferences over the years, such as the expansion of ground floor private areas over the patterns (of restaurants, pubs and residential buildings gardens); the obstruction of entire sectors by restaurant porches or by market stands; the urban furniture deterioration; the new kiosks on the beach sidewalk; the mosaics dismantling due to rock pieces replacement or to access underground infrastructure; the indiscriminate tree planting by neighborhood people; the serious original design deformation in some areas. (Fig.4)

In her book entirely dedicated to Burle Marx's design for Copacabana Promenade, when introducing the topic of heritage management, Julia Rey Pérez states:

The Burle Marx's design for Copacabana sidewalk is currently protected by the State Institute of Cultural Heritage of Rio de Janeiro (INEPAC), belonging to the Secretary of State and Culture. The protection request document with case number E-18/000.030/91 and dated January 9, 1991 is called Urban-Landscape Complex located on the Rio de Janeiro waterfront.¹

Notice that the author associates the heritage value with the boardwalks design and not with their materiality, although the mentioned document

addresses the work done. In this case, what should prevail as heritage, stone or paper? Should it be preserved the sidewalk itself or the Burle Marx design intentions graphically recorded?

Replacing blocks portions is not only non-exceptional, but also expected and often necessary for the proper conservation of the Portuguese cobblestone pavement. Hence, in cases like this maintenance of design purposes surpass the concern for materiality preservation. What matters most is to preserve the landscape as a set and as a unique public work of art, not each cobblestone piece itself. Authenticity of this kind of heritages has to do more with the respect for the design determinations than with the conservation of original materials.



Figure 4. Upper images: Views of the “permanently temporary” awnings in the corner between Atlântica Avenue and Santa Clara Street. Bottom images: Views of the “permanently temporary” awnings in the corner between Atlântica Avenue and Sousa Lima Street © Google Earth captures edited by the author.

Acknowledging the intangible design and not only the tangible built architecture as heritage worthy to be preserved may help to solve an antique philosophical paradox: the Theseus Ship. According to Plutarch’s narrative, the ship wherein Theseus returned from Crete to Athens after killing the Minotaur had thirty oars, and the Athenians preserved it for more than a thousand years. As time went by, they took away the old planks as they decayed, putting in new and stronger timber in their place. The ship tale became a standing example among the philosophers, for the logical question regarding individuation and, for extension, authenticity; does the Theseus

ship remained the same as its parts were being replaced or did the Athenians make a fake? Going further, assuming they made a false ship, how many planks replacements could be made without ruining the original one?

Paper, therefore, sometimes is stronger than stone. Not because its destructive potential – as predicted Victor Hugo – but precisely the opposite: thanks to its capacity of being a reliable resource to guide maintenance, restoration or reconstruction of architectures and landscapes. Furthermore: it is possible to assume that in some cases materiality renovation is a requirement to design intentions safeguard and the fundamental document to heritage preservation is the paper and not the stone.

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Notes

- 1 Julia Rey Pérez. *La intervención de Burle Marx en el Paseo de Copacabana: un patrimonio contemporáneo* (Sevilla: Junta de Andalucía. Consejería de Cultura, 2011), 143. Our translation. Our emphasis.

Contemporary continuity of an introverted heritage site – The case of the Cité Modèle of Heyssel (Brussels, Belgium)

Morgane Bos

UCLOUVAIN (BELGIUM)

Designed to be one of the masterpiece of the 1958 International Exposition, the Cité Modèle of Heyssel is one of the few progressive Belgian social housing complexes adhering to the CIAMs precepts. This type of urban development referred as “grand ensemble” is exceptional within the Belgian borders in particular due to the introverted character of the original plan. Indeed, the radical composition of the Cité Modèle clearly expresses the will to break away from the traditional urban fabric becoming a self-sufficient entity, protected from the “chaotic” existing city. Renaat Braem, emblematic figure of the Modern Movement, known as a part of the heterogeneous team of Belgian architects who designed the Cité Modèle, was convinced that the city, by its intimidating external monumentality and its inner serenity, would reorganize social relations and thus generate a new, more liberated human. Once considered as a virtue, this introverted aspect of the social housing design has a “ghetto” resonance today. After some golden years, it became place of relegation of vulnerable populations. In addition, the pilot city has been slashed by its infrastructure of collective social and by its individual housing units that originally had to balance the site density. In recent years, the choice made by the owner in order to face contemporary issues was to reopen the whole site to its environment while strengthening the architectural unity and the strong identity of the buildings. To achieve this, they hired Gilles Clément to rethink the landscape areas. This paper aims to question the legitimacy and sustainability of this built and landscape heritage but above all its continuity. The contribution is an opportunity to open a window on the Brussels’ current position to better understand the reception of Modernist era legacy, in general, and specifically the policies of intervention on the post-war housing heritage.

1. In the wake of the Second World War, the period of the ‘Trente Glorieuses’ saw the construction of numerous collective housing units in Brussels, as in other European cities. Unlike neighbouring France, the urban development referred to as “grands ensembles” is not very common in Belgium. With the exception of a few notable ensembles such as the Kiel in Antwerp (Renaat Braem, 1951) and the Cité de Droixhe in Liège (EGAU, 1951), most high-rise buildings are integrated into the urban fabric and are therefore an integral part of the built environment. The Cité Modèle appears as a rather exceptional object.

A kind of fragment, even an enclave, which allows one to withdraw into a new world created from scratch, with some points of contact, which leave the

possibility of rare connections with the outside. Both the specific aesthetics and the autonomous settlement on the site unequivocally express the concern for another world, a better world.¹

2. Faithful in many respects to the precepts of the CIAM, the Cité Modèle is considered today as an emblematic place of the utopias of the 1950s. Not only for its undeniable qualities and innovation in terms of urban planning and architecture, but also, and above all, for the ideology it embodies and what it says about the time of its construction.

Architecture as a social tool

3. “Het lelijkste land ter wereld” (the ugliest country in the world) is the name of a pamphlet written by Renaat Braem, one of the most representative figures of the Modern Movement in Europe who occupied in Belgium a position comparable to that of Le Corbusier in France. He is not only known for the many emblematic buildings he built in his homeland, but also for the explicit ideological thinking with which he framed his building activity. Throughout his career, he was an outspoken critic of Belgian urban policy while at the same time working hard for a radical transformation of the built environment. From his early age, he set himself up against all the obstacles to this development: clericalism, formalism, traditionalism, capitalism, which were, in fact, all the prevailing values in post-war Belgium.

4. Braem used many ways of communication to spread his ideas, which includes his teaching practice and countless lectures, drawings and publications, written in a direct style, of which this pamphlet illustrates the offensive tone towards the institutions of his time. “He spared no effort to obtain a ‘total architecture’, a total organization of the human environment which, he felt, would act as a ‘lever’ to create a ‘liberated’ socialist society.”² In this ideology, he opposed Le Corbusier, with whom he worked as a trainee between 1936 and 1937. If Le Corbusier was clearly a model for him, a luminous point of reference whose rise and evolution he followed closely, Braem cannot definitely be reduced to a Flemish version of the master.

Fragment of a new planned universe

5. Renaat Braem is also known as a part of the heterogeneous team of Belgian architects who designed the Cité Modèle of Heysel.

Initiated by the socialist deputy Fernand Brunfaut who came to power after the long reign of a social-catholic formation, and who probably saw an opportunity to use the funds of the exhibition to the benefit of Brussels’ inhabitants, the Cité Modèle had to be one of the masterpiece of the 1958 International Exhibition. It aimed to show visitors from all over the world Belgium’s ambition and innovation in terms of housing and urban planning

for its workers. The idea having emerged rather late in 1954, a commission appointed a college of six architects at the end of 1955, chosen for their previous achievement and their political and regional affiliation. These architects included: two Flemish, Renaat Braem and Victor Coolens; two Walloons, the group l'Equerre and René Panis; and two representing Brussels, the group Structure and Jean Van Doosselaere. While the eleven protagonists was clear, we can clearly note the advantage taken by Braem from the beginning of the project. From the very first sketches, his influence, facilitated by his typical graphic power³, is obvious.

From the inside of the houses we can see the entire residential part of Brussel, from Laeken to the Basilica of Koekelberg. In the immediate surroundings, the banal expansion of the so-called garden cities and fallow sites forms a front of ugliness against which the new neighbourhood will have to fight, with the help of its aggressive and defensive composition. The basis of the entire concept is the following: to form an island of conscious order and clarity in the chaotic layout of the streets filled in Brussels with particularly incoherent buildings. This can only be expressed in an orthogonal composition of lines and plans worked out in all its details, to give the complex a monumentality which will serve to react against the general urbanistic and architectonic inertia of the area.⁴

6. Indeed, the radical plan of the Cité Modèle clearly expresses the will to break away from the traditional urban fabric, becoming a self-sufficient entity, an island of clarity and joy of life⁵, protected from the “chaotic” existing city.

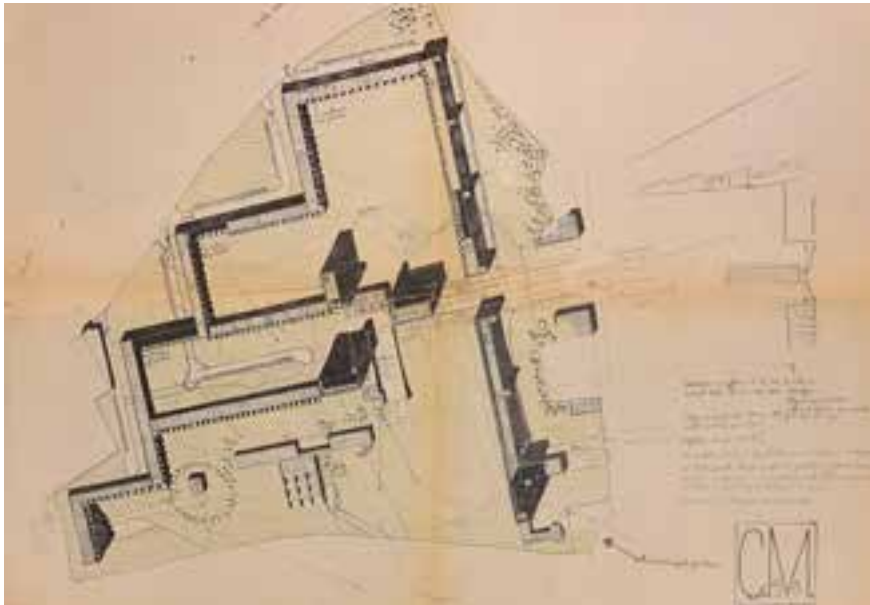


Figure 1. Renaat Braem, “Cité-Modèle”, Brussels, Belgium, Braem’s first sketches already express the introverted character and the idea of ramparts around the plot © AAM/Fond Braem, 1956

(Fig. 1) By “chaotic city” Braem also considered the recent achievements of the International Exhibition which illustrated the whole global constructivist tradition that he disdained.

The project of the Cité Modèle was the perfect opportunity to experiment and apply his ideology, through dealing with ‘the art of organizing the human environment for the physical and psychological liberation of humanity.’⁶ Braem was convinced that the city, by its intimidating external monumentality and its inner serenity, would reorganize social relations and thus generate a new, more liberated human.

7. The whole morphology of the site expresses this introversion. On the east side of the plot, a rampart is materialized strongly by the succession of two buildings totaling nearly 300 meters in length. This wall should have had on the exhibition’s visitors an effect of purifying impression by finding themselves inside the radiant order of a new planned universe.⁷ Between the two

buildings, a rather monumental slope leads pedestrians to the “main street” **(Fig. 2)** Similar processes tend to form a rupture at the edges of the plot. In the south of the site, the barrier is created more subtly by a large empty green space on a natural slope. This space offers few paths, which undeniably creates a rupture. On the north–west side, a vast wall of low–rise houses should have been built in order to balance the site density. Unfortunately, they were never constructed and were replaced in the 1970s by crude housing blocks scattered all over the place (n°9 to 12) in order to meet the urgent housing needs through more intensive land use. As a kind of sentinels⁸, three



Figure 2. Renaat Braem, “Cité-Modèle: rampe des Citronniers in the 1970s”, Brussels, Belgium, Monumental slope for entrance ©Sint-Lukasarchief

isolated high-rise buildings (n°4, 5 and 8) surround the large triangular plot. Finally, at the highest point of the site, the Place Haute lined with colonnades, appears in Braem's sketch drawings as the heart of the Cité. Surrounded by three high protective buildings (n°1 to 3), the square was initially planned as a public space for social, political and commercial gatherings, a modern version of the Greek agora.

8. The Cité Modèle stands out from its surroundings by its rigorous orthogonality. It asserts itself by a culture of right angle that strictly governs the composition, which is, according to Albert Bontridder, "the best way to ensure that randomness, the unforeseen, the limpness will not tarnish the work"⁹. The only one exception is the 'Place Ronde', located at the lower point of the plot at the corner of Avenue des Citronniers and Avenue Arbre Ballon. This square was planned to be surrounded by shops and was thus supposed to create a focused entry point, a welcoming gesture.

9. Furthermore, the low-rise individual housing units are not the only part of the project to have undergone an intensive redesign due to economic and political fluctuations. Indeed, the pilot city, conceived as autonomous, should have benefited from many collective social infrastructures, as the original plans show. Neither the church, nor the schools, nor the gymnasium, nor the library were actually built. Among the social facilities intended to support social emulation, only the social centre has been constructed but was stripped of its original specific characteristics. With these facilities, "the cultural axis" also disappears from the executive plan ... with all that this entails in terms of social significance.

Utopia vs reality

10. Once the excitement of the exhibition had passed, the stakeholders realized that the project was too expensive. The quest for profitability gradually eroded the initial project. In addition to these drastic program cuts, architects were also asked to reduce ongoing construction costs, which further impaired the quality of the Cité.

Ultimately, only half of the original project was built and the memory of the complete ensemble remains embodied in the model that was proudly displayed at the 1958 Exhibition. Slashed by a part of its essence, the utopia of the 'new universe' never really came true. Despite the great qualities of its design, the pilot city does not carry the social values imagined by the college of architects in the 1950s.

Qualitative and promising outdoor spaces

11. Freedom, dear to Braem, was fully expressed in the green spaces that he carefully designed. The writings he published in magazines, as well as the

numerous sketches found in his archives, speak for themselves. The public outdoor areas, as they should have been built, reflect a very modern and functionalist approach in addition to a sense of detail that is very human-oriented. Spatial organization, roads, paths and visual axes, as well as the way in which they are enhanced by, and interact with, the high-rise buildings, contribute to the urban and architectural quality of the Cité Modèle.

12. In Braem's original city project, both mineral spaces and plant areas were clearly arranged. Car parking spaces were defined and there was no continuous traffic through the site. The park was equipped to encourage social interaction with areas for play, sports, rest and meditation. At the same time, nature had ample space to expand and grow, freely engaging with high-rise buildings.

13. Using the potential offered by the natural topography, all the multiple pathways were meticulously defined as illustrated by the one that borders the 'Place haute'. Sometimes covered, sometimes open, the path should have led to a terrace built on the roof of the social center, which offers a panoramic view of Brussels. The walk consisted of a sequence of deliberately created spatial impressions and perspectives and the view was ultimately the highlight of the stroll. There, the terrace would have been topped by a sculptural composition in reinforced concrete whose theme is the right angle. "Surrounded by an ellipse with the symbols of earth, air, fire and water, which means that humans, in the midst of the natural elements that surround them, express their will to control their destiny through the right angle, the sign of human order."¹⁰ For Braem, it was about elevating urbanism and architecture to their highest social and cultural significance. (Fig. 3)



Figure 3. Renaat Braem, "Cité-Modèle", Brussels, Belgium, Perspective view of the social center topped by the right angle monument © AAM/Fond Braem, 1956

Rethinking the landscape for a new connected Cité Modèle

14. Fifty years after the first idea emerged, the buildings are gradually ending their first life cycle. In order to meet the new technical, environmental and societal challenges, the Foyer Laekenois, main owner of the Cité Modèle, launched a procedure for renovation in 2004. The objective is “to maintain the buildings’ expressiveness while giving them a technical facelift”¹¹. The position adopted, as expressed in the official documents, is to preserve or even strengthen the overall unity of the site, but not necessarily by aiming for uniformity. A new college of architects was formed as it was in the 1950s. It consists of three Belgian architects with strong references.

15. The winning team is responsible for producing a masterplan that guarantees a coherent long-term vision, based on a rigorous and in-depth diagnosis of the site. Intended to be evolutionary, it presents a certain degree of indefiniteness in order not to hinder future developments. Structured around four distinct fields of action (the Core, the Ring, the In-betweens, the Carpet) regarding the different sectors and aspects of the site, the masterplan confirms the existence of a global intervention strategy. The “Core” designates the heart of the Cité while the “Ring” is the part of the site that makes it perceptible from the surrounding exterior. The intervention approach adopted for these two perimeters is radically different. Considering that buildings 1 to 8 are the oldest and the most exemplary, the “Core” should have been carefully restored, respecting the original architectural concept. Unfortunately, some financial, logistical and technical requirements have somewhat modified the ambitions, forcing the architects to adopt a more interventionist attitude, which nevertheless guarantees a certain homogeneity of the ensemble. Regarding buildings 9 to 12, they have been subject to a more straightforward intervention: stripping, extension, and new façades. Through this process, it clearly appears that the choice was to better connect the whole site to its environment.

16. To achieve this goal, among other initiatives, the team of architects hired the famous garden designer Gilles Clément to rethink the landscape areas. “Carpet”, which designates the landscape project in the masterplan, expresses particularly well the continuity of the landscape under and through the buildings. Clément’s intervention was made possible by the “1% artistic”, an initiative that allows 1% of the works budget to be set aside for the creation of a piece of art dedicated specifically for the site. Considering the space as an artistic work, Clément began his intervention creating a “Staircase–Garden”. From a strictly functional point of view, the staircase acts as a major link between the blocks and the shops on the other side of the avenue, which the project never achieved because of the removal of the school in the original plan. However, the arrangements, typical of Clément’s work and his thesis “Jardin en mouvement”, i.e. oversized staircase, interruption of the flights of stairs by planted areas, spontaneous ecological management of the surroundings, nature “in motion”, transform the functional project into a place where the expression of nature works for social interaction (**Fig.4**). At the

same time, Clément's staircase provides a new reading to the topography, on which the original architects' team had already based the articulation between the squares.

17. As a result, the impression that emerges from this transformation is mainly about the shade of nature colours. Whereas the landscapes were essentially dominated by a uniform green, due to the omnipresence of maples, the wish was indeed to add new atmospheres and a stronger experience through the seasons, by planting trees and shrubs with characteristic traits, such as a spring bloom, a special smell, edible fruits, a particular color in autumn, etc.



Figure 4. Gilles Clément, "Escalier-Jardin", Brussels, Belgium, View from tower n°3. © ARCHHistory/APEB,2018.

On heritage preservation

18. If Clément's intervention falls within the guidelines of a rigorously established master plan, the modes of expression of his work are barely compatible with the initial guiding ideas, which promoted freedom through order. As a result, the organic layout of the Cité Modèle's boundaries contrasts with the original orthogonal patterns, leading to questions about the relevance of such an approach in terms of heritage preservation. Since the contemporary intervention is fundamentally different from the 1960s project, it is certainly appropriate to consider Gilles Clément's work as a contemporary piece of art within the original one.

19. More generally, it would be interesting to reconsider the legitimacy of providing urban continuity to an originally introverted heritage site like the

Cité Modèle. The approach favoured by the team of architects is based on the hypothesis that architecture is responsible for social ills. It is a recurring observation: architecture is frequently associated with the failure of 'living together'. However, if modern architecture has not kept its great promises of freedom in its time, it has not either caused the often-described social devastation. Indeed, sociological studies¹² reveal that many variables are involved in the social success of an urban project and architecture is only one of them. Would architecture be a "compromise", a concept that Braem was actively running away from?

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Notes

- 1 Jan Schreurs, "A la recherche d'une authentique urbanité: entretien avec Marcel Smets", Bruxelles, *A+*, 2001, 68.
- 2 Francis Strauven, *René Braem : Les aventures dialectiques d'un moderniste flamand*, Bruxelles, Archives d'architecture moderne, 1985, 103.
- 3 Ibidem, 165.
- 4 Renaat Braem, "Modern wonen in België", *Kompas* n°1, 1960, 16.
- 5 Renaat Braem, "Modelwijk Heysel Brussel", Antwerpen, *Bouwen en wonen*, 1958, 273.
- 6 Ibidem.
- 7 Francis Strauven, op. cit., 166.
- 8 Pierre Bernard et al., *La Cité Modèle à Bruxelles, Vie(s) d'un grand projet*. Bruxelles, Editions Aparté, 2012, 69.
- 9 Albert Bontridder, «La Cité–Parc du Heysel», *Habiter*, revue éditée par l'Institut national du logement, 1958, 416.
- 10 Renaat Braem, "Modelwijk Heysel Brussel", op. cit., 279.
- 11 S.c. Le Foyer Laekenois, "Appel d'offre général, Marché d'étude", Bruxelles, 2004, 5.
- 12 Christine Schaut, «Tout au nord des tropiques : une architecture moderne à Bruxelles», Bruxelles, CLARA, Éditions de la Faculté d'Architecture La Cambre Horta, 2017.

The modern garden in German schools in Spain and Portugal. Rubió i Tudurí at the *Deutsche Schule Valencia*

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At the end of the 19th century, German schools were founded in Spain and Portugal. Their primary objective was to keep the descendants of the German colonies in contact with the cultural values of their nationality, without excluding Spanish pupils from gaining knowledge of these values.

After the Spanish Civil War, many schools renovated their premises and new buildings were constructed in accordance with the canons of German educational architecture, created in the architectural trend of the Modern Movement. They were designed by the *Bundesbaudirektion* in Berlin, and a *kontakt architekt* was appointed in the city of destination to direct the work. This German–Spanish collaboration led to the involvement of local technicians, including landscape architects and garden designers.

These groups of buildings are generally located in an open area, isolated constructions, with no party walls, where the garden or green area occupies a large part of the surface area and, in new forms for a new architecture, modern gardens are planned.

The uniqueness of the spaces that are generated between blocks of each school building gives rise to water features or even fountains that are designed as works of art. The permeability of these gardens often flows between the ground floor from the street to the private courtyard of the kindergartens, essential elements in German schools, where open–air education is promoted.

From the letters between Pablo Navarro, chief architect of the *Bundesbaudirektion* in Valencia, and the Catalan landscape architect Nicolau–Marià Rubió i Tudurí, the project for the garden, which was designed to give continuity to the large block occupied by the volumes designed in Germany, was drawn in an unpublished form. This was the first school that Rubió i Tudurí designed in this city according to the canons of what we call a modern garden.

1. German Schools and the modern movement

The origin of the German Schools in Spain and Portugal dates back to the end of the 19th century, just at the time when Germans emigrated to other countries in search of work. The trades they came to occupy were mainly jobs related to port activities, industry, and new communications such as the construction of new railway lines.

The presence of German colonies distributed geographically and strategically along the coast and in the most important capitals of the peninsula and the islands, is the definitive impulse for the creation of schools for the schooling

of the children of immigrant families in these locations¹. Over the years, the German government took over the support and promotion of these schools, as awareness of the importance of this instrument for cultural policy abroad grew.

It was during the Spanish Civil War that the German Schools really came to a turning point. Many of the school buildings were taken over as military barracks, bombed or used for other non-educational purposes. Many of these schools continued to give classes in private houses given by German families still living in Spain, and many others closed permanently².

At the end of the war – and in the midst of the Second World War, in which Spain and Portugal declared themselves neutral – the German schools in these countries reopened their centres, teaching activity resumed and, in many cases, new buildings had to be constructed, as the old ones had become practically unusable.

During the Second World War, they were under the influence of Nazi Germany, but when the war ended, the Allies closed the schools and expropriated all the buildings, which were subsequently auctioned off and acquired by various institutions.

Those German educational institutions that managed to survive the cessation of teaching activity in the schools during the war took advantage of the situation to completely renovate their image and build new buildings. It was then that the different Cultural Associations of the German Schools in Spain and Portugal began a new phase, in which they delighted us with buildings constructed according to the canons of German educational architecture created in the architectural current baptised under the name of the “Modern Movement”.

2. The modern garden in modern school architecture

The modern school heritage is understood as a particular case of modern architecture in terms of equipment. Through the works belonging to this period, established between 1925 and 1965, it is one of the ways of understanding the society of that time.

In the case of the German schools in particular, in addition to a change in architecture, there is also an influence of German architecture in the social, educational, architectural and technological areas.

Of all the different sites that form part of the history of the different German Schools in Spain and Portugal, five, specifically, belong to this period³, such as the sites of the German Schools in Bilbao, Valencia and Madrid in Spain, and Lisbon and Oporto in Portugal.

The first three were included in the *Do.Co.Mo.Mo. Ibérico* in 1990. The other two are not included for the moment, but present more characteristic modern features and deserve a detailed study.

As the research work prior to this article shows⁴, the projects for the schools in Madrid, Lisbon and Valencia appear in a German publication, *Planen und bauen im Neuen Deutschland*, in 1959, which showed the projects for buildings to be constructed in other countries coordinated by the *Bundesbaudirektion*⁵ in Berlin.

One of the aspects they have in common is that they are designed as a group of independent buildings connected to each other, allowing the creation of green spaces in the open air, in the form of courtyards and gardens. And these gardens, surrounded by modern architecture, are inevitably designed as modern gardens.

Open-air education has its origins in the guidelines that were being proposed in Germany as early as the 1940s, with the *neue Schule*, the new school. School activity takes place both inside and outside the classroom. The pupils take over every corner of the school's perimeter. Garden areas, vegetable porches, water features, ponds, planters, paved courtyards, rockeries... Any space is susceptible to being used for an activity, and therefore has to be designed in the same way as the interiors of buildings are laid out.

In Spain, although later, these concepts were introduced thanks to the new models of German schools. Specialists such as landscape designers, sculptors or even mural artists are involved in the design of each part of the school. And in most of them they are usually relevant professionals.

In the case of the landscaping of the *Deutsche Schule Valencia*, it is known through oral sources that Nicolau-Marià Rubió Tudurí⁶ was in charge of designing the main garden in Jaime Roig street, but it had not been possible to corroborate until today, as the original documents of the project's memory have just been found in a historical archive⁷, that all the exterior spaces of the school were also designed by him. For this reason, we will focus the analysis of this article on the exterior of this building.

3. The *Detusche Schule Valencia*. History and origin of the building

In 1954, when the German School Association of Valencia, founded in 1909, had just been reconstituted after the German institution's hiatus during World War II, the Federal Republic of Germany acquired a usufruct of land from the School Association in order to construct a new building.

The *Bundesbaudirektion* of Berlin chooses Pablo Navarro Alvargonzález as *kontakt Architekt*, as he is a German-speaking architect resident in the city⁸. The contract includes setting up a studio in the city exclusively for the project, supervised by Peter Müller, the German state architect (*Bauleiter*) sent to

Valencia (together with his wife, who will act as secretary). Also coming to Valencia is the technician Rolf–Dieter Weisse, whose function is to help draft the project (*Entwurf/Bearbeitet*).

Together (the Valencian and the Germans), they draw up the final programme after visiting several schools in Germany (specifically in Bonn and Cologne, taking advantage of the trip to sign the contract), to finally present a project and a budget, which cannot in any way be exceeded.

Another condition is that most of the materials used in its construction will be shipped from Germany. This will be one of the main reasons for the contribution of new construction techniques to modern architecture in Valencia.⁹

The first impression of the *Deutsche Shule Valencia* as a whole is that of a building particularly influenced by the Germany of the late 1950s, a country which, after the vicissitudes of the Second World War, was once again embarking on a programme of renewed national reconstruction. This, in architectural terms, would translate into a return to the principles of the modern movement, postulated years earlier at the Bauhaus.

4. Urban context and the gardening at Jaime Roig

Focusing on the purely local context (the late 1950s and early 1960s), it is worth remembering that the Modern Movement was becoming increasingly present in the city, and that this was the case with the new urbanism. This was the time when the introduction of free–standing buildings instead of closed blocks was gaining momentum, especially in the area around Av. Jaime Roig, where the school was located. A street of new urbanisation and, therefore, of new architectural habits¹⁰.

Jaume Roig Street began in 1927, as a perpendicular to the new *Avenida Blasco Ibáñez*, known as *Paseo Valencia al Mar*, and ends at *Primado Reig*, a traffic ring road. It borders the *Viveros Municipales* and is close to the *Alameda*, the site of the expansion of the Valencian bourgeoisie at that time.

It was classified as a garden city area because it began with a block of villas for the journalists' guild, but with the passing of time, the building typology of the area evolved into open buildings in the form of towers or blocks due to the particular modifications made each time a licence was applied for. These blocks were endowed with private garden areas, as was the case with the spaces generated in the layout of the buildings in the project for the *Deutsche Schule Valencia*¹¹

The new project for the *Deutsche Schule Valencia* is located on a plot of 8,483 square metres in the north–west of the city, 1.5 km from the city centre. The existing Faculty of Medicine and the other university schools encompass the whole within the educational district of Valencia.

To the west of the plot, the main building consists of 17 classrooms, reception, staff room, headmaster's room, library, drawing room, physics laboratory, changing rooms and toilets. On the north side, connected to the main building by a covered passageway, is the double-height gymnasium (convertible into an auditorium) with the necessary auxiliary rooms. To the east is the kindergarten, arranged on a single floor and structured into five classrooms and a covered play area, bathrooms and toilets, a room for the director, a room for the staff and a small kitchen. The three volumes, perpendicular to each other, house a courtyard open to the south (**Fig. 1**).

5. Preserved documentation of the garden of the *Deutsche Schule Valencia*. Graphic memory and written memory

The interview with Pablo Navarro Esteve, son of the architect Pablo Navarro Alvargonzález, reveals that Nicolau Marià Rubió i Tudurí was commissioned to design the main garden of the German School in Valencia. This landscape designer also designed the gardens for the *Sagrado Corazón de Jesús* school in Godella¹² (1955) and the *Jesús y María* school in Valencia¹³, but the only one that meets the canons of the modern garden is that of the *Deutsche Schule Valencia*.



Figure 1. Aerial view of the DSV at the time of completion in 1961. © Historical Archive of DSV.

"However, before that, there is evidence of the introduction of a small-scale landscape culture, which came in the fifties with the naturalistic and "Mediterranean" gardens designed by the Catalan architect N. Rubió i Tudurí, initially for the residences of the Serratosa, Gómez-Trénor families, etc. In Rocafort, Jávea and Valencia, and later for schools, factories and hotels, scattered throughout the capital and the province of Alicante; it is common to find sinuosities and refined combinations of masses of trees, shrubs, grass and flowers with rockeries (Fig. 4), defining chromatic itineraries that invite visual routes, of later influence on local gardening^{14a}".

In the interview, the latter emphasised that, through this urban planner, *"the mulberry trees that decorated the access to the original plot were removed and palm trees were planted for the first time in Valencia in the middle of the city"*.

The following documents have been extracted from the archive of the Fernando Rubió Tudurí *Biblioteca-Arxiu* in Mahón:

- Five typewritten letters signed by the *Bundesbaudirektion* of Valencia. P. Müller and P. Navarro and addressed to N.M. Rubió.
- Descriptive report of the project (4 pages)
- List of plants of the project (3 pages). Classified between Trees (20 species) and Shrubs (30 species).
- Two photographs of the original model of the *Deutsche Schule Valencia*.

From the Historical Archive of the Territorial College of Architects of Valencia. Only one image has been extracted, the only one deposited in this file (**Fig. 2**).



Figure 2. Image of the access garden to the main building of the Deutsche Schule Valencia. The author is unknown, and also the year, but they are probably from the same collection that Calvo made previously to the inauguration. © Historical Archive of Colegio Territorial de Arquitectos de València."

6. Conclusions

From the project's descriptive report, it is clear that the landscape architect intervened in all the exterior spaces of the plot, as he began his discourse in this way:

"The various parts that make up our project, grouped into seven "Positions", are not to be considered as independent entities, but rather constitute a single garden, providing unity of conception, unity of style and – it must be achieved – unity of execution.

[...]

When we consider the different "positions", we must bear in mind that each of them also forms a whole".

They are described in detail in the following locations,

Position 1: Jaime Roig main façade garden – west. (Fig. 2).

Position 2: Service area garden – north.

Position 3: Garden located between the main building and the multi-purpose pavilion – north.

Position 4: The large central courtyard, the largest and most diverse of positions – south.

Position 5: Spaces adjacent to the kindergarten classrooms – east. (Fig. 3).

Position 6: Free space for play – north-east.

Position 7: Planting reserve for practical gardening work – south-east.

It is interesting to have the descriptive report as well as the lists of plants, trees and shrubs of the project, but not the original plan of the project.



Figure 3. Image of the patio of the Kindergarten from the Deutsche Schule Valencia. © Calvo, 1961, Historical Archive of DSV

For some time, we were waiting to receive a reply from the historical archive, indicating that it had appeared... But reading the letters sent by the *Bundesbaudirektion* of Valencia, the waiting time and, therefore, the hope of finding it quickly stops when we read the following paragraph:



Figure 4. Image of the access garden to the main building to the secondary stairs of the *Deutsche Schule Valencia*. It shows the rocks in the garden and the small palm trees © The author is unknown. Provided by Paco Götz.

"The Memoria descriptiva is accepted in its entirety, having found it very interesting; this Memoria we would indeed like you to send it to us in clean form; I am sending you back the draft you sent us because we do not know if you kept a copy of it."

It is therefore understood that the report was returned to Barcelona, to N.M. Rubió i Tudurí, but the plans remained in the Valencia office.

Judging by the many attempts to locate any plans from the office of Pablo Navarro and Peter Müller, it can be concluded that they will probably never appear, because after a flood all the material was destroyed – with the exception of the 8 folders that make up the set of plans and sheets that they themselves drew up for the *Deutsche Schule Valencia* – everything else was destroyed.

The last letter confirms that this work was assigned to "*La Hortícola de Pedralbes*", coordinated by the same N.M. Rubió i Tudurí, on 3 February 1961, shortly before the inauguration of the new building.

As an anecdote, it should be pointed out that part of the excess plants that were transferred to the DSV to be planted were planted in the Valencian architect's residence in Altea, and are still there, according to direct family sources.

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Notes

- 1 Barcelona (1894), Madrid (1896), Málaga (1898), Bilbao (1917), Las Palmas (1920), Puerto de la Luz (1920), Sevilla (1920), Gijón (1921, closed in 1924), San Sebastián (1921), Santa Cruz de Tenerife (1922), Santander (1924, closed in 1927), Vigo (1925), Valencia (1926), Cádiz (1930) and Cartagena (1931).
- 2 This success led to the definitive closure of the German schools in Cartagena, Cadiz and Vigo.
- 3 In fact, there are 9, but these 5 have the most characteristic modern features and deserve a detailed study.
- 4 In the author's Master's thesis, Benet Morera, I. *Arquitectura moderna en los colegios alemanes de España y Portugal: El Colegio Alemán de Valencia*. Dissertation. UPV. Valencia, 2018.
- 5 Translation from German, Dirección feredal de construcción.
- 6 He was born in Mahón on 6 February 1891 (...). His uncle, the architect Joan Rubió Bellver had a great influence on him. Like him, he was an architect, watercolourist and lover of adventure. Nicolau was also a town planner, garden designer, writer, translator, playwright and journalist. In 1917, as director of Parks and Gardens in Barcelona, he began a successful career that lasted until 1937.
- 7 *Biblioteca-Arxiu Fernando Rubió Tudurí*.
- 8 Married to Rosa Esteve Werlow, granddaughter of Herta Werlow Kröplin, a member of the German colony in Valencia.
- 9 Navarro, Pablo. "Proyecto para el Colegio Alemán de Valencia" en *Arte Vivo* 2. Marzo – Abril, 1959
- 10 Sentieri, Carla. *Historia y proyecto de una calle: Jaime Roig*. Valencia. De la casa urbana a la vivienda de la ciudad abierta. Valencia: Universidad Politécnica de Valencia, 2013.
- 11 Carmen Jordá Such. *Arquitectura valenciana: itinerarios de la historia reciente*. Revista Geometría n m. 13, 1992, pp 38–39.
- 12 Documentació: H 112H / 4 / 7 : 1 plànol E 1: 200; C 514 / 97 : 1 plànol. Còpia, del COAC.
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- 14 Jordá Such, Carmen. (1992) "Arquitectura Valenciana: Itinerarios de la historia reciente." In *Geometría n°13* magazine. p 47.

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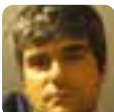
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Joana Bastos Malheiro

PhD in Architecture in 2018, at the Faculty of Architecture of the University of Lisbon, with a thesis entitled "The City in the New State: urban design in the work of João António de Aguiar".

She is currently an assistant professor at the Faculty of Architecture of the University of Lisbon. She works in the Humanities area(s) with an emphasis on Arts, Architecture, and Design. Coordinator of the Research Project "For an Architectural Memory" at the Research Center for Architecture, Urbanism and Design (CIAUD) at FA-UL.



Caroline Bauer

Laboratory of Architecture Design, Planning, History, Materiality (LACTH), Lille School of Architecture and Landscape Design, France.

Trained as an architect (2007), PhD from the University Paris 1 Panthéon-Sorbonne (2015), Caroline Bauer is a lecturer in the history of architecture in the School of Architecture and Landscape Design, Lille, France, and researcher at the LACTH. She is a member of the scientific council and the board of DoCoMoMo France, and in charge of the inventory. Her work focuses on architecture, heritage and the architectural profession in the 20th century. She recently published *Les frères André. L'architecture en héritage* (Hermann, 2022) and co-directed *Les Cahiers Thématiques n° 20* on the subject of serial architecture and heritage (Maison des sciences de l'homme, 2021).



Simona Belmondo

Architect, graduated a Master's Degree in Architecture from the Polytechnic of Bari in 2015

In 2019, she achieved her post-graduate at the School in Architectural and Landscape Heritage at the Polytechnic of Milan with a thesis about the reconstruction of a church damaged by the earthquake. In the last years has collaborated with several architectural firms in Bari, Milan, Turin and Seville, working on projects related to contemporary interventions in cultural heritage contexts. At the present she is honorary assistant in the Department of Architectural Projects at the University of Seville.



Irene Benet Morera

Architect by the ETSAV since 2011. Master's Degree in Architectural Heritage Conservation in the Management modality of the ETSAV.

Master's Final Project "Arquitectura moderna en los Colegios Alemanes de España y Portugal", 2013. La Deutsche Schule Valencia'. In 2018 she participates in several national congresses EMERGE 2018, and international, VII CONGRESO INTERNACIONAL DE ARQUITECTURA BLANCA, y VALENCIA INTERNATIONAL BIENNIAL OF RESEARCH IN ARCHITECTURE. She is currently a PhD student in the Department of Architectural Composition at the ETSAV with the topic "Arquitectura moderna en los Colegios Alemanes de España y Portugal. Una selección".



Nathália Bichinho C. Oliveira

(1988). Is an architect (FA-UFRGS), with a master (PROPAR-UFRGS) and Phd Candidate (FADU-Udelar) degree in Architecture.

She teaches and researches at the Design Institute (FADU-Udelar), with focus on Latin American modern architecture, theory of project and methodology and systematization of research in architecture. She is Brazilian and practises her professional and teaching career in Uruguay.



Catherine Blain

Architect and PhD in Urbanism, is research fellow and lecturer at École nationale supérieure d'architecture (ENSA) de Paris-Belleville (IPRAUS UMR AUSser).

Her research, mainly focused on the French Post-War period, develops different lines of investigation such as the CIAM and Team 10 debates or the history of new towns. Author of several books and articles, she was curator of the exhibition *L'Atelier de Montrouge, la modernité à l'œuvre* (1958–1981) (CAPA, 2008),

accompanied by a monograph. She is active member of DoCoMoMo–France (scientific committee), vice–president of the French Association d'Histoire de l'Architecture (AHA) and member of European Architectural History Network (EAHN). editin



Manuel Blanco

PhD. Architecte. Full Professor of Architectural Composition, ETSAM UPM. Head of the ETSAM UPM.

XHe is the Head of the Centro Superior de Diseño de Moda de Madrid (2013–17), National Fashion Award in 2017. He addresses the Research Group and PhD. program in "Architecture, Design, Fashion & Society". First Head of the National Museum of Architecture and Urbanism of Spain, 2007. He was the Curator of the Spanish Pavilion, X Biennale di Architettura di Venezia, 2006 and winner of the Museography of the Museum of Royal Collections. He is the International Head of EUROPAN Europe and of the Conference of Spanish Schools of Architecture, too. He is a Founding member of ICASAR, Section of Architectural Archives of the International Council on Archives, and also a member of the Executive Committee, 2004–08.



María del Carmen Blasco Sánchez

Architect by the ETSAV, UPV in 1983.

PhD Architect from the UPV in 1989. Associate Professor of the Department of Urbanism from 1986 to the present. Teaches at the ETSAV at Undergraduate and Master levels. Participated as a researcher in 4 research projects with regional public funding, and two internationals: Med–Int URB–ACT, (2004–06) and U_Graden (2022–24) of the European Community. Director of the Chair of Sustainable Municipalities (Cátedra Municipios Sostenibles) of the UPV. Has been recognized a six–year period (sexenio) of research by ANECA. Author of books, book chapters and articles focused on urban project, landscape and urban morphology.



Anna Bonora

Graduated in Construction Engineering in 2017. She holds a PhD in Architecture, and since 2021 she is a Research Fellow at the Department of Architecture at the University of Bologna.

She is a member of SIRA, the Italian Society for Architectural Restoration, and she carries out research on restoration, with particular attention to the study of indoor microclimate and its influence on the conservation of historical, artistic and cultural heritage. During her PhD she investigated on some valuable historical buildings, as: the Cathedral of Santiago de Compostela in Spain; Venaria Reale in Italy; the Historical Library of Salamanca in Spain.



Zsuzsanna Böröcz

Is a musicologist, and an art and architecture historian.

She obtained a Ph.D. in art history at the KU Leuven in 2004. Her main fields of interest are interior and design issues in the context of heritage conservation, craftsmanship and higher education in the 19th– and 20th–century. Currently, she is a part–time guest professor at the KU Leuven Faculty of Architecture and she is affiliated to the University of Antwerp Faculty of Design Sciences. Zsuzsanna is President of Docomomo Belgium and co–founder and chair of the Docomomo International Scientific Committee on Interior Design.



Morgane Bos

Graduated as an architect in 2012 (ULiège, Belgium).

Since 2018, she has been involved as a teacher and research assistant for the faculty of Architecture of UCLouvain and the LAB institute. Her scientific interests focus on material and constructive knowledge of buildings with a special attention paid to post war architectural heritage and modern movement. She recently started a doctoral thesis under the supervision of Prof. Giulia Marino, which aims to identify how the Brussels' social housing built during 'Les Trentes Glorieuses' can be adapted today to better respond to contemporary issues, taking account of their patrimony identity.



Maria Cristina Cabral

Is Professor at the Faculty of Architecture and Urbanism and the Graduate Program in Urbanism (PROURB) at the Federal University of Rio de Janeiro (UFRJ).

Fellow Researcher at National Council of Scientific Researchers (CNPq), and State Scientist (FAPERJ). Architect and Urban Planner, MSc and Ph.D. in History, specializing in modern architecture and city planning. Co-author of the book *Foreign Presence: architecture in Rio de Janeiro (1905–1942)*.



Deniz Can

achelor's Degree in Architecture from Gazi University in Ankara. Master's Degree in Architecture and Urban Planning in Middle East Technical University. Thesis titled "Mapping out Smart City Initiatives in the Turkish Context" in 2019.

She has been working as a research assistant at Middle East Technical University, Department of City and Regional Planning since 2015. She continues her doctoral studies in the same university. Her study areas consist of digitalization, technological transformation, urban policies, sustainability, and modernism. She has been a jury member in competitions at universities and professional platforms and has been a speaker at various academic conferences. She is an active member and substitute board member of Architects Association 1927 and Chamber of Architects of Turkey Ankara branch.



Gonçalo Canto Moniz

Is PhD architect, Associated Professor by the Department of Architecture and Researcher at the Centre for Social Studies of the University of Coimbra.

Coordinator of the European project URBINAT "Healthy corridor as drivers of social housing neighbourhoods for the co-creation of social, environmental and marketable NBS" (H2020, 2018–2023). He is researching, publishing and teaching about modern architecture, namely inclusive urban regeneration and modern architectural education. He is a member of the Docomomo ISC Education+Training Committee.



Andrea Canziani

Ministero della Cultura / Ministry of Culture Department of Archaeology Fine Arts and Landscape

Architect, Ph.D. in Programming Maintenance Rehabilitation of Building and Urban Systems, Pg.D. in Restoration of Monuments, Co-chair of Docomomo International Specialist Committee on Education + Training (ISC/E+T). He is Main

Officer for architectural heritage at Ministry of Culture in the Department of Archaeology Fine Arts and Landscape in Genova. He teaches Architectural Preservation at Politecnico di Milano. He has been former Secretary General of Docomomo Italy. His research activities are focused on the conservation history and theory of the 20th-century heritage and its relationship with contemporary art.



Francesca Castanò

(Naples June 28, 1970). Is Architect, PhD and Associate Professor of History of Architecture at the Department of Architecture and industrial design of the University of Campania Luigi Vanvitelli, since year 2015.

She graduated cum laude in Architecture at the University of Naples Federico II, and with her thesis she won the Prize for Undergraduates 1995 awarded by the CNR, for the sector "Technological Innovation and Territorial Development". Its specific topics are contemporary architecture and industrial heritage. Her last monograph is *Angelo Mangiarotti e la fabbrica Siag. La storia di una costruzione infinita* (Siracusa, Lettera Ventidue 2017).



Andrea Castro Marcucci

Researcher and professor in History of Architecture and Architectural Criticism, Universidad ORT Uruguay.

Master en Laboratorio de Vivienda para el Siglo XXI. Universidad Politécnica de Cataluña. Máster en Proyectos Integrados de Arquitectura. Universidad Ramón Llull, La Salle. Arquitecta, Universidad del Zulia, Venezuela. Editor of the journal *Anales de Investigación en Arquitectura*, edited by Universidad ORT Uruguay.



Alessandro Cavallo

PhD candidate in Preservation of Architectural Heritage at Politecnico di Milano.

The field of investigation concerns the preservation of Italian architecture of the Twentieth century and the strategies of intervention and protection of the built heritage (inventory, building surveys, etc.). Of particular interest are the constructive research experimentations pursued between the two wars and in the post-war period. The PhD research investigates the spread of the doubly curved structures, thin shells in reinforced

concrete and other materials, between the fifties and seventies in Italy, from the historical, constructive, architectural, and cultural point of view and the challenges of their protection.



Noelia Cervero Sánchez

Architect (University of Valladolid, 2004), Masters Degree in Art History (University of Zaragoza, 2011) and PhD in Architecture (University of Zaragoza, 2016).

Associate Professor of Architectural Graphic Expression in the Department of Architecture of the University of Zaragoza. Research stays at the 'Sapienza' Università di Roma and the Royal Academy of Spain in Rome – RAER (2016). Author of the book *Las huellas de la vivienda protegida en Zaragoza: 1939–1959* (Rolde, 2017). Articles published in *Informes de la Construcción*, *Ciudad y Territorio*, *Urbano*, *Estoa*, *VLC*, *EGA* or *ACE*. Conferences and teaching activity at Politécnico di Milano, LNEC in Lisboa, Università di Perugia or Università di Napoli "Federico II".



Nicholas Clarke

Delft University of Technology, Heritage & Architecture/AE+T/ Faculty of Architecture, The Netherlands.

Is a South African architect and lecturer at the section of Heritage and Architecture at the Delft University of Technology, where he defended his PhD thesis *How Heritage Learns* in 2021. He has co-authored and co-edited a number of award-winning publications on architectural heritage and conservation, focusing on shared heritage, resilience and sustainable development, including *Eclectic ZA–Wilhelmines: A shared Dutch built heritage in South Africa* (LM: Pretoria, 2014, co-edited with Karel Bakker and Roger Fisher). His architectural practice focusses on restoration and impact assessment and he is active in ICOMOS International's World Heritage reactive monitoring and advisory processes.



Carlos Eduardo Comas

Studied architecture in Porto Alegre, Philadelphia, and Paris.

He has written and lectured extensively on Modern Brazilian Architecture and Urbanism, along with curating exhibitions on Brazilian

and Latin American Modern Architecture. A former chair of DOCOMOMO Brazil, chair of DOCOMOMO Núcleo – RS, he is Full Professor at Universidade Federal do Rio Grande do Sul, Brazil, and edits its Graduate Program in Architecture journal, *ARQTEXTO*.



Loreto Corisco González

Master's degree in Architecture by the University of Granada (Spain).

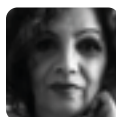
Her Master's thesis was selected for the prize Alonso Cano of the University of Granada. During her studies, she carried out stays in Katholieke Universiteit Leuven (Belgium), Pontificia Universidad Católica de Chile (Chile) and collaborated in construction programmes in Tanzania. Her degree's thesis entitled "*Encontré una silla. Dos miradas a la cotidianidad*" was awarded first prize at the XI Bienal Iberoamericana de Arquitectura y Urbanismo. In the research field, she has published in journals such as *REIA* and has been part of the research project "Laboratory of Territories in Transformation" linked to the Department of Architectural and Engineering Graphic Expression at University of Granada. Alongside, she works as an architect in the same city.



Luís Miguel Correia

Is an Assistant Professor in the Department of Architecture at the Faculty of Sciences and Technology of the University of Coimbra and a researcher at the Centre of 20th Century Interdisciplinary Studies.

He holds a master's in Construction Sciences and a PhD in Architecture with a specialization in Theory and History of Architecture. His research interests particularly focus on national monuments and their relationship with the territory, the landscape, and also with a certain idea of national identity. Since 1993, he has been engaged in architectural practice with Nelson Mota and Susana Constantino (COMOCO Architects).



Cláudia Costa Cabral

Architect, Doctor in Architecture (ETSAB/UPC, Barcelona).

Full Professor, Architecture Graduate Program, Faculty of Architecture, Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre,

Brazil. Researcher of CNPq – National Council of Scientific and Technological Development, Brazil. Chair of DOCOMOMO Brazil during 2012–2013. She is interested in modern and contemporary architecture in Latin America; the relationship between architectural culture, art, and technology. She is the author of several articles and book chapters on these themes.



Bárbara Coutinho

PhD in Architecture. She has a degree in History of Art (1993), a Post-graduate degree in Art History Education (1995) and a Master's degree in Contemporary Art History (2002).

Founding director and programmer of MUDE – Museu do Design e da Moda in Lisbon since 2006. Invited Associate Professor at Instituto Superior Técnico – University of Lisbon and Researcher of CITUA – Center for Innovation in Territory, Urbanism and Architecture. Divides her work between teaching, curatorship and writing, having as main research field themes that intersect museology, architecture and design, with particular attention to Portuguese design and contemporary material culture. Co-Chair of the Docomomo International ISC–Interior Design and member of the Bienal Iberoamericana de Diseño advisory board.



João Miguel Couto Duarte

Lusíada University, Faculty of Architecture and Arts i Centro de Investigação em Território, Arquitectura e Design – CITAD I Lisbon, Portugal.

(1966) (joao.mc.duarte@gmail.com) is a Lisbon born Portuguese architect practicing since 1990 and an assistant professor at the Faculty of Architecture and Arts, Lusíada University of Lisbon [FAA/ULL], where he teaches since 1991, and a research fellow at Design, Architecture and Territory Research Centre [CITAD], ULL. He is also a film producer.

João holds a degree in Architecture from Faculty of Architecture, Technical University of Lisbon [FAUTL] (1990), a MSc in Art Theories from Faculty of Fine Arts, University of Lisbon [FBAUL] (2005) and a PhD in Architecture from Faculty of Architecture, University of Lisbon [FAUL] (2016).



Yazmín M. Crespo Claudio

Is a Puerto Rican architect, educator, researcher, Ph.D. Candidate, and Lecturer in Architecture at Harvard University Graduate School of Design.

Her scholarship addresses the relationship between architecture, education, media, and territory, focusing on pedagogical experiments of architecture in Latin America and the Caribbean. She is an Assistant Professor and former director of the department of Architecture (2014–2018) at Universidad Ana G. Méndez, where she teaches architecture studios, visual thinking and communication, and history and theory courses. She has taught at NYIT, PUPR, ELISAVA, UPR–RP, INTER–METRO, and CORNELL. She is the co-founder of taller Creando Sin Encargos, Est.2012.



Darinka Czischke

Is Associate Professor at the Faculty of Architecture and the Built Environment, at TU Delft.

In 2014 she was awarded the Delft Technology Fellowship to develop her research on Collaborative Housing. She is founder of the Co–Lab Research group at TU Delft and co-founder of the working group 'Collaborative Housing' at the European Network for Housing Research (ENHR). Previously, she worked as Director of World Habitat; Research Director of the European Social Housing Observatory at CECODHAS Housing Europe; and as Research Associate at the LSE Cities Programme, London School of Economics and Political Science. She has published extensively about social, affordable and collaborative housing in international comparative perspective. She is currently the leader of Project Together!, a cross-sector initiative focused on realizing the potential of collaborative housing forms in the Netherlands.



Giorgio Danesi

Graduated with honours in 'Architecture for Conservation' (Master's degree, 2013) at Università Iuav di Venezia.

He is PhD in 'History and Conservation of Architecture' (2018), with a thesis focused on the XX century restoration works of St. Mark's Basilica (Venice). His recent research interests (post–Doc researcher) include the study of Gio Ponti's Villa Planchart in Caracas and, in 2022, the XX century artificial stones in North–East of

Italy. Since 2020 he has been adjunct professor of 'Architectural Heritage Conservation' at the *Università degli Studi di Udine*. His research interests are focused on the conservation of XX century heritage.



Isadora de Almeida Furtado

Is a student at the University of Brasília, Graduating in Architecture and Urbanism since 2016.

Since 2019 she is part of the research group TOPOS – Landscape, Design and Planning as a Scientific Initiation Scholarship (UnB/CNPq), working on the Project 'Brasília, Landscape and Project: Revisiting the new modern capitals of the 20th century'.



Ana Elisabete de Almeida Medeiros

Universidade de Brasília.

Ana Elisabete Medeiros is a Brazilian architect, urbanist, and Professor at University of Brasília (UnB), with a DEA in Urbanism from IUG/UPMF – France, and a PhD in Sociology from UnB. Former head of the Department of Theory and History, she was an Academic Visitor at Oxford's Latin American Centre. Over recent years she has been teaching and working as an academic supervisor on master's and doctoral-level courses. She is part of the "One Company Town in Brazil Project" and a researcher at the Documentation, Modeling and Preservation of Cultural Heritage Group. Her areas of research have focused on cultural heritage.



Anna Karla de Almeida Santos

Laboratory of Urbanism, Lab-U, Swiss Federal Institute of Technology Lausanne, EPFL

Anna Karla Almeida is a Brazilian architect urbanist and expert on industrial heritage. Currently pursues her PhD at EPFL Switzerland, at Laboratory of Urbanism LAB-U (2019 – 2023) and is a member of the Executive Board at the Habitat Research Centre of EPFL. Her research investigates the conditions of habitability in Company Towns of the twentieth-century. Previously, she worked as an intern at US/ ICOMOS at the Office of Historic Preservation OHP, San Antonio Texas, United States and as a

collaborator at the Master TPTI, Master Erasmus Mundus in Techniques, Heritage, Territories of Industry at the University of Padova, Italy.



Wessel de Jonge

Is an architect and a full professor of Heritage & Design at the Faculty of Architecture, Delft University of Technology, the Netherlands.

Founded in 1999 WDJArchitecten is specialised in the adaptive re-use and restoration of 20 century heritage buildings, including various social housing schemes. Most noted is the rehabilitation of the Van Nelle Factory in Rotterdam of 1928, which has since been recognised as a UNESCO World Heritage Site in 2014. In 1988, Wessel has been the founding Secretary of DOCOMOMO International. He has lectured and published internationally on the challenge of preserving recent architectural heritage.



Francisco de la Torre Oliver

(Almería, 1965). Artist and Professor of the Department of Painting at the Polytechnic University of Valencia.

Master in Artistic Production and Doctor in Fine Arts. Member of the Art and Environment Research Center specializing in Spanish rationalist art and architecture. Received a research grant from the Valencia Provincial Council and the Cañada Blanch Foundation. His artistic works have been recognized in museums and foundations such as the Reina Sofía Museum, the Bank of Spain or the Weissman Foundation in Los Angeles. He obtained the Bancaixa award in 2001, and the Caja Sur award in 2003.



Andréa de Lacerda Pêsoa Borde

Associate Professor at Federal University of Rio de Janeiro – UFRJ

At Urbanism Postgraduate Program and Architecture and Urbanism Faculty, Rio de Janeiro, Brazil. Coordinator Cultural Heritage and Contemporary Cities Laboratory (LAPA/ PROURB). Researcher CNPq/ FAPERJ.



Isabela de Rentería Cano

PhD architect by Universitat Ramon Llull (2013).

Master of Architecture in Urban Design, Harvard University (1982). Associate Professor of Architecture at the Universitat Ramon Llull.



Els de Vos

(b. 1976), Engineering-Architect and Spatial Planner, is Associate Professor at the University of Antwerp, where she chairs the interior architecture programme.

Her research is situated in the field of the history and theory of (interior) architecture, home culture, gender and public space in the second half of the 20th century. She obtained a PhD on the architectural, social and gender-differentiated mediation of dwelling in 1960s–1970s Flanders. She has co-edited several volumes, including *Reuse of Modernist Buildings: A Case Study Handbook* (2019). Currently, as a workgroup leader of the COST-action *European Middle Class Mass Housing* (<https://mcmh.eu/>).



Emre Dedekarginoğlu

Diploma in Interior Architecture from Bilkent University in 2010. Master's Degree from Hacettepe University in 2015. Thesis, titled "Functional Analysis of Interior Spaces of Low-Income Housing: A Squatter Example from Dikmen Valley".

He has been working in Hacettepe University, Department of Interior Architecture and Environmental Design as a research assistant since 2014. He continues his doctoral studies in Hacettepe University. His research interests include housing design, low-income housing studies, virtual reality and 3D modelling.



Julia Deltoro Soto

Architect by the ETSA of the Universitat Politècnica de València (UPV).

Spain since 2005 Obtained her PhD from the UPV in 2015. Since 2021 belongs to the Department of Urbanism as an Assistant Professor, now teaching at Undergraduate and Master levels. Has been a lecturer at the UPV since 2017. Has researched and published on topics related to urban design and planning, urban history and morphology. Has done a research stay at the Bartlett School of Planning of the University College of London. Has national and international professional experience in the field of architecture and urbanism.



Sara Di Resta

Is Associate Professor of Architectural Preservation at Università Iuav di Venezia.

Architect, Ph.D. in Conservation of Architectural Heritage, her research activities are focused on the conservation of 20th-century heritage and on the architectural language in conservation design. She is responsible for Education and Internationalization of SSIBAP – the Specialisation School on Architectural and Environmental Heritage in Venice. In 2017 she is Gold Medal at the VI Domus International Prize for Architectural Conservation. She is member of the boards of directors of Docomomo Italia and SIRA – the Italian Society of Architectural Conservation.



Fernando Diniz Moreira

Is an Architect (UFPE, Brazil, 1990) and historian (Catholic University of Pernambuco, 1991) with a Ph.D. in Architecture (University of Pennsylvania, 2004).

He is a Full Professor at the Federal University of Pernambuco (UFPE) in Brazil, where he is teaching since 1996. He has published and lectured on theory, history and conservation of modern architecture and urbanism. His professional experience also included conservation plans for urban districts, convents, and listed buildings.



Débora Domingo-Calabuig

Is an architect PhD and professor at the Universitat Politècnica de València (UPV). Currently, she holds the position of Vice-rector for Sustainable Development of Campus at the UPV.

Her interests include the methods, means and impact of architectural research. Her research focuses on the social consideration in architecture and urban design, particularly in the Western European context of the second half of the 20th century. She is a member of the Research Academy of the European Association for Architectural Education. She is co-recipient of the 2020 Lilly Reich Grant for Equality in Architecture.



Anica Dragutinovic

Is a PhD Candidate at TU Delft (The Netherlands).

She is Research Associate at IDS Institute for Design Strategies, Teaching Associate and Coordinator of the Master Program MIAD/MID at TH OWL (Germany) since 2016. She obtained Master of Architecture in 2016 at the University of Belgrade, Faculty of Architecture (Serbia). She is a MC member of the COST Action MCMH (<https://mcmh.eu>), was involved in RMB Reuse of Modernist Buildings project (<https://www.rmb-eu.com>) and was a member of HvdV research group at University of Antwerp (Belgium). She is currently involved in SHA Shared Heritage Africa project (<https://sha.architectuul.com>).



Laurent Duport

Architect (Principal of C+D architecture),

Hon. FAIA, is a recipient of the Electra Grant and of the Richard Morris Hunt Prize, Senior lecturer and research fellow at École nationale supérieure d'architecture (ENSA) de Montpellier (HITLab). He is leading the "Mastère Spécialisé © Architecture et Patrimoine Contemporain" and the workshop "Patrimoine Contemporain". His research mainly focuses on the XXth century heritage. Author of several articles on architect Georges Candilis, he is the curator of the exhibition Quatre Grands Ensembles en Occitanie (2017–2019). He is a board member of DoCoMoMo–France.



Carlo Dusi

Accademia di Architettura di Mendrisio, Università della Svizzera Italiana, Switzerland.

Graduated in architecture at the Politecnico di Milano in 1998 and attended a master in restoration on Cultural Heritage at Politecnico di Milano. From 2010 to 2018 he worked as assistant professor at the "Accademia di Architettura – Università della Svizzera Italiana" where from 2016 is course lecturer in "Construction Archetypes and Materials of Pre-Industrial Architecture", and from 2018 lecturer and researcher. He is author of several publication on construction history and restoration of historic and modern architecture.



Sumiko Ebara

Associate Professor, Chiba University

Sumiko Ebara graduated from the Faculty of Architecture at the University of Tokyo, worked at Tadanaga Miyamoto Architect & Associates from 1997 to 2000, and took a master's degree in Conservation Studies from the University of York. Her doctoral thesis at the University of Tokyo was on the conservation of ruins and war-damaged buildings in the 20th century. She is currently an Associate Professor of Chiba University, and a visiting researcher at University of Westminster. She was a committee member of DOCOMOMO Japan until March 2021.



Alfred Esteller Agustí

Is Architect from the Polytechnic University of Valencia and professor at the CEU Cardenal Herrera University.

He has international professional experience focusing on the application of sustainable criteria in urban planning and building projects for private and public promotion. As a university professor, he has taught at Mexican universities such as the Instituto Tecnológico de Estudios Superiores de Occidente, the Universidad del Valle de Atemajac and the Universidad del Valle de México, among others. He was also co-founder of the Urban Innovation Laboratory at UNIVA University. His research focuses on issues related to efficiency in urban planning, environmental impacts and bioclimatism in buildings and urban environment.



Kristian Fabbri

Architect, consultant in building energy performance, energy services and indoor environmental quality, is an Adjunct Professor in Building Physics at the University of Bologna.

He also works for Emilia–Romagna Region (Public Bodies), SMEs trade and professional organisations. His research interest includes human behaviour, indoor and outdoor comfort, energy poverty, heritage buildings, and building energy performance. He published several research articles in international journals and books, such as: K. Fabbri, *Indoor thermal comfort perception*; M. Pretelli, K. Fabbri, *Historic Indoor Microclimate of the Heritage Buildings*; S. Piraccini, K. Fabbri, *Building a Passive House*; K. Fabbri, *Urban Fuel Poverty*. He writes poetry and dramas.

**Giulia Favaretto**

Graduated with highest honours in Architecture. Thesis in Architectural Restoration, University of Bologna

She holds a PhD in Architecture and is an Assistant Professor at the Department of Architecture at the University of Bologna. Her main research activities are focused on the restoration of the 20th century heritage, on the conservation of the autarchic materials, and on the relationship between modernity and restoration. In parallel with these fields of investigation, her research path develops the themes connected with the combination of improving energy behaviour and preserving heritage buildings. She attended national and international conferences, among which the 14th–16th International DOCOMOMO Conferences. She is a member of SIRA, the Italian Society for Architectural Restoration, and of DOCOMOMO Italia.

**Zara Ferreira**

(b. Portugal, 1988). Architect, MSc in Architecture (2012, Técnico – University of Lisbon, thesis: *The Modern and the Climate in the Lusophone Africa. School Buildings in Mozambique: The Fernando Mesquita Concept (1955–1975)*).

Secretary general of **docomomo** International and co-editor of **docomomo Journal** (2014–2018). She is currently doing a PhD on the transformation of domestic space of post-WWII large housing estates in Lisbon (Técnico – University of Lisbon) supported by a Doctoral Fellowship of the Portuguese Foundation for Science and Technology (FCT, SFRH/BD/115196/2016).

**Jaime J. Ferrer Forés**

Associate Professor at the Architectural Design Department of the ETSAB, Universitat Politècnica de Catalunya.

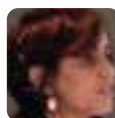
Architect by the Barcelona School of Architecture (2000), PhD with European Mention (2006) and Extraordinary Prize of Doctorate of the Universitat Politècnica de Catalunya (2008). Fellow at the Royal Spanish Academy in Rome (2015–2016). Author of the monograph on Jørn Utzon. Works and Projects, Gustavo Gili (2006). Selected as one of the “Europe 40 under 40” by the European Center of Architecture and the

Chicago Athenaeum (2014). His work has been part of the Vogadors (2012) and Time Space Existence both at the Venice Biennale of Architecture (2014).

**Paulo Eduardo Fonseca de Campos**

Is PhD architect, Associated Professor by the Architecture and Urbanism School of the University of São Paulo (FAUUSP).

Coordinator of the Research Group DIGI-FAB – Digital manufacturing technologies applied to the production of Contemporary Design and Architecture. Visiting professor at the Department of Architecture of the University of Coimbra, Portugal (2018–2019). Visiting researcher at the SAPL of Newcastle University/UK (2014–2015). Master in Civil and Urban Construction Engineering from the Polytechnic School of USP (1989).

**Luciana Saboia Fonseca Cruz**

Is a Brazilian architect, urbanist and Professor at the University of Brasília, Brazil, with a PhD in History and Theory of Architecture from Université Catholique de Louvain, Belgium (2009).

She was a visiting researcher at Office for Urbanization at the GSD Harvard, EUA (2017) and is an associate researcher at LIAT, ENSA Paris–Malaquais. Saboia’s publications include “Post–compact city: design strategies from Brasília” (2021). From 2015 to 2019, Saboia was the vice–dean of FAU–UnB and Director of Research (2019–2021) and, currently, she is a researcher at Brazilian National Council for Scientific and Technological Development with a focus on landscape, culture and design.

**Caterina Franchini**

Expert in construction history, she received the national qualification to hold the Associate Professor position (2017).

She holds a PhD in History and Criticism of Architectural and Environmental Assets and a specialisation in Conservation of Monuments and Sites (RLICC–KUL). Initiator of the “MoMoWo – Women’s Creativity since the Modern Movement” EU project (2014–18), she was Do.co.mo.mo. Italia’s Steering Committee member from 2014–21. Curator of exhibitions, she presented at more than 40

international conferences and is the author of 170 publications. Her research interests include gender studies in architecture and design, environmental sustainability and 20th-century heritage building technologies.



Mariana Freitas Priester
Universidade de Brasília.

Mariana Priester is a Brazilian architect, urbanist, and PhD student at Universidade de Brasília, Brazil. Integrates the research group Documentation, Modeling and Heritage Conservation/LabeUrbe – PPG/FAU – UnB and the research Temporalities and Scales of the Cultural Heritage City. She works as a special advisor at the Secretariat of the Brasília Urban Ensemble – SCUB/SEDUH at the Federal District Government – GDF.



Giuseppe Galbiati
Has a Master's degree in Architecture and Building Engineering from Politecnico di Milano (2020).

He is currently PhD candidate at EPFL (TSAM, Laboratory of Techniques and Preservation of Modern Architecture – prof. Franz Graf) and UCLouvain (LAB Institute – prof. Giulia Marino). His scientific interests are focusing on the preservation and thermal retrofitting of the modern and contemporary heritage and on the history of construction techniques of XX-century's buildings.



Maximiliano García Vairo
(1988). Is an architect (FADU UdelaR), with several first prizes in architecture competitions.

He teaches and researches at the Design Institute (FADU UdelaR). He is writing his master dissertation (ETSA UPM).



Carlos García Vazquez
Architect and urban planner. Full Professor at the University of Seville (Spain), and Visiting Professor at the Politecnico di Milano (Italy).

My research activity has been focused on the field of urban studies, with special focus on contemporary phenomena. As a second field of research, the one dedicated to postwar

social housing estates stands out. My third field of research is modern architecture history. I have published six books. The most recent one is *Cities After Crisis. Reinventing Neighborhood Design from the Ground-Up* (Routledge, 2022). I have taught at Texas Tech University (Lubbock, United States), Universidad de Los Andes (Bogota, Colombia), and have carried out extended research visits at Northwestern University (Chicago), University College London, and Tongi University (Shanghai).



Héctor García-Diego Villarías
PhD in Architecture from University of Navarre (2011).

Professor (ANECA) at ETSAUN. He has disseminated his research in magazines such as EGA, PPA, RA, among others, in international conferences and publications. Grant by the Getty Research Institute and other by Bancaja Foundation to develop his dissertation in L.A. (The Getty) and N.Y. (GSAPP Columbia University). Research stay at the ENSAPBX, Bordeaux.



Zaida García-Requejo
B.Arch. Ph.D. University of A Coruna.

Lecturer in Architectural Composition, at the Architectural Projects, Urban Planning and Composition Department (UDC). Visiting Researcher at Illinois Institute of Technology, Art Institute of Chicago, Museum of Modern Art and University of Michigan. Vice Dean, A Coruna School of Architecture since November 2019. Managing Editor, *BAC Boletín Académico* since November 2019. Selected publications: *EN BLANCO Journal* (2018), *ZARCH Journal* (2018), *BAC Boletín Académico* (2019), *ACE: Architecture, City and Environment* (2021), *CPA Cuadernos de Proyectos Arquitectónicos* (2021), *TPJ The Plan Journal* (2021), *Constelaciones* (2021), *Informes de la Construcción* (2021). zaida.garcia@udc.es



Julio Garnica
(Valencia, Spain, 1974). Architect (2001) by the Escuela Técnica Superior de Arquitectura de Barcelona ETSAB-UPC.

Associate Professor in the Department of Theory and History of Architecture ETSAB–UPC since 2004. Author of various works on 20th century Spanish architecture, he has curated several exhibitions on Catalan architects of the second half of the 20th century and given lectures in various courses and architecture cycles. He regularly participates in international congresses and seminars, directs the “Ah” newsletter of AhAU and is Member of the Technical Commission of Do.co.mo.mo Ibérico. He currently combines teaching and research with independent professional practice in his architecture studio, with which he has obtained several mentions.



Ana María Gascón Hernández
Architect by the ETSAV, UPV since 2011.

Master's Degree in Advanced Architecture, Landscape, Urbanism and Design in the speciality of Urbanism, Territory and Landscape, by the UPV in 2013. Associate Lecturer of the Department of Urbanism of the UPV since 2021, teaching at the ETSAV in urban planning subjects of the Degree in Fundamentals of Architecture. Currently also working as a freelance architect and researching to obtain the PhD with a thesis entitled “The Areas of Economic Activity in face of the new territorial challenges. Revision and modification of the intervention strategies”.



Selin Geerinckx
MSc interior architect and researcher, is affiliated with the Interior Architecture programme at the University of Antwerp.

She builds on the genealogy of the interior architecture discipline through a focus on modern dance theory and methodologies. Her research centers on the bodily and mental effects of modernist housing. She recently studied the work of Lea Daan who brought daily radio gym classes into the homes between 1935 and 1940 in the frame of public health. Selin co-curated the exhibition *Living in Color* in Antwerp (2019) and was co-tutor in the International Student Workshop *DOCOMOMO 2020+1* (oDOMOs) in Tokyo.



Yuta Genda
University of Tokyo

Yuta Genda received the Master degree in Environmental Engineering from Kyoto University in 2006 and the Master degree in Urban Engineering from the University of Tokyo in 2017. Since 2018, he is a Ph.D. student at the Department of Urban Engineering, the Graduate School of Engineering, the University of Tokyo. The Specialty is urban history, architectural history, and cultural exchange. From 2006 to 2012, he worked for a spatial design company and planned several museums. Since 2012 he has been working in an incorporated administrative agency and launched some projects such as the ASEAN's modern architecture preservation project.



Lia Gil Antunes
Feminist architect and researcher, graduated from Darq–University of Coimbra in 2012.

Here, she is developing her PhD on Women of the SAAL process (1974–1976) in Portugal: Women techniques and residents for the right to housing (FCT). Co-founder of the association *Mulheres na Arquitectura* and collaborating researcher at Interdisciplinary Center for Gender Studies (CIEG–ISCSP/ULisboa). Between 2019–2021, she was a research fellow in the project «W@ARCH.PT – Women architects in Portugal: Construction of visibility, 1942–1986» (CIEG–ISCSP/ULisboa, FCT). She has been dialoguing with intersectional feminisms in the construction of the History of Women in Architecture, housing, and cities in Portugal.



Ana Gilsanz-Díaz
Architect (UPM, 2004), Master in Sustainable Architecture and Urban Design (Extraordinary End of Studies Award, UA, 2000) and Ph.D. Architect (UA, 2017).

She is a part-time Lecturer at the University of Alicante Department of Graphic Expression, Architectural Theory and Design and a member of UA's Gender Studies Institute. She has developed an intense professional activity, including office work, cultural management, and the coordination of a wide range of activities involving architecture and design (such as Carton LAB, GAC Architectural

Branding, and CTA). She is also part of *Situated Investigations: Women's Architecture in Spain from Peripheral Perspectives 1978–2008* (Generalitat Valenciana, 2021–2023).



Hannia Gómez

President, Fundación de la Memoria Urbana (2000) and founder, CENTRO de la Ciudad (2001).

Studied Architecture at the FAU Universidad Central de Venezuela in Caracas and Urban Design at the GSAPP Columbia University in New York. Curator of Gio Ponti's Villa Planchart (2002). Author of the texts of exhibition catalogues *La Ville Neuve* (1900–1975), *Our Architects en Caracas* (1925–1975) (2017); *Suite Iberia* (2015), and the book *El Cerrito: Gio Ponti's masterpiece in Caracas* (2009). Writer, curator and architecture and city critic for *El Nacional* since 1992, she is a founder and actual Chair of Docomomo Venezuela (2010).



Filipe González

CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa

Assistant Professor at Lisbon School of Architecture of the University of Lisbon. Graduated in architecture in 1995, Master of Science in Human Ecology and Ph.D. in architecture in 2013 with the thesis "Stereomorphology: geometry's contributions to sustainable development". He is a member of ArchC_3D research group from the Research Centre in Architecture, Urbanism and Design (CIAUD). He has been author and co-author of several articles, architecture projects, both with public and private entities, from governmental agencies to private companies. He is member of the steering committee of the RIPAM (Mediterranean Architecture Heritage Group of Schools Organizers of the International Meeting).



Isaura González Gottdiener

Architect

Graduated from the Faculty of Architecture (FA) of the UNAM, where she is currently a professor in the Theory, History and Research Area. Appointed Academic Secretary of FA in February 2021, she is currently pursuing

degrees in the Master and Doctorate Program in Architecture at the FA UNAM. For over 15 years she has collaborated in specialized architecture magazines, also coordinating, and curating architecture exhibitions at the UNAM, among them "Arcadio Artís, Subtle Force". A member of the College of Architects of Mexico City, the Society of Mexican Architects and of the National Academy of Architecture.



Franz Graf

École Polytechnique Fédérale de Lausanne, ENAC Faculty, TSAM Laboratory of Techniques and Preservation of Modern Architecture, Ch, Lausanne, Switzerland.

A graduate in architecture of the École polytechnique fédérale de Lausanne (EPFL, Switzerland), Franz Graf is Full Professor of Technology at the Accademia di Architettura di Mendrisio and Associate Professor of Architectural Theory and Design at the EPFL. His research explores modern and contemporary construction systems and he has published in major reference works. Since 2010 he has been President of Docomomo Switzerland and a member of the International Specialist Committee on Technology, and since 2012 member of the "Comité des experts pour la restauration de l'œuvre" of the Le Corbusier Foundation. From 2008 to 2014, he is co-director of the research project *Critical Encyclopaedia for Reuse and Restoration of 20th-century Architecture*.



Roberta Grignolo

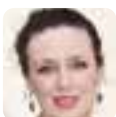
Teaches conservation of 20th century heritage at the Accademia di architettura in Mendrisio, Università della Svizzera italiana, since 2009.

She received her degree in Architecture in 2000 from the Politecnico di Torino, Italy. In 2003 she completed a DEA in "Sauvegarde du patrimoine bâti moderne et contemporain" at the Institut d'Architecture, Université de Genève. In 2006 she gained a joint PhD from the Politecnico di Milano and the Institut d'architecture in Geneva. She was co-leader (2009–2013) of the research project "Critical Encyclopaedia for restoration and reuse of 20th century architecture", a partnership between USI, EPFL, ETHZ and SUPSI.

**Arianna Guardiola-Víllora**

Dr. Architect, Senior Lecturer at the
Dep. of Continuum Mechanics and
Theory of Structures, Universitat
Politècnica de València (Spain).

She lectures at the School of Architecture at the UPV different subjects related with the design and analysis of building structures at undergraduate, master and postgraduate level. She focuses her research, together with "Gender and Architecture" on structural optimization considering sustainability criteria. Within this last objective are framed her main lines of research: "historical structures", "seismic vulnerability of residential buildings", "energy efficiency of building structures", and "design and analysis of steel structures".

**María-Elia Gutiérrez-Mozo**

University of Alicante.

Architect (University of Navarra, 1992) and PhD. Architect (Technical University of Madrid, UPM, 1999), she is Associate Professor at the University of Alicante Department of Graphic Expression, Architectural Theory and Design and a member of UA's Gender Studies Institute. Her research is characterized by a qualitative and contextualized approach to the study topics, blending that which is close with what is needed, using social, cooperative, and participatory approaches while addressing gender and sustainability issues. She is the principal investigator of *Situated Investigations: Women's Architecture in Spain from Peripheral Perspectives 1978–2008* (Generalitat Valenciana, 2021–2023).

**Deniz Hasirci**

Was born in Reading—England,
and received her PhD from the
Department of Interior Architecture
and Environmental Design—Bilkent
University, Turkey.

A Fulbright visiting scholar at NCSU, she is currently working at Izmir University of Economics, and is one of the two coordinators of the DATUMM_Documenting and Archiving Turkish Modern Furniture project, and coordinator of the Reading History of Furniture and Interior Architecture in Turkey through Oral History Method project. She is a member of the docomomo_tr Interior Design Committee and Docomomo ISC-ID. She is a member of Fulbright Alumni, Chamber of Interior

Architects—Turkey, 4T Design History Society, and EDRA.

**Romy Hecht**

Architect and Master of Architecture,
PUC, 1998; PhD in History and Theory
of Architecture, Princeton University,
2009.

Her essays have been published in *Studies in the History of Gardens & Designed Landscapes* (UK), *Harvard Design Magazine* (USA), *New Architecture* (China), and *ARQ, Trace and Revista 180* (Chile). In her publications, teaching, and research, Hecht has developed a fundamental work in the theoretical and methodological field for the development of landscape studies in Latin America. She is currently Professor of PUC's School of Architecture.

**Fatemeh Hedieh Arfa**

Is a PhD researcher at the Delft
University of Technology.

She investigates the adaptive reuse process of heritage buildings with the aim of developing a methodology for dealing with them. Her research and teaching experiences include adaptive reuse, redesign, and restoration of heritage buildings.

**David Hernández Falagán**

Universitat Politècnica de Catalunya,
Spain.

Holds a Ph.D. in Architecture and lectures at the Department of Theory and History of Architecture and Communication techniques at the Polytechnic University of Catalonia. His research encompasses areas such as the theory of technique, the future of the habitat, and critical design methodologies.

**Isamar Anicia Herrera Piñuelas**

Is architect and master's degree in
environmental Pollution, Toxicology
and Health by *Universitat de València*.

Professor at *Escuela Superior de Arquitectura—ESARQ*, Guadalajara Jalisco. She has been involved in social design projects and activism, her concern includes also neuroarchitecture and well-being. She has published in research

magazines of architecture and urbanism. Participating at international research congress. Author of the book *"Natural-Illeza. Acercamiento a una arquitectura sensible"* where she reflects on the way in which we interact and learn from the environment conditions. That's why her work is strongly related to the teaching-learning process that links the habitat and living.



Josenia Hervás y Heras

Escuela de Arquitectura, Universidad de Alcalá, Madrid. Spain.

PhD Architect (2015 UPM). Specialisms in building and urban planning (1991). Associate professor University of Alcalá (2016). Her thesis "El camino hacia la Arquitectura: las mujeres de la Bauhaus" was finalist in the 10th BIAU2 and published under the title *Las mujeres de la Bauhaus: de lo bidimensional al Espacio total*. She collaborated on the catalog of the exhibition on German women architects (DAM, Frankfurt, 2017); *Beyond Bauhaus. New Approaches to Architecture and Design Theory* (Ed. Dr.-Ing. Johannes Warda, University of Heidelberg). Conferences on the students of the Bauhaus at universities, Colleges of Architects and at the Cervantes Institute in Berlin.



Mat Hinds

Is a practising architect and Director of Taylor + Hinds Architects based in Hobart, Tasmania.

In 2016, Taylor + Hinds completed additions to Edith Emery's former home designed by her in 1958. Taylor + Hinds' project raised Emery's profile and she is now recognised by a named award of the Tasmanian Chapter of the Australian Institute of Architects, inaugurally granted to Taylor + Hinds. In 2018 Mat was awarded the Tasmanian Emerging Architects Prize for his contribution to the profession. The practice has twice been nominated for the Royal Academy Dorfman Award, The Swiss Architectural Prize and has received the Australian Institute of Architects highest honours for works in cultural heritage in 2018, and 2020.



Diego Inglez de Souza

(São Paulo, 1978). Is an architect and urban planner by the Faculty of Architecture and Urbanism of University of São Paulo (2003), Ph.D. in History and Architecture (FAU USP/ Université Paris 1 Panthéon Sorbonne, 2014).

Teacher of Catholic University of Pernambuco (2015–2019), researcher at Lab2PT (University of Minho, 2019–2021) and associated researcher at ISCTE–IUL (Lisbon, Portugal). Author of *Reconstruindo Cajueiro Seco: arquitetura, cultura popular e política social em Pernambuco (1960–64)* and books' chapters and articles published on Brazilian, European and American journals, magazines and exhibition catalogues.



Benito Jiménez Alcalá

Degreed in Architecture and History of Art in Valencia (Spain).

PhD architect by the Architectural Association of London with the thesis: "Environmental Aspects of Hispano-Islamic Architecture". Currently working as a full professor in the School of Architecture of the University San Pablo–CEU in Madrid (Spain) in subjects related to History of Architecture and Gardening, and Construction, as well as in the Doctoral Programme of the same University. As a researcher he has been an active member of the group "Heritage, Architecture and Landscape" since its creation in 2006, with publications related to landscaping and painting mainly. In parallel he also works as a freelance architect, intervening in the development of different projects associated to residential architecture and restauration. He has also collaborated with the area for conservation of architectural heritage in the municipality of Madrid.



Fernando Jiménez Parras

Dimomo architecture cultural association

(Jaén, 1976) studied Architecture at the Higher Technical School of Architecture of Granada. Since 2004 he collaborates with the Docomomo Ibérico Foundation, of whose Technical Commission he has been part since 2016 on behalf of the Andalusian Council of Official Associations of Architects, taking care of the coordination of the works as well as the research and documentation work in Jaén. Since 2014 he directs the collection of architecture cutouts cortaypega within the framework of the Dimomo Architecture Cultural Association. His research is focused on the use of the cutout as an instrument of dissemination and the architecture of the National Institute of Colonization and International Style in Jaén.

**Kristin Jones**

B.Arch. Ph.D., Illinois Institute of Technology, R.A.

Principal of the architecture firm Studio Integra, Ltd., Oak Park, Illinois. Illinois Institute of Technology Adjunct Professor and Mies van der Rohe Society Board of Directors. Selected publications: *TPJ The Plan Journal* (2021), *VAD Veredes, Arquitectura y Divulgación* (2021), *ENQ: The ARCC Journal for Architectural Research* (2016), and proceedings for the ARCC–EAAE International Conference on Resilient City (2022), ACSA–EAAE Teachers Conference (2019), *Routledge–AMPS–PARADE Teaching–Learning–Research Conference* (2020)

**Carmen Jordá Such**

Is an architect and full professor of Architectonic Composition (2003)

She is also a researcher in architecture and urban development with numerous publications, specialised in the Modern Movement as well as in the confluence of technical culture (history of concrete structures) and architectural culture. She was awarded the COACV prize both in 1989 and 1990. She was Vice-rector of Campus and Infrastructure of Universidad Politécnica de Valencia between 2013 and 2017. She has been a member of Docomomo Iberia since 1995. She is also the head researcher of the project “Conservation Management Plan Chestre Workers University Paraninfo”, winner of the international competition (2019) Keeping it Modern of the Getty Foundation, Los Angeles.

**Stuart King**

Is a senior lecturer in architectural design and history in the Faculty of Architecture, Building and Planning at the University of Melbourne.

He is a member of the University’s Australian Centre for Architectural History, Urban and Cultural Heritage (ACAUCH) and he undertakes research in Australian architecture with a special interest in Tasmania. Stuart is member of the Society of Architectural Historians Australia and New Zealand (SAHANZ) Editorial Board (2018–) as well as a past co-editor of the society’s journal *Fabrications: JSAHANZ* (2014–2017) and past SAHANZ President (2011–13).

**Élise Koering**

Lecturer in History of Architecture. École Nationale Supérieure d’Architecture Paris–La Villette. Researcher (AHTTEP–UMR–AUSser, Paris, France) and Associate Researcher (LACTH, Lille, France).

The research of Élise Koering focuses on architecture and decorative arts of the first half of the 20th century, and more specifically on the theoretical and applied construction of the Corbusian interior (“Young Researcher” Grant from the Foundation Le Corbusier: Les intérieurs corbuséens. Reflections on the question of furniture and “interior architecture” in Le Corbusier’s work before the Second World War). The built work of Le Corbusier and Eileen Gray in the interwar period is a primary object of study, as is the action or discourse of women in architecture before, whether they are architects or related.

**Nataša Koselj**

Is an architect, educator, researcher, curator, designer, Docomomo Slovenia Chair and author of more than 200 articles and publications on Modern Movement.

She was educated in the University of Ljubljana and did her Ph.D. research at Oxford Brookes University in 2003. In 2008 she co-curated an international Docomomo research on modern school buildings. In 2018 she co-organised 15IDC Docomomo conference *Metamorphosis – The Continuity of Change*. She is the author of *Rita Footstool* and was awarded Plečnik Medal in 2014.

**Lejla Kreševljaković**

Is a researcher in architectural theory and is interested in the social aspect of architecture.

She obtained a doctoral degree in architecture from the Faculty of Architecture, University of Sarajevo. Her thesis was on the socialist architectural heritage in Bosnia and Herzegovina through the conservation and protection of community centres. She has a master’s degree in architecture and a master’s degree in art from the University of Sarajevo. Her architectural projects were exhibited in several combined exhibitions and two individual exhibitions. She works at the Faculty of Architecture, University of Sarajevo, as an assistant professor.

**Marieke Kuipers**

Delft University of Technology,
Heritage & Architecture/AE+T/
Faculty of Architecture, The
Netherlands.

Is emeritus Professor of Cultural Heritage at Delft University of Technology and former Senior Specialist in Recent Built Heritage at the Dutch Agency for Cultural Heritage, Amersfoort; former secretary/co-editor of DOCOMOMO's ISC on Registers; member of ICOMOS 20C ISC and active for World Heritage nominations. Fields of interest: identity, cultural resilience and revitalisation of built heritage. Newest publications: "Reconstruction and Reconciliation. Post-Conflict Replications in the Netherlands", in Simone Bogner and others (eds.), *Denkmalwelten und Erbediskurse*, Berlin, Urbanophil, 2021, 88–105; *Common Ground: Dutch–South African Architectural Exchanges 1902–61*, (Edam, LM Publishers, 2021, co-edited with Nicholas Clarke and Roger Fisher).

**Susana Landrove**

Architect, 1993, ETSA UPC, Barcelona. She is the Director of the Fundación DOCOMOMO Ibérico since 2009 and has been in charge of its programmes and research since 1995

She is a member of the ISC/R of DOCOMOMO International since 2000. She has coordinated and participated in numerous research projects related to Modern Heritage: "INNOVAConcrete, Innovative materials and techniques for the conservation of 20th century concrete-based cultural heritage, 2018–2021, "ARCH XX SUDOE. The architecture of the XXth Century in Spain, Gibraltar and the French regions of Aquitaine, Auvergne, Languedoc-Roussillon, Limousin, Midi-Pyrénées y Poitou-Charentes", "Application of the Spanish CTE building regulations to Modern Movement heritage buildings" (2011) and "Catalogue of buildings included in the National Plan for Conservation of XXth Century Cultural Heritage" (2011–15). She has been a jury member of the 2021 edition of the FAD Award for Thought and Criticism.

**Alejandro Leal Menegus**

PhD in Architecture from the
Universidad Nacional Autónoma de
México (UNAM).

He is a tenured professor at the School of Architecture (UNAM) and part of the Centro de Investigaciones en Arquitectura, Urbanismo

y Paisaje (CIAUP). His research focuses on twentieth-century Modern architecture and its conservation, specifically in housing and construction history from a cultural perspective. He is also a member of the Mexican National System of Researchers (SNI) and DOCOMOMO Mexico chapter.

**Vitorio Leite**

Architect, graduated at Faculdade de Arquitectura da Universidade do Porto (FAUP).

He studied and worked in Santiago do Chile, between 2008 and 2012, and, in 2014, with Catarina Ribeiro, established merooficina, an office for architecture based in Porto. Today, he is teaching as visiting assistant professor at FAUP, working as a researcher at Department of Architecture at the Faculty of Sciences and Technology of the University of Coimbra and pursuing a PhD in Architecture. His doctoral studies are focused on architectural creation processes.

**Logan Leyton Ossandón**

Architect unanimous maximum distinction, 2009.

Diploma in Design Thinking, Universidad de Chile, 2019, postgraduate studies in Contemporary Architecture Criticism by the school of architecture of the Catholic University of Chile 2020 and candidate for master's degree in architecture by the same school. Assistant professor of Research Project Formulation with Alejandro Crispiani, School of Architecture, Pontificia Universidad Católica de Chile, DIRIP UC 2021 Award. Director of LL Arquitectos Asociados. His next publications are the editorial projects " Anonymous Modernity Vol. I & II, 1926–1976", "Domestic Speculations" and " Essays, Tests and mistakes that a picture is not worth more than a thousand words".

**Inês Lima Rodrigues**

Architect and researcher, PhD in Modern Housing of Portuguese Influence, with recognized merit as "Premi Extraordinari Doctorat-UPC".

She has published book chapters, articles and participated in international conferences as

outcomes from her post-doctoral research on Angola's modernity; Co-PI of the R&D project "Middle-Class Mass Housing in Europe, Africa and Asia" and researcher in the R&D project "Archwar", funded by FCT. She is also WG1 Leader in the COST Action 18137. She carries out architectural project practice as a parallel activity to research, complementing the knowledge and the relationship between both areas.



Sabei Liu

A final year PhD candidate in Architecture, the University of Hong Kong.

Her research interests lie in the urban morphology, walking behaviours, thermal comfort, and pedestrian networks analysis of 3D volumetric, high-density and high-rise city. She also has teaching assistant experience in city history and sustainable environmental design course. She is also the former president of the Student Chapter of International Council for Research and Innovation in Building and Construction (CIB) in HKU.



Laura Lizondo-Sevilla

Is an architect PhD and professor at the Universitat Politècnica de València (UPV).

Director of the Cátedra Blanca Valencia. Pre-doctoral research stay at GASPP, Columbia University, and a post-doctoral research stay at Central Saint Martins, UAL, both related to two ongoing lines of research: the architecture of Lilly Reich and Mies van der Rohe and the architecture and urbanism of the Plateglass Universities. She has published in: *PpA*, *EGA*, *ACE*, *ARQ*, *Revista 180*, *VLC Journal*, *JSAH*, *BAC* and *Arquitectura Revista*. She is co-recipient of the 2020 Lilly Reich Grant for Equality in Architecture.



Néstor Llorca Vega

Universidad Internacional SEK Ecuador.

Ph.D. Candidate in Architecture from the University of Alcalá with the thesis "Hybrid architectures of hybrid cultures. The case of Quito in the 20th century", Master in Architecture and City Project (UAH) and

Architect by PUCE, Quito.

Member of the research groups "Theorization and diagnosis of contemporary habitat" and "Intelligent environments via cyber-physical systems" at UISEK Ecuador. He has published several articles in the areas of Theory, Criticism, and Technology. Currently Dean of the School of Architecture and Civil Engineering at UISEK Ecuador. Co-founder of I+D+A architecture studio and founding partner in Equidad y Desarrollo EQD Consultores.



Mar Loren-Méndez

Is a Ph.D. Architect, Seville University USE.

She has a Master on Advanced Design Studies, Harvard University; and a Master on Heritage and New Technologies, European Leonardo Da Vinci program. Full Professor at the School of Architecture USE. Since 2015 she is the director of the Research Group Contemporary City, Architecture and Heritage.

With a focus on non-exceptional heritage, and specifically, Modern and Contemporary, she has worked on cross-cultural studies Europe-America, tourist littoral transformation, and she is currently focused on creative and interdisciplinary heritage methodologies, with the conceptual integration of new technologies. Her pioneer contributions in the field has resulted in her leadership of the UNESCO Chair on Built Urban Heritage in the Digital Era CREHAR (Creative Research and Education on Heritage Assessment and Regeneration).



Carolina Luna Marín

1993, Ecuadorian. Architect, Master in Architecture with a mention in integral projects at the UISEK International University of Ecuador.

Her research was a pillar in her training, starting with her undergraduate research thesis entitled "Theoretical study and project development for the architectural rehabilitation of the student residence of the Central University of Ecuador." She published the article "Possible futures for the UCE student residence: A methodological approach for its rehabilitation", in the magazine *Arquitecturas del Sur* in Chile. Finally, she did her master's thesis on the heritage of the Modern Movement in Quito.

**Barbara Lubelli**

Is an associate professor at TU Delft, Faculty of Architecture and the Built Environment.

Her research and teaching activities focus on the durability of materials and structures and the development and assessment of conservation materials and techniques for heritage buildings. She (co)-authored numerous articles in international peer-reviewed journals and books as well as contributions to (inter) national conferences.

**Susan Macdonald**

Bsc. (Architecture), B. Arch. University of Sydney, MA (Conservation Studies) (University of York/ICCROM)

Is currently Head, Buildings and Sites, and oversees over 25 projects that aim to advance conservation practice internationally, including the Getty's Conservation Modern Architecture Initiative (CMAI). Projects involve research, field projects, training and dissemination. Susan has worked in the private, public sector and non-profit sectors on a variety of issues from local to world heritage matters. Engaged in conserving 20th century heritage for many years, she is a member of the DOCOMOMO ISC Technology, and a Vice President of the ICOMOS 20th Century Committee.

**Joanna Majczyk**

Wrocław University of Science and Technology, Wybrzeże Wyspiańskiego

Architect, assistant professor at the Faculty of Architecture/Wrocław University of Science and Technology, head of Department of Contemporary Architecture at the Museum of Architecture in Wrocław (Poland). She does research on architecture and urban planning of the 20th century, socialist realism and European modernism. She is a co-author (with A. Tomaszewicz) of a monograph on the works of Anna Tarnawska and Jerzy Tarnawski, pioneers in post-war reconstruction of Wrocław. She is an author of the creative biography of Andrzej Frydecki (1903–1989), a modernist architect.

**Maria Manuel Oliveira**

Completed her Architecture degree at School of Fine Arts of Porto (1985).

She is a researcher at Lab2PT, and since 1997, a lecturer at the School of Architecture at the University of Minho, where she has been teaching and conducting work on architectural and urban design at the School's Studies Centre. She is currently involved in research projects related to the rehabilitation of spaces and buildings, which are significant for urban collective memory.

**Giulia Marino**

Professor at the UCLouvain, LAB Institute (Brussels, Belgium) and researcher at the Laboratory of Techniques and Preservation of Modern Architecture at the EPFL (Lausanne, Switzerland).

Giulia Marino is specialized in conservation of the modern and contemporary heritage, and in history of 20th-century construction techniques and building services. She has developed these two main strands of research in her work, as well as the monumental heritage and in the extensive corpus of architectural production 1945–75. Her last books are the monographs "Les multiples vies de l'appartement-atelier. Le Corbusier" (2017), "La Buvette d'Évian. Maurice Novarina, Jean Prouvé, Serge Ketoff" (2018), and "Avanchet-Parc" (2020). She is Vice President of Docomomo Switzerland and member of ICOMOS.

**Carmen Martínez Gregori**

Is an architect from the Polytechnic University of Valencia (UPV).

She obtained the Diploma of Advanced Studies Department of Urbanism UPV and a year later, she began to work as an associate professor in the Department of Architectural Composition UPV. Since 2010 she is teaching at the School of Art and Superior Design of Valencia (EASDV) Department of Interior Design. She researches in works on the Counselling of Environment, Water, Urban Planning and Housing and Official College of Architects of the Comunitat Valenciana (COACV). 2003 she has been working as an architect obtaining several awards from: Spanish Association

of Tile Manufacturers, Valencian Housing Institute, Balearic Housing Institute and COACV, published in magazines: Arquitectos, TC, Temas de Arquitectura, Detail, AV and Arquitectura Viva.



Beatriz Martínez Lauwers

graduated with a degree in Fundamentals of Architecture and a Master's Degree in Architecture from the Polytechnic University of Valencia, class of 2010–2016.

She currently combines her work as an architect and interior designer in her own studio founded in 2020 under the name of Bala Studio, with the completion of her doctoral thesis: *"Architects and interior design in the domestic space"*.



Francisco Juan Martínez Pérez

Architect by the ETSAV, UPV in 1992.

PhD Architect from the UPV in 2004. Associate Professor of the Department of Urbanism. Teaches at the ETSAV at Undergraduate and Master levels. Participated as a researcher in 4 research projects with regional public funding, and two international: Med-Int URB-ACT, (2004–06) and U_Graden (2022–24) of the European Community. Vice-Director of the Chair of Sustainable Municipalities (Cátedra Municipios Sostenibles) of the UPV. Has been recognized a six-year period (sexenio) of research by ANECA. Coordinator of the Working Group University Urbanism and Sustainability CADEP–CRUE until 2016. Author of books, book chapters and articles focused on urban projects, landscape and the shape of the city.



Sanja Matijević Barčot

Is an architect and Assistant Professor at University of Split, Faculty of Civil Engineering, Architecture and Geodesy.

She received her PhD in History and Theory of Architecture and Historic Preservation from the University of Zagreb in 2014. Her research interests include modern architecture and culture, legacy of socialist housing strategies and politics of urban planning after WWII.



Chandler Mccoy

Manages the Conserving Modern Architecture Initiative at the Getty Conservation Institute in Los Angeles whose mission is to advance the practice of conserving modern heritage.

This includes developing and delivering educational and training programs, managing field projects, and publishing technical books related to conserving modern heritage. He was trained as an Architect in the US and attended ICCROM's architectural conservation program in Rome. He is a LEED-accredited professional and a cofounder of the Northern California Chapter of Docomomo-US.



María Melgarejo Belenguer

1990. Architect by the ETSA Valencia-UPV.Valencia.

1995 Professor of Plastic Arts and Design.
2005 PhD in Architecture from ETSA Barcelona, UPC, Catalonia. Thesis: Towards the Interior of Architecture. 1925–1937. Lilly Reich– Charlotte Perriand. 1992–96 she coordinated the cultural activities of the COACV, directed the New Ways of Living course in 1995 and was editor of the publication for which she obtained in 1998 the COACV AWARD. 1996– 97 she was Director VIA-Architecture magazine. 1998–2000 she was Valencia's correspondent for the magazine Pasajes de Arquitectura y Crítica. 2007 Mention in the VI Thesis Contest Arquia Foundation. 2005–16 Associate Professor of the Department of Architectural Composition ETSA UPV. 2010 Master's Degree in Heritage Conservation. 2012 FAD Thought and Architectural Criticism Award. 2021 Professor of Plastic Arts and Design.



Sanket Mhatre

is a practicing architect from Mumbai with a steady investigation in the diversity of nature and the built.

His M.Arch. thesis (on theory and design) was awarded the Louis Kahn Gold Medal by CEPT University. His practice motivates him to pursue these concerns through research on historic cities, natural environments and sensory qualities of a design. He currently teaches at the IES College of Architecture.

**Pablo Millán Millán**

PhD in Architecture and Heritage from the University of Seville and Professor of Architectural Projects Department at the same University

PhD in Architecture and Heritage from the University of Seville, he is Professor of Architectural Projects at the same University. He develops his research and professional activity mainly in the conservation of built heritage. After completing the "Master in Architecture and Historical Heritage" and the "Master in Management of Latin American and Andalusian Heritage", he has focused his studies on the contemporary analysis of historical buildings and structures. Currently, together with the research and teaching activity carried out at the Higher Technical School of Architecture of Seville, he is a researcher at the School of Architecture and Design of the Pontifical Catholic University of Valparaíso in Chile.

**Margot Missoorten**

Department of Architectural Engineering – PhD Vrije Universiteit Brussel (VUB) and Ghent University (UGHENT) – Funded by the Research Foundation Flanders (FWO).

Graduated in Architectural Engineering at the Vrije Universiteit Brussel (VUB) in 2020 and is now a doctoral student at the VUB (Faculty of Engineering) and Ghent University (UGhent, Faculty of Arts and Philosophy). Her FWO SB-funded research studies the concepts, construction characteristics, and conservation possibilities for Belgian rational interwar kitchens.

**Azar Mohammadpanah**

Is an architect and a current Ph.D. candidate at the Faculty of Architecture of the University of Porto (FAUP, 2020).

Her FWO SB-funded research studies the concepts, construction characteristics, and conservation possibilities for Belgian rational interwar kitchens.

**Hugo Mondragón López**

Associate Professor in the School of Architecture PUC–Santiago de Chile.

Architect (UPC–1990), Master in theory and history of art and architecture (UNAL–2003), Master in architecture (PUC–2002) and doctor in architecture and urban studies (PUC–2010). He is a member of DoCoMoMo and Society of Architectural Historians. Recently published "Modern Providencia. Medium and small housing buildings. 1930–1970", as an author, and "Atlas of the Ordinary. 1930–1970. Drawings and photographs of modern architecture in Brazil and Chile", as editor. Mondragón is a member of the Editor Committee of Dearq and ARQ magazines of architecture. Mondragon is the head of the Heritage and Modernism Research Cluster CENPUC.

**Henrieta Moravčíková**

Is Professor of Architecture History at the Faculty of Architecture Slovak University of Technology

Head of the Department of Architecture at the Slovak Academy of Sciences, and chair of the Slovak DOCOMOMO chapter. Her field of interest is 20th and 21st century architecture and modern architecture heritage. Her book, *Architect Friedrich Weinwurm* (2014), was awarded the International DAM Book Award. Together with her team she prepared the first complex analytical monograph on modern town-planning of the capital of Slovakia Bratislava (un)planned city (2020). The International Creative Media Award recently awarded the monograph the Gold Award.

**Maria João Moreira Soares**

Lusíada University, Faculty of Architecture and Arts i Centro de Investigação em Território, Arquitectura e Design – CITAD i Lisbon, Portugal

She is a Portuguese architect practicing since 1988, an assistant professor at Faculty of Architecture and Arts, Lusíada University of Lisbon [FAA/ULL], where she teaches since 1989, and a research fellow at Design, Architecture and Territory Research Centre [CITAD], ULL. She is a member of CITAD's Board of Directors and coordinator of Architecture and Urban Planning Research Group. She is also a film producer. Maria João holds a degree in Architecture from Faculty of Architecture, Technical University of Lisbon [FA/UTL], 1987, and a PhD in Theory of Architecture from Lusíada University of Lisbon [ULL], 2004.

**Laura Mucciolo**

(1996), M. Arch., is currently Ph.D. student in Architectural and Urban Design curriculum at *Architecture. Theories and Project course*, Sapienza University of Rome.

She holds the Master's degree in Architecture at University of Florence (School of Architecture) in 2021, with the research: "Third Paradise. Super-Landscapes / Super-Architectures for mutual adaptations dwelling". She has carried out research in Italy and abroad (UNAM, Mexico; OMA - Office for Metropolitan Architecture, The Netherlands). She took part to conferences and published essays focused about city, countryside, automated building landscape, figurative communication of architecture.

**Zaida Muxí Martínez**

(Buenos Aires, 1964).

She is an Architect at the University of Buenos Aires and obtained her PhD from the School of Architecture of the University of Seville. She had been Director of Urban Planning, Housing, Public Space, Ecology and Environment in Santa Coloma de Gramenet (Catalonia, Spain). She is a professor of Urban Planning at the School of Architecture of Barcelona (ETSAB) at the Polytechnic University of Barcelona. Former co-director with Josep Maria Montaner of the Master of the 21st century Sustainable Housing Lab from 2004 till 2014. Deputy Director of ETSAB (2009-2012). Her last book is "Beyond the Threshold. Women, Houses and Cities" (dpr-barcelona, 2021). She is co-founder and member of the research network "Un día una arquitecta".

**Rocío Narbona Flores**

(1982). Is Ph.D. Architect from the University of Las Palmas de Gran Canaria and a member of its research group *Arquitectura, Patrimonio y Paisaje* (Architecture, Heritage and Landscape).

Her doctoral thesis and subsequent research has focused on the landscape project in contemporary tourist areas. She currently combines her research with her professional activity and is an assistant at the Brandenburgische Technische Universität Cottbus-Senftenberg in the subject of architectural project.

**Elena Navarro-Astor**

Dr. in Business Organization, Senior Lecturer, Department of Business Organization, Universitat Politècnica de València (Spain).

She lectures Applied Economics and Business Management at undergraduate level, at the schools of Architecture and Building Engineering at UPV, and Human Resource Management at master level. Her research interest is broadly focused around Human Resource Management in the construction industry, with a special interest in gender issues. She has published comparative studies of women architects in France, the UK, Lithuania and Spain, and also on career barriers confronted by women in the construction industry.

**Edyta Naworska**

An architect and PhD candidate, graduated from Wrocław University of Science and Technology in 2021 with a Master's Degree in Architecture and Urban Planning

Currently work in the well-known and awarded architectural studio PORT as an architect specialized in multifamily architecture. Research interests: the significance and impact of the state policy on housing construction in Wrocław (former Breslau), including the activity of housing cooperatives, in the inter-war period.

**Tsai Ning**

Ning Tsai is currently a lecturer in the Department of Architecture in National Kaohsiung University, and simultaneously doing a Ph.D in the Department of Architecture in National Cheng Kung University in Taiwan.

He received his M. Arch from National Cheng Kung University in 2012. His research is mainly in post-war Taiwanese architecture and art, and is represented by architect Chi-Kwan Chen. His teaching focused on the initial education of architecture.

**Louise Noelle Gras**

Instituto de Investigaciones Estéticas, UNAM

Art and architecture Historian, professor/ researcher at the Instituto de Investigaciones Estéticas of the National University of Mexico. Involved in architectural criticism, co-founder

and Director of the Comité International des Critiques d'Architecture (CICA). Active in the field of the protection of the 20th Century architectural heritage, chair of DOCOMOMO Mexico and of the ISC-Registers. Member of the Arts Academy, the Society of Architects and Jean Tschumi Prize of the UIA. Contributor to numerous architectural journals and author of various books, on Ricardo Legorreta, Luis Barragán, Mario Pani, Enrique del Moral, *Arquitectos contemporáneos de México* and *Guía de Arquitectura de la Ciudad de México*.



Patricia Noormahomed

Is a PhD candidate in Architectural Heritage at Universidad Politécnica de Madrid (UPM) and a lecturer at Universidade Wutivi (UniTiva).

She is an architect and holds a Master's degree in Rehabilitation, Restoration and Integral Management of Built Heritage. She has been Visiting Researcher at Habiter Research Centre (Faculté d'Architecture La Cambre-Horta, Université Libre de Bruxelles), a member of the project Coast to Coast – Late Portuguese infrastructural development in continental Africa, and is, currently, a researcher in the project 'ArchWar'. Her research field is the architecture of the 20th century, focusing on modern architecture in late colonial Mozambique.



Zeren Önsel Atala

Born in 1983 in Istanbul, Zeren Önsel Atala is a Ph.D. candidate at Istanbul Technical University (ITU), Department of Architecture.

She studied at ITU and had her B.S. degree in architecture in 2007 and M.Sc. degree in restoration in 2010. Her proposed title for Ph.D. dissertation is "Conservation of The Modern Heritage Values of Multi-Layered Western Anatolian Cities Planned In 1920–1960". She worked as research assistant between 2012 and 2018 at ITU and spent one year (2014–2015) at University of Stuttgart as scholar. She is working as lecturer at Ozyegin University since February 2019. She is a member of ICOMOS Turkey National Committee, Docomomo International and Docomomo Turkey.



Melis Örnekoğlu Selçuk

Received her bachelor degree from Izmir University Economics, Interior Architecture and Environmental Design Department in 2016.

She studied industrial design at Univerza v Ljubljani as an Erasmus student. She holds an M.Sc. degree in industrial design received from Izmir Institute of Technology in 2019. Currently, she is a PhD candidate at Ghent University, Industrial Systems Engineering and Product Design Department. Since 2020, she has been working for the Erasmus+ KA2 project 'T-CREPE' as a researcher. She worked for DATUMM_ Documenting and Archiving Turkish Modern Furniture as an assistant. She is a member of docomomo_tr Interior Design Committee.



Manuela Palmeirim

Is a Professor of Anthropology at the University of Minho, Portugal.

She is the author of *Of Alien Kings and Perpetual Kin* (2006) and co-author of *The Lunda* (2017), among other publications. Having conducted extensive fieldwork among the Aruwund (Lunda) of the Democratic Republic of the Congo on foundation myths and kingship ideology, she is currently working on domestic space, sorcery, and knowledge building in Zanzibar.



Maite Palomares Figueres

Titular de Universidad en Departamento de Composición Arquitectónica de la Universitat Politècnica de València.

PhD. in Architecture. Professor in the Architectural Composition Department at the Universitat Politècnica de València. Master's Degree in Architectural Heritage Conservation. University Specialist in University Teaching Practice. She develops research on the lines of modern and contemporary architecture, the Conservation of Modern Heritage, and on Modern and Tourism Architecture. She is a member of DoCoMoMo International and of the Technical Committee of DoCoMoMo Ibérico, as representative of the Universitat Politècnica de València. She has also received an Architecture Award from COACV 2000–02 and is a member of the Valencia Design Council. She is IP of the project "Conservation Management Plan Chestre Workers University Parainfo", winner of the international competition (2019) Keeping it Modern of the Getty Foundation.



José Parra-Martínez:
University of Alicante.

Architect and PhD. Architect (Polytechnic University of Valencia, 2000 and 2012), Senior Lecturer at the University of Alicante (UA) Department of Graphic Expression, Architectural Theory and Design and a member of UA's Gender Studies Institute.

His research explores intersections between historiography and place, gender, and generation in modern and postmodern architecture from the critique of the media, policies and pedagogies that have produced its hegemonic discourses. He has been a member of the Iberian DOCOMOMO Register Committee (2007–2011) and is currently taking part in the research project *Situated Investigations: Women's Architecture in Spain from Peripheral Perspectives 1978–2008* (Generalitat Valenciana, 2021–2023).



Óscar Pedrós Fernández
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PhD. in Architecture (UDC, TU Munchen, 2013). Professor of Architectural Design at ETSA A Coruña (UDC) and member of Research Unit pARQc (Landscape, Architecture and City). Visiting professor at TU Munchen, OTH Regensburg, ENSA Clermont–Ferrand, UE Maringá and NUACA Armenia. Member of *Iacobus project: Refurbishment of European Heritage*. Author of books: *Architecture and Illusion. Designing from In–genius Loci* (sp., Diseño Editorial, 2019, running–up XV BEAU, FAD and COAG first prize) and *The Engine of Dreams* (sp., Labirinto, 2020). Architectural work published in the international context. oscar.pedros@udc.es.



Alfredo Peláez Iglesias
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He teaches and researches at the Design Institute (FADU UdelaR), with focus on interior space, modern architecture, school architecture, practice and theory of project.



Ana Carolina Pellegrini
Is an Architect (UFRGS, 1999), Doctor (UFRGS, 2011) and Professor at the Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil

Teaches both in undergraduate and graduate courses; researches about architectures *out of time* and about design as heritage; has articles published on Brazilian and international journals and has participated in several seminars and conferences in Brazil and abroad; took part in several International Docomomo Conferences, such as in Mexico City, 2010; Espoo, 2012; Seoul, 2014; Lisbon, 2016, Ljubljana, 2018 and Tokyo, 2020+1.



Ana Pereira Roders
Is Professor of Heritage and Values, and Head of the Department of Architectural Engineering and Technology, at TU Delft.

The chair aims to further understanding on the values that define heritage, such as cultural, social, ecological, and economic; and how they impact the sustainability of cities. One of the main goals is to define, develop, and test new integrated assessment frameworks to better monitor and strengthen heritage conservation worldwide. Since 2008, Ana cooperates closely with UNESCO and the World Heritage Centre in particular. Her work is most relevant to governance reforms in heritage and urban planning.



Verdiana Peron
Graduated with honours in 'Architecture for the Old and the New' (Master Degree, 2017) at *Università Iuav di Venezia*.

Her Master's thesis was mentioned at the 2nd SIRA (Italian Society of Architectural Restoration) Young 2018 Award and ARCo Young 2017 Prize. She obtained a postgraduate specialisation in 'Architectural and Landscape Heritage' at *Università Iuav di Venezia* (2020). She is a PhD student in 'Preservation of the Architectural Heritage' at *Politecnico di Milano* and she collaborates in the teaching of the University courses. Her research interests are focused on the conservation of 20th–century heritage, in particular on roadside architecture.

**Peer Peters**

Is an urban designer and planner who worked from 2004 until 2021 for the Urban Development Department of The Hague.

Since 2017 he was dedicated to the district Mariahoeve as urban designer. Here he worked closely with developers, the district residents council Mariahoeve, the department of Preservation and the Aesthetics committee. He is experienced in inner-city redevelopments, where are many interests and cultural-historical integration is part of the design task. An open planning process is preferred for integrating the many interests within the city. Since 2020 he has started his own practice, working on urban developments in different municipalities.

**Ioanna Piniara**

Is an architect and researcher holding a PhD by Design from the Architectural Association (AA).

Her research interests include the study of domesticity as a biopolitical device for the control of bodies and identities, the spatial ramifications of economy, institutional power and policy in the design of urban housing as well as narratives for the decolonization of housing typologies and urban forms. Ioanna is teaching at the 'Projective Cities' MPhil in Architecture and Urban Design programme and the History and Theory Studies course at the AA. She is also a post-doctoral fellow of the 'Architectures of Order' research cluster at the Goethe University Frankfurt.

**Uta Pottgiesser**

Full Professor, TH OWL/TU Delft, Emilienstr. 45, 32756 Detmold Germany/Julianalaan 134, 2628 BL Delft, The Netherlands.

Uta Pottgiesser is Professor of Building Construction and Materials at TH OWL (Germany) since 2004 and Professor of Heritage & Technology at TU Delft (The Netherlands) since 2018. She holds a Diploma in Architecture from TU Berlin and a PhD from TU Dresden (both Germany). From 2017–19 she was appointed as Professor for Interior Architecture at the University of Antwerp (Belgium). She lectures and publishes internationally. She is Board Member of DOCOMOMO Germany since 2016 and was Chair of the DOCOMOMO International Specialist Committee on

Technology (ISC/T) from 2016–2021. Since 2022 she serves as Chair of DOCOMOMO International.

**Elena Pozzi**

(Ravenna July 21, 1987). In Architect, PhD and is a ministerial officer serving at Uffizi Galleries in Florence since 2019.

Formerly researcher at the Polytechnic of Milan (territorial Pole of Mantua), she got her PhD at the IUAV University of Venice, with a research thesis on architectural neo-medievalism in Bologna, that is still the main theme of her research.

**Avelina Prat-García**

Studied architecture at the Universitat Politècnica de València (UPV).

She worked as an architect before starting in cinema. From 2014 she has worked as a script supervisor in more than thirty feature films, with directors such as Fernando Trueba, Cesc Gay, Martín Cuenca, Javier Rebollo or Lucile Hadzihalilovic. She has written and directed short films and documentaries. Her last short film, *3/105*, was selected at Venice International Film Festival (*La Mostra*). She has just finished her first feature film, *Vasil*, produced by *Distinto Films*, which will be soon screened in cinemas. She is co-recipient of the 2020 Lilly Reich Grant for Equality in Architecture.

**Marco Pretelli**

Architect—degree in 1991 at the Università Iuav di Venezia.

PhD in Conservation of Architecture in 1999 at the University of Naples "Federico II", Architect at the Soprintendenze per i Beni Architettonici of Arezzo (2000) and Venice and its Lagoon (2000–2005), since 2005 is an Associate Professor of Architectural Restoration at the University of Molise and, since 2009, at the University of Bologna; since 2016, he is a Full Professor at the same university. Already in the PhD Steering Committee in Conservation of Architecture at the Politecnico di Milano, since 2013 he is a member of the PhD Steering Committee in Architecture at the University of Bologna. The main lines of his research focus on topics of theory and history of restoration, restoration of modern architecture, restoration

of historical plants, and microclimate of historic architecture.



Carolina Quiroga

Faculty of Architecture, University of Belgrano and University of Buenos Aires, Buenos Aires, Argentina.

Carolina Quiroga is an architect and Specialist in Conservation and Re-use of heritage. She is a professor and researcher at the Faculty of Architecture –University of Buenos Aires and University of Belgrano– in the field of architectural design and heritage intervention and re-use. Director of LINA Laboratory > Intervention + Architecture. Director of the research project “Resilience, social participation and sustainability as strategic project approaches for the intervention of urban-architectural heritage” and the Course “Heritage and Gender mainstreaming. Design project tools for the territorial, urban and architectural intervention” in the University of Buenos Aires. Author of several presentations and articles related to architectural education and modern heritage re-design. She is a member of ICOMOS and DOCOMOMO ISC Registers and DOCOMOMO ISC Education+Training.



Wido Quist

Is the section leader of Heritage & Architecture section at TU Delft.

He holds a PhD in building conservation and his research interests contain among others history of conservation, 19th and 20th century building materials and adaptive reuse of Modernist buildings. He is Secretary General elect of DOCOMOMO_International.



Eryk Rawicz-Lipinski

DOUGLAS-WALLACE ARCHITECTS, DUBLIN, IRELAND

He is a certified architect and a member of the Royal Institute of Architects of Ireland. Holds a master's degree from Wrocław Technical University and a Postgraduate Diploma in Applied Building Repair and Conservation from University of Dublin, Trinity College. He works at Douglas-Wallace Architects in Dublin and lectures Materials Science and Structural Mechanics in Griffith College, Dublin. His main

research involves development of modernism and social housing in Ireland. He is a member of Docomomo International



Ana Maria Reis de Goes Monteiro

School of Civil Engineering, Architecture and Urbanism, State University of Campinas, Brazil.

Is an architect and urban planner with masters in urbanism and doctorate degree granted by State University of Campinas – UNICAMP. Since 2001 she has been teaching at the Architecture and Urbanism course at UNICAMP. Since 2012 she has been director of the Brazilian Association for the teaching of Architecture and Urbanism (ABEA), being its vice president in the 2017/2019 administration and its current president. At the postgraduate level, she works in the Architecture, Technology and City program at UNICAMP. Author of several presentations and articles related to architectural education and Brazilian architecture.



Guilherme Rene Maia

Is architect (UFRGS/Brazil – 2007), have a master's in architecture (UFRGS/PROPAR/Brazil – 2012) and is PhD candidate at University of Coimbra – DARQ/Coimbrastudio since 2017.

Is a Research fellow at CIAUD – Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, where works on the project PORARQ – Por Uma Memória Arquitetónica – on which research architects have worked both in Portugal and Brazil. Have a special interest in the exchanges between Portuguese and Brazilian architectures from 20th and 21st centuries, as reflected by the development of his PhD thesis.



Ana Isabel Rodríguez Aguilera

Master's degree in Architecture by the University of Granada (Spain).

She has received scholarships to develop internships in architectural offices and to start the research line, highlighting XV Arquia award at Estudio Carme Pinós (Barcelona), collaboration fellowship with university departments and FPU fellowship for research and university teaching training, both from Spanish Ministry of Universities. She has carried

out research stays at the University of Porto (Portugal) and at the Arizona State University (USA). Currently she is part of the research team "Proyecto: Experiences in Architecture and Landscape", linked to the Department of Architectural and Engineering Graphic Expression at University of Granada, where she develops her PhD research.



Sara Rodríguez Cajaraville
(Vilagarcía de Arousa, 1976). Master in Architecture (ETSAC, Universidade da Coruña).

Collaborator in different offices of architecture and companies specialized in rehabilitation and energy. Management of teams in singular works, pioneers in Galicia for the use of renewable energies such as the Allariz Biomass Plant (Orense), the nED Factory building in Vilalba (Lugo), or the residence of the Countess of Fenosa in A Toxa (Pontevedra). sararodriguez@mun-do-r.com.



Eva J. Rodríguez Romero
Escuela Politécnica Superior,
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PhD in Architecture by the Polytechnic University of Madrid and specialist in Historic Gardens and Architectural Restoration. He completed his doctoral thesis, "The Landscape Garden and the Recreational Quintas of the Carabancheles: the Royal Possession of Vista Alegre", at the Institute of History of the CSIC. Full Professor and Head of the Architectural Constructions Area at the San Pablo-CEU University of Madrid, Member of the Academic Committee of the Doctoral Program in "Composition, History and Technique of Architecture and Urbanism" of CEINDO. She founded, in 2006, the Research Group "Heritage, Architecture and Landscape", of which she is Main Researcher. His lines of research cover the history of Spanish gardening, as well as the perceptual analysis of gardens and landscape, the urban landscape and the urban form.



Ana Román
Is editor of redfundamentos, founder and director for eight years of the journal rita_ (Revista Indexada de Textos Académicos) and director of the II Iberoamerican Congress redfundamentos.

Experiences and research methods. She currently directs the collection Habitar Iberoamérica (redfundamentos), is communications manager at the international firm IDOM Consulting, Engineering and Architecture and collaborates with various national media. Curator of the 11th Iberoamerican Biennial of Architecture and Urbanism, she has taught at several Spanish universities and curated exhibitions at national and international level.



Verónica Rosero Añazco
Ph.D. in Architecture, University of Alcala, 2015.

Cum Laude. International Doctorate Mention for research stay at TU Delft. Master in Architecture and City Projects, University of Alcala, 2009. Architect, Pontifical Catholic University of Ecuador, 2006. Associate Professor, Central University of Ecuador since 2016. Co-founder at I+D+A Architecture Studio, an office that combines research, divulgation and architectural design.



Barbara Rozas Reinecke
Architect and Master of Architecture, PUC, 2020.

She has co-curated and collaborated in various projects by Barco Galería and is currently teaching at the master's in architecture program (MARQ) UC. Her essays have been published in *Dearq* (Colombia) and *Anales de Arquitectura* (Chile). She is a member of Docomomo Chile and a founding member of the Heritage and Modernism Cluster CENPUC, where she is currently contributing to the "Between the lines" project, that focuses on the disciplinary contribution of modern women architects in Chile.



Miguel Ángel Ruano Hernansanz
ETS Architecture of Madrid.
Valladolid

Is an architect by the University of Valladolid, Master in Conservation and Restoration of Architectural Heritage by the Polytechnic University of Madrid and currently a PhD candidate in Architectural Heritage by the School

of Architecture of Madrid-UPM. His research work focuses on studying the history and operation of the GATEPAC buildings from their construction to the present day. He has participated professionally in historical heritage restoration projects, highlighting interventions in Condes de Grajal's Palace (Grajal de Campos, León. 2017) and the Monastery of San Benito of Sahagún (Sahagún, León. 2019 and 2022).



Alberto Rubio Garrido
Architect (Polytechnic University of Valencia, 2008).

PhD in Philosophy (University of Valencia, 2015) with the recognition of Extraordinary Award and PhD in Architecture (2021, Polytechnic University of Madrid). I have participated in International Research Projects, both in the area of philosophy, as well as in architecture and urban studies. Part of the results obtained have been shared through different publications and communications. I have been a researcher at the Instituto Valenciano de la Edificación since 2016 and Director General at Generalitat Valenciana since 2020.



Claudia Rueda Velázquez
PhD architect by Universitat Politècnica de Catalunya (2008).

Research Professor at Universidad de Guadalajara, México. Member of the DOCOMOMO México.



Francisco Javier Saenz Guerra
Became an architect in 1985 (ETSAM, Madrid)

In March 2005 he presents his PhD under direction of Mr. Juan Navarro Baldeweg. He is assistant teacher in the Architectural Projects' subject area, tutoring students of the third year at Madrid's 'CEU Architecture. As from his outset as a student, he has been working non-stop at his father's architects' firm 'Francisco Javier Sáenz de Oiza' in the different projects carried out by the firm, (Seville's, Madrid's Trade Fair Complex, Residential Buildings at Madrid's M30) or developing private assigns. At present, both he lead their own architects' firm.



Wolfgang H. Salcher
Federal Monuments Authority Austria (Bundesdenkmalamt), Deputy Head of Department.

He worked previously in architectural practices in Austria, Italy, Germany and with the IFA – Institut français d'architecture in Paris. He worked on the reconstruction of the Antoni Gaudí church at the Colònia Güell near Barcelona. He has organised international symposia on Post-war-Modernism. He has written on concrete conservation, post-war architecture, change management, school buildings and cultural heritage. Member of Docomomo International since 2006.



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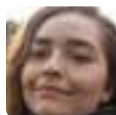
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The editors wish to thank the committees, session chairs, authors and text editors for their contribution to the proceedings of the 17th International **docomomo** Conference.

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The workshop "A MODERN UTOPIA. DESIGN AS A TOOL FOR THE CONSERVATION AND REUSE OF MODERN HERITAGE" has been supported by UPV 2021-1-ES01-KA131-HED-000011341, ERASMUS BLENDED INTENSIVE PROGRAMES (BIPs). ERASMUS+ 2021-2023, to promote higher education between partner universities and with Docomomo International Specialist Committee Education+Training.

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Docomomo international is a non-profit organization dedicated to the documentation and conservation of buildings, sites and neighbourhoods of the Modern Movement. It aims to:

- Bring the significance of the architecture of the Modern Movement to the attention of the public, the authorities, the professionals and the educational community.
- Identify and promote the surveying of the works of the Modern Movement.
- Promote the conservation and (re)use of buildings and sites of the Modern Movement.
- Oppose destruction and disfigurement of significant works.
- Foster and disseminate the development of appropriate techniques and methods of conservation and adaptive (re)use.
- Attract funding for documentation conservation and (re)use.
- Explore and develop new ideas for the future of a sustainable built environment based on the past experiences of the Modern Movement.

Docomomo international wishes to extend its field of actions to new territories, establish new partnerships with institutions, organizations and NGOs active in the area of modern architecture, develop and publish the international register, and enlarge the scope of its activities in the realm of research, documentation and education.

In pursuit of the mission of **Docomomo** international, as updated in the Eindhoven-Seoul Statement 2014, the theme of the 17th International **Docomomo** Conference is "Modern Design: Social Commitment & Quality of Life".

The Conference takes place in València, from 6 to 9 september 2022, at the Higher Technical School of Architecture of the Polytechnic University of Valencia, and at the Cheste Workers University, included as a work of the National Conservation Plan for the 20th Century and whose Paraninfo-Auditorium has received a "Keeping it Modern" Grant Award from the Getty Foundation Los Angeles.

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