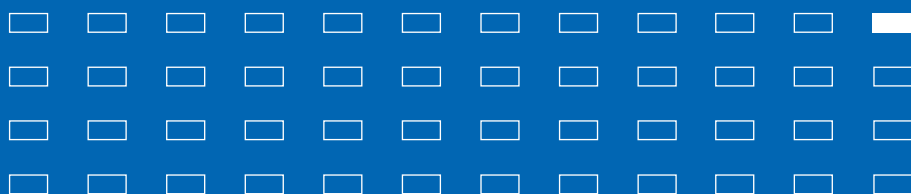


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adaptive reuse



the modern movement
towards the future

EDITORS

ANA TOSTÕES
ZARA FERREIRA



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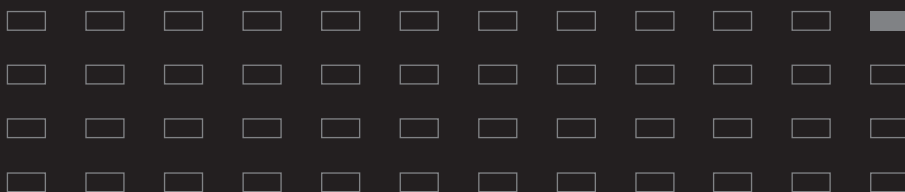
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INTRODUCTION



Towards the Future, Continuity as an Eternal Present

Ana Tostões

CHAIR OF **DOCOMOMO** INTERNATIONAL

Following the enjoyable **docomomo** tradition that is to meet in a stimulating environment, the 14th *International **docomomo** Conference* takes place at the Calouste Gulbenkian Foundation Headquarters and Park, a unique ensemble in which the architectural solution, location and functioning of the building itself are intimately linked to the park via continuity between exterior and interior spaces, establishing an intimate relationship between construction and garden, such that the life of the building extends naturally to the exterior areas and from these to the interiors.

Designed by the architects Alberto Pessoa, Pedro Cid and Ruy Jervis d'Athouguia in cooperation with the landscape designers António Viana Barreto and Gonçalo Ribeiro Telles between 1959 and 1969, the Gulbenkian ensemble confirms modernity's capacity to create a monument and to build an "eternal present". The sign of vital culture manifested in the public enjoyment of its space confirms the resilience of the site's capacity for permanent reuse, through a kind of timeless modernity. The Gulbenkian Headquarters and Park were classified, in 2010, as a national monument. It is the first modern ensemble in Portugal to have been recognised formally as heritage. That is, as an asset which, despite its young age and modernity, has attained universality and a timeless aura. In other words, it has achieved the value of a monument, recognised as such by the community, and for that reason deserves to be safeguarded and passed on to future generations. This distinction has a dual meaning. On one hand it recognises the complex's excellence as a cultural centre, on the other it celebrates the careful restoration and renovation undertaken over the almost 5 decades of intense use. It therefore confirms the daily care taken with the maintenance of the building and treatment of the garden.

In 2016 the ensemble integrates the Tentative List of nominations for UNESCO World Heritage.

60 years after, one may say that some of the concerns that motivated the architects in the late 1950s, have returned. The expressed neutrality of their architecture has ensured that the building and garden complex has maintained its cultural efficacy to adapting uses and by updating spaces, offering inspiration to those interested in Modern Movement architecture's resilience envisioned as a long process of continuity.

This is to say, the complex is evidence of the stimulus of "Adaptive Reuse. The Modern Movement towards the Future" as the argument adopted for discussion in the 14th *International docomomo Conference*. In pursuit of the mission of **docomomo**, as updated in 2014 through the Eindhoven-Seoul Statement, this theme aims to promote exchange of ideas, processes and experiences regarding the conservation and (re)use of buildings and sites of the Modern Movement, to foster and disseminate the development of appropriate techniques and methods of conservation and (re)use, and to explore and develop new ideas for the future of a sustainable built environment, based on the past experiences of the Modern Movement.

Relating technology, spatial form and social commitment, through an optimistic faith in progress, modern architects sought to attain new heights of beauty, functionality and flexibility in use. The challenge for today is how to deal with this modern legacy in relation to the continuously changing context over time, including physical, economic and functional changes, as well as fast-moving socio-cultural, political and scientific contextual values.

Preserving the architectural heritage of the 20th century requires us to take account both of the opportunity and the duty to reuse buildings which have lost their original function, which are physically and/or technically obsolete, and which no longer meet today's ever more demanding standards. Matters, such as the demand for physical reuse, for spatial or functional transformation, and the answer to contemporary exigencies of comfort and safety under the scope of responsible environmental sustainability are part of the contemporary agenda. This inevitably highlights the question of the value of the existing built fabric, which can be a strong resource that calls for our attention in terms of social, economic and environmental sustainability.

The contributions in this volume of Conference Proceedings discuss issues such as the value of the icon or the ordinary, the interrelationship of modernity and Modern Movement built heritage, economy and energy saving, the social mission of architecture and the responsibility of architects towards the future. As a multidisciplinary platform, the aim is to investigate a cross-section of subjects raised by the challenge of preserving, renovating and transforming the Modern Movement legacy worldwide, alongside with the complex background of today's changing times.

Following the seven main themes are acknowledged: 1) Landscapes, 2) Cities, 3) Public Spaces, 4) Complexes, 5) Buildings, 6) Construction and Technology, 7) Interior Design and Furniture; and a final reflection on 8) Theory. These

Proceedings survey the 29 sessions and 125 papers: The *landscapes* theme addresses the challenges posed by restoration and reuse on a matter far more ephemeral than construction, questioning the future of landscape heritage in the current changing contexts. The theme considers issues such as geographical, political and cultural marginality, the emergence of mass tourism in the transformation of landscape, the relationship between outside and inside, the vital value of the site and the pre-existing land, considering the irreplaceable role of landscape in shaping a better world for all. The *cities* theme reveals reuse strategies and public policies addressing urban conservation towards a sustainable responsible approach. The *public spaces* theme draws attention to the possibilities of converting large areas into specific cultural spaces and on reinventing modern children's places. The *complexes* theme focuses on the challenges of renovation of industrial complexes, university campuses, and housing estates by analysing their adaptation to contemporary environmental standards. A session specially dedicated to Africa questions how currently adjustable are modern buildings and infrastructures conceived for an African context. The *buildings* question is dedicated to discussion of conservation and reuse of Modern Movement constructions by analysing churches, healthcare architecture and brutalist buildings. A session dedicated to intangible heritage explores the potential of intangible heritage values for adaptive reuse. The *construction and technology* theme examines the processes of material selection on conservation interventions, innovative construction experiments undertaken on reuse projects and the challenges addressed in the adaptation of structures in post-colonial societies. The *interior design and furniture* theme analyses how one can adapt modern interior designs and furnishings, finding a balance between the interior and its surroundings, the detail scale and the concept of global design.

Finally, the broad inclusive *theory* theme deals with a large number of conjectural questions focused on different fields related to adaptive reuse: theories and practices on the conservation and transformation; the exploration of the notion of adaptability in architectural design, education and conservation; whether ordinary modern architecture must be conserved in a state of protected inertia or should be part of dynamic change. It also addresses adaptive reuse projects analysed by the lens of the CIAM doctrine or focusing on the aesthetics of growth and change, and the power of reuse as social activism.

The Modern Movement represents an innovative approach to community life, public space and the organization of the built environment; a kind of continuity envisaged as an eternal present. Currently, looking towards the future seems to comprise a search for a sustainable future which is the essence of the challenge underlying the theme of the conference. In fact, "Adaptive Reuse. The Modern Movement towards the Future" is a main theme of **docomomo** International as an organization looking towards the future committed to ethical values and engaged with the community to always address the challenge of creating a better place in which to live.

14th International Docomomo Conference

Ana Tostões

CHAIR OF **DOCOMOMO** INTERNATIONAL

Zara Ferreira

SECRETARY-GENERAL OF **DOCOMOMO** INTERNATIONAL

docomomo International is honoured to hold the 14th *International **docomomo** Conference* in Lisbon, where the International Headquarters are based (at the Técnico-University of Lisbon), from 6 to 9 September 2016, at the Calouste Gulbenkian Foundation, for debating the theme “Adaptive Reuse. The Modern Movement Towards the Future”.

The 14th *International **docomomo** Conference* combines 7 keynote lectures, 29 paper sessions, 6 round-tables, an international workshop (1-5 September) and tours in Lisbon (5-6 September) and Porto (10-12 September). In order to foster transnational and interdisciplinary approaches to the study of the Modern Movement, the 2016 International **docomomo** Conference launched a preliminary call for sessions which, gathering 76 very good proposals, proved to be a success. The call for papers received 516 proposals, from which were selected 125 abstracts for publication. These numbers exceed, largely, former conference participation, having led to the decision of organising the Conference program, exceptionally, through 5 parallel sessions, revealing the quality of the proposals presented and the ability of the Calouste Gulbenkian Foundation in extending the venue capacity.

docomomo International wishes to express its gratitude to all **docomomo** chapters for their support, following the commitment assumed in September 2014 at the Seoul Council Meeting, of assisting **docomomo** International in the huge task of accumulating the functions of the Conference organisation with the hosting by the International Headquarters. In this framework, a special thanks must be given to Hubert-Jan Henket, always with wise and fundamental advice, to Louise Noelle, Panayotis Tournikiotis, Horacio Torrent, Miles Glendinning, Yoshiyuki Yamana, Wessel de Jonge, Jong Soung Kimm, Tae Woo Kim, Eui-Sung Yi and to Scott Robertson for the unconditional availability and his efforts in mobilizing members and colleagues for the English revision of the Proceedings. The long

list of members acknowledged for the English text editing of this Proceedings book reveals the generosity and solidarity of this teamwork acting as the well spring of the **docomomo** network. Thank you to you all!

docomomo International is also very grateful to the 14th *International docomomo Conference* scientific committee and the session chairs for the scientific work and active support, and all the authors for sharing their knowledge and for agreeing to allow their papers to be published. To all of the contributors who met deadlines and acted according to the agreed rules in order to be possible to present the Conference Proceedings at the Conference itself.

Finally, **docomomo** International thanks all the institutions who made this Conference and Proceedings possible: Municipality of Lisbon for supporting the **docomomo** International Headquarters in Lisbon since 2014 and for wide logistic support during the 14th *International docomomo Conference*, workshop and tours; Técnico – University of Lisbon for hosting the **docomomo** International Headquarters, ensuring the daily support of the International Secretariat for more than 2 years; Calouste Gulbenkian Foundation for generously hosting the venue of the 14th *International docomomo Conference* in such an inspiring atmosphere, offering the Congress Centre and the astonishing Main Auditorium, validating the excellence of the Modern Movement architecture and landscape; Port of Lisbon for being the main sponsor of the Conference hence making possible the conference in Lisbon; to *Casa da Arquitectura* for sharing the edition of this Proceedings book with commitment, revealing the common efforts to the dissemination of architecture in an international framework.

docomomo International is proud to acknowledge all its partners in recognizing the importance of the presence of **docomomo** International in Portugal, strengthened by the organization of the 14th International Conference in Lisbon. The excellence of the Honour Committee of the Conference, headed by the President of the Portuguese Republic, and holding major governmental and institutional representations, highlights the recognition of **docomomo** International's role in contributing to the cultural and scientific development, in the framework of the most international active networks.

Last but not least, we wish to thank all the **docomomo** International staff and volunteers who devoted their time and efforts to make the Conference happen.

docomomo International truly welcomes **docomomo** friends and members from the 69 **docomomo** chapters to the 14th *International docomomo Conference*, believing in the value of this Proceedings Book for framing critical knowledge.

Responsibility and Commitment

Nuno Sampaio

EXECUTIVE DIRECTOR OF CASA DA ARQUITECTURA – CENTRO PORTUGUÊS DE ARQUITECTURA

The city and architecture are heritage, it is culture. The same collective conscience, and our own, demands of us today responsibility, commitment, determination and action.

In a happy encounter, last year in April, *Casa da Arquitectura* and **docomomo** International celebrated with a protocol the will to unify efforts to encourage the study and promotion of architecture, namely the architectural heritage of the Modern Movement.

Today, both institutions, that are going through a unique moment, have a lot in common and a wide range of possibilities in exchanging experiences in collaborating and cooperating.

docomomo International, an NGO that represents 70 countries and with almost three decades of existence has nowadays its headquarters in Portugal, and a group of documents and archives stored in *NAI (Nederland Architectuur Instituut)* in Rotterdam and in Portugal.

docomomo has, as of now, a set of scientific groups with specialized knowledge in conservation and document classification, in technical areas with skills in technical and construction systems for the preservation of buildings, and also, in the area of science that allows them today to be consultants to several international institutions for the promotion, conservation and reuse of building and places of the Modern Movement.

Casa da Arquitectura, an international institution with more than 2,000 associates, founded in 2007, was recently presented as the new Portuguese Architecture Centre. It has as main goals: 1) house, preserve, take care and make public architecture archives and collections; 2) promote the opening of a large group of buildings to the general public through guided tours; 3) promote science, academia, cultural, playful, touristic and social activities that contribute to the wider knowledge of architectural heritage, national and international, inside and outside of Portugal.

Casa da Arquitectura has in its care two singular buildings, one at Roberto Ivens St., once the family home of architect Álvaro Siza and today our headquar-

ters, and the *Boa Nova* Tea House, a 20th century building classified as National Patrimony in Portugal. Regarding these buildings, *Casa da Arquitectura* has the responsibility to promote their correct occupation, conserve and maintain them for 20 years, and contribute to their familiarity through visits to these two buildings. Soon *Casa da Arquitectura* will receive, from the Municipality of Matosinhos, the Real Vinícola block, a group of buildings of significant value in the context of Portuguese industrial heritage, where will be housed, amongst other programs, the new headquarters of *Casa da Arquitectura*.

Casa da Arquitectura – Centro Português de Arquitectura presents itself as the first Portuguese institution solely dedicated to architecture that will bring together architecture archives and exhibitions. The centre will boost the partnerships and collaborative work with similar national and international institutions, with the goal of promoting interdisciplinary debate and to take architecture to the general public.

It is this way, with a collaborative spirit, *Casa da Arquitectura* joins as a partner in the 14th International **docomomo** Conference in Portugal with the theme “Adaptive Reuse”. This is the first of many future initiatives to be undertaken by *Casa da Arquitectura* and **docomomo** International that will share the responsibility and the commitment in the promotion of modern architecture and the conservation of our architectural heritage.

Técnico – University of Lisbon and Docomomo International

Arlindo Oliveira

PRESIDENT OF TÉCNICO – UNIVERSITY OF LISBON

As an international school of engineering, science, and architecture, Técnico – University of Lisbon has proudly hosted and actively supported **docomomo** in its mission to preserve, document, and protect our architectural legacy and culture. The activity of **docomomo** is very important within Técnico, since the association plays a fundamental role in the way architecture and related fields are viewed and studied by students, professors, and researchers. The intimate relation between **docomomo** and other agents in Portuguese society has helped establish Técnico as a key player in questions related with the preservation of our architectural patrimony, an area that becomes more and more important as Portugal becomes a more developed country and pays more attention to it.

The organization of the 14th *International **docomomo** Conference* in Lisbon is particularly relevant for this mission since it brings the attention of the Portuguese community to the importance of preserving and reusing buildings that are part of our common heritage. Reusing existing buildings in an effective way is one of the central problems for Lisbon, a city with many centuries of history that now must adapt to new challenges, technologies, and requirements. The Modern Movement has contributed with many of these buildings, which must now be put to new uses, many of them made possible by new technologies and new approaches to mobility. Protecting and reusing these buildings represents a challenge to architects, but also to civil engineers, planners, and city managers.

I look forward to welcoming the conference delegates to Lisbon and I thank the conference organizers and **docomomo** for having chosen our city as the venue for this important event.

Docomomo International in Lisbon

Fernando Medina

MAYOR OF THE MUNICIPALITY OF LISBON

Lisbon hosts this year the 14th *International **docomomo** Conference* and the nearly 500 experts from around the world who will gather here to share knowledge and contacts in the framework of the mission of this prestigious international organization – the documentation and rehabilitation of buildings, neighbourhoods and urban landscapes built within the framework of the architecture and urbanism of the Modern Movement, understood as the technical, formal and ideological response of architecture to the contemporary world.

Since 2014, **docomomo** has had its headquarters in Lisbon, with the full support of the Municipality of Lisbon. With nearly three decades of existence, the presence of **docomomo** in Lisbon highlights the strategic position of the city in the most active cultural networks of Europe and the World.

The innovation of contemporary Portuguese architecture, the excellence of the city of Lisbon and its modern heritage, the rehabilitation potential that its buildings represent, is in the international spotlight, and a clear recognition of the vigour and cosmopolitanism of Lisbon.

The organization of the 14th *International **docomomo** Conference* in Lisbon, under the theme “Adaptive Reuse” couldn’t be more timely and pertinent at a time when Lisbon is brimming with initiatives intended to humanize the city. A dynamic, but green and pleasant city, a modern, but friendly city, and one that is innovative but sustainable, cosmopolitan, but welcoming. A city made by and for people.

Building a city, particularly a city of quality, is always a challenge, in which valuable contributions cross different areas, and where architecture plays a decisive role. Strengthening its cosmopolitan tradition, Lisbon launches itself once more into the future, highlighting architecture, urbanism and public space, investing in major actions that will allow us to become an international reference.

One example of this commitment, is the ambitious programme for public space, *A Square in Each Neighbourhood*, with about 30 interventions all over the city where, using a square, a street, a neighbourhood garden, or existing or pro-

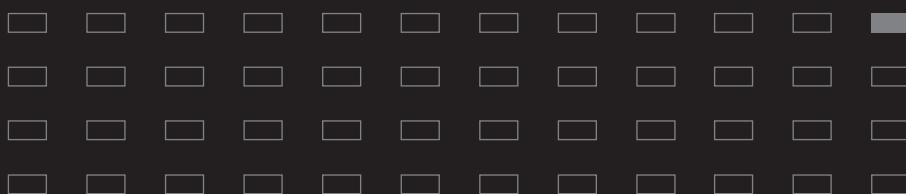
posed collective facilities, a public space is organized as a meeting point for the local community, a micro-centrality that focuses on local businesses and employment. The space is reorganized to emphasize soft mobility, walking and cycling, public transport and low level traffic, to make it a place where its citizens can spend time. The conditions created by this will certainly serve as a stimulus for leveraging the rehabilitation of private buildings, making the city more attractive, dynamic, competitive and inclusive.

Urban revitalization can also extend to the rehabilitation and reoccupation of obsolete industrial types of structure that contribute to the demographic, social, economic and cultural revitalization of the urban fabric. An example of this type of space is Alcântara's LX Factory, and there are other parts of the city with great potential for the implementation of projects of this kind, such as the area from Chelas Valley to *Braço de Prata*.

There is no doubt that this pulsating vibrant city is being pushed forward by both municipal and private initiatives, the intersection of experiences and perspectives, multiculturalism, and the willingness to do, and do even better. More people, more jobs, a better city – is our answer to the demands of the times we live in. Lisbon is alive and welcomes everyone participating in this event.



LANDSCAPES



Marginal Landscape

Jan Haenraets

ATELIER ANONYMOUS LANDSCAPE CONSULTANCY INC.; **DOCOMOMO** ISC U+L, BELGIUM

Andrew Saniga

UNIVERSITY OF MELBOURNE; **DOCOMOMO** ISC U+L, AUSTRALIA

During the Modern Movement design approaches and attitudes to the city explored optimistic, ecologically connected, and multi-disciplinary visions. The new challenges of a post-wwii era saw the built environment professions in a state of flux, jostling for position, being delivered new types of work or going through sometimes troubling periods of redefinition. A new appreciation for the value of “landscape” played a fundamental role in contributing to quality of lifestyles, environmental well-being, and the social and cultural identities of our cities.

Yet, in our current age, the extent to which the designed landscape has been accepted, acknowledged and valued for fulfilling a crucial role can still be called into question. For example, the heritage movement internationally, has been relatively slower in taking account of landscapes compared to the recognition given to monuments, buildings and the like. Ultimately much territory has been won in positioning designed landscapes and cultural or organically evolved landscapes on a similar ranking to, say, architecture, but to what extent has this territory been characterised by a firm or a fragile footing? Do the distinctive qualities of “landscape” compared to architecture, planning, or even urban design contribute to any tendencies towards it becoming marginalized in the trajectory of historical research, criticism, conservation, management and even within the professions themselves?

The papers of this session explore diverse case studies of designed landscapes associated with the Modern Movement era and how the term “marginality” might apply to them. For instance, marginal could be relevant in the context of landscape architecture as a discipline, in the heritage industry, or in the context of geographic isolation. In other cases the positioning of landscapes might be a result of politics, aesthetic values, complexity of cultural layers, or living qualities of landscape.

Nicole Valois considers the role of landscape terminology and the position of designed landscapes within the heritage movement and discipline. She evaluates the place of landscape within organisations such as **docomomo** or UNESCO, and challenges definitions of cultural and designed landscapes within heritage charters, particularly the World Heritage Convention, and in terms of practice, the modern university campus. In her findings it appears that designed landscapes remain less represented and acknowledged, which echoes research done by Jan Haenraets on the status of conservation of designed landscapes of the 20th century and achievements to date of key conservation organisations.

Likewise, the values of modern landscapes and the meanings attributed to them are often difficult to define. In this sense, Peter Ferretto explores residual spaces in and around infrastructure in Hong Kong and how as marginal landscapes these spaces can have deeper meanings via the way people reclaim and adapt them to generate a rich array of uses. Such case studies show that in the present global context of population growth and rapid urban expansion and development, the legacies and visions of landscape architecture and other planning and design professions often escape easy definition.

Yanis Diaz considers marginality from the perspective of the future of landscape heritage in the context of the challenges delivered by social acceptance, use, economics, appropriateness, worthiness. His case study reflects on the post-Soviet condition, and landscapes of transportation with Modernist era bus stops in rural Kazakhstan. In his analysis Diaz questions the aesthetics of decay in the context of radically changed political and social circumstances and the role this might play in defining marginality. Sara Di Resta too reflects on political pasts, exploring manifestations of controversial historic layers of propaganda which ultimately can be brought to bear on how we might interpret complexity and marginality in relation to reuse and repurposing. Di Resta investigates the architectural and landscape heritage that surrounds the post-industrial settlement of Le Trezze at Venice Lagoon, a site which falls within a coastal landscape that has already seen centuries of change through land reclamation.

As introductory case studies to the session, the examples of Woomera Village in outback Australia, and the garden at Little Sparta in Scotland, are given. The case study by Jan Haenraets of Little Sparta was part of his study into conservation challenges of designed landscapes of the recent past. Little Sparta was developed as a poetic garden since the 1960s by Ian Hamilton Finlay and his wife Sue Finlay in the rural Scottish Pentland Hills, Lanarkshire, to the south of Edinburgh. The garden is a composition of over 275 art works which were created in-situ as garden poems that closely interact with their surroundings. Many of the art works are living sculptures, integrating crafts, philosophy, history, poetry and horticulture. Little Sparta is now described as one of the most original and significant art works of the 20th century, and is as much a political statement or symbol of artistic freedom, as it is a garden. Its complex balance between art and nature, art and place, together with its remote location and its slow process towards recognition,

all illustrate the potential of marginality as a unique and vital characteristic of designed landscapes. For gardens such as Little Sparta, how do we address long-term financial sustainability and practical conservation, including integrity and authenticity in an ever-evolving landscape?

Andrew Saniga's research into the small settlement of Woomera Village in the South Australian arid region highlights marginality in the context of geographic isolation, remoteness, and the political and ideological baggage of the Cold War. Commencing in 1946, Woomera was part of an Anglo-Australian joint operation, the region's broad and relatively un-populated landscape becoming host to the industries of armament and rockets. Landscape architecture played a role in transforming an arid landscape into an oasis. In this sense, the village's architecture and designed landscape were ensembles of infrastructure, essential in serving a range of domestic and logistical purposes. By 1980 however, the demise of bombs, satellites, nuclear testing and the like effectively saw Woomera's population shrink from thousands of people to a point where today there exists only a mere hundred or so.

Woomera Village's heritage status is uncertain: its remoteness makes visitation difficult; its fabric is under government control and is often locked within prohibited areas; its aesthetic qualities are derived from military and rocket research and are sometimes difficult to appreciate; and crucially, its oasis-like quality is gradually disappearing as the once optimistic visions of post-WWII landscape architecture become subsumed in a regenerating landscape of indigenous vegetation. A series of fieldwork exercises over a ten year period will need to be ongoing in order to document, re-purpose and re-imagine Woomera Village whilst also embodying the multiple forces enacting on its landscape, through time.

In conclusion, these dimensions of marginal landscapes variously contribute in attempts to reuse and to adapt significant landscapes into the future. In some instances, the issues are so ingrained and complex so as to make the situation beyond any straightforward solution. All of the papers advocate the ongoing survival of such landscapes whilst also being mindful of uncertain and changing contexts in which they exist. They clarify the roles that the "marginalized" landscape can play in our cities and regions and conclude that the history of the modern landscape has special qualities that make its conservation and management something that needs to be continually discussed and resolved, from multiple perspectives.

Are Modern Designed Landscapes, Cultural Landscapes?

Nicole Valois

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In the field of heritage conservation, the current focus on cultural landscapes as demonstrated by the growing literature and discussion on the subject is marginalizing modern designed landscape heritage. This could be explained by the way cultural landscapes are defined in the World Heritage Convention, a definitive reference in the field. In fact, it focuses mostly on large scale landscapes while modern designed landscapes are associated with public spaces, campuses, highway landscapes, and urban housing developments. Despite the fact that a designed landscape subcategory is included in the World Heritage Convention definition of cultural landscape, this does not make them part of the discourse on cultural landscape. Instead, they are completely overshadowed. Therefore, it makes it difficult to assess and enhance their heritage although they are *a priori* inscribed in city spaces as cultural landscapes.

This paper focuses on the complex meaning of cultural landscape and how its general comprehension by institutions has an impact on the integration of designed landscapes into the Modern Movement heritage. It also shows how the meaning of cultural landscape is a reflection of the relationship between humans and their environment. The word “cultural” was added to “landscape” in the World Heritage Convention in 1992 precisely to create this relationship: one of the significant elements of designed landscapes of the modern period is their capacity to create places of assembly and exchange that express the new value of democracy.

With examples of modern designed landscape in Canada, this paper explores the cultural values they carry, embodied in their physical and material aspects as well as by their association with the particular socio-cultural context of this period.

It hopes to contribute to a better understanding of modern designed landscape values at a time when they are approaching the end of their life cycle.

An integral part of the World Heritage Convention of 1992, the cultural landscape has since become the focus of an established field of academic study, the object of corroborative research and an idea present in conservation practice worldwide. It is an established fact that landscape results from the interaction between groups of human beings and their environment (culture and nature) and that the values of a place are defined by its tangible and intangible values; in short, by what is there and by what it signifies in the eyes of those who live there. Cultural landscapes generally refer to vast, complex landscapes outside urban centres. The term is rarely associated with clearly defined landscapes of a more constrained size and yet, the “clearly defined landscape designed and created intentionally by man” is listed as one of three categories of cultural landscape in the Convention¹.

The fact that inclusion of cultural landscapes in the Convention coincides with the birth of a consciousness of the Modern Movement in landscape architecture gives us furthermore an opportunity to examine designed landscapes through the lens of cultural landscapes.

1. CULTURAL LANDSCAPE

The integration of cultural landscape as a category of property in the *Convention* was the result of work over a long period of time and meant the registration of a wide variety of landscapes on the World Heritage List. This act challenged the persistent dichotomy between natural and cultural heritage, two distinct categories in the *Convention* in which many landscapes appeared twice over. In fact, it could be said that all landscapes are cultural; landscapes in their entirety across the world are invested with our culture as a human society. That being said, landscape has not always existed: its emergence varies from one society to another conditional on the appearance of a word, of literary descriptions, of representations and of the places themselves². Once substantiated, its meaning evolves. As well, the appearance of cultural landscape in the field of conservation attests to the fact that it is inseparable from its subject, a *réalité trajective* particular to a ternary relation where it is neither totally object nor subject, but fits neatly into the trajectory between the two and supported by values³.

Of the three definitions of cultural landscape in the *Convention*, only the 1st (Category 1), the “clearly defined landscape”, is clearly identified as a type: it refers to “garden and parkland landscapes constructed for aesthetic reasons”, to which we associate the term “designed landscape”.

In the two other categories, “organically evolved landscape” refers to rural and large-scale landscapes – vineyards, for example – and “associative cultural landscape” to landscapes which are repositories of beliefs, myths and rituals.

These definitions are derived from previous documents. The *Florence Charter* of 1981 and the *Recommendation concerning the Safeguarding of Beauty and Character of Landscapes and Sites* by UNESCO in 1962 predate the discussions on cultural landscapes⁴. Category 1 in particular is an outcome of the *Florence Charter* which refers to a “historic garden” and to the fact that “a historic site is a specific



FIGURE 1. Jean-Claude La Haye, public space in front of the Pavillon Louis-Caron, Université de Montréal, Montreal, Canada, 2015.
© Nicole Valois, 2015.



FIGURE 2. Jean-Claude La Haye, passage alongside the Samuel-Bronfman pavilion, Université de Montréal, Montreal, Canada, 2016.
© Nicole Valois, 2016.

landscape" (Art.1 and 8). The term "historic garden" is the forerunner of Category 1 of cultural landscapes in the *Convention*, the "clearly defined landscape". In the text of the *Recommendation*, the types refer to "urban landscape sites" as well as to "natural landscape sites". To all appearances, nature and culture are under the same heading. Landscape before the *Convention* is therefore, at one and the same time, the work of man, the work of nature and evidence of the cultural, affective and symbolic links to places that communities have sustained over time.

"Designed landscapes", having become a distinct category in the *Convention*, are now absent from the literature on cultural landscape. A survey of this category of the World Heritage List bears this out: scarcely more than 10% of the cultural landscapes are listed because of criterion i) "to represent a masterpiece of human creative genius" on the World Heritage List of 2016. Moreover, the registration of properties on the list as "associative landscapes" and "evolved landscapes" is on the rise according to Rössler⁵.

This examination of definitions through the lens of charters and conventions is pertinent because these same definitions are reused by many government organizations for the protection of landscape across the world, some of which establish links between designed landscape and cultural landscape.⁶ However, if this seems evident, as supported by Luengo's statement that "Now for us gardens are cultural landscapes",⁷ this is certainly not current thinking in the field of conservation – neither scientifically nor academically.

2. MODERN MOVEMENT

The movement to document and to protect modern landscapes is relatively young. The establishment of the International Specialist Committee on Gardens and Landscapes by **docomomo** in 1994 as well as the creation of the Cultural Landscape Foundation in 1998 are the evidence of these organizations' first efforts to raise awareness⁸.

These initiatives happened at the same time as publications on modern landscapes and their designers, the number of which has grown since the 1990s. Typically in the form of monographs and articles, this work focused for the most part on well-known landscape architects, on the significant issues of the movement or associated themes. In this literature, "designed landscapes" are defined by their components and their aesthetic values; they refer to places that are clearly defined and are generally small scale. With their greater emphasis on the designers and on the movement itself and less on conservation practices, this work nevertheless did help to increase understanding of the places themselves and, indirectly, on how to conserve them. They made the professional and academic communities aware of the contribution of landscape architects to the shaping of the modern landscape and to the aesthetic, historic, contextual and social values of the gardens, public places, residential ensembles and university campuses of the modern era⁹.

3. CULTURAL LANDSCAPE: CANADA AND QUÉBEC

Aside from the initiatives of the field of conservation and publications on designed landscape, the modern designed landscape is rarely represented across the world¹⁰ and even more rarely in Canada. Despite the fact that the post-war period saw the birth of a large number of public spaces, there is very little documentation of the work and even less associated with its conservation. Moreover, no modern landscape is to be found in the listing of the Historic Sites and Monuments Board of Canada¹¹.

The same holds true in Quebec, where according to the new *Loi sur le Patrimoine Culturel du Québec* (2011), cultural landscapes are exclusively associated with rural landscapes and large territories. No modern landscape has been placed as such on the list of protected properties. The category where they could have been included, that of gardens and parks, is included in the category of "site patrimonial" and associated with architecture in most cases¹².

The road to understanding that designed landscapes are also cultural landscapes is not evident either in Canada or in Quebec. As a consequence, very little is available to researchers wishing to study this body of work.

4. DESIGNED MODERN LANDSCAPES VERSUS CULTURAL LANDSCAPES: TWO CASE STUDIES

We have seen how designed landscapes and, more precisely, the Modern Movement for the protection of landscapes seem to be perceived as independent from cultural landscapes. However, fundamentally, modern designed landscapes are well and truly cultural landscapes because 1) they are the result of diverse expressions of interaction between humans and their environment and 2) cultural landscapes refer to cultural values, an idea which brings together both the subjective and objective values implicit in the subject matter, as well as that of the use of places as supported by different groups of experts and non-experts¹³. To make this idea workable, it is necessary to see the designed landscape neither entirely as object nor entirely as subject but rather as a representation of the interaction between people and sites and valued for criteria that differ from the norm.

The cultural values inherent in the concept of cultural landscapes apply to designed landscapes like the main campus of the *Université de Montréal*.

The 65ha campus is comprised of buildings, public spaces, woodlands, a sports area, and a circulation system. Sited on the north flank of Mount Royal, it is one of the properties that form the 665ha *site patrimonial déclaré du Mont-Royal*, according to the *Loi sur le Patrimoine Culturel du Québec*.

The campus' attractiveness is in large measure due to the fact that when it was developed in the 1960s, the buildings and the grounds were designed in the modern style in response to the social, demographic and economic needs of the era, as



FIGURE 3. Lawrence Halprin, The Pyramid in front of the MacLaurin Building, University of Victoria, Victoria, Canada, c. 1967. © University of Victoria Libraries, Special Collections and University Archives.

well as to the natural conditions of the site: the slope of the land, the presence of 120-million-year-old rock formations, woods with rare species of trees and nature itself encircling the campus all dictated the planning¹⁴. The design is expressed in stairways, landings, retaining walls, roads and outlooks from which the views of the northern part of the city are unique. This alternating and overlapping of built and natural spaces on the campus is unique and tangible.

The historic and intangible value of these public spaces, like those of many other campuses of the period, is attributable to the fact that they were part of the emerging practice of planning in North America at the time. Created as a response to demographic growth and growth in education, the campus is a veritable hub of social and cultural life. In addition to acting as links between buildings (facilitated by standardization of both materials and furniture), these public spaces support this idea by offering students gathering places, particularly popular in the 1960s. The idealism associated with the era continues to be evident on the *Université de*



FIGURE 4. Lawrence Halprin, The Pyramid, University of Victoria, Victoria, Canada, 2013. © Nicole Valois, 2009.

Montréal campus as the use of exterior spaces for events and for demonstrations is still part of current practice.

The same observation applies to the campus of the University of Victoria in British Columbia where nature was a key player in the design from its initial 1963 plan, because of the implication of landscape architects like Clive Justice (1926-), Don Vaughan (1937-) and Lawrence Halprin (1916-2009). Public spaces play an important role as exemplified by The Pyramid in the centre of the campus, conceived as an agora

with a stage in the form of a truncated pyramid in red brick. This stage has served over the years as the venue for the awarding of diplomas and as the site for commemoration of *The National Day of Remembrance and Action on Violence Against Women*¹⁵.

In both examples, the campus as a whole is the bearer of values and merits being appreciated for the ensemble of its architecture and landscape which form the base for its social, historic, aesthetic, environmental and ecological values. It is possible that the components could be threatened by the failure to link the values of each constituent part to the ensemble of the campus.

5. PERSPECTIVES

While the movement within the conservation world to enhance the understanding of modern landscapes coincides with that of cultural landscapes, much remains to be done so that the designed landscape of this period becomes a field of research in its own right, inclusive and not dissociated from cultural landscapes. One avenue to follow towards a more holistic view of the designed landscapes of modernity would be to make them fully-fledged cultural landscapes and consider them through the lens of the “evolved” and “associative” landscapes as defined by the *Convention*:

- [as] results from an initial social, [...] imperative [which] has developed its present form by association with and in response to its natural environment.
- [as a] continuing landscape [...] retains an active social role in contemporary society closely associated with the traditional way of life [...] [which] exhibits significant material evidence of its evolution over time.
- [as landscape] justifiable by virtue of the [...] artistic or cultural associations of the natural element rather than material cultural evidence.

Does this not describe “designed landscapes” of the modern period whether they are public places, campuses, infrastructure, gardens or parks?

Are they not “continuing landscapes” which evolve as a result of acts of planning and sociocultural, economic and political imperatives - all of which leave visible traces over time? Are they not landscapes which respond to constantly evolving needs while maintaining their role as places for social and cultural expression and places both to gather and to linger?

The Modern Movement would benefit from the idea of designed landscape being enlarged and enhanced by values other than those usually attributed to it. This would allow designed landscapes to be examined not only for aesthetic and stylistic qualities and the importance of the architect, but also for their value as social mechanisms. This would lead to a better representation of modern heritage and to the possibility of recognizing the heritage of landscape architecture as a part of this global movement. A better integration of modern designed landscapes into the discussion of cultural landscapes would enrich research, would create inventories including a wide variety of landscapes and would define specific tools for evaluation other than those which are normally used and often based on those used for architecture.

NOTES

Text translated by Nancy Dunton.

1 UNESCO, 2013 *Operational Guidelines for the Implementation of the World Heritage Convention*, accessed on February 12, 2016, <http://whc.unesco.org/en/guidelines>.

2 Augustin Berque, “De la Constitution du Sujet dans le Paysage”, *Paysage et Imagination*, École Nationale Supérieure d'Architecture de Paris La Villette, 2013, accessed on February 9, 2016, <http://ecoumene.blogspot.ca/2013/05/sujet-et-paysage-berque.html#more>

3 *Ibid.*

4 Monica Luengo Añón, “The Cultural Landscape Concept: Reflections on Past and Future Directions”, *Cultural Landscapes: Preservation Challenges in the 21st Century*, Rutgers University, 2012, accessed on February 9, 2016, <https://www.youtube.com/watch?v=VLcto4PqrfM>.

5 Mechtild Rössler, “World Heritage Cultural Landscapes 1992-2012”, in A. St-Clair, N. Mitchell and K. Taylor (ed.), *Conserving Cultural Landscapes: Challenges and New Directions*, New York, Routledge, 2015, 38-52.

6 Notably Heritage Scotland and Heritage Council Victoria. See Heritage Victoria, *Landscapes of Cultural Heritage Significance: Assessment Guidelines*, February 2015. Cultural landscapes are defined as a suite of values shaped by a natural process and by human activity.

7 Monica Luengo Añón, *Cultural Landscape Concept*.

8 The organization is now known as the **docomomo** International Specialist Committee on Urbanism + Landscapes (ISC+U+L). Also note that the 1999 *Preserving Modern Landscape Architecture* conference at Wave Hill, New York was considered as the first event completely dedicated to modern landscape architecture according to Jan Haenraets and Obas J. Ebohon, “Landscapes of the Recent Past: Identifying Key Problems Regarding the Conservation of Designed Landscapes”, 10th International **docomomo** Conference – *The Challenge of Change: Dealing with the Legacy of the Modern Movement*, Rotterdam, Netherlands, 2008.

9 Were it not for these publications, the designed landscapes of the modern period would be essentially perceived as extensions of the architecture.

10 Haenraets and Ebohon, *Landscapes of the Recent Past*.

11 Note that in Canada the laws protecting heritage properties fall within the jurisdiction of the provinces. Those properties listed by the Canadian federal government, whether places, events or persons, are included as commemoration of historic aspects of the country as a whole. The idea of cultural landscapes is distinct from that of parks and gardens and is evaluated by different criteria. Cultural landscapes are in large part associated with indigenous cultural landscapes, which served as the entry point to the idea in the early 1990s due to the work of Susan Buggey. See Susan Buggey, *An Approach to Aboriginal Cultural Landscapes*, Historic Sites and Monuments Board of Canada, 1999.

12 Also notable are the aberrations, such as the fact that Mount Royal despite being a complex and large-scale site, is a “site patrimonial” and not a “cultural landscape”, according to the Quebec law on cultural properties! The same is true for Square Dorchester, a significant late 19th century public place surrounded by built form.

13 Australia ICOMOS, *The Australia ICOMOS Charter for Places of Cultural Significance. The Burra Charter*, 2013.

14 For modern public spaces on campus, see Nicole Valois, “L'Architecture de Paysage Moderne du Campus de l'Université de Montréal”, *Cahiers de Géographie du Québec*, 56 (158), 2012, 343-372.

15 Nicole Valois, Claudine Déom and Christina Cameron, *Les Valeurs Patrimoniales vues par le Public: Étude de Cas: The Pyramid, campus de l'Université de Victoria*, 2014, accessed on February 12, 2016, <http://www.patrimoinebat.umontreal.ca/fr/projets-de-recherche/projets-en-cours/les-valeurs-patrimoniales-vues-par-la-public-etudes-de-cas>.

Residual Landscapes: Reclaiming Hong Kong's Lost Urban Spaces

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This paper examines the latent infrastructural urban landscape of Hong Kong, a topic encompassing multiple opportunities to redefine the marginal and forgotten fabric of the city, an untapped public asset with the potential to galvanize a new spatial ecology of a city in urgent need of alternative types of public space.

Inspired by Sola-Morales' text "Terrain Vague"¹ the research analyses two specific case studies, the Shau Kei Wan bus depot located on the eastern part of Hong Kong Island and the Mai Foo housing estate situated in Kowloon. Both conditions have the common feature of being built on reclaimed land, yet offer different examples of how vacant, hidden and unoccupied infrastructural spaces are colonized and become integral to the neighbouring community. Through a process of analytical mapping, drawing and photography, a series of relational landscapes are defined, that seek to demonstrate how forms of residual habitation occur and mitigate pre-existing environments. Of primary concern to the argument is the notion of *background city*, for example, the other Hong Kong that represents how the city's hardware becomes integrated into civic life.

By unfolding how awkward spaces are occupied, a taxonomy of appropriation is identified, that collectively constitute a catalogue of successful urban typologies which lie outside today's logical spatial frames. Undercarriages become active wet markets, vestiges of a bygone coastline re-emerge as pedestrian paths crossing barren no man's land are a few examples of the imbued nature these *lost spaces* of Hong Kong have to offer.

Although the issue of reclaiming urban residual spaces is rapidly becoming the zeitgeist of our period, Hong Kong paradoxically, given its extreme urbanity, has little critical studies on the matter. This paper addresses this shortfall, exploiting how multi-layered urban pauses can accommodate overlapping programmes and, through creative urban solutions, transform typically avoided public spaces that isolate and blight communities into alternative paradigms.

1. HONG KONG'S ALTER EGO

"What is a city? What determines its specificity? What shapes its quality? The evolution of the contemporary city does not follow a linear movement."

In his recent article "The Inevitable Specificity of the City"² the architect Jacques Herzog claims all cities are the fruit of transformation processes, however much we live in a connected globalized network, cities develop their own way of dealing with change.

Hong Kong is a city that fully embodies this theory. One could argue that Hong Kong is in a state of transformation, where large sections of its territory have been transformed into a highly technical landscape. The interrelation between city and landscape, from infrastructural facilities to reclaimed land, is the product of a decidedly pragmatic and engineered policy of control. Yet with an urban density of more than 30,000 inhabitants per square kilometre and an average residential area of about 11 square meters per person³ there is another side to this unique city that is often overlooked.



FIGURE 1. Hill Road Viaduct, Sai Ying Pun, Hong Kong. © Peter Ferretto, 2015.

The “residual landscape” represents the alter ego of Hong Kong, the “other” landscape that exists by default, a by-product background of: lost, vacant, forgotten, and neglected moments that act as a “buffer” between the natural and the artificial, at the same time establishing the urban “amalgam” which connects and ties communities together.

Dwelling in-between urban spaces, the interstitial city, from the hawker stalls in mid-levels to the demon chasing ladies under the Causeway Bay viaduct (an intangible cultural heritage where older ladies curse one’s enemies), have long been part of Hong Kong’s urban culture. Analogous to how in music, it is not simply the notes that count but also the spaces between notes that generate a melody, residual landscapes become the “in-between” city establishing the unique urban depth of Hong Kong.

This new mutating landscape is most visible at the foothills of Hong Kong’s steep terrain where an embedded landscape of mitigating circumstances, pure rational functionality adapting to extreme topography, represents what Richard Sennett calls the “true to life” city⁴. Beyond any other form of land development, this man made environment and its associated hidden domain, represents Hong Kong’s unique identity and could (if embraced) address the city’s long standing “space of disappearance” problem, as theorized by Ackbar in *Hong Kong and the Politics of Disappearance*⁵ where he exposes the city’s disappearing cultural identity, caught in transition between East and West, Colonial and Postcolonial, and Tradition and Modernity. For Ackbar the notion of disappearance is directly connected with Hong Kong’s identity: a place that has always been a place of transit,



FIGURE 2. Yue Man Mansion Walkway, Kwun Tong, Hong Kong. © Peter Ferretto, 2015.

where its residents have continuously considered themselves in a state of transience: migrants on their way from the mainland to a better world.

To be able to digest how residual spaces operate within Hong Kong, one has to understand these conditions as “relational landscapes”, spaces fundamentally connected to the urban evolution of the site. The residual condition, it is my thesis, corresponds to the spatial temporal relationship of the site, where specific situations become constructs of

a complex articulated development. Hence, rather than elaborate a taxonomy of the multiple types of lost urban spaces within Hong Kong, this paper focuses on local instances of residual habitation, dialectically contrasting two conditions, each belonging to a precise historical and geographical reality. The purpose of the exercise is to demonstrate how common alterations of pre-existing environments allow the city to mitigate and transform estranged landscapes into pockets of urban life. By focusing on the actual urban every day, the urban presence of the here and now, the objective is to nullify the effects of our current urban amnesia, where the profession at large (architects, students and academics) seems to have exorcised most critical considerations regarding the role of the marginal city in our society.

2. THE COLLECTIVE VESTIGES OF SHAU KEI WAN

Shau Kei Wan is a hybrid district, simultaneously eroded and artificially reclaimed by man (adjacent mountains have been excavated to provide for the reclaimed land infill), which sits on the north-eastern part of Hong Kong Island. This relatively suburban district, an oxymoron statement given its population in excess of 70,000 who live in a density of approximately 30,000 people/km², evolved from a 18th century fishing village into a transformed, genetically modified, reclaimed landscape.

At the heart of the district lies a large residual space, a by-product of three intersecting infrastructures: the Island Eastern Corridor expressway, a subsidiary bypass and an elevated pedestrian walkway. These three components combine to define a new topological ground, where: historical traces, residential complexes and infrastructure are woven into a complex urban fabric that seemingly stretches and folds to accommodate all.

The more you look the more you discover in Shau Kei Wan. The conversion of the above mentioned transport interchange, from a potential wasteland into a

thriving and propagating public realm, will here be analysed. Without being part of any planned urban design masterplan, this redundant condition has become over time a multi programmed dynamic place, with interconnected programmes coexisting with the contiguous surrounding city. A clear example of this coexistence would be the pedestrian walkways that are squeezed between the overpassing viaduct and the underlying street network, that have been colonized by a specific group of the community, for instance elderly women exercising and practicing tai-chi.

Every aspect of this three dimensional urban jigsaw has been cleverly adapted to incorporate public amenities. From functional public staircases becoming impromptu terrace for people to rest and watch the evolving daily narratives, to the flyover acting as an integrated bus shelter, life seems to permeate this contingent site. Yet it is only via the slow process of mapping the territory, by analytically drawing, that one is fully able to comprehend the complexity of the dynamics at stake. Why is this specific site activated when so many other similar cases remain forgotten? Just as a leather chair retains the physical presence of the occupier long after their disappearance, this site once sat on the harbour front of Shau Kei Wan, the scene of the local market for more than a century. Once the land was reclaimed and the new infrastructure erected, the collective vestiges of the past daily life reappeared, as if to prove that even if one removes all traces of the physical domain its collective memory persists alive with the community that inhabit it. An example of this would be the unforeseen encounters between mutually exclusive groups, vis-à-vis commuters arriving by bus and local residents walking along the imaginable coast line.

Besides this positive instance of a dynamic forgotten place, there are many examples within Shau Kei Wan where community engagement is poor and these spaces remain marginalized. A specific instance, a counter example of sorts, is where the same meandering Eastern Corridor expressway mentioned above, comes into direct contact with the real island coast line. Here, multiple manifestations of past physical local history can still be found, in the form of: a local temple,



FIGURE 3. Shau Kei Wan Bus Terminus, Shau Kei Wan, Hong Kong, Axonometric Drawing. © Peter Ferretto, 2015.



FIGURE 4. Lai Wan Wet Market, Kwai Chung Road, Mei Foo, Hong Kong. © Peter Ferretto, 2015.

an impromptu ship repair yard and even a vibrant municipal fish market, however these moments of high programmatic activity fail to dissipate and infiltrate the surrounding vacant land – the residual remains unincorporated.

3. THE MEI FOO INCUBATOR

Mei Foo, situated on the west boarder of Kowloon, lies at the opposite end of the spectrum vis-à-vis typologies of Hong Kong's residual urban landscape compared to Shau Kei Wan. It is a private housing estate accommodating more than 80,000 inhabitants in a complex of 99 towers built in phases during the 1970s. This autonomous enclave, resembles if seen from above, a medieval fortress surrounded by a green moat in the form of Lai Chi Kok public park.

The estate, again built entirely on reclaimed land, is bisected along its central axis by the Kwai Chung Road Motorway, a main infrastructural artery. The astonishing characteristic however, relies on the transformation of the highway's identity, from a blatant disadvantage into a positive asset. The 40 m wide elevated road becomes the missing public realm serving and enhancing Mei Foo's notion of neighbourhood. The conversion of a rigid and unforgiving piece of urban infrastructure into a series of interconnected civic spaces, ranging from a public "wet-market" to a covered plaza surrounded by an integrated commercial world, transcend all traditional and prescribed notions of public space as we have become accustomed to define them.

The generated "under landscape" unfolds as a territory of opportunities, where space is transformed by a process of recuperation and programmatic induction into a place. 80,000 people require a large amount of facilities and resources to function smoothly. Of prime importance is food, where similar conventional Hong Kong compounds eagerly displacing such facilities outside the complex's boundaries to allow most of the commercial activities to focus on more financially lucrative activities. This is also the case in Mei Foo, however given the existence of this "lost" landscape below the highway new opportunities are created.

In Mei Foo one finds a notion of the residual that is constructed out of a series of multifaceted circumstances. To understand the inherent complexity at stake one has to conceive the estate as a virtual section, mentally drawing an image of an orthogonal cut through the neighbourhood, in the process acknowledging how the datum of the highway acts as an artificial incubator of social life. In a climate such as Hong Kong's, where direct sunlight has to be avoided most of the year, where there is chronic shortage of useable public space, the large structural spans of the highway beams form a column free urban living room with the least amount of associated urban design. It is as if the community has developed a rapport with the condition, embracing it rather than simply denying it.

4. CONCLUSION

To draw any general conclusions about urban residual spaces of Hong Kong from looking at two isolated conditions would be naïve and counterproductive to the scope of the research. Yet, both instances demonstrate that commonly discarded urban spaces here offer a wide variety of adaptability in adjusting to their specific adjacencies, where their success is directly related to a process of gradual transformation that could be described as “urban osmosis”. Each example reveals how characteristics specific to Hong Kong – reclaimed land, adjacent high density neighbourhoods, rich street culture – all contribute to connecting segmented urban spaces.

Shau Kei Wan and Mei Foo were selected for the purpose of this study as they represent distinct comparable examples of neighbourhoods, with existing and new histories, that have positively negotiated imposed urban realities such as large elevated highways. At a moment when the common position is to generate design strategies to negotiate these inhospitable places, we are here confronted with real examples that have occurred organically and with no obvious institutional imposition. To this effect Hong Kong can become a platform to gain important on site information about how the urban residual can become relevant to our daily urban experience. Both examples do not stand out for their eye catching design, rather they succeed in achieving something more humble yet essential for civic life – they create a sense of belonging.

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- 1 Ignasi de Sola-Morales, “Terrain Vague”, *Anyplace*, Cambridge, MIT Press, 1995.
- 2 Jacques Herzog, *The Inevitable Specificity of Cities*, Zurich, Lars Müllers Publishers, 2015.
- 3 Rolf Jenni, *Hong Kong, China – Engineering Territory*, Zurich, Lars Müllers Publishers, 2015.
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- 5 Abbas Ackbar, *Hong Kong and the Politics of Disappearance*, Minneapolis, University of Minnesota Press, 1997.

Reclamation Landscapes of the Venice Lagoon. The Urgency of Conservation and Reuse of the Rural Settlement of Le Trezze (Portegrandi)

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The hamlet *Le Trezze di Quarto d'Altino* is situated in the contact area where the mainland gives way to the Venice lagoon. The lagoon is made up of a complex network of land and salt marshes crossed by canals: a physical and environmental system subjected to deep transformation processes both of natural and anthropic origin. The reclamation works carried out by the fascist regime starting from 1927 constitute the last phase of impressive land modification initiated by the Venetian Republic in the 16th century.

Along the provincial road running on the left bank of the River Sile, a long row of farmhouses was erected along three kilometres. These houses were part of a linear settlement placed between the canal *Taglio del Sile* and the lagoon, at the edges of the large reclamation area. The rhetoric of the regime is reflected in the propagandistic names of the houses, referring to the position (Sile House); the productivity of the soil (Florid House, Fertile House, Fecund House, Favourite House); the land reclamation (Resurrected House, Hope House); the political propaganda (Rebirth House, Redeemed House, Victory House, Imperial House).

The building typologies comply with three recurring solutions, taking into account the number of hosted families and the activities performed. The settlement was designed in stylistic continuity with the Venetian rural architectural tradition but it was built with advanced techniques. In fact, the houses are exemplary of an important moment of transition from traditional construction methods to one based on the use of materials and techniques typical of industrial production.

Since the 1960s, due to the increasing attractiveness of the industrial complexes in the region, the whole area has been abandoned by its inhabitants.

Nowadays, in the total absence of policies of landscape enhancement, this modern rural building heritage which carries a controversial historical memory for the country is gradually degrading.

1. A MAN-MADE MARGINAL LANDSCAPE

Set on the edge of the lagoon, the hamlet *Le Trezze di Quarto d'Altino* is situated in the coastal margin where the mainland gives way to the Venice lagoon. The lagoon is made up of a complex network of landmasses and *barene* (salt marshes) crossed by canals; a complex physical and environmental system that has undergone profound transformation processes originated either by natural or anthropic events.

The reclamation works carried out systematically by the fascist regime starting from 1927, in fact constitute the last phase in a series of impressive works initiated by the Venetian Republic in the 16th century.

The history of the area between the villages of Portegrandi and Caposile is closely connected to its particular geographical location. It is a border area and a hydraulic hinge between water and land where fresh and sea waters intersect and important internal and lagoon navigation routes converge. The water projects

conducted by the Venetian Republic in the reorganisation of the territory entailed profound changes to the natural landscape, and had two main goals: the defence of the lagoon from the sedimentary effects of turbid water due to river floods, and the preservation of the Sile River as a vital trade route in the lagoon area. Between the 16th and 18th centuries, the driver and means of implementation of this policy was the Water Authority, made up of an Advisory Board and the *Savi Sopra le Acque*, who had executive functions. The strategic objective of the work was to rethink the course – and, therefore, the impact – of the Sile River in these territories. The river used to flow into the sea at Portegrandi (known as *Bocca di Valle* before the fall of the *Serenissima*), but in 1683 it was deflected by excavating the canal *Taglio del Sile*, transferring waters into the bed of the river *Piave* and making them flow into the Adriatic Sea.

Another crucial urgency giving impulse to the works that were undertaken was the decision to allocate land for agriculture. A first settlement was established at *Portegrandi* as a result of the creation of *Taglio del Sile* which, however, did not bring any improvements to the area; on the contrary, the opening of the canal worsened conditions and turned once fertile land into marshes. The area saw significant improvements only two hundred years later with the opening of the *Canale della Vela*, which collected the waters of the *Canale Fossetta* and conveyed them into the lagoon through a tunnel excavated at *Le Trezze* itself.

In 1808 the Napoleonic Land Register attested in the area between *Trepalade* and *Portegrandi* 19 buildings and 14 other constructions set in 1200 hectares of land. The private reclamation of *Le Trezze* by the Levi Company of Venice did not start before 1880, and the 13 consortiums¹ that were active in the region that same year later came to form the current land reclamation consortiums (*Consorti di Bonifica*).

Proceeding at a fast pace and rigorous in the definition of the changes brought to the area, work initially took place between the Sile and the *Canale Lanzoni* to be successively extended to the south. A breakthrough would come in 1927 with the draining of the marshes by the Caposile Reclamation Consortium². In this period, 48 mechanical land reclamation projects were carried out leading to about 10,895 hectares devolved to agriculture, which amounted to more than a quarter of the marshland between the *Sile* and the *Livenza*.



FIGURE 1. Tommaso Scalfarotto, The Venice Lagoon, 1783-1784. © Archivio di Stato di Venezia, *Savi ed Esecutori alle Acque*, Laguna, Disegno 94B neg. 1230/P13, foto 150 [top]. IGM Topographic map – Italian Military Geographical Institute, scale 1:25000, 1931, foglio n. 52, quadrante IV, orientamento S.O., Caposile, Comune di Quarto d'Altino [bottom].

2. A TWO-WAY RELATIONSHIP BETWEEN THE CONSTRUCTION INDUSTRY AND THE TERRITORY

The new road linking *Caposile* and *Portegrandi* on the left bank of the *Taglio del Sile* was constructed alongside the reclamation works of the 1920s and 1930s. It replaced the road that for over two centuries had linked the two villages along the right bank of the canal towards the lagoon³.

A long row of farmhouses was erected along three kilometres of the new road crossing the landscape, forming a simple, linear settlement overlooking the lagoon on the edge of the large reclaimed land.

The rhetoric of the then ruling fascist regime is reflected in the propagandistic, well-wishing names that mark in large letters the façades of each house, referring either to their location (*Ca' Sile* [Sile House]), the fertility of the soil (*Ca' Florida*, *Ca' Fertile*, *Ca' Feconda*, *Ca' Favorita* [Florid House, Fertile House, Fecund House, Favourite House]), the land reclamation (*Ca' Risorta*, *Ca' Speranza* [Resurrected House, Hope House]) and especially to political propaganda (*Ca' Rinascita*, *Ca' Redenta*, *Ca' Vittoria*, *Ca' Imperia* [Rebirth House, Redeemed House, Victory House, Imperial House]). Finally, the farmhouse named *Ca' Romagna* referred to Benito Mussolini's birthplace.

The first house documented in the area was the *Ca' Nuova* [New House]⁴ (now *Ca' Speranza* [Hope House], a name that was given after the extension that defined

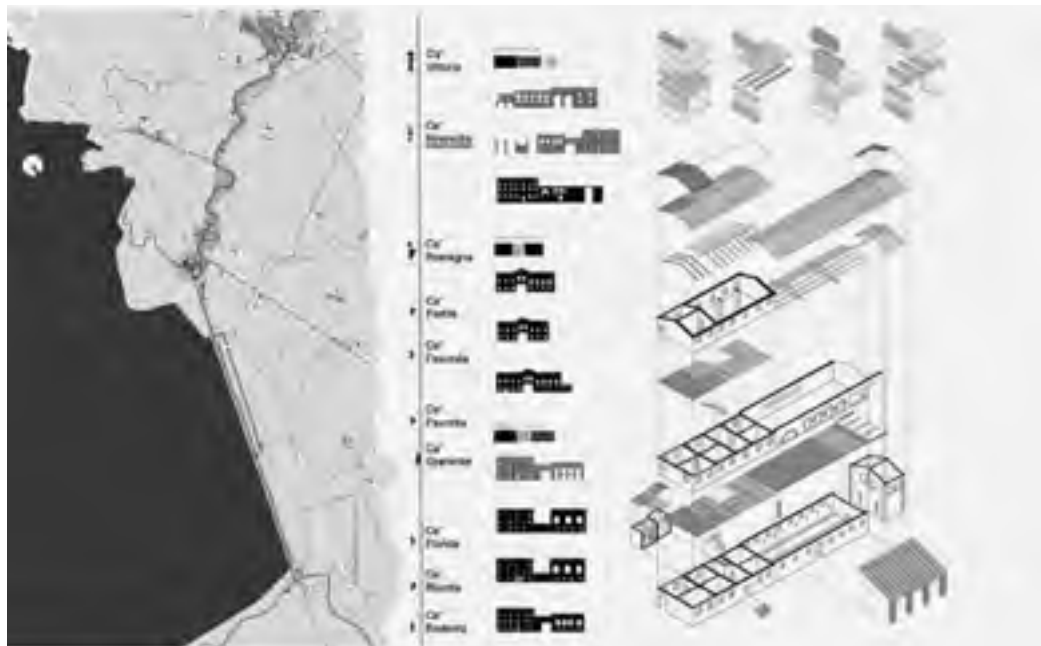


FIGURE 2. The colonial settlement beside the canal *Taglio del Sile*. Location and building typologies. © Sara Di Resta, 2013.

the final structure). By 1931, all the new farmhouses located along the *Taglio del Sile* had already been built⁵.

More ancient rural settlements comprised less land and featured buildings with greater cohesion. However, in the vast areas of reclaimed land more space was devoted to production, leaving fewer houses laid out in a row along the banks of rivers. Farmhouses are generally made up of a part devoted to living quarters and a part intended for agricultural activities, sometimes integrated with auxiliary buildings. The size of the fields and the characteristics of the homes allowed farmers to achieve self-sufficiency, producing all that was necessary to provide for the livelihoods of their families.

The morphological structures of the rural settlement built between *Portegrandi* and *Caposile* are three recurring typologies of residential and farm buildings, each of them designed to take into account the number of families housed and the activities performed: the housing unit on three levels with stables and barn (*Ca' Feconda*, *Ca' Speranza*, *Ca' Florida* and *Ca' Redenta*), the compact housing unit on two levels with warehouse (*Ca' Fertile*, *Ca' Favorita*, *Ca' Risorta*) and the compact housing unit (*Ca' Rinascita*, *Ca' Redenta*, *Ca' Vittoria*, *Ca' Imperia*).

The buildings are set within the landscape in stylistic continuity with the Venetian rural architectural tradition; however, from the point of view of construction, they are exemplary of an important moment of transition from traditional construction methods to one based on the use of materials and techniques typical of industrial production. Despite the traditional look due to the use of load-bearing walls and double-pitch roofs, these buildings are "hybrid structures" that introduce reinforced concrete into well-established construction practices. Unlike the developments that characterized urban construction at the time, here concrete is not used in the already long-established technique of the frame, but it is found in edge beams inserted in the walls and in elements subject to flexure (such as architraves) to replace more traditional wood, which is still used for the roofs and floors of the houses. Finally, construction techniques based on the use of both steel and masonry and concrete were adopted in order to cover larger spaces such as rooms used for haylofts, barns or stables.

The identity of the places, where it is difficult to distinguish between natural and man-made features, lies in the two-way relationship that closely links architecture, the broader landscape and associated infrastructure. The rural settlement came to be as a result of the changes brought to the area, which was rigorously divided into fields, canals and roads and governed by the presence of the houses that fit neatly into this pattern.

At the basis of this plan were contemporary ideas of society and development that gave impetus to works which, albeit achieved in rural and marginal areas, were an expression of modernity. This is similar to what happened during the same years with the major land reclamation of the Pontine Marshes to the south of Rome: elements of the landscape ruled by human intervention coincided with



FIGURE 3. The settlement houses located between *Portegrandi* and *Caposile*. © Sara Di Resta, 2016.

the appropriation of land, agricultural self-sufficiency and the creation of road infrastructure linking centres and facilitating travel. The idea of landscape and the resulting transformations are instrumental to the improvement in living conditions and, therefore, to progress.

3. FROM THE PARADOX OF ABANDONMENT TO REUSE STRATEGIES

The first signs of crisis in agriculture and the increasing attractiveness of great industrial complexes in the region triggered the slow abandonment of the settlement by the farmers. In 1966 the whole area, comprising fields and homes, was under a single ownership. However, that same year a flood greatly disrupted the territory causing extensive damage which compounded the destruction already inflicted by a violent storm in 1946. Moreover, the elevation of the provincial road carried out in order to raise the banks of the *Taglio del Sile* abruptly cut off the connection between the houses and the lagoon. In the late 1960s the rural settlement was almost completely abandoned. Works completed in this period were only aimed at resuming farming activities and did not include the maintenance of the houses.

The territory that we can see today has the boundless, rigorous appearance of the reclaimed land interrupted by a long row of crumbling buildings left to decay. The image of a society indifferent and oblivious to these places emerges between the outlines of a landscape made up of treeless fields, neglected labour, abandoned houses.

The reasons why this area, removed from main urban centres, was marginalised and disconnected from the tourist routes that favour Venice and the beaches also lay in the controversial history of which the rural settlement is a reminder. The total lack of landscape enhancement policies is causing the loss of this fragile, yet impressive historic and cultural heritage that provides evidence of the keen experimentation and stubbornness of an era.

An accurate, non-rhetorical analysis of this site, considered of little value even by the official iconography, may constitute a first contribution to the enhancement of a site straddling nature and project, landscape and territory. Due to the quality of its environment, this part of the lagoon also has much potential to offer the leisure industry.

To ensure the area an initial form of protection, the first desirable step is the decree of Landscaping Constraint by the Superintendence of Fine Arts and Landscape for Venice and the Lagoon: the site (buildings and landscape) will thus be subject to conservation and enhancement in accordance with the Art. 142 of the Italian Code of Cultural Heritage and Landscape (Legislative Decree no. 42/2004).

A further objective is to initiate a process aimed at a compatible adaptive reuse of the settlement, now nestled in surroundings that make it almost invisible to people passing in the area. The quality of the spaces offered by the conservation of the settlement and the influx ensured by the Portegrandi - Jesolo provincial road, particularly in the months when tourist inflow is more intense, may indeed support a project focused on the enhancement of the rural and natural aspect of the area.



FIGURE 4. The view of the lagoon from the canal *Taglio del Sile* [top] and the sowed fields from the interior of the buildings [bottom]. © Sara Di Resta, 2016.

From this viewpoint, the farmhouses lay at the heart of a process of social and cultural interest aimed at regaining the attractiveness of a context defined by both an architectural and a territorial dimension. In fact, both the material and immaterial values of the site can be fully appreciated only by the view from the higher floors of the farmhouses. The built environment, composed both by the buildings that punctuate the territory and by the road that abruptly interrupted any connection between the fields and the lagoon, now represents the element from which it is possible to reach a more complete perception of the landscape. In particular, the colonial houses become the main observation point to catch the qualities of the environment: the view from the windows of the rural settlement reveal – finally with an all-encompassing perception – the different layers that compose the territory, allowing the visitor to recreate an intense image outlined by the 20th century dedicated to the landscape, progress and collective memory.

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Marginal Structures: Bus Stops throughout the Former Soviet Landscape

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Accessible public mass transportation, specifically intercity buses, has enabled people to reach far distances, connecting the geographically marginal rural countryside with urban centres. This required certain infrastructure, such as roads, terminals, and bus stops. These bus stops appear as small, individual structures in otherwise untouched landscapes, being the sole trace of human intervention in the vastness of a rural area: one could say that bus stops are the quintessence of marginality, in the middle of the landscape. This is even more evident when the areas are vast, such as in the former Soviet Union. In addition, bus stops as a typology sometimes eschew aesthetics for a purely functional purpose. After the fall of the Soviet Union, many bus stops faced neglect and destruction. Nowadays, the remaining ones lie in a state of suspense, with no clear destiny amidst the advent of private transportation. However, bus stops represent unique examples of utilitarian architecture that can convey a strong heritage and cultural history. This paper will attempt to understand the marginal character of bus stops and the significance that such places hold today by following three steps. First, it will present a series of bus stops in countries of the former Soviet Union. Second, it will address their marginal characteristics in terms of place, type, aesthetics and heritage. Third, it will discuss conservation approaches for these places. These stops incite many questions particularly considering their current state of decay: What would be a more suitable solution, conservation or demolition? Do aesthetics influence their heritage value and thus their fate? Marginal in aesthetics, geography and typology, these bus stops were once points of communication. They now stand scattered as silent shadows of a past that ignites curiosity and discovery.

1. INTRODUCTION

The idea of marginal landscapes can bring notions of distance, conveying a geographic aspect related to location and the perception of place. Rural bus stops can be seen as quintessential marginality: located in the countryside, they seem forgotten. These stops, some of them mere shelters, intensify the marginality of a landscape, beyond architectural or urban aspects and into heritage circles, by viewing them against the vastness of an area, such as the former Soviet Union. To introduce the bus stops, I will first present a brief description of them. This leads to dealing with the notion of the marginal landscape, which will be addressed through four aspects manifested in bus stops. The closing argument will address the future of these bus stops. Considering their marginal quality, what could their future look like? The focus of this paper is to present bus stops as samples of everyday places that could expand the traditional heritage discourse in terms of landscape conservation.

2. BUS STOPS

In his photography project *Soviet Bus Stops*, Christopher Herwig presents a series of bus stops throughout the landscape of the former Soviet nations¹. Once part of a centralized network, these stops fulfilled the role established by the socio-political system of the time²: emphasizing the virtues of the collective over the private by encouraging mass transportation in the Soviet Union³. By creating an urban-rural network, the system would discourage private transportation seen as the height of individualism, placing these bus stops in strategic areas to guarantee coverage and connection⁴.

Though state-controlled, isolation gave a unique liberty of design for the bus stops⁵. Architects and artists were free to work on them, incorporating personal and cultural expressions, and characteristics of the landscape to their designs⁶, as mentioned by Zurab Tsereteli⁷. Armen Sardarov⁸ explains the concept behind the bus stops: to have a detour from brutalist and mass produced architecture characterized by State projects⁹. All over the country, different ideas, cultural and personal expressions became part of these stops¹⁰, simultaneously influenced by the local contexts as well as by the landscape itself: abundance of wood in the Baltic states and Belorussia produced many wooden stops; Kazakhstan and Uzbekistan had huts, geometric and animal shapes; and around the Black Sea they were abstract, with mosaics and bright colours¹¹.

After the fall of the Soviet Union, the effects of decentralization did not spare the stops. Economic difficulties and the rise of private transportation diminished the use of the network, leaving the landscape devoid of much activity. This brought forth the current state: some stops were torn down and even though



FIGURE 1. Architect unknown, bus stop, Aralsk, Kazakhstan. © Christopher Herwig, 2015.



FIGURE 2. Architect unknown, bus stop, Niitsiku, Estonia.
© Christopher Herwig, 2015.



FIGURE 3. Architect unknown, bus stop, Biasieda, Belarus.
© Christopher Herwig, 2015.

others are still used, most stand in bad condition, some used as dumpsters and toilets. Herwig says that while searching for stops, he found that many had been replaced by prefabricated ones, others had simply been demolished. His fear is that many more can be lost without any documentation.

3. MARGINAL STRUCTURES IN THE LANDSCAPE

The words “marginal landscape” can in one interpretation trigger images of distance and isolation: they can carry strong physical and geographical notions, becoming the main characteristics¹². Henceforth I would like to elaborate on what these words can convey, through four niches in which marginality plays a key role and from where further thoughts evolve.

Of Place

The first aspect of marginality refers to geographical nature. Here, the spirit and sense of place prevails, the *genius loci*, which includes the experiences and feelings of people to a location and their connection¹³. This distance to a place not only separates us from the designated area but also creates emotions of wonder and discomfort, providing mixed feelings about these places. Maybe we did not know that something like this existed or could exist far away from everything else. Its loneliness transmits uncomfortableness, a suspicion that there could be something wrong there, as to why it had to be secluded. This isolation can also lead to the realization of the vastness of the landscape, making us feel even smaller¹⁴.

The Soviet bus stops, mainly rural, become perfect examples of this geographic marginality. Extending through various nations, they pervade varied landscapes: deserts, forests, mountains and plains, many seemingly inaccessible. They stand alone, maybe next to a small building, and with the outdoors as their true companions, they enhance the spirit of the place through an aura of mystery, anchoring the landscape to a specific time.

Of Typology

Typologies offer views of places in human history that signal power, wealth, humanism and even war. Certain typologies have earned a status¹⁵ and are treasured as embodiment of identities and proud achievements¹⁶. Yet even in typology, marginality can be seen exemplified by everyday architecture, one that in many cases portrays the idea of function over form since it was conceived to do so. These are places that are constantly exposed to the public, bringing an idea of boringness since they are assumed to be there for a functional purpose. This ordinariness makes certain typologies unattractive or uninteresting, marginalizing an entire category, having its relevance and merit overseen¹⁷. This extends to marginalizing a landscape typology, a landscape of the everyday such as that of underground tunnels, checkpoints, kiosks, and overpasses¹⁸.

The constant exposure of people to the Soviet bus stops has resulted in them not paying much attention to the stops. Drivers and passengers in many cases do not see them as other than a stopping point on the road, unaware of their value as artistic expressions during a rigid time.

Of Aesthetics

As the third aspect of marginality, aesthetics becomes an important value that is part of both architectural and heritage components¹⁹. In many cases, traditional notions of aesthetics direct the approaches when valuing sites, where authentic or pristine views are promoted, presenting a site under a specific light, traditionally through the prism of beauty²⁰. But aesthetics is a wider spectrum, one that offers beauty but also *ugliness*, seen as its marginal counterpart²¹. Displeasing aesthetics such as dilapidated states or forms, create visceral reactions making appreciation for certain places difficult, mainly due to the fringe nature of these aesthetics perceived as wrong or incomplete.

The decaying image that the Soviet bus stops convey have an impact on how people perceive and interact with them, reflecting on the landscape itself, a landscape that looks lonely and forgotten. Though most, if not all, the stops can be considered impressive works of art, their deteriorated state creates a discomforting distance between those that interact with them, permeating also towards the land they occupy. The stops are dirty, falling apart, alone, and these perceptions constitute a sense of discomfort when approaching them.

Of Heritage

Places become important holders of heritage value, as they represent identity and pride, carrying the intangible values of cultural significance and *genius loci* – spirit of place – that bring together communities. In the terms of organizations like the World Heritage Centre and ICOMOS²², sites whose relevance goes beyond local spheres are presented to the world. Yet even here there is an issue of marginality, manifested by the international discourse focused on traditional views of the heritage fabric²³. While various initiatives and organizations have raised



FIGURE 4. Architect unknown, bus stop, Pitsunda, Disputed region of Abkhazia. © Christopher Herwig, 2015.

awareness for underrepresented sites for years, the traditional heritage discourse permeates the main discussions, dominated by the monumental²⁴.

The Soviet bus stops are not only marginalized by traditional heritage discourse but also within the communities that directly interact with them. They do not convey a sense of pride or identity, but on the contrary transmit a sense of shame and ostracism in part due to how far they stand from the commonly understood international heritage stance. Despite the general underrepresentation of heritage landscape sites²⁵, a unique “landscape of transportation” can be identified, together with a spirit of connectivity, taking into account the serial nature of these individual structures and how they are isolated in physicality yet not in essence²⁶.

4. CONSERVATION

With many of these stops in dire condition, the question arises: “What can be done?” The exact number of bus stops is unknown, and preserving all of them is impossible, and may not be necessary. But how many should be preserved, how and under what criteria? International discourse calls for respect of authenticity and integrity²⁷, focusing on the materiality and with external approaches and valorisation of cultural significance²⁸. Are these conservation approaches possibly too narrow²⁹ and muddled in traditional views³⁰? Might restoration by these standards be masking the spirit of a place³¹? Do we really want such an approach? Would this not take away these emotions that could only be experienced by traversing the fringes of our heritage comfort zone?

Conserving without restoring, maintaining the displeasing aesthetics is tricky since ugly realities³² and decay have the added difficulty of becoming accepted³³. On the other hand, full restoration to a former state could freeze the structure, ignoring the potential imprint of contemporary and future layers of experiences. The contradiction here is that if the dilapidated state is allowed to exist, the landscape disappears, but this can also be seen as a reflection of the natural course of things, that is, transience: nothing lasts forever. Could this be seen as a radical conservation? Could it be an “aconservation” that respects the fleeting nature of the site³⁴?

5. EPILOGUE

The bus stops of the Soviet Union are unique and play a relevant role in the identification of a “transportation landscape”, but their current state of decay relegates them to the fringes of people’s awareness by causing dullness or shame, and enabling further their deterioration and possible disappearance. Dimensions such as place, typology, and aesthetics have contributed to the banishment of the bus stops – bound to the landscape – from the more common sites in heritage discussions, endangering their essence, as well as the landscape itself. These are places that do not fit the traditional heritage discourse, and by creating interest in them, this discourse can help the viewing of such places in a different way.

The view of a dilapidated landscape is the key concern, as there seems to be less hesitation to overlook places that do not adhere to traditional heritage discourses. Though contradictory, the displeasing aesthetics that the bus stops imprint on the land can be seen as a unique value, a quality in itself that helps retain the *genius loci*, one that transmits emotions of awe and sometimes difficult histories. The decay shown by these landscapes and the bus stops within them can be seen as a reflection of the fall of the Soviet Union, a memory of what used to be³⁵. Of course, locals are bearers of heritage values of the bus stops and their actions would reflect their relations to the memory of the landscape³⁶. But one should ask if these actions are carried out with awareness for the values at play, and not simply to please an established external order³⁷.

Marginality goes beyond mere locality. It permeates different levels within structures and landscapes, expanding to the mind. The location of the bus stops, on the outskirts of the physical realm, makes it easier for them to slowly vanish from the mental realm. Unawareness of the beauty which can lie within banality influences the future of this unique landscape, threatening it to disappear without even at least documenting or knowing it. After all, if a tree falls in the woods and there is nobody to hear it, does it make a sound?

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- 33 Bernard Tschumi, *op. cit.*, 73: "Architecture reflected these deep feelings: putrefying buildings were seen as unacceptable, but white dry ruins afforded decency and respectability."
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Outside In: Landscape and Building

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Language biases our reading of the built environment, just as it channels so much of our general experience of the world. In the English language, for example, we have traditionally paired the words “house and garden”, and “inside out”, in that order. This sequence suggests that the building should come first in our considerations, with the exterior setting following only in a secondary position. The reality, in fact, is almost always the reverse. The landscape comes first – not always a designed landscape, of course, but at the minimum as a site with a natural and often cultural history. And just how do we define the word “site”? In recent years we have become more aware that the limits of our property hardly constitute the boundaries of the true site. Birds do not respect property lines, nor do the rain and the flows of air and water that temper a neighbourhood – and at a larger scale, a region. Yes, and today we also have a global consciousness, and understand that factory production in places like China produces particulate matter that travels across the ocean and arrives in San Francisco. No site exists in isolation any longer.

Yet the architect's older vision of building and site persists. The building is most often conceived as an object that occupies a site, at best engaging it, but in many recent architectural projects, more or less ignoring it. Parametric architectural design rarely considers the land it is intended to inhabit until a later moment in the design process, if at all. The result is often a structure better suited to a world's fair or at best suburbia, where structures have less pressure to engage their sites or consider the natural environment – or even the buildings adjacent to them.

In certain moments in the past, the consideration of the site was paramount. Great gardens of the French *Grand Siècle*, such as Vaux le Vicomte, took the idea of *territoire* as their starting and ends points, reshaping it in accord with the *château*, and considering garden and “house” as a single entity. At Versailles, in fact, the grandeur of the new garden instigated an expansion of the architecture, with a desire to bring them into greater accord. Admittedly, there was a hunting lodge

at Versailles from an earlier era, but Louis XIV and André le Nôtre shared visions sufficiently grand to redesign the entirety of the place as an immense yet integrated ensemble.

Jumping to the modern period we find many instances of buildings that occupied their sites without engaging them in an active way; Le Corbusier's Villa Savoye might serve as a good example. However, there have always been architects and works that did consider their sites more fully, and used them to instigate their initial design thinking. Of the architects working in the 20th century, Frank Lloyd Wright spoke the most often about the bond between building and land, and produced an architecture resonant with the landscape through its plan, mass, profile, and materials. His 1939 Fallingwater is justifiably celebrated as a building which seems to rise from the banks of a stream. (Yet, curiously, as a result the water can only be heard, but not seen, from inside the house.) His construction and continued reconstruction of Taliesin in Wisconsin, furthered his early investigations of the site. Perhaps most of all, it was Wright's house and studio at Taliesin West outside Phoenix, Arizona – whose construction began in the late 1930s – that appears as an almost architectonic transformation of the landscape: its topography, soils, and vegetation.

Rather than imposing an architectural form upon the land – as Mies van der Rohe set the Farnsworth house upon the banks of the Fox River – Wright began with the land itself. Not that one must mimic the landscape to achieve a certain bond with it. Richard Neutra sympathetically derived the plan for the 1947 Kaufmann house in Palm Springs from the desert landscape, but unlike Wright restricted his use natural materials to some few certain walls. At his Tremaine house, or roughly the same year, a succulent garden joined a house constructed with concrete and glass with its landscape of wooded foothills. Thus, although an alien construct, the house comfortably occupies the land in a manner more resonant than works by Mies. Carlo Scarpa masterfully conjoined the addition to the municipal cemetery at San Vito d'Altivole by wrapping the original precinct on two sides, extending, yet maintaining the figure of what is in effect a cultural landscape. Working on a rocky seashore in Leça da Palmeira, Álvaro Siza configured his swimming pools as architectonic shapes set in dialogue with the rocks; the architecture first served as a wall to retain the road above, and thereafter as space for a café and dressing rooms for the recreation facility. Luis Barragán's 1968 Cuadra San Cristóbal enfolds its site, tightly as a quadrangle at one point, but in other places it welcomes in the surrounding landscape. As there is a paper in this session discussing the Gulbenkian campus and garden, I will mention only how the site and building were developed in tandem, although the consideration of the garden followed the initial competition.

The advent of advanced building technologies – among them long-span structures and large sheets of glass that could move laterally – facilitated the reduction of wall thicknesses to thin membranes. Where the climate and social codes allowed these possibilities were broadly exploited. Considerable transparency

followed, as did the easy flow from outside in and inside out. In regions such as southern California, the sliding door and the building plans reflected an increased regard for the garden spaces as a seamless continuation of living. Richard Neutra's work is instructive here.

Thus, some architects have little regard for the site, while others actively draw upon it. The garden and house may be designed as a couple, or the house may even follow the garden. The examples already presented demonstrate that only in some specific instances have we encountered architects who truly regarded the site, its physical characteristics and its physiognomic qualities. An encompassing view is more common in the work of landscape architects than architects, as site planning and landscape design is their province. The 1957 Miller garden in Columbus, Indiana, is one of the most successful and beautiful examples of the wedding of architectural and landscape spaces. Although the use of a square plan for the house by Eero Saarinen suggests a formalism that did not derive from the site, the landscape architect Dan Kiley created a series of spaces that complemented each of the interior rooms, evident in its site plan. Although touched by classical inclinations, Kiley worked fully in modernist space, each precinct defined by lines or *allées* of trees, or rooms whose corners were left open so that one space flows into the next. The result was an ensemble which suggests that the order was garden and house, although in fact they were developed almost simultaneously.

As a last example: the Donnell garden by Thomas Church in Sonoma, California, was first built in 1947. At that time building materials for private use were still under wartime restrictions, and the construction of the house itself was postponed for several years. Building a swimming pool was permitted, however, because it could serve as a reservoir for fighting grass fires. Thomas Church claimed that the inspiration for his biomorphic shapes derived from the meanders of the Napa and other rivers that can be seen from the site. From these, Church and his project landscape architect Lawrence Halprin developed the shape of the pool – which although appearing to be freeform is actually quite regular, using arcs of circles and straight lines. The garden was accessible from several points, and as a whole the designers made no attempt at naturalism, entirely dismissing the idea of the defined room or the use of the axis. Each of the support structures – the bathhouse and the living pavilion – were designed by the architect George Rockrise, who was working in the Church office. The result was an integrated ensemble of garden, swimming pool, and architecture. The house, in fact, does not join the pool garden, but was built adjacent to it several years later, and tied to the original garden by a serpentine hedge of juniper.

Behind this session was the idea to reverse the order of study for the two entities “garden” and “house”, to look at the building within a landscape, and the relation between exterior spaces and those inside. Contributions investigated the formal relation between outdoor and indoor space, as well as how life was lived in the two zones – but always beginning with the outside. To what degree did

the site suggest the materials and character of the architecture – or purposely stand in contrast to them? How did garden design in the 20th century influence the design of the building? What was the nature of collaboration between landscape architect and architect? How did the process of design proceed? How did an extreme climate or harsh terrain affect the outdoor-indoor relationship? Were the effects of the passage of seasons, and the passage of time, on landscape and building equal or imbalanced? How do we deal with issues of restoration or adaptive reuse when a landscape is far more ephemeral than construction? The papers to follow will answer, at least in part, some if not all of these questions.

Consideration of Time in Landscape and Building

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Architectural discourses in Western cultures tend to focus more on form than on process. Even when accepting that landscapes are in constant flux, many descriptions focus on their form rather than the process they become. This attitude becomes even more noticeable when describing buildings. The bias in question may be explained through distinct dichotomies: between nature and artifice; between building and dwelling; and between insertion and integration. Deliberately leaving the first out of this discussion – for its complexity necessarily falls beyond the scope of this essay – this paper shall focus on the latter two. Both landscape and building can be conceived of as objects prepared in advance for people to inhabit; they are finished when they adjust to a shared cultural image. Tim Ingold, for example, refutes this vision when he claims that neither nature nor human agency pre-prepare form for life. Those who conceive of landscape and building as artefacts also tend to admit that their creation is made through a series of insertions on a pre-existing template, whether natural or cultural. A vision of the world that privileges process over form accepts that landscape and building – and especially the nature of the relationship between the two – are formed through a process of integration, rather than insertion. Yet, the existence of these forms in the process of dwelling implies its constituency in time as much as in space. By accepting their temporal dimension, landscape and building are not only constant works-in-progress but also part of a process that incorporates them in life. Some buildings and landscapes are unique because they were conceived with a strong consideration of their temporal evolution, for example the Louisiana Museum of Modern Art in Denmark and *Museuminsel* Hombroich in Germany. These settings were not developed as simple acts of constructing buildings on the pre-existing landscape but rather as a deliberate succession of smaller acts considering landscape and programme. The differences as well as similarities between the two projects help us understand the potential for new relations between landscape and building.

1. INTRODUCTION

Architectural discourses in Western cultures have historically focused more on form than on process. Today, even if many descriptions accept that landscapes are composed of dynamic processes in constant flux, they focus on landscape as form rather than the process they become. This biased approach becomes even more noticeable when describing buildings.

The bias in question arises from a simplistic understanding of architecture through three dichotomies: between nature and artifice; between building and dwelling; and between insertion and integration. As its complexity falls beyond the scope of this essay, I will not discuss the former and will focus on the latter two to explore the temporal dimension that necessarily exists in any construction.

Some buildings and landscapes are unique because they were conceived with a strong consideration of their temporal evolution. Such is the case of two European art foundations – Louisiana Museum of Modern Art in Denmark and *Museuminsel* Hombroich in Germany. These iconic settings did not simply insert buildings into a pre-existing landscape, but regarded construction as a deliberate

succession of smaller acts to integrate landscape and programme into the built form. The differences as well as similarities between the two projects help us understand the potential for new relations between landscape and building.

2. TEMPORAL CONSIDERATION IN THE PROCESS OF CONSTRUCTION

One way of conceiving landscapes and buildings is by understanding them as objects built for inhabitation. From the point of view of their construction, this vision accepts two ideas.

First, it holds that these objects are finished when they adjust to a culturally shared image. The idea of a building, or a landscape, being complete precisely on the day of inauguration may have a certain photographic appeal – the walls are sharp, as sharp are the planting schemes; the floors are immaculate, as immaculate is the manicured grass; there is no dust, no stains and no dirt, just as there are no leaves, rotten logs or muddy puddles. When included in the photographs, people push the setting into the background and allow the beholder to date them very quickly, thus contaminating the desired timelessness of those who wish to preserve the idea of the building or the landscape as polished products. Yet, if both building and landscape are built to stage life, they certainly cannot exist before those who have dwelt in them have contributed to their temporal evolution¹.

The British anthropologist Tim Ingold refutes this vision when he explains that neither nature nor human agency pre-prepare form for life. One could argue that pre-defined form can partially influence the way of living, but Ingold's



FIGURE 1. Maps showing the temporal evolution of the process of construction at the Louisiana Museum. © Pardey, 2007.



FIGURE 2. Map of Insel Hombroich revealing the complex network of paths, that guide the visitors to the different pavilions deployed on the landscape. © Insel Hombroich Foundation, 2007.

point about the process of dwelling encourages the act of regarding landscape and building as progressive works-in progress through processes which integrate life in them.

Located in the Danish municipality of Humlebæk, the Louisiana Museum of Modern Art was designed in 1958 by Vilhelm Wohlert and Jørgen Bo. The architects first considered the coastal landscape of Øresund and its relationship with the existing house as the starting point for their design². However, the art foundation was not created all at once; it would take more than thirty

years to finalise the complex, long after the museum and its collections became famous as an aesthetic experience that surpasses the simple qualities of the modest buildings. Each of the pavilions that constituted the museum responded to the topography to focus views to the surrounding landscape.

The *Museuminsel* Hombroich, located outside the western German city of Neuss, departed from a simple landscape project. Initially planned as a park around the large Pink House, the property underwent a series of transformations throughout the 20th century. These included land reclamation, restorative planting and the channelling of the river Erft to create the island around the central area. Alongside overtime, the series of architectural pavilions – the “chapels in the landscape” as Karl-Heinrich Muller, the museum’s creator, often refers to them – were conceived in parallel with the new vision for the landscape not only to host a diffuse art programme but also to amplify the motto of the museum promoted by its founders: “Art parallel with Nature”³.

Second, the conception of buildings or landscape as objects admits that their creation assumes insertions on pre-existing templates, either natural or cultural. It is not difficult to use this argument to frame an understanding of the two art sites: the buildings at the Louisiana museum were arranged in a complex continuous form set in an existing landscape with gentle slopes facing the sea; at Insel Hombroich the refurbished 18th-century park received a series of buildings conceived as sculptures and arranged as nodes or sited along the network of paths.

The historical processes of evolution in both case studies are key to revealing a vision of the world which rejects a simplistic act of insertion of buildings in the landscape in order to reveal a more complex process of integration of building and landscape over time. In fact, when closely analysed, this process of integration was used as a design method to conceive and then consequently enact inno-

vative relationships between building and landscape that constitute an aesthetic experience.

At the Louisiana Museum, the series of interventions highlight an almost continuous process of connecting buildings in the landscape. Begun in 1958, additional structures were constructed in 1966, 1971, 1976, 1982 and 1991. These successive acts of construction of the built form over time envelop the landscape to create a park⁴.

At Insel Hombroich, landscape and buildings were articulated in conjunction over time. The landscape that exists today, together with the pavilions that punctuate it and the network of paths that connect it, created a complex narrative that lives through the aesthetic experience of the users.

3. TEMPORAL CONSIDERATION IN THE ACT OF VISITING

The consideration of time in the process of construction of the two art sites links with an equally important consideration of time in act of visiting them. The act of visiting constitutes the users' point of view.

When considering visiting as an important dimension in the process of knowing the two foundations, Ingold's dwelling perspective also constitutes an aesthetic experience conceived through art, buildings and landscape⁵.

Unlike more conventional museums where the art collections are curated in expected "logical" arrangements – by chronological order, artistic movement, or period – here the artistic objects and artefacts are coordinated with visual links and juxtapositions to building and landscape that invite the users to explore and encounter the unexpected.

Visiting these two sites encourages innovative ways of experiencing time. At the Louisiana Museum, visitors experience a play of glass corridors that encourage walking inside along the landscape outside and of closed pavilions with controlled views out. The buildings are no longer the inside space to appreciate the landscape that lies outside, and the landscape is no longer the outside space surrounding the buildings. Instead, built form and landscape mediate alternate, sometimes even unexpected experiences from the inside-out and the outside-in which are designed to evolve and perform fluidly over time. This deliberately fluid and ambiguous experience of inside and outside, was successfully explored especially through the initial proposal of 1958.

At Insel Hombroich the landscape offers an immersive experience that fuses art with nature through a network of paths that traverse the landscape⁶. The landscape guides us along the network of paths through various thresholds, like lines of trees or thick green hedges, to the pavilions that neglect their surroundings outside in order to focus on the art inside. The pavilions work more as walk-in sculptures rather than lenses focused on views to the landscape.

It is perhaps interesting to note how the act of visiting these two sites also becomes an experience through framing views to the landscape. At Louisiana a



FIGURE 3. a) Louisiana Museum, view of the landscape from inside one of the glass corridors included in the initial construction of 1958. © Pardey, 2007. b) Hohe Galerie at Insel Hombroich, the landscape guides the visitors through a dense line of poplars. © Insel Hombroich Foundation, 2007. c) Hohe Galerie at Insel Hombroich, inside, the pavilion neglects the surroundings to focus on the art. © Insel Hombroich Foundation, 2007.



FIGURE 4. a) Louisiana Museum, view to the pond from the rectangular window at Louisiana. © Louisiana Foundation, website, retrieved 2016. b) c) Graubner Pavilion (left) and Tadeusz Pavilion (right) at Insel Hombroich, views to the landscape from the round window. © Insel Hombroich Foundation, 2007.

harmonious built structure frames an external display of landscape. Here, the large rectangular window with the human sculpture by Giacometti frames a view to the pond, thus offering an experience similar to the views framed by the round glass bay window existing at the Graubner pavilion or the rectangular window at the end of a long room at the Tadeusz pavilion at Insel Hombroich.

4. FROM THE INSIDE-OUT AND THE OUTSIDE-IN

When analysing the relationship between buildings and landscape the consideration of time helps unravelling some of the aesthetic qualities the two art sites may offer. First, the successive acts of constructing these two museums highlight the process of integrating the built form to conduct our experience of the landscape. At Louisiana, the construction over 30 years allowed the visitors to understand the will to integrate the complex around the landscape. At Insel Hombroich, the construction of the pavilions activated a network of paths to navigate the landscape.

Second, the act of visiting constitutes an immersive experience of time. At the Louisiana Museum, visitors may appreciate the fluidity between inside and outside, as well as the controlled views to the landscape from the closed pavilions. At Insel Hombroich the landscape becomes an on-site map to navigate the network of paths that encourage the act of walking. In direct contrast with this act of exploration, the inside of the buildings acts as central points to experience art.

Third, the consideration of time promotes a shift in the traditional role one tends to associate to buildings and landscape. Buildings host the art programme and serve as lenses or nodes of articulation by offering multiple focal points in the landscape; art is both a programme and a visual and sensorial experience that

parallels landscape and nature; and finally landscape is not a simple background to host an art museum but also a foreground that acts as the central space of programmatic activities. The landscape as a designed experience is not just a complement to the buildings and the art but becomes an important and meaningful embodiment of the experience itself.

At Louisiana, for example, the park occupies a central position not only physically, with the buildings constructed around it, but also socially. Although being outside the exhibition spaces, the landscape operates in conjunction with them to exhibit art, as well as performing other important functions such as music concerts, summer festivals, or allowing for contemplation. Unlike the former, at Insel Hombroich the buildings do not enclose the park, yet similarly, the park exhibits art sculptures as well as social activities.

The time of construction and the time of visiting offer us unexpected perspectives that stress the visual qualities of the place and give a prominent role to the landscape. When carefully generalised, the consideration of time may also affect contemporary architectural and landscape architectural practices in both their creation and conservation. Following this train of thought, the design, construction, and maintenance of buildings and landscape becomes less about the insertion of static objects and more about the integration of different elements, also by considering their dynamic evolution.

The potential for recalibrating contemporary practices should be seen less as an endorsement of disciplinary blurriness – where we can no longer distinguish the contours and conduct in the making of architecture, landscape architecture or urban design – and more as an encouragement of exciting possibilities for fruitful inter-disciplinary collaborations that may arise in the pursuit of conditions for dwelling between landscape and building.

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NOTES

- 1 Tim Ingold, "The Temporality of the Landscape", *World Archaeology*, 25 (2), 1993, 152-174.
- 2 Kali Tzortzi, "Museum Building Design and Exhibition Layout: Patterns of Interaction", Istanbul, 6th International Space Syntax Symposium, 2007.
- 3 Bernhard Korte, *Topos*. In I. H. Foundation, Neuss, Insel Hombroich Foundation, 2007, 54-67.
- 4 John Pardey, *Louisiana and Beyond: The Work of Vilhelm Wohlert*, Copenhagen, Edition Bløndal, 2007. Bernhard Korte, *Topos*. In I. H. Foundation, Neuss, Insel Hombroich Foundation, 2007, 54-67.
- 5 Tim Ingold, *op. cit.*
- 6 Bernhard Korte, *op. cit.*

Landscapes and Sanatorium: The Changing Role of the Natural Site in the Cure for Tuberculosis

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The tuberculosis sanatorium emerged during the second half of the 19th century to counteract the threat of Tuberculosis, which had spread at an alarming speed in wide parts of Europe. Since neither cause nor cure were known, the medical strategy was to improve the patient's overall health and resistance against the disease.

The "dietetic-hygienic treatment", which remained the basis for the standard therapy against TB in the years to come, regarded disease as the result of an estrangement between man and nature. To enable for the patient's active engagement with the natural site was therefore one of the sanatorium's most important functional aims, the (integrative) relationship between building and surrounding landscape from the beginning a central architectural challenge. With regards to this challenge, this paper will compare the Beelitz Heilstätten, a vast sanatorium complex built between 1898 and 1904 on the outskirts of Berlin to Johannes Duiker's Zonnestraal (1931) and Alvar Aalto's Paimio (1933), two of the most iconic modern sanatoria. Zonnestraal but especially Paimio were praised for their architects' sensitivity in relating the building to the site. Yet, it were indeed the Beelitz Heilstätten which, 30 years earlier and despite their distinctly un-modern appearance realized a much more complex integration between building and site, making the natural surroundings a truly functional part of the curing process.

Although hardly above sea level, early postcards of Beelitz depict a landscape carefully crafted to resemble an alpine setting. The advanced technical supply system was accordingly situated in a vast subterranean tunnel system and also the formal expression of the buildings was designed to complement the landscape.

While in Beelitz the landscape was not only "designed as an integral part" of the complex but took centre stage, Paimio presents us with a cross-country ski-track like walkway, "zigzagging formally toward the forest and arbitrarily circling around a series of small round pools"¹.

Both Zonnestraal and Paimio demonstrate that the natural surroundings were increasingly understood as a collection of fragmented elements, as what the *Athens Charter* would later refer to as "natural elements" or the "conditions of nature [...] sun, space and verdure". This understanding led the original sanatorium idea itself ad absurdum, but prepared the path for future architectural experimentation and ultimately turned the sanatorium into "an ideal project on which to demonstrate the principles of Functionalism".

1. INTRODUCTION

The tuberculosis sanatorium emerged during the second half of the 19th century to counteract the threat of TB², which had spread at an alarming speed in wide parts of Europe. Since neither cause nor cure were understood until Robert Koch discovered the tuberculosis bacillus in 1882, and no pharmaceutical cure would be available until the 1950s, the medical strategy sought to improve the patient's overall health and resistance against the deadly disease.

In 1854, the Silesian scientist and physician Dr. Hermann Brehmer introduced the "dietetic-hygienic treatment" in order to strengthen the patients' self-defence.

The combination of a rest cure in fresh air (the “sunbed-cure”), water applications, walks and open-air exercise, together with a rich, strengthening diet, organised within a disciplined routine formed the treatment that remained the basis for the standard therapy for many years to come.

The dietetic-hygienic treatment was greatly indebted to the tradition of “natural healing”. The “*Naturheilkunde*” regarded disease as the result of an estrangement between man and nature, and aimed to balance the patient’s body and soul, to reconcile him with nature and thus with his own nature. To enable the patient’s active engagement with the natural site was therefore one of the sanatorium’s most important functional aims, the integrative relationship between building and surrounding landscape from the beginning a central architectural challenge.

This paper will compare the 1898 Beelitz Heilstätten, a vast sanatorium complex built on the outskirts of Berlin, to Johannes Duiker’s 1931 Zonnestraal and Alvar Aalto’s 1933 Paimio, the last two being among the most iconic modern sanatoria.

Both Zonnestraal and Paimio are representatives of the “hygienic” – or “functional” style – with a mechanistic aesthetic expressed in flat roofs, white walls, and wide glass planes. These became a canon for later sanatorium architecture.

Furthermore, Zonnestraal and especially Paimio, were praised for their architects’ sensitivity in relating the building to the site. Yet, it were the Beelitz Heilstätten, which 30 years earlier – and despite their distinctly un-modern appearance – realized a more complex integration of building and site, making the natural surroundings a truly functional part of the curing process.

2. THE ALPINE SITE

With the 19th century conviction that cities were true breeding grounds for disease, in particular tuberculosis, also came the theory that there were places of health outside of the city. The medical theory of the “immune place”, developed by Dr. Brehmer in the 1850s, would serve as the impetus for the development and justification of the tuberculosis sanatorium situated in natural surroundings, ideally in the dry air of an unspoiled mountain region.

Postcards from the first medical institution dedicated solely to the cure of tuberculosis, Dr. Brehmer’s sanatorium in Görbersdorf in Silesia of 1854, depict



FIGURE 1. Beelitz-Heilstätten Alps. © Eva Eylers’s archive.



FIGURE 2. Sanatorium Görbersdorf (today Sokolowsko), newspaper advertisement, probably 1880. © Eva Eylers’s archive.

the sanatorium buildings embedded in a raw mountain region, providing the romantic vision of an almost untouched pastoral landscape. Although neither of Brehmer's theories could be unambiguously proven, the mountain setting became the site *par excellence* for the place of health.

However, with the rising number of TB patients and the urgency to provide sanatorium treatment for the working population as well as the wealthy came the idea to establish sanatoria closer to the large industrialized cities as well as in the mountains.

In 1898 the foundation stone for one of the largest TB sanatoria in Europe was laid in Beelitz, in the "*Märkische Flachland*", literally the flat land surrounding Berlin. Despite a location at 40 meters and thus hardly above sea level, the landscape was carefully crafted to resemble an alpine setting where meandering walkways and rustic wooden bridges led patients through artificial hills and an abundance of pine trees to carefully designed vistas.

3. DIFFERENT FORMAL EXPRESSIONS FOR THE SAME INTERNAL ARRANGEMENT

Like many buildings required by the course of industrialisation, the sanatorium had been without precedent and thus without a typological model. Given that by the 1880s TB had been understood to be a highly infectious disease, the sanatorium's internal organisation would be based on the principles of hygiene, strictly bound to medical and organisational necessities, and efficiency.

The functional interior was already employed for the very first sanatoria although their outside appearance implied a rather different interior.

In Görbersdorf, for example the distinctly modern, functional internal arrangement was hiding behind an exuberant neo-gothic facade, establishing a contrast between the building's inside and outside. Within the development of the building type of the sanatorium there are two moments which differ fundamentally from the tradition of the rather random adaptation of facade "styles" and represent instead a unique and experimental approach.

One moment would be certainly the use of the "hygienic style": here the discrepancy in aesthetic appearance between the interior and the exterior has been resolved. Yet, the facade had nothing to do with being the logical outcome of the internal functional arrangement, although it had been promoted in that way.

4. THE BEELITZ STYLE

The second moment, dating about 30 years earlier, was the Beelitz style, where a distinct discrepancy still existed between the appearance of the building interior – and its facade, while, for the first time both – interior arrangement and façade – served the same distinct curative purpose.



FIGURE 3. Beelitz sanatorium: pavilion for men, 1898. © Eva Eylers's archive.

The Beelitz style, in my view, was a peculiar mixture of English country house³ and German Heimat style introduced between 1898 and 1902 by the architects Schmieden & Boethke during the first realisation phase of the complex.

The Beelitz pavilions were up to 150 m in length. Yet, the fact that they were only three storeys high and employed a specific colour scheme, allowed them to blend modestly with their surroundings. The park-landscape which was supposed to play an active role in the therapy was thus staged and complemented by the buildings.

The combination of romantic landscape and the architecture included the use of the pitched roof, exposed timber framing, colour-glazed brickwork, cast iron balcony details, and an altogether very vivid colour scheme. Beelitz presented its patients with a familiar environment, if of a different scale, which could be associated with being rooted in a medieval, pre-industrial past in order to help them to reconcile with (their) nature.

The Beelitz style was thus an active element of the cure, and was therefore functional and inventive, much more than the so called “hygienic style”.

5. THE HYGIENIC STYLE

But it was the “hygienic style”, first used in 1928 for Jan Duiker's Zonnestraal sanatorium in the Netherlands, and not the “Beelitz”, which was promoted at the time as fundamentally “new” and “true” to the respective functional requirements and spatial arrangements, – altogether as the logical architectural response to the demands of medical sciences.



FIGURE 4. Zonnestraat sanatorium, Hilversum. © Eva Eylers.

Yet, with the hygienic style, the idea of the reconciliation with nature, that is to say the collaboration with the natural site, was reversed. A part of the sanatorium's original function was lost and assumed by the building itself as a "medical machine".

The hygienic style was based on the striving for health in any area of human life. Jan Duiker first described the formal expression as "sanitary in its basic construction, execution and interior arrangement", and thus encompassing the whole building, both inside as out. More than just another "style", it was to foster and enable for "physical and mental wellbeing". Social betterment, even a new culture would emerge from the science of hygiene and technique with the "hygienic style" as a means for promoting a healthy and correct way of living.

But while the hygienic style mirrored the "look" of the inside to the outside it certainly did not respond any more to the curative demands of tuberculosis than the Beelitz Heilstätten style had decades earlier.

6. THE HYGIENIC STYLE: NOT NECESSARILY IDENTIFIABLE WITH "HYGIENIC ENVIRONMENT"

The primary advantage of the hygienic style was its modern appearance. Plain white facades became a sign for a functional building. However, if function were taken as a building providing the most hygienic environment, there was no need for the facade to assume any particular colour or shape. There were strategic political and certainly strong aesthetic reasons for the hygienic style. But most certainly there was no medical reason for whitewashing, tiling and smoothing the sanatorium's outside shell.

7. ARCHITECTURE AND “NATURE”

As much as the curative demands influenced the inner arrangement, the relationship with the city had remained the same over time but the relationship with the surrounding changed significantly through the use of the hygienic style.

In Beelitz a number of “attractions” were placed along the extensive system of meandering walkways through the surrounding woodland. Daybed pavilions, opportunities to play games and especially created views helped integrate the building with its environment. Paimio, however, confronts us with a cross-country ski-track like walkway, “zigzagging formally toward the forest and arbitrarily circling around a series of small round pools”⁴. Maximising its length at the favourable south side of the complex, the path appears to be an efficient extension to the building rather than an attempt to engage the site.

The formal appearance invites associations with Aalto's 1930 competition entry for the Vierumäki Sports Institute. The path was, however, the result of an earlier design stage, where terraced rows of daybed pavilions were to flank the south side of the patient wing. For reasons unknown these pavilions were not realized. The path, however, – following the logic of the building, not the site – survived as an imprint of the earlier design idea.

Although, similar to Paimio, the Beelitz sanatorium employed a most advanced technical supply system which serviced the complex with heat, water and electricity, this system was concealed in a vast subterranean tunnel system to avoid disturbing the overall impression of the landscape.

Like the very first sanatoria, in Beelitz the idea of integrating the natural surroundings, of enabling a direct experience of nature with all the senses was central to the architectural organisation. While we see in the case of Zonnestraal and later Paimio (and – again – although the emphasis on an engagement with nature and its function in the medical cure had never been altered) a clear shift towards abstracting nature until the point where it was not important anymore if the patient could view actual trees in front of his or her window – or just their mere representation.

In the case of Zonnestraal the natural surroundings still played an important role: the patient was encouraged to walk to the workshops dedicated to the occupational therapy, which were spread out in the wooded site. Yet, although Duiker justified his decision to create a two-storey complex as to improve the patient's experience of nature, in a sense, it is already here less the engagement and more the view of nature which is provided for, by the building.

While Zonnestraal still keeps the patients in contact with the ground (although a little wall carefully protects them from rolling onto it), Paimio renounces the ground floor access for the patients altogether and, instead, makes them look at nature from the 7th floor roof-terrace or through a carefully designed window frame.

Despite the extensive fenestration, the building closes itself to its surroundings. This lack of direct access inhibits direct communication with nature which

instead is filtered, internalized and reduced to a view. Being self-referential, the building does it all, even substituting the lacking winter sun with a canary yellow flooring.

While the character of the Beelitz architecture responded directly to the site, both Aalto and Duiker seemed to understand the building rather as a healing machine which operated increasingly separated from its site, thus demonstrating an increased degree of independence from the ground and the collaboration with nature.

8. CONCLUSION

Regarding the development of the sanatorium over time the demand for a particular site and the patients' active engagement with the natural surroundings, the precondition of the original sanatorium cure was increasingly challenged.

The internal arrangement of the Beelitz Heilstätten mirrored the new system of therapeutic and medical policies, while the exterior addressed traditional architectural elements and supported the collaboration between building and landscape. Yet, both served the same overall function: the cure.

With the implementation of the hygienic style, which became associated with the modern sanatorium per se the previous complexity, the close link between building and site, as developed at the Beelitz sanatorium was lost.

By enabling a complicated and ambiguous relationship with the surroundings, promoting to open up, while at the same time distancing itself from any particular site, the hygienic style supported the sanatorium's endeavour to become a perfected medical and universal machine.

Both Zonnestraal and Paimio demonstrate that the natural surroundings were increasingly understood as a collection of fragmented elements, what the *Athens Charter* would later refer to as "natural elements" or the "conditions of nature [...] sun, space and verdure"⁵. This understanding led the original sanatorium idea itself ad absurdum, but prepared the path for future architectural experimentation and ultimately turned the sanatorium into "an ideal project on which to demonstrate the principles of Functionalism"⁶.

NOTES

- 1 Paul David Pearson, *Alvar Aalto and the International Style*, New York, Whitney Library of Design, 1978, 89.
- 2 Tuberculosis or TB is a disease caused by a bacterium, (*Mycobacterium Tuberculosis*). The disease can affect not only various parts of the body – the bones, intestines, and also the skin – but ultimately all organs and bodily systems. In the context of this paper I am referring to the most widespread form of the disease, the form to be predominantly treated within the sanatorium, pulmonary tuberculosis.
- 3 Hermann Muthesius' publication *The English House* (1904) was to become influential especially in Germany. Muthesius

praised the country house as the true and honest outcome of the British healthy lifestyle (with fishing and hunting and a general liking of the outdoors). This particular agreement of the building with nature and a healthy lifestyle was then given as a model for German Architects.

- 4 Paul David Pearson, *op. cit.*
- 5 Le Corbusier, *The Athens Charter*, New York, Grossman Publishers, 1973, 55.
- 6 Richard Weston, *Alvar Aalto*, London, Phaidon Pres Limited, 1995, 50.

The Fate of Landscape: Place and Architecture in the Works of Hannes Meyer

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In 1928, just after taking over the direction of the Bauhaus from Walter Gropius, Hannes Meyer wrote “Bauhaus and Society”, in which he elaborated his views on the landscape and how architecture is necessarily bound to its fate: “All creative action is determined by the fate of the landscape which for the man with roots there is peculiar and unique; his work is personal and localized. If a floating population lacks these roots its work easily becomes stereotyped and standardized. A conscious experience of the landscape is building as determined by fate. As creators we fulfill the fate of the landscape”¹.

This was not the first time Meyer referred to the landscape as a determining factor of the architectural process; however, it was the first in which he described it as a sense of belonging, as an almost spiritual connection to place. Several years before he had referred to the physical implications of dealing with nature while designing the *Petersschule*, where the exposure to sunlight was mathematically calculated to determine the size and placement of the openings and shaped the suspended platforms on the courtyard. Meyer’s connection to landscape lay at deep and personal level since it was the environment in which he felt more comfortable, where he could “vent himself”, whether in the forests of Ziebig, the riverbanks of the Bira in the Soviet Far East, the mountains of the Swiss Jura, or the Mexican Popocatepetl. Two projects are especially significant as conscious interactions with the landscape: the ADGB School in Bernau (1929) and the Children’s Home in Mümliswil (1939). In both cases the buildings were rooted in the terrain; their openings were thoroughly studied to create and regulate the visual and physical connections to the site; the materials, especially in the latter, are indigenous to the region and the designed landscape is the product of a careful selection determined by Meyer himself.

When Hannes Meyer and Hans Wittwer submitted their project for the Palace of the League of Nations competition in 1927, they were clearly aware of the role the site plays in conveying a sense of belonging. In response, they purposefully avoided situating their isometric projection in a specific terrain. By these means they warned against the nationalistic overtones of place by favoring a universal architectural language that could relate to the highest aims of such an institution. The placement on the site, as it appears in the plan, highlighted the contradiction between construction and nature, as opposed to establishing an artificial link through landscape design².

Only a year before, in his article “*Die neue Welt*”, Meyer had established his position in recognizing the mobile and the universal as expressions of the New World: “Our homes are more mobile than ever. Large blocks of flats, sleeping cars, house yachts and transatlantic liners undermine the local concept of the ‘home-land’. The fatherland goes into a decline. We learn Esperanto. We become cosmopolitan”³. Meyer himself was already a model of such cosmopolitanism; he had traveled extensively, had lived in several places, and had even visualized himself dwelling in hotels, the ultimate form of rootlessness. However, his connection to



FIGURE 1. Hannes Meyer, Siedlungsgenossenschaft Freidorf, Muttetz, Switzerland, 1919-21. © Siedlungsgenossenschaft Freidorf Archive, Theodor Hoffmann, 1921.



FIGURE 2. Hannes Meyer and Hans Wittwer, ADGB School, Bernau, Germany, 1928-30. © Handwerkskammer Berlin/Baudenkmal Bundesschule Bernau e. V., Raquel Franklin, 2015.

the land and the way he related it to his architectural thinking was beyond the cultural ties of the homeland; it was rooted in the understanding of the physical characteristics of the site and their effects on people.

Architecture for Meyer was just “pure construction”; building, he said, was a biological rather than an aesthetic process. The house is not only “a piece of machinery for living in but also a biological apparatus serving the needs of body and mind”⁴. Meyer identified 12 fundamental aspects to be considered in the construction of the modern house, most notably gardening and protection against weather. These considerations summarized the different kinds of relationships experienced by the inhabitant: between the individual and others, between the individual and domestic animals, and between construction and environment. Every aspect had to be examined: the interaction with neighbors, the effects of gardens and pets on each other, and the impact of the site on the construction; the temperature and humidity of the soil; the incidence of sun on the façade throughout the year; and the shadows the building would cast. Only with these data was it possible to calculate the size of windows, the drainage systems, etc. needed for the better functioning of the house⁵.

These concerns were not new to Meyer. In 1919, when designing Freidorf, his first major enterprise on the outskirts of Basel, he visualized the relationship of its inhabitants to the land as an important aspect in the success of the cooperative by giving each of the 150 single-family houses a 200 m² *nutzgarten* in which to grow vegetables and fruits. These gardens contributed to the 63% of green space in the estate. Taller trees like cherry and walnut defended the colony against rain and cold winds⁶. Green spaces were the responsibility of the community although decided mainly by Meyer, who served not only as its designer and head of the construction committee, but also as the head of the gardening commission⁷. In Freidorf, Meyer met Konrad von Meyenburg, who in time became an important influence on the development of Meyer's ideas regarding the optimization of processes and the better use of soil – lessons he would later apply at the Bauhaus.

If gardening was one of the main concerns in Freidorf, solar orientation was equally important for the design of the *Peterserschule*. In 1926, Meyer and Wittwer presented a project for a school adjacent to the *Peterskirche* in Basel. The building had no other consideration of the site but the strict orientation of rooms and the mathematical calculation of windows to ensure the admission of adequate light and heat into the classrooms. The project followed Johann Heinrich Pestalozzi's ideas about education, including the use of open space for sport. Two suspended platforms – displaced horizontally to allow solar exposure, even to the lowest level – would provide the girls with additional space. The school was designed in clear opposition to the traditional architecture of neighboring buildings; it was open, light, technologically intrepid and functional.

Equally technology-bounded, Meyer's entry to the competition of the Palace of the League of Nations explored the symbolic and physical possibilities of transparency. For him, "the architectural expression to such a body must presuppose that it is nerved by the will to attain truth [...]. No back corridors for backstairs diplomacy but opened glazed rooms for the public negotiations of honest men"⁸. Meyer was emphatic in denying any kind of symbolism. If so, was transparency the symbol of honesty or was meant as a means of surveillance? In any case, their project was awarded a third prize that opened some professional opportunities for Meyer.

In December 1926, while attending the inauguration of the Bauhaus in Dessau, Meyer met Walter Gropius who, a short time later, hired him to direct the school's architecture department. At the Bauhaus, first in the architectural workshop and later as director of the school, he stressed the social character of the institution and set the collective work and projects rooted in reality as priorities. The curriculum changed significantly by grouping the workshops in four main areas supplemented with lectures on the "artistic and scientific" fields. Sport became an integral part of the *Bauhäusler's* education; each Saturday they would play on the grounds of the Bauhaus, extending the connection to the exterior not only visually through the curtain walls, but also through physical interaction that developed the connection between body and mind. Meyer addressed this concern in his courses through the study, for instance, of gardens and their effect on the senses and mood throughout the year⁹. At



FIGURE 3. Hannes Meyer and Hans Wittwer, ADGB School, Bernau, Germany, 1928-30. © Handwerkskammer Berlin/Baudenkmal Bundesschule Bernau e. V., Raquel Franklin, 2015.

the Bauhaus he published his first important statement regarding the landscape. In his 1929 article "Bauhaus and Society", Meyer strongly criticized the current orientation of the school. He accused it of being focused on style instead of acting an institution aimed at the fulfillment of its true purpose of shaping a harmonious society through design¹⁰. Although he still referred to the quest for harmony in scientific terms, he recognized some force of a different, abstract, intangible nature that had to do with the sense of belonging, of growing roots¹¹:

*Finally, all creative action is determined by the fate of the landscape, which for the man with roots, is peculiar and unique; his work is personal and localized. If a floating population lacks these roots its work easily becomes stereotyped and standardized. A conscious experience of the landscape is building as determined by fate. As creators we fulfill the fate of the landscape.*¹²

Also in 1929 Meyer worked on the construction of the ADGB School in Bernau, a project won in a closed competition. From the beginning of the process, Otto Hessler had made it clear to the Board of the German General Trade Union Federation (ADGB) that the building, as well as its program, should be an example of modern architecture¹³. In fact, the program was quite original: it consisted of a school for temporary training that "would provide workers not only with knowledge and skills, but also give them the possibility to free themselves from the pressures and hindrances of an average proletarian existence, [and instead give them] a relaxed one that would expand every sense and organ, through a healthier, though disciplined living"¹⁴. The workers would spend between 1 and 2 months at the facilities. In order to avoid the feeling of a hotel, and anticipating that they were already introduced to collectivism, the 120 participants were to be distributed in 12 units of 10 people, each group occupying a level of a 3-story residential block planned with 5 double-rooms on each level. These blocks were the dominant elements in the composition, and were staggered smoothly according to the slope of the terrain, renouncing what Meyer called the dictatorship of form¹⁵. The rooms, positioned along the southeast façade, faced a small pond and the sports grounds, framed by the wild forest, which was left intact. On the opposite side, a glass corridor protected circulation from rain and unified the entire composition by leading from the public areas of the auditorium and dining-room to the gymnasium and lecture-rooms at the rear of the complex. The control of light was carefully calculated and mechanically regulated in each room. Adjacent to the entrance, the instructors enjoyed the independence of their villas, surrounded as well by the green of the forest. The building immediately became a great success – but for only a brief period. Its original form and use were preserved until 1933, falling prey to the country's political changes.

By that time, Meyer had already left Germany. After his dismissal from the Bauhaus in 1930, he immigrated to the Soviet Union and remained there until 1936. Among the most interesting projects he developed during that time, was

the urban planning of the newly established Jewish Autonomous Region of Birobidzhan in the Far East of the country. There, the detailed analysis of the soil was fundamental not only in terms of planning, but also for the political project of resettling Jews on the land – a proposal that had failed from its very inception. Unable to remain in the Soviet Union, Meyer headed back to Switzerland where he reconnected with one of his first clients, Bernhard Jaeggi.

Jaeggi, head of the Swiss Cooperative Union (VSK), commissioned Meyer to design a children's home in the village of Mümliswil in the Swiss Jura, an experiment applying Pestalozzi's educational system. Up to 30 children would spend between 2 and 3 months there guided by a "Mother Gertrud" and a teacher with a knowledge of sports, and providing them with the necessary elements for a communal life: hygiene, modern rooms, good nourishment, and physical activity¹⁶. Yet, equal emphasis was placed on the individuality of each child¹⁷. Meyer's functional scheme divided the building into two wings, the children's wing faced east while the adult wing faced south. At the corner, as an articulation of the building's form, the round room featured an egalitarian disposition of seats around a table that allowed children to participate in discussions, plays, and other activities. The room opened the views to the magnificent landscape of the forest and the village that rested at the base of the hill. At its top, an open terrace served for morning exercise and the evening choir. The use of materials and handwork indigenous to the place was privileged, nonetheless, within a standardized structure.



FIGURE 4. Hannes Meyer, Kinderheim Mümliswil, Mümliswil, Switzerland, 1939. © Siedlungsgenossenschaft Freidorf Archiv, Bertly Stoll, ca. 1939.

Meyer conceived the spatial experience of the building to parallel that produced by music. For him, the architect could achieve the conscious spatial experience of the landscape through constructive-plastic means, just as the musician could produce the musical succession of space through tone and silence, rhythm and volume¹⁸.

In Mümliswil Meyer deliberately pursued such an experience of place. The discovery of the building along the uphill pathway was followed by the first sight of the mountains and the village below through the curtain-wall of the vestibule. A fragmented view of the exterior through the frames of the windows in the playroom then anticipated the undivided contemplation of the landscape through the openness of the round-room – experiencing the immensity of nature through the limitations of the manmade¹⁹.

Meyer's understanding of the connection between architecture and landscape evolved through the years, marked by his own experiences and ideological questioning. It went from the rigorous scientific analysis of soil quality, the geographical location and topography of the site, and its relevance in solving problems of light, temperature, humidity, and other physical effects on the building, to the cultural associations of belonging, and finally to a sensorial experience of a building rooted in the land, an architecture that responded to the "fate of the landscape".

NOTES

- 1 I am in debt to the Kulturstiftung des Bundes who's fellowship allowed me to spend 18 months working at the Stiftung Bauhaus Dessau on "The Coop Principle: Hannes Meyer and the idea of a collaborative design". Also my gratitude to Mr. Philipp Potocki who generously provided me with invaluable information on Freidorf and accompanied me through my journey to Meyer's works and archives in Switzerland and the Siedlungsgenossenschaft Freidorf. To the Baudenkmal Bundesschule Bernau e. V., Mrs. Judith Fluri from the Guido Fluri Stiftung, Mr. Josef Tschan of the Gemeindeverwaltung Mümliswil-Ramiswil and Mrs. Regula Nebiker Toeback of the Staatsarchiv Basel-Landschaft.
- 2 Cf. Hannes Meyer, "Project for the Palace of the League of Nations, Geneva, 1926-27", in *Hannes Meyer: Buildings, Projects and Writings*, op. cit., 42.
- 3 Hannes Meyer, "The New World, 1926", in *Hannes Meyer: Buildings, Projects and Writings*, Architectural Books-NY, op. cit..
- 4 Hannes Meyer, "Building, 1928", in *Hannes Meyer: Buildings, Projects and Writings*, Architectural Books-NY, op. cit..
- 5 *Ibid.*
- 6 Cf. Hannes Meyer, "Die Siedlung Freidorf", in *Bauen und Gesellschaft. Schriften, Briefe, Projekte*, Dresden, VEB Verlag der Kunst, 1980, 21.
- 7 Cf. *Protokoll Freidorf, Sitzung des Verwaltungsrats vom 27.07.1920*, Siedlungsgenossenschaft Freidorf Archiv.
- 8 Cf. Kenneth Frampton, *Modern Architecture – A Critical History*, London, Thames and Hudson, 1992, 134. Meyer denied any kind of symbolism. Taking him by his word, then the openness of the glass tower could imply instead the surveillance of such diplomats. Hannes Meyer, "Project for the Palace of the League of Nations, Geneva, 1926-27", *Hannes Meyer: Buildings, Projects and Writings*, op. cit.
- 9 Cf. Hannes Meyer, "Cursos de Arquitectura", *Arquitectura y Decoración*, n. 12, México, October 1948, 247.
- 10 Hannes Meyer, *Bauhaus and Society*, *Hannes Meyer: Buildings, Projects and Writings*, op. cit.
- 11 *Id.*
- 12 *Id.*
- 13 Cf. Hannes Meyer, "Bundesschule in Bernau bei Berlin", *Zentralblatt der Bauverwaltung*, n. 14, 1931, 213. ETH-GTA Archiv.
- 14 Adolf Behne, "Bundesschule in Bernau", *Das Werk*, n. 9, September 1928, 289. ETH-GTA Archiv.
- 15 Hannes Meyer, "Bundesschule in Bernau bei Berlin", op. cit..
- 16 Cf. Hannes Meyer, "El Hogar Infantil Cooperativo en Mümliswil (Jura Suizo)", *Arquitectura* n. 8, México, July 1941, 29.
- 17 *Id.*
- 18 Cf. *Ibid.*, 31.
- 19 Cf. *Id.*

The Creation of an Urban Landscape

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The Headquarters and Park of Calouste Gulbenkian Foundation (FCG), in Lisbon, are probably the first structure in Portugal where the relation between exterior and interior lead to an outstanding result. Designed and conceived based on the continuity between interior and exterior, refusing the conceptual attitude of interior plus exterior, this unitary system reveals clear understanding of the proposed site, sensibility of what could have been Calouste Gulbenkian expectations, and concretizes Modern Movement ideals regarding de landscape design and architecture.

Moreover, the aim is to present and discuss formal aspects, material options (natural and unnatural) and technological solutions that define the architecture of this structure and how that solutions materialize the relation between exterior and interior.

Finally, the paper will argue the role played by architects, landscape architects, and engineers in a wide ideological frame that perceived building and garden as a global gesture of social and cultural dimension, present in the FCG Headquarters and Park.

The aim of the paper is to analyse FCG as spatial continuum, as the confirmation of a refined aesthetic sensibility and of a humanized way of seeing the world capable of enhancing the qualities of architecture through the creation of landscape attaining universality values and a timeless aura. The argument is that, bringing together modernity and monumentality, FCG have launched the link between matter and idea as an organic and biological whole.

1. INTRODUCTION

The headquarters and park of the Calouste Gulbenkian Foundation (FCG) in Lisbon represent the first modern Portuguese environment with an outstanding relation between exterior and interior as a spatial continuum. As such, the project refused the more common conceptual attitude of interior plus exterior. This unitary view revealed a clear understanding of the proposed site for the project and what could have been Calouste Sarkis Gulbenkian (1869-1955) expectations, while concretizing Modern Movement ideals regarding landscape architecture and architecture.

Through its design the park mediates the relation between the buildings' super-structures, the urban context, and the human scale, while generating a unifying system established by the complicity between natural and synthetic materials. From the first moment of the project's design process, this complicity resulted in a set of strategies that met programmatic guidelines – an effort for achieving a new monumentality in a project that would become a fundamental element in Lisbon's green infrastructure.

2. A LANDSCAPE SUPER-STRUCTURE

The architects of the building complex – Alberto Pessoa, Pedro Cid, and Ruy Jervis d'Athouguia, working with the landscape architects António Viana Barreto and Gonalo Ribeiro Telles – created an integrated design embracing both building and park. Functioning as a whole, modelled as a topographic sculpture, its horizontality and varied levels promoted the spatial continuity sought by the designers. Variations of transparency and opacity follow one another with graphic rigour, creating moments of transition between indoors and out, forging a close connection between architecture and nature, and raising perspectives and points of view based on changing compositions of boundaries and clearings, and light and shadow.

Following the 1959 original competition, the consultants and the *Servio de Projectos e Obras* (SPO), the foundation's project team, unanimously recommended the selection of the entry presented by Pessoa, Cid and Athouguia – the only team among the 3 competitors which had a landscape architect, Ant3nio Barreto, on their team¹. His contribution would later become an integral part of the project's development from 1961 onwards, at which time a second landscape architect, Gonalo Ribeiro Telles, joined him. As planned, the building complex comprised 3 volumes: the headquarters, the museum and the auditorium, although these were treated as a single body in which the various departments



FIGURE 1. Alberto Pessoa, Pedro Cid, Ruy Athouguia, Calouste Gulbenkian Foundation, Lisbon, Portugal, 1969, gardens by the landscape architects Viana Barreto and Ribeiro Telles. © AFCG, M3rio de Oliveira, 1969.



FIGURE 2. Alberto Pessoa, Pedro Cid, Ruy Athouguia, Calouste Gulbenkian Foundation, Lisbon, Portugal, 1969, longitudinal cross-section. © AFCG.

were carefully interlinked, and where the public and staff could circulate fluidly. Theirs was also the design proposal that most clearly interpreted the programme, which occupied only 13.4% of the site². Thus we see that the essential concept of the design was rooted in the continuity of space between buildings and park.

The transition from design to construction reaffirmed the notion of manipulating nature, and within the framework of the architectural solution, the landscape was given prominence³. The fact that almost 87% of the site area remained unbuilt allowed significant representatives of the existing vegetation to survive, but it also made possible the transformation of the site's morphology. The unyielding horizontality that characterized the design was appropriate for the distribution of the constructed volumes because "it allowed a reading of the buildings, in all directions, as a continuation of green spaces"⁴. The interior spaces were also organized in relation to the outdoor spaces, thus "providing a comprehensive overview of the park"⁵. The design of the peripheral areas made it possible to "erect the building on the highest part of the terrain, thus making it feasible to build a large underground structure housing substantial parking garage. The roof garden above the garage created a gentle slope which lent new perspectives to the entire architectural composition"⁶.

The layout of the building complex was organized as a sequence of volumes, as if suspended from recessed bases, together forming a quasi-organic body with the building site. To this end artificial platforms were created, shaping the site as a topographic sculpture. In addition, the roofs of the lower structures were treated as extensions of the park itself or as planted terraces. A consequence of this approach was the treatment of the lower volumes as a succession of landscaped platforms integrated with the park, namely the plane of the roof garden terrace above the hall for temporary exhibitions, the foyer staircase, or conference areas. From this symbiotic process the buildings and landscape were conceived as an indivisible whole, reflecting the thinking of the time, which ranged from abstraction to minimalism, and from metabolism to brutalism. But any harshness in architectural style was tempered by the fundamental respect for the landscape.

As built, the interior spaces address the human scale, with comfortable, low-ceilinged but luminous atriums linked by staircases that accentuate the element of surprise in their interaction with the park. Transparency, a free and flexible plan, and spatial interpenetration – all modern concepts – resulted. The museum building is articulated around these 2 patios, directing the visitor's gaze to a stimulating variety of views toward precise vistas of the park or concentrated inward on the intimacy of the interior patios. Characterized by different vegetal colours, forms or textures, the park emerges as a sculptural as well as a horticultural form. In other cases, the sculptures themselves were placed near sources of natural light and specific outdoor views, for example, the celebrated *Diana* by Jean-Antoine Houdon. Synthesizing the values of function, form, and symbol, the Gulbenkian Museum building raises the works of art in the collection, architecture and landscape design to new heights.

Within the volume of the auditorium a large window at the rear of the stage establishes a visual interaction with the park and the pond at its base. This interconnection confirms the objective of creating a continuous whole achieved through construction and manipulated nature⁷ “possibly serving as a stage setting, in a surprising perspective for the audience”⁸.

The linear volume of the Foundation offices is characterised by its laminar aspect, by the repetition of the modules, by the rigour of its design and the hardness of the concrete and glass of which it is built. The planted green balconies and garden terrace roofs play a fundamental role. Sited at a higher elevation than that of *Avenida de Berna*, on exactly the same level as the enormous eucalyptus retained by architects, the roof of the car park gives form to a gentle, gardened acropolis that gives the building its monumental aspect.

3. THE 3-FOLD STRATEGY: AN INTERDISCIPLINARY TEAM, THE PROGRAMME FOR THE PARK, THE DEFINITION OF CONTINUITY

As an ensemble the Gulbenkian buildings and park testify to the collective effort, both technical and aesthetical, among the architects, the various engineers, and the landscape architects who were assembled at the very start of the project. In December 1960, the engineer and project coordinator Guimarães Lobato, working with the necessary consultants, began the development and execution of the competition scheme⁹. They defined the park as crucial for implementing the preservation policies defined by the landscape architects¹⁰. In April 1961, Lobato strengthened the role of the landscape architects by requesting the integration of the buildings with new trees and the existing species. At that time he also decided to assign that commission to the landscape architects Gonçalo Ribeiro Telles and António Vieira Barreto, who worked with the winning architectural team during the competition¹¹.

The programme for the park submitted by these young landscape architects is a revealing document that announces the revolution enacted by this new gen-



FIGURE 3. Alberto Pessoa, Pedro Cid, Ruy Athouguia, Calouste Gulbenkian Foundation, Lisbon, Portugal, 1969, hall of the Headquarters and Main Auditorium. © AFCG, Mário de Oliveira, 1969.

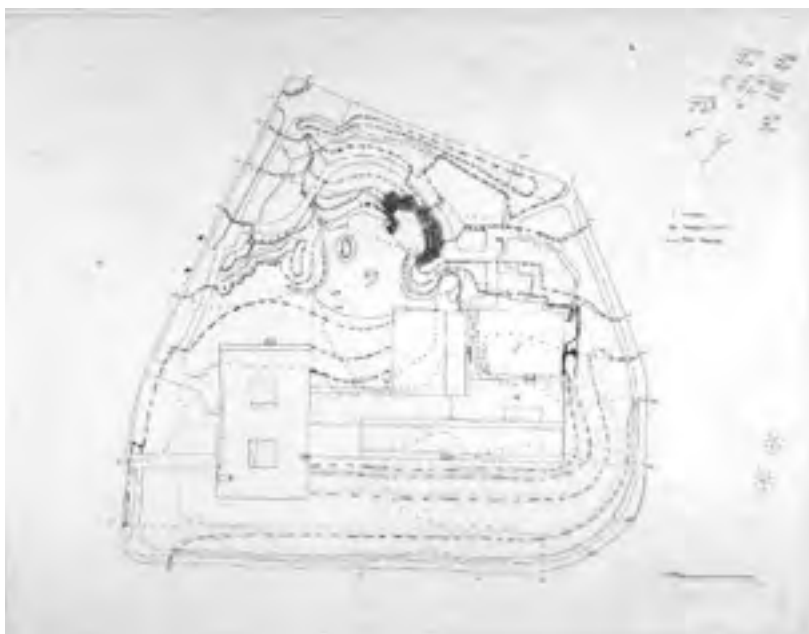


FIGURE 4. Alberto Pessoa, Pedro Cid, Ruy Athouguia, Calouste Gulbenkian Foundation, Lisbon, Portugal, 1969, gardens by the landscape architects Viana Barreto and Ribeiro Telles, study for the modeling of the land where it is visible the undulating line of the ledge located in the south of the building. © AFCG, Gonalo Ribeiro Teles.

eration of professionals¹². Among the 12 points listed in the *Draft Program* for the project, the following sentences are noteworthy: "Movement is an essential element in the life of the park and the layout of courtyards and inner spaces. Their dynamic aspect; [...] growth, seasons, life; [...] the naturalistic design of the building architecture; the perfect continuity between the inner and outer spaces. [...] the interest of the founder [Calouste Gulbenkian] in nature"¹³.

The proposed design was the creation of a true landscape, a space that is present, visible, and sensitive; its transitory nature accepts both life and death, its functional logic, the inter-relation between the systems that embrace nature and humans, associating the inherent beauty of nature to its life cycle. The designers rejected the mere framing of scenery in favour of creating interactive spaces. If some of these principles can be recognized as those that characterized the Modern Movement, it also brought the landscape architects closer to the team of architects; in our opinion, however, they are much more than that. That sympathetic relationship resulted from the specific training and experience of this first generation of Portuguese landscape architects that determined a particular concept of landscape, and consequently a very particular course of action. Different devices were used to establish continuity: the innovative solution for covering the underground parking, the flat green roof above the congress hall and temporary exhibitions space, the modulation of the land; the lake; the aesthetics of the materials; and not least of all the incorporation of the park into the building's interior by means of the patios¹⁴.

The solutions found for relating building and the park by the landscape architects demonstrated a high level of maturity and expertise in terms of design and construction, but also in the swift and qualified manner in which they had answered all the challenges¹⁵. As a landscape, the Gulbenkian park enacted one of the main demands of Modern Movement park design, summarized by James C. Rose as early as 1940: "we have yet to develop the house and landscape unit on the same basis rather than just the house with the park attached"¹⁶. The success of the Gulbenkian design team work can be seen in the continuous movement used to access the underground car park as well as in the technical solution for using its roof as a model used in other areas of the project; for example, the Temporary Exhibitions and Congress galleries. Through these means they ensured the desired continuity "environmental quality" of the cultural events held in the building and on the ground.

These arguments were rooted in the proposal submitted by the landscape architects in December 1961: "The architectural solution determined the way in which buildings connect to the green area surrounding them, deriving a strong continuity between the inner and outer spaces with balance and harmony. Therefore, it is not just a case of integrating building and park, nor creating a park that serves a building. It is necessary to find a total, intimate relation between the elements that comprise the whole, in a manner that the complex will encompass the entire area, naturally extending the life of the building beyond the walls into the open air rooms – and from these to the inner rooms"¹⁷.

In fact, the conceptual complementarity of the architecture and landscape merely confirms the use of a shared ideological framework, a contemporary approach shared by artists, architects, and landscape designers from the same generation. It also reveals a method for creating within a dominant horizontality the surprise introduced into an apparently rigid, geometric, and tough language of construction. Like the building, which one discovers as one explores, the park encourages “pleasurable strolls”¹⁸. In continuity with the succession of inner spaces, the garden opens and closes sequentially, creating illusions of perspectives and points of view composed of boundaries and clearings, light and shadow, different gradations of green and the colourful punctuation of flowers¹⁹. The Gulbenkian complex represents a refined aesthetic sensibility and humanized way of seeing the world that is capable of enhancing the qualities of architecture through the creation of landscape. It is a landscape that works with the memories of the place, and constructs the “link between matter and idea” as an organic and biological whole²⁰.

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NOTES

- 1 The competition involved 3 teams of architects and was carried out between April 1959 and January 1960.
- 2 The area set aside for construction of the winning project was 36 536 m², as opposed to the 50,314 m² of the team project by Arménio Losa, Formozinho Sanchez and Pádua Santos, or the 63,677 m² proposed in Analdo Araújo, Frederico George and Manuel Laginha's project. They corresponded, respectively to 13%, 20% and 30% occupation of the area of the garden. Cf. *Relatório de Apreciação dos três estudos de ante-projecto da construção da sede e Museu da Fundação Calouste Gulbenkian*, Lisbon, March 1960.
- 3 Alberto Pessoa, Pedro Cid, Ruy Athouguia, 1961. *Descriptive Note*, case 40276/961, July 15, 1961; *Descriptive Memoir*, proc. 40276/ 961, 15 July 1961.
- 4 FCG, *Relatório de Apreciação dos Três Estudos de Ante-projecto da Construção da Sede e Museu da Fundação Calouste Gulbenkian*, Lisboa, Arquivo Fundação Calouste Gulbenkian, 1960.
- 5 *Id.*
- 6 Alberto Pessoa, Pedro Cid, Ruy Jervis d'Athouguia, *Descriptive note*, Case 40276/961, AFCG.
- 7 The double-glazed wall behind the stage provides a natural scenario overlooking the pond to the south and an

open relationship between the hall's interior and the park, thus communicating with the park, the trees and the illuminated pond. See Ana Tostões, *The Buildings*, Lisboa, FCG, 2012. The lake was studied and designed to exhaustion. It was studied in close relationship with the Auditorium, with the Amphitheatre and with the Temporary Exhibitions Gallery, with which it establishes boundary, deepness and relations of complicity. Its design derives from the dramatization of the land morphology and the manipulation of the slope. The already existing small particularities are accentuated. Roughness, dimension and movement appear. The perimeter of the water surface is draw by concave and convex spaces that provide a rhythm and a sequence of spaces and points of view that either are shown or hidden in a game of constant discovery, where light and vegetation play a fundamental role. This close relation established with the whole determines that its limit is materialized by different constructions, in accordance with the nature of the surrounding space. This difference of the construction apparatus is reflected by the different types of vegetation. The lake margins are therefore well marked in some areas and attenuated in others but the lake, in its whole, is always the natural continuation of the different surrounding areas

- where it touches, never overlapping or creating fractures. See Aurora Carapinha, *Os Jardins*, Lisboa, FCG, 2006.
- 8 "Os Auditórios", *Colóquio-Revista de Letras e Artes*, n. 56, Lisbon, 1969, 66.
 - 9 AM SPO, FCG, Folder 112, File 95, Vol. 1B.
 - 10 They had been call to define a strategy to preserve the trees of Park S. Gertrudes since 1958 (Carapinha, 2006, 62) in order to define the competition Programme to be followed by the three architects team.
 - 11 Who were both Agronomic Engineers and Landscape architects.
 - 12 Teresa Andresen (coord.), *Do Estádio Nacional ao Jardim Gulbenkian: Francisco Caldeira Cabral e a Primeira Geração de Arquitectos Paisagistas, 1940-1970* Fundação Calouste Gulbenkian, Serviço de Belas, Lisboa, 2003.
 - 13 Arquivos Gulbenkian, PT FCG FCG: SPO-S012/01/13/01-D01155. *Naturalist* because its image is based on meeting the building complex equipment (AM, SPO, FCG, Folder 112, File 95, vol. 1B). Likewise, the park that the authors were proposing to design would express its very own operative logic – the one of a natural process and that dictated by the purpose of being a park. And if such statement makes us wonder on the adoption, by this new profession, a naturalist-based discourse, it is because we cannot understand it as a whole. In our opinion, it goes far beyond that reading. Is based more in a humanist ecology, where Man, and subsequently, his actions, are an integrant part of the landscape and of its transformation process. As such, landscape is simultaneously an ecological, construction/ cultural/emotional and social system.
 - 14 Keil do Amaral and Carlos Ramos considered: "The new yard that extends and delimits the foyer of the rooms for the congresses committees is a sure valorisation element of this area; the same applies to the level differences created, the succession of internal spaces and other details. They will all complement the pleasure of having a wide contact with the park, already created for the conference room and the congresses working rooms [...] – which when assessing the pre-project we have considered as being too closed and without benefiting as much as possible of certain contacts with the park – which considerably limit certain aspirations of a wide contact with the exterior and an ample use of the natural light, the presence of the park and of the yards will still be sensed". The 2 advisor architects thought that the required efficiency level had been achieved, both in what concerned the accesses, spaces, dependencies, interconnections and equipment, and also that in relation to the "environmental quality that will make particularly attractive the cultural manifestations to be held there". In what concerns the Main Auditorium, advisors thought that the solution reached [...] is worthy of record [...] being desirable that no insurmountable difficulties be created for the maintenance of the large glass pane foreseen for the back of the stage and which will confer to this room, in certain occasions, a true unusual charm". In what concerns the evolution of the Museum design, they pointed out that, despite the difficulties appeared throughout the process, "the museum [...] shall not have the gloomy, heavy and unattractive look of some closed museums. Likewise, the library now benefited from a wider contact with the park and with its relaxed environment. The item titled Integration of the special technical studies into the general architecture and current condition of the works progress study, the experts referred that [...] the studies for the parks [...] have already reached a maturity that allowed moving to the execution phase, although conditioned by the need for waiting that the construction works to release the grounds where the plantations and landscaping is to take place. The new yard that extends and delimits the foyer of the rooms for the congresses committees is a sure valorisation element of this area; the same applies to the level differences created, the succession of internal spaces and other details. They will all complement the pleasure of having a wide contact with the park, already created for the conference room and the congresses working rooms [...] – which when assessing the pre-project we have considered as being too closed and without benefiting as much as possible of certain contacts with the park – which considerably limit certain aspirations of a wide contact with the exterior and an ample use of the natural light, the presence of the park and of the yards will still be sensed." October 10, 1961 – Note (S.P.O.) underground parking. Report on the meeting held on 06.01.1961. The meeting was attended by G. Lobato, Vaz Raposo, Pessoa, Ahtouguia, Ribeiro Telles, Sousa Machado, Sena da Fonseca, Aguiar – where the study of the "loads caused by bushes and grass over the slab structure was requested; the plan for the loads and the slab lowering areas will be provided as soon as possible by the landscape architects". AM SPO, FCG, Folder 112, File 95, vol. 1b.
 - 15 The response to the technical issues raised by the covering of the underground parking was one of architects first concerns. António Barreto made a set of calculation to assess the possibility for constructing that structure. The specific weight of the peat, gravel and vegetable soil, as well as the relevant dry and wet weights, were considered pursuant to the different layers deemed necessary for creating the relevant conditions for ensuring the green system. The method was tested and the possibilities for the draining system were experimented; also, the ideal inclination for the platform was also studied, as it was also related, not overlooking the strong idea of continuity that the architects had determined, not only between the building and the park, but between the whole space and the city.
 - 16 James C. Rose, "Parks", *California Arts and Architecture*, May 1940, 20.
 - 17 Arquivos Gulbenkian PT FCG FCG:SPO-S002-D00025.
 - 18 Ana Tostões, *Idade Maior. Cultura e Tecnologia na Arquitectura Moderna Portuguesa*, Porto, FAUP, 2015.
 - 19 The vegetation builds the space from three landscape archetypes: the woods, the clearing and the hedge, which are comprised of trees and bushes that correspond mainly to the different vegetable associations existing in the Portuguese landscape. The hedge is the wall. It is the windscreen that individualizes, configures and protects the interior. The woods represent the volume that appears in the areas most exposed to the wind or more modelled. The edge of the woods facing the clearing, open in the situations where the gradient is smaller, offers a diversity of different spaces, with their own ambiances. These are determined not only by the boundary location, of contact between such different but complementary realities, as is the case of the woods and the clearing, but also by the undulating movement which that line and surface presents. The presence of the trees and their absence, in an intimate relation with the volume of the building, the different functions of the complex and the visual relations dictated the entire organization. Trees are either isolated or scarce closer to the building creating places that can be seen as a continuation of the inner areas, as *open-air rooms*, as referred by the landscape architects. And they become denser in the boundaries of the space, hiding, protecting or valuing the urban realities that encompass the whole. Amidst this variation – concentration in the periphery and scarceness within the space – the woods appear. Its shadow offers quiet, intimacy, strolling spaces that stand against the sociability and gathering suggested by the light-filled clearings. The use of vegetation derives from the place and its characteristics and not from fashion or tastes. The species that comprise our *climax* woods are used, adjusting them to each ecological situation that is founded in each fold of the ground. Mainly autochthones species are used because they are the better answer to attend to conservation and maintenance of the

park. However, their presence – mainly due to the predominance of species of the evergreen character, and hence the predominance of green color palette – has definitely contribute to a moderation of the space where the light and the shadow are protagonists. This ecological and aesthetic option of the landscape architects defines a continuity between inside and outside by the sobriety that both reveal. See Aurora Carapinha, *Os Jardins*, Lisboa, FCG, 2006.

- 20 All those arguments were, after all, the grounds that had supported the proposal submitted by the landscape architects in December 1961: “The architectonic solution adopted and the location and operation of the buildings are in such a way connected to the green area surrounding them that will provide, derived the perfect continuity between the inner and outer spaces, the balance and harmony, ultimately the general solution for the set. It is not therefore a case of integrating just a building in a park, nor creating a park for serving a building. It is necessary to find a total, intimate relation between the elements that comprise the whole, in a manner that the complex will encompass the entire area, naturally

extending the life of the building beyond the walls into the ‘open air rooms’ and from these to the inner rooms. As elements comprising the same set, each one will maintain well defined characteristics that, without being mixed, will complement itself, providing value both in terms of aesthetics and in terms of the function of each place and the relevant environments. This is the fundamental principle that was intended to be achieved in the proposed solution. Following these guidelines, the massifs and clearings of the park, as well as its topography, will create perspectives in a close relation with the volumes and spaces of the buildings, as these were also designed considering the most remarkable green elements. The park layout, perfectly updated in what concerns the techniques and construction materials to be used and the specific functions of each area, will be the naturalist base. The adopted architectonic principle so requires it, being facilitated by the existing vegetation and the interest of the Founder by nature widely justifies it.” See Gonalo Ribeiro Telles, Ant3nio Viana Barreto, *Report of the Previous – project*, 1961.

Architecture and Tourism: Rethinking Modern Leisurescapes

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The emergence of mass tourism in the 20th century posed a new factor in the characterization of modern society. Guaranteed access to better working conditions and to housing, the “right to rest” was, perhaps, the most important social achievement of the century, leading to the widespread regulation of paid vacations. Leisure, perceived as an activity in itself, would gradually replace work as the basis of human relations and, consequently, of spatial organization, in the sense that to a “leisure society” would necessarily correspond new forms of territorial perception and occupation. It is on the implications of leisure and, therefore, of tourism in the physical transformation of the territory that this session aims to reflect upon how the democratization of travel and holidays triggered the appearance of new infrastructures devised specifically for leisure and the development of particular types and ways of dwelling that privilege social encounter, recreation and outdoor living.

During the 20th century this general framework expanded to include different contexts, preferably natural settings, where modern architecture and urban planning helped shape the new scenographies of “play” for the masses. Architecture and landscape thus assumed a fundamental role in the construction of the tourist imagery, working as local mechanisms for the experience of travel and explored as icons of the modern way-of-life, of which tourism is an inherit aspect.

Focussing on the ability of architecture and urban planning to meet the growing demands of tourism development, by restructuring the existing landscape in order to accommodate this new activity, the aim of this session is to gather research that addresses the cultural changes introduced by tourism in modern society through the territorial and architectural responses associated with it. Also, and possibly more relevant today, works that approach the capacity of such

production to survive and adapt to the recent evolution in tourism typologies, with mass demand giving place to more diversified, specialized and segmented needs. In fact, the main challenge posed to the *leisurescapes* of modernity is to remain sustainable in the present socioeconomic situation and attractive to the contemporary tourist, in terms of environmental quality and users' amenities expectations. On the other hand, as a result in many cases of formal experimentation on new functional programmes and typo-morphological models, some of these same infrastructures have become out-of-date and obsolete, placing the need to rethink their purpose and future use. Still, there are also examples that convey important lessons for today, putting forward pertinent alternatives to traditional forms of urbanization, more in tune with the increasingly temporary and sporadic character of current tourism practices. In this sense, reuse can be understood in a dual perspective: material and conceptual. And it is from this standpoint that "Architecture and Tourism: Rethinking Modern *Leisurescapes*" sets out to establish new possibilities of debate.

The range and quality of the abstracts submitted for selection confirm the relevance of the theme. From the Mediterranean European countries to the other side of the Atlantic, the contributions span across a variety of subjects. Amongst them, Ricardo Paiva (Federal University of Ceará, Brazil) proposed presenting part of a research project committed to the documentation and analysis of modern hotel construction in northeast Brazil, resulting from state tourism development policies implemented from the 1950s onwards, with the purpose of generating public awareness to the threat of demolition and mischaracterization of such heritage. On the same topic, Verónica Esparza (*Universidad del Desarrollo*, Chile) suggested taking on Emilio Duhart projects for the Ancud and Castro inns designed in the sixties for Hotelera Nacional S.A. (HONSA), in Chile, as examples of how a more contextualized approach to modern architecture has ensured the prevalence of the original character of those works over physical and programme transformation. In the case of the Fontainebleau Hotel in Miami Beach, Marcia Lopes de Mello (Miami Dade College School, USA) put forward the argument that Morris Lapidus' modern design set the standard for the "good life" associated with American post-war consumer culture and, although deeply renovated and extended in reply to new tourism demands, it still stands today as a symbol of glamour and luxury establishing a model for resort architecture.

Moving on to Europe, Ricardo Agarez (Ghent University, Belgium) suggests that looking back to the Portuguese Algarve's mass tourism development process could provide the scope for a broader reflection on the role of modern architecture in the construction of contemporary narratives on *leisurescapes*. Similarly, Ricardo Carcelén González (Technical University of Cartagena, Spain) considered a more comprehensive study of the *Obra Sindical de Educación y Descanso* holiday cities built in Perlorá, Tarragona and Marbella, as architectural and urbanism experiments on the organization of working class seaside leisure during the Francoist regime. Also focusing on tourism settlements in Spain, Xavier Martín

Tost (Ramon Llull University, Spain) based his analysis on the camping typology as a temporary and informal occupation of natural environments, using the case study of the Salou campsite, designed from 1956 and transformed, in the 1980's, into a public central park for the city where some of the original plots and buildings were kept as part of a patrimonial conservation plan and opened to new public uses. Concerning Croatia, two different approaches on the *leisurescapes* of modernity were submitted. Michael Zinganel (Academy of Fine Arts of Vienna, Austria) had a closer look at the more recent physical transformation, or ruin, and ownership changes of ex-Yugoslavia mass seaside tourism facilities built under Tito's socialist state; and Martina Ivanus (Ministry of Culture, Croatia) has a presentation on Zdenko Stizic's holistic plan for the reconstruction of the Plitvice Lakes tourism infrastructures after WWII, involving the country's architectural elite of the time today unattended and inadequately emphasized. Additional abstracts were sent from Spain, Italy, Germany, Hungary, Lithuania, Canada and Australia.

In the end, four others were selected for further discussion. Ana Vaz Milheiro (University Institute of Lisbon, Portugal) with ground-breaking research on the role of tourist resorts for public servants built during the *Estado Novo* regime (1933-1974) in the Portuguese African colonies as mechanisms, both of evasion and moralization of the working class, but also of cultural construction of the displaced individual, and their loss of meaning and consequent neglect after the process of decolonisation. Also on state promoted tourism infrastructures, Myrianthe Moussa (NTUA, Greece) examines the current condition of the Greek National Tourism Organization, Xenia Project network, aimed at the development of international tourism after the civil war (1946-1949), to promote its reuse and restoration and ultimately its preservation as modern architectural heritage. Pursuing a similar goal, Sara Cipolletti (University of Camerino, Italy) attempts to define contemporary reading parameters for the *re-semanticization* of the "ruins" of mass tourism spread along the "Adriatic-city". And, finally, questioning the reuse of modern *leisurescapes*, Petros Phokaides (National Technical University of Athens, Greece) and Panayiota Pyla (University of Cyprus, Cyprus) balance the complex nuances between architecture, tourism, politics and socioeconomic development through the study of Famagusta's exceptional history, where notions of "play" and "conflict" are deeply intertwined, giving an acute perspective with wider resonations in the context of the present European refugees' crisis.

Architecture and Spirit: The Role of Tourist Resorts for Public Servants during Late Portuguese Colonialism

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During the *Estado Novo* regime (1933-74), the recreation of public servants was a concern expressed by the Ministry of the Colonies (after 1951 known as the Overseas Ministry). For a public servant, moving to the colonies represented a withdrawal from the normality of metropolitan life. The time devoted to rest and leisure should, in the colonial context, be understood as a way of “refreshing the spirit”, benefiting from conditions which allowed an escape from the “severity” of colonial daily life. Several official reports referred this issue as essential in the preservation of a “high morale”. If other colonial powers solved identical problems with short-term assignments and with mandatory stays in the respective metropolises, the Portuguese condition forced the solution to be found locally. The proposals included the building of tourist resorts and their respective hotels, leisure and sports facilities along the maritime coast or in mountainous, scenically attractive zones, specifically designed for public servants.

The Empire after WWII was not, however, homogeneous, and demanded different responses. The Colonial Planning Office, created in 1944, in Lisbon, would be one of the instruments used to reflect upon the urban and housing needs of public servants, respecting the different Portuguese colonial realities. The tourist programs were often used to test hypothesis aimed at improving the habitability and operability of the colonial structures. Through the study of this public department (that had different functional layouts until 1974), this paper intends to understand how the colonial State used tourist programs to “soften” colonial life, “emotionally” decreasing the distance from the metropolis. To achieve this, architects mixed, almost simultaneously, designs that “imitated” Portuguese urban schemes and architecture, with more “modern” approaches.

This agenda transformed the tourist projects into experiments for living in accordance with the local climate and geography, without uprooting the “European” individual. The urban plans included houses, commonly described as “for weekends” (which denoted several influences, from a traditionalist appearance to the “Californian” house), where the climatic suitability and the use of local materials (such as adobe) were precociously proposed, both for economic and rational reasons. These plans were also relevant to places destined for the “native” and in the way their habitability began to be understood. A last reflection, important to explain the process: the ruined state of most of these structures reveals that they served a historically defined purpose, unsuitable to the postcolonial significances.



FIGURE 1. House in *Praia Varela*, c. 1946,
Guinea-Bissau © Luís Costa, *Universidade
de Coimbra*.

1. "IN THE FRENCH POSSESSIONS IN NORTH AFRICA, PUBLIC SERVANTS OFTEN GO TO THE METROPOLIS TO REFRESH... IN THE BELGIAN CONGO, THE STAY DOES NOT EXCEED A TWO YEAR PERIOD... BETWEEN US, IT HAPPENS THAT MANY WORKERS ONLY RETURN TO THE METROPOLIS AFTER 4 OR 5 YEARS (LIVING IN THE COLONIES)..."¹

The establishment of tourist resorts in the Portuguese colonies specifically designed for public servants can be interpreted as a political strategy from the government to overcome the need for leisure provided by the State in the colonized territories. The importance of establishing a period of alienation from the daily colonial life was considered an essential aspect of the public servants' mental health. It was also a tactic to promote the preservation of Occidental culture, preventing a large exposure to local habits and ways of living. However, plans exclusively for tourist activity did not abound in the official production. Its specificity, reported in very few plans, occurred without changes in the urban models practised in the colonial context that favoured the "Garden-city" schemes. There were obvious adaptations of the main urban features, highlighting the residential areas (where the units often followed a minimum program, reproducing typologies like "weekend houses" and bungalows), sports areas (especially for the practice of tennis, basketball and golf), and commercial quarters. "Native" districts were considered as separate realities. Tourism was exclusively a European activity.

The general lack of infrastructure, proper housing and other facilities, described as elemental for a standard life, was pointed out as a cause of distress between the European populations living in the colonies. The argument was expressed by José Manuel Galhardo Zilhão, in 1946, date of the first urban plan, designed inside the Colonial Planning Office, for explicit tourist intents. The general urbanization plan for *Praia Varela*, in the former Portuguese Guinea (now Guinea-Bissau), intended to occupy an empty landscape with an exceptional potential to become a real *estância de repouso* (rest resort)². The site, located in the north of the territory, near the Atlantic and located 230 km from the capital Bissau, was surrounded by tropical forest. The main purpose was to provide the best rest in an African colony where "the living environment (was) bad, the weather (was) depressing and the accommodation (was) terrible"³.

By offering a resort equipped with proper housing units, suitable to the climate, with a hygienic design and well-built, the Guinea colonial government, headed by the commander Manuel Maria Sarmiento Rodrigues, a future minister of the Overseas, wished to prove that it was possible to build convenient lodgements in Africa for Europeans. In this context, it is not surprising that the architect's main concern was to explain the correct shape for the colonial house, from the functional point of view, to the building materials, ventilation solutions and aesthetic considerations. Economic and pragmatic solutions were part of the

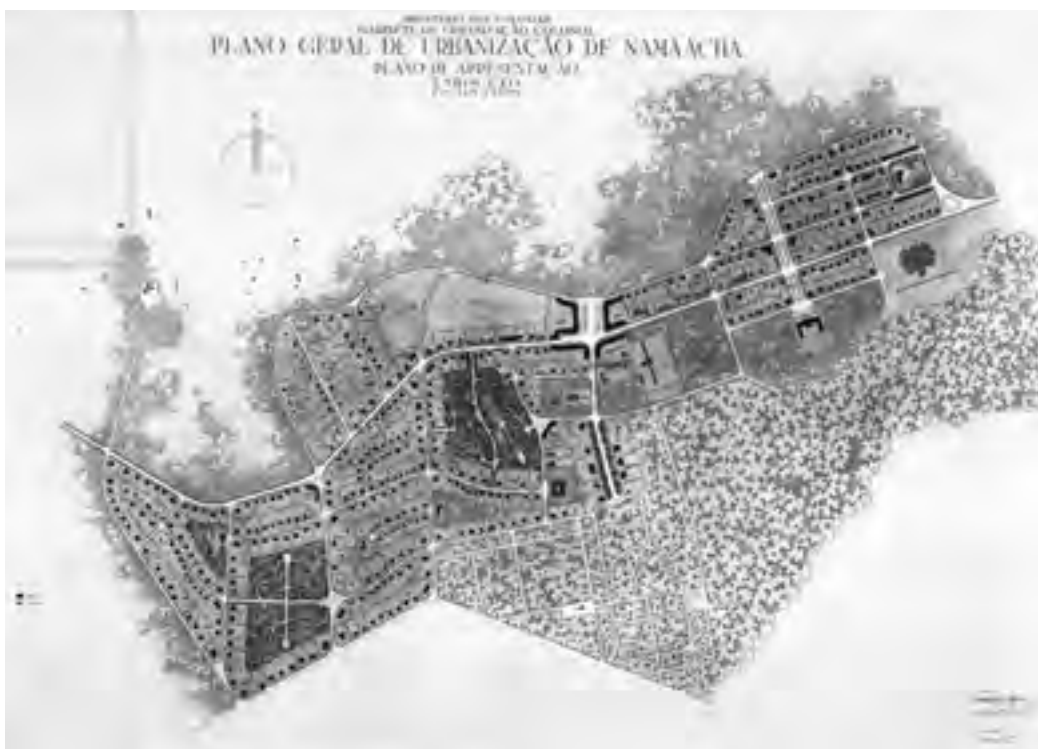


FIGURE 2. João Antônio Aguiar, Mário de Oliveira (*Gabinete de Urbanização Colonial*), Namaacha Urban Plan, Mozambique, 1947. © *Arquivo Histórico Ultramarino, Trabalho 113*.

scheme, where even the traditional building systems, like the use of adobe, were encouraged.

At the same time, Zilhão offered an urban solution inspired by zoning procedures, an administrative tool – in his own terms – that “prevent constructive ill-discipline, and flexible enough to mould the unpredictable conditions of future life”⁴, based on a residential area served by commercial and public facilities. New transport infrastructure was also provided to facilitate access, including to the most disadvantaged public servants, who would come by public transport (probably bus). However, some concerns were related to the specificity of the tourist program, like the proximity of Ziguinchor (Senegal) and of a French community that could also benefit from Praia Varela’s new urbanization. From all the houses it should be possible to enjoy the beauty of the site, described as “full of contrasts and fantasy”⁵. The “native” population, indispensable to the functioning of the resort, was housed in a specific quarter, separated by a *cordon sanitaire* (a green space, never mentioned as such), fulfilling the racial segregation habits that shaped Portuguese colonial urban plans until the advent of the sixties. The inspiration emerged from other colonial experiences, like the French or the Belgian quoted before.

2. "CLIMATE SMOOTHNESS, THE NEAR ABSENCE OF MALARIA, THE PROXIMITY (OF A POPULOUS URBAN CENTRE), THE PICTURESQUE LOCATION AROUND WHICH ARE ALWAYS PLEASANT PLACES FROM WHERE ONE CAN ENJOY LIFE IN BEAUTIFUL PANORAMAS, ARE FACTORS THAT, NOT FAILING THE STATE ACTION, ARE A GUARANTEE OF THE CONSOLIDATION AND DEVELOPMENT... OF A RESTING AND TOURISM RESORT (IN THE COLONIES)"⁶

The Praia Varela urbanization was only partially implemented, probably because it did not fulfil all the requirements for a successful performance: the contraction of malaria was a real danger and both road and aerial access were difficult. Only a small hotel and a few houses (12 to be exact) were built. The bungalow typology, with two bedrooms and a bathroom, was the chosen one. The houses had no kitchen in order to persuade people to use the collective "*cantina*" subsidized by the State in order to balance the initial official investment.

More than a decade later, in 1959, Mário de Oliveira, also an architect at the same colonial bureau as Zilhão, introduced a new plan⁷, less ambitious, that intended to be more realistic in terms of economic purposes, a fact that was supported by the suggestion to include prefabricated systems and, at the same time, solving two common problems: the unavailability of skilled labour and the shortage of building materials.

Oliveira had worked in the Colonial Planning Office since 1947. After graduating in Porto, he went to Madrid, where he attended courses in Hygiene and Urbanology at the School of Architecture, and in Urbanism at the Institute of Local Government Studies under the guidance of César Cort. His ideals would develop from a more conservative approach, reflecting racial segregation and monumental design in the early fifties, to a more conceptualistic realm, leading to cultural integration practices and using "native" knowledge related to prevailing winds and site implantation. Determined by the abundance of mosquitoes in the forests around *Praia Varela*, health issues demanded sanitation works that were dominant aspects of the new plan. New functions were also included, as a Catholic chapel (the colony was predominantly Muslim and animist), a water tower reservoir, and sport facilities for the practice of tennis and basketball. Although the new plan improved the "native" neighbourhood with specific commercial facilities, the resort continued to be designed for European public servants. The roads were drawn from a landscape perspective, conceived in terms of car rides and foreseeing the presence of viewpoints to admire the natural panorama.

Oliveira worked on several urban plans promoted by the Ministry of the Colonies, designated the Overseas Ministry after 1951, following the legislative renewal that changed Portuguese colonial policies. His experience overlapped with the beginning of the Colonial Planning Office. In 1947, he had already signed, with João António Aguiar, the architect in chief, the general urbanization plan for Namaacha, in Mozambique, for 3000 inhabitants, covering an area of 124 hec-

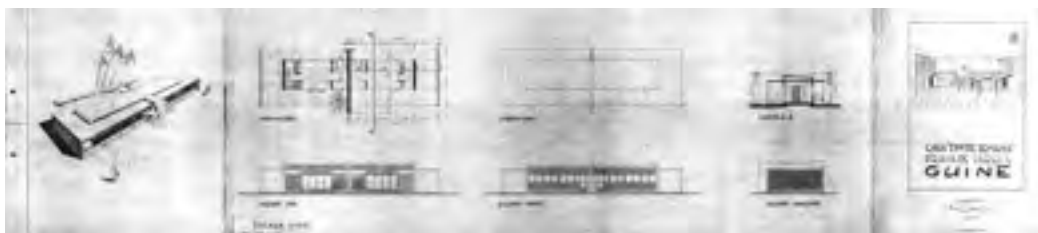


FIGURE 3. Luís Possolo (*Direcção de Serviços de Urbanismo e Habitação da Direcção-Geral de Obras Publicas e Comunicações do Ministério do Ultramar*), Weekend houses, Praia Varela, Guinea, 1955. © Arquivo Histórico Ultramarino, Trabalhos 483-486.



FIGURE 4. Lucínio Cruz (*Direcção de Serviços de Urbanismo e Habitação da Direcção-Geral de Obras Publicas e Comunicações do Ministério do Ultramar*), Hotel to be built in Mindelo city, Cape Verde, 1958. © Arquivo Histórico Ultramarino, Trabalho 567.

tares, a very different situation from the *Praia Varela* case. Namaacha village was already a tourist resort following the Alvaro de Castro government's establishment there of the official summer residence, between 1915 and 1918. The village was located in the southern part of the Mozambican territory, 80 km west of Lourenço Marques (now Maputo), and was described as having picturesque surroundings and pleasurable natural parks. The State action was determined to increase the tourist potential, complementing the private promoters' initiatives, and equipping Namaacha with a set of infrastructure appropriate to the needs of the public servants in terms of housing, road network and other services. Among the sport facilities were included tennis, basketball, roller skating and golf. The new plan adopted the "Garden-city" approach, privileged by architects as a proper design for the tropical urban settlement. Once more, the proposed "native" district (that should replace the pre-existing neighbourhood located in the centre of

the village and described pejoratively) was kept away from the perimeter of the formal city, outside its drawn limits.

Six years later, João Aguiar, the most influential architect in the bureau, designed the urbanization plan for Praia de Palane⁸, in the Mozambican region of Quelimane. The seaside values of Palane beach justified the State's intervention through a plan as a regulation tool, and the lack of economic resources from the Municipality vindicated this pragmatic approach, so the majority of the building activity was aimed at private investment. The possibility, however, of a village such as Palane reaching a population growth regardless of the tourist use, required considering the possibility that a future revision of the plan could result in the introduction of new functionalities such as primary schools, markets and workshops. These arguments reflected an official anxiety about an exclusive focus on the development of tourist ventures and probably helps to explain why its accomplishment was not a priority.

3. "IN OUR COLONIES, THERE ARE REGIONS THAT, DUE TO THEIR SITUATION, MILD CLIMATE AND LOCATION, AND PICTURESQUE NATURE HAVE GOOD CONDITIONS FOR REST RESORTS THAT MAY POSE AS GREAT TOURISM CENTRES, WITH DISTRACTIONS AND RECREATION FOR THOSE WISHING TO ENJOY THEIR WEEKEND REST"⁹. TO TURN SUCH AN IDEA INTO REALITY, AN ECONOMICAL HOUSING TYPE HAD TO BE STUDIED SO THE COST COULD BE SUPPORTED BY THE FUTURE OWNERS, MOST OF THEM WITH WEAK ECONOMIC RESOURCES"¹⁰

In general, urban plans did not provide residential projects, just described its minimal features and pointed out clear rules for its implementation: the requirement not to obstruct the view, preference for hedges or even their absence. The typologies, however, were listed regarding the most common household types, from a single couple to a family with two or more children. The proposals regarding area dimensions or programmatic organization followed the general regulation for housing promoted by the *Estado Novo* in normal conditions. The sketches only located the houses on their the plots, usually following an organizational structure reflecting the topography of the site. Several attempts were undertaken to find a solution able to be reproduced in different regions without major changes. The idea was to normalize the summer house for the public servant, making it easier to recognize the action of the *Estado Novo* and the functional and specific program of these buildings.

In this context, the weekend house was the type selected, continuously improved by several architects in the bureau. The first designs developed by architect Luís Coelho Borges, with the supervision of Aguiar, were set up for Angola and Mozambique. Even though its shape was very conservative, the main

purpose was to draw houses “with the indispensable minimum of compartments, but convenient and affordable”¹¹. The typologies differed by having more or less rooms and one or two floors. The plans had no corridors in order to suppress leftover spaces. The ownership of an automobile was also part of the program, since access depended on having autonomy from public transport. Borges also defined some materials, such as the use of bricks in the interiors, and the shape of the roof. The chimney was one of the elements that raised most criticism for being dispensable in the mainly tropical regions. Its existence, however, had a symbolic significance and was intended to remind the users of their European roots, appealing directly to the spirit and memories of the Metropolis.

In 1955, Luís Possolo, a very well-prepared architect, with a post-graduate degree in Tropical Architecture from the Architectural Association, in London, and also an employee of the Overseas Planning Office, sketched a more modern approach for the *Praia Varela* residential units¹², complementing the urban plan drawn more than a decade before. His houses followed the same functional dispositions of Borges’ designs, but had a different stylistic configuration, inspired by the “Californian houses” or even by Richard Neutra’s projects which were well-known in Portuguese circles. Issues like cross ventilation and the proximity to the sea were considered in the selection of the building materials. None of the houses, however, was ever built and four years later, Eurico Pinto Lopes, a colleague of Possolo, made another attempt using industrial materials, resembling “Lusalite” (corrugated asbestos cement sheeting). Prefabrication, precarious labour, and local materials (like timber for the building structure) were part of the proposal submitted to the Overseas Ministry.

Completing the residential program, many of these urban plans integrated small hotel units and guest houses, specially thought out for the public servants, offsetting the lack of private offerings in places that were less attractive for private investors. This was the case of guest houses for sites such as São Filipe village¹³, *Baía das Gatas*¹⁴ and Assumada¹⁵, in Cape Verde, or Ribaué¹⁶ in Nampula, Mozambique, developed during the fifties and the early sixties. Without much theoretical elaboration, these projects reveal essentially functional and programmatic approaches, expressing, at the same time, the different aesthetic principles followed by the architects employed at the bureau. In the sixties, architect Alfredo da Silva e Castro designed a hotel for the city of Praia, Cape Verde’s capital, which would never be built¹⁷. This hotel, however, already represented an innovation in the architectural language promoted by the Estado Novo, by integrating local materials and suggesting a wider contextualisation with the landscape. The project was inserted into the consolidated urban environment and not in a tourist resort among sumptuous tropical landscapes. The hotel in Mindelo city, on São Vicente island (also in Cape Verde), designed a few years earlier by the architect Lucínio Cruz¹⁸ using modern principles, and built with some compromises, was the most usual example of this urban production, focused on a more cosmopolitan spirit.

Supporting facilities for beach activities, like small bars, were also part of the production of this bureau of the Overseas Ministry. The most radical proposal – in terms of leisure program planned in an official realm – was the Bissau terrace¹⁹, sketched for the city seaside promenade, but it was never built. The building design was based on shapes and materials simulating traditional construction systems and African expressions. Its author, Luís Possolo would go on to build a restaurant on Luanda's island (Angola), during the sixties, under a private commission, using the same principles. The restaurant was destroyed after Angolan independence, however some similar projects have survived. Apart from the facts that lead to its obsolescence, we can always speculate if its almost cartoonish shape, given by the interior ornamental program (which was too attached to African jargon) or the thatched roof did or did not offend a truly nationalist character in a post-colonial period. Other buildings, such as the few houses built in *Praia Varela*, also did not survive the African independence process. In this case, the houses had a very specific program, having no kitchen, and were strongly connected with a European formalism. The absence of a kitchen was no problem, since, in African tradition, this part of the program is always apart from the main house. The European formality, on the other hand, was adopted after independence in other Guinean and African cases and the colonial houses, in urban and rural contexts, were inhabited with no major maintenance work. But *Praia Varela* with its strong tourist objective, besides its general failure, was always a colonial enterprise.

4. FINAL CONSIDERATIONS

The tourist programs for public servants acted as microcosms of the problems experienced in colonial territories. The solutions, as well as overcoming obstacles, showed a development in knowledge, from an initially empirical process to an increasingly technical approach. The cities' designs reinforced the choices made in similar urban plans, although focusing attention on specific functions (housing, sports areas and commercial zones). Weekend house typologies were thought of as thumbnails of single-family residential programs, alternating between traditional styles, with strong references to the national architecture (Portuguese architecture) and to modern counterparts, recalling a renewed sophistication. This architectural production allowed technical experiences such as resorting to traditional techniques or, on the other hand, giving rise to new technologies of prefabrication. The hotels and guest houses reflected the pragmatism of other urban infrastructure, without exploiting innovative forms. Somehow, the main lines of the *Estado Novo's* architectural regime were reflected in these programs: pragmatic, low-maintenance and identical approach.

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- 4 *Ibid.*, 576.
- 5 *Ibid.*, 573.
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Branding the Greek Vision for Tourism: The Xenia Network

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The Greek National Tourism Organization (GNT0) was founded in 1950, to develop tourism as a basic axis of economy, to attract foreign exchange and to promote the international “icon” of Greece as a “cultural product”. At that time, high standard quality facilities for tourists did not exist. Thus, GNT0 started the Xenia Project to create accommodation infrastructure for the development of tourism. The completed buildings, prominent examples of post-War modern Greek architecture, and the associated infrastructure, created a network that shaped the *leisurescape* of the country based on modernism. Although local communities welcomed the programme enthusiastically, it was mass tourism, new luxury life model and bad management that led the Xenia Project into decline.

This paper’s ambition is to reveal the current condition of the buildings and of the *leisurescapes* of the programme, and the causes of their decay, to evaluate reuses and renovations, to explore contemporary threats and to make proposals for their protection and recognition as monuments. Selected examples will support the above effort, by exposing the necessity for preservation and reuse. This article is part of a larger scale effort to communicate the values of the Xenia Project to the public, so that a large-scale restoration can be acknowledged and appreciated. Modern accommodation buildings and *leisurescapes* can be upgraded to a branded cultural product.

1. INTRODUCTION: THE XENIA PROJECT

At the end of WWII and the following civil war, the newly-founded GNT0 had to renovate the obsolete facilities destroyed by raids and to subsidize new investments in high standard tourist hotels. Unfortunately, private investors hesitated to invest in tourism accommodation, although they were supported by low-interest loans¹. Thus, GNT0 started the Xenia Project, a State programme to create accommodation infrastructure for the development of tourism.

The buildings of the project follow the principles of modernism mixed with local, geographical and cultural context.

We can categorize the types of the buildings of the project in two groups. The first one comprises tourist facilities without accommodation such as: beach facilities, pavilions, restaurants, tourist stations and special facilities. The 2nd group is related to tourist accommodation (more than 100 buildings) such as: hotels, motels & highway stations with accommodation, hostels, etc.

2. BRANDING THE GREEK LEISURESCAPES

The Xenia Project fulfilled the vision of GNT0 to develop international tourism. Those constructions were designed to offer hospitality to high-class international tourists, who brought valuable foreign exchange to a poor developing coun-



FIGURE 1. Ph. Vokos, Xenia Motel of Messologi. © J. Paraschos, 1960.

try. You would find them at archaeological sites, on the islands, along highways, in urban settlements, in spa-towns and other destinations of tourist interest.

The Organization was not planning the buildings alone, but rather as part of an integrated sustainable policy on tourism. Sites were declared as “tourist sites” with special legal status for hotels and tourist accommodations. “Wild”, beautiful places would be transformed into high-class resorts. GNTTO aimed to extend the tourist season beyond the summer period, so as to ensure the financial sustainability of the hotels. Occasionally, other activities (yachting, golfing, etc.) or events (the Athens Festival, the Epidaurus Festival, the Feast of Wine) were also promoted.

At the same time, there was not sufficient access to the developing tourism sites. GNTTO planned the infrastructure to connect to the periphery, which would serve the local communities, too, and organized tourist tours by Pullman. Sea cruises were organized in a similar way. The Organization upgraded the port of Igoumenitsa and connected Greece to Italy by ferry-boat. Many other programmes (casinos, campings, etc.) were organized all over the country.

The Xenia Project gave priority to the underdeveloped provinces and led the private Greek investors towards international high standards. The produced buildings, which are prominent examples of post-War modern Greek architecture, and the associated infrastructure created a network that shaped the *leisurescapes* of the country based on modernism. The “Xenia” brand managed to build awareness of high standard tourist facilities.

3. DECAY, CURRENT CONDITION AND CONTEMPORARY THREATS

The Decay

A public operator as GNTO, no matter how well organized, is never as flexible as a private one. Bureaucracy and inexperience led public management to failure. The Organization soon recognized its inability and tried to privatize the project². Its attempts in most cases were unprofitable. The only solution was long-term leasing by private operators. Concessionaires were exploiting the hotels with beneficial contracts, ignoring their obligations for new investments and proper maintenance of the facilities.

The 2nd fatal mistake was the Organization's compromise to decrease the budget of some projects. The changes reduced the hotels standards (for example by replacing private bathrooms in each room with shared toilets) and, at the same time, reduced the return on investment and its life expectancy³.

It is worth clarifying that even in the cases that a project failed as an economic activity, it always contributed to the tourist development of the site and gave a long-term macroeconomic profit.

The Current Condition

Today, most of the buildings are obsolete and abandoned, waiting to collapse or to be demolished with irregular procedures. Reuses, with the same or a different function, temporarily saved some, but awkward attempts at renovation and structural reinforcement have dramatically transformed their architectural identity. Here are some characteristic examples of each category:

DEMOLISHED XENIA'S

In 2004, the Xenia of Heraklion in Crete (G. Nikolettopoulos, 1961), although in a good condition, was demolished by the local authorities, thus provoking an intense political dispute.

In 2006, the Xenia Hotel of Ioannina (Ph. Vokos, 1958) was replaced by "The Grand Serai" (*Saray* = palace in Turkish). Its demolition was "inevitable" for the



FIGURE 2. G. Nikolettopoulos, Model of Xenia Pavillion in Chalkida.
© G. Nikolettopoulos.



FIGURE 3. Cl. Krantonellis, Xenia Hotel of Nafplio in 2015. © M. Moussa, 2015.

new management, as the contradiction between the lean modern hotel and the glamorous, phantasmagorical new building, representing a new “luxury” life, was more than evident.

ABANDONED XENIA FACILITIES

The majority of the abandoned buildings are owned by the State or the local authorities. In most cases, these owners don't have the budget or the motive for structural reinforcement and renovation.

The Xenia Hotel of Tsagarada, Pelion (Ch. Sfaellos, 1957) and the Xenia Motel of Vytina, Arcadia (C. Mpitsios, 1961), prominent examples of GNTO's effort to develop winter tourism, are abandoned. The local communities claim ownership of these structures in order to re-operate them.

XENIA'S IN USE WITH THE SAME FUNCTION

Reuse with the same function is the most promising solution, but, unfortunately, not all examples are successful. In many cases, limited or extensive expansions have corrupted the modern characteristics of the projects.

The first Xenia Hotel of Nafplio (Cl. Krantonellis, 1951, expansion 1956), is preserved in a very good condition. No significant alterations were made, except for the external colouring of the visible concrete surfaces.

The renovation of the Xenia Hotel in Kos island (Ph. Vokos, 1959) transformed the basic architectural characteristics of the building. The most inappropriate intervention was the extensive replacement of specific original materials with glass.

XENIA'S REUSE WITH ANOTHER FUNCTION

In the majority of the reuse proposals with a different, function the property is owned by local authorities. Almost all Xenia projects were very popular among local communities, hosting local social events.

The Xenia Motel of Olympia I (A. Konstantinides, 1963) is currently used as a Town Hall. The main transformations, which are in opposition to the original characteristics of the building, are the external colouring and the enclosure of *pilotis*.

The Xenia Hotel of Nafpaktos (P. Manoulides, 1966) is currently owned by the local authority. An extensive debate is in process about the reuse of the building. The main issue at stake is to choose between reuse with the same or a different function. A reuse with the same function comes with the risk of anarchical expansions. In addition, local hotel owners are against this competitive reuse. A reuse with a different function, which would host leisure activities lacking in the town of Nafpaktos (a conference centre or a multipurpose hall), seems to be a better proposal.

Contemporary Threats

Natural landscape, as well as Xenia's *leisurescape*, has been alienated by mass tourism. New environmental legislation and the development of alternative tourism (ecotourism, geotourism, agrotourism, etc.) are measures that will restrict the environmental degradation.

Economic crisis is a new threat. The facilities owned by the State are now under the Public Properties Company's control, an organization for the management of public real estate. Its only goal is privatization at any cost, as the income is repaying the national debt. In the name of exploitation, all kinds of landscapes, including the Xenia's facilities, became sites for construction.

4. PRESERVING AND REINFORCING THE MODERN MONUMENT

The Modern Monument

Greek people respect ancient and medieval monuments. More recent monuments (traditional, neoclassic style, etc.) are treated with romance and nostalgia. On the contrary, *béton armé* as a material, is demonized by the public, as a result of our modern lifestyle in compact cities. Under those circumstances, modern monuments are appreciated only by a limited elite.

Preserving Monuments in Greece

The State addresses the modern monuments with discrimination, too. Two different organizations, the Ministry of Culture (focusing on antiquities) and the Ministry of Environment (newer monuments), are in charge of monuments' classification. Very often, the two authorities are in competition with each other.

The Xenia Hotel of Arta (D. Zivas, 1958) was built in the medieval castle of the town. Unfortunately, building on medieval ruins was not a rare practice in 1950s. In Arta's case, the new hotel construction was considered as regeneration, because the castle had been used as a criminal jail. In 2009, the building was proposed to be declared as a monument, but the claim was overruled by a council composed by members from both authorities. The main excuses were that such



FIGURE 4. D. Zivas, Xenia Hotel of Arta. © J. Paraschos, 1960.

declaration would put at risk the older monument and that the modern building needed reinforcement, which would destroy its authenticity.

Structural Reinforcement

This is the main problem a modern building faces today. All other necessary upgrades to comply with contemporary regulations (fire security, user safety, even energy upgrade) are manageable. The core legislation⁴ demands that all buildings made of concrete, even monuments, when they are reinforced, they should achieve seismic resistance similar to new buildings, by using concrete cloaks, seismic diaphragms, concrete or metal shear walls etc. These retrofits deform the bearing structure by changing the ratios. New materials, such as steel plates, fibre reinforced polymers and new methods, may reduce this disharmony, if the regulation should loosen in case of monuments.

In 2008, researchers⁵ from the Department of Civil Engineering of the Aristotle University of Thessaloniki evaluated the structural system of the Xenia Motel of Paliouri, Chalkidiki (A. Konstantinides, 1960). According to the study, the main issues were: the geometrical forming of the structure (without shear walls, complicated plan structure provision, irregular sections) which is against today's seismic codes, concrete carbonation due to the damages of the visible concrete from the nearby sea, moisture and the lack of maintenance. Fortunately, the general ophthalmoscopic stability was good. A structure analysis followed, proving that the current condition was insufficient, as expected. Unfortunately, the two proposals made by the team were discouraging. The first one would transform the facades and the second proposed a full reconstruction.

5. RE-BRANDING MODERN GREEK ARCHITECTURE: THE XENIA NETWORK

In 2007, the Association of Greek Architects started an “aggressive” effort to declare the most important Xenia Project’s buildings as monuments⁶. The effort has – for the time being – saved some of them from demolition, but not from physical decay leading to collapse. P. Nikolakopoulos, who was in charge of the Association’s effort, came with the idea of the “Xenia Network”. The declared buildings would be restored to their original state and re-operated as accommodation units. The Xenia Network would focus on sophisticated tourists that are looking for alternative cultural attractions and appreciate modernism as a lifestyle.

Taking this idea a few steps further, we could reuse “Xenia” as a branded experience. Modern accommodation buildings and *leisurescapes* will upgrade to a branded cultural product, addressing not only to tourists but also educating local communities on modern architecture heritage. The brand will communicate the values of the Xenia Project to the public, so that a large-scale restoration can be acknowledged and appreciated.

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Ruins of Mass Tourism in Italy. A Conceptual and Functional Reinterpretation of Tourist Architectures of the 1950s and 1980s in the mid-Adriatic Landscape

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Numerous ruins of post war tourism developments can be found in many Italian coastal areas. Along the Adriatic coastline, beginning from Emilia Romagna down to Abruzzo, a consistency of towers, colonies, hotels, resorts, lodgings and tourist homes can be found, all built between the late 1950s and early 1980s, today incapable of dialogue with the dynamics of tourism and contemporary cities. These are holiday architectures now in disuse or under-exploited, many of which have been left to their status as beachside planned ruins.

The possibility for economic growth, guaranteed by the resources of tourism, accelerated the reconstruction effort during the post-war period, in particular concerning Italian coastal areas with intensive settlement. This process of intense construction occurred in conjunction with a renewed approach to design in Europe. Tourism constructions today represent the remains of that particular period of architectural thinking in Italy.

In this paper the beachside architecture of mass tourism is used as a lens through which to critically scrutinize different aspects of an extremely recent past, whilst at the same time interpret and interact with the various dynamics of contemporary scenarios. The area of reference for the study is the coastal portion of the mid-Adriatic within which various case studies are identified, that despite revealing aspects of a specifically local nature, at the same time are paradigmatic of similar conditions found in other geographical contexts.

The objectives and the results of the proposed paper are:

Through an investigation method, the reconnaissance and mapping of specifically identified mass tourism complexes.

Prefiguring possible scenarios that may reconsider such realities from a perspective of interest and the potential to recycle these structures.

1. INTRODUCTION

By the end of the 1950s, the effects of the economic boom had seeped through to free time practices and tourism had been definitively consolidated as a mass phenomenon, so much so that its organisation assumed the connotations of an industry sector. It was during those years that the Italian territory experienced the consequences of such progress, translated into processes of uncontrolled building and construction. The 1970s would represent the peak of this trend, whilst in the early 1980s the vocation of intensive tourism supply entered into crisis, manifesting itself as unsuitable and disproportionate with respect to the initial diversification and personalisation of free time practices¹. Numerous tourism complexes can be found in many Italian coastal areas, now in disuse or under-exploited, characterizing those particular tourist phases.

The need to analyse and study mass tourism complexes, evaluating them with reference to specific topics of modern architecture and their current disuse, gives to the research the validity to interpret various aspects of an extremely recent

past, whilst at the same time reinterpret and frame beachside constructions within the various dynamics of contemporary scenarios.

This paper portrays the phenomenon through two main topics: the first related to the recognition of the architecture of mass tourism with reference to the modern architecture generally and to the forefront experiences in design; the second to changes in the tourism experience and the consequent abandonment of the complexes that were built for holiday makers.

A portion of Italian coastline is selected, the mid-Adriatic coast, as a paradigmatic territorial set to study. An investigation method of selecting and interpreting beachside structures is proposed; an interpretative tool and reading parameters are exposed. Transformation scenarios to succeed in relocating the identified tourism structures in the contemporary context, reinterpreting their meaning, are collected.

Conclusions take on a perspective that is able to consider the ruins of mass tourism not merely as an obstructive presence from which we need to be freed, but rather as an opportunity for the transformation of coastal urban spaces.

2. MASS TOURISM, PRODUCTION OF TERRITORIES AND WASTES OF THE SEASIDE PRACTICE

Since the emergence of mass tourism, as a conquered good and a modern achievement, the attempt to plan free time of paid workers has had quantitative and qualitative implications in the territory. From the 1920s to the 1940s tourist transformations regarded functions, organizational structures and users. Specific accommodations were conceived such as family camp, children's colony and hostels².

The further increase of living standards, and the widespread use of private cars, accelerated the process of reconstruction after the WWII, crossing other modern topics like the wave of generational optimism celebrated by the pop culture phenomenon.

Only in the 1960s the planning of free time definitively matured. In 1964 the *Triennale* of Milan and two numbers of the journal *Casabella* were devoted to leisure activities. The urgency to create a new landscape for 50 million Italians was declared³.

The process of intense construction occurred in conjunction with a renewed approach to design in Italy and in Europe. A wave of trust in technological progress, combined with a tendency towards the urban scale and grand gestures, unveiled the strong ideological force now driving architectural design. Urban planning demonstrated the ambition of the Modern Movement to organize seaside practice into territorial structures⁴. Plastic shapes, high-rise and big volumes, elongated fronts, stairs, ramps and gangways rendered an iconic and monumental image to seaside resorts, which celebrated holidays.

However, over the years, seaside cities have revealed their contradictions and weaknesses. The insatiable productive process of the tourist real estate simplifies



FIGURE 1. Tourist architectures of the 1950s and 1980s in the mid-Adriatic landscape. The photomontage shows how the Mass Tourism constructions articulate the spatial rhythm of a linear and continuous landscape. © Sara Cipolletti, 2015.

aspirations and reduces the construction of tourist destinations to a much more simple and banal problem⁵. A sprawl of buildings and of inhabited or cut off portions of territory have emerged, causing the on-going deterioration of beach side settlements. If during the 1970s and 1980s, the sea was still being exploited as a unique good, after the 1990s the tourist experience has been characterized by a change in the perception of free time. Cultural and creative activities have become vehicles for increasing the liveability of areas for both tourists and locals, interrelated with the everyday⁶. The dissolution of precise spatial, temporal, functional and semantic boundaries between industrial cities and tourist areas has exposed the limits of tourism as an industry for seasonal leisure and entertainment⁷. The changing tourism phenomenon has confirmed the gradual disappearance of the traditional tourist type opening a debate about the future and the connotation of beachside mass tourism destinations.

3. MASS TOURISM RUINS OF THE 1950S AND 1980S IN THE MID-ADRIATIC LANDSCAPE. INVESTIGATION METHOD AND TRANSFORMATION SCENARIOS

The Case Study of the Adriatic-city

The stretch of the Adriatic coast, beginning from Emilia Romagna down to Abruzzo, is greatly representative of the after-war urbanisation, related to the tourism phenomenon. The originally sickly and marshy coastline of the mid-Adriatic landscape started to change with the completion of the infrastructure, which

is the primary linear construction of its distinctive geographical comb-figure⁸. The growing demand for seaside accommodations implemented the progressive occupation of the coastal areas, transforming the territory into a continuous city. Using an allotment scheme, a dense road network was designed with a rectangular grid, allowing the construction of buildings with high surface coverage⁹. The urbanization of approximately 1000 hectares of coastline, geared towards the development of a mega urban/beachside conurbation stretching along a distance of 300 km, is called the Adriatic-city¹⁰.

The almost total absence of an architectural and urban project confers a prevalent anonymous and shoddy image on urban tissues, but the sprawl settlement pattern sometimes is marked by more *grandiose* traces of mass tourism. The Skyscrapers of Rimini (1957) and of Cesenatico (1958), the Hotel House of Portorecanati (1968), the Lido Tre Archi (1970) the Taunus Village (1961) of Numana – the only built on the *Garden-City* principles – were often geared towards models adopted by the highest forms of experimentation in architectural and urban research and production.

The mid-Adriatic landscape is marked by numerous testimonies to mass tourism organization and its gradual deterioration. These structures represent the landmark of coastal landscape. They are the spatial rhythm of a linear and continuous landscape.

Investigation Method: Interpretative Tool and Readings Parameter

A blue plastic cover of still water, a black rubber mouthpiece, an empty bottle of sun-tan oil, half sandal destroyed, plastic bags [...] along the beach the wastes of the tourist practice tells a fragmented and complementary history¹¹.

The plastic material, according to Orvar Lofgren, is not only the common element that holds together the new tourist economy; its wastes pose more extensive and major questions of a recent Mediterranean history. The interpretation of plastic fragments as “tourism remains” considers mass tourism both as an important wide ranging phenomenon and as an intense cultural, social and economic history, which set up many coastal developments or destinies.

Reading parameters, which determine the comparative examination on “mass tourism ruins”, establish interpretative tools to select and map tourist constructions. These are subordinate to the historical and evocative value of mass tourism ruins:

- The position with respect to the coastline and to the city key-areas;
- The physical dimension and macro-scale in spite of sprawl settlement pattern;
- The quality of the design;
- The lost or potential relations with urban context where it is located;
- The ambition to follow highest experience;
- The completeness referring to the original project.



FIGURE 2. Jet Residence, Portorecanati (MC), Italy, 1970s. The structure situated in an isolated portion of Portorecanati city, is now underexploited, its volume and its dimension confirm the choice of an urban macroscale for the mass tourism accommodations. © Sara Cipolletti, 2015.



FIGURE 3. Marconi Hotel, Grottammare (AP), Italy, 1960s. One of the high quality example for both the elongated front and the circular object of the dining room, the hotel lives a partial disuse for its expansive restructuring. © Sara Cipolletti, 2016.



FIGURE 4. Lido Tre Archi, Fermo (FM), Italy, 1970s. A tower and buildings enclose the open public space, a place of city was designed but the isolation and the project incompleteness confirm a cut off portions of territory. An adaptation to a permanent residence, operated by social poor class, transforms part of the structure. © Sara Cipolletti, 2016.

Other critical parameters include:

- Activation of spontaneous reuse;
- Maximum availability to welcome procedures for the re-appropriation of spaces and the possibility to activate scenarios of architectural and urban transformation.

The aim of the reading parameters is not to establish categories capable of defining general interpretation criteria for a sprawl landscape, but instead they seek to produce an interpretive framework for each individual case, allowing an understanding of the specific urban fragment, its transformation times, particular dynamics and characters.

The selection and the analysis of beachside architectures, identified from within the period between the 1950s and early 1980s, through the interpretative tool of 'ruins' and the reading parameters, aims to clarify the meaning and the role that the ruins of territorial tourism consumption are assuming in the context of the transformation of contemporary cities and society.

Transformation Scenarios

In light of their potential for reactivation in urban circuits, the possibility for reuse, *re-semanticization* or elimination should be assessed.

The activation of spontaneous reuse often transforms the seasonal structures into permanent residences; this process is in particular carried out by the 2nd or 3rd generation of owners or by immigrant and poor social classes¹², requiring more urban services and relations with contexts in order not to accentuate their isolation.

Relocating the identified tourism structures in the contemporary context and prefiguring transformation scenarios is broad-ranging and includes recycling practices, recovery and redevelopment, which may be intended as programmatic strategies tied to new free time trends, and as planning actions on buildings and contextual relations.

The project for a theatre and cultural spaces within the skyscraper of Rimini¹³ works in this way; the structure is transformed into an enormous cultural building, an Adriatic node for cultural and artistic events. The recent installation of a theatrical workshop inside the high structure¹⁴ of Rimini, operated by its inhabitants, is a motivating occasion to show not only the building but also the community who lives inside and it confirms the importance of private initiatives as premonitory symptoms.

The possible dynamics able to re-activate new life cycles for these underexploited tourist facilities should also be traced through aspects not belonging to the traditional project disciplines.

The development of an app, proposed in the project RITMI¹⁵, is an additional communication and management solution. The app, which will systemise all the identified structures through a map, will become a platform for the construction of a place options menu. This will be an interactive tool, which, through the

contribution of users, will be able to provide constant updates on events, practices and transformations taking place. The desire to create a network of Adriatic places and architecture is also proposed in the project for a cultural route of the Adriatic beachside architecture¹⁶.

The app and the cultural route will encourage the use of a system distributed throughout the territory, constituted by the tourism sites and architectures identified with mass tourism, each of which will be recognisable thanks to its unique features, capable of suggesting non-standardised ways of taking holidays.

In this way, the objective of triggering a form of tourism mobility along the Adriatic coast that involves increasingly larger segments of the territory will be pursued.

4. CONCLUSIONS

Mass tourism architectures represent the most modern and inventive character of the industrial society, but they belong to the theme of residual space, both on an urban and architectural scale, tied to a first overproduction of the industrial era and, then, to the economic dynamics of the post-industrial era.

The metaphorical figure of the "ruins" is suitable to describe and interpret the building process of the beachside territory, because it gives to mass tourism architectures the connotation of "remains" of a specific tourist modern progress and its gradual deterioration.

Meanwhile the reading parameters reconstruct details, stories, fragilities and possible scenarios of reactivation of each mass tourism case, portraying a global and a local history. Moreover, they are extremely useful in sorting out the most representative tourist constructions in contemporary landscapes, recognizing them as an important recent heritage to reinterpret and reuse.

The need for selection and mapping mass tourism architecture in the relationship between the evolution of the tourist practice and the territorial transformations is functional for building critical awareness and consciousness around a reality previously evaluated marginal and belonging to an industry sector.

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- 6 Sara Cipolletti, "Nuove Pratiche del Turismo", *Oltre la Spiaggia. Nuove Pratiche per il Turismo Adriatico*, Macerata, Quodlibet, 2012, 90-93.
- 7 Ricard Pié Ninot, Josep M Vilanova Claret, "A Century of Tourism in Europe. New Challenge to the Discipline of Urbanism", *ARA Journal of Tourism Research*, n. 70175, Barcelona, 2012, 109-114.
- 8 Marco d'Annunziis, "Città Adriatica e Turismo", *Oltre la Spiaggia. Nuove Pratiche per il Turismo Adriatico*, Macerata, Quodlibet, 2012, 28-33.
- 9 Giulia Menzietti, "La Città del Turismo nel Secondo Dopoguerra", *Oltre la Spiaggia. Nuove Pratiche per il Turismo Adriatico*, Macerata, Quodlibet, 2012, 82-85.
- 10 Pippo Ciorra, "Adriati-città. Un Paesaggio Postindustriale", *Le Cento Città*, Vol. 1, 2006.
- 11 Orvar Lofgren, *Storia delle Vacanze*, Milano, Bruno Mondadori, 2001, 158-160.
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- 15 RITMI, *Relitti Inattesi del Turismo di Massa*, is a research project proposed by S. Cipolletti, G. Menzietti con A. Gabbianelli, E. Marcotullio in the School of Architecture and Design, University of Camerino.
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Leisure-scapes and Conflict-scapes: The Famagusta Modern Coastline

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The Famagusta coastline, with its silky beachfront crowded with tourists and locals, was the quintessential “scenography of play” in 1960s’ Cyprus. Famagusta was key to local Government’s policy for tourist development and postcolonial nation-building, and the city’s promotion as a Mediterranean beach destination was crucial to jump-starting the country’s modernization processes. All this changed dramatically after the violent division of the island in 1974: Famagusta changed inhabitants and its southern part – called “Varosha” – was abandoned and fenced off, decaying over 40-years into a “ghost town”. Today, a new dramatic change is imminent, because the re-opening of the city to its past inhabitants is considered key to the unification of the island. For this reason, it is truly timely to tackle the challenges posed by Famagusta’s modern heritage and especially its *leisure-scape*, which not only constitutes a paradigmatic example of a modern tourist landscape but also represents a setting where the 40-year old decay of buildings and infrastructures threatens the city’s very recovery. In addition, the entire *leisure-scape*’s intangible associations with former inhabitants’ memories, current inhabitants’ needs, and various stakeholders’ aspirations for the city’s future demonstrate the intensely contested nature of this *leisure-scape*’s past and future. Precisely to highlight how the presumably “laid back” *leisure-scapes* are intertwined with landscapes of “conflict” (ethnic, social, and other), this paper examines the complex history of Famagusta’s modern *leisure-scape*. By exposing the coexistence of *conflict-scapes* within *leisure-scapes*, the paper sheds new light on current (and yet again contested) visions for Famagusta’s future, attempting to open larger questions around the reuse of modern tourist *leisure-scapes*. The paper argues that the analysis of Famagusta’s exceptional case as a *leisure/conflict-scape* imparts a more nuanced understanding of the complex histories of architecture and tourism and their intrinsic ties with politics and socioeconomic development.

1. INTRODUCTION

In the first days of 2016, on the major Christian Orthodox feast day of Epiphany, hundreds of Greek Cypriots flooded the beach of Varosha, an area in the southern part of Famagusta abandoned by its inhabitants since 1974¹. The crowd watched a group of young men reenact the ritual of competing to retrieve a big cross from sea waters. This celebration had not happened in Famagusta for more than 40 years. The reenactment of this religious event, against the backdrop of what was once the modern *leisure-scape* – a *leisure-scape* which now stands as a renown “ghost town” or a “no man’s land”² – was seen by the media as an experiment in mutual trust between the Greek and Turkish Cypriot communities³. The whole ceremony was hailed as a sign of optimism for the current and intensive reconciliation efforts, which are aiming both to re-open the city to its past inhabitants, and, eventually, unify the whole island⁴.

The reconciliation talks anticipate dramatic changes on the horizon and bring forward the task to tackle the challenges posed by Famagusta's modern heritage. The city's modern leisure-scape is of particular importance as it constitutes a most emblematic urban memory. However, the 40-year old decay of buildings and infrastructures pose great challenges for conservation practices, as the material legacy of Famagusta's leisure-scape is under serious threat of complete eradication. To what extent can Famagusta's modern heritage be saved? Will the significant deterioration of buildings and infrastructures be the key criterion to decide which layers will be removed and which will be preserved? What other conceptual criteria will impact the selection and what is the role of the various stakeholders in assigning heritage or memory value to the built environment? How much would this process be influenced by property issues and speculations for real-estate values and ultimately how much weight would heritage matters have against the background of emerging tourist and environmental policies that relate to this important 1960s *leisure-scape*?

2. THE LEGACY OF FAMAGUSTA'S MODERN LEISURE-SCAPE

Let us first examine the modern legacy of Famagusta, considering also the politics of its leisure aesthetic.

Undeniably, the city's coastline, with its silky beachfront, crowded with tourists and locals, was the quintessential "scenography of play" for Cyprus in the 1960s, and this was evident in tourist postcards of the time, travel guides, tourist ads, and films⁵. Of course, such a paradigmatic modern *leisure-scape* emerged in the context of the island's complex socioeconomic and political realities of the time, as Famagusta was key to local Government's policy for tourist development and postcolonial nation-building. In fact, the city's promotion as a Mediterranean beach destination was crucial to jump-starting the country's modernization processes that were widely implemented by the young state. It was quite early after the inception of the Cyprus Republic in 1960, that the country followed the lead of many Mediterranean countries, tying its economic growth to tourist development and promoting measures for making the island an international tourist destination.

Tourism was promoted in the midst of turbulence and territorial and social divisions between Greek and Turkish Cypriots. Following inter-communal conflicts of 1963, Turkish Cypriots' withdrew into enclaves while the United Nations initiated intense peacekeeping efforts tying socioeconomic development goals with efforts to resolve the inter-communal conflict. These UN efforts kept a fragile balance until 1967, when a 2nd violence outbreak took place, causing a military response by Turkey. After that, the Turkish Cypriot leadership announced the creation of a separate administration. Soon afterward, inter-communal talks were initiated in search of a settlement of what came to be known as "the Cyprus Problem". Even though these inter-communal talks of 1968 gave a glimpse of opti-



FIGURE 1. Famagusta, Cyprus. The leisure-scape of the abandoned Varosha area in Famagusta. © Mesarch Lab, University of Cyprus, 2010.

mism for a smoother social and economic development, in the early 1970s, the stability of the young Cyprus Republic continued to be threatened, both by external powers and by internal turmoil. This turmoil made tourist development appear precarious; nonetheless, the Government placed a great deal of hope on tourism's economic benefits. It was in this context that it promoted an emblematic tourist development project in the golden sands coast of Famagusta, in 1969. The brief analysis of the project that follows here demonstrates two things: firstly, how corporate and architectural aesthetics of leisure were intricately connected with the complex realities of the Island; and secondly, how the exposure of these connections can now, in retrospect, inform the re-appreciation of these *leisure-scapes*.

Intercommunal Politics and Supra-Political Aesthetics:

The Golden Sands Hotel

The project of Golden Sands (supported by British Airways and Cyprus Airways) was to combine hotel and recreation facilities on a large portion of state-owned land, in the southern end of the Famagusta coast. The Government commissioned the British architectural firm of Garnett, Cloughley, and Blakemore, which collaborated with the local firm of Philippou Brothers⁶. The goal was to have an international hotel brand combined with a signature design so as to insert Cyprus "on the tourist map of the Mediterranean"⁷, as the signed agreement between the Government and the hotel's management firm stated. As evidenced by the active involvement of the country's President, Makarios, in the entire process, this project was a high priority on the Government's modernization agenda⁸.

The project architect for Golden Sands, Patrick Garnett, revealed a certain ambivalence towards modernist internationalism and standardization. On the



FIGURE 2. Famagusta, Cyprus. Images from 1973 Cyprus' tourist guide. © Christos Elia, *Guide to Cyprus – A Handful of Information*, Messrs Orphanos&Zivanaris Ltd, 1973.



FIGURE 3. Garnett, Cloughley, and Blakemore, Golden Sands Hotel, Famagusta, Cyprus, 1969-1973. © Patrick B. Garnett, "A view of the sea", *Interior Design*, 1977 August, 436.

one hand, he steered clear of repeating the "same international block [that] seems to reappear in different countries throughout the world" and sought to create "a sense of atmosphere" that he believed was lacking in many modern hotels⁹. This stated goal was both a reaction to dominant modernist tenets and an embrace of market strategies in the hotel industry that searched for authenticity and the exotic, so as to offer an "escape from reality"¹⁰. Ultimately, however, Garnett's search for clues for the locale, concluded that: "There was no established architectural vernacular in Cyprus. The influences of the many conquering nations had resulted in a neutralization of building form"¹¹. It seems that Cyprus's history was too contested and its contemporary situation too volatile for Garnett to venture into making direct references to peculiar cultural characteristics¹². Thus, what he chose to call "neutral" forms, was an effort to hint to regionalist allusions while steering clear of ethnic politics. Even if his formal preferences could be construed merely as a zealous attachment to modernist tenets on the part of the architect, it is hard not to see the particular appeal of these supra-political aesthetics (and an aesthetics of neutrality) in *leisure-scapes* that are created in the backdrop of *conflict-scapes*.

In other words, the supra-political aesthetics of the Golden Sands can be seen as a rhetorical reaction to the island's ethnic conflicts, while also expressing aspirations for unification.

Environmental/Social Politics on the Beachfront

The conflicts with which the leisure-scape of Famagusta had to contend did not only pertain to intercommunal disputes, but also to other social and environmental issues. These issues were palpable given that the economic benefits of tourism development reached only a part of the society.

Let us consider the overall leisure-scape of Famagusta. Situated on a strip of land between a major traffic road and the beach, this *leisure-scape* comprised small and middle size hotels and tourist apartment buildings along the sandy beach. All these projects – some by the Government as mentioned earlier, and

some by local small and middle scale hotel entrepreneurs, architectural offices, and construction companies – partially obstructed the neighbouring area's connections to the waterfront creating juxtapositions in the cityscape between the more and the less privileged. These tourist facilities, which sprung up in record time between 1965 and 1974, shaped an extended linear zone that profited from free access to sea, sun and sand creating the characteristic modernist landscape of Famagusta. They exhibited various experimentations with hotel and apartment building typologies, landscape and interior design: beach pavilions, hotel lobbies, bars, restaurants, balconies, and gardens, gave rise to a leisure culture that could be shared by visitors and locals¹³ – advancing a claim that the economic and other benefits of tourism would be diffused to the wider society¹⁴. In other words, the same modernist leisure aesthetics advanced a claim of democratization, along with a claim of modernization and neutrality already discussed.

The perception of the public beach as a democratic space is related according to Sarah Whiting to the contact with a natural setting that “seemingly returns us to a state of nature, a state preceding social and economic stratification”¹⁵. But this is an illusory condition because various mechanisms “invisibly transform the beach into an undemocratic space where all publics are not equal”, which further “complicates the allegory of the beach-as-democracy”¹⁶. This can also be argued for the leisure-scape of Famagusta where, although it was a primary tourist centre and a vehicle for the local society's modernisation¹⁷, there were many insidious practices that complicated the perception of “tourism-as-democracy”. Some took the form of reactions to the excessive growth of tourism which, as it privileged particular places and social groups, also shaped economic imbalances and gaps within the society. The leisure-scape of Famagusta, was thus creating an increasing the gap between those who could rip the benefits from the tourist industry and those who could not. To make things even more complex, other stakeholders reacted to the environmental and social degradation issues. These discourses critiqued Famagusta's leisure-scape, through films and press articles, for turning a paradigmatic coastline of leisure into a grotesque example of development excesses and uncontrolled tourist industry¹⁸. These critiques resonated with wider reactions that stressed the need to protect the resources that tourism relied upon and with agendas that called for the protection of the environment and the local tradition, which continued in other forms and are relevant today in the context of contemporary sustainability debates.



FIGURE 4. Famagusta, Cyprus. © Press and Information Office (PIO), Republic of Cyprus, 1973.

3. RETHINKING THE (CONTESTED) FUTURES OF FAMAGUSTA'S LEISURE-SCAPE

Given the ethnic, socio-economic as well as environmental contests that constituted the *leisure-scape* of Famagusta, one could ask: to what extent is the 1960s boom of the prospering of a Mediterranean coastal resort a precious memory to be revived? Might it instead be an environmental calamity that should be avoided? And, what do the pitfalls of modernist planning have to teach us about contemporary large-scale coastal development plans, which are now hurriedly considered in Cyprus in the name of exiting the current economic predicaments of the country? Tourism development is yet again embraced as a panacea of economic recovery and sustainability, and the emerging proposals tend to present a rather dark prospect when they promote large-scale developments that favour economic over environmental goals. In this context, perhaps there is still something to be learned from the urban-scale strategies that shaped Famagusta's modern *leisure-scape*. Granting that *tabula rasa* approaches and the top-down, large-scale planning have proven dubious, and without wanting to idealize the 1960s interventions more than they deserve, we might draw on their plural architectural responses to climate and landscape, and the multiple design scales they employed to accommodate urban and leisure programs. One might even notice that in contrast to the single private foreign investments which are behind current large-scale developments, the leisure strategies of the 1960s facilitated small and middle-sized local capital engaging social actors at different levels. Such cautious assessments might prove helpful in searching for the future and heritage of modern *leisure-scapes* against current development strategies and tourist policies.

Caught as it is in the dynamics of uncertain political negotiations, Famagusta's future is still uncertain. But this uncertainty could enrich rather than hinder strategies for rethinking the heritage of *leisure-scapes* against the background of a divided society and currently dire socioeconomic situation. It is thus important to ask how can this mid-20th-century heritage relate to previous historical layers in the city? Might modernism's abstract aesthetic and its supra-national outlook still form an alternative to the type of religious or ethnic associations that historic buildings tend to have? Can the modernist aesthetics that were promoted by international and local actors in the 1960s, trigger contemporary strategies that avoid thematic traditionalism or empty formalism of some of the current *leisure-scapes*?

This paper does not expect an easy response to such questions, as much as it aimed to challenge the seemingly "laidback" nature of *leisure-scapes* by highlighting their complex intertwinement with ethnic, social and environmental conflicts. Drawing critical insights from the contested past (and, for that matter, the equally contested future) of Famagusta's *leisure-scape*, the paper ultimately points to the urgency to develop heritage strategies that need to avoid idealisations of the pre-

1974 past: strategies that will also try to negotiate the *leisure-scape's* intangible associations, the former inhabitants' memories, the city's current inhabitants' needs, and various stakeholders' future aspirations¹⁹.

NOTES

- 1 Varosha was abandoned by its inhabitants before it was captured by the Turkish military during the 2nd phase of the Turkish invasion, in mid-August 1974. Ever since it has remained sealed off, under the control of the Turkish military.
- 2 The description of Varosha as a "ghost town" is said to belong to the Swedish journalist Jan-Olof Bengtsson, who wrote an article in *Kvällsposten* newspaper in 24 September 1977, after a visit to the city: "The asphalt on the roads has cracked in the warm sun and along the sidewalks bushes are growing. Today – September 1977 – the breakfast tables are still set, the laundry still hanging and the lamps still burning. Varosha is a ghost town". See "Ammochostos (Famagusta) Municipality", accessed on February 12, 2016, <http://www.famagusta.org.cy/default.asp?id=341>. See also theoretical analysis of the "ghost town" condition: Paul Dobraszczyk, "Traversing the fantasies of urban destruction: Ruin gazing in Varosha", *City* 19, n. 1, 2015, 44-60 and Colin Sterling, "Spectral Anatomies: Heritage, Hauntology and the 'Ghosts' of Varosha", *Present Pasts* 6, n. 1, 2014, accessed on February 12, 2016, <http://www.presentpasts.info/articles/10.5334/pp.57/>.
- 3 "Epiphany in Famagusta (PHOTOS)", 06/01/2016, accessed on February 12, 2016, <http://in-cyprus.com/epiphany-in-famagusta-photos/>.
- 4 See for example Jonathan Gorvett, "Cyprus Hopes Reunification Talks Will Revive a Resort, Population 0", *The New York Times*, August 31, 2015, accessed on February 12, 2016, http://www.nytimes.com/2015/09/01/world/europe/cyprus-varosha-reunification.html?hp&action=click&pgtype=Homepage&module=second-column-region&region=top-news&WT.nav=top-news&_r=0.
- 5 See for an analysis of cinematic representations of Famagusta's leiscurescape the following chapter: Theopisti Stylianou-Lambert and Nicos Philippou, "Aesthetics, Narratives, and Politics in Greek-Cypriot Films: 1960–1974", in Costas Constandinides and Yiannis Papadakis (ed.), *Cypriot Cinemas: Memory, Conflict, and Identity in the Margins of Europe*, Bloomsbury Publishing USA, 2014, 91-117.
- 6 The local firm was the architectural office of Philippou Brothers, which had extensive practice in Cyprus at the time.
- 7 Press and Information Office (PIO), "Agreement on the lease of 'Golden Sands' Signed", Nicosia, September 10, 1969.
- 8 Patrick Garnett, project architect, explained that Makarios "considered this new project as very significant to Cyprus's new image", extract from P. Garnett's unpublished writings, Courtesy of Derry Garnett (London).
- 9 See Patrick B. Garnett, "A view of the sea", *Interior Design*, 1977 August, 437.
- 10 *Id.*
- 11 Attached as he was to modernist aesthetics, Garnett's search for local character ultimately boiled down to "evolving some simple new shapes in concrete which would solve practical problems such as corrosion and, at the same time, could result in giving the complex an individual architectural identification", *Id.*
- 12 Patrick B. Garnett, "Shape and form in Cyprus: the Golden Sands holiday hotel complex in Famagusta; Architects: Garnett Cloughley Blakemore & Associates", *Concrete*, vol. 9, n. 2, 1975 February, 26.
- 13 On the topic of leisure culture see Thorstein Veblen, *The Theory of the Leisure Class*. OUP Oxford, 2007 and Dean MacCannell, *The Tourist: A New Theory of the Leisure Class*, University of California Press, 1976.
- 14 Statistics are often used to verify the impact of tourism to the country's economic growth: Tourism contribution to Cyprus' gross domestic product increased from around 2.0% in 1960 to 7.2% in 1973. Also annual arrivals increased from 25,400 in 1960, to 264,100 in 1973. See Richard Sharpley, *Tourism Development and the Environment: Beyond Sustainability?*, Earthscan, 2009, 168-169.
- 15 See Sarah Whiting, "Lines Drawn in Sand: The Public/Private Urban Beach", *ANY: Architecture New York*, 1, 1993, 48-53.
- 16 *Ibid.*, 49.
- 17 Famagusta hosted in the early 1970s the 31.5% of the hotels and 45% of the total bed capacity of the island. Ammochostos (Famagusta) Municipality, accessed on February 12, 2016, <http://www.famagusta.org.cy/default.asp?id=341>.
- 18 For example, the 1969 short movie directed by A. Konstantinides titled "The Departure" [*I Fygi*], shows a man wondering as if in a dream in the Famagusta coastline. The scenes of the built tourist landscape are juxtaposed with scenes where the same man is freely enjoying unspoiled coastlines in the north of the Island.
- 19 Various stakeholders are expressing their aspirations for the city's future in various forms. See for example: "Famagusta Ecocity: a thriving centre", accessed on February 12, 2016, <http://in-cyprus.com/famagusta-ecocity-a-thriving-centre/>; "Hands on Famagusta", accessed on February 12, 2016; "Bicomunal Famagusta Initiative", accessed on February 12, 2016, <https://www.facebook.com/go4famagusta>.



CITIES



Reuse and Valorisation of Modern Architecture in Small Towns: Images, Plans, Strategies

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The debate over the historical centres (from Saverio Muratori, Gianfranco Caniggia, Pierluigi Cervellati and in particular from 1945 until the 1970s) is still today of great interest. It is particularly so in Italy and in Europe, especially at this historic moment when – also as a result of the crisis – there is a noticeable movement of populations towards the smaller centres that are often satellites of the large cities. It is not by chance that it was exactly Italy – with 22,000 historical centres in comparison with 8,000 municipalities – which pioneered this debate in order to move forward the politics and reflections about the reasons of depopulation and for the valorisation of historical centres, particularly with the intent to connect the city with the territory. In the following setting the *Associazione Nazionale dei Centri Storico-Artistici* (ANCSA) was founded in 1960 and successively promulgated the *Gubbio Charter* (*Carta di Gubbio*) that maintains attitudes partially conservative, partially innovative: historical centres and architectures are classified, aside from demolitions and new interventions. From the research carried out by Saverio Muratori it emerges that the old cities must be considered as a living and unitary reality and, exactly as with a living organism, it is necessary to conserve them in accordance with their particular characteristics and their quality in order to keep them alive, thanks to a continuous process of renewal: a building is a living organism within a larger organism represented by the city. It is from this growing awareness of the city, from this invitation to consider the concreteness and the central role of the architect that the plans for the historical cities are made evident – as in those for Como (Caniggia) and for Bologna (Cervellati) – and they are still today significant examples of methodology.

The field in which this session operates is the current one, with the aim of opening a reflection on the historical centres in an international context, ana-

lysing the problem in the current time through the presence of modern architecture in the small centres, a theme that has still not been adequately debated. In this sense it is necessary to consider the historical urban contexts and the town layers where modern architecture is present that was carried out by the architects who belonged to the Modern Movement or to the 1950s and 1960s. In these circumstances, the emerging modern architecture is not always understood and valued, resulting in buildings being abandoned, underused and at risk of being demolished.

In respect to this argument, the guidelines of the *Historic Urban Landscape* (HUL), which were set up by UNESCO in 2011, are useful to express a new point of view. They introduce a reading and interpretation of the historic urban landscape to be intended as a result of an historical layering, which integrates cultural and natural values to the objectives of conservation of the urban patrimony and to a social and economic development. According to this methodology the urban patrimony is considered as a social, economic, and cultural good for the development of cities with attention to the material and immaterial quality of the urban and civic life, simultaneously widening the concept of the historical centre.

The historical centre in its entirety can be considered as an element of identification, a sort of brand recognized on a national and international level. Furthermore, the inclusion of modern architecture with its presence in an historical context, layered and in some way controlled, acquires remarkable importance and prominence exactly for the urban identity and for the single citizens and communities it represents.

If a link between the historical centre and its modern architecture is thought possible, exactly through a vision of integrated progress, not only concerning a limited context, but rather by including a more ample discussion of territorial character, the architectural valorisation always remains an open debate. An interesting example of modern architecture valorisation in historical contexts is that of *Open House Slovenia* (begun in 2010). *Open House* is a festival dedicated to modern architecture adhered to by many European cities with annual appointments. Its aim is to spread awareness of modern architecture realized thanks to a large participation of the citizens. It should be noted that Slovenia is the only country that adheres to this initiative as an entire region and not as contributions from separate cities.

Still open is the challenge to comprehend how it is possible to give value and to confront the modern legacy in relation to little known contexts, so that promotion and management do not remain uncertain. The work undertaken in this session has concentrated on four examples from four diverse European regions – Croatia, Estonia, Norway and Italy – so as to be able to have different case studies that will enable us to shed light on the present situation.

The Croatian case presented by Lidija Butković Mićin concerning the Trogir Motel is interesting due to the participative strategy used in the valorisation of the complex. The Trogir Motel is, for Croatia, a fundamental example of modern

architecture designed in 1965 by the architect Ivan Vitić (1917–1986) one of the most important architects in the country. The participative process that was started by Loose Associations had the aim of sensitizing the local authorities, the citizens of the town of Trogir and the potential owners of the architectural and cultural significance of the building, in order to make them understand the building's importance and value for the entire community. In this way, starting from research and experience, it has been possible to valorise a building and an entire area pushed by an active participation with educational and artistic programs. The process used has now a value of a pilot project, which is certainly exportable, where art and education result in being mediators between the architecture and the citizens. Art has, in the following, a significance of becoming an integral part of the project of urban regeneration and has been able to attract, in unexpected ways, the attention of the media to an existing problem, therefore transforming it into an opportunity and a resource.

The absence of a specific function and consequently the oblivion of architecture as a symbol of a past to be forgotten, to the extent that they can become elements not integrated into the collective identity, is represented by the case of the Estonian collective farms. The example offered by Laura Ingerpuu highlights how the perception of architecture and its acceptance by part of the population has changed in the course of recent history, following the fall of the Soviet Union and between the 1960s and the 1980s with changes linked to the economy. If for a long period the administrative buildings of the collective farms (*kolchoz* and *sovkhoz*) were points of reference on a territorial level, the shift from an agricultural economy to a different arrangement and consequently a social change has emptied the buildings of any significance. The three cases proposed for study: the administrative building of the Kurtina Experimental Poultry Farm (1965 – 1966) of Valv Pormeister, the office building of Luemanda State Farm (1977 – 1986) of Veljo Kaasik and the administrative building of Tsooru Collective Farm (1969 – 1977) of Toomas Rein are also examples of European architectural models circulating in an unexpected context.

The post-war period gave an opportunity for reflection on the theme of identity in a context where it was necessary to harmonise the needs of reconstruction and of an economical recovery with that of re-appropriation of one's own history.

Norway's city of Elverum, is a case of planning and reconstruction after the WWII conflict and of the questions that emerged over such reconstruction. Kristian Reinfjord analyses the case of this city completely reduced to rubble that was reconstructed after 1946, in large part using materials like concrete, therefore completely discordant with tradition. However, it was exactly this city which had to be entirely rebuilt that gradually becomes the example of a contemporary modernism in which new materials are used alongside the traditional ones expressing a symbol of a new democracy.

Cerignola (Italy), a case studied by Raffaella Maddaluno, is one of the first interventions proposed by the INA-Casa plan to be considered as an opportunity

for experimentation. Entrusted to Mario Ridolfi and Wolfgang Frankl, it is considered as a methodological case of integration, addressed in the Italian tradition, that for a while has had a greater regional value, than an international one, due to the attention to local materials and to the community's needs. Ongoing is the debate on the restoration strategy of this example of architecture, for the definition of new guidelines that take into consideration the constructions' original composition, but also the changes to be made for the inhabitants' needs.

Motel Trogir Project: Protecting Croatia's Post-WWII Architecture

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The Motel Trogir project was launched in 2013 by Loose Associations – the association for contemporary art practices, and its associates (Nataša Bodrožić, Lidija Butković Mićin, Diana Magdić and Saša Šimpraga) was a civil campaign focused on the motel built in Trogir in 1965, designed by Ivan Vitić, one of the most prominent Croatian architects of the 20th century. Vitić's motel is one of the rare examples of outstanding modern architecture in Trogir, a mid-Dalmatian coastal town with approx. 13 000 permanent inhabitants, of which approx. 1000 live in its historical centre that is inscribed on the UNESCO World Heritage List since 1997. The project includes many activities and was developed around a specific methodology which can be best described as a combination of civic activism and scientific, public and educational work including the curating and promotion of contemporary art projects. One of the main project goals was to ensure motel's formal recognition and protection by the planning authorities, which was successfully secured: the motel in Trogir was included in the List of Protected Cultural Goods of the Republic of Croatia in 2013, and in 2015 also the motel in Rijeka, a variant of the same original design by Vitić. By focusing on the qualities of the architectural concept, and its significance for the history of tourism in Trogir and for the town's community life, the project seeks to oppose the dominant media narrative which views the motel area strictly in the light of its present, dilapidated state, thereby implicitly advocating the radical solutions conforming to the appetites of potential investors. In this respect, the Motel Trogir project also broached the subject of the social value of the still often stigmatised Socialist era's tangible heritage – not only for the purpose of canonizing specific structures or architectural complexes, but also in order to preserve the cultural memory and social affirmation of modernism and its influence and current significance.

1. THE MOTEL TROGIR PROJECT / ORIGINS

Late modernist architecture dating from the highly productive period between the 1950s and the 1980s, during which Croatia was part of the Socialist Federative Republic of Yugoslavia (SFRY), has only in the last ten years become a subject of interest to the state monument protection administration – an interest expressed unevenly and then primarily in the larger urban centres. For instance, the City Institute for the Protection of Cultural Monuments and Nature of the City of Zagreb has so far placed approximately thirty representative examples of post-WWII modernism under its protection, thus taking the lead on the national level, in terms of the number of protected monuments. Whereas in Split, where a more systematic registration of the structures dating from the interwar modernist period has already been established, the registration and protection of more recent architectural achievements has only just begun.

This part of the country's architectural legacy is still neglected – “a heritage without an heir”¹ – and all too often has been subjected to inadequate adaptation or accelerated decay due to insufficient (or non-existent) formal legal protection, undeveloped social awareness or questionable privatisation procedures which



FIGURE 1. Ivan Vitić, Motel *Sijeme*, Trogir, Croatia, 1965. © Croatian State Archives, Rendulić, 1966.

took place in the 1990s. The situation is especially difficult in smaller towns, particularly those with a rich architectural heritage where experts and conservation practitioners are focussed on monuments from earlier historical periods, thereby leaving the overlooked modernist architecture vulnerable. The Motel Trogir project, of the non-governmental organisation Loose Associations², has become one of the projects the domestic non-institutional arena undertaken by the civil society associations which have recognised the need for stronger engagement in this field. Primarily this is in order to compensate for the lack of institutional care, but it is also to broach the subject of the social value of the still often stigmatised Socialist era's tangible heritage – not only for the purpose of canonizing specific structures or architectural complexes, but also in order to preserve the cultural memory and social affirmation of modernism and its influence and current significance. The direct incentive for the participants of Motel Trogir project was provided by the publicity campaign for inscribing the former *Sijeme* motel in Trogir, built in 1965, on the List of Protected Cultural Goods of the Republic of Croatia,

which proved successful. The motel in Trogir was granted the status of a permanently protected cultural item in 2013. The same status was granted to the motel in Rijeka in 2015, a variant of the same original design by Ivan Vitić, whereby it became the first architectural monument under formal protection built after the WWII in Rijeka and its surroundings.

2. CASE STUDY: TROGIR AND THE *SLJEME* MOTEL BY IVAN VITIĆ

Trogir is a mid-Dalmatian town with approximately 13,000 permanent inhabitants (including its immediate surroundings), of which approximately 1000 live in its historical centre. In 1997, it was inscribed on the UNESCO World Heritage List owing to the preserved condition of its original medieval urban matrix and its architecture ranging from the Romanesque to the Baroque period, with minimal interventions and these primarily of a more recent date. The existence of an exceptionally well-preserved medieval centre has undoubtedly deferred the public reception of a more modern type of architecture.

Architecture with proto-modern and modern characteristics appeared just before WWI, first on the neighbouring island of Čiovo (the tobacco processing plant administrative building) and in the city's land surroundings (privately owned villas with Vienna Secession characteristics), as well as a result of the investments of the Italian administration in social housing (such as the so-called *Case minime* on Čiovo, by architect Amedeo Luccichenti, 1942/43)³. Architectural modernism fully took hold only after the WWII, spurred by a wave of Socialist modernisation, that is, by public investments in the construction of industrial, residential, educational, health, cultural and recreational facilities. The transformation of the Trogir riviera into a tourist destination was an important pillar of social prosperity. Its final precondition was fulfilled with the completion of the Adriatic Highway in 1965, which marked the opening of the coastline to a mass tourist market and the reorientation of Yugoslav tourism towards foreign visitors. Simultaneously with the completion of the highway's final sections, along its route, i.e. in Preluk near Rijeka, Biograd and Trogir, motels were opened, owned by the domestic agricultural industrial combine *Sljeme*, and were designed by Ivan



FIGURE 2. Ivan Vitić, Motel *Sljeme*, Trogir, Croatia, 1965.
© Trogir City Museum.



FIGURE 3. Ivan Vitić, Motel *Sljeme*, Trogir, Croatia, 1965,
current condition. © Duška Boban, 2015.

Vitić (1917-1986.), one of the most distinguished Croatian architects of his generation. He designed the first project, which was to become the blueprint for this series of motels, in 1962 for an investor in Trieste. The Trieste project was then altered for the purposes of the *Sljeme* combine, most notably by significantly reducing the scope and number of different elements⁴.

The motel in Trogir is located at the western entrance to the city's historical centre and consists of a dispersed spatial ensemble of several low-rise volumes connected by covered walkways and driveways. From today's perspective, the value of this achievement is particularly evident from the balanced relationship achieved with the immediate environment – derived from a sustainable model of land management in the former system of public ownership – that is, from a low level of development of each allotment and the positioning of the motel complex away from the coastline⁵. Furthermore, although the motel is an undoubtedly modern work, involving abstract pure geometric forms and a rational approach to the project task, it does not lapse into sterility and formalism, but makes reference to the local conditions by co-opting elements of the regional architectural tradition, such as stone masonry and wooden blinds. During the 1950s and 1960s, Vitić became known for designing some emblematic examples of the creative extensions of Dalmatian cities through bold, modern architecture. His approach moved between adaptation and contrast with respect to the given context⁶. For the *Sljeme* motels the author received the annual award of the *Borba* daily paper for the best architectural achievement in Yugoslavia in 1965.

3. CREATION OF A PUBLIC / PROJECT STRATEGIES

The publicity campaign for the protection of Vitić's motel emphasized the inherent qualities of this architectural project and its significance for the history of tourism in Trogir and for the town's community life. Its purpose was to inform the local and wider public, the Trogir city authorities and even the potential owners (who are still resolving disputes over ownership in court) about the unquestionable architectural and cultural merit of Vitić's motel and its special status as one of the rare examples of outstanding modern architecture in the city. By insisting on the positive aspects, the campaign sought to oppose the then dominant media narrative which presented the motel area strictly in the light of its present, dilapidated state, thereby implicitly advocating the radical solutions conforming to the appetites of potential investors. One of the project goals was to achieve cultural listing, thus ensuring that the motel and its surrounding area could be understood and treated as a single monument whose renovation would have to be carried out according to establish principles of conservation, i.e. respecting the original architectural plan and the existing spatial relations. By employing the strategy of obtaining support from renowned experts, informing the public via the media and social networks and partnering up with local associations involved in heritage activism⁷, efforts have been successful in shifting



FIGURE 4. Ivan Vitić, Motel *Sljeme*, Trogir, Croatia, 1965. © Duška Boban, 2015.

the public discourse towards constructive ideas and the articulation of a socially responsible position, as opposed to the privatisation of spatial policy management. The project has developed a specific methodology which can be described as a combination of civic activism and scientific, publicist and educational work, as well as curating and producing contemporary art projects. An important part of the preservation strategy is the continuous organization of cultural events and replicating its image of the endangered site through social media, publications and public posters for these events. In this way it has been possible to oppose “the strategies of decay” which seem to be prevailing nowadays in order to liberate the ground for possible new construction.

In 2014, an international public call for proposals for the production of several site-specific artworks was launched. The artists were invited to undertake an examination of the problem of public spaces in Trogir focusing in on the town's identified neuralgic points, i.e. the motel area and the adjacent former camping site Soline devastated as of the late 1980s, and the Garagnin family neoclassical garden that has been severely neglected despite it being formally recognized as a cultural monument since 1960s⁸. The emphasis on art events has continued with the help of international partners which resulted in a research residence for six domestic and foreign artists, for the purpose of presenting their work at *Mediterranea 17 Young Artists Biennale* (BJCEM) in Milan in October 2015 (the *Alice Doesn't Live Here Anymore* project)⁹. Furthermore, public discussions and lectures were held along with guided tours of the site for citizens and exhibition projects aimed at familiarizing the local public with the modern architectural heritage wider of the Adriatic region. In 2015, the Trogir City Museum hosted the critical historical exhibition *Tourism During Socialism and After* by Michael Zinganel (presented earlier in Graz, Berlin and elsewhere, including Rijeka in Croatia) and *Modern Architecture of Trogir* by Lidija Butković Mićin proposed and funded through the Motel Trogir project. The latter is the result of pioneering work on the document-

ing and scientific analysis of the architecture of Trogir in the period from 1945 to 1990. Thus project includes the mapping of the coordinates of significant urban development after WWII. This exhibition project was motivated by a desire to add a broader perspective to the ongoing public dialogue about the future of Vitić's work, as well as raising public awareness and respect for the modern architecture of the Trogir area, and to gain support for the need for systematic research and preservation of this part of the town's architectural legacy.

Events of this kind constantly generate and occupy the media space in relation to the participation of the local community in the decision-making processes concerning the built environment and in the creation of conditions for a more recognized status of modern architecture. By the time of the project's completion, we would like to see a statement such as "Vitić's motel in Trogir is as an important part of the local environment's identity as the medieval and Renaissance monuments"¹⁰ become a self-explanatory fact.

NOTES

- 1 The term was coined in 1960s by Milan Prelog, PhD (1919-1988), a prolific Croatian art historian and an outspoken advocate for the preservation of historic architectural monuments endangered by the large infrastructure projects and urban development in Croatia's coastal towns and villages due to accelerated economic growth. It has since become widely used in public debates that aim to point out any part of Croatia's national heritage that has succumbed to neglect by the proper authorities or/and the general public.
- 2 The project was developed in 2013 by Loose Associations – the association for contemporary art practices – and its associates (Nataša Bodrožić, Lidija Butković Mičin, Diana Magdić and Saša Šimpraga), with the financial support of the Ministry of Culture of the Republic of Croatia, the City Office for Education, Culture and Sports of the City of Zagreb and the Kultura Nova Foundation. Information on the project activities is available at the official website of the association (<https://slobodneveze.wordpress.com>) and the project (<http://motelitrogir.tumblr.com>). The first publication has also been released, under the title *Motel Trogir: it is Not Future that Always Comes After*, Zagreb, Loose Associations, Eidhoven, Onomatopoe, 2016.
- 3 Further reading: Stanko Piplovic, *Graditeljstvo Trogira u 19. Stoljeću*, Split, Književni krug, 1996; Dražen Arbutina, "Architectural Work of Italian Architects Amedeo Luccichenti and Vincenzo Monaco in Croatia", in *Prostor*, Zagreb, Faculty of architecture, University of Zagreb, 2012, 296-309.
- 4 Vitić's Adriatic motels have recently been the object of keen scientific interest instigated in the large part by Motel Trogir project's efforts. Further reading: Tomislav Pavelić, "Vitić's Motels – Trieste, Umag, Rijeka, Biograd, Trogir", *Arhitektura*, Zagreb, Croatian Architects' Association, 2006, 95-103; Melita, Cavlovic, "The Motel and the Adriatic Highway", in *Motel Trogir: it is not Future that Always Comes After*, op. cit., 66-83; Lidija Butković Mičin, "Between the Road and the Sea", in *Motel Trogir: it is Not Future that Always Comes after*, op. cit., 86-107.
- 5 Urban planning on the eastern Adriatic coast and its tourism-related development during the Socialist Federal Republic of Yugoslavia has been extensively covered in Croatian and foreign publications. See: Vladimir Mattioni, *Jadranski Projekti: Projekti Južnog i Gornjeg Jadrana: 1967-1972*, Zagreb, Urban Planning Institute of the Republic of Croatia, 2003; Luciano Basauri, Dafne Berc, Maroje Mrduljas, Dinko Peracic, Miranda Veljagic, "Constructing an Affordable Arcadia", in *Unfinished Modernisations: Between Utopia and Pragmatism*, Zagreb, Croatian Architects' Association, 2012, 348-369; Hannes Grandits and Karin Taylor (ed.), *Yugoslavia's Sunny Side: A History of Tourism in Socialism (1950-1980)*, Budapest-New York, Central European University Press, 2010; Michael Zinganel, Elke Beyer and Anke Hagemann (ed.), *Holidays after the Fall: Sea-side Architecture and Urbanism in Bulgaria and Croatia*, Berlin, Jovis, 2013.
- 6 Vitić's prominent interpolations include those in his native city of Šibenik: the Simo Matavulj (today Juraj Šizgorić) Elementary School (1952), the Jadran hotel (1957-1959), the city hall (1952-1960) and the Yugoslav People's Army Garrison (1960/61). Further reading: Vera Grimmer, "A Radical Dialogue", in *Arhitektura*, Zagreb, Croatian Architects' Association, 2006, 79-93.
- 7 A permanent partner of the Motel Trogir project is Radovan – Society for the Protection of the Cultural Monuments of Trogir, founded in 1988 (Danka Radić, Ph.D., is the current president), which publishes its own magazine, analyses and, if necessary, critically reacts to current urban-planning and conservation plans, as well as construction projects in Trogir's historical centre and surroundings, in an effort to prevent the urban degradation caused primarily by the excessive exploitation of the city for the purposes of tourism.
- 8 In November 2014 an one-day art event open to the public was held featuring site-specific projects by the artists selected through the open invitation: Marko Gutić Mižimakov, Ana Zubak and Neli Ružić. With the support of Goethe-Institut Croatia, in June of the following year a fictional city tour/performance was organized by Katharina Zimmerhackl.
- 9 Croatian and international artists have been invited through an open competition to reflect on the topic of motel Trogir as a modernist building and the social context which formed it. The selected artists were Igor Juran, Bojan Mrdenović, Ana Zubak, Nuša Jelenec, Gaja Mežnarić, Sandra Fruebing and Sonja Jankov. More information is available on Mediterranean 17 official website: <http://mediterraneabiennial.org/17-no-foods-land/motel-trogir-alice-doesnt-live-here-anymore>.
- 10 Statement from a letter of support to the project from Silva Kalčić, PhD, art historian and the executive editor of a monograph on Vitić: *Arhitektura*, Zagreb, Croatian Architects' Association, 2006.

The Past and the Future of the Soviet Rural Architecture in Estonia

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The administrative buildings of collective farms (*kolkhozes* and *sovkhozes*), which form an important part of the Soviet Estonian rural architecture, became a phenomenon in the whole Soviet Union between the 1960s and 1980s. This type of prominent building was unusual in the architecture of the small towns and rural settlements due to its distinctive and non-standardized design. After the collapse of the Soviet Union and the abolishment of the collective farming many of the former administrative buildings, which used to be the icons of a region, were neglected, abandoned and left to decay for several years. Today, the main difficulty lies in the question of their reuse and maintenance since a large number of the former office buildings are in a poor physical condition and an effective new function has not been found for many of them. Recognition of these buildings as a non-questionable part of Estonian architectural history of the second half of the 20th century plays an essential part in their preservation. This article, based on three case studies (i.e. three different administrative buildings of collective farms from different regions in Estonia), aims to present the challenges regarding their valorisation, preservation and reuse in the context of a changed society and ownership relations.

1. INTRODUCTION

The administrative buildings of collective farms (*kolkhozes* and *sovkhozes*), which form an important part of the Soviet time rural architecture, represent an outstanding built legacy in Estonian small towns and rural settlements. The heyday of these buildings ended with the collapse of the Soviet Union and the abolishment of the collective farming. Despite the fact that a proper new function has not been found for several former office buildings and many of them are in a quite poor physical condition today, they still play an essential role in Estonian architectural history that should neither be ignored nor forgotten. The present article concentrates on the issue of how changes in the society have altered the value judgements towards these originally highly appreciated office buildings of the collective farms and how this has influenced their current situation and future perspectives.

After the incorporation of Estonia into the Soviet Union the collectivization of agriculture was forcibly imposed. The implementation of the new agricultural production system brought along large-scale construction works in the rural areas. Next to the agricultural production buildings and dwellings for the workforce, offices were needed for the management of the collective farms. More than 300 collective farms were operating in the Soviet Estonia at the end of the 1970s¹ and many of them had a new building built for their administration between the 1960s and 1980s that meant the arrival of modern architecture to the small towns and rural areas.

The administrative buildings soon became a phenomenon of the rural architecture of the Soviet Estonia. Despite the fact that the construction policy was similar everywhere, the prosperous collective farms had more finances to implement more ambitious ideas². In 1966, a new architecture bureau EKE Design (*EKE Projekt*), which designed mainly for the collective farms, was created. Despite the fact that EKE Design was also based on cooperative ownership, there was more freedom and flexibility for both architects and builders³. Furthermore, the wish of the management of the collective farms to outdo each other, resulted in the creation of real avant-garde architecture with gables, towers and irregular-shaped windows⁴. Due to their uniqueness they became a phenomenon that was known not only in the Soviet Estonia but in the whole Soviet Union and also in the Western countries.

The office buildings of the collective farms did not only serve an administrative purpose, frequently other facilities were also placed there, such as a restaurant, library, healthcare services, post office etc. Eventually they became the community centres, where different social activities were held, such as theatre performances, sport activities or parties. Due to their societal, as well as social, function the administrative buildings became popular among the local people and workers of the collective farms; their attractive architecture and design made them the icons of the region.

After the re-establishment of the Republic of Estonia in 1991 the agricultural system was restructured, which meant that the Soviet rural way of life ceased to exist and the initial function of most of these specialised buildings was lost. Not all of the edifices received a new suitable function, some were only partially used or left to decay. Over the years, the Soviet-time poor quality building, including the extremely low energy efficiency as well as the poor quality building materials, have begun to take stronger effect on the physical condition of the edifices. The demographic changes, where by many of the former workers of collective farms moved to the cities and the overall population in the small towns and rural areas has decreased considerably over the years, have had a direct impact on the wealth of the municipality and consequently influence the reuse of the built legacy today. Additionally, after the change of the state regime the negative memories from the troubled past were transferred to the built legacy and the buildings, which used to express the opposition to the undesired regime, became instead representative of the Soviet system and therefore were ignored or even despised by many people.

2. THREE CASE STUDIES

The following part of this article focuses on three case studies through which the problems of reuse and valorisation are analysed in the context of changes in the society and ownership relations. The studied cases are: the administrative building of Kurtna Experimental Poultry Farm, built in 1965-66 and designed by

Valve Pormeister (hereinafter Kurtna); the office building of Lümända State Farm, built in 1977-86 and designed by Veljo Kaasik (hereinafter Lümända); and the administrative building of Tsooru Collective Farm, built in 1969-77 and designed by Toomas Rein (hereinafter Tsooru). Similarities as well as differences in the past and present can be found in all the three cases, however they illustrate well the overall situation and the problems regarding all the former administrative buildings of collective farms in Estonia.

All three examples are architecturally fascinating buildings. Kurtna, designed in the spirit of Scandinavian modernism⁵, was a real masterpiece of the time due to its "cornice architecture" and its Mies van de Rohe-like roots and its Aalto-like fan-shaped assembly hall.⁶ Lümända represents a mix of modernist and post-modernist styles with the main characteristic feature of dolomite tiled pylons in front of the main entrances that give a strong effect to the simple façades⁷. Whereas Tsooru, inspired by a Finnish modernism, was with its snow white façades and ribbon windows a great reinterpretation of the functionalist ideas of the beginning of the 20th century⁸. The three edifices that were representing an alternative approach in the strict and standardized society became admired and praised by the public immediately after their completion.

As a result of the liquidation of the collective farms the three buildings faced a different fate that partially depended on their location and architecture and partially on the business plan and the initiative of the new owner. Compared to the other two, Kurtna, which is located 25 km outside of the capital city, is an example of a fairly successful functional adaptation. Despite the fact that for several years the edifice was abandoned, it was brought back to life by the private limited com-



FIGURE 1. Valve Pormeister, the administrative building of Kurtna Experimental Poultry Farm, Kurtna, Estonia, 1965-66.
© Laura Ingerpuu.

pany that bought the building. Today the former administrative building of Kurtna, which is in seasonal use, providing facilities for conferences, parties and trainings as well as for accommodation, functions very well. Lümānda, located on the biggest island of Estonia, was appropriated by the local government and has been serving as a municipality building, community house, library and post office to the present day. Whereas Tsooru, which is situated in the South-Eastern part of Estonia and in a very remote region with rapidly declining number of residents, has fallen into



FIGURE 2. Veljo Kaasik, the administrative building of Lümānda State Farm, Lümānda, Estonia, 1977-86. © Laura Ingerpuu.

ruins. The owner of Tsooru, who bought the building in the 1990s, has argued that since his plan to convert it into a retirement home did not get funding from the government and was therefore never implemented, there was no longer a functional perspective for such a specific building⁹. Nevertheless, the Kurtna example demonstrates that it is possible to adapt a specific building to a completely new and sustainable function if the owner has the will. In fact the remote and isolated location in a small picturesque town or in a rural settlement close to nature may be even an advantage for the adaptive reuse of a specific building; for example, to be adapted for the purpose of tourism as a hotel, a tourist farm, a spa, etc.

It might be argued that the reuse and preservation of a municipality owned building would be much simpler as the public institution is a more stable owner, however the reality is different. The case of Lümānda, which is used for public activities, indicates that there are still many challenges regarding its maintenance that depend on the financial capabilities of the municipality. The local government of Lümānda has claimed that erecting a new municipality house is as expensive as a complete renovation of the old administrative building and, since the new edifice is seen as more valuable, it is preferred to demolish the old one. The local government is even against the process initiated by the Estonian National Heritage Board to list Lümānda as a cultural monument because it would hinder the plan of demolishing it¹⁰. While no municipality would think of demolishing a couple of centuries old building situated in their administrative territory, the demolition of a former Soviet architectural gem is often considered without further thought. This approach demonstrates that the question does not always lie in the fact of who is the owner or what are his financial capabilities, but actually in the attitude towards the Soviet built legacy that is valued differently from the architecture of earlier periods.

Despite the fact that in 1997, when Tsooru was included on the list of the most valuable Estonian 20th century buildings composed by the Estonian national



FIGURE 3. Toomas Rein, the administrative building of Tsooru Collective Farm, Tsooru, Estonia, 1969–77. © Museum of Estonian Architecture. Unknown photographer.



FIGURE 4. Toomas Rein, the administrative building of Tsooru Collective Farm, Tsooru, Estonia, 1969–77. © Laura Ingerpuu.

working group of **docomomo** and the National Heritage Board of Estonia excluded the possibility of listing it as a building of merit¹¹, Soviet architecture has begun to be more broadly acknowledged in Estonia today. However, while the architectural, historic and aesthetic values have begun to be recognised by the experts and people dealing with heritage conservation, the general attitude of the “ordinary” people is still simply linked to the appearance and functionality of an object. Up until now only two administrative buildings of collective farms have been inscribed on the Estonian National List of Cultural Monuments. One of the two is Kurtina, which interestingly was listed already in 2001 – many years before the wider acknowledgement of Soviet architecture had even begun. Although the building has been a cultural monument for many years, it is not advertised among other objects as the symbol or an attraction for the region on the website of the municipality¹²: this also indicates a lack of knowledge or interest of the non-experts. As regards Tsooru, there are only a few local activists, who are interested in preserving and restoring the now ruined office; the local government does not concern itself as it is privately owned edifice and in the eyes of many of the local people the non-functioning building should be demolished. As long as the building is well kept and in use, it is seen as a useful edifice, but when the building is abandoned and decayed it is usually considered to have no value.

Very often the most recent built legacy is not seen as something valuable and worth of preservation since it is still “young” and, as regards Soviet architecture, the memories from the unpleasant past also play a role in the evaluation process. Even if the administrative buildings of collective farms are valued at the expert level who are also responsible for raising awareness of their architectural historic values, it still takes time for the general public to re-value them as a symbols of their time and to appreciate them as an important part of the history. Until the time when Soviet architecture is recognised as equal to the architecture of older eras, the challenge of the preservation and reuse of these former masterpieces will remain.

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NOTES

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- 2 Liina Jänes, *Valve Pormeister: 1922-2002: Eesti Maa-arhitektuuri Uuendaja* [Valve Pormeister: 1922-2002: Modernizer of Estonian Countryside], Tallinn, Eesti Arhitektuurimuuseum, 2005, 44.
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- 9 Interview with the previous owner of the administrative building of Tsooru Collective Farm, March 9, 2015.
- 10 Raido Kahm, "Lümada ei Taha Keskusehoonet Mälestiseks" ["Lümada does not want the administrative building to become a monument"], *Saarte Hääl*, December 23, 2014, accessed on April 22, 2015, <http://www.saartehaal.ee/2014/12/23/lumanda-ei-taha-keskusehoonet-malestiseks>.
- 11 Mart Kalm, "Collective Farms of Soviet Estonia: Promoters of Architecture", *op. cit.*, 32.
- 12 Internet website of Saku Municipality, Saku Municipality, accessed on April 23, 2015, <http://www.sakuvald.ee/aktiivne-puhkus>.

Democratic Ideas in Concrete: Protection and Valorization of a Modernistic Building Environment in Norway

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The small Norwegian town of Elverum was bombed during the first days of WWII, and the former *jugend* style city was reduced to rubble in the blink of an eye. Rebuilding of several Norwegian cities after 1945, such as Molde, Steinkjær and Elverum resulted in holistic building environments based on modernist principles in architecture and town planning. Famous Norwegian architects were used, creating “new” towns from scratch throughout Norway. For architectural historians and cultural heritage management, such buildings and milieus are thought of as valuable monuments of WWII and its aftermath. Here democratic ideas and confidence in the future are expressed in concrete and modernistic building expressions. However, modern buildings of the 1950s have, until lately, been seen as ugly and as reminders of unwanted history by the general public. Based on the quality of the complete environment, such as in Elverum, cultural heritage management in Norway has communicated, and stimulated new uses, in order to change the reputation of the architecture of the post-war reconstruction period, according to local government and the citizens of the small town. A strategy of communication of social and historic values of the buildings is used together with seeing the rebuilt city centre’s architectural values in the context of when it was built. In 1946, and onwards, these buildings were seen as democratic ideas in concrete.

1. INTRODUCTION

The small city of Elverum, located in the Eastern part of Norway was bombed in the early days of April 1940. The whole city centre was destroyed, and 70 larger buildings, former shops, apartment blocks and public monumental buildings were crushed to rubble. In 1946 a new city plan of Elverum was enacted and rebuilding of the city began. Due to shortages of building materials, rationing and few resources, provisional timber buildings were erected, later replaced with modernistic concrete structures. The rebuilding of Elverum was completed with the opening of the city hall in 1958. As we shall see, concrete buildings represented a new start and a bright future when built, but were, from the 1970s, seen as ugly, cold and monuments of unwanted history. Antiquarians have in recent years worked on turning around the reputation of this architecture, and communicated that these buildings are valuable heritage.

In Norway, architectural heritage worth preserving, was, until recently, associated with stave churches, medieval lofts and older buildings from throughout the country. Early antiquarians embraced timber buildings as a part of creating and legitimizing the new national state of Norway in the middle of the 1800s. It is, therefore, in discussions on preservation, in some ways harder to argue for preservation and development of heritage from the post war area. Most people will argue that the beautiful, useful and old is worth preserving, and only that. Even



FIGURE 1. Elverum City hall, 1959. © Erling Syringen, Glomdalsmuseet.

though this is often a subjective argument, building antiquarians in Norway are met with such assertions. And architecture of the re-creation of Norwegian cities after WWII falls into this category. However, the rebuilt sites of Norway, and their architecture, were, in the 1950s and 1960s, had a good reputation and were thought of as high quality buildings. After about 1970, the cities were seen as ugly and dull¹. This viewpoint has been, in Elverum, unchallenged until recently. Now the rebuilt city is seen as a unique heritage site worth preserving.

Modernistic architecture is not seen as cultural heritage by most people in Norway. To get the commune, owners and users of Elverum to recognize the heritage value of their city, a fairly easy strategy is chosen. The social, architectural ideas behind the buildings are communicated, not only in print, media and meetings, but also in the regulation plans from the redevelopment of the city. To grasp the effect of this strategy, one needs to be aware of the cognitive content of the rebuilt architecture, embedded in facades, material use and the social context of the 1940s and 1950s.

2. MODERNISTIC ARCHITECTURE OF ELVERUM

In the winter of 1946 a new city plan of Elverum was enacted by the city council stating that rebuilding of the city centre should be started, based on local building traditions, to preserve the city's distinctiveness. Earlier, the planner in charge of rebuilding, Sverre Pedersen had, together with occupation forces, designed a new city plan in 1942. This plan radically changed the city layout, and was, after the war, seen as too German, and it carried connotations not welcome in 1946.

The rebuilt town became something completely different, modelled as a symbiosis of modernistic concrete architecture and local traditions. Elverum became a unique small town and a witness of the thoughts of an optimistic future in the late 1940s. Rebuilding also took advantage of the original plots and streets.

The rebuilt architecture of Elverum is characterized by clean simple lines, with only modest decoration. Built in reinforced concrete, and local granite, oak and stone slate roofs, the buildings contrast with the former buildings in every way. Wrought iron is used in details in front of windows, and in other minor details². All re-erected buildings serve the same functions as before the war. Even though the buildings are larger and could house more people and shops, the same street patterns and plots were used. Usually, in Norwegian rebuilt cities, new street grids were laid out before rebuilding the towns in a modernistic urban way. This was not done in Elverum.

The city commune of Elverum has now regulated their rebuilt post-war architecture for preservation according to the Plan and buildings act, but when owners suggested rebuilding, changing facades or building near to these buildings, politicians voted for destructive works on the buildings, reducing their heritage value. As authorities on cultural heritage, antiquarians of the Hedmark municipality developed a strategy for preservation of the post-war architecture of Elverum. What has been fruitful for their preservation was to change the reputation of the modernist buildings.



FIGURE 2. Skogbrukets hus, ca. 1960. © Erling Syringen, Glomdalsmuseet.

3. COMMUNICATING ARCHITECTURAL CONTENT AND CONTEXT

Rebuilding of the Norwegian cities after WWII, were by law to be inspired by Norwegian vernacular architecture. Rebuilding architecture facades and external expression was tied to the local building customs³. The ideal building was inspired by the common Norwegian tradition, and every project had to be approved by the government. The Norwegian ideal was maybe a reaction to the German invasion, and these esthetical and practical details should mark both exteriors and interiors. The after war buildings should be better than the old ones, and were markers of the new, modernistic zeitgeist. The commune wanted to build something new, neither functionalistic like in the 1930s, or like the former *jugend* style. Buildings also had to resemble and mark their environment⁴. To safeguard these ideals, type drawings were produced for rebuilding in the country-side and suburbia, for building in timber.

The early fifties were marked by an optimistic attitude towards the future, where rebuilding bombed cities was seen as a golden opportunity to correct earlier mistakes in architecture⁵. The thinking regarding rebuilding in Norway was compatible with timber vernacular architecture, for instance, as seen in northern Norway after WWII. However, this caused problems when rebuilding cities where one should build in concrete, a material intrinsically seen as international. Buildings rebuilt in Elverum were tied to commerce and public functions, and could be more international, it was thought. Odd Brochmann wrote in 1940 that: "the modern shop is just as international as the concrete itself"⁶.

Rebuilding city centres in concrete fell outside building "true Norwegian" in timber. Even though such viewpoints were criticized by the 1940s' contemporaries, there were strong international tendencies in Norwegian monumental architecture after WWII. New ideals in architecture and functional necessities were starting to point in rebuilding the city centre of Elverum, where modern building techniques and materials expressed the new city⁷. Public squares and axial broad roads were important features in the rebuilding of Norwegian cities⁸. Public buildings were built in a grand scale and were supposed to over-shine the remaining houses in the city in the 1950s, maybe as a response to occupation, and to underline the social democratic government of the area. Concrete became a symbol of the modern area. In the book *Norwegian Architectural History* it is stated that: "before the WWII, modernism had established itself as a superior principle of the democratic society"⁹. Concrete resulted in new visual expressions in Norwegian architecture and became an expression of belief in modern times, and it is reasonable to believe that the symbolic effects of concrete contributed to a cognitive reconstruction of modern Norway.

4. CONCLUDING REMARKS

The rebuilt post-war architecture in the small city of Elverum was, from the 1970s, thought of as ugly and cold. Inhabitants, politicians and even the commune did not see the value of these modernist, in our eyes, magnificent and interesting buildings. In order to communicate the heritage values, it has been most fruitful to state and recognize those heritage values based on the cultural history of this architecture. By communicating the architecture's cognitive content and context, the buildings, previously seen as cold boxes in concrete with staring windows, became interesting ideas of democratic ideas in concrete that the people of Elverum again fell in love with.

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- 1 Robert Øfsti, "Steinkjær. Ein Retrospektiv Omdømmestudie av en Gjenreisningsby", in *Fortidsminneforeningens Årbok*, Oslo, 2015, 184.
- 2 Descriptions on the building's technical details are based upon observations on site and the building descriptions by the architects for Elvarheim: Torp, E. og L. Torp, 1953, *Byggebeskrivelse for Elvarheim tilhørende Elverum kommune ved arkitektene Torp & Torp*.
- 3 Helga Stave Tvinnereim, *Det nye Molde. En Studie av Gjenreisninga etter Bombinga i 1940 på Bakgrunn av – Ulike Retningar innen Europeisk Byggekunst med Særleg vekt på Professor Sverre Pedersens Planarbeid for Norske byar og Tettstader*, Trondheim, 1986, 335.
- 4 "Functionalistic, in the right manner of the word, is the way one want the houses, but they should be inspired by their environment, they shall be country like, naturalistic and Norwegian". Fransis Craxfurd-Jensen, *Norske hus for Land og by*, Oslo, 1940, 1.
- 5 We are facing a major task. Old-fashioned and new sins are to be made good again, now when our sins are demolished. The valuable, in architecture, is to be reawakened. *Dagbladet* 9.11.40, Weekly portrait, signed J.B., after Tvinnereim 1986, 338.
- 6 "The modern shop is just as international as the concrete itself. It is not stating some nationalistic expressions that could be expressed in the building. We should not worry about the Norwegian in connection with this matter". Odd Brochmann, "Gjenreisningen og det Norske i vår Byggeskikk", in *Foreningen til Norske Minnesmerkers Bevarings Årbok*, Oslo, 1940, 38-39.
- 7 Bernard Luther, "Wiederaufbau Norwegischer Städte, Deutsche Monatshefte in Norwegen", n. 5, 1942, 2-8, after Tvinnereim, 1986, 342.
- 8 N.G. Brekke, *Norsk Arkitekturhistorie. Frå Steinalder og Bronsealder til det 21. Århundre*, Oslo, Det Norske Samlaget, 2003, 343. Free translation.
- 9 *Ibid.*, 352.

The *INA-Casa* Housing Estate of Mario Ridolfi and Wolfgang Frankl in Cerignola: Analysis and Intervention Strategies

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On 28 December 1949, the Implementation Committee allocated 130 million Lire to Cerignola Council, Italy, for the building of new houses. The convention contract was signed on 20 August 1950 establishing that Cerignola Council would direct the executive phase of the project while the project itself was entrusted to Mario Ridolfi and Wolfgang Frankl.

The Council identified a location in the suburbs known as Via Pantanella for the project. The Technical Department of Cerignola Council carried out the executive project and organised the construction site, dividing it into two groups of buildings.

The case of Cerignola should represent the built manifesto of the *INA-Casa* from a historical perspective. Even the choice of designer is not accidental, considering the role of Mario Ridolfi in post-war architectural culture. His presence in a significant number of reconstruction projects was the result of political and cultural involvement that began with Italian rationalism and matured both through experimentation in the CNR Manual as well as research in the preparatory phase of *INA-Casa*. Indeed, the choice of Cerignola does not appear to derive simply from housing needs: it was also the birthplace of Giuseppe di Vittorio, a notorious trade-union activist and politician as well as long-time leader of the rural classes in the south of Italy and, in particular, Cerignola. The original scepticism of di Vittorio for the *INA-Casa* plan was well-known and the decision to carry out one of the first *INA-Casa* plans as well as the choice of Ridolfi, appeared highly strategic in demonstrating the validity of the Fanfani Plan. This paper aims to analyse the degree of integration within the urban area in light of the project choices made by Ridolfi along with the impact such choices had for the inhabitants and the state of building preservation. Such an examination ultimately aims at a methodological reflection on the interventions and the protection of a key example of post-war Italian architecture.

1. THE FANFANI PLAN AND THE *INA-CASA*

On 23 June 1948 in the Parliamentary Chamber, the Honourable Minister of Labour and Social Security, Amintore Fanfani (1908-1999), discussed the possibility of the urgent improvement of the conditions of Italian employment, planning a series of measures aimed at the resolution of the phenomenon. The position that Italy had occupied during a delicate stage in the international political arena would soon appear marked by compromise, with any political development somehow characterized by wishes expressed from the other side of the Atlantic, going far beyond the normal scope of national interest¹.

The bill received the final vote in the Senate on 20 December 1948 and in the House on 24 February 1949 with Giuseppe di Vittorio (1892-1957), secretary general of the Italian General Confederation of Labour (CGIL) and speaker for the minority, playing a major role within the opposition during the debate in the House. With the *Fanfani law* n. 43 of February 28, 1949, the *INA-Casa* real estate section

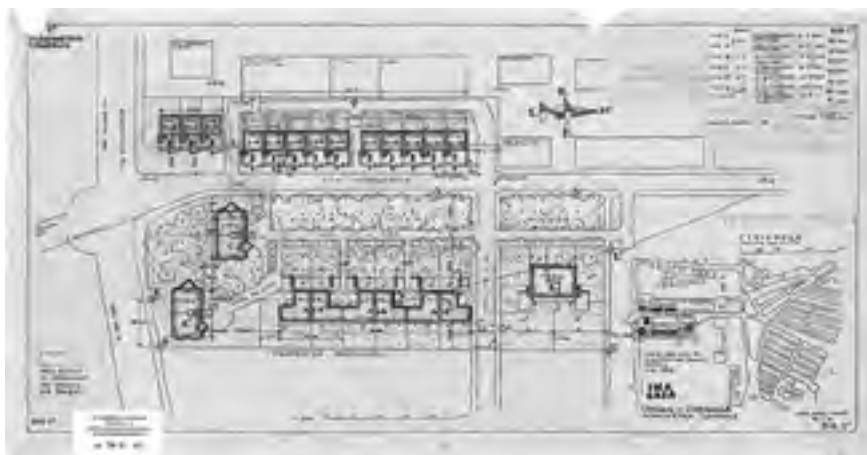


FIGURE 1. General Plan, 28 February 1950. © Accademia Nazionale di San Luca, Roma. Archivio del Moderno e del Contemporaneo. Fondo Ridolfi-Frankl-Malagricci.

was established within the National Institute of Insurance with the objective of increasing employment through the construction of leasable housing or homes destined for employees².

The architect Arnaldo Foschini (1884-1968) was charged with the management of the plan, a decision that would immediately appear political in its nature. Foschini, with his shrewd plan for the reorganization of the profession of architects, would thus set in motion the “grandiose housing machine”, making up for his shortcomings as reported by the press by calling upon Adalberto Libera (1903-1963) as project director³.

As for planning, the Project Implementation Committee had to make a choice in terms of the rationalization of the appointments made for positions of housing design, carrying out a series of tenders that would select, according to well-defined criteria, a list of designers on a national level to whom projects would be entrusted⁴.

Italian architecture was thus enlisted and included among the 137 names were architects such as Franco Albini (1905-1987), Piero Bottoni, Giancarlo De Carlo (1919-2005), Luigi Figini (1903-1984) and Gino Pollini (1903-1991), Franco Marescotti, Enrico Peressutti (1908-1976) for the BBPR partnership and Ludovico Quaroni (1911-1987).

The Fanfani plan was renewed through law n. 1148 of November 26, 1955 and, in effect from 1 April 1956, contributions from employees, employers and the State would be extended by a further seven years. On this occasion the parliamentary process was quicker and without significant opposition.

The construction of housing during the *INA-Casa* period was characterized by haste, by the need to produce homes as quickly as possible and build houses that did not present significant manufacturing complexities, thus applying existing research to knowledge gained in order to optimize solutions that were already available on the market. The buildings were characterized by masonry structures

and where the load-bearing function of the walls was of less importance, the language of the facade always retained the appearance of typical masonry construction. This approach understandably led Italian architecture away from other European architectural languages focused on the dematerialization of facades in favour of the freedom of the plan, ignoring architectural compositions in light and contemporary reinforced concrete. It may be concluded that tradition was perfected during the period of Fanfani housing⁵.

2. MARIO RIDOLFI AND THE INA-CASA NEIGHBOURHOOD IN CERIGNOLA: GENESIS OF THE PROJECT AND SITE MANAGEMENT

The Implementation Committee allocated 130 trillion lire to the town of Cerignola for the construction of new housing through resolution n. 29 of 28 December 1949. The project was entrusted to the famous Roman architect Mario Ridolfi (Rome 1904-Terni 1984) who would make use of the collaboration of his German colleague, Wolfgang Frankl (Munich 1907-Terni 1994), with whom he had already begun a fruitful and lasting project partnership⁶.

The *INA-Casa* management board approved the Ridolfi draft on April 24, 1950. For the realization of the project, the town identified an area peripheral to the urban centre, located along Via Pantanella which led towards the Municipal Cemetery. In the final draft version that was actually executed, Ridolfi confirmed the choice of the typologies (the version included seven) yet locates them in the urban space according to different rules. This included two tower buildings (C and C'), terraced townhouses (D-E) on the side of Via Pantanella and smaller houses (type A-A', type B), both intended for manual or agricultural workers. The definitive solution is represented by a general plan, on a scale of 1:500, dated February 28, 1950.

The dates revealed on the drawing designs demonstrate that the delivery time available was limited and that the district was funded, designed and built



FIGURE 2. Type C and D-E. © Accademia Nazionale di San Luca, Roma. Archivio del Moderno e del Contemporaneo. Fondo Ridolfi-Frankl-Malagrìcci.

in around a year and a half. Such haste is symptomatic of the great expectations surrounding the successful construction of housing⁷.

The Cerignola district was expected to represent the “built” manifesto of the *INA-Casa* plan, where nothing was left to chance. Such expectations were, in fact, not disappointed. Ridolfi choose materials that recall local building traditions, without falling into the imitation of folk traditions, opting instead to leave all materials visible on the exterior⁸.

The first plot awarded for construction included the construction of the two tower buildings in line, (type C and type C') and a block of five terraced buildings of type D-E, with the second located in the neighbourhood along Via Pantanella⁹.

The *INA-Casa* management approved, with a note of April 24, 1950 (n. 4348), the Ridolfi draft for the second construction plot in the neighbourhood with a choice of materials that did not present any great variation¹⁰.

The district was thus delivered to the inhabitants, yet a memo dated March 30, 1953 from the Executive Board of the National Institute for State Employee Housing implies that a few months from completion, some external walls had moisture issues and that, apparently recognizing the severity, the management was willing to finance maintenance works for the tuff in the walls as an exceptional case, even though the maximum cost for each structure had been reached. The work described includes, among other things, the provision of wired plaster for external walls which completely altered the formal aspect of the entire neighbourhood¹¹.

3. CONSTRUCTION ANALYSIS OF THE BUILDINGS AND RECONSTRUCTION OF THE ORIGINAL CHARACTER

The analysis carried out on archived documents allowed for identifying the construction phases of the neighbourhood and to better describe the figures participating in the management of the organizational phase. The archived documents

relating to the neighbourhood were not in equal numbers for the two building plots.

The quantity surveys are valuable tools in the identification and reconstruction of the construction materials of the buildings. Verification of the actual architectural choices made on site, the quantities of materials used and their names has been possible. It has also been possible to identify masonry and building systems information, not deducible from a mere reading of project drafts.



FIGURE 3. The seismic skeleton. © Raffaella Maddaluno.



FIGURE 4. Intervention manual – Type C'. © Raffaella Maddaluno.

Measurement in the field allowed for graphically reconstructing the buildings studied, providing a critical survey through which to virtually view the buildings returned to a previous state to that of any intervention by tenants. This operation highlighted more clearly the pathways to follow for any subsequent intervention aimed at the recovery of the buildings.

The rules of construction are clear, as are the rules of composition, yet the complexity of the architecture is never dull in terms of an approach to elements. One such element of interest is, for example, the lattice of concrete pillars located in all of the buildings, thus raising several questions regarding their actual function¹².

The skeleton has been studied and proposed graphically, in the specific case of the linear towers, in an attempt to provide the most useful elements for the understanding of static and formal relationships that bind them to the wall. The pillars have been provided at all openings of the buildings as well as in the most critical points such as the corners and niches suggesting a seismic function. Indeed, Cerignola is located in a notoriously seismic area with a high incidence of earthquakes¹³.

4. GUIDELINES FOR A PLANNING A REDEVELOPMENT INTERVENTION MANUAL

In the absence of regulations governing use and maintenance, owners have made use of the tools at their disposal in order to personalize their homes as much as possible. The two plots in the neighbourhood present varying degrees

of degradation. While the buildings in the first plot have not suffered from large-scale building transformation but only present superficial modifications to the facades and some illegal construction that has partly invaded private courtyards, the buildings of the second plot have, instead, been affected by volumetric changes that have rendered certain building types unrecognizable. Internally, the apartments have undergone various transformations in terms of the modification of space brought about by changes to the conditions of living standards over time. The most frequent intervention includes the replacement of windows or the replacement of balustrades along terraces and cornices with alternative materials.

The proposed interventions identify three areas for action: the first concerns the facades of buildings, for which the choice was made to return them to their original condition of a visible tuff surface along with the necessary treatment required to withstand the elements. The second is based on the reconstruction of all the elements of the original finish following the redesign of the project, including the elimination of added volumes. The third involves the redevelopment of the spatial relationship between the buildings, returning an urban identity to the neighbourhood.

The interpretative scheme reported is proposed as a preliminary tool for the preparation of any future redevelopment carried out in the district. The buildings concerned, the C-type and D-E types of the first plot, have been ideally divided in their outer envelope and internal partitions and each of these technological units has been further subdivided by analysing the components of which it is composed. The analysis has consisted in bringing a part of the more general description found in the general conditions of contract and, from a dimensional point of view, the more detailed respective entry of the quantity survey of the original executive project. Each building block has been contextualized, indicating the type of building to which it refers and the degradation or transformation from which it has suffered thus far. The survey phase thus ends with a complete picture of the technical characteristics and historical and executive documentation of buildings. For each element the degree of constraint to be attributed during the protection phase is suggested: an A-type constraint if intervention is required that restores the initial characteristics of the building, and a B-type constraint when in the presence of original building elements that require maintenance with the C type constraint if it is considered appropriate to introduce a planning recommendation that was not necessarily contained within the Ridolfi draft but serves towards the actualization of particular structural elements.

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NOTES

- 1 In March, US President Harry Truman, who had expressed himself decisively on the issue of the communist threat in Western Europe, reserved favourable words towards the DC, yet had no plans to fund governments encompassing Communist-inspired parties. The Fanfani Plan was not supported enthusiastically by the American allies who did not share the view that entrepreneurs needed state support in the construction of housing, feeling that it could restrain the growth of productivity and limit trade liberalization policies. De Gasperi had signed up to the Marshall Plan European Recovery Program (ERP), which entrusted the ECA with the task of implementing program actions. Following meetings between the labour minister and James David Zellerbach (1892-1963), head of the mission, the ECA decided to finance the Fanfani plan, but only in part, channelling some economic aid into a fund in order to facilitate private initiative in construction: *Erp-Casa*.
- 2 The law envisaged the creation of the organizational structure of the organism articulated as follows: an implementation committee with the task of issuing regulations and distributing funds and assignments; INA-Casa Management with the task of performing executive duties; commissions for the allocation of housing and, finally, general contractor stations that, depending on the circumstances, could coincide with local municipalities, with INPS, INCIS, IACP or production Cooperatives.
- 3 The studies conducted by Libera on the theme of the housing are well known: in 1943 he published *La Carta della Casa* with Giò Ponti (1891-1979) and Giuseppe Vaccaro (1896-1970) and in 1946 he was working on the publication of a book entitled *La Tecnica Distributiva Funzionale dell'Alloggio*.
- 4 The publication of 4 booklets (two published in 1949 for the first seven-year period and two in 1956 for the second seven-year period) would govern choice and unintentionally define the language of INA-Casa. Indeed, in October 1949 a booklet was published entitled *Suggerimenti, Norme e Schemi per la Elaborazione e Presentazione dei Progetti – Bandi di Concorso*.
- 5 Sergio Poretti, "Le Tecniche Edilizie: Modelli per la Ricostruzione" (ed.), *La Grande Ricostruzione: il Piano INA-Casa e l'Italia degli Anni '50*, Roma, Donzelli, 2001, 113-128; Sergio Poretti, "La Costruzione", in Francesco Dal Co (ed.), *Storia dell'Architettura Italiana. Il Secondo Novecento*, Milano, Electa, 1997, 268-73.
- 6 The role of Ridolfi is significant. He was not selected through the call for tender for architects as his previous studies on housing units and his ongoing collaboration with Libera saw him included among the illustrious consultants of the Plan.
- 7 The general designs are dated February 11, 1950 and the details of fixtures are dated February 20, 1950.
- 8 From a historical point of view, Cerignola was one first towns considered by the Plan; 1950, the year of experimentation, witnessed the optimistic forecasts of the Fanfani Plan in terms of both time and money on construction sites, testing both reactions to the Plan and experimenting with the operational tools made available. The choice of architect was not accidental. His presence in many of the most fundamental reconstruction projects was the result of a political and cultural commitment that was born within Italian Rationalism and matured through both experimentation with the CNR Manual (1946) and in research carried out behind the scenes during all preparatory phases of the INA-Casa. Neither was the choice of Cerignola simply the result of some housing needs analysis; it was chosen, rather, as it was the birthplace of Giuseppe Di Vittorio, for some decades the voice of the peasant classes in the South and, in particular, of Cerignola. Initial scepticism from Di Vittorio towards INA-Casa plan is documented and, therefore, the strategic operation of building one of the first INA-Casa neighbourhoods in his home town seemed a neat solution towards proving the validity of the Fanfani plan.
- 9 With a contract signed 21 June 1950 and registered in Cerignola on 1 July 1950 for a total amount of £48,750,135 (Lire), the Antonio Pedone construction company won the tender for the first building plot on 23 May 1950. Construction supervision was entrusted to the Technical Director, Engineer Francesco Amati. The expected completion time for the work according to the contract was 2 July with a delivery time of 3 July 1951. Minutes taken during the final phases of construction demonstrate that work was completed one month ahead of schedule, on 2 June 1951.
- 10 See documents from the IACP archive relating to the 2nd plot (worksite n. 1662 – Construction company "Masotina Vito fu Nicola").
- 11 Read in the Document "Should further work be indispensable for moisture removal from the external walls, the estimate of the works deemed necessary should be submitted for examination and, in exceptional cases, their eventual approval granted".
- 12 "The lattice of Cerignola raises a question. Is it only the abstract memory of the lattice that characterizes so much Italian architecture of the thirties (resumed by Ridolfi himself in building overlapping villas designed with the Rech and Festa company at the exhibition of the E42 housing area) or does it assume its expressive value independent of the masonry structure, but mindful of the structures of the stone buildings or cornices and pilasters of traditional architecture?" Giorgio Ciucci, "Ridolfi e l'INA Casa", in Renato Nicolini (ed.), *Mario Ridolfi Architetto 1904-2004*, Milan, Electa *Architettura Atti*, 2005, 158.
- 13 "All of the buildings have a load-bearing structure in tuff masonry that performs the main task of supporting the building; the floors fulfil the task of stiffening the building horizontally; the masonry structure further ensures the rigidity of the construction; the plug wall is connected by supporting walls transverse to the external walls, in order to create the closed bearing meshes. With this constructive boundary organization, the pillars thus lose their supporting function, indeed, they invade the masonry to a depth of 20 cm. Bringing the entire series of plates on the facade into view, Ridolfi provides tenants with a reassuring constructive message". Tullia Iori, "Quartiere INA-Casa a Cerignola", in Paolo Portoghesi (ed.), *Mario Ridolfi. Opera Completa*, Electa, Milan.

Urban Conservation, Modern Heritage and Public Policies: Towards a Sustainable Approach

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1. INTRODUCTION

Throughout the 20th century, a significant number of intermediate cities grew and densified, building their urban environment with modern architecture. In several cases, they did so by assuming urban plans that expressed the cities' political ambition of becoming regional centers among the territorial networks. Modern architecture was able to represent these shared aspirations of social development while displaying a particular setting for each city.

Countless of these intermediate cities have suffered gradual deterioration of the large heritage areas once characterized by modern architecture, while many face the challenge of its conservation confronted to processes of urban development. Largely the urban fabric is characterized by minor structures, however these areas also include a number of modern buildings of significant monumental quality. At the same time, there are also numerous neighborhoods that, although once emerged close to the idea of metropolitan development and the construction of the city through modern architecture – such as housing developments and complexes – and now, are subjected to substantial deterioration in the face of current urban dynamics.

It is necessary to raise some basic theoretical assumptions, to recognize the shapes heritage protection assumes in different cases and to verify the possibilities planning instruments and public policies can have regarding sustainable conservation of modern urban heritage¹.

2. URBAN CONSERVATION, THEORETICAL APPROACH

Heritage sustainability initially lies in its durability over time, in the recovering of its meanings and overcoming cultural obsolescence, in its restoration with regards to energy and technological conditions overcoming material obsolescence, and also, in the possibilities assuring economically, its material and significant maintenance.

Theoretically any heritage consideration responds to a previous conceptualization, resulting from a process of historical research and assessment of significance considering urban form and the possibilities of social dynamism that the urban environment, where it belongs, can provide. The identity and legibility of the heritage in the urban project are key factors to determine which modern heritage buildings should be preserved to form the city's new state.

Identity is constituted by the set of features that differentiate it from other built pieces and readability corresponds to the possibility of joining other buildings to be clearly present in the urban fabric as a whole. Moreover, the chances of sustainable conservation could be increased or reduced depending on public policies implemented, including sustainable conditions in energetic, technological or economic terms. Also cultural significance, that being an immaterial, elusive and dynamic condition establishes hierarchies in long-term resources available.

3. STUDY CASES: IDENTITY, READABILITY AND DIFFERENCE

In the case of many young cities with a modern heritage concentration quality, urban form could be the reference in order to establish heritage value, its possible interventions whether regarding protection (conservation, preservation), transformation (restoration, rehabilitation, reuse) or replacement and incorporation of new architecture. This last point is key in shaping urban landscape, readability and identity of the city. In the cases we are working on, different options have emerged where heritage significance assumes its urban condition and therefore its significance for a public policy that makes it sustainable².

On the one hand, an urban center configured by modern architecture – Osorno – since the 1929 urban plan sustained architectural consistency over time. The plan assigned unique characteristics to the urban form, with maximum height defined for volumes and the establishment of a continuous canopy over the public sidewalk consistent with a wet weather climate. The main square was the subject of a remarkable landscape project and on its edges were constructed outstanding examples of modern architecture following the norm. If the initial intentions signaled an interest in generating a “total art work” at the urban level, subsequent achievements were aligned with the initial project. The current status is still of great homogeneity and consistency especially in the public spaces. Its chances of preservation through the delineation of an urban conservation area are effective and allow the hierarchization of a sector of great importance and public significance.

The other example – Chillán – portrays a city rebuilt after an earthquake in 1939. Through a plan, a civic center was shaped around the main square, where a single building – the Government building – with a portal that connects with a large courtyard configures one of the sides; along another side, a succession of three buildings: the municipal palace, a technical school and a theater; and on the third side, the cathedral – a futuristic building of parabolic section- was arranged³. A commercial sector was also established, with modern typologies configuring a continuous facade and a number of housing complexes for workers. Paired or isolated single houses with a front yard reconfigured the remaining urban fabric. Most of the buildings followed modernism canons: flat roofs, curved balconies, ribbon and porthole-shaped windows. During the first five years more than 750 buildings were erected, showing a notable stylistic homogeneity, however, discontinuous and with many gaps between completed buildings. Conservation possibilities indicate a clear confirmation around the square, portions of the commercial sector and housing projects that could be protected with a spatially continuous regulation. But the huge discontinuity of modern heritage in the rest of the traditional urban plan, with later constructions between the modern buildings, offers a challenge to both legislation and revaluation or significance.

Arica is known as the city of eternal spring, located on the seashore in the tropical wilderness. Its modern consolidation was completed between 1950s and 1970s, linked to policies promoting regional development. It has a number of remarkable buildings such as the casino, the stadium, two different university's campuses, sea and sunbathing facilities, amongst others. Also a large number of housing projects required by immigration that fuelled its development. Some of these projects – formed by small houses – have been altered given its lightweight construction materials and its need for adaptation to contemporary life. Complexes with a strong urban presence have remained in good condition; one of which has been declared a national monument. Urban conservation ought to take a mixed strategy – considering the protection of singular buildings and the preservation and renewal of the urban fabric. Alterations to housing complexes has emerged as a strong defense against sun exposure, so that sustainable conservation can be addressed by alternative designs that, relating to its own status as heritage, can be applied in each case throughout the modern urban fabric.

The cases briefly presented here propose strongly differentiated forms of protection arising from the physical conditions that heritage assumes in the urban environment. The cases presented in this session expand on these possibilities, revealing experiences that arise and key aspects to be considered in defining a more appropriate approach to sustainable urban conservation.

4. TOWARDS A SUSTAINABLE APPROACH

The ways in which heritage shapes its identity and the ways in which it establishes legibility at the urban level determine the difference in basic guidelines for sustainable conservation. Conservation can be addressed by bounding areas with strong homogeneity, but the preservation of dispersed heritage throughout the urban fabric becomes more complex, and only a clear coordination between existing heritage and urban plans expectations can be proactive.

Considering action on several large housing complexes situated in different parts of the city can fix its significance while benefiting the urban structure in general – neighborhoods or parts of the city where they are located beyond their own heritage value.

Also, the combination of renovation projects complementary to conservation, allows for the possibility of re-signifying and enhancing heritage values. While particular designs may be debatable in each case, it seems beneficial in itself to combine conservation and new architecture.

On the other hand, it never hurts to overemphasize the need for a direct and clearly established relationship between urban conservation areas and local planning. In many places, procedures of conservation are detached from those of urban planning, however, successful cases show that a broad political vocation of the city, its people and its authorities, can interrelate these – usually detached – fields, for the achievement of a better, more sustainable city.

A condition that is critical in these cases is the inclusion of heritage value as part of the generation of larger urban strategies incorporating other variables, both for the acceptance of conservation measures and for the achievement of the necessary resources. Action on public space can be one of these strategies, as well as divulgation and education on heritage values and places likely to be full of future life.

Modern urban heritage preservation usually bases its actions on some initial declaration of physical-material preservation, however much, this seems to be a necessity it is not sufficient. The declaration itself has often promoted speculative processes associated with heritage significance value. This has resulted in some cases in an increase of its renewal costs, especially when original technologies were exploratory and need now to be renewed for reasons of energy balance or material obsolescence.

In some cases, it has been verified that heritage declaration causes a basically residential structure to become an object of cultural and tourist recognition, shifting largely its urban conditions. In other cases, speculative processes lead to the displacement of the existing population and the onset of gentrification processes, with a gradual increase in land prices and the replacement of the established ways of life.

It is for this reason that the declaration of assets must necessarily be accompanied by specific public policies, to orient the associated processes.

The application of a “large scale approach” can become a healthy practice to address the conservation of a heritage requiring material renovation, applicable both at municipal and national level, regarding modern heritage public works.

A sustainable approach should consider a better correlation between property protection, its relation to different levels of urban planning, its chances of ongoing changing significance and permanence of public policies designed to keep them in time, so as to ensure its use and enjoyment by the community.

NOTES

- 1 This paper is also a result of the project *La arquitectura de la Gran Ciudad, Chile 1930-1970*, supported by the National Fund for Scientific and Technological Development, Chile (Fondecyt 1140964), in which the author is responsible researcher. Thanks to Fondecyt for the financing granted.
- 2 Horacio Torrent, “El Patrimonio Moderno en la Construcción del País Urbano: Dialécticas entre Arquitectura y Ciudad en Chile 1930-1970”, Valdivia, AUS, n. 17, 2015, 11-17.
- 3 Horacio Torrent, “Expansion and Conflict – Chile, 1939: The Reconstruction of the City, Modern Architecture and its Current Interpretation as Heritage”, in Ana Tostões, Jong Soung Kimm, Tae-woo Kim (ed.), *Expansion & Conflict*, Seoul, **docomomo** International/**docomomo** Korea, 2014, 236-239.

A Change of Scale for Sustainable Interventions on Modern Heritage

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The paper provides an overview of recent Swiss experience in the domain of reusing and adapting existing buildings and points out the advantages of large-scale approaches. The first example concerns an inventoried Zurich residential settlement of the fifties. Considering intervention at the scale of the whole settlement, as opposed to that of the single building, made it possible to devise a strategy which obtained the support of all the parties involved: the city, the owners and the heritage department. One third of the estate was demolished and replaced by new buildings, which concentrated all upgrading interventions. This enabled the remaining two thirds of the buildings to be preserved and undergo only minimal adaptations. A large portion of the *Siedlung* was thus conserved.

The second example concerns the school buildings owned by the municipality of Zurich, the majority of which were built in the 20th century. The municipality's objective was to upgrade the school portfolio, while meeting both sustainability and conservation goals. A project was launched and a large-scale approach was adopted, considering the overall performance of several buildings instead of each individual building. Several variants were drafted, the most interesting of which is the *Variante Konsenz*. It analyses for 13 cases-studies the best compromise from a sustainability, economic and conservation standpoint. In this "consensus variant", high standard energy retrofit interventions on some schools offset other interventions which are less efficient from the energy standpoint but more focused on conservation, thus allowing the most fragile and valuable buildings to be excluded from heavy retrofit transformations.

The paper details the above examples and the processes which led to their implementation. It shows that large-scale approaches pave the way to finding shared solution and drafting respectful and sustainable reuse strategies.

1. INTRODUCTION

Sustainability, in its several inflections, has become a prominent part of the building agenda. The reuse and adaptation of existing building stock is one of the means which can be used to achieve a more sustainable development. The paper offers an overview of recent Swiss experience in this domain, which is based as much on common sense and on an ethical view of architecture, as on sustainability calculations and eco-efficiency equations. It shows that adopting large-scale approaches, i.e. moving to a "district or portfolio level", paves the way for overcoming what is often considered as an incompatibility between sustainability and heritage conservation issues.

2. UPDATING A RESIDENTIAL SETTLEMENT WITH A LARGE-SCALE APPROACH

One of the main goals of the Zurich Department of Urbanism today is densification and this often takes place following the "demolition-new construction model"¹. One recent densification strategy – adopted in the *Else Züblin-Strasse*

residential settlement – appears to be particularly interesting: it escaped the total demolition-new construction model by adopting a large-scale approach.

The *Else Züblin-Strasse Siedlung* was built in 1950-52 in Zurich Albisrieden, a former village to the west of the city center. It was incorporated into the municipality of Zurich in 1934 in the wake of industrial development and was gradually built over by building cooperatives.

The *Else Züblin-Strasse Siedlung* was commissioned by the Sunnige Hof private cooperative and designed by a group of architects comprising Sauter & Dirler. It was built following the early fifties garden-city vision, and was subsequently inscribed in the Cantonal heritage inventory. This means it is recognised as bearing a historical interest, but the inscription doesn't entail any physical protection – it can be modified and eventually demolished.

In time, the municipality raised the building index by approximately one third, so in the year 2000 the owner – still the Sunnige Hof cooperative – announced a design competition to fully exploit the increased building volume of the site, calling for a two-pronged strategy: one third of the estate was to be demolished and replaced by new buildings, the rest – the buildings on the main street – was to undergo a radical but temporary upgrading. The underlying aim was to obtain a complete renewal of the residential settlement in three phases, with 1/3 of the buildings replaced every 10 years. The choice of starting the building replacement work from the centre of the plot, where it would not be visible from the main *Albisrieden Strasse*, was intended to allow residents to gradually get used to the change.

The Zurich based practice of Burkhalter Sumi Architekten won the competition, with a project that called for the creation of six new buildings and for a thorough upgrading of the existing ones. The latter comprised a radical transformation of the existing apartments to create bigger units, the addition of exterior lifts and the creation of larger loggias. Subsequently, however, the architects amended their initial strategy. On the basis of a careful evaluation of the *Siedlung's* specific qualities – narrow buildings arranged following contour lines, continuous landscape, sloping roofs, loggias and subtly painted windows etc. – they decided to maintain the buildings that were to be kept in a condition as close as possible to the original one. They thus used the support of the Heritage Department to devise a minimal, conservation-driven intervention, which they achieved by concentrating all major changes in the new buildings.

The six new compact blocks, designed to replace the ones which were to be demolished, incorporate all the answers to the new needs: the increased surface requirements, an expanded range of apartment types to put on the market (larger apartments, layout variety), compliance to current standards (accessibility: since the apartments in the new buildings all have lifts and are accessible, the old buildings were exempted from inserting lifts, which were mandatory in the first place), and excellent energy performance, thanks to a thick layer of external insulation (*Minergie standard*) and a low shape factor (high compactness).

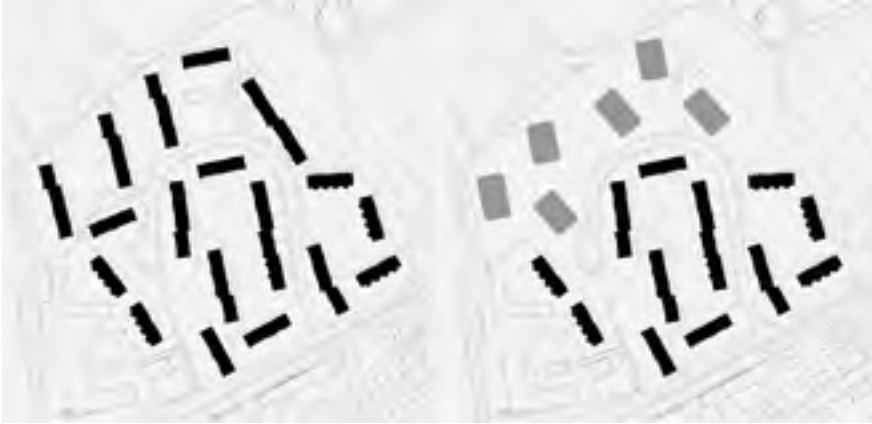


FIGURE 1. *Else Züblin-Strasse Siedlung*, Zurich, Switzerland, 1950-51. Plan of the *Siedlung* before (left) and after the intervention by Burkhalter Sumi Architekten (right). The drawing illustrates the two-pronged design strategy: one third of the estate is to be demolished and replaced by new buildings, whereas the buildings on the main street are to be preserved. © Burkhalter Sumi Architekten.

Consequently, interventions on the existing buildings were reduced to the bare minimum: no changes were implemented in the original apartment layout, no lifts or loggias were incorporated, no exterior insulation was added as it would have drastically modified the buildings' appearance. Conversely, the original staircase windows were preserved, the exterior stone elements were cleaned and the metal entrance canopies were restored. The only major intervention was the replacement of the apartment windows, which had already been changed, with new high performance thermal-break profiles: this included the reconstruction of the original *Blumenfenster*, a typical feature of the original design.

The intervention also took into account the public space in between the buildings, conceived as a continuous "green carpet" running fluidly between the blocks, without fences or divisions. The position of the new blocks was designed to keep as many old trees as possible, and new pathways linking old and new buildings were designed by the landscape architect Günther Vogt.

Complementarity between new and old features can be found at all levels: functional-typological arrangement (large apartments in new buildings, smaller ones in existing rows); social mix (young families with children in larger new apartments, singles or couples without children in smaller existing apartments, thus achieving a social mix); regulatory compliance (the accessibility in new apartments makes up for the inaccessibility of the existing ones); and sustainability (excellent energy performance in new buildings complying to *Minergie standards*, with triple-glazed wood-metal windows, geothermal heating systems, and a heat recovery ventilation system that compensates for the poor energy performance of the existing blocks).

If the issue of improving the functional and energy performance of the *Siedlung* as well as that of making the settlement compliant to current standards



FIGURE 2. *Else Züblin-Strasse Siedlung*, Zurich, Switzerland, 1950-51. View of the *Siedlung* before (left) and after the intervention by Burkhalter Sumi Architekten (right). On the right you can see the new and the old buildings side by side. © Right: *Wohnen*, 1951, 3; left: Roberta Grignolo, 2013.

had been faced at the scale of the single building, each building would have been deeply transformed and made unrecognisable, whereas by moving to the larger scale all changes could be concentrated in the new buildings while conserving the existing ones. Furthermore, the arguments adopted by Burkhalter Sumi to press for the conservation of the original features of the existing buildings, as well as the care adopted for the intervention, seem to have raised the residents' and owners' awareness of the historic and social value of the existing buildings.

The intervention – newly built blocks, restoration of existing blocks and rearrangement of public space – was entirely funded by the owner-cooperative through residents' rents. The expanded range of apartment types put on the market raised the attractiveness of the settlement and increased requests from new dwellers wanting to move in, thus setting the basis for the long-term conservation of the original blocks. The initial goal of complete renewal of the residential settlement in three phases seems to have been (momentarily?) discarded. The view of the settlement from the main *Albisrieden Strasse* and the garden-city character of the neighbourhood have (so far) remained unchanged.

3. A LARGE-SCALE APPROACH FOR THE ZURICH REAL ESTATE PORTFOLIO

A few years later, the City of Zurich, which owns an extensive building portfolio, comprising residential settlements, social centres and educational buildings, adopted a similar strategy on an even larger scale: the whole portfolio of its school buildings. Almost half of the city portfolio consists of schools, two thirds of which are listed in the Heritage Inventory², but since 2008, when Zurich adopted the *2000-Watt Society* vision, interventions on municipal buildings have to consider grey energy too³.

Thus, each time an intervention on a school building was planned and discussed with the relevant parties (Planning Department, Building Department,

3 Schulhausportfolio der Stadt Zürich

Der Gebäudepark *Schulen und Schulport* ist das grösste Portfolio der städtischen Bauten umfasst mit einem Gebäudeversicherungswert von ca. CHF 1700 Mio. rund 30% des gesamten Verwaltungsvermögens der Stadt Zürich. Über die Hälfte der rund 120 Schulanlagen sind im Inventar der Denkmalpflege aufgeführt.

Für die vorliegende Studie wurden die nächsten 11 instanzzusetzenden Schulhäuser untersucht. Die Schulhäuser befinden sich zum Zeitpunkt der Auswahl noch in einer sehr frühen Planungsphase - alle vor der Phase 1 Strategische Planung gemäss *Verfahrenshandbuch für allgemeine Hochbauverfahren der Stadt Zürich* [8]. Um eine Hochrechnung auf das gesamte Portfolio zu ermöglichen wurde die Auswahl um einen hypothetischen Neubau und einen hypothetischen Bau aus den 80er Jahren ergänzt.

Figur 2: Ausgewählte Schulhäuser der Stadt Zürich [12]

	Schulhaus Hans Asper Schulkreis Uto, Kirchbergstrasse 35, 8036 Zürich Erbaut 1912 (Architekt F. Fisser), Innensanierung 1972, Fensterersatz 1998 Primarschulhaus mit Turnhalle Denkmalschutz: Schutzumfang Fassaden und Korridore
	Schulhaus Bornweg Schulkreis Uto, Bornweg, 8055 Zürich Erbaut 1973 (Architekt V. Langenegger) Primarschulhaus mit Turnhalle und Schwimmhalle Denkmalschutz: keine Auflagen
	Schulhaus Hofacker Schulkreis Zürichberg, Hofackerstrasse 45, 8032 Zürich Erbaut 1998 (Architekt F. Weert) Primarschulhaus mit Turnhalle Denkmalschutz: Schutzumfang Fassaden, Eingangsfläche, Treppenhaus
	Schulhaus Kern Schulkreis Limmatli, Kernstrasse 45, 8004 Zürich Erbaut 1962-1964 (Architekt A. Gieser), Innensanierung 1978 Primarschulhaus mit Turnhalle Denkmalschutz: Schutzumfang Fassaden, Treppenhaus
	Schulhaus Kornhaus Schulkreis Limmatli, Limmatstrasse 176, 8005 Zürich Erbaut 1941 - 1943 (Architekt A.H. Steiner) Primarschulhaus Denkmalschutz: Schutzumfang Fassaden inkl. Fenster, Korridore, Schulräume

	Schulhaus Linde Schulkreis Uto, Schulhausstrasse 1, 8002 Zürich Erbaut 1937 (Architekt G. Gull) Primarschulhaus, Turnhalle als Einzelgebäude Denkmalschutz: Schutzumfang Fassaden
	Schulhaus Leimbach Schulkreis Uto, Wegelerstrasse 40, 8041 Zürich Erbaut 1900 (Architekt F. Weert), Um- und Anbauten 1943 und 1961 Primarschulhaus, Turnhalle als Einzelgebäude Denkmalschutz: keine Auflagen
	Schulhaus Loogarten Schulkreis Letz, Eugen-Huber-Strasse 145, 8048 Zürich Erbaut 1969 - 1975 (Architekten Haefli-Studer-Studer) Primarschulhaus, Turnhalle als Einzelgebäude Denkmalschutz: Fassadenmörtel / Kunst am Bau
	Schulhaus Mönchshaus Schulkreis Zürichberg, Mönchshausstrasse 180, 8008 Zürich Erbaut 1910 (Architekten J.E. Meier-Greif und J. A. Adler), Innensanierung 1973 Sekundarschulhaus, Turnhalle integriert Denkmalschutz: Schutzumfang Fassaden, Korridore, Treppenaussenbereich
	Schulhaus Schwanenberg Schulkreis Gütli, Lennstrasse 40, 8046 Zürich Erbaut 1969 (Architekten J. de Stoudt + W. Adam + F. Badier) Fassadenisolierung 1996 Primarschulhaus, Turnhalle als Einzelgebäude Denkmalschutz: keine Auflagen
	Schulhaus Sihlfeld Schulkreis Uto, Sihlfeldstrasse 5, 8041 Zürich Erbaut 1973 (Architekten Müller + Nedisbach) Primarschulhaus, Turnhalle integriert Denkmalschutz: keine Auflagen
	Hypothetisches Schulhaus 89er Jahre Daten sind interpolierte Werte auf Basis folgender Grundlagen: Anforderungen Machbarkeitsstudie Wettbewerb Blumenfeld, Zürich Messergentisse Schulhaus Elmstatt, Cham und Hünenberg

FIGURE 3. The sample of 13 schools which were considered representative of the whole Zurich portfolio of school buildings. © Stadt Zürich, Amt für Hochbauten, 2011.

School Department, Heritage Department) there used to be heated discussions because each party pursued different objectives. The comparison between different subsequent interventions led to the observation that some interventions met the sustainability goal level defined by the *2000-Watt Society* vision (eg. buildings which weren't inventoried and could therefore be fitted with an external insulation), while others (eg. those which were protected and the exterior envelope of which could thus not be changed) were well beyond limits. Constructive discussions between the parties gradually brought the working team to think at the scale of the whole school portfolio: if one school doesn't comply with energy standards and another is instead well within limits, there can be an overall balance. Furthermore, if the issue is dealt with by considering the entire school heritage of the municipality, direct conflicts between energy, space, regulatory and conservation issues can be reduced.

Such a global and holistic approach was adopted by the study *Schulen auf dem Weg zur 2000-Watt-Gesellschaft* launched in 2008⁴. The coordinators decided to analyse a sample of 13 school buildings, which were considered representative of the whole 120-buildings portfolio⁵. The project considered several issues: interventions on the buildings themselves (envelope insulation, roof and ground floor

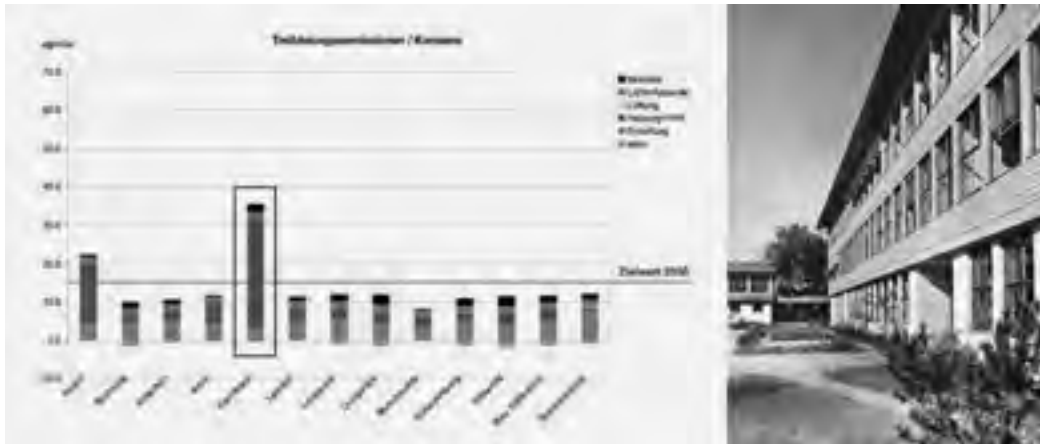


FIGURE 4. The graph illustrates the greenhouse gasses emission of each school in the “Konsenz Variant”. The Kornhausbrücke school by Albert Heinrich Steiner, 1941-42 (marked with a rectangle on the graph and portrayed in the right picture), is well above the defined limit (“Zielwert 2050” red line). The graph shows that the good performance of the schools that remain under the limit can offset the poor performance of other more fragile and valuable buildings. © Left: Stadt Zurich, Amt für Hochbauten, 2011; right: *Das Werk*, 1945, 32.

slab insulation, window replacement, integration of solar energy systems, type of fuel adopted, use of renewable or non renewable energy, grey energy measurements), but also complementary interventions (user behaviour, calculation of travel to school distances, awareness raising among students, etc.).

Three variants were drafted: “Variant 1” was considered a minimal intervention strategy, usually used for listed buildings; “Variant 2” suggested a thorough intervention focused on the reduction of energy consumption; the “Konsenz Variant” sought a compromise between energy, economic and conservation issues. In this “consensus variant”, the overall results of which are similar to those of “Variant 2”, high standard energy retrofit interventions on some schools offset other interventions which are less efficient from the energy standpoint but more focused on conservation, thus allowing the most fragile and valuable buildings to be excluded from heavy retrofit transformations.

Thus the Kornhausbrücke school, built by architect Albert Heinrich Steiner in 1941-42, the envelope and window fittings of which are protected, stands well above the 2050 limit goal, but its “poor” energy performance is offset by the performance of the other buildings considered.

Furthermore, by calculating the grey energy of each intervention, the *Schulen* study clearly shows that erecting new schools is not always convenient when considering the final result: demolition and new construction costs raise the overall impact of such interventions well beyond set limits. Renovation appears to be a more sustainable strategy.

The *Schulen* study is now used to guide and programme interventions on the city school stock: the first buildings to undergo renovation were the ones in the study, but the representativeness of the sample provides useful precedents from

the study that are also applicable to other buildings. On the basis of the success of this study, the same approach was also extended to other building typologies which are part of city's building stock: the residential settlements (*wohnsiedlung*) and the centres for elderly (*alterszentren*)⁶.

4. CONCLUSION

The above examples and studies, all based on large-scale approach, provide ingenious strategies which can usefully be adapted to other built portfolios or ensembles when a constructive compromise is sought between frequently competing issues, such as sustainability, standards, economy and heritage. Furthermore they highlight the importance of establishing a culture of constructive dialogue between all relevant parties when interventions on building stock are required. Gradually this will allow not only protected buildings to be taken into consideration, but also high quality buildings, as yet unprotected.

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NOTES

- 1 Cf. Zürich Hochbau departement, Amt für Stadtebau (ed.), *Dichter. Eine Dokumentation der baulichen Veränderung in Zürich – 30 Beispiele*, n. 1, Zürich, Stadt Zürich, 2012.
- 2 Stadt Zürich, Amt für Stadtebau (ed.), *Schulhäuser der Stadt Zürich. Spezialinventar, Archäologie und Denkmalpflege*, Zürich, 2008.
- 3 In 2008 the Zurich population voted the 2000-Watt Society vision, which aims at limiting individual energy consumption to a maximum of 2000 Watts, which is as much energy as worldwide energy reserves permit and which is consequently justifiable in terms of the impact on the environment. This vision was enshrined in the city's Constitution and thus stands on a par with other goals, such as the conservation of heritage. This forces all the parties involved in the town development to factor in sustainability, including grey energy, when implementing an architectural design for the city.
- 4 Stadt Zürich, Amt für Hochbauten (ed.), *Schulen auf dem Weg zur 2000-Watt-Gesellschaft. Schlussbericht Teilprojekt "Szenarien"* [Schools heading towards a 2000-Watt Society], June 2011.
- 5 The representative sample of 13 buildings comprised: two schools dating back to the end of the 19th century, two belonging to the early 20th century, two to the 1910s and one to the 1940s; four were post-war buildings, one was built in the 1980s and one was a new building.
- 6 The same issues were examined, the main difference consisted in the extrapolation method. The Wohnsiedlung study defined seven categories of homogeneous buildings on the basis of their construction date: pre-war settlements, built between 1910-1945; post-war settlements (1946-1965); settlements built during the economic boom (1966-1975), divided in small blocks and towers; the settlements of the 1980s (1980-1989); new settlements (1990-2015); future settlements (2015-2050). This classification provides a comprehensive overview of the entire portfolio. The Alterszentren study adopted yet another approach: since the portfolio comprised only 28 buildings, the study examined all the buildings and provided sufficient details to develop precise recommendations for each building.

Conservation of 1918-1939 Modern Neighbourhoods in Present-day Krakow

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During the Second Republic of Poland, between 1918 and 1939 the urban development of Krakow, a city of 250,000 residents, proceeded relatively slowly but was nevertheless harmonious. A significant number of modern buildings and a smaller number of modern complexes were built. As the latter are rather limited in both number and size, and since the population of the city climbed rapidly after WWII to 750,000 residents, these inter-war complexes have ended up as isolated enclaves in the present-day city.

The paper deals with the heritage of several modern residential complexes in Krakow built in the interwar period. Four Krakow neighbourhoods of varied size and character are used as case studies:

- The Officer Neighbourhood – ca. 600 residential buildings, mostly detached (170), semi-detached (340), and terraced houses (60);
- The Quiet Corner Neighbourhood – 12 detached houses and 20 terraced houses;
- The Social Insurance Institution Neighbourhood – 5 multi-family blocks of flats;
- The Worker Neighbourhood – 11 multi-family blocks of flats and a social-cultural centre.

The paper provides short descriptions of the original form of these neighbourhoods, followed by a discussion of their present-day situation and their position within the contemporary planning and heritage protection systems. Two of the four legal forms of heritage protection in Poland are highlighted as being especially appropriate here: inclusion on a register of monuments (and so far almost no buildings have actually been listed) and decisions taken within a local development plan (only one plan has so far been enforced).

The situation of Krakow's modern urban heritage is somewhat paradoxical. The neighbourhoods in question are generally appreciated, praised and commented upon. However, their particular features and quality are not sufficiently recognized in practice, and this has led to their partial deterioration. The reasons for this contradiction range from general economic conditions and certain inconsistencies in the planning and protection system to insufficient knowledge on the subject. For this reason, successful projects dealing with original modernist fabric, and their complementary or acceptable extension, though not numerous, are praiseworthy.

1. INTERWAR PERIOD NEIGHBOURHOODS IN KRAKOW

During the Second Republic of Poland, in the interwar period, Krakow was the country's fourth to fifth most populous city. The number of residents increased from 180,000 in 1918 to 259,000 in 1939. The city's area, which had increased eight-fold between 1909 and 1915, increased only slightly in this period from 47,4 km² to 48,3 km². As well as being the local administrative and economic centre, the city was also an important cultural and academic centre. Urban development was relatively slow but reasonably harmonious. Planning regulations and subdivision plans were a standard tool of planning. In 1937 the first master plan of the city was completed, however its full enforcement was soon halted by the outbreak of WWII in 1939.

A significant number of new structures were built in Krakow in the interwar period, including public buildings (such as the impressive edifices of the National



FIGURE 1. Above: areas of the 1918-1939 modernist neighbourhoods marked on the background of 1934 map of Krakow. Below: the four neighbourhoods (in dark) on the background of contemporary Krakow scheme. © The author's archive (map) and evaluation (scheme).

Museum and Jagiellonian Library) and a few new industrial buildings (mills and small plants) together with transportation facilities (new bridges and a small airport). However, the most frequently built projects were of a residential nature, including 3-5-storey multi-family buildings lining both existing and newly laid-

out streets with continuous frontage lines. Several hundred of these buildings gave dozens of Krakow streets a new architectural image, although the new scale and urban fabric did not differ much from what it had been before WWI.

There were not many residential complexes comprising a number of separate buildings. Four such neighbourhoods of varied size and character have been identified and these are used as case studies.

Case 1) The Officer Neighbourhood (*OsiedleOficerskie*)

The Officer Neighbourhood was intended largely for the use of military and veteran families (a number of such projects were built in Poland after WWI in Warsaw, Lviv, Lublin). It was situated in the north-eastern part of the city, in the direction of the Krakow airport of the time, and planned by the Municipality of Krakow in 1924-1926 using a series of regulation and subdivision plans, most of them drawn up by engineer Marian Lenk. The Officer Neighbourhood is a general term for quite a large area (ca. 600 lots in total), delimited by three boundaries: the north-south former fortification line in the west, the east-west tract of Mogilska St. in the south, and the Bialucha river in the north-east. This consisted of several parts: three parts of the Officer Neighbourhood proper (laid out in 1925), the Official Neighbourhood (laid out in 1924), a large triangular area in between (laid out in 1926), and smaller adjacent areas laid out until construction of a pharmaceutical plant started in 1930 and put a stop to any further expansion to the east.

Although far from being complete by 1939, the Officer Neighbourhood as a whole became the largest new complex of residential buildings in Krakow at the time. Its character was not entirely uniform. The vast majority of new buildings were defined in the plans as detached houses (160) or semi-detached houses (170 on 340 lots). Each of them was destined for one, two or (seldom) several families. Six small four-storey blocks of flats were localised in the south-eastern corner. There were also three longer quarters of 60 mostly three-storey buildings extending longitudinally along the former fortification line.



FIGURE 2. Original regulation plans of the Officer Neighbourhood's first three parts and of the Quiet Corner. © The National Archives in Krakow.

Seven small squares were planned in these neighbourhoods. All streets were to be lined with trees, on both sides in most of them. The 1934 bridge across the Bialucha improved access to the Official Neighbourhood to the north.

The neighbourhood's first houses, dating back to the 1920s, were given modernised classical forms, influenced by the idea of a national architecture harking back to old-style Polish manor houses with their columned porches and pitched roofs. More modernist 1930s houses had flat roofs and reduced decoration. Many architects were responsible for the projects in the officer neighbourhood. Among the architects of the former period were Alfred Kramarski and Kazimierz Kulczynski, and the latter, Stanislaw Juszczyk and Samuel Manber.

It is remarkable that part of the neighbourhood complex was situated outside the city limits at the time (in the village of Olsza). However, this made hardly any difference to the way the area was laid out and built-up.

Case 2) The Quiet Corner (CichyKacik) Neighbourhood (Osiedle PKKO)

The Quiet Corner neighbourhood was built in 1936-1939 by the PKKO (County Municipal Savings) firm for its staff in the west of Krakow. The location was attractive due to the adjacent large common and nearby park and sport facilities. The area was then a small neighbourhood of only two streets: one straight (first called 8th St., then Pekszyc-Grudzinskiego St., and now Domeyki St.), lined by 12 detached houses built mostly in 1936 and 1937, and the other semi-circular (7th St., then Koniecznego St., and now Beniowskiego St.) next to which 20 row houses were planned (5 houses were built by 1939).

Of the dozen detached houses, two larger ones, designed by architect Adolf Szyszko-Bohusz, became a sort of entry gate to the neighbourhood while the 10 smaller ones, by architect Wacław Nowakowski, provided the plan with a backbone. Nowakowski himself was also responsible for the entire neighbourhood plan.



FIGURE 3. Contemporary situation of the Krakow neighbourhoods built in the interwar period: 1) the Officer Neighbourhood. 2) the Quiet Corner. 3) the Social Insurance Institution Neighbourhood. 4) the Worker Neighbourhood. The shades mark the age of buildings: A – built before 1918. B – built in 1918-1939 (or commenced by 1939). C – commenced and built after WWII. © The author's evaluation. Drawing by Maciej Kapolka, 2016.



FIGURE 4. Contemporary views of the Krakow 1918-1939 modernist neighbourhoods. 1) semi-detached houses along Kasprowicza St. in the Officer Neighbourhood. 2) detached houses along Domeyki St. in the Quiet Corner. 3) two blocks of the Social Insurance Institution Neighbourhood. 4) two blocks of the Worker Neighbourhood (the frozen Vistula in the foreground). © Maciej Motak, 2016.

Case 3) The Social Insurance Institution Neighbourhood (*Osiedle ZUPU*)

The Social Insurance Institution Neighbourhood in Falata St. was situated in the western part of the city, near the southern edge of the Common. It was designed by architect Roman Piotrowski, who was assisted by Nowakowski, and built between 1930 and 1933 by the ZUPU insurance company for its employees (just as in many other Polish cities like Warsaw, Lviv and Biala). It consisted of five four-storey blocks of flats, which were placed at right or nearly right angles relative to the latitudinal Falata St.: three on the northern side and two on the southern side. The estate was the first neighbourhood in Krakow to be influenced by Le Corbusier's vision of a modern city. Its functionalist blocks featured almost flat roofs and rounded corner balconies. Two south blocks were linked by a laundry pavilion, a clear sign of socially oriented attitude.

Case 4) The Worker Neighbourhood (*Osiedle Robotnicze*)

The Worker Neighbourhood on Czarodziejska St. (now Praska St.) was built in 1935-1939 by the Worker Cooperative in the southwestern part of the city, not far from the right bank of the Vistula River. The neighbourhood plan, drawn up by Stefan Piwowarczyk, was arranged according to a similar principle to that of the Falata St. i.e. the latitudinal street was to be aligned with the blocks of flats in pairs but at right angles to it. All nine blocks, of various length, were built on the northern side as planned but only two blocks on the southern side were completed due to shortage of money.

A social building, housing a library and a meeting hall, was an important part of the neighbourhood. This was designed by Fryderyk Tadanier, assisted by Michał Zakrzewski, and built at the eastern entrance (going away from the city centre) to the neighbourhood. The Worker Neighbourhood was much larger than the Social Insurance Neighbourhood, although the buildings themselves were only two-storey, more appropriate given its location on the outskirts of the city.

2. FURTHER TRANSFORMATIONS OF THE NEIGHBOURHOODS

WWII put a stop to any further development of the Officer Neighbourhoods, and the Officer Cooperative finally ceased to exist in 1954. Since the 1950s a number of new projects have been built, most of which have little to do with the original principle of the neighbourhoods design. All squares have either been built-up or deformed in some way. Over 20 blocks of flats, mainly typical five-storey ones, have been inserted as well as small villas, two schools, a veterinary clinic, several small offices, and an open-air swimming pool, mostly near the Białucha river. A highly original church complex by architect Stanisław Niemczyk, built between 1989 and 1994 in the centre of the neighbourhood, has become a local landmark.

The Quiet Corner has not been altered that much. All the gaps on the semi-circular Beniowskiego St. have been filled in. The straight Domeyki St. has retained its character although three of the houses along its eastern side have been remodelled and extended.

The Social Insurance Institution Neighbourhood in Falata St. has hardly been altered, except for some loft conversions and general technical modernisation.

The Worker Neighbourhood was enlarged in the 1950s both by the extension of existing buildings and by the construction of new ones. All the original blocks have had a third storey added, and three new three-storey blocks have been built on the southern side, their plans generally in line with the original plan of the neighbourhood.

Both the number and size of the neighbourhoods discussed nowadays seem rather small. By the 1980s Kraków had 760,000 residents and spread over 327 km². More than 40 large modernist housing projects of highly typical blocks of flats were built between the 1950s and 1980s. The discussed neighbourhoods have therefore now become isolated enclaves within the present-day city.

3. PRESENT CONDITION OF NEIGHBOURHOODS AND BUILDINGS

These neighbourhoods survived WWII practically intact but they were spatially affected afterwards, to different extents and in various ways by post-war transformations. In post-war Poland, the importance of individual property was reduced in favour of state property or state-dependent cooperatives. With the free market system replaced by a centralised economy, buildings were often neglected. The physical condition of the buildings tended to decline but the high quality of their con-

struction and of the materials prevented them from any real deterioration. They turned out to be good solid buildings, have never been uninhabited, and neither has one ever been pulled down. With time, they have attracted attention for their extension potential, especially since the restoration of democracy, self-government, and the free market in Poland in 1989. Renovation of some of the buildings meant their thorough remodelling, which in turn has resulted, in some cases, in a partial distortion of their original shape and loss of architectural details.

The residential buildings in Krakow built in the interwar period enjoy a very good reputation. Complimentary opinions are expressed both by residents and society in general – and these are shared by specialists in the field and by local authorities such as representatives of the municipality or conservators. The real estate market, which notes high prices in those neighbourhoods, provides further proof of their favourable perception. The neighbourhoods and their buildings are often cited in the research literature and referred to as patterns of appropriate development.

4. POSITION OF THE NEIGHBOURHOODS WITHIN THE HERITAGE PROTECTION SYSTEM

There are four main legal forms of heritage protection in Poland under the 2003 Monuments Protection and Care Act: listing a building or a complex on the Register of Monuments; recognising it as a Monument of History; creating a Culture Park; and decisions taken within local development plans. The first and the fourth seem to be the most relevant to the neighbourhoods under discussion. However, none of the four neighbourhoods and only two buildings in the Officer Neighbourhood have been listed on the Register of Monuments, although many houses have been declared as architectural monuments. The latter were entered in the Record of Monuments, a less strict and limited form of heritage protection: three of the four neighbourhoods as urban complexes, 302 buildings in the Officer Neighbourhood (including 14 built in the 1950s), 9 buildings in the Quiet Corner (out of 12 in Domeyki St.), and all 12 buildings in the Worker Neighbourhood. Neither the Social Insurance Neighbourhood nor any of its blocks have been listed at the Record.

As of 2016, the Officer Neighbourhood (virtually the whole area) is the only one of the four discussed cases to have received a local development (land-use) plan, which is considered to be a very strict instrument of planning and protection (nearly 50% of Krakow area has now been covered by land-use plans since 2003). None of the four neighbourhoods has been included by the local revitalisation (regeneration) plans that have been in use in Polish cities since 2005.

Apart from the official system of heritage protection, informal initiatives undertaken in order to help protect these areas should also be noted. All four neighbourhoods have been included in the Krakow modernist trail and there exists an association of lovers of the Officer Neighbourhood.

5. CONCLUSIONS

Although the Officer Neighbourhood, Quiet Corner, Social Insurance Institution Neighbourhood and Worker Neighbourhood have much in common, they also differ considerably from each other. The first two consist of single family buildings (the first mixed with multi-family houses, the second exclusively single-family). The last two are composed of blocks of flats, and the last is the only one equipped with a social-cultural building. The original plans of the neighbourhoods were, although relatively simple, by no means accidental: well-balanced and with certain subtle compositional features. The architectural style of the Officer Neighbourhood is a mixture of houses in the 1920s historicising and romanticising style, together with 1930s modernist buildings. The three other neighbourhoods are dominated by the purer modern image that took over in the 1930s.

In their 80 to 90 year history, the neighbourhoods have undergone various transformations. WWII made their full completion impossible. In turn changes from the original design principles resulted in some contrasting in fills introduced between the 1950s and 1980s. Since the 1990s, the neighbourhoods' attractive location and other measurable values have resulted in a renewed pressure for densification and extensions, and one has also to note that the attitude towards modern heritage and its protection has improved. The discussed neighbourhoods have become an important and respected part of Krakow's interwar architectural heritage.

The present-day situation of this modern urban heritage in Krakow is complex and somewhat paradoxical. While the neighbourhoods are appreciated and praised for their features and quality, their value is still not recognised sufficiently in practice, which occasionally leads to partial losses of original structures and forms being replaced with the newer and often substandard ones. Such a contradiction results from general economic pressure, some gaps within planning and protection systems, and the limited scope of strict protection.

Finally, one should emphasise some of the positive developments which have emerged in the 21st century. Some of these neighbourhoods' original buildings have been perfectly renovated as offices, company buildings or restaurants or, best of all, as residential buildings. Another good sign is the first new projects, which either draw upon their historic context or provide a new design that fits in very well with the shapes and sizes of the surrounding structures.

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Borovo – from the City of Modern Architecture to the Listed Heritage of a Historical Industrial Complex

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Czech industrialist Tomas Bat'a, the owner of the Bat'a company which specialized in the manufacturing of footwear and rubber during 1920s created a territorial network of *Bat'a's company towns* in Europe and worldwide so called *Bat'a's satellite towns*, headquartered in the industrial and functional town of Zlin, Czech Republic. The planned investments for the constructions, as well as the architectural and urban projects of the satellite towns derived from the Bat'a's Construction Office in Zlin, which generated modernist transformations of the city space according to the principles of the International Style. By using an example of the Bat'a's satellite town in Borovo, Republic of Croatia, we can trace the continuous changes of the given space as a result of the historical circumstances.

Through this research we follow several specific periods of Borovo's transformation. After WWI, "the conceptual identity" contributed to international modern architecture and urban planning, as part of the Bat'a's company towns network when Borovo aimed to become a regional centre of a planned conurbation. "The real identity" of the town corresponds to the constructed Bat'a's satellite town and the continuous construction after WWII. It reaches its climax, which lasts till the 1990s, when a negative development cycle as well as towns degradation commences. And finally, the main focus of the research is based on the "nowaday's identity" which encompasses today's condition of this space under its institutional protection as a listed heritage.

We analyse the existing approach protection by the means of a critical review in order to find ways to revitalize Bat'a's heritage in Borovo. Can we intervene inside a modern historical unit and if so which are the best ways to intervene in order to connect the unescapable theory of change with the modern architecture, as well as to enable the preservation of the town dematerialization?

The goal of this research is to recognize the potential for development of public policies as well as the instruments of urban planning in regards to sustainable conservation of the modern historical architecture. In the case of the sustainable approach of Borovo, as a zone of future transformation, we analyse the relationship of the former users and potential opportunities for the future users with the benefits for the local community.

1. INTRODUCTION

The urban concept and architectural expression of a *Bat'a's company town* in Borovo (formerly the Kingdom of Yugoslavia, today the Republic of Croatia)¹ wasn't created organically or elementary but rather as a planned exported product of the Bat'a Company, initiated in 1931² at the construction office in Zlin³ (formerly Czechoslovakia, today the Czech Republic). Thanks to the Bat'a Company, Zlin was transformed from a provincial, historical city into a unique example of functionally planned modern city, divided into industrial, residential and commercial zones even before the CIAM congress in 1933 and the *Athens Charter* in 1941⁴. The largest

investments made by Bat'a started during the 1930's, when the founding and construction of *company towns*, also known as Bat'a's *satellite cities*, began. By merging economic, social and cultural politics, a territorial network of cities around Europe and the world was created, and Borovo was among them *pars pro toto*, with Zlin as their headquarters⁵. The creation of a "conceptual identity"⁶ encompasses the conceptual urban plan for Borovo⁷ designed by architects František Lydie Gahura and Antonín Vitek in 1935, which itself was derived from an urban model for an *ideal industrial city* for the future⁸. During the short period between 1931 and 1946, the valuable empty land of Borovo was taken and defined by creating a "true identity"⁹. The project realised in Borovo was more modest than the conceptual models. The specificity of the urban typology of *company towns*, as well as the import of new urban structures and unified geometrical architectural forms has completely altered the surrounding landscape of urban and rural settlements in the vicinity¹⁰. Haussman's diagonals and radial corridor connections and the model of public communication cross profiles are the main characteristics of the Bat'a's *company town* in Borovo.



FIGURE 1. František Lydie Gahura, Conceptual Urban Plan, Borovo, Croatia, 1935. © Državni Arhiv Osijek, Fund: Tvornica – Borovo.



FIGURE 2. Bat'a's Construction Office in Zlin, Borovo, Croatia, 1937, View of the housing and factory. © Private collection Franjo Beck, 1937.



FIGURE 3. Based on the geodetic map. Map of the Listed cultural heritage complex, Borovo, Croatia, 2013. Map of the Listed cultural heritage complex divided in zones A, B and C according to the level of protection and MB as main buildings, potential listed heritage. © Private collection, authors of the map; Ivan Hubalek, Ines Ambruš, 2013.

A unique architectural model was created in the Bat'a's construction office in Zlin, for the purposes of shaping all public, residential and industrial buildings, which highlighted their unity, uniformity and affiliation to a single organism¹¹. Tomaš Baťa came to know the replicated construction system in the USA which was applied during the construction of industrial and public buildings by their architects F. L. Gahura and engineer Arnost Sehdal, creating a standardized system of modular ferroconcrete skeletons in the raster of 6.15 m × 6.15 m grid of pylons¹². The model reduced the residential house to the basic form of a square as well as the use of red color, which has been also found in the house prototype "Red Cube" by Farkas Molnar, created for the Bauhaus exhibition in 1922 by KURI¹³. Following the WWII the development of the city's "true identity" continued, as Borovo went through an apogee in the 1980s¹⁴.

The value of the constructed heritage of the Bat'a's *company town* was evident in continuous urban planning onwards from 1956¹⁵. The new conceptual urban plan was conceived by reputable Yugoslavian architect Mišćević¹⁶. The economic, cultural and urban autonomy of the company town in Borovo maintained its presence during socialism until 1991, when the development cycle was abruptly ended by the Civil War in Croatia, which marks the beginning of decline and degradation¹⁷.

2. MODERN CITY AND POSSIBLE FUTURE DEVELOPMENTS

The creation and development of the *company town* in Borovo was parallel to the nearby historical city of Vukovar¹⁸. Borovo is used as an example when looking into many unknown connections, one of the most notable ones being the relationship between the "existent minimum" of German Siedlungen¹⁹ and Czech functionalism. Further research identifies the functional city in its emerging form before and after the *Athens Charter*. Since the idea takes a hold within Yugoslavia only after the creation of Borovo (period before the *Athens Charter*), and its presence to such an extent is to be considered emblematic of the socialist social structure. Following the *Athens Charter*, the modern city archetype is taken over from the Borovo type and is further developed in a Yugoslavian framework. Borovo's planimetrics are burdened by geometry which can be found in all analog ideas of periods before and after the *Athens Charter*²⁰ with the regularity gridded streets which are systematized according to functional characteristics.

It is an attempt to reorganize society new a framework²¹. The proclaimed start from nothing, achieved by planning the empty space without existing elements and structures, has allowed the production forces to take over the dominant roles of creating space, claims Magaš²². We have to imagine the mood during the period between the 1950s and 1960s as well as the professional mood at the end of the International Style which is further explained by Košir²³. For example let us remember all of the conventional urbanistic models which were prevalent during the mid-1960s: “free” allocation of blocks and skyscrapers in an empty space. The idea behind the development and shaping of Split III²⁴ was to determine an all-encompassing development strategy for upcoming city districts. The basic matrix was formed by two motifs: the motif of an intensively constructed street, high concentration of apartments and the motif of open intensively green spaces between them intended for recreation and parking. That context makes the referent example reference model of shaping a step forward towards a radical turn which took place during the 1970s into what we presently call post-modernism.

3. THE INDUSTRIAL COMPLEX AS CULTURAL HERITAGE

Finally, the research focus shifts towards the “real identity” which encompasses the current state of this area as a protected cultural heritage of the industrial complex of the Bat’a’s *company town* in Borovo²⁵. The terms and the system of protection measures is determined by the valorization of the complex and individual buildings and their interrelations. By analytic methods and significance, on several maps²⁶, the regulations of protection measures, conservation and revitalization as well as other relevant values are defined which make the industrial complex of Bat’a’s *company town* in Borovo a place of cultural heritage²⁷. Any new construction into the existing tissue must not endanger historical buildings and it has to be integrated into the ambient²⁸.

4. NEW SUSTAINABILITY IDEAS BASED ON THE EXPERIENCES OF THE “MODERN MOVEMENT”

While analyzing the reverse influence on today’s Borovo, by realized functional cities which followed during the period after Borovo’s creation and the *Athens Charter*, we use the analogy of using new ideas for sustainability developed which were based on the experiences of the Modern movement. With the conservation and improvement of urban structures, Bogdanović²⁹ states that we should regard the course of future “events” methodically and to carefully develop a strategy for further city occupation. He advises that we need to address the connecting zones on the river bank. River banks are the most attractive locations for forming cities, claims Djokić³⁰. River banks present the most distinguished parts of city structures for most towns. They are places which feature recognizable objects, entire city matrices and in some cases, they are completely dependent



FIGURE 4. 1) Construction office Bat'a Zlin, Community house (on the left) and Bat'a housing, 1931-1941; Matija Salaj, Cinema (on the right), 1967, Milan Mihelič, skyscrapers (further away in the background), 1972-1976, Borovo, Croatia. Panoramic view of the housing and public spaces. 2) Construction office Bat'a Zlin. One devastated single family house from 1938, Borovo. 3) Dragica Knežević, recent reconstruction of the house for four families, Borovo, Croatia, 2014. © Ines Ambruš, 2015.

on the configuration of the river flow. The plethora of variants proves that these city sections contain the most unknowns as well as opportunities to implement a sustainable approach. Borovo is a city on the banks of Danube River with a corporate-created identity and brand. Announcing urban design competitions would allow an insight into the understanding of all existing urban models for the town. On one side it would attract planners which firmly believe in economic and technical progress, while on the other, it would call to the opposing ideologies which consider urbanism to be a sort of applied anthropology, and the desired city plan is being developed as a collective cultural exhibition, founded on the understanding and appreciation of the rules of cultural heritage³¹. These two approaches aren't irreconcilable and can be used in unison to prepare far-reaching decisions into the domain of sustainable cultural politics instruments. The urban competition must be preceded by significant expert research as well as a plan of (city) restoration³². When selecting methods of restoration it is desirable to include public consultation. It is important to heed the wishes, needs and ideas of public representatives and then present possible solutions. The initial phase would include highlighting aspects of the city which make it unique, while creating an identity for the city. A possible identity is formed by architecture, functions, services and future population which will be adorned by an urban lifestyle. Such projects on a local level present the state of the economy on a global level.

5. CONCLUSION

Can we intervene within a historical modern urban complex while at the same time merge the unavoidable demands of changes with the encountered modern architecture in order to restore and protect it during the process of city dematerialization? It is necessary to recognize the possibility of the development of public policies and instruments of urban planning, in accordance with sustainable preservation of historical modern architecture. In the case of sustainable access to the protected industrial urban area, as future transformation zone, we perceive a relationship between all former users of the industrial complex and settlements through various possibilities for future local community uses. Today, on a micro spatial level, Bat'a's Borovo truly exists only through the status of protected, listed cultural heritage³³. The survival and preservation of authentic structures would gain value if the Bat'a's *satellite towns* were to become united and connected on a macro spatial level in a unique network of cities through an international project of protection and preservation of modern architecture and urbanism. In that way it could create a virtual network of cultural heritage of those cities³⁴. The mono-functional, introverted cities with a closed system such as Bat'a's *company towns* are characterized by lack of flexibility and great vulnerability as their primary function has been lost. In order for them to be regenerated as a unique whole, their survival depends on the same significant capital which created them in the first place. On a small scale, Borovo has a potential for several possibilities of sustainable development in the future. For example, it could thrive as an important strategic point, a future port in the planned project of the Danube – Sava channel. It could also be used for continuing industrial production which would be competitive (ex. automotive industry) or as another specialized center such as a software development city. Over time, Borovo has been transformed from a proclaimed functional city into a mono-functional city – a residential settlement of the historic city of Vukovar as a result the loss of its initial, mainly industrial function.

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NOTES

- 1 The suitable location for the construction of Bat'a's company town in Borovo was chosen by Tomáš Bata (1876-1932) and his team in a rural area with an abundance of unused land and potential workforce. Borovo was constructed at a bend of Danube's right bank, 1337 rkm, only 4 km from the historic city of Vukovar, among the previously formed traffic corridors; railway lines, international state road Vienna – Vukovar – Belgrade – Istanbul and the navigable portion of the Danube.
- 2 The Bat'a Company from Zlín was present with their products on the market of the former Kingdom of Yugoslavia from 1910, and officially registered as a trade company *Bat'a cipele i koža d. d.* Zemun – Zagreb in 1922. Afterwards, in Borovo, the company was officially registered in 1933 as *Bata jugoslavenske Tvornice Gume i Obuče d.d. Borovo*. State Archive Osijek, DAOŠ – Fund “Borovo-Factory”, excerpt from the judicial registry, December 1, 1933 – entered into the registry at kotar court in Vukovar; *Bata Cipele i Kože d.d.* with the headquarters in Borovo; Srez Vukovar.
- 3 The company had its construction office with departments for architecture and urbanism which was in charge of planning, projecting and realization of all architectural and urban projects. Jan Kotěra, a student of Otto Wagner and professor at the Prague academy was the Head of Office. Apart from Kotěra, the Office employed his student, František Lydie Gahura (1891-1958), Josef Gočar, Antonín Vitek, Vladimír Karfík, Jiří Voženilek and others. Ladislava Hornakova (ed.), *The Bata Phenomenon Zlín Architecture 1910-1960*, Zlín, Regional Gallery of Fine Arts, 2009, 57-93, 257-263.
- 4 Henrieta Moravčíková, “Social and Architectural Phenomenon of the Bataism in Slovakia (The example of the community Šimonovany-Batovany-Partizánske)”, *Sociologia*, vol 36, n. 6, 2004, 519-543.
- 5 List of existing Bat'a satellite cities in former Czechoslovakia: Otrokovice – Batov (1930-1934), Trebič, (1933), Nové Zámky (1935), Zruč nad Sázavou (1938), Sezimovo Ústí (1939) Bošany, (1931-1934), Svit (1934), Liptovský sv. Mikuláš (1938), Batovany – Partizánske (1938). *Satellite cities* in other parts of Europe: Borovo in Croatia (1931 godine), Othmuth in Poland (1931), Möhlin in Switzerland (1932), East Tilbury in England (1932), Chelmeck also in Poland (1932), Hellocourt and Vernon in France (1932), Best in the Netherlands (1933) and Martfü in Hungary (1941) and on other continents: Batanagar, India (1934-1935), Batawa, Canada (1938-1939) and in Brasil Batatuba (1939), Mariapolis (1941), Bataguassu (1953), Nova Andradina (1958), Município de Anaurilândia (1963), Município de Batayporã (1963). Ladislava Hornakova (ed.), *op. cit.*, 123-143.
- 6 The methodological terms “conceptual identity”, “true identity” and “real identity” are taken from Maroevič. Ivo Maroevič, “*Zaštita Urbanih i Prostornih Vrijednosti*”, in *Konzervatorsko Novo Iverje*, Petrinja, Matica hrvatska Petrinja, 2000, 77-82.
- 7 DAOŠ, Fund: *Borovo – Factory*. The conceptual urban plans of Borovo are characterized by an accentuated central axis of green surfaces with public buildings intended for education, culture, recreation, trade and infrastructure. The central axis derives from the factory (nucleus), while the residential zone is organized in free-standing houses within green zones and is developing equally from on both sides of the axis. The locational specificity of Borovo lies within defined transport corridors such as the river Danube, railway tracks and paved roads already defined the composition of the entire city. Vitek's blueprint depicted a city intended for 20 417 employees and the construction of 3396 apartments and 1558 houses was predicted to secure their housing.
- 8 This urban model was created in the urban design department of Bat'a construction office in Zlín which worked on the theoretical research on urbanism which were collected in several books, that are in *Moravský Zemský Archiv v Brně, Státní Ohresní Archiv ve Zlíně, Bata, a. s., Stavebení odd.* (further MZA Brno – SOKA Zlín, Bata), 1/4, rec. no. 69, inv. no. 30; 1/4, rec. no. 70, inv. no. 33; V, inv. no. 1-5, 11-23, 25-28, 51; XV, rec. no. 21, inv. no. 34, published book *Ideální průmyslové město budoucnosti* Dr. J. A. Bata, 1937.
- 9 When the Borovo factory opened for business in 1931, there were 150 employees and the next year saw an increase to 800, while the peak was reached in 1939 when Borovo numbered 4650 people. Dr. Hrelja, Kaminski, “Borovo”, note 23, table 6, p. 42. The employment data was calculated according to the report completed by the Executive Board of Bat'a Borovo for the years 1938, 1939, 1940 and 1941. Company statistical yearbook for 1968, Borovo 1969, 26.
- 10 Natural resources weren't integrated with the city. Đergaj forest remains on the side along the river Vuka, which means that the potential of constructing a city on the river Danub was minimally realised. Only the factory maintains a direct link with the river, which suggests a lack of synergy and interweaving of functions within the planned city.
- 11 The geometric volumes with flat roofs and accentuated mezzanine coronas filled with red brick and glass are of a recognizable model according to which all Bata's industrial and public buildings were constructed. The community house was constructed in 1936 in order to create a center of Borovo's cultural and social life. The sports and recreation zone is defined by the football stadium designed by Krafík in 1936, followed by tennis courts, bowling arena and the pool playground. The outdoor pool and sports arena upgraded the sports and recreation zone but not until after WWII. Bat'a contribution consisted of creating a new infrastructural corridor – an airport, opened in 1934 when a regular Beograd – Borovo – Zagreb airline was introduced. The residential house typology was designed to reflect the social status of the employee living there. Bat'a was in favor of collective work and an individual residence.
- 12 Gilian Darley, *Fabbriche, Origine e Sviluppo dell'architettura Industriale*, Bologna, Edizione Pendragon, 2007, 92-98 [2003].
- 13 KURI (Constructive, Utilitarian, Rational, International) – Name of the group formed mainly of Hungarian artists who worked around Bauhaus (Farkas Molnar, Henrik Stefan, Andor Weininger, Kurt Schmidt and others. The group was based on publications and works by Moholy, Nagy and Molnar. They cooperated with Yugoslavian artists (Dragan Aleksić, Boško Tokin, Ljubomir Micić). Dubravka Djurić, Miško Šuvaković, *Impossible Histories, Historical Avant-Gardes, Neo-Avant-Gardes and Post-Avant-Gardes in Yugoslavia (1918 – 1991)*, Massachusetts Institutes of Technology, 2003, 307, 308.
- 14 During socialism, the company Bat'a was confiscated and transferred into the ownership of Yugoslavia State under the name Kombinat Borovo. DAOŠ, Fund “Borovo-Factory”, Kotar public court, Vukovar, March 15, 1946, I. R. 368/49. The confiscation document for the Bat'a factory stated that it owned an amount of 317 hectares of land.
- 15 Thanks to the continuous rise in productivity, the company Kombinat Borovo became one of the leading factories in former Yugoslavia. In 1980 it had roughly 22 000 employees and produced 22 million pairs of footwear. Today Borovo produces 200.000 pairs of leather footwear and 180.000 pairs of rubber and textile footwear.
- 16 As an extension of Bat'a Borovo he designed an urbanistic plan in the international style and achieving new densities by upgrading the central axis with public buildings, while raising the residential zone vertically onto higher floors of collective residential skyscrapers, which distinctly separated it from Bat'a settlement.

- 17 After the Croatian War of Independence, residential settlements were separated from the factory by being transferred from factory property into state property which automatically meant the disappearance of the authentic, self-sustaining company town. In the types of management and public policy implemented of significance is the exclusion of the private sector in the continuity of urban form in the built environment. Today there is, polarization on the public areas (streets, parks, primary school, etc.) under administration of local government of Vukovar and the remaining property of the company Borovo (industrial buildings with associated housing and community buildings) which is state property under Center for the Restructuring and Sale. Today the company town Borovo has been joined with the historic city of Vukovar as a city district, which it was never planned to be part of it.
- 18 In environmental terms today the area of Borovo on the south-east is structurally discontinuous from the historical city of Vukovar, with linear coastal caesura which carries out part of the port functions. Neighbourhoods on the north and west are the settlement of the rural type characterized by free-family houses in relatively low density housing of modest architecture designed and built after 1950s.
- 19 1924, Ernst May and New Frankfurt. Jean Castex, Jean-Charles Depaule, Philippe Panerai, *Urbane Forme*, Beograd, Agora, 1989, 190-194; Michel Toussaint, *Da Arquitectura à Teoria da Arquitectura na Primeira Metade do Século XX*, Lisboa, Caleidoscopio, 2013, 246.
- 20 Construction of New Belgrade in 1948 (Arch. Dobrović N.) and New Zagreb in 1957 (Trnsko settlement; Arch.; Kolacio, Z., Maretić, M., Uhlík, J., Wenzler Halambek, M.)
- 21 According to Borovo's urbanism example, a fundamental Le Corbusier definition was formed: "Urbanism must set up relations between locations intended for residence, work and free time in order for the daily activity cycle, such as residence, work and recreation, to be within the strictest economy of time and space". Bruno Milić, "Funkcionalni Grad Prije i Poslije Atenske Povelje", *Arhitektura*, CIAM, Godina, 37-38. Marijan Hržić (ed.), *L.C. Annales Techniques*, Crece, No 46, 1933. Zagreb, Savez arhitekata Hrvatske, 1984-1985, 54-61.
- 22 Boris Magaš, "Tragovi kretanja", in Marijan Hržić (ed.), *Arhitektura*, CIAM, 37-38, Zagreb, Savez arhitekata Hrvatske, 1984-1985, 62-65.
- 23 Feđa Košir, "Humana metamorfoza, Za definiranje gradske slike Splita", in Marijan Hržić (ed.), *Arhitektura*, CIAM, 37-38, Zagreb, Savez arhitekata Hrvatske, 1984-1985, 152-153.
- 24 *Id.* (1968 during the time of public tenders for the development of a new district of the city of Split in Croatia, Split III (Mušić, V., Bežan, M., Starc, N.) (the area encompasses 350 hectares, with a planned population of 50000)).
- 25 In 2008 the Bat'a's company town in Borovo was placed under protection of Ministry of culture Republic of Croatia as area, cultural and historical urban complex and entered on the list of the registry of Cultural Heritage of the Republic of Croatia. Afterwards was begun the systematic reconstruction of residential zones under the oversight and regulation of Ministry of Culture Republic of Croatia, Directorate for the Protection of Cultural Heritage, Conservation Department in Vukovar according to inadequate conservation guidelines, and oversight. All interventions in this protected area are regulated by legal Act of the Protection and Preservation of Cultural Heritage of the Republic of Croatia and in accordance of the foregoing relevant Institution. The majority of funding comes from investors and owners, with some also granted by the Ministry of Culture Republic of Croatia.
- 26 1. Purpose of areas along with the main buildings, 2. Identification of historical structures – area genesis, 3. Condition of Bat'a residential and public buildings in 2010, 4. Condition of industrial buildings in 2013, 5. Area zones according to the level of protection (Zone "A", "B" and "C" with a grading of significance of historical structures and protection measures)
- 27 In the industrial courtyard zone most of the buildings are demolished or irreparably devastated. That area is suitable for, conservation, reconstruction and restorations where it is possible. Degraded and damaged authentic structures without heritage values could be demolished and include infills with new elements which will enrich the area both through horticulture and architecture. The most valuable factory buildings (the shoe factory I. and II. and rubber factory) with associated surroundings must be revitalized in order to preserve the historical characteristics of the industrial area.
- 28 Possible interpolation methods include the adaptation method with the goal to combine the newly constructed buildings with the historical area while attempting to assimilate the new with the old. Furthermore, the method of accentuation as an attempt to set up a more balanced relationship between the new and old elements. Interpolation methods according to book of Ivo Maroević (Ivo Maroević, *Sadašnjost Baštine*, Zagreb, Društvo povjesničara umjetnosti SR Hrvatske, 1986, 189-240.)
- 29 International tender for the improvement of the urban structure of New Belgrade. Bogdan Bogdanović, "Budućnost Novog Beograda. Međunarodni konkurs za unapređenje urbane strukture Novog Beograda", *Arhitektura urbanizam*, vanredni broj. Godina 25. (ed.) Uglješa Bogunović, Beograd, Časopis za arhitekturu, urbanizam, primenju umetnost i industrijsko oblikovanje, 1986, 3-5.
- 30 Vladan Djokić, *Urbana morfologija: grad i gradski trg*, Beograd, Univerzitet u Beogradu, Arhitektonski Fakultet, 2004, 44.
- 31 An example of good practice was the *national competition for Cep* for the sandbanks of San Giuliano, Mestre, Italy on 1959 and the example of Matera few years earlier. The goal was to solve the social, material and cultural degradation of Matera and to relate the historic city of Venice to the modernisation of the suburbs. These projects remained as fundamental point of reference to the urban culture in Italy. Donatella Calabi, *Storia dell'urbanistica europea. Questioni, strumenti, casi esemplari*, Milano, Bruno Mondadori, 2008, 269-270.
- 32 According to Pogačnik, they are the following expert research: 1. Analysis of the existing residential structure (regarding ownership, usage, age, architectural shape, construction, technical and static situation) – documented, 2. Analysis of owner's propositions, a form of including owners participation into the restoration process – documented, 3. Grading and significance of monumental protection and conservation – documented, 4. Studies of possible restoration forms and revitalization programs – documentation necessary, 5. Possible organization of traffic and public areas – documentation necessary.
- 33 About Bat'a's satellite towns Batanagar, Batawa and Otrkovic and their reuse currently writes Munoz Sanz in Victor Munoz Sanz, "Between global turbulences and local manners: The multiple lives of the Bata Shoe Company Satellite towns", in Paolo Marcolin, Joaquim Flores (ed.), *20th Century New Towns Archetypes and Uncertainties Conference Proceedings*, DARQ, CEEA, ESAP, Porto 22-24 May 2014, 277-297.
- 34 Opportunities for detailed location analyses would be set up in all cities along with opportunities for their grading of significance, presentation suggestions and revitalization of the Bat'a cultural heritage. The expert scientific approach to safety measures would be common to all cities and would be able to secure their survival through *musealization* of the most valuable, authentic structures.

Tel Aviv's White City.

12 Years since UNESCO's Designation

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This paper aims to assess the effects of urban renewal upon a city sector, twelve years after its designation by UNESCO as a World Heritage site. The White City of Tel Aviv developed at the conjunction of three utopian conceptions: Modern Movement ethics and aesthetics that informed its functionalist architecture, Zionism, a national movement that aimed to create a new society for the Jewish people, and Sir Patrick Geddes' theories on the ideal urban community, applied in the Tel Aviv Plan of 1925.

First interest in the White City of Tel Aviv's heritage was risen by researchers in the early 1980s, ensued by a widening recognition during the 1990s and culminating in 2003 with UNESCO's declaration. For now, municipal efforts strive towards formal architectural conservation, its technologies and procedures, tackling with a large, mixed-use area holding several hundreds of listed residential buildings. A number of architectonically valuable cases of renovation notwithstanding, the authors observe and analyse certain contradictory results. Firstly, an accelerated gentrification process currently taking place; secondly, ominous decay of buildings and the predictable displacement of tenants who cannot afford the renovation costs. Speculative acquisitions by real-estate developers are creating a high-end housing market, enjoying the improved quality of urban life. The so-called Bauhaus style is becoming a marketing ploy, obscuring the spirit that informed the architecture and town planning of the White City; a public and professional controversy has developed concerning the limits of permitted additions and the magnitude of changes.

The question arises as to whether the UNESCO Declaration and the Tel Aviv Conservation Plan have been a pivotal factor in the gentrification process or did they just accelerate a much wider and complex phenomenon. These two documents focused on architectonic aspects but were not informed by an assessment of their social impact, nor were complemented by a conception of the White City as a social space. Must urban renewal always lead to gentrification?

1. BACKGROUND

Founded in 1909 as a suburb north of the ancient port of Jaffa, Tel Aviv developed as a lineal northward thrust along the seashore. Initially, it was an aggregation of neighborhoods with no comprehensive planning strategy. However, *garden suburb* ideas informed its planning from the very beginning, attaining such success that by 1924 Tel Aviv had developed into a burgeoning, caotic township of 30,000 inhabitants.

This disorganized, unsystematic growth prompted the legendary mayor Meir Dizengoff to invite Professor Patrick Geddes, "social evolutionist, city planner", father of regional planning, to formulate a master plan that would regulate the city's future growth. The result was what nowadays is known as the Geddes Tel Aviv Plan of 1925. A significant stage in the city's development had begun.

Geddes tackled with a new urban district to the north of the existing city: almost 360 ha of sand dunes bordering on the Mediterranean to the west and the Yarkon River to the north. The planned area was as large as the whole built-up city at that time. Geddes devised a unique and original “city of gardens”, alluding to the name “Tel Aviv”, meaning “hill of spring”. He proposed a plan for a city of 100,000 inhabitants, which would be “more beautiful and health-giving than any previous form of community in human annals.” Geddes summed up the plan’s goal stating: “the model and ideal before us is that of the garden village. But this is no longer merely suburban, but as coming into town and into the very heart of the city block.”



FIGURE 1. Geddes' boulevards: the excellent urban quality of life has remained.
© Horacio Schwartz, Raquel Rapaport.

Geddes proposed a system of main streets defining large urban “home-blocks”. The main ways carried traffic and commercial activities while the core of the urban block was dedicated to public open spaces and educational and cultural buildings. The Geddes Tel Aviv plan of 1925 is the most accomplished amongst the experimental planning of its time; it indeed produced a new form of urban community and its excellent urban quality has endured.

Subsequently, Tel Aviv underwent a period of prosperity and substantial growth. By 1934 it reached a population of 60,000. Many Europe educated architects, some of them Bauhaus graduates, arrived at Tel Aviv; the Modern Movement entered the professional scene. To celebrate the city’s 25th jubilee, a splendid international exhibition – the *Levant Fair* – was held north of Geddes’ district. A team of young architects designed a compound of avant-garde pavilions that would transform the urban landscape. The exhibition was a turning point: it provoked an exceptional public reception of MoMo architecture and induced the formation of Tel Aviv’s White City.

Unlike Jerusalem, steeped in history, Tel Aviv was felt to be a *tabula rasa*, which encouraged experimentation: the freedom to be new. Municipal statistics show that by 1934, 800 of Tel Aviv’s 5329 buildings were modernist ones; by 1938, 1200 new MoMo buildings were added to the urban fabric, and by 1948, the year the State of Israel was established, one out of every two houses in Tel Aviv was a MoMo building. Hence, since the *Levant Fair* both the architectural community and the public overwhelmingly adopted the principles of MoMo in concept and form.

The emergence of new typologies for middle class apartment houses, workers’ estates and public buildings consolidated the core of the “White City on the

shores by the Mediterranean”, as Tel Aviv began to be called. MoMo became the accepted language of its architecture: the emerging bourgeoisie, organized labour, building cooperatives, architects and patrons all agreed to adopt this language as an expression of national renaissance. In the interim, the city continued growing and became the centre of a national metropolis.

2. RECOGNITION AND DESIGNATION

Modernist architecture continued to be built on the area through the 1950s; the conjunct effect of the Geddes’ plan and avant-garde architecture produced a unique urban area. In turn, the 1960s brought the beginning of decay: new affordable public housing in suburban estates increased downtown depopulation. During the 1970s, the White City, also called “Bauhaus district” declined: its aging residents could not and owners did not invest in the upkeep of buildings. Low real-estate values ensued; previous public enthusiasm was transformed into apathy: Tel Aviv architecture was trivialized in the public’s eye and stopped drawing attention.

Only in the early 1980s did Tel Aviv’s White City begin to stir public awareness and researchers’ interest, through a few seminal publications about what was being considered a national “golden age of modernism”. This culminated in 1984, on the 75th anniversary of the foundation of the city. The Tel Aviv Museum hosted the exhibition *White City, International Style Architecture in Israel – Portrait of an Era*, curated by Prof. Michael Levin. The same year, the exhibition toured to New York.

A widening recognition ensued during the 1990s. Several Modern Movement historians visited the White City and marked its uniqueness. Even with deteriora-

tion, the White City area continued to be well served by public transport, retail commerce and services, providing easy access to and for cultural and educational institutions. As real estate values sunk, it allowed “urban pioneers”, attracted by the quality of urban life implicit in Geddes’ plan, to swap suburban family flats for inner-city rundown dwellings; this generated an influx of creative classes, young professionals and empty-nest middle class couples, starting in the 1980s and increasing significantly since the 1990s.



FIGURE 2. Renewed public spaces: Geddes’ Culture Square flanked by White City buildings.
© Horacio Schwartz, Raquel Rapaport.



FIGURE 3. High-level renewal made even more manifest the decay of untouched buildings. © Horacio Schwartz, Raquel Rapaport.

The next milestone took place in 1994, with a *World Conference on the International Style in Architecture*, jointly organized by UNESCO and the Municipality. Two years later Tel Aviv's White City was listed as a World Monuments Fund endangered site. After the historians began the task of the conservationists, and the Conservation Department, headed by Prof. Niza Szmuck, who prepared a detailed survey and conservation plan. The plan included about 1000 International Style buildings, 120 of which were protected by stringent restrictions, and a further 600 buildings of other styles. The plan also affected the design of the surrounding area, spreading out over about 10 km². Approved in 2000, by 2002 it was proposed to UNESCO for World Heritage listing.

In 2003, almost 20 years after the White City exhibition, UNESCO named Tel Aviv a World Heritage Site "for its treasure of modern architecture". From the UNESCO World Heritage decision document we quote:

*The White City was constructed from the early 1930s until the 1950s, based on the urban plan by Sir Patrick Geddes, one of the foremost theorists in the early modern period [...]. The buildings were designed by architects who were trained in Europe where they practised their profession before immigrating. **They created an outstanding architectural ensemble of the Modern Movement in a new cultural context.** The buildings are mainly three to four storeys high, with flat roofs, plaster rendering, [...] and the colour scheme ranging from cream to white.*

The White City of Tel Aviv is an outstanding example of new town planning and archi-

tecture in the early 20th c., adapted to the requirements of a particular cultural and geographic context. [It...] is a synthesis of outstanding significance of the various trends of the Modern Movement in architecture and town planning. [...] Such influences were adapted to the cultural and climatic conditions of the place, as well as being integrated with local traditions.

The designated area was marked on the city's map by means of a blue contour, which from then on would affect the city's future.

3. AFTERMATH

Today, 13 years after UNESCO's declaration, an accelerated process of change has taken over the whole district. A significant number of architectonically valuable buildings have been renovated, and the White City's renewed attractiveness has caused strong demand for potential "colonizers". Consequently, speculative acquisitions by real-estate developers are creating an upper-end housing market; the so-called Bauhaus style is becoming a marketing ploy, distorting the austere spirit that informed the architecture of the White City.

As most of the White City designated buildings are in private ownership, the scope of municipal or governmental intervention was limited. That is why public funds have been spent mainly in improving public spaces – most successfully in the formerly dilapidated waterfront areas of the Tel Aviv port, the renewed "Culture Square" and Geddes' Boulevards.

Subsidized loan companies such as Ezra Ubitzaron provide some assistance to those wishing to renovate their houses; however, regulations for listed buildings are strict and their implementation expensive, often making it impossible for the residents to meet the costs. This makes even more manifest the decay of untouched buildings; then again, it opens a window of opportunity to developers willing to

assume the renewal costs in exchange for building rights for additions to the upper floors'. The newly added dwellings are usually built at the highest standard, with obvious social and economic implications. Present newcomers, then, tend to belong to the upper bourgeoisie. Furthermore, original dwellers were mainly middle and working class leaseholders, yet the renewal process brought a swift rise of rental prices, and prompted illegal subdivision and subletting of properties. Speculative acquisitions by real-estate developers increase the threat of eventual displacement of tenants; as a simultaneous process, many up-market resi-



FIGURE 4. Aging, renewal and gentrification. The sign reads: "Luxury flats for sale". © Horacio Schwartz, Raquel Rapaport.

dential projects, mostly high-rise towers, have been planned close to the White City: several are in the approval process and quite a few have already been built.

4. CONCLUSIONS

The UNESCO Declaration and the Tel Aviv Conservation plan have been key factors in a gentrification process of the White City, speeding up a much wider and complex phenomenon. It is now accepted knowledge that renovation or conservation of buildings and urban sites result in a rise of real estate values and an influx of well-off dwellers. The present discourse refers to downtown as the new urban frontier and to *gentrifiers* as urban pioneers, newcomers to whom suburban life is no longer suitable and proceed to downtown neighbourhoods colonization.

Conversely, gentrification was originally defined as the process of renewal of deteriorated urban areas that often displace poorer residents. Middle-class people take up residence in a traditionally working-class area of a city, changing its character. The term “gentrification” was coined in 1964 by British sociologist Ruth Glass, a Marxist urban geographer; anthropologist Neil Smith expanded the term’s scope to understand gentrification as a new form of neo-liberal urban policy: while the driving force behind gentrification is a growing difference between the potential value of inner urban properties and their land values, this disparity acts as a magnet for relatively unrestricted actions of property-based capital, real estate agents and developers.

The renewal and gentrification process developed on the context of significant changes in housing policies. From the 1970s Israel has witnessed a diminishing role of the government in national housing policy, towards market-oriented urban restructuring projects. From a Socialist, centralized welfare state led by a *Mapa’I* government, that built large public housing neighbourhoods during the 1950s and 1960s, political change brought since 1977 a neoliberal, private enterprise-oriented *Likud* government. At present, the result is a mounting deficit of dwelling units, and a widespread demand for affordable housing in the Tel Aviv metropolis. Looking at the designated area boundaries on the map one realizes how large a portion of the whole city it encompasses; it stands to reason that an urban sector of this size must be part of a comprehensive master plan. The large number of buildings and the extent of its area of influence demand a socially oriented economic development plan to offset the economic forces at lease. The conservation plan and UNESCO’s declaration focused on physical/architectonic aspects but were not informed by an assessment of their social impact. The conservation plan was not accompanied by a long-term implementation plan taking into account the social consequences of the urban renewal process. Only recently such a plan has been devised and approved by the local Council, and consequently it has been compelled to tackle with the results of the UNESCO Declaration while earlier it could have directed them, and avoid negative trends. The implementa-

tion of the White City conservation plan has caused a chain reaction: a massive psychological, behavioural impact on an entire sector, a living urban district undergoing change and becoming an observable phenomenon; the economic impact was not foreseen. Moreover, long-term policy instruments were not created neither to counter speculative market trends nor to avoid the displacement of a vulnerable population. Hitherto, integrated handling of the whole district as one spatial entity, as well as an adequate answer to the acute deficit of affordable housing in the metropolis, are both lacking. It is worth noting, however, a significant cultural phenomenon: the Tel Aviv White City and the Geddes Plan have become prime academic topics, staple research cases for architecture students; academic and professional controversies have developed concerning the limits of permitted additions and the magnitude of changes allowed within the White City. Simultaneously, questions are beginning to emerge concerning the future conservation of public housing estates and buildings adjoining the White City sector and in the greater Tel Aviv area. Built during the 1950s and 1960s, it is now named "The Gray City", because of its widespread use of exposed concrete. Now the aim is to seek guiding principles for a sensitive adaptation to current needs. The authors conclude that there exists an urgent need for judicious strategies and regulatory instruments to control and direct future interventions, in order to preserve social diversity. Must urban renewal and architectural conservation always lead to gentrification?

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Modernist Gdynia. Challenges of Heritage-Based Development

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The city of Gdynia, Poland, developed on the back of the success of its sea port. As Poland regained independence after WWI, the country was left without a port of its own. In 1921, a site was designated near Gdynia, a small village at the time. Divided into several construction stages, in the late 1930s the modern port of Gdynia became one of the biggest on the Baltic Sea, with its outer part going into the sea and inner part neighbouring on the village.

Created in 1926, Gdynia's first urban plan ensured a strong link between the city and the sea with a spacious city square taking centre stage. The city's grandest buildings were to radiate from it. Construction began in the late 1920s and is still on-going, in a sense. The outer quarters comprised residential buildings, many of which were of public and service type. The inner city's residential developments were primarily tenement houses without annexes, most of which represented modern architecture. There were large multi-family houses with several staircases, a unique solution, still successful today. Gdynia's prevailing modernist 1930s architecture is characterised by the style's typical architectural features.

Ensuring heritage-based urban development today is a multi-level operation involving research, law, economics, urban planning, community involvement and promotion. The authorities' objective is to search for harmony between heritage and urban growth in the pursuit of sustainable development.

Maintaining the modernist architecture is a key challenge, and Gdynia's regulations are very helpful with that. Land use plans are now very specific about conservation requirements, all based on analyses of architectural features. While conservation and restoration efforts benefit from public funding, community-led involvement is just as important. The authorities are happy to inspire and support the involvement of residents in preserving historic heritage. If heritage is to survive, it must be part of development.

1. HISTORY

The city of Gdynia developed on the back of the success of its sea port on the Baltic coast. As Poland regained independence after WWI, the country was left without a port of its own. The site for the new port was designated in 1921, near Gdynia, a small fishing village at the time, and next to where a small river enters the sheltered bay. Divided into several construction stages, in the late 1930s the modern port of Gdynia became one of the biggest on the Baltic Sea, with its outer part going into the sea and inner part neighbouring on the village.

Authored by two Polish urban planners, Roman Feliński and Adam Kuncewicz who were both keen followers of modern architecture and urban planning, Gdynia's first urban plan was created in 1926. It ensured a strong link between the city and the sea with a spacious city square inspired by Venice's St. Mark's Square taking centre stage. The city's grandest buildings were to radiate from the square. Construction began in the late 1920s and is still on-going, in a sense. The outer



FIGURE 1. Bay of the Baltic Sea and the village of Gdynia in 1913. The place where the port and the city were built.
© Archives of the Museum of the City of Gdynia.

quarters comprised residential buildings. There were numerous buildings, part of an extensive programme of public and service functions. The inner city's residential developments were primarily tenement houses without annexes, most of which represented modern architecture. There were also large multi-family houses with several staircases built by organised community initiatives such as the Social Insurance Institution, a unique solution, still successful today. Gdynia's prevailing modernist 1920s and 1930s architecture is characterised by the style's typical architectural features. The city's young and talented architects, Tadeusz Jędrzejewski, Zbigniew Kupiec, Tadeusz Kossak, Stanisław Ziółowski, Stefan Reyman and Jerzy Müller, were very familiar with, and inspired by, the works of Walter Gropius, Mies van der Rohe, Le Corbusier and other classics of modernist architecture.

2. THE PRESENT

Delivering heritage-based urban development today is a multi-level challenge and an operation involving research, law, economics, urban planning, community and promotion. The objective is to search for harmony between heritage and urban growth in the pursuit of sustainable development, which is a responsibility of local authorities. Many of the historic buildings in residential areas and in the city centre are still used in their original function: with flats and services. Residential buildings include primarily five and six-storey densely-developed ten-



FIGURE 2. The first spatial development plan of Gdynia, prepared by Adam Kunciewicz and Roman Feliński in 1926.
© Archive material.



FIGURE 3. Polish Sailor's House, designed by Bohdan Damiński and Tadeusz Sieczkowski, erected between 1938-39.
© Alina Limańska-Michalska.

ement houses. Arranged in quarters, the buildings follow the city's original development plan. Designed to high standards in the 1930s, the buildings continue to offer comfortable living. The numerous service buildings are important for the running of the city. They include the main Post Office, District Court, City Hall, banks, churches, city Market Halls, office buildings of shipping companies and foreign outposts such as the Swedish Seaman's House and trade organisations such as the Gdynia Cotton Certification Centre.

Faced with rapid technology changes, industrial sites such as the port and its historic buildings have to surrender to the needs of transformation. In such cases efforts are taken to preserve and restore the most valued buildings and make them part of the present-day port operations. This includes the long-term warehouse, several port cold stores, a granary and office buildings, including the Port Authority building.

Occasionally, the original function ceases to exist. The port has seen some very successful conversions such as the Marine Station. Originally the terminal for transatlantic liners going from Gdynia to New York, it now houses the

Emigration Museum opened in 2015. The city's modernist public transport depots have been converted to accommodate the Science and Technology Park. Bought by the Municipality of Gdynia, the historic Swedish Seaman's House is currently being converted to become the city's culture centre, which is dedicated to support amateur and alternative art.

3. LEGAL PROTECTION OF MODERNIST ARCHITECTURE

In Poland there are a few grades of legal protection of monuments. The 60 historic monuments constitute the highest nationwide grade. All 16 provinces keep their registers of historic monuments of a regional grade. To the lowest grade we include sites recorded within local registers kept by almost 2,500 Polish communes.

Maintaining the modernist architecture is a key priority, especially because it is the city's symbol and one of the country's most important historic complexes. Gdynia's regulations are very helpful with that.

Spatial Planning

Land use plans are a key tool of conservation. They are now very specific about conservation requirements, which must be based on analyses of architectural features.

In its land use plans Gdynia additionally determines categories of monuments, what results in a diversified level of protection.



FIGURE 4. Gdynia City Centre, developed in 1920s and 1930s, contemporary aerial picture. © Maciej Bejm.

The plans make it clear that new projects must fit in with the historic surroundings and be consistent with the modernist heritage in terms of size and ambience in areas where cultural features prevail. Conservation requirements are part of land use plans and are available to all stakeholders. Public discussions are held to explain the plans.

Land use plans cover the whole historic monument area, as well as its surrounding as a kind of a buffer zone. Certainly, in the remaining area of the city of Gdynia (outside the Monument of History), there are both individual buildings and complexes listed in the provincial registry of historic monuments (70 entries so far) or in the communal one (1719 entries).

Gdynia's City Centre Recognised as a Historic Monument

Gdynia's efforts of many years were crowned in 2015 when its city centre was listed as a historic monument. The sixtieth and the last item on the register, the historic complex was recognised by the President of the Republic of Poland based on recommendation by the Minister of Culture and National Heritage. First introduced twenty years ago, the listing is awarded to Poland's most precious historic sites due to their research, historic, technical and artistic values. To qualify, sites must be of special historic interest and have a proven record of effective preservation and conservation efforts. The City of Gdynia satisfies all the requirements.

4. RESEARCHING MODERNIST ARCHITECTURE AND EXCHANGING EXPERIENCE WITH OTHER COUNTRIES

Protection and conservation of modernist architecture must have a strong scientific base. As Gdynia got engaged in protecting its modernist architecture, it became increasingly clear that to do so it must exchange experience with other centres that study and protect modernist architecture. Key to this effort is understanding how modernist architectural icons are protected and preserved across Europe and worldwide. It was agreed that establishing a regular national and international forum of experts is the best way to achieve this goal. Designed to bring together specialists and enable direct communications about research and conservation, the event is organised by Gdynia authorities. While it provides its organisational resources, it also joins forces with leading scientific institutions such as the Faculty of Architecture at the Gdansk University of Technology, ICOMOS Poland and the National Heritage Board. In 2007 Gdynia hosted the first international scientific conference followed by events in 2009, 2012 and 2014. The fifth conference will be held in Gdynia on October 20-22, 2016. It has already attracted specialists from many countries. Because attendance is free, the audiences include not only specialists but also members of the public who take an interest in modernist architecture.

The conference is the perfect opportunity for regular meetings and presentations of research findings. It is important to promote this work. This is why the

City of Gdynia agreed to prepare, fund and publish three post-conference books in two languages – in Polish and English.

5. EDUCATING AND PROMOTING MODERNIST ARCHITECTURE

A key element of a long-term cultural heritage policy is to engage visitors and tourists. Modernist architecture sets the stage for tourist routes across the city. Tourists are guided by professionally trained guides in modernist architecture.

Gdynia plays host to special events such as the annual *Architecture Weekend* with documentaries on architecture, meetings with specialists, lectures and guided tours of sites that are off the main tourist tracks or more difficult to access.

Just as many other cities, e.g. Berlin or Tel Aviv, Gdynia too organises free tours of modernist architecture over summer weekends. They are available to all. In 2015 Gdynia hosted *Open House*, a popular event all over the world, originally from London. The idea is to show visitors interesting historic and contemporary interiors, not accessible on regular basis.

Engaging the Residents

Public participation is crucial to conservation efforts. The city's authorities are happy to inspire and support the involvement of owners and residents in preserving historic heritage. Gdynia's short history means that the memory of how the port and city were built is very much alive in many families. The people of Gdynia have a very strong sense of attachment to their city, an urban patriotism in a way. History and architecture-themed events never fail to attract large crowds. There are also community-led initiatives to protect historic architecture. Gdynia's biggest modernist residential building from the 1930s houses a museum. Dedicated to the residential complex, the museum was created by the residents, and showcases the building's original furnishings, fittings and interior decoration. In several houses the owners arranged public displays of the history of the buildings in the gateways. Gdynia's strongest asset is its residents who are proud to be from Gdynia.

Funding and Co-funding the Restoration of Modernist Heritage

Restoration and conservation of the modernist heritage rely strongly on public funding. Where buildings are not owned by the municipality, grants are very helpful with motivating owners and users of listed buildings both private and state-owned.

Funding for grants comes from different sources. It is distributed within the framework of the nationwide competition announced by the Minister of Culture and National Heritage, as well as regional competitions organised by provincial monument preservation officers. Each year city of Gdynia assigns considerable sums to subsidize historical sites within its area. Obtaining a grant in Gdynia is conditioned by the financial contribution of the owners. The level of contribution from the public funds is related to the monument's category.

6. CONCLUSION

Gdynia's example shows that if heritage is to survive, it must be part of development. Development based on local heritage is taking on a special meaning. The people of Gdynia and their elected local authorities are proud of the city's modernist architecture and make sure that it is well protected. Looking after Gdynia's modernist heritage is primarily the responsibility of the City Conservation Office but also of the Spatial Planning Office, Roads and Green Areas Authority, Department of Public Relations and Information, Department of Architecture and Building, Tourist Information Centre, City Visual Artist's Office, Department of Buildings, Museum of the City of Gdynia and occasionally of other municipal units. Coordination is ensured by the permanent Modernism Team run by the deputy mayor with the head of City Conservation Office as its secretary.

Gdynia prides itself on its comprehensive and inclusive policies. Conservation cannot be an elite effort. It must engage as many stakeholders as possible. The role of the authorities is to coordinate and the role of the specialists is to ensure consistency with the principles of conservation.

|| || PUBLIC SPACES



Reinventing Modern Children's Spaces and Places

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Reinventing Modern Children's Spaces and Places is intended to be a forum for discussing the development of modern child-centric environments within the broader theme of the Modern Movement, thus helping to establish the place of the child in the history of architecture.

Since the mid-19th century, the different political, social and cultural events taking place in western countries have triggered a new consciousness about the need for new and appropriately designed spaces and objects for children, both for their public and private lives. The industrialisation process and urban growth; children's birth and mortality rates; the increased participation of women in the labour market; public awareness of the need for safe and healthy environments; the kindergarten movement; the recognition of the benefits of leisure and sports activities; the establishment of medical, psychological and sociological studies about children; and the establishment of free compulsory education (along with the decline of child labour), all of these factors together form the basis of the impetus that has been given to the creation and development of modern facilities for children.

The growing attention that is now being given to the rights and well-being of children and the role that their environment plays in their upbringing had already been declared one of the great missions of the 20th century by Ellen Key, in her book *The Century of the Child* published in 1900. But it was with Philippe

Ariès' pioneering work *Centuries of Childhood* (1962) that an intensive debate was finally set in motion within the field of childhood studies¹. The use of spaces and material artefacts provided evidence for claiming that a new idea of childhood had begun in early modern Europe, drawing attention to the need for childhood to be studied from an architectural perspective. In the last two decades, this new field of research has been gaining importance in academic circles and has been the subject of numerous debates reported in a vast number of articles published in journals, magazines and books². Furthermore, exhibitions such as *Kid Size: The Material World of Childhood*, at Vitra Museum (1997), *Century of the Child. Growing by Design 1900-2000*, at MoMA (2013), and *Playgrounds. Reinventing the Square*, at Museo Reina Sofia (2014) have brought this matter to the attention of a wider audience, leading to a discussion of the material culture of children from a multidisciplinary perspective.

The architectural response to the consequences and challenges brought by the WWII underlined the importance given to children in the reconstruction process, stressing the impact of environments on children's education and on the shaping of future citizens³. Children's needs were placed at the centre of the social policy of post-war welfare states, resulting in a new theoretical approach to urban and architectural questions, unlike any other that had been known previously⁴. The growing importance attached by the privileged classes to promoting a good and creative childhood and to encouraging the participation of children in family life, coupled with the gradual appearance of a new consumer-based lifestyle, completely altered the nature of the objects designed for children, due both to the creation of new child-centric products and environments and to the fact that children were regarded as important and active agents in the decision-making processes of consumerism⁵.

The Modern Movement's aim of social reform, its functional and rational principles supported by the use of new construction technologies and materials, and the importance given to the design and quality of industrial production, all played a key role in the creation of an appropriate and attractive design for children's equipment and day-to-day products. The historical significance of spaces such as schools, kindergartens, playgrounds, orphanages, hospitals, indoor environments, and the learning and play materials, and equipment produced during the modern period with a child-centric approach are representative of the importance that was attached to the architectural discourse of that time.

The focus of *Reinventing Modern Children's Spaces and Places* has been broadly defined. It covers different areas of activity (outdoor/indoor spaces, public/private spaces), seeking to identify the new approaches brought to children's spaces and places by the Modern Movement by addressing the following questions: how did different international contexts affect the design of children's spaces and places during the Modern Movement? What were the design and architectural interpretations of the children's different demands and aspirations? What is the meaning of these spaces, their identity, values and specificities, their

potential and their contribution to the reinvention of the design of children's present-day urban environments?

The interpretation of modern case studies from different geographical areas, performed at different times, provides a basis for reflecting on the historical significance of children's spaces within an international framework, as well as on their current meaning, covering a number of political, social, educational, architectural and urban concerns. It is an opportunity to grasp how architecture is representative of, yet also influenced by "culturally constructed views of ideal childhood"⁶. It also makes it possible to discuss modern accomplishments that either have no identified authorship or are afforded less consideration through their being part of the domestic sphere, having remained far removed from the architectural debate, but nonetheless playing a crucial role in the pursuit of the social aims of the modern movement.

Yael Allweil discusses the historical design process of a *kibbutz* children's house (1925-29), built to house and educate children in a community that understood the key role that they played in the foundation of a new communal-national society and therefore regarded the care of children as a collective responsibility. Developed with the full involvement of the community, this project was seen as a modern social and architectural model by other *kibbutzim*.

Paola Virgili follows the design process of 35 Italian school buildings (1970s) that used a flexible prefabricated system to create a child-centric educational environment. Despite being seen as suitable for their initial educational function, these buildings do not meet the current regulatory requirements raising questions about the principles that should guide their rehabilitation.

Marco Di Nallo explores the theme of playgrounds by following the construction of playgrounds in Zurich (1950s/1960s), as part of a public campaign to raise awareness about their importance for the education and moral training of children. Initially designed for children, the first playground soon began to be attended also by adults and older people, creating community centres that were regarded as important architectural and social means for supporting democracy.

Klára Bruhová returns to the discussion of playgrounds with an analysis of children's playground equipment designed to improve the public spaces of pre-fab housing estates in Prague in the 1960s. The conception and design of these playground artefacts brought together architects and artists who cooperated on a project that discussed function and art with the aim of stimulating children's imaginations.

These cases are particularly relevant in the light of current issues and concerns in western societies, namely the declining numbers of children to be found in the public domain of cities, mainly as a result of an ageing society; the current standardised solutions for children's urban and architectural spaces, applied indiscriminately to distinct contexts, which are limiting the imagination and inventiveness required for children's play and socialising; the challenge brought

by children's present-day dependency on technology and how this can be incorporated into their educational and leisure environments⁷.

The educational, recreational and social values of the modern facilities that are located in distinct cultural and international contexts will be an opportunity to reinvent the children's spaces of both the present and the future. The idea is to promote a fertile discussion and ensure that we enjoy an intellectually lively session.

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NOTES

- 1 Originally published in French under the title *L'Enfant et la Vie Familiale sous l'Ancien Régime* in 1960, in Paris.
- 2 See Catherine Burke, Ian Grosvenor, *School*, London, Reaktion Books, 2008; Anne-Marie Châtelet, *L'Architecture Scolaire*, 2004, and *L'École de Plein Air*, 2003; Mark Dudek, *Children's Spaces*, Amsterdam, Elsevier, London, Architectural Press, 2005, and *Kindergarten Architecture*, 1996; Ian Grosvenor, *Materialities of Schooling*, 2005; Marta Gutman, Ning de Coninck-Smith, *Designing Modern Childhoods: History, Space and the Material Culture of Children*, New Brunswick, Rutgers University Press, 2008, and *A City for Children*, 2014; Roy Kozlovsky, *The Architectures of Childhood. Children, Modern Architecture and Reconstruction in Postwar England*, Farnham, Ashgate Publishing, 2013; Amy F. Ogata, *Designing the Creative Child*, 2013, Minneapolis, University of Minnesota Press, 2013; Colin Ward, *The Child in the City*, 1978; Alfred Ledermann, *Playgrounds and Recreation Spaces 1968*; Liane Lefaivre, Ingeborg de Roode, *Aldo van Eyck: the Playgrounds and the City*, Amsterdam, Stedelijk Museum, Amsterdam, Rotterdam, NAI Publishers, 2002. See also the notebook of *Growing by Design: The 1990 International Design Conference* in Aspen, by Jane Clark Chermayeff and the catalogue produced for the exhibition *The Classroom, from the Late 19th Century until the Present Day*, VS school museum, Berlin, Ernst Wasmuth, 2010.
- 3 Amy F. Ogata, *Designing the Creative Child*, Minneapolis, University of Minnesota Press, 2013.
- 4 See Roy Kozlovsky, *The Architectures of Childhood. Children, Modern Architecture and Reconstruction in Postwar England*, Farnham, Ashgate Publishing, 2013, 1-18. For example: Alison and Peter Smithson (*Urban Re-identification Grille*, CIAM 1953), Aldo van Eyck (*The Child in the City: the Problem of Lost Identity*, CIAM 1956; *Amsterdam Orphanage*, CIAM 1959; *Playgrounds in Post-war Amsterdam*), Le Corbusier (*Unité d'Habitation* at Marseille, 1946-1952); Post-war Hertfordshire school building programme; and the schools designed by Hertzberger.
- 5 See Amy F. Ogata, *Designing the Creative Child*, 2013, Minneapolis, University of Minnesota Press, 2013, and the chapter "Power Play" from the catalogue of the exhibition *Century of the Child – Growing by Design*, 182-213.
- 6 See Marta Gutman, Ning de Coninck-Smith, *Designing Modern Childhoods: History, Space and the Material Culture of Children*, New Brunswick, Rutgers University Press, 2008, 2.
- 7 See Mark Dudek, *Children's Spaces*, Amsterdam, Elsevier, London, Architectural Press, 2005.

“Today’s Child is Tomorrow’s State”: Kibbutz Children’s House as Nursery for the Good Zionist Subject 1922–1948

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This paper explores the *kibbutz* children’s house as a unique modern institution designed to house and educate *kibbutz* children and form them into a model “children’s society” that would serve as foundation for the aspired-for nation state. I study this modern institution by examining the formation of the children house building type in *kibbutz* Beit-Alpha 1925-1929, accepted as cornerstone of *kibbutz* social-material structure by all 270 *kibbutzim*. Rather than a typological examination, my paper conducts close historical account of the formation of the first children’s house as modern building type and its first implication in the spatial and aesthetic language of the Modern Movement in architecture.

The highly ideological Beit-Alpha commune perceived childhood as the nexus for forming the radically new communal-national society they aspired for, forming a child-centered society embedded in the children’s house as emblem of the radically-new *kibbutz* social and spatial form. Beit-Alpha therefore insisted on collective care for children as “property” and responsibility of the entire community and allocated its best resources for good care of the children in the only permanent, well-lit, ventilated and serviced structure in their settlement.

As a building type, the children’s house entailed removing children from their parents’ dwellings in tents and shacks across the settlement and housing them in a separate structure serving both dwelling and education in order to provide them good material conditions at times of austerity.

Design of the new house involved a long process of negotiations between the commune, architect-planner Richard Kauffmann and the Jewish National Fund that cemented *kibbutz* commune and its children as equal partners in the design process who embed their ideology and agenda into modern architecture.

The children’s house marked the *kibbutz* movement as a child-centered society, whose monument is a unique modern building and building type.

1. INTRODUCTION

Even before any permanent structures, *kibbutz* communes regarded themselves permanent national settlements once their first children were born. Children marked intentional settlement and planning for a long-term future in the homeland. As recounted by mother of the first child of *kibbutz* Tel Yosef:

It was a great event for the entire camp – the first child. We took the form of a settlement – we already have a family with a child. All that time I was troubled by the question: where shall we house the baby? In the tent? What about the days’ heat and nights’ winds? But behold! The comrades built us a palace. A square shack made of straw mats with a tin roof, a true palace. This was the first children’s house in Tel Yosef. We were invited to move to [nearby Kibbutz] Ein Harod and even pressed to do so for the sake of the baby. But moving the baby seemed to us like “betraying the homeland”. We remained in our shack¹.



FIGURE 1. First children housing in Beit Alpha in a wooden shack. Note wooden cribs used for taking children outside yet keeping them from touching the dirt and mud. © Beit Alpha Archive.

This testimony makes three important points: the assertion that a “proper settlement” is only one that includes families with children; the sense that removing the child would be betraying the settlement’s integrity as “homeland”; and a sense that these two principles rely on objectively adequate housing conditions for babies². *Kibbutz* austere living conditions, primarily in tents, were identified by this mother, her commune, and the surrounding community as inadequate for babies – requiring thinking about “dwellings for children” as a separate problem for the physical and social wellbeing of the community, and developing new dwelling forms for this purpose.

Addressing the “child as future state” as a planning problem, the *kibbutz* movement produced a unique institution for collective dwelling and childcare – the children’s house. First articulated as a housing solution, it was soon infused with ideology regarding child rearing in light of *kibbutz* communal ideology and Zionist nation building. I show that planning the first children’s house in *kibbutz* Beit Alpha triggered an intense, transformative planning process of the entire settlement, involving negotiations between commune, settling agencies and architects over what constitutes good national habitat for citizens of the future nation. Beit Alpha commune took an unprecedentedly active role in the design process, transforming planning from a relationship between land-owning agencies and architect to involve *kibbutz* members as equal partners in planning.

2. PERMANENT SETTLEMENT: CHILDCARE AS PLANNING

Children served Beit Alpha as an impetus for planning. Founded in November 1922, it initially included no planning aside from the decision to locate camp dwellings by Mount Gilboa rather than use up fertile valley land for non-productive purposes. Beit Alpha's early housing solutions included tents, mud huts, shacks and straw shacks. Each tent housed three to four single *kibbutz* members, or two couples separated with a sheet³.

Beit Alpha's first child was born August 1923 in a tent on site. That year Palestine Land Development Company (PLDC) commissioned its head architect Richard Kauffmann to prepare a master plan for Beit Alpha and adjacent *kibbutz* Hephzibah, reflecting belief in their sustainability as permanent settlements⁴. Kauffmann's proposal included two yards for each Kibbutz: one surrounded by dwelling and communal structures and the other, deeper into the valley, surrounded by farming structures, organized along fanning axes. Between the two *kibbutz* dwelling yards Kauffman located communal services to be shared by both communes⁵. Both masterplan and first child set Beit Alpha on the right path as permanent settlement.

Yet Beit Alpha members had ideological issues with the design which they regarded not communal enough and far too monumental for their ideal life. Planning, they posited, was too important to conduct hastily and professional planners did not necessarily know what was best for revolutionary society. Beit Alpha ideological commune could not live with Kauffman's monumental design which they regarded bourgeois or with his yard scheme applied to any settlement type. Beit Alpha members, believing in the virtues of austerity, preferred to halt the planning process and remain in their substandard housing a while longer than accept hasty decision-making producing a built environment unfit for their ideological commune. Members invited an architect on their behalf to give a second opinion on the plan, their Vienna-days friend architect Leopold Krakauer⁶. Members thereby declared their role in the trio planner-landowners-dweller as most significant in determining the nature, qualities, and timetable for national settlement. Delaying its own master planning entailed a delay in the construction of permanent, well-serviced dwellings⁷. The Sinader family, having lived with a young baby in a tent for 2 years, could no longer tolerate these conditions and in 1925 left the *kibbutz* and the country to return to Poland. The *kibbutz* was shocked and traumatized by departure of its first born, consid-



FIGURE 2. Kauffmann's plans for Beit Alpha's first children's house, 1927. © Tal, 1991; Shifman, 1944.

ered the child of the commune at large. While families and individuals continually left (and joined) all *kibbutz* settlements, it was the unique character of Beit Alpha which made this departure a catalyst for rethinking its communal structure, facing a clear correlation between bad housing conditions and “bad” subject formation – while on the other hand marking the community as a whole responsible for this failure due to the bad housing conditions it provided its children. Beit Alpha’s subsequent action was two-fold: first, assigning children to the only shack, the commune’s best structure; and second, re-igniting the planning process.

3. THE CHILDREN’S HOUSE: A MODERN INSTITUTION

As first measure, all four Beit Alpha babies born in 1924 and 1925 were taken out of their parents’ tent dwellings and allocated the best structure in Beit Alpha – the first wooden shack supplied by WZO Eretz Israel Office. This provided them with better insulated, more durable, and better ventilated housing. The shack was placed on a concrete platform which elevated it slightly from the ground and prevented flooding, and, unlike the tents, ensured a dry floor which could be washed and kept relatively clean.

Parallel, Beit Alpha approached PLDC for the construction of a concrete, hygienic “children’s house”, as *kibbutz* settlements were too poor to finance construction themselves. Sources indicate that master planning began anew in November 1925 in conjunction with Beit Alpha’s appeal for the design and funding of a children’s house⁸. This relationship between settlement planning and children’s house sheds light on the role of the children’s house in the design process for the entire *kibbutz*. The fact that PLDC agreed to consider funding the design and construction of the communal children’s house was extraordinary in the mid-1920s in light of its doubts regarding the sustainability of communal societies, as discussed in detail below. However, the need to provide children with concrete and sanitary dwelling where limited resources could not provide good housing to all families separately made the children’s house a reasonable solution.

With planning back on track, Kauffmann proposed a second round of sketches for Beit Alpha-Hephzibah in late 1925, including design for children’s houses produced January 1926. He let his colleague and assistant architect Lotte Cohn develop a detailed design for Hephzibah’s house while he designed the Beit Alpha building himself⁹. Kauffman designed Beit Alpha’s first children’s house as a 2-storey concrete structure, a monumental element in the landscape among one-storey wooden shacks and tents. Each floor included 5 rooms, each for 4 to 6 children. When the house was built, the population of Beit Alpha included 20 children, and its construction reflected the expectation that this number would double. The cellar included a room for the adult carer responsible for watching over the children at night. Floors were separated by age: the ground floor, allocated for young children and the second, accessed by an outside stairway, allocated for babies due to its better ventilation. Each room was ventilated by two windows and a door



FIGURE 3. Beit Alpha's first children's house, north façades, c. 1929.
© Beit Alpha Archive.



FIGURE 4. The children's house as the settlement's main public institutions c. 1930. © Beit Alpha Archive.

leading to the corridor. Shades were placed on all room windows to block intense sun radiation in the valley. In the middle of each floor, 2 small rooms served as bathroom and toilet with running water, and were provided with small service porches for hanging laundry and ventilation. The tiled roof gave better ventilation by allowing the release of hot air.

Compared with adult dwellings, the children's house was a well-lit, well-ventilated and spacious environment. The glazed corridors, and especially the second floor corridor serving babies, provided a clean outside play area away from muddy unpaved *kibbutz* lanes, where children were able to interact and form their children's society in a clean and secure environment. In the evenings, the house was a social hub for the *kibbutz*, a meeting point for members working all over the farm who came there to put their children to bed. The carer's room in the cellar was the only *kibbutz* structure lit at night, a gathering place where members could chat and drink coffee while the entire *kibbutz* was dark¹⁰.

One of the main impetuses for the children's house was reducing child mortality by providing good sanitary conditions, which in the remote *kibbutz* were initially very low. The children's house had the only inside bathrooms and toilets in Beit Alpha. Washrooms and toilets were centrally located on each floor, easily accessed from all rooms, serviced with a porch for ventilation and easy disinfection by running water and sunlight¹⁴. Separation of the house into one floor for children and a second for babies enabled isolation of age groups to prevent the spread of disease, especially to protect young babies. Each floor included an "isolation" room, or infirmary, where sick children were kept away from the rest to prevent infection. *Kibbutz* children's houses maintained a high level of sanitation to the point of obsession, a fact noted by the famous educator Janusz Korczak¹¹. The result was a drastic drop in child illness and mortality.

In 1929 with the outburst of ethno-national violence in Palestine, Beit Alpha was attacked by nearby Arab village Bissan as part of the second round of riots in the country¹². Members of Beit Alpha and Hephzibah barricaded themselves in the new children's house, using it as defence post, and managed to drive away

the attack. The division of the house into two floors with no internal stairway (only an outside one) was very useful in defence, as attackers could not access the upper floor from within the house and so there was no need for the few defenders to occupy both floors. Following the attack and Beit Alpha's ability to withstand it by barricading in the children's house PLDC transformed design principles for all new *kibbutz* settlements, investing in concrete structures which doubled as children's houses and defence posts¹³.

4. THE GOOD HABITAT FOR THE ZIONIST "NEW MAN"

The children's house's unique duality as first public institution and proper dwelling characterized it from the very start as the only *kibbutz* "house" in the sense of serving all of life's functions in a single structure was the children's house. Beit Alpha members' involvement in its design as knowledgeable participants rather than clients transformed both *kibbutz* built environment and the triad commune-planner-landowner. The modern institution of the children's house articulated the relationship between shaping proper citizens and self-governance, by identifying the home as the site in which one begins one's formation as a good member in society.

With statehood, the consequences of the children's house educational-ideological institution of the "future state" became glaring with respect to both parent-child relationship and the status of weak children in society. Following heated debates about education, ideology, and the relationship between society and individual in the 1970s and 1980s most *kibbutzim* deserted communal care for the children. Beit Alpha stopped communal care for children in 1991. Consequently, children's houses became childcare centres while parental housing had to be altered to make room for children.

NOTES

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35 Italian Schools to Save: the “Valdadige” Schools Designed by the Studio *Architetti Valle*

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Italy's 20th century gave birth to a number of distinguished teachers, writers, artists and designers who dealt with early education for children, including their intellectual and sensory training and development. Some renowned figures such as Maria Montessori, Gianni Rodari, Bruno Munari, to name just a few, accompanied the transformation of Italy in those years from an agricultural based economy to an industrial society.

The first laws in the country that introduced mandatory education date back to the late 19th century. Since then those laws have undergone numerous reforms of the norms that regulate the functioning of the national education system. There were also the important architectural examples of school buildings that accompanied and stimulated the debate on these reforms. During the 1960s, with the measures used to determine the size of the schools, the count per student replaced the standard count per classroom. These were years of economic boom in Italy, and the construction industry was developing considerably, so this regulatory measure was of great interest for its architectural consequences.

The Studio *Architetti Valle* (Gino Valle, Giorgio Macola) designed its schools in this historical, economic and social context. 35 prefabricated schools by the firm, of particular interest for their quality and innovation, were built throughout northern Italy. In these prefabricated schools there is a strong focus on the use of colour, lighting, and spaces of aggregation aiming the quality of environment for the children. At the same time, due to the great flexibility of their prefabricated system, these schools perfectly adapt to the context in which they are located. Their size, articulation and arrangement of volumes could all be adapted to each specific circumstance. Much like children, the buildings are similar, but not identical.

Today these structures no longer fulfil the current-day regulatory requirements relating to energy performance, yet their prefabricated system could easily allow for sufficient adjustments.

Is their fate sealed? Will they be poorly considered and grouped together with some of the lesser quality school buildings that were mass developed and built during those same years? Will they too be demolished in order to build new and more energy-efficient buildings?

Or will it instead be possible to renovate and restore the schools to uphold and preserve their important legacy?

1. INTRODUCTION

“The revolution of the Modern Movement was above all a typological revolution: and once this revolution had been completed there was not a single building that could maintain a type or types, a model or models that had existed beforehand”¹.

With project designs by the Studio *Architetti Valle* (Gino Valle, Giorgio Macola), between 1976 and 1984, the Valdadige building company completed 35 elementary and middle schools between *Trofarello* (Turin) and *San Leonardo di Cividale* (Udine). These are reinforced concrete prefabricated structures that were built within suburban residential areas. The ways in which the project designers chose to address the scholastic programs to fully valorise the different children's activities makes the projects particularly innovative.

2. PUBLIC SCHOOLS: FROM SIMPLE OBLIGATION TO A COMMUNITY OF LEARNING FOR CHILDREN

The first laws introducing compulsory school attendance in a newly unified Italy date back to the second half of the 19th century. The Casati Law of 1859, established elementary school articulated into 2-year periods and enacted compulsory education for children of 6 to 7 years of age, which was initially a heavily rejected obligation². Since then a number of reforms to the rules that govern the law's operation have followed. In 1923, the Gentile Reformation raised compulsory education to 14 years of age and class attendance was divided by year of birth³. The study programs tailored for those students who wanted to attend high school and then college began only after 5 years of study within the scholastic program. This change initiated a strong egalitarian drive throughout Italy, and in 1948, with the birth of the Italian Republic, public education for everyone was finally instituted in the new Constitution: it was to be free of cost, but mandatory for eight years, divided into 5 years of elementary school and three years of middle school. It was only in 1962 that middle school became unified, thus allowing for students to access any and all forms of higher education.

Before the end of WWII many schools were still held in buildings created for other purposes. The typological model for school buildings was largely based on a corridor scheme, with the classrooms directly facing a central hallway. The proposals of European pedagogical scholars and hygienists had not yet produced any possible variations to the standard models of public school buildings. The confidence of the Modern Movement in the role that architecture can play in the formation of a new society was concretely implemented in Italy during its Reconstruction period.

Rooms of clean and flowing spaces that were large and bright took the place of cramped classrooms of hierarchical order according to static and prescriptive sequences. The classrooms opened onto outdoor green areas, and group activi-



FIGURE 1. Map reporting the 35 schools built. © Paola Virgili, 2016.



FIGURE 2. Plant school to Bissuola, Mestre, Venezia. © Paola Virgioli, 2016.

ties took place in mobile spaces that were multifunctional and modifiable according to their different uses; spaces exalted their qualities for aggregation with architectural solutions for materials and details of high quality⁴.

This was the onset for the concept of the functional unit, which, thanks to new forms of free aggregation, allowed for schools to adapt to different contexts, having a consequent opening to the communities in which they were inserted. It was in 1962, with the reforms on middle schools and the birth of a National Commission of

studies for its building structures, that the central role of children became evident at a regulatory level⁵. In order to determine the size of the school building, the “count per classrooms” was in fact abolished in favour of a “count per student”⁶. It is with these significant changes that the educational role of the school as a small community of children, after the efforts of the 1950s, started to give shape to some highly experimental architecture. These were years of a great economic boom in Italy and the construction industry was also developing considerably.

3. THE SPACE OF CIRCULATION AS AN EDUCATIONAL SPACE

It is in this socio-historic context that the project designs presented by Studio Architetti Valle for Elementary and Middle schools were developed. With building starting in 1976, there were 35 schools of distinct quality and innovation, all distributed throughout northern Italy. In these prefabricated school buildings there is clear evidence in their design of reflections on colour, light and spaces for aggregation that focus on the children's quality of life, in addition to the desire of creating an identifying nucleus within suburbs that were rapidly developing in that period. The reflection that accompanies the design, which can be reviewed in the Valdadige studio's catalogue of architectural projects, starts from a listing of regulatory norms included in the legislation for school-building construction which was then in force⁷. The Ministerial Decree (D.M. 18/12/1975) in fact contains a proactive part, with a series of indications on how to develop a school structure, and a prescriptive part, indicating standards of dimension and accessibility. The first part provides project-designers with the general criteria for the project settings and configuration: the building is to be designed as a homogeneous body that is capable of becoming a tool for communication and knowledge by those who use it; spaces for classrooms should be considered complementary to the set of other teaching spaces and must be spatially integrated with them; and the library and auditorium, where all extracurricular activities of the school are to take place,

must integrate visually and spatially with the overall structural organisation. It is starting from this selection of legislative guidelines that the architects developed their project, which is principally characterized by the allocation of a “container” to each group of scholastic activities⁸.

The school is thus made up of several autonomous and independent buildings, each having a specific function. There is a building with the classrooms and the library, one with the kitchen and cafeteria, one with changing rooms and a gym, and one for the central heating plant. All of these are in close relation to one another, thanks to a walkway that joins them. This walkway always connects two street entrances, placed at the east and west of the building system, and the different containers are connected orthogonally to these access points. In this way the classrooms are never illuminated by a north-south light, which instead provides natural light for the central space of aggregation. The reinforced concrete prefabricated structure provides the school building with a tripartite section of 12-meter spans, and the central hall, with the classroom entrances, has a double-height space. The balconies on the first floor and the open hallways that face towards the ground floor, are very generous spaces, where, in addition to walking, you can play. The sequence that is then created walking through the spaces from the outside to the interior of the school-building - street, portico pathway, entranceway, gathering space, stairwell, balconies, outdoor landscape – is, in my opinion, the most interesting aspect of the project. It is along this open and free path that one can experience continuous exchanges among older and younger students, and where the play area involves the multifaceted functions of intellectual, social, emotional, affective exchange. And it is along this space of circulation that the architects deal with the materiality of the building, choosing to address the tangible elements with great care and detail: the combination of the entranceway and front windows on the schools main façade, the stairwell leading to the first floor, the attachment between the column-capitals and the prefabricated system of suspended ceilings, the parapet walls, the windows, and the lighting.



FIGURE 3. Studio Architetti Valle, interior of a school, 1978. © Studio Architetti Valle, 1978.



FIGURE 4. Studio Architetti Valle, school to Chirignago, Venezia © IC “Cristoforo Colombo”, 2016.

The schools that were built in urban settings were much different. The prefabricated system based on the iteration of elements renders a rather abstract image of simple volumes cut horizontally from continuous strip windows along the longer sides of the buildings. This is a rather strong image where the chromatic uniformity (all of the buildings that make up the complex are painted green with red window framing) conveys the idea of a small village. Furthermore, the assemblage of the building units along the portico pathway transformed the school from a building into part of the urban fabric.

4. WHAT FUTURE?

The 35 schools built in Italy between 1976 and 1984, rather than suffering inadequacy of their spaces, are starting to feel the effects of aging due to the simple passage of time and incoherent maintenance. Fortunately however, the schools are still in use and the functional de-configuration, that is the projected idea of “containers”, instead demonstrates its advantages when the school gyms remain open during the afternoons to various sports and cultural associations.

The need for weighty project interventions to adapt the school-buildings to new energy efficiency standards, as well as the need to retrofit some of them for anti-seismic adjustments, lead us to reflect on the possible modes of intervention. This raises a problem of sense and meaning. We are not in fact dealing with a single architectural work that marks a significant moment in the career of a master architect, but as many as 35 schools that are similar but not identical. They are in fact an industrial product that is prefabricated and built in series, but which is now no longer reproducible. How should intervention on these buildings occur without reducing them to anonymous suburban artifacts? The answer to this question certainly deserves some significant discussion and debate.

Some early observations can already however be made:

- Could it be plausible to wrap the buildings with a ventilated façade to augment the level of energy efficiency, and alter the thickness of the walls? Replace the window-framing of strip-windows with more efficient windowpanes? Place photovoltaic panelling on the roof? Keep the red and green colours? Maintain some of the more distinct building elements, while renouncing certain performance improvements? There are two main figurative references, two languages, used by the architects in these schools so there are perhaps two conceivable approaches to their conservation.
- These schools were built in four different regions of Italy. For some years, every region in Italy has its own building regulations, so the Valdadige schools risk undergoing a non-consistent renewal and restoration process, yet they were planned and built unitarily. It is instead essential to provide a distinct and timely approach towards a renewed arrangement of each

- public space in proximity to the schools, especially in the cases with portico walkways facing those spaces. There are 35 schools that are similar in character, and they should *all* remain that way.
- The space of circulation and movement (which, in this project is conceived of as a space of recreation, conceptually comparable to streets and plazas) is the heart of the school, where teaching, learning and social activities all blend together. And this is “a sort of collective space that is almost neutral. However, the ‘almost’ here is essential. The small breaks... transform these simple volumes into clean and vital spaces”⁹. This space, the “third teacher”, is the aspect with which it would be possible to structure and organise occasions of formal and informal learning, that are important for children of the present and of the future¹⁰. As Rafael Moneo comments: “Therefore, I do not believe that architecture is just the superstructure that we introduce when we talk about buildings. I prefer to think that architecture is the air we breathe when buildings have arrived at their radical solitude”¹¹.

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Game, Function and Art: Children's Playground Artefacts in Post-war Czechoslovakia

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This paper deals with children's playground artefacts made by Czech and Slovak architects in the post-WWII era (with emphasis on the period of 1960s and so-called *Normalisation*). Territorially, the paper focuses on the situation in Prague, mostly within the prefabricated housing estates. New housing estates of the era were planned with regard to the quality of public space including the presence of artefacts and artworks. The goal, among others, was to create a united culture of urban space and to achieve certain humanisation of the otherwise rigid environment. The concept of public art and its financial support even fell under government regulation and the budgets for new construction projects had to include a certain amount of funding budgets exclusively for public art works. The commissions often called for objects that would be not only of aesthetic quality, but would also possess some functional use for the inhabitants. Particularly frequent tasks then were to create playgrounds or climbing objects for children. As a result, we have a series of playground artefacts which can be seen in the same time as original works of art of the era. Moreover, these objects were not infrequently designed by otherwise persecuted creators often exploring organic design or abstract forms, eschewing allegory and symbolism (cf. socialist realism of the time not so far away). The reasons for this unique situation lie in the functional nature of these commissions as well as in the need to stimulate children's imagination. This background then allowed to defend either an unacceptable name of an artist or a style. This paper shows a selection of works and introduces them as functional playground artefacts on one hand and as original works of art (and full-fledged parts of the artistic development of the era) on the other. This paper also covers the present condition of these artefacts and raises a question of their contemporary protection.

1. INTRODUCTION

No matter how critically we regard the period of socialism in former Czechoslovakia (1948-1989) it would be hard to deny its fairly consistent concern for the development and well-being of children. Moreover, the concern was related not only to professionals in the fields of medicine or psychology, but also to architects and artists. In journals of the era dealing with architecture and design, we can find a number of studies dedicated to the quality of environment for children, and especially to the issue of children in cities. In these texts, cities are considered, unlike nature, as places rather unfriendly to children, not offering them nearly enough stimuli for their development. Thus it was regarded a necessity to adapt some of the urban areas to the needs of children¹. Most often, we can read about playgrounds or monkey-bars – particular and tangible ways of enriching urban public space and adapting this public space to the needs of children.

2. OBJECTS OF CHILDREN'S IMAGINATION

The two basic needs to be respected in any design for a children's game, were repeatedly defined as exercise and use of imagination². The first was understood as

offering children a variety of physical activity; the latter as creating an environment capable of encouraging the sense of adventure and children's ability to "see in [...] objects or spaces something new and unusual"³. Architectural historian, Marie Benešová, remarked in this context, that children preferred "rather somewhat wild environment full of obstacles and adventure than the most beautiful of playgrounds for their games"⁴. Architect and urban planner Otakar Kuča observed a preference for natural grounds, as opposed to perfectly kept parks⁵. They both linked those points to children's need of unleashing their imagination. According to those hypotheses, the opportunity for children's imagination was a crucial factor in the interventions in urban spaces.

Entertaining the imagination of children was a desired effect for both entire playgrounds and individual monkey-bars – those being the main topic of this text. In the 1960s, Vladimír Kýn, one of the sculptors dealing with the issue, wrote: "the monkey-bar has to be a treat for children's eyes, appealing by its very shape, and offering itself to games"⁶. Based on those thoughts, Kýn came to the conclusion that the design of a playground artefact depended above all on artist's imagination, creative invention and knowledge of children's soul⁷. Further, he pointed out the aesthetic value of the playground artefacts, for they became permanent elements of the environment in which children spend much of their free time⁸. Basically, he summarized the reasons leading many experts to the belief that it was necessary to consider the shapes of the playground artefacts as sculptures capable of helping children to understand values such as "logic of spatial construction, harmony of proportions, the laws of tectonics and the beauty of colours"⁹.

These factors led to the demand of a complex grasp of the playground objects. Emphasis was also placed on cooperation among architects, whose job was mainly to incorporate the game elements into the surrounding architectural ensembles, and artists, who should guarantee the quality of design and aesthetic value of the object itself. There are several examples of their successful cooperation and truly complex approach in the experimental housing estate *Invalidovna* in Prague (first project 1959, built 1962-1967). The pieces were designed as inherent parts of the housing complex and they fit into its urban logic as well as into the aesthetics of the whole carried out in then popular so-called Brussels style¹⁰. The design of the playing sculptures also reveals the emphasis on activating children's imagination. The sculpture named "Chicken" by Eleonora Haragsimová indeed refers to a chicken by its form, however, due to its amorphous shape it still leaves plenty of space for other interpretations. The slide by Jaroslav Vacek – an organic shaped object with holes and cavities – is even more abstract. In the eyes of a child, it can become watchtower, cave, bridge and hundreds of other things.



FIGURE 1. Eleonora Haragsimová, children's monkey-bar named "Chicken", *Invalidovna* housing estate, Prague, Czech Republic, 1964. © Klára Brůhová archive.

3. BETWEEN ART AND FUNCTION

However, to an art historian, the piece will offer other connotations. He could recall, for example, works by Henry Moore or other objects from the biomorphic and abstract sculpture canon. These pieces thus should be seen not only as functional elements within the housing estates but also as works of art with undeniable aesthetic qualities. Due to their allegiance to both the worlds of function and art, these artefacts are also described as “functional sculptures”. Their ambiguous character proved to be crucial when it came to argumentation supporting the realization of these art objects. Prior to Czechoslovakia’s success at *EXPO 58* (which somewhat eased the situation of art)¹¹, the local art community knew Socialist realism as its official style. The abstract art was subjected to censorship. Hence, the artists creating abstract art had very limited possibilities to publicly display their work. Ironically though, their works could be placed in public space as parts of playgrounds, where it was possible to defend an abstract concept of the object by its function and the necessity to activate imagination¹².

In 1960s, the Czechoslovak art community saw a shift from the descriptiveness of Socialist realism toward a newly tolerated abstract tendency¹³. This was also the case of *Invalidovna* housing estate and its artefacts. Nonetheless, art censorship was not dead. Especially during the so-called *Normalization*, i.e. after August 1968, a number of artists were prohibited either to exhibit or to publish their work for political reasons. The situation did not change until 1980s. However, even under those restrictive circumstances, loopholes could be found. “Functional sculptures” in public space were one of those situations. Since they were mostly parts of large housing complexes, it was the main architect who had the final decision concerning the choice of participating artists. The principle that “the selection of artists depends on professional opinion of the project leader – the main architect”¹⁴ was even legally binding for it was a part of the ČSSR Government Resolution n. 335, dated July 8 1965. The same resolution allowed the main architect to launch a public competition in order to select the participating artists. Both of these ways, the main architect’s decision or competitions, often succeeded in pushing through projects and artists that were otherwise “in the doghouse”¹⁵.

Naturally, the situation was not limited only to “functional sculptures” but it also concerned other visual elements linked to architecture. Often, it resulted in complex architectural works combining the spatial concept, carefully designed functional elements with fine art. The realization of these architectural *Gesamtkunstwerks* was enabled by ČSSR Government Resolution n. 335. It argued by “deepening ideological and aesthetic education of the people and increasing the cultural level of its environment”¹⁶ and assigned about 1-4%¹⁷ of the project budget of any public construction to its artistic decoration which therefore could be quite generous. As examples of the successful cooperation between architects, artists and designers, resulting in outstanding and complexly conceived buildings we can mention the former Federal Assembly (competition 1965, built 1967-

1974), *Strojimport* Building (designed and built 1962-1971), DBK Department Store in Prague (designed and built 1968-1981); Hotel Thermal (competition 1963, built 1967-1977) or Thermal Spring Colonnade in Karlovy Vary (designed and built 1961-1975); the Czechoslovak Embassy in Berlin (competition 1970, built 1975-1978) and many other objects.

4. LONG JOURNEY FROM THE VISION TO ITS REALIZATION

However, let's return to the sculptures for children. They were not always designed as part of architectural complexes. Sometimes, they were a result of a separate project or independent competition. This approach can be exemplified in a jubilee "great national art contest" in 1960, launching also a category of "functional sculptures for playgrounds"¹⁸. There were renowned sculptors among the participants, such as Eva Kmentová and Olbram Zoubek or Jiří Novák. The participants submitted mainly works of organic shapes which was the case of a set of five designs by Alena Svojtková or two proposals for slides by Zoubek and Kmentová¹⁹. One of the slides was eventually manufactured, albeit in a somewhat altered form.

At this point, the approval process of the projects should be also mentioned. The body responsible for the approval was the Czech Visual Arts Fund. Its Commission assessed the first sketches as well as the later plastic models²⁰ and sometimes the final form was quite noticeably affected. Functional sculptures thus cannot always be seen as an embodiment of pure artistic invention (apart from fulfilling its primary function) but rather as a certain compromise²¹ between the artist's ideas and the requests of the Commission²².

Despite their outcome, the competitions offered the original, unchanged artistic visions and thus a possibility to learn about them. One of these sources was



FIGURE 2. Jaroslav Vacek, concrete children's monkey-bar, *Invalidovna* housing estate, Prague, Czech Republic, 1963. © Klára Brůhová archive.



FIGURE 3. Olbram Zoubek, proposal of children's slide, from the jubilee "great national art contest", 1960. © Olbram Zoubek and Polana Bregantová archive.



FIGURE 4. Olbram Zoubek and Eva Kmentová, children's slide, Julius Fučík's Culture and Relax Park, Prague, Czech Republic, 1960. © Olbram Zoubek and Polana Bregantová archive.

the aforementioned jubilee contest of 1960. Among the submitted proposals, there were objects shaped in a *Moore*esque way as well as structures composed from simple geometric elements. Formally, they could be easily seen as opposites. However, they fell under the same tendency, i.e. the abstract art form. Furthermore, they followed the same basic principle, offering a wide scope of options for children's imagination. Moreover, the constructions using geometrical elements often had another

significant advantage – namely a compositional variability. Examples of such structures include a proposal by Viktor Fixl made of metal pipes and PVC plates or an award-winning composition by Jiří Novák²³.

5. FASCINATION WITH THE UNIVERSE

In 1960s, there is another, completely separate category surpassing the abstract and imaginative character of previous projects. This category consists of works inspired by the space exploration and the space race of the era. The topic was developed for example by the aforementioned Jiří Novák, responsible for various designs referring to spaceships and satellites²⁴, or Zdeněk Němeček, who managed to create a monkey-bar with a symptomatic nickname *Sputnik*. However, the monkey-bar is one of the few realized cosmic inspirations. Despite the social resonance of the space theme and its ideological prioritization in the visual arts and design, it did not leave a mark within actually built children's playgrounds. A possible reason could be found in a monothematic and illustrative nature of the objects.

6. ABANDONED HERITAGE

Despite the fact that many of the individual proposals and competition designs have not been carried out, there are still quite a lot of built "functional sculptures". Many were created within the playgrounds in new housing estates, as in the case of aforementioned *Invalidovna*. Paradoxically, the context of their origin often causes their decline. Today, the artefacts are not appreciated for their artistic value but rather associated with the depersonalized space within the housing estates and generally with mostly negative connotations of the former

regime. Unfortunately, many works have been already destroyed, insensitively moved out of context or left in disrepair. Sadly, in the Czech Republic we still lack an institutional protection of heritage of the “functional sculptures” and other art works in the public space. Interventions to rescue these artefacts are usually activist in nature. In this context, I would finally like to mention a pioneering project called *Aliens and Herons* which raises the awareness of the topic in the Czech Republic. Due to this effort, the issue has a wider recognition and the understanding of “functional sculptures” among both professionals and the general public is slowly beginning to rise.

7. CONCLUSION

As a result of many factors, such as the concern for the development of children, need to stimulate children's imagination, regard to quality of public space etc., we have a number of so called “functional sculptures” within our cities in the Czech Republic. This includes a series of playground artefacts, which can be seen not only as purely functional children monkey bars, but also as original works of art of the era – often designed by excellent designers, artists or architects, who were exploring organic design, abstract forms or formal reduction. Of course these works had to meet their functional essence even though, however, they could and should be considered as rightful parts of the art production of those years. And therefore, they should also be treated approximately regarding this context.

NOTES

- 1 Vladimír Kýn, *Prolézačky a Plastiky pro Dětská Hřiště*, Ostrava, Krajské Osvětové Středisko v Ostravě, 1966, 6. Jiří Musil, “Děti ve Městě”, *Architektura ČSR* XXII, 1963, 41-42.
- 2 *Id.*, 42. Otakar Kuča, “Příroda v Soudobé Architektuře”, *Architektura ČSR* XIX, 1960, 320.
- 3 Jiří Musil, “Děti ve Městě”, *Architektura ČSR* XXII, 1963, 42.
- 4 Marie Benešová, “Oddych ve Městě. Odpočinek v Krajině”, *Architektura ČSR* XXXI, 1972, 323.
- 5 Otakar Kuča, *op. cit.*, 320.
- 6 Small monkey-bars by O. Zoubek in Letná: “What is their actual function intended by the sculptor? Maybe he even did not know what they would embody in children's eyes. Now they represent an obstacle race track, an hour before they were stores where the leaves, twigs and stones can be bought. Sometimes they are jets, cars, trains or bikes.” Vladimír Kýn, *op. cit.*, 6.
- 7 Vladimír Kýn, *op. cit.*, 9-10.
- 8 *Ibid.*, 10,12.
- 9 *Ibid.*, 12.
- 10 Artistic style, popular in Czechoslovakia from the late 1950s. The name is derived from the success of the Czechoslovak representation at World's Fair held in Brussels in 1958 which motivated a search for a new visual style in architecture and applied arts. Generally, Brussels style can be defined as soft modernism.
- 11 Pavel Karous, “Umělecká výzdoba sídlišť v Československu 60.-80. let”, *Zprávy Památkové Péče*, 2015, 334.
- 12 Jan Wollner, “Vzhůru do Vesmíru! Funkční Plastiky v ČSSR”, *ERA* 21, 2013/3, 24.
- 13 Tomáš Pospiszyl, “Sochy, Které Nikomu Nepatří”, in Pavel Karous (ed.), *Vetřelci a Volavky*, Praha, Arbor Vitae, 2013, 417.
- 14 *Usnesení vlády ČSSR ze dne 8. července 1965 č. 335 o řešení otázek uplatnění výtvarného umění v investiční výstavbě*.
- 15 Pavel Karous, *op. cit.*, 337.
- 16 *Usnesení vlády ČSSR ze dne 8. července 1965 č. 335, příloha, 1.*
- 17 Specific percentage was determined by the amount of investment and other variables. However, it was not only the socialist block reserving a certain percentage of funds for art. On the other side of the Iron Curtain, similar rule was in place in France and a strategy “Percent for Art” was also implemented in some American cities. Pavel Karous, *op. cit.*, 333.
- 18 Josef Raban, “Jubilejní soutěž 1960”, *Tvar* XI, 1960, 312. Ludvík Veselý, “Několik slov o soutěži k 15. výročí osvobození ČSSR”, *Domov*, 1960, 3-7.
- 19 Josef Raban, *op. cit.*, 284-324; Ludvík Veselý, *op. cit.*, 3-7.
- 20 Vladimír Kýn, *op. cit.*, 29-30.
- 21 In the context, art historian Tomáš Pospiszyl regards some “functional sculptures” designed by the artists to be only “marginally and even grotesquely mirroring the character of their work in a field of visual art”. Tomáš Pospiszyl, *op. cit.*, 422.
- 22 Retrospectively, the fact is being mentioned by the artists themselves. Interviews with Polana Bregantová concerning the experiences of her father, Olbram Zoubek, February 2016.
- 23 Josef Raban, *op. cit.*, 323-324.
- 24 Daniela Kramerová, *Jiří Novák. V Pohybu*, Praha, Arbor Vitae, 2010.

From Playgrounds to Recreation Centres for People of All Ages: Alfred Trachsel and the Case of Zurich

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Two deeply rooted beliefs, both ingrained parts of Helvetian self-awareness, are at the basis of the importance given to children's environment in Switzerland. On the one hand it is often stressed that Switzerland is a land of educationalists; on the other hand it is seen as self-evident that the mission of education is to train the moral being even more than to instruct. Such a mission was to be entrusted to schools and recreation facilities as well. Alfred Trachsel, architect at the Zurich building department was one of the main figures of the Swiss and international debate on playgrounds: he personally designed some playgrounds and in 1959 he was co-author with Alfred Ledermann of the fundamental book *Creative Playgrounds and Recreation Centers*. Since the early 1950s creating adventure-playgrounds for the city of Zurich became a priority. This kind of playground aimed at awaking the creative talent in children and adolescents, by substituting passive-play apparatus with active working materials such as wood, clay, paper and tools.

Soon after its opening in 1954, the first municipal Robinson-playground in Zurich became attended not only by children, but also by parents, young adults and elderly, and it was consequently extended and converted into a community center. Starting from these premises and motivated by pedagogical reasons, there was a systematic joint effort of voluntary and municipal agencies in Zurich to provide a network of "Recreation Centres for People of All Ages", leading to a much closer contact between children, young and adults.

This paper focuses on the construction and on the current state of such spaces and places. It aims to explain how leisure and educational policy during the 1950s and the 1960s brought to the evolution of the concept of the recreation centers for people of all ages starting from adventure playgrounds.

1. PLAY AND EDUCATION

If the 20th century is *The Century of the Child*, the post-war period could be considered the "golden age" of playground design¹. Starting from the late 1940s the playground was brought into the fold of landscape and architecture, ushering a period of invention and experimentation².

"Man only plays when in the full meaning of the word he is a man, and he is only completely a man when he plays." This sentence by Schiller is quoted by Alfred Ledermann in the opening essay of one of the most important book about playgrounds, edited by himself and by the architect Alfred Trachsel: *Creative Playgrounds and Recreation Centers*, first published in 1959³. The modern disclosure of play as a significant human activity that is derived from human nature has been first shaped by Schiller and Rousseau.⁴ Play is idealized as a realm of freedom and strictly linked to nature; according to Rousseau in all the games that children played, there could be found material for instruction. The formative role of play was further investigated in the 20th century according to the new psychoanalytic theories: Jean Piaget formulated a link between play and cognitive



FIGURE 1. Robinson playground Heuried, Zurich, Switzerland, 1956. The Robidorf with its wooden houses, in the background the building site of the recreation centre by Hans Litz and Fritz Schwartz. © *Baugeschichtliches Archiv der Stadt Zürich*, 1956.

maturity, stressing the centrality of play in children's learning and the use of the environment⁵.

The debate on leisure for children and youth was already underway before WWII, however, immediately following the end of the war the momentum of this discussion increased. Switzerland was spared the vicissitudes of the conflict and the reasons for developing recreation facilities for the young were clearly both different and less pressing than in other European countries, where youth associations often operated as surrogates for the family unit. While in other countries the creation of playgrounds was somehow linked to the war – the Danish architect Carl T. Sørensen built his first “junk playground” during the German occupation, and Lady Allen of Hurtwood, hoping to mold what she called “peace-loving citizens”, let children join British reconstruction by building things at places that had been bombed⁶ – in Switzerland it was the urban sprawl and the shrinking of green areas that concerned educators, planners and architects.

The strong Swiss vocation for pedagogy found further positive feedback in the idea of leisure as a time to shape and mould one's personality, influencing the conception and design of playgrounds and recreation center. Switzerland is a land of educationalists, starting with Rousseau and Pestalozzi, right down to the leading Swiss figures in modern pedagogy, such as Adolphe Ferrière and Jean Piaget⁷. Adventure playgrounds embodied just the most progressive thoughts of educational theory that appeared in the early 20th century.

With few exceptions, histories of post-war architecture completely ignore the adventure playground, as its anti-formalism does not fit into design-centered narratives that conceive architectural history as a series of monuments. As a result, it has been discussed mostly from the history of childhood perspective.⁸ These spaces and places have been often considered as “minor architecture”, also because usually authored by municipal agencies and not by mainstream architects.

Recently modern playgrounds had been brought to the attention of a larger audience: in 2015 the RIBA held a small but well promoted exhibition on *The Brutalist Playground*⁹, and in 2016, Gabriela Burkhalter, who worked long since on modern playgrounds, curated the exhibition *The Playground Project* at the Kunsthalle Zurich¹⁰. However, due to a lack of recognition of their social and architectural value, many of these recreation facilities suffered major alterations, losing many of their original qualities.

2. ALFRED TRACHSEL AND ZURICH'S PLAYGROUNDS

In 1953, the *Fifth International Congress for School Construction and Open-Air Education* took place in Zurich, contemporaneously to the exhibition *Das Neue Schulhaus*, curated by Alfred Roth¹¹. On the 3rd day of the congress – organized under the patronage of the foundation *Pro Juventute*¹² – the architect Alfred Trachsel gave a lecture on modern playgrounds. In addition to the lecture, material related to the playground Bergwiesen – built in 1952 by Trachsel himself and other volunteers in Zurich-Triemli – was displayed in the exhibition¹³.

Alfred Trachsel could be considered the pioneer of Swiss adventure playgrounds and recreation centres. Since the late 1940s he began to take an active interest in architecture for children, looking in particular at the Danish model. In the 1950s and 1960s he worked for the Zurich Building department and he designed different playgrounds both in Zurich and in the rest of the country; together with Ledermann, he gave lecture all over Switzerland about the new playing and encounter concept¹⁴.

Following the congress a working group – comprised of Trachsel, the *Pro Juventute* secretary-general Alfred Ledermann, the editor Edwin Arnet, and the local director of education Gottlieb Lehner – formed with the objective of creating adventure playgrounds for the city of Zurich¹⁵. In 1954 the first municipal adventure playground, designed by Trachsel in collaboration with *Pro Juventute*, was opened in Wipkingen, on the Limmat river, away from traffic and noise: an empty meadow, building materials and an old tram¹⁶.

Adventure playgrounds, called in Switzerland Robinson playgrounds, embodied a new concept in the use of leisure time, aiming to awaken creative talent in children and adolescents by substituting the passive-play apparatus with active working materials such as wood, clay, paper, and tools¹⁷. Robinson playgrounds had no readymade play equipment and no predetermined agenda: like Robinson Crusoe on his lonely island children could create their world. The *Robidörfer*

looked like villages of little wooden houses: children met every two months to discuss together with the supervisor the main issues of the community life, learning the basic rules of democracy while playing¹⁸.

3. FROM ROBI-PLAYGROUNDS TO RECREATION CENTRES

Soon after its opening, the Wipkingen playground, became used not only by children, but also by their parents and young adults. This revealed that across all age groups there was a need for leisure time facilities of a creative nature¹⁹: following the introduction of the 8-hour working day, the question of spare time became an adults' issue and not just one for younger generations²⁰. Starting from these premises, and with social and pedagogical motives, *Pro Juventute*, under the guidance of Ledermann and Trachsel, developed the notion of "Recreation Centre for People of All Ages"²¹.

In 1957 the Wipkingen playground was equipped with additional playrooms, club rooms, workshops, and libraries, designed by the architect Hans Trösch, turning it into the first recreation centre for people of all ages²². The centre is characterised by a sequence of open, semi-open, covered and closed spaces. It is organised in three small constructions along a central covered pathway: a small one containing rest rooms, an elongated building for workshops, and a square multifunctional room used as a theatre or as a community room. Today the



FIGURE 2. Alfred Trachsel, Hans Trösch, Wipkingen recreation centre and Robinson-Playground, Zurich, Switzerland, 1958. © *Baugeschichtliches Archiv der Stadt Zürich*, 1958.



FIGURE 3. Hans Litz and Fritz Schwartz, Buchegg recreation centre, Zurich, Switzerland, 1958. The yard with the small open-air theatre facing the labyrinth and the small community hall on the right. © Jürg Wolfensberger, *Baugeschichtliches Archiv der Stadt Zürich*, 1958.



FIGURE 4. Hans Litz and Fritz Schwartz, Heuried recreation centre and swimming pool, Zurich, Switzerland, 1961-65. The recreation building and the stepped courtyard in 1966 and today. © *Baugeschichtliches Archiv der Stadt Zürich*, 1966.

Wipkingen community centre is still active: during the years a new pavilion and two small storage areas were added; but, even so, it preserves the original character and it still works as a lively community centre²³.

Starting from the Wipkingen experiment, a new programme was developed in order to create a network of recreation centres for people of all ages throughout the city²⁴. The aim of the city of Zurich was to provide a leisure centre within a one kilometre radius so that every citizen could reach a centre within fifteen minutes of walking²⁵. In the following years the Building and Garden department started to plan recreation centres in other neighbourhoods²⁶. These centres, besides playgrounds and fields, usually housed workshops for different kind of materials, a library, an auditorium and different club rooms. During the afternoon these community spaces were used primarily by children and adolescents, while in the evening the same facilities were used by adults and school-leavers.

Although more defined and less ephemeral than Robinson playgrounds, also recreation centres were conceived as open structures able to encourage creativity and the sense of community in children, youth and adults. The space should not be rigid or constraining so as to allow meaning to be generated by the different activities that took place within the centre: "We want to create a space for the spontaneous, the multiplicity, the improvised and for healthy noise", wrote the architects Hans Litz and Fritz Schwarz about their project for the recreation centre in Buchegg²⁷.

Arranged in several buildings along the perimeter of a small park the recreation centre Buchegg provided the usual playground and facilities, plus two highly imaginative and appealing constructions. The former contained hobby rooms, workshops, and a yard with a small open-air theatre facing a wonderful concrete labyrinth that serves as a backdrop and stage access, a small community hall with

a fireplace and library, and a children's village. In the east edge of the small park Alfred Trachsel designed another children's village, made largely of concrete culvert sections, with its own private roads and traffic lights. This town in miniature serves as both a location for traffic instruction and a game²⁸. Unfortunately in the mid 1980s Buchegg centre was heavily refurbished and extended, adding post-modern moulding and changing or demolishing many original components such as the children's village and the concrete labyrinth, while the traffic playground is no longer functional and is semi-abandoned.

Underlying the idea of recreation centre for all ages there were not only social and educational reasons, but also urban and economic issues²⁹. Due to the increasing lack of space in urban areas and consequently to the increase of land prices, creating leisure facilities for different age ranges or different activities was no longer possible: a policy decision was made to combine leisure-time centres with other facilities such as parks, swimming pools and sports grounds. The recreation centre Heuried (1961-67) is one of the first examples of this mixed use leisure facilities³⁰: design by Hans Litz and Fritz Schwarz it consisted of a swimming pool with dressing rooms, an artificial ice rink, tennis courts, playgrounds, the restaurant, all purpose terraces and, finally, a recreation building with workshops, library and an open-air courtyard theatre, roofed over in 1980³¹. Today only the recreation building is still standing, while the rest of the complex was recently demolished and it will be replaced by a new sports centre designed by EM2N³².

4. FINAL CONSIDERATIONS

The recreation centre for people of all ages represents an architectural approach to leisure and education that has its roots in the Swiss history of progressive education. It deliberately avoids the separation of age groups and the provision of specifically designed facilities, in order to promote educational experiences across age groups.

Referring to Swiss recreation centres the Austrian critic Friedrich Achleitner described this kind of spatiality: "Actually the spatial, the sequence of spaces, its opening and closing, its increasing and marking off, its going up, graduating, stacking, turning, in sum all manipulations which are possible with space, are once more the focus of interest"³³. He identifies that in this spatial conception not only an interpretation and activation of facts of life appear according to aesthetic reasons, but that there is also "an expression of the changed social situation, of a more democratised way of life".

The recreation centres of Zurich are still active today under the patronage of the foundation *Zürcher Gemeinschaftszentren*. However, the scarcity of documentation on their history and the fact that, although some of them are in the local inventory, they are not actually protected, witnesses the lack of a full awareness of their value.

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- TRACHSEL, Alfred, *Recreation-centres of Zurich*, Zurich, Pro Juventute, 1971.

NOTES

- 1 *The Century of the Child* is a famous book by the Swedish writer Ellen Key, published in 1900. In this bestseller she proposed that the world's children should be the central work of society during the 20th century. Ellen Key, *The Century of the Child*, New York & London, G.P. Putnam's Sons, 1909. The title was reused also for the exhibition *The Century of the Child: Growing by Design 1900-2000*, at *The Museum of Modern Art*, New York, July 29-November 5, 2012.
- 2 Roy Kozlovsky, *The Architecture of Childhood. Children, Modern Architecture and Reconstruction in Postwar England*, Farnham, Burlington, Ashgate, 2013, 47-57. See also Susan G. Solomon, *American Playgrounds; Revitalizing Community Space*, Hannover & London, University Press of New England, 2005.
- 3 Alfred Ledermann, Alfred Trachsel, *Creative Playgrounds and Recreation Centers*, New York, Praeger, 1959.
- 4 Roy Kozlovsky, *op. cit.*, 51-52. Jean-Jacques Rousseau, *Emile or On Education*, New York, Basic Books, 1979 [1763]. Friedrich Schiller, *On the Aesthetic Education of Man in a Series of Letters*, Oxford University Press, 1967 [1794].
- 5 Jean Piaget, *Origins of Intelligence in Children*, New York, International University Press, 1952. Piaget was director of the International Bureau of Education between 1929 and 1967.
- 6 Roy Kozlovsky, *op. cit.*, 53-56.
- 7 This vocation to education entails the awareness that the mission of education is to train the moral being even more than to instruct: "The moral man is the main goal of education" Alfred Roth wrote in the last part of his fundamental book *The New School*, first published in 1950. Alfred Roth, *The New School, Das Neue Schulhaus, La Nouvelle École*, Zurich, Girsberger, 1950.
- 8 Roy Kozlovsky, *op. cit.*, 51-52.
- 9 **The Brutalist Playground was a commission by Assemblé and artist Simon Terrill exploring post-war design for play.** The exhibition was open at the RIBA from 10 June to 16 August 2015 and accompanied by talks, workshops and events. <https://www.architecture.com/Explore/Exhibition-sandEvents/BrutalistPlayground/BrutalistPlayground.aspx>.
- 10 **Swiss political scientist and urban planner, Gabriela Burkhalter curated different exhibitions on modern playgrounds:** in 2013, *The Playground Project*, at the Heinz architectural center, Pittsburgh, as part of the 2013 *Carnegie International*, see the website of the exhibition, accessed on February 12, 2016, <http://ci13.cmoa.org/playground>; in 2014, *Architektur für Kinder. Zürchs Spielplätze*, at the Institute for the History and Theory of Architecture gta, ETH Zurich, see the exhibition brochure on the website: accessed on February 12, 2016, <https://media.gta.arch.ethz.ch/downloads/ausstellungen/press/gta-Ausstellungsbrochuere-Architektur-fuer-Kinder.pdf>. She also edited the website *Architektur für Kinder*, an ongoing research project and an online archive on the history of playgrounds: accessed on February 12, 2016, <http://www.architekturfuerkinder.ch>.
- 11 The congress was held from 27th August to 6th September at the Zurich Kunstgewerbemuseum. Congress documents and proceedings are partially held in the gta archives (bequest Alfred Roth). School construction was treated as an interdisciplinary problem and thus architects as well as pedagogues, hygienists, and doctors were involved in the congress. Documents and proceedings are partially preserved at the ETH Zurich in the gta Archives, bequest Alfred Roth.
- 12 The foundation *Pro Juventute* is a well-financed, private organization dedicated to all aspects of the welfare of youth, founded in 1912.
- 13 Alfred Trachsel, "Kinderspielplatz Bergwiesen der Baugenossenschaft Sonnengarten im Triemli, Zürich", *Schweizerische Bauzeitung*, 70, n. 37, 1952, 536-538; Alfred Ledermann, Alfred Trachsel, *op. cit.*, 55-55.
- 14 For an overview on Trachsel see: Walter Canziani, "Zum Tod des Architekten Alfred Trachsel", *Neue Zürcher Zeitung*, 24.03.1995, 56. For his playgrounds project see **Alfred Ledermann, Alfred Trachsel, op. cit.**
- 15 Alfred Trachsel, "Kinderspielplätze", *Das Wohnen*, 29, n. 1, 1954, 8-11.
- 16 Alfred Ledermann, Alfred Trachsel, *op. cit.*, 120-127; Eugene D. Sternberg, Barbara E. Sternberg, *Community Centers and Student Unions*, New York, Van Nostrand Reinhold, 1971; Ursina Jakob, *Spielplatzpioniere, Leben mit dem Verkehr, Schulhausarchitektur*, Zurich, Quartiervereins Wipkingen, 2005, open-source accessed on February 12, 2016: <http://wipkingen.net/wp-content/uploads/Spielplatz-Leben-Verkehr-Schulhaus.pdf>
- 17 "Jugendliche Siedlungsbauer am Werk", *Das Wohnen*, 38, n. 10 (1963), 368-369. The name. The association with Robinson Crusoe was an idea of Ledermann, on this see: Bettina Hürlimann, "Robinsonaden", *Du - Atlantis: kulturelle Monatsschrift*, 26, n. 5, 1966, 389-396.
- 18 "Jugendliche Siedlungsbauer am Werk", *op. cit.*, 368-369. See also Wayne R. Williams, *Recreation Places*, New York, Reinhold, 1957, 223-229.
- 19 Alfred Ledermann, "Vom Spielplatz zum Freizeitzentrum", *Pro Juventute, Schweizerische Monatsschrift für Jugendhilfe*, 7/8, 1957, 363-370. Alfred Trachsel, "Vom Spielplatz zum Freizeitzentrum", *Das Werk*, 46, n. 7, 1959, 229-233.

- 20 At that period, many intellectuals were concerned that the task of *Menschenbildung* (a term often used by Pestalozzi) was threatened by the tendency of modern urban society to isolate individuals or to annihilate them in an anonymous mass. With the reduction of the working week from 48 to 44 hours, approved by Swiss citizens in 1958, and the resulting increase of free time, leisure became a social and political challenge. See: Peter Kaufman, *Vierzigstundenwoche in der Schweiz? ein anschaulich-theoret. Beitrag zur Geschichte und zur Problematik der Arbeitszeitverkürzung in der Schweiz*, Zurich, Polygraph Verlag, 1960. For an overview on the evolution of working time in Switzerland see the "*Historisches Lexicon der Schweiz*", <http://www.hls-dhs-dss.ch/index.php>, under the heading "Arbeitszeit".
- 21 See *Pro Juventute*, *Schweizerische Monatschrift für Jugendhilfe*, n. 8/9, 1959, monographic issue dedicated to recreation facilities for young and adults; Gustav Mugglin, "*Zeitgemässe Freizeiteinrichtungen – eine Aufgabe für Stadt und Land*", *Das Werk*, n. 3, 1960, 78.
- 22 Hans Troesch, "*Robinson-Spielplatz Wipkingen in Zürich*", *Das Werk*, 46, n. 7, 1959, 234-235.
- 23 The complex is listed in the *Denkmalspflege* inventory for building of local value. This means it is potentially worthy of protection and that every intervention on the building requires the approval of the *Denkmalspflege*.
- 24 The management and maintenance of recreation centres was assigned to the foundation *Pro Juventute*, who also conducted training courses for supervisors. 60% of the yearly expenses were covered by financial contribution from the city of Zurich; *Pro Juventute*, benefactors and voluntary assistants also contributed considerable amounts. Alfred Trachsel, "*Spielplätze und Gemeinschaftszentren in Zürich*", *Bauen + Wohnen*, 11, 1957, 397-404.
- 25 Alfred Trachsel, "*Vom Spielplatz zum Freizeitzentrum*", *Das Werk*, 46, n. 7, 1959, 229-233.
- 26 On the January 20th, 1963 the citizens of Zurich took a vote on recreation centres and confirmed the public interest in the issue, a plan was ratified which would led to the creation of more than 20 recreation centres – of which 13 were already in operation. Alfred Trachsel, "Report on the State of the Recreation-Centers of Zurich", in *Recreation-centres of Zurich*, ed. Alfred Trachsel, Zurich, *Pro Juventute*, 1971, 3-4. On the planning of leisure infrastructure see also: "*Freizeit und Raumplanung. Resultate von Literaturanalysen in den Bereichen Soziologie, Pädagogik, Medizin*", *Berichte zur Orts-, Regional- und Landesplanung*, n. 28, August 1974, Institut für Orts-, Regional- und Landesplanung der ETH Zürich.
- 27 Hans Litz and Fritz Schwarz, "*Freizeitzentrum Buchegg in Zürich*", *Das Werk*, 46, n. 7, 1959, 236-240; Alfred Ledermann, Alfred Trachsel, *Creative Playgrounds and Recreation Centers*, 114-115, 136-138.
- 28 The signs were interchangeable so that children could confront themselves with different circumstances or simply remove them using the area merely as a playground. This traffic playground was a further development of the *Schülerverkehrsgärten* (traffic training ground) already operational in some cities. Both police and the Swiss Touring Club took part in the design process together with *Pro Juventute*.
- 29 Gustav Mugglin, "*Zeitgemässe Freizeiteinrichtungen – eine Aufgabe für Stadt und Land*", *Das Werk*, 47, n. 3, March, 1960, 78.
- 30 Fritz Schwarz, "*Freibad-, Sport- und Freizeitanlage Heuried in Zürich-Wiedikon*", *Das Werk*, 53, n. 9, 1966, 340-343.
- 31 "*Dokumentation Bauprojekt, GZ Heuried, Aufwerungsmassnahmen*", 2011, dossier in the *Denkmalspflege* archives, Stadt Zürich, Amt für Hochbauten. Between 2009 and 2012 the recreation building was refurbished and restored by deplus architekten eth/fh.
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Large Spaces into Specific Places: The Challenges of Converting Buildings for Cultural Uses

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Industrial buildings, outdated malls or even dairy factories have been, and will continue to be, reused for cultural purposes such as museums, libraries and exhibition spaces. For such activities, modernist buildings with large luminous spaces and a lot of flexibility have been very suitable for conversion. Given the growing role of the cultural industry in the competition between cities globally, it is no surprise that cultural activity centres have been created in growing numbers to strengthen the branding of cities as part of the global market. This is especially the case in urban centres, where industrial activity has moved further from traditional city-centre areas.

At the same time, new cultural centres are playing an increasing role locally in creating and maintaining identities for inhabitants in their physical surroundings. Industrial buildings numbering probably in the thousands have been taken into new cultural uses during recent decades, and there is no reason to think that this kind of development will cease in the future. As early as 1997, when the former printing works designed by Aarno Ruusuvuori in Tapiola, Finland was proposed to become a cultural centre with museums, art galleries and other activities, there were in Europe alone 26 similar activity centres, most of them functioning in former industrial buildings.

The 5 papers presented in this session will give a wide array of viewpoints concerning this phenomenon. The session was originally proposed as an examination of questions of architectural identity, changing symbolic values of buildings and the balancing of historical values of the different stages of a development as a built structure is designed for new uses. This original session scheme has happily expanded in scope, to include the macro-scale of changes in a huge country such as China and the micro-scale of one city district and its identity, as

in the case of Tehran or even one building, such as the former department store in Kagoshima, Japan.

All these different realities, from the global economy to the individual daily experience of a city-dweller, constitute a vast contextual background against which to assess the role of modernist architecture. From WWII air-raid shelters to large industrial complexes, all types of modernist architecture share many mutual features, both in ideological standpoints and in formal architectural language. If our aim is to preserve some of these characteristics, whether conceptual or physical, for the future, then we are inevitably confronted with choices about the best ways to achieve this. It would be tempting to say simply that most large redundant buildings transformed into cultural uses have succeeded quite well in this aim.

But this being said, we still need to acknowledge some other, more ambiguous nuances. Buildings with negative connotations, such as prisons or mental institutions, have also been adapted to new uses, as seen in the case cited in this session, of the Nazi air raid shelters in Wrocław, Poland. It seems that in many cases, the negative or even sinister reputations attracted by certain buildings is really a generational issue, and for most of the population today, the buildings of the 1930s and 40s no longer bear a significant burden from their original use anymore. This leaves more room for the possibility of seeing the original architectural, social or cultural intention as a resource for the creation of something new.

Discussion on the Reuse of Industrial Heritage and Relics into Cultural Industry Clusters in China

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China is going through a period of social transformation and high speed growth in the economy. Meanwhile, due to air pollution, the existence of giant factories can no longer be tolerated in urban environments, which leaves a substantial industrial relics and heritage, particularly for former industrial metropolis such as Tianjin, Shanghai, Luoyang, Fuzhou, Shenyang, etc. This paper intends to present a general summary of Chinese industrial heritage and relics, and discuss measures for their transformation. It begins with elaborating the causes of large-scale factory relocation and the situation at their former locations, whether destroyed, remaining, or converted for reuse. Then, it classifies their reuse patterns, pointing out that former industrial areas are encouraged to transform into cultural industry clusters, and that supporting policies are provided for each provinces, city and even districts. At present, there appears to only be one accepted choice, which is to transform the industrial buildings into cultural industry places. Finally, it discusses if cultural industries are a suitable choice for industrial relics and heritage, and how this transformation could become an opportunity for former industrial areas. After investigating several industrial cities, analysing most cultural industry clusters in China, and tracking typical cases, it is concluded that the cultural industry is not a saviour for all industrial relics and heritage, and may even be the opposite. Former industrial heritage and relics can only survive as cultural industry clusters under certain circumstances.



FIGURE 1. Beijing Lajin Creative industrial park. © Lian Hu, 2014.

1. INTRODUCTION

In the mid-1980s in some major cities in China, issues regarding the optimization and upgrading of industrial structures first started to come up. Some enterprises began to move out of the urban centres, and updating urban industrial land becoming an important part of urbanization. The reconstruction and reuse of industrial architecture is an important factor in achieving the updating of industrial land, and is also a necessary requirement for reducing construction costs, creating cultural landscapes, and passing on the city's history.

During this expansion, the process of urban reuse and industrial upgrading in largest and medium sized cities is centred on old city areas. Their previously rational layout had become irrational due to urban expansion. Industrial land had gradually taken over the city centre, which now makes its removal a necessity. Nowadays, the removal of large industrial facilities that occupy important urban land resources as well as the reconstruction and redevelopment of these original sites has become a trend in urban development. Under the pervasive background of increasing protection of industrial heritage and relics, the protection and development of this kind of industrial heritage is facing increasingly diverse development requirements and complicated development goals. This kind of heritage is not only required to embody the memories of a city's history and culture, but also to become a dynamic area for attracting new urban economic growth. Hence under the policy guidance, the reconstruction of industrial heritage and relics is inevitable, but with complicated characteristics driven by various interests. How to reuse and why reuse? Those are the issues that need to be studied.

2. INDUSTRIAL HERITAGE REUSE

Initially the reuse of industrial architecture was the result of autonomous actions led by architects and artists. In the early 1990s there were some excellent reconstruction examples in coastal cities. The development of economic social, industrial and cultural policies have been gradually affecting the reconstruction and reuse of industrial architecture, and evidence of characteristic stages has emerged.

Autonomous Stage (Early 1990s-2000)

The regeneration of industrial land and the reconstruction and reuse of industrial architecture in China were first developed in megacities like Beijing, Shanghai, and Guangzhou. This was related to their higher level of urbanization, so that they were the first ones to face with the upgrading of industry structures. In this period, although a large amount of industrial architecture was torn down, there were some shining examples of industrial architecture reborn due to autonomous reconstruction by companies and artists.

During this period, reconstruction focused on individual buildings and there was a lack of planning to reuse entire facilities. Taking the approach of retaining structures and re-dividing the space, the interior design of commercial offices involved substantial modifications, while the interior of artistic spaces basically retained the original style.

This period shows us development modes and reconstruction methods that were decided according to the different needs of the subjects. The investment by enterprises was high and the reconstructions were for renting aiming the gain of high rent returns; while investment by artists was low and the reconstructions were for their own use and aiming the use of the artistic value of the space. Therefore, the reuse constructions of this period are focused on individual buildings rather than large facilities.

“Less Industry, More Service” Stage (2001-2005)

Stepping into the 21st century, the urbanization process in China was speeding up, more cities faced the problem of regenerating industrial land on a large scale. In 2001, the General Office of the State Council sent notification to the State Development Planning Commission of Some Policies and Measures to Speed Up the Development of Service Industry During “the 10th 5 year-plan” period. For the first time, it clearly proposed the adjustment of the urban land structure, and that the proportion of industrial land should be reduced and that service industries should be increased. In addition, central cities were encouraged to achieve the “less industry, more service” industrial structure. Under the guidance of this policy, more industrial enterprises moved out of the city suburbs and thus resulted in a lot of old industry architecture. This drove the reconstruction of industrial architecture into a new stage, in which 3 main development modes were present: dominating enterprises, governments and academic groups.

In contrast to the previous stage, the development modes and ways of reconstruction and reuse were more diversified in this stage. The reconstructions dominated by enterprises extended from single units focused on commercial offices, to richer diverse forms which were oriented towards modern service industries. Partially preserved, entirely renovated, with one or more industry heritage items transformed as key points, the rest of the factories were torn down and rebuilt.

As the manager and servant of market activities, the reconstructions dominated by governments focused on increasing urban infrastructure and cultural and leisure service facilities. Thanks to the natural advantages of governments in coordinating and management, these reconstructions were usually on a larger scale and were parks or big public based architecture.

The reconstructions dominated by academic groups applied a folk and academic mode that was non-profit, creating space with characteristics and keeping the overall style at the same time.

In general, development modes brought new explorations of reconstruction and reuse ways. The breaking up shapes, the addition and subtraction of space,

restructuring of elements, and contrast between the old and the new, were all bolder than before. The reconstruction and reuse of industrial heritage were meeting the need of modern city ways of living with a more open and inclusive attitude.

Cultural Creative Industry Stage (2006 till now)

In this period policy orientations have a more evident influence on the development modes. With policies giving strong support to the development of cultural creative industry, also the demonstration effect of Beijing 798 and Shanghai M50 and others, naturally industry transformations tend to point to cultural creative industry.

This paper takes reuse of the textile industry's heritage as examples to explain how large industrial heritages and relics are transformed into specific places.

The heritage of the textile industrial is widespread and its architecture contains outstanding features, recording the development history and manufacturing method and technical process of the textile industry and the evolution of industrial architecture. To some extent, it reflects the development level of social productive forces and contained the most advanced industrial and technical information of that time, which is of historical importance by showing artistic, scientific, social and cultural values. Therefore, the current exploration of the textile industry's heritage is protected and reuse is of great importance.

The author compares 15 cases of the reconstruction and reuse of national textile industry heritage.

CITY	SHANGHAI	BEIJING	SUZHOU	TIANJIN	QINGDAO	HANG ZHOU	CHANG SHA	CHANG ZHOU
GDP RANKING	1	2	5	6	10	8	20	33
NUMBER OF PROGRAMS	4	2	3	1	2	1	1	1
PROGRAMS	Shanghai Chuang Yi He	Beijing Laijin Creative industrial park	Suzhou Pingjingfu Hotel	Tianjin No.3 National Cotton Factory	Qingdao "Hong Jin Fang" art workshop	Hangzhou Ideal 166 Loft	Changsha Yu Xiang Sha factory and shipyard	Canal 5 Creative Campus
	Shanghai M50 Creative park	Beijing Ocean Art Center	Suzhou No. 1 Silk Factory		Qingdao Sky City			
	Shanghai International Fashion Center		Suzhou Su Lun Field urban complex					
	Shanghai Husizhan							

TABLE 1. Different cities' GDP ranking and number of textile factories reconstruction cases. GDP ranking from National Bureau of Statistics.

CAUSES OF REUSE

Industrial architecture heritage was once the representative of our country's new technology, the new material and new structure of a certain period, which is an important part of the context of urban development as well as a witness to the city's entire image and history. The heritage of the textile industry is of very high social and historical value. Textile factory reconstruction and reuse enables the maximum development and utilization of the urban style of architecture embodied in textile factories and realizes the organic combination of stylistic architecture protection and economic development.

Municipal governments' regional planning, preferential policies, reconstruction and reuse of textile industry's heritages as well as the final decision of the industry are very influential.

For example, in 2009 when Beijing n. 2 Cotton Textile Mill started to be reconstructed, the local policies included: Beijing's Municipal 11th 5-Year Outline Plan in 2006 aimed to speed up the development of modern service industries, enacting local regulations and preferential policies to support the development of a creative cultural industry, getting rid of industrial monopolies, encouraging the reorganization of resources, strengthening financial support and prioritizing the development of 6 creative cultural industries; Chaoyang District's government built the "CBD-Dingfuzhuang International Media Corridor"; "Policies on Promoting Creative Industry Development in Beijing" formulated 35 specific rules on 8 aspects in 2008. In the author's research, administrative personnel claimed that the park has been granted 30 million in financial support from different departments of the government.

Other cases in Tianjin, Shanghai and Suzhou are also related to regulations regarding the development of a modern service industry in local 12th 5-year plans.

From the above cases, the interactive reactions between regional economies and policies to promote the transformation of secondary industries like the textile industry, to tertiary industries can be clearly seen. Meanwhile, regional economic development provided substantial fundamental, national and regional policies to provide guidance for the reconstruction and reuse of textile factories.

CHOICES OF BUSINESS TYPE

The Industrial architecture of the textile industry mainly includes workshops and warehouses. They are solid and practical, occupying large areas. They are usually surrounded by administrative offices, subsidiary houses and living quarters. Take Tianjin n. 3 Cotton Factory as an example, it originally possessed a building complex, spinning mill, fabric mill, warehouse, power plant, repair workshop and accommodation areas. Textile factory architecture has its own characteristics.

Among 15 domestic cases that have been discovered, the final business types are shown in table 2. From it we can see that 9 out of 15 cases are now cultural creative industries, 2 are commerce, 2 are combination of cultural creative industries and commerce, and 1 is a hotel.

BUSINESS TYPE: CULTURAL CREATIVE INDUSTRY				
Shanghai Chuang Yi He	Shanghai M50 Creative park	Shanghai Husizhan	Hangzhou Ideal 166 Loft	Qingdao "Hong Jin Fang" art workshop
Suzhou No. 1 Silk Factory	Beijing Laijin Creative industrial park	Beijing Ocean Art Center	Canal 5 Creative Campus	
BUSINESS TYPE: COMMERCE + CULTURAL CREATIVE INDUSTRY				
Tianjin No.3 National Cotton Factory	Qingdao Sky City			
BUSINESS TYPE: COMMERCE				
Suzhou Su Lun Field urban complex	Changsha Yu Xiang Sha factory and shipyard			
BUSINESS TYPE: FIVE-STAR HOTEL				
Suzhou Pingjingfu Hotel				

TABLE 2. Final business type of domestic textile factory reconstruction.

There is a trend towards miniaturization in the creative industry regarding business organization and toward clustering, with respect to space distribution. The intensive and systematic pattern of textile factories' original production provides massive workshops and warehouses, making it possible to accommodate the clustering of creative industry. Emphasizing man's creativity, the cultural creative industry is also a kind of knowledge-intensive industry. Textile factories not only possess the cultural atmosphere that stimulates man's creativity, but also has saw-tooth roof workshops with flexible loft space that's easy to subdivide vertically and horizontally.

Take Beijing *Laijin* Creative industrial park as an example, the single-layer zigzag workshop built in 1954 occupies an area of 58,000m², with a length of around 300m from east to west and around 200m from south to north. The highest point of the zigzag building is 8m. The frame of the roof structure was retained in the reconstruction and was divided into several independent spaces by walls and windows, making it into 30 independent units of 100m² to 400-500m² with green intervals in-between. Each unit is separated by a one column grid. Settled enterprises are required not to change the external surface but the interior space is free to be decorated. By self-designing the rented unit, enterprises create their own culture as well as add to the vitality of the park. Creative industrial multi-story office buildings are also constructed in the surrounding area of the main workshop. On one side, the entire structure of excellent industrial heritages is kept to the maximum, on the other side, the function of CBD independent office industry promotes the vitality of surrounding cities.



FIGURE 2. Tianjin No.3 National Cotton Factory. © Lian Hu, 2014.



FIGURE 3. Graph profile and perspective of workshop reconstruction. © Provided by the workshop of Tianjin no. 3 National Cotton Factory.

The second-stage design of Tianjin no. 3 National Cotton Factory includes division of the interior space while reconstructing massive connected workshops. However, from the outside, it's still a whole structure, which differs from Beijing *Laijin* Creative Industrial Park. While reconstructing the sing-layer workshop on the top story, the 8.3 m high vertical space was divided into bottom and upper layers of 3.5 m high each. In horizontal direction, glass grid and glass wall are utilized to further divide the interior into required spaces.

3. PROBLEMS IN TRANSFORMATION

As China is developing rapidly, on many occasions, correct development routes have resulted from a method in which practice come first, and then experience and lessons are concluded. This is the case in the transformation of industrial heritage into cultural places.

With the guidance of central policies and support of local regulations, many factory areas have been directly designated as “cultural and creative industrial parks”. On one hand, they respond to the policy so as to gain advantageous development conditions, on the other hand, they catch the “cultural and creative” tide to expand their influence. In recent years there has been a great emergence of cases of industrial heritage transformed into cultural creative industry parks, but it is not the only or the best method for the reconstruction and recycling of industrial heritage.

The industry development mode using the cultural creative industry as the mainstream, provides new features for the way industrial architecture is reconstructed and recycled, as the following aspects show:

1) Cultural creative industry parks are, to some degree, able to transfer the supply and demand contradiction between high land values, high plot ratios, and industrial heritage in urban centres. By promoting the planning of parks and spaces of quality, the overall style and features of industrial heritage are protected on the basis of ensuring economic benefit.

2) The cultural creative industry is keen to utilize the cultural characteristics of industrial heritage and to encourage creative inspiration, thus the historical features are respected during the reconstruction, the original architecture and structures are retained as much as possible, and the elements with distinctive characteristics and part of the old machinery are carefully maintained.

3) Unlike the single function which predominated in the earlier stages of reconstruction of industrial heritage, which might be commerce and offices, or museums and landscape parks, or artists' studios, the cultural creative industry parks are a kind of multifunctional complex combining creative design, cultural exhibitions, commerce and leisure. They will meet various demands for production and city life. They are not just open to a certain group of people, but to all citizens, and providing a site for communicating city culture.

The development mode, worked out collaboratively by the government and enterprises, has evident advantages for the large scale updating of industrial land. The protection and recycling of industrial heritage are no longer just discussed at the architectural level, but planned and designed at the comprehensive level of “architecture – city – environment”, and during the reconstruction and recycling, their influence on city space, city structures and city context is taken into full account.

Therefore, it is only by perfecting the scientific basis and rationality of the policies related to reconstruction and recycling of industrial heritage, giving full play to the role played by every subject in the market, and continuously exploring the optimal way of reconstructing and recycling industrial heritage, can we better promote the updating of city space and the continuation of the city context.

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Improving the Quality of Urban Life through Culture-led Regeneration

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The transition from an industrial to post-industrial society in the 21st century has changed the notion of distance, space and time worldwide. Culture and art have begun to play a significant role in the prosperity of the economy and identity of the city. The cultural reuse of buildings, as the main form of culture-led regeneration, has profound effects on urban life. Interactions between notions of society, networks and place have caused many changes in urban public spaces.

While culture-led regeneration has stemmed originally from the developed countries, it has now developed into a global tendency penetrating all over the world. The same story can be seen in developing countries, albeit with significant differences. Since, in many developing countries such as Iran, there is no longstanding industrial economy and, consequently, no outstanding industrial heritage dating from the past century, in most cases culture-led regeneration projects instead target ex-military buildings. These are often valuable samples of 20th century modern architecture, but they are not functionally compatible with the land-use system any more.

The effects of cultural reuse projects could potentially be investigated from different points of view, but this study concentrates on their impact on the quality of urban life in surrounding neighbourhoods. For this purpose, two case studies in Tehran have been surveyed. The first one is the Iranian Artists Forum, converted from a former barracks: in 1999 the repaired building became a cultural complex. The second one is the Qasr Museum-Garden project, under which the first modern prison built in Iran has been turned into a museum and a place for cultural events. An interpretive-analytical method was used in the qualitative research on which this paper reports. The effect of these projects on the quality of urban life was investigated through open interviews with residents who live near these buildings. From this research it emerged that the interaction between buildings and surrounding area through urban public spaces has created a context for lively and creative attendance by local inhabitants.

1. INTRODUCTION

In recent decades, a transformed notion of urban life has prompted a new vision for urban planning. After fundamental changes in the permanent functions of cities, urban planning is attempting not only to renovate deteriorated areas physically, but also to restore their economic prosperity and social vitality, and, in this new context, culture and art have significant roles to play.

Depending on the wider context, the “target” buildings and sites are different in each country. In Iran, for example, culture-led regeneration projects focus on military buildings that are valuable examples of modern architecture, but which are not functionally compatible with the urban land-use system any more.

This study concentrates on the effects of the cultural reuse of military sites on the quality of urban life in surrounding neighbourhoods. For this purpose two culture-led regeneration projects in Tehran, the capital of Iran, have been surveyed: the “Iranian Artists Forum” and the “Qasr Museum-Garden”. After a brief literature review, the methodology of the research will be outlined. Then the case studies and the result of this research will be discussed.

2. LITERATURE REVIEW

Regeneration is “breathing new life and vitality into an ailing community, industry and area [bringing] sustainable, long term improvements to local quality of life, including economic, social and environmental needs”¹. Although based on common aims, the differing political systems, economic status, social features, and consequently planning approaches within each country leads to different approaches to urban regeneration.

Culture-led Regeneration

During recent decades urban regeneration approaches in many countries have concentrated less on physical reconstruction than on economic revival, and in this context cultural capitals become correspondingly all the more important. Cultural activities potentially encompassed within this approach include “the arts, libraries, museums, heritage and cultural tourism”². 3 main aspects of culture-led regeneration will be touched on in this paper.

As Evans and Shaw³ have argued, “The rebirth of redundant buildings as galleries, museums, and cinemas for creative businesses is one of the more visible signs of attempts at regeneration, along with the emergence of ancillary businesses such as cafes, new street lighting, paving and commissioned works of art”. They emphasise that “regeneration is not simply about bricks and mortar. In relation to the physical, this is as much about the quality of the public realm as it is about the buildings”⁴.

In the economic arena, culture-led regeneration is expected to attract investments, increase tourist income, generate new jobs, and attract educated people. Measurement of these impacts is normally carried out at a macro national scale, which is outside the scope of this research. But it is worth at least mentioning that, in addition to the positive effects of culture-led regeneration, it could also have some challenging results, such as gentrification.

Identification and measurement of the social impact of culture-led regeneration is relatively difficult, but a significant amount of research in this field in recent years has emphasised its increasing importance^{5 6}. The formation of social networks, introduction of different cultures, enhancement of public awareness and social identity, widening of choice for leisure time, and reduction of social segregation become especially important in this area.

Culture-led Regeneration Tools

In most culture-led regeneration projects, functions are clustered around a monumental “cultural flagship” building. In many cases, such buildings are renovated industrial and military buildings. Cultural flagships play the role of catalyst though their ability to attract commercial developments, art activities, and people. Grodach⁷ argues that the most projects normally focus on an architectural form that sets them apart from their surrounding areas. They are designed or renovated for the benefit of visitors, not local residents.

The second popular tool is the mounting of cultural events. Events convert traditional high culture into a more popular matter, making buildings, streets and squares into a focus of cultural life in the city, and stimulating new forms of cultural transmission that can attract a huge audience⁸. Flexible public spaces have a crucial role in this interaction.

Public art is another vital tool used in regeneration. "A wide range of advocates have claimed that public art can help develop senses of identity, develop senses of place, contribute to civic identity, tackle social exclusion, possess educational value and promote social change"⁹.

Theoretical Framework

Certain aims are common to almost all regeneration projects, including environmental quality enhancement, social inclusion and economic prosperity, all of which are critical to any improvement in the overall quality of urban life. This ultimate goal can be pursued through a range of policies, including enhancement of residential zones, economic efficiency, mixed-use development, redefining place identity, and improvement of pedestrian public spaces.

3. METHODOLOGY

This research surveyed two case studies based on a qualitative approach. Semi-structured face-to-face interviews were used as the main tool for collecting data, and grounded theory was used for analysis and for making the model. In this procedure, the collected data shape the research concepts and categories. They are interrelated and connected by three processes of open, axial, and selective coding, and the final result is a "paradigm model"¹⁰.

Since the population (of residents in surrounding neighbourhoods) is very large, we relied on a convenient sampling technique. These sites were visited many times in different seasons, days, and hours. Interviews were begun with 8 persons in both cases and continued up to the scale of thirty respondents, at which point a theoretical saturation was reached, and new interviews added no new data to previous ones.

4. CASE STUDIES

In recent decades, many sites with obsolete functions have been converted into museums and cultural complexes in Tehran, Iran. In this research we survey two of them.



FIGURE 1. Location of case studies in Tehran. © Delaram Ashtari.

Iranian Artists' Forum

This cultural complex was established through cultural reuse of a military building and its surrounding area. The building was built as a barracks and arsenal a century ago. Its architecture is a good representative example of the modern architectural style used for early 20th century public buildings in Iran. Its simple plan, brick façade, large lobby, wide staircase and straight corridor, linking a large number of rooms, are all characteristic of this style.

In 1999, the building was renovated and re-equipped for cultural purposes. In this project, its formal features were preserved, but its function was changed to galleries, theatres and rehearsal rooms. In addition, its surrounding area was regenerated as part of the project, and became a public park, "The Artists' Garden". Today, this complex is renowned as one of the main cultural hubs in Iran, located as it is in Tehran's first modern district, with its rich post-1940 mixture of residential units and offices.



FIGURE 2. The Iranian Artists' Forum project. © Delaram Ashtari.



FIGURE 3. The Qasr Garden Museum project. © Delaram Ashtari.

Qasr Garden Museum

This project concentrates on the cultural reuse of Iran's first modern prison complex. Designed by Russian architect Nikolai Markov in 1929, this is one of the most noteworthy examples of Iranian early modern architecture. In addition, its historical function of housing political prisoners played a crucial role in the Iranian revolution. In 2008, the culture-led regeneration of the former prison was begun and, today, all the former prison buildings have been turned into a museum surrounded by a public park. The buildings have been renovated to represent the history of the past two centuries of Iran, and in particular, the history of this prison. Besides, the complex contains some galleries and theatres that enhance its cultural function. When first built, the prison was located outside the borders of the city. But during the subsequent expansion of the city, a new residential district was formed around it.

5. RESULTS

The results of the survey are based on the responses of interviewees to the main questions. The recorded interviews were analysed word by word. We use three levels of coding for the identification of concepts, categories, core categories and their condition. The results are shown in the table.

MAIN ISSUES	NO. OF CONCEPTS	CATEGORIES	CORE CATEGORIES	CONDITION
Physical transformations	24	- public transportation - environmental design - infrastructures	- improvement of environmental quality	Contextual
Functional transformations	21	- diversity and vitality - flexibility of spaces - cultural events	- diversity and vitality of functions of open spaces and buildings	Contextual
Relationship between the building and the neighbourhood	18	- unpleasant memories of prison - limited range of "high" art exhibited - lack of sense of belonging to the buildings - intangible borders of military sites	- necessity of intermediate flexible public spaces	Contextual
Social effects of culture-led regeneration project	26	- social inclusion - respect differences - increased social diversity	- social interactions (among neighbours and between locals and strangers)	Interactional
Locals' opinion about previous military function of sites	19	- locals' painful memories related to military occupation of site - interference from strict security policies	- new collective memories are demanded	Interactional
The most desirable place in the neighbourhood and its function	36	- public space for different user groups - green open spaces - public space for interaction with others and spending free time - contemporary exhibitions and events	- urban open spaces designed through culture-led regeneration as a focus for urban life	The main phenomena
Interaction between project and city	15	- sense of pride among residents - introducing the neighbourhood at a national and global scale - education of visitors	- new identity and image of the neighbourhood	Consequential

TABLE 1. The results of analysis.

The survey demonstrates that monumental buildings in culture-led regeneration programmes play a leading role in attracting visitors. But the role of these projects in improving the quality of urban life of residents in surrounding areas, and its success at a local scale, both depend on the relationship between the building and its surrounding areas. Urban public spaces featuring a high environmental quality and a flexible form suited to a wide range of functions, can play a pivotal role in the success of a project at a local level.

As T1 shows, in the perception of residents, public spaces are the most important part of a regeneration project and the best place for spending their time. They can interact with others by taking part in different cultural events, and can shape new collective memories to remove the previous painful ones. Regeneration can, then, create a new image and identity for a neighbourhood.

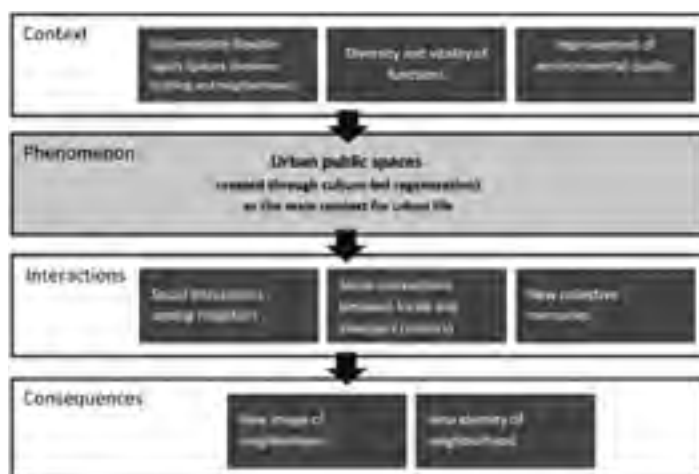


FIGURE 4. The paradigm model of the research project. © Delaram Ashtari.

6. CONCLUSION

This paper has tried to interpret and evaluate the effects of culture-led regeneration projects (i.e., the cultural reuse of former military buildings) on the basis of the perceptions and viewpoints of residents in surrounding areas. This is a group that, although influenced directly by these projects and capable of playing a significant role in the success of them, was nevertheless largely disregarded in previous studies.

The results of this research show that the public urban spaces, as an intermediate zone between the buildings and surrounding neighbourhoods are more important than the buildings alone. These urban spaces, with their special attributes, provide a suitable context for the cultivation of diverse and vital activities among residents of different ages, genders, religions, etc.

As the standard functions of culturally reused buildings (such as museums or places for specialized exhibitions) are often a little too abstruse to be fully attractive for ordinary residents, the addition of more popular elements such as cultural events and public art within public spaces not only fosters greater interaction between residents and any visitors, but, within the communities themselves, holds out promise of improving social inclusion among residents and reinforcing a revitalised image and identity for their neighbourhoods.

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Keeping Continuity of Identity in a Changing Society

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In Japan, there are a large number of buildings that are demolished due to its deterioration over time and its incapacity of meeting today's demands. Maruya Gardens is one of the good examples of reused buildings. Its reopened tenant building, including community spaces for civil life, intends to be the linchpin of the Kagoshima city revitalization.

Maruya (also called Mitsukoshi from 1984 on) was a department store located in the centre of the city, having contributed for the development of Kagoshima in the 20th century, especially at the high-growth period of Japan (1960s-1970s). It was designed by Kenji Mitsuyoshi in 1961 as one of the masterpieces of his early stage, with the aim of connecting people, architecture and the city.

As other provincial cities in Japan, Kagoshima is now facing the falling population and the hollowing of the urban area and the department stores have become out-dated after some large shopping malls have been opened in the surroundings.

The president of the Japanese Maruya head office decided to renovate this building to meet today's urban and social demands in Kagoshima and to contribute for the revitalization of the city centre. The reuse project was developed by the architect team "Mikangumi" and has transformed Maruya in a centre of civic life involving the local community. The original assumptions of the project were sought and conserved, even the original appearance has been lost. We believe it will continue in the future.

1. INTRODUCTION

Originally established as a "mercery" shop in Kagoshima in 1892, the present Maruya Co., Ltd was set up in 1936. Initially, it was a clothing speciality store located on the same site as today's store, on the main street, with its tram-line, in the central shopping area: the Maruya store had opened the same year that the city tram had begun operation. The central shopping area of the city, named "Tenmonkan", dates back to the 18th century. It has been the busiest spot in Kagoshima for more than 200 years, with many shops and head offices of banks lining the main street, in the 20th century along with cinemas, theatres and dance halls, and sometimes markets. It was the centre of the economy of Kagoshima. With the opening of Maruya, coupled with the inauguration of the city tram, the golden age of Tenmonkan began.

This situation changed in 2004 when the Kyushu *shinkansen*, or high-speed passenger line, opened to Kagoshima. The commercial area of the city was previously confined to the Tenmonkan, but now a large shopping centre was built by the terminal of Kagoshima's central station. With the advent of the *shinkansen*, some people living in Kagoshima even travel go for shopping or work in Fukuoka, a larger city than Kagoshima in the Kyushu region. On top of this, there was a general process of decline of department stores in Japan, as the old-fashioned appearance of many speciality stores or department stores lost their appeal to customers. According to a commerce establishment survey, the sales total per year in the Tenmonkan area

decreased steadily between 1991 and 2007, while that of the central station area was increasing. In addition to this, in 2007 a large shopping mall was opened in the suburbs, and the urban structure of the city thus changed again.

Presently, therefore, the Tenmonkan commercial area is facing an apparently inexorable crisis of decline, with an increasing number of vacant stores. Those still living and shopping there are trying to take measures to reinvigorate the economic activities there.

2. ARCHITECTURAL DEVELOPMENT

The original building of the Maruya department store was built in 1961. It was designed by the architect Kenji Mitsuyoshi, assistant professor at Kyushu University. Kenji Mitsuyoshi studied under Kenzo Tange at Tokyo University from 1950 to 1955 and collaborated with him in designing Hiroshima Peace Memorial Museum and Kurayoshi City Hall, among other projects, when still a graduate student. After graduating from university, he secured the post of assistant professor at Kyushu University. His speciality was architectural design and urban planning, and he designed several educational institutions for the university, many public or educational facilities and commercial buildings, and drew up master plans for municipalities and land improvements in Kyushu, which contributed to the social and cultural evolution of that region of Japan. The Maruya department store, however, was one of the masterpieces of his early career. Mitsuyoshi emphasised in all his books and other writings, throughout his career, that the most important aim in designing architecture was to maintain continuity with the past and harmony with its surroundings, a concept that he realized triumphantly in this particular work of architecture.

The first building stage for the department store was a reconstruction of the former 2-storey accommodation of the original Maruya mercery store, which had been built after 1945 and contributed to the rehabilitation of the built fabric and employment base of Kagoshima.



FIGURE 1. Kenji Mitsuyoshi, Maruya department store, Kagoshima, Japan, 1961, after completion of original construction. Taken in 1961. © Maruyahonsha House journal, Maruyahonsha Co., Ltd.



FIGURE 2. Kenji Mitsuyoshi, Kagoshima, Japan, 1976. After completion of the third extension. © Maruyahonsha House journal, Maruyahonsha Co., Ltd.

The reconstruction project begun in 1960, when Maruya had grown to become the largest clothing shop in the western part of Japan, and the company decided to start a completely new business by opening a department store. This expansion reflected the growth in the emerging “information society”; radio and TVs were gradually being introduced to ordinary houses.

The new building had 3 storeys, constructed of reinforced concrete and with deep blue coloured tiled wall surfaces. There were no exterior windows on the façade except for slit-like long strips of narrow windows and small circular ornaments. The foundations were built strong enough to hold 8 storeys, allowing for a later extension. The total floor area was about 6600m², the shopping area being 4000m². The local bank and affiliated companies financed it: they needed the new business and new building just as much as did Maruya itself. The building was extended 3 times, all to the designs of architect Kenji Mitsuyoshi, and therefore his original concept guided the development of the building.

The first extension was realized in 1965, when the complex was heightened to 4-storeys. The second extension was begun in 1967 after obtaining permission following consultation with nearby shop proprietors. Maruya applied to build to a maximum height of 8 storeys but was allowed to build only 6. In the extension, the building was equipped with an escalator rising up through 5 floors, and it was equipped with sprinklers on all floors – the first ones in Kagoshima. There were big striped windows at the central wall of 5th and 6th floor above the entrance, giving it a new appearance on the frontage facing the city. The total floor area grew to about 13,450m² and the shopping area to 6880m². The number of customers on the day of the opening was about 100,000, and it became the largest and most popular department store in Kagoshima.

The third extension to the building included the extension of the existing building from 6 to 8 storeys and construction of a new building. This was started in 1975, at a time when Maruya had just been merged with the Mitsukoshi Company. When it was re-designated as the Kagoshima branch of the Mitsukoshi department store in 1984, the façade colour was changed to white. For the next 25 years of Mitsukoshi operation, there were no big changes in the building, but in 2009 it finally closed altogether because of a terminal sales decline.

3. MARUYA GARDENS

Originally the department store of Maruya Ltd. until 1984, and then subsequently merged with Mitsukoshi Co., Ltd, which had become one of the largest department store chains in the country by that stage, the Maruya building had supported and vitalized the local economy and life for decades. In 2009 when the Mitsukoshi company closed, Maruya found itself standing at crossroads. The president of the company argued that they should sell the building, find another tenant or construct a new building. Given that the department store of Maruya and Mitsukoshi had developed with its surroundings, however, the solution of



FIGURE 3. Mikangumi, Maruya Gardens, Kagoshima, Japan, 2010. Entrance and planted façade. © Maruyahonsha Co., Ltd.



FIGURE 4. Mikangumi, Maruya Gardens, Kagoshima, Japan, 2016. Garden 0 at the basement floor © Fumiko Ikemoto, 2016.

revitalizing Tenmonkan now seemed imperative, and it was decided to open a new type of commercial building.

The remodelling architects were Mikangumi and Kenmei Nagaoka, the latter, president of D&Department Inc. and a longstanding design activist, was nominated as the creative director. Their concept of the new store was “unitement”, an invented term intended to connote profuse connections between people living in the area or come there for its varied activities, and who make the area full of vitality. The architects decided instead to locate the community space as a garden inside the building, to be used as a public space. They rearranged the stairwells and extended the floor space without enlarging the building. They maintained the original structure but made interior changes in order to obtain sufficient ceiling height. The device of wall-greening was proposed, to integrate the façade thoroughly into the street.

The remodelled complex, rebranded “Maruya Gardens”, was opened in 2010. Now the building is used for a range of activities by volunteer groups, and there

is a gallery, a small theatre and free space where citizens can just sit and relax. Sometimes events in collaboration with shops, and users of the garden, are held.

The Maruya building has stood on the same spot for over 50 years, playing a constantly important role in revitalizing the city. Following its radical change from department store to a multi-purpose community hub, the complex still attracts people from all over the surrounding area. Hence, the original motive and purpose of the building has survived, even though the original appearance has undergone enormous changes.

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Adaptive Reuse in Industrial Buildings – An Architectural Evaluation of Ankara’s CerModern Art Gallery

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The adaptive reuse of abandoned industrial buildings is still an important subject for many countries. These buildings, although bearing a mechanical and industrial character, can now be transformed into public spaces like museums, restaurants or performance halls with preserving their original structure or form. In Turkey, Silahtaraga Power Plant in Istanbul and Gas Station in Izmir were pioneering examples that highlighted the reuse potential of old industrial buildings. In the capital city of Ankara, after a long renovation process, the Cer Ateliers, a service and repair works for railway wagons, were converted into an art gallery in 2010. Renamed “CerModern”, this atelier complex is now being hailed as one of the most important cultural centres in Ankara, and an exemplar for contemporary museum architecture. Since the ateliers were regarded as a “memory” of early republican architecture era, the renovation process of the complex carries a greater importance in the context of preservation and functional transformation. This paper will investigate the CerModern complex in terms of adaptive reuse criteria and will provide an analysis of the transformation of the ateliers’ old and current setting, in context of an architectural evaluation.

1. INTRODUCTION

The Industrial Revolution brought many radical changes and improvements within social structures, everyday conditions, production processes and scientific matters. The field of architecture has also been influenced by this transformation in social, economic and technological factors, and industrial structures like workshops and factories made their first appearance. The ever-increasing number of these industrial structures had an enormous influence on their surroundings, both socially and economically. Over time, these areas also started to sprout residential buildings, intensifying the population density and ultimately creating large cities.

Starting in the 1990s, a fresh wave of technological developments rapidly reshaped the city and its social structures, as well as redefining the techniques of industry. The increasing use of automated systems and computerised controls brought new spatial requirements, rendering the old industrial buildings deficient and redundant.

As structures of great scale and often remarkable architectural form, industrial buildings increasingly stood out as a potential heritage, and ideas for reusing them with new functions sprang up at the end of the 1970s. Since “historic buildings help define the character of our communities by providing a tangible link with the past”¹, the adaptive reuse approach adopted towards these buildings is one of great importance.

According to Douglas, adaptive reuse constitutes “any building work and intervention to change its capacity, function or performance to adjust, reuse or

upgrade a building to suit new conditions or requirements”². “Adaptive reuse can transform heritage buildings into accessible and useable places as well as provide the added benefit of regenerating an area in a sustainable manner”³. The extent and scope of the adaptive reuse process may vary from a simple refurbishment to a complete renovation of existing structures. The main aim of adaptive reuse of industrial heritage is, then, to revive it with new functions, and to safeguard the socio-cultural, historical and architectural values of the city.

2. WHY REUSE INDUSTRIAL BUILDINGS?

According to Mendilcioğlu, the potential reasons for reuse and change of function in industrial buildings can be classified under 5 headings: 1) technological developments; 2) structural damage within the building; 3) shifts in economic viability; 4) aesthetic and symbolic values; 5) socio-economic reasons⁴.

Technological developments can render an industrial building's technological capability and production capacity outdated, leaving it obsolete in relation to contemporary requirements. The building can suffer from cumulative structural damage from heavy-load machines, or from the removal works of those machines. Economic shifts play an important role in the viability of industrial buildings, as they are massive structures compared to the everyday city scale, and thus a potential demolition or rehabilitation plan can be extremely expensive. In many cities, industrial buildings, owing to their architectural structure and iconic value, can potentially act as an important tourism focus and provide cultural and economic benefit to their surroundings – emphasising the aesthetic and symbolic importance of these buildings. And at a socio-economic level, industrialization within a city leaves in its wake a unique social and cultural texture of historic urbanisation.

With these reasons in mind, it can be confidently asserted that industrial buildings have a strongly multifaceted character, and can act as key notes for a city in terms of culture, texture, history, economy and society.

3. INDUSTRIAL BUILDINGS IN TURKEY

As a developing country, Turkey's shift from an agricultural to an industrial economy was a slow process. Industrialization in Turkey generally started in the 1950s, in response to Marshall Plan aid. İstanbul, Ankara and İzmir acted as country's main industrial hubs for many years, and many industrial buildings were built in both cities. Many of those industrial buildings, whether currently active or not, are documents of early republican-era architecture, and are thus of great importance.

The idea of preserving and refunctioning old industrial buildings in Turkey first emerged in the 1990s when the “industrial heritage” concept, and preservation pressures in relation to individual industrial buildings, started to emerge⁵.

Since then, various disused industrial buildings have been tackled by restorers and revived with new functions, in İstanbul, Ankara and İzmir. The Silahtarağa Power Plant (Santralistanbul) in İstanbul and the Gas Station in Izmir are two well-known examples which have been converted into cultural and art centres.

4. CERMODERN ART GALLERY

The CerModern Art Gallery, situated in the old industrial area of Ankara, is the foremost art and culture centre in the city, and an important adaptive reuse exemplar. Since its opening in 2010, it has hosted many art events, exhibitions and works of famous artists, and continues its role as a cultural hub within the city.

Previously containing the “Cer Atölyeleri” (Cer Workshops) railway repair works, the restructured building was designed to take its cue from the old workshops, and their strong architectural identity. The general design approach was to emphasize the workshops as the core of the complex while adding a modern additional building to the grouping, and providing a defined approach to the over-all site.

Historical Background of the CerModern Art Gallery

According to the project’s architect, Semra Uygur⁶, the workshops were built around 1926-1927, when the construction of a nationwide railway network was declared as a state policy. The works were built in two phases, both using masonry. In the first phase, 3 equal-sized workshops were built and in the second phase, a hangar building was built next door. Following their redundancy and consequent neglect, the buildings fell into a state of severe decay. Around half of two of the workshops had collapsed, and there were serious problems with the main structure and the foundations. In 1995, the decision was taken to renovate the buildings as a museum. After the completion of an initial restoration phase in 2008, the approved project was begun by Uygur Architects and the gallery building was finished in 2010.



FIGURE 1. Uygur Mimarlık, *CerModern Art Gallery*, Ankara, Turkey, 2010. © Cemal Emden.

Constructing the Gallery

The major concern in this construction process was to rehabilitate and reinforce the structure of the workshops. The façades of the equal-sized spaces were treated with materials that respected the original material selections. The openings, which were previously used as doors, were converted into windows, and the small windows on the front façades were preserved. The hangar, owing to the extensive damage on its bearing walls, had been covered with corrugated metal plates on both sides. The workshops' roof structures were rebuilt with steel framing and covered with wooden planks.

Designated for conversion into the main art gallery spaces, the workshops were divided with exposed concrete columns and their industrial identity was emphasized by the exposure of installed ventilation tubes on the ceiling. The interior space was treated with exposed concrete surfaces, grey-coloured floors and white exhibition panels, which provided a subtle contrast with the main structure of the galleries.

An extension building was also added to the complex. This building was designed to form a symbolic link between the old workshops and the contemporary re-organization of the built spaces. According to Uygur, the extension building envelops the works like a "compression bandage" with its circular façades and

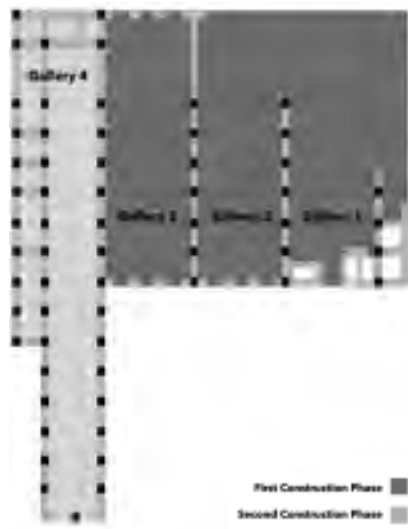


FIGURE 2. Plan scheme of *Cer Ateliers* prior to the restoration process, Ankara, 2000. © Uygur Mimarlık, redrawn by Emre Dedekarginoğlu.



FIGURE 3. *Cer Ateliers* prior to the restoration process, Ankara, 2000. © Uygur Mimarlık.

transparent surfaces, and firmly connects itself to them⁷. The extension building also defines the exterior courtyard of the gallery, providing a well-formed sym-bolical bond between all spaces.

The extension building, in contrast to the old workshops, manifests a mod-ern architectural approach, with its large glass surfaces providing a highly illu-minated environment; it features an extensive use of exposed concrete in walls, ceilings and even at the stairs.

In Figure 4, the spatial organisation of the building complex can be clearly seen. The circular “movement” of the extension building encloses the two galler-ies, which had been partially demolished. The movement also shapes the interior spatial organization of the extension building. The courtyard, which has been framed from three directions, shows a well-defined spatial character.

Occupying a site totalling 11,500m² in area, the CerModern Art Gallery complex has four art galleries, café and library area, offices, a store and an elevator that provides vertical circulation between the floors. The newly constructed base-ment floor takes its general spatial order and form from the cues of the extension building and it has an exhibition space, artist ateliers and a smaller gallery.

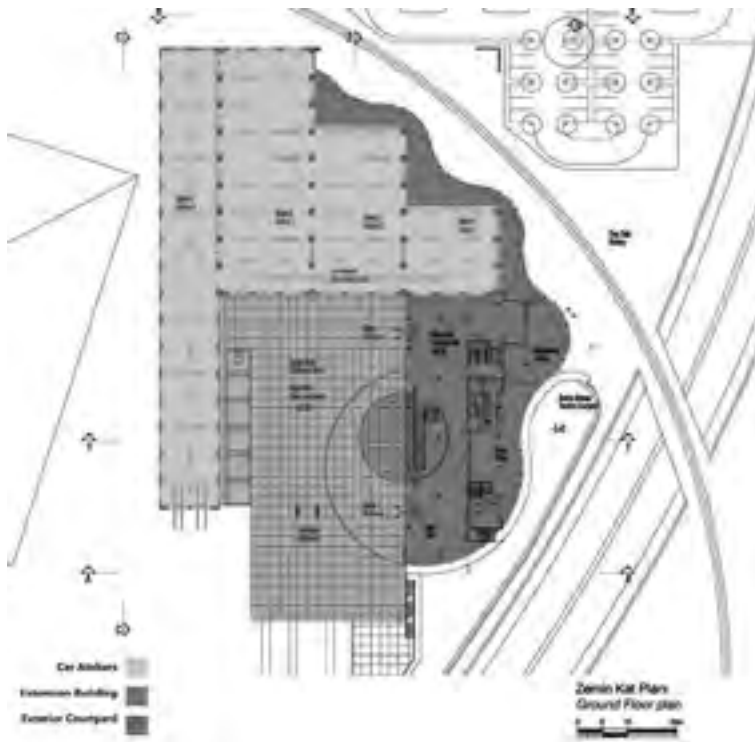


FIGURE 4. Uygur Mimarlık, plan of *CerModern Art Gallery*, Ankara, 2010. © Uygur Mimarlık.

5. ANALYSIS AND CONCLUSION

By forming a new, modern art gallery while at the same time preserving a significant piece of the industrial heritage of the capital city, Ankara, the CerModern building has been hailed as a successful adaptive reuse project while filling an important gap in Turkey's contemporary architectural texture.

Since reuse of old industrial buildings and publicising this within society, has been an overlooked issue in Ankara, CerModern has acted as a unique example and rallying-point. The re-invention of the works with a new function established this approach as a sustainable solution, through which the capital city gained an important art gallery, and an example of early republican era architecture was safeguarded. Owing to its new function and spatial order, the building also promoted the cultural and touristic aspects of Ankara.

The design approach of the building responds to the requirements of contemporary museum architecture. The dynamic and living spaces are combined with larger-scale galleries, that communicate the historical identity of their former setting without hindering the general modern organisation of the interior space. The railway tracks left embedded in the courtyard form another symbolic link with the past, while giving the courtyard a distinctive character.

As a result, the CerModern Art Gallery is a well-executed adaptive reuse project, within which a careful consideration of historical importance, and of the new function, is supported by a well-refined architectural design, in the process filling an important gap in the capital city of Turkey.

Learning from this convincing precedent, architects, city planners, engineers and government officials will now be able more confidently to tackle the challenge of reviving other redundant industrial buildings with new functions, to create more enriched and sustainable cities for the benefit of all.

NOTES

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From Bunker to Place of Art. The Adaptive Reuse of WWII Air Raid Shelters in Wrocław (Breslau)

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In addition to seemingly countless underground bunkers, the city of Breslau was furnished in 1941-1943 with five large-scale above-ground civilian air raid shelters, designed by Richard Konwiarz (1883-1960), former assistant to Max Berg and one of the most prominent local Nazi architects. The structures, even though built simultaneously, were quite dissimilar: two of them, designed to resemble townhouses, were built within the perimeter of the 19th century urban grid, two were free standing structures of considerable height and circular layout, one was significantly smaller, rectangular and free-standing. The buildings – rational, bare concrete structures within – bear references to the French revolutionary architecture on their façades, with aesthetics somewhere in between Konwiarz's modernist past and the Nazi classicism of the 1940s. All 5 of them are characterized by a concrete structure with very thick walls and extremely small openings, and all survived WWII without much damage. For a long time after the war, these structures seemed to be unsuited for any adaptive reuse scheme and served as warehouses. Their existence in the urban landscape was perceived as both a strong statement and enigmatic presence. The two freestanding tubular volumes, especially, seemed to challenge the city dwellers' imagination by their detachment and the timelessness of their architectural décor. The beginning of the 21st century saw the launch of two reuse schemes, also quite dissimilar: the biggest bunker was adopted to house the Wrocław Contemporary Museum, while the smallest is being extended to become a cultural center for the "WUWA 2" new housing development. The restoration and adaptation of the largest bunker started with the introduction of an art-piece (a concrete poetry installation by Stanisław Drozd), on its façade, followed by internal refurbishment and the addition of a glazed pavilion on top. The ongoing project for extension of the smallest bunker is not completed yet. Due to the dimensions of the existing volume, it is possible that preservation concerns will have to give precedence to functional ones, the extension being the larger volume. The article aims at an examination of the adaptive reuse strategies in both cases and their merit as conservation methodologies as well as spatial solutions.

1. INTRODUCTION

An extensive study on the phenomenon of adaptations of industrial (and military) architecture heritage for museums, was conducted in 2011 by one of Wrocław University of Technology's researchers¹. According to this study there are 2098 listed former industrial buildings and complexes in Poland, among which 39 are public museums or "skansens", and there are a few private museums: in all, 62 former industrial structures are used as exhibition venues. Almost 40% of those – a very large group – are reused as galleries dedicated to contemporary art. Out of 411 museums listed by the Polish Ministry of Culture and National Heritage, only 30 are housed in so called "technical heritage" buildings². The rarest site-categories of museums, though, are those located in buildings associated with warfare – wartime factories, air shelters and the like. Since such buildings were omnipresent both during WWII and the cold war period, the question arises: why not put

these spaces to use in a new way? Is this heritage too laden with emotionally negative connotations, or is it simply too complex and inflexible for a revitalization to be feasible? Dorota Monkiewicz, the director of Wrocław Contemporary Museum (hereafter MMW), sums it up:

*We are the first museum in Poland housed in a real bunker [...] Bunkers [...] are a problem of totalitarian, military architecture in the heart of European cities. How are these buildings perceived by society, now? What kind of symbolic content do they bring, in the everyday life of metropolises?*³

Aestheticians chiefly visualise a museum, after Emmanuel Kant, as a frame (*parergon*) for artworks, or, like Jacques Derrida, as a duality of the physical frame and the contextual connotations: historic, political, economic⁴. When adapting any historic building, the main concern is normally to retain the highest level of authenticity, but with industrial buildings a further problem might arise: namely, the obstacle to adaptation posed by any surviving technological equipment within the original structure. A successful balance between theatricality of an exposition and authenticity of the remnants of the buildings' past may here be very hard to attain. On top of this, in case of buildings associated with WWII, historic connotations can pose a problem of strong resentment against them, as being sullied by their Nazi past⁵.

2. THE BUILDINGS

This article describes two of a group of five above-ground air raid shelters that are a legacy of Nazi times in Wrocław (Breslau). The buildings were designed by Richard Konwiarz in the early 1940s, as part of the Nazi wartime civilian protection policy, which was at the time widely advertised (in 1942 an exhibition entitled *Baulicher Luftschutz*, showing designs and realized air raid shelters, travelled throughout Germany and Austria)⁶. Konwiarz's work might have been influenced by an air shelter designed in 1941 by Karl Bonatz for Berlin, although the first Wrocław building was designed as early as 1940, while the remaining 4 were dated between 1942 and 1943.

The bunker designed earliest, a rectangular one within an urban block perimeter, shows direct traces of the influence of French revolutionary architecture, transmitted via Peter Speth's Würzburg women's hospital design of 1809⁷, and is endowed with the most striking detailing, comprising an exaggeratedly rusticated plinth and corners, a large cornice, and a high roof (with classic tripartite façade structure). The other rectangular shelters' façades were also designed as tri-partite compositions, with rustication of the plinth, corners, accentuated cornices and very small, almost exclusively round windows, but their designs were less elaborate.

The two circular buildings, among which the present seat of MMW is the larger, have a simpler design, comprising tubular shapes (accentuated with deli-

cate lines – in plaster – marking the floor heights) topped with simple cornices, with added projections decorated with rustication at corners. The bigger one has 6 floors and two projections of 5 and 6 floors, and the smaller – 5 floors and a 1-floor-high projection on two sides. Above the flat roofs rise circular volumes, with the diameter of the inner structural ring. The bunkers were designed with load bearing concentric circular concrete walls, and the space between the rings was divided into small cell-like rooms. There were open curved stairs in the middle of the plan and ancillary staircases, located, in the case of the bigger bunker, in a projecting 5 storey high rectangular volume at the back of the building. The front projection of the MWW bunker is smaller and serves only ornamental purposes: at the time of construction it was adorned with the 3rd Reich symbol – the eagle holding a swastika. Interestingly, the two circular buildings were located in the vicinity of large churches, one of them also circular in plan. Civilian air raid shelters were designed to mimic the surrounding urban landscape, thus leading to the use of austere classicist forms and, in the case of the rectangular ones, high roofs for disguise⁸.

3. WROCŁAW'S AIR RAID SHELTERS AFTER WWII

Built before 1943, the civilian air raid shelters served as war-time hospitals and points of defence. After WWII they became either disused or neglected, serving as warehouses, with no attempts at restoration. The temporary seat of MMW, the largest of the shelters, was a retail outlet, the second circular building served for some time as an archive of the National Museum⁹ (this use was abandoned a while ago), the two large rectangular buildings were used in a similar way by various administrative institutions, and the smallest remained a vacated ruin, its roof and façade décor gone. The two large rectangular bunkers underwent refurbishment at the beginning of the 21st century as their shape, material and lack of natural light is suitable for archives. The circular bunkers and the smallest rectangular one had to wait longer for a new life.

In 2008, after a competition for a new Wrocław Contemporary Museum¹⁰, it emerged that the new institution, established in 2007 (official launch 2011), would not be allocated enough money to build a new venue, so a temporary solution was called for. That solution was the refurbishment of the so called *Strzegomski* bunker. Since 2008 works on the outer shell of the building were conducted, amounting to replastering, conservation of details, and reconstruction of the main entrance portico. In 2009, on the façade, where in Konwiarz's time there was a Nazi eagle, an artpiece was introduced. This was both an act of dedication of the place and a very important visual sign. The art was not picked at random, as its author, Stanisław Drozd, is a well-known member of Wrocław's conceptual avant-garde. Thus the museum asserted its future mission as a centre for contemporary art, and its background in 20th century local artistic traditions.



FIGURE 1. Civilian air raid shelter in Strzegomski Square, Wrocław, now the temporary seat of MWW, view from Legnicka Street. © Lukasz Wojciechowski.



FIGURE 2. Civilian air raid shelter in Strzegomski Square, Wrocław, now the temporary seat of MWW, 2nd floor interior. © Lukasz Wojciechowski.



FIGURE 3. Civilian air raid shelter in Strzegomski Square, Wrocław, now the temporary seat of MWW, linked 3rd and 4th floor space. © Lukasz Wojciechowski.

4. REFERENCES

Apart from strictly artistic references, the main curator and director of MWW, Dorota Monkiewicz, likened her gallery to the two other main art institutions functioning in former bunkers: *Boros Collection* and *Kunsthalle Recklinghausen*.

Not only the story but also the architectural language of Wrocław's air raid shelters resemble the Berlin *Reichsbahnbunker*, now housing the *Boros Collection* (Karl Bonatz, built 1942, Jens Casper, Petra Petersson 2007)¹¹. Within this empty, barren, low-ceilinged and thinly plastered concrete bunker, the architects of the *Realarchitektur* studio sought air, light and openness, their intervention entailing diminishing the number of rooms from 120 to 80, including large-scale cutting of concrete walls and floor slabs. Spatially the effect is a creation of new and complex set of volumes, but as to the treatment of walls, their strategy may be called vague – the interior still has traces of the building's past (graffiti), some of the concrete was exposed, and some walls replastered. The collection was partly adjusted to the venue, as most of the artists were living and active.

Another strategy was adopted in Recklinghausen: the former railway air raid shelter was turned into a perfect white cube, after the late modern fashion of the 1950s; some of the floor slabs were cut out to provide 4,1 m high exhibition space for contemporary art¹², with the collection building up with the functioning of the space¹³.

5. THE MWW ADAPTATION STRATEGY

The biggest air raid shelter in Wrocław was adapted by a group of young architects from VROA and CH+ studios¹⁴. The funding available was inadequate for a major conversion, which contributed to the strategy of minimal intervention. Within the building there were no traces of former fixtures, dividing walls were not retained in their original positions, and there were no original doors. Accordingly, the architects chose to:

- Save all the existing floor finishes and staircases;
- Retain all existing openings in the concrete circular walls inside the building, (including a hole resulting from dismantling an obsolete lift) and to close the surplus ones with semi-transparent materials;
- Cut out the minimum of floor slabs, joining two of the existing 6 floors;
- Add a glazed pavilion on top, surrounding the existing volume in such a way, that it does not change the formal expression of the building but allows for a breathing space and viewing terrace in the Museum;
- Cut out the central circle to introduce a new lift and a light shaft.

As to the wall treatment the decision was to strip all the plaster down and expose the naked concrete. This gesture was named by the architects "critical rehab", and was applauded by curators. "The concrete walls, the severe interi-

ors make them a desirable frame for contemporary art works”, in the opinion of Dorota Monkiewicz¹⁵.

6. THE MWW DISPLAY: CRITICISM

The typology selected for the display – one of contemporary minimalism, neither white cube or black box, with barred concrete walls – is, in this author’s opinion, contrary to the demands of authenticity. However, some of the actions undertaken, such as cutting out of floor slabs while opening up the exhibition space, were inevitable¹⁶, and the minimalist intervention did not change the perception of the overwhelming interior of the bunker and did not blur its rigid geometry. The purification of façade by the use of an art-piece in place of Nazi symbols can be viewed as an artistic intervention, and thus fully defensible.

7. THE INTERVENTION WITHIN THE SMALLEST WROCŁAW AIR RAID SHELTER

The smallest rectangular bunker, with its footprint of 411 m² is designated to become a part of a local cultural centre for a new district, with the proud aspiration of becoming a new WUWA for the 21st century. This building is an epitome of civilian shelter-bunker problems: the thickness of its walls is 2 m, the height of the rooms 235 cm net, the wall décor vanished, and the original plaster flaking off. An architectural contest for the extension was won by architects of the joint studios, CH+ and Sofft¹⁷. The effect of their architectural intervention is yet to be seen, but the visualization shows that what will be left of the bunker is a hint, or a shadow of its former existence: the building will serve, after cutting out all of its contents, as an auditorium, with the concrete left exposed, and the lines of severance clearly visible.



FIGURE 4. Civilian air raid shelter in Białodrzewna street, visualization of architectural adaptation. © Courtesy of Sofft and CH+.

8. CONCLUSION

Air raid shelters are extreme buildings, mainly because of their geometry, but also through the emotions they provoke. Any adaptation of an existing heritage of this kind can be a way to preserve, if not the entire building, at least the memory and the shape. As Hans-Gunther Golinski said, this is arguably a way in which "non-places become art places"¹⁸.

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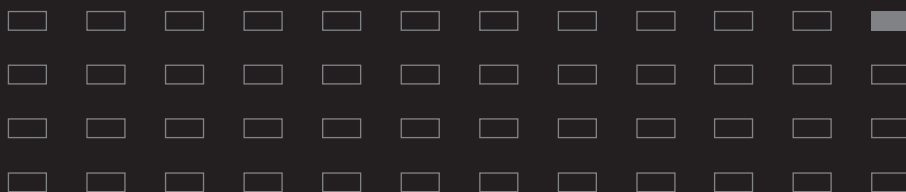
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- 8 But they are also typical of Richard Konwiarsz's simple, yet powerful geometrical earlier style (esp. Wrocław city stadium, entrance gate to the ZOO).
- 9 Jan Harasimowicz (ed.), *op. cit.*
- 10 The competition brief called for 4500m² of exhibition space, 3000 sq m of storage space and around 8000m² for additional functions, some of them public; the MWW after five years of operation in the bunker with less than 4000m², seek to extend the available space by branching out.
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COMPLEXES



Industrial Buildings and Areas as Zones of Transformation

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Industrial environments and plants are exceptional as objects of reuse: they have often been important providers of employment in their areas and thus have strongly shaped the identity of regions, communities and cities. The traces of working life persist as memories within their walls and behind closed gates. Now, with new uses, the gates are re-opening – but what actually remains? What can building conservation achieve and what is it needed for?

Typically, in terms of their layout and construction, many industrial plants are rather easy to convert to new uses – due to their rationality and uniform structures – if appropriate uses can only be found!

Industrial plants can be evaluated in the planning process so that they are preserved as they are, with some parts being restored, and other parts undergoing change. Designing buildings for industry, much like those for transportation, has generally been very much oriented towards function.

Industrial complexes may include parts that are difficult to reuse and confound conventional architectural design: for instance, engineering structures such as bunkers, silos, water tanks, coaling and cooling towers, conveyor belts, power plants and heating plants, the new uses of which are marginal. Hopefully, there will be further discussion about their value and significance as landmarks, commemorating a defunct industrial operation. Cost aspects are decisive, often without any more general discussion. Issues of *beauty*, *strength*, and *utility* also frequently emerge in debates about preservation, but *memory* less so.

I come from Finland, where a significant number of the plants connected to the forestry industry are located in small, often depopulating communities. When industrial operations come to an end, there is uncertainty about what to do with the large vacated facilities, and how to gradually find new uses. The oldest part of the architecturally impressive *Kaukopää* pulp mill in eastern Finland, dating from 1935, was secretly demolished in 2002 without the knowledge of the

National Board of Antiquities. It was easy for the new multinational owners of the plant to make a decision from afar without having to consider the local significance of the history of the company and community.

With some minor exceptions, the Industrial Revolution, which had its origins in mid-18th century England, over the course of 200 years, swept across the entire globe. Now, the post-industrial era and the information technology revolution have rendered a large part of these industrial plants obsolete. The zonal subdivisions of functionalist town planning pushed industrial plants to the urban periphery. This was later compounded by the high cost of building land, and limited possibilities for expansion and transport connections.

New plants are now located outside growth centres, adjacent to major transport routes. Everywhere the traces of industrial production are disappearing from the urban fabric and the lives of the urban inhabitants, no matter how little pollution they create. The presentations you are about to hear will describe the protection and reuse of prefabricated factories of high architectural quality in Italy, the placement of new “cleaner” production methods in existing industrial plants in the USA, ways of integrating abandoned industrial plants in the urban fabric of the Netherlands, as well as a classification system for industrial architectural heritage in China. The challenges of locality and identity will be discussed as well as global challenges, such as the requirements of ecology and culturally sustainable development.

Converting Historical Industrial Complexes in European Cities: Best Practices

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The conversion and adaptive reuse of industrial complexes are ongoing tasks for architecture, conservation and urban development. The historic urban design structures of such complexes are understood as spatial qualities in practice; a systematic reflection about this practice is missing. The central questions arise: what types of urban design structures can be identified before conversion, and what is best practice in terms of the conservation and enhancement of these urban design structures? My research project has developed a typology of historic urban design structures of industrial complexes. 5 different types are defined so far: 1) *solitaire*, 2) *city within a city*, 3) *urban block*, 4) *row constructions*, and 5) *axial complexes*. The characteristics of these 5 types are discussed along the categories of: spatial borders, internal structure, solids, positioning, access and representations. This typology has been applied to diverse cases throughout Europe. The presented cases are: Rog, Ljubljana, Slovenia; Zsolnay, Pécs, Hungary; AEG, Berlin, Germany; Alstom, Belfort, France; and Zollverein, Essen, Germany. I argue that the applied best-practice typology enables systematic comparison and discussion of different cases and practices for handling the urban design structures of historic industrial complexes undergoing conversion. This short contribution presents initial findings of ongoing research on this theme.

1. INTRODUCTION

The conversion of historic industrial complexes is an important task in many European cities¹, and case studies are found throughout Europe. The adaptive reuse of industrial complexes is discussed not only as pieces of architecture or technical monuments, but also as contributors to urban revitalisation processes². Recent practices of architecture and urban design (*Städtebau*) in Europe indicate that the historic urban design structures of industrial complexes are understood through their spatial qualities. However, systematic reflection on this practice is lacking. The general questions arise: what types of urban design structures can be identified before conversion, and what is best practice in conservation and enhancement? These questions do not focus on the reasons for certain historic urban design decisions – be they functional or design-oriented – but instead on the present-day handling of existing structures.

The author has analysed, over many years, the adaptive reuse of industrial heritage sites and the conflicts/solutions between new architecture versus industrial heritage. The methodology and findings of a 3-year research project funded by the German Research Foundation (DFG) have been published³. Next to fulfilling the demands of design and heritage conservation, architectural practices demonstrate that the transformation of industrial complexes is strongly related to urban development strategies. This challenge for architects, urban designers and conservationists leads to the following detailed questions: which elements

of the industrial complexes can be removed and which can be added while still preserving the unity of the industrial heritage? How are new accessibilities of the complexes designed? Here, urban design issues come into play.

2. AN URBAN DESIGN TYPOLOGY

I discuss the complexes between 2 poles of urban scale: the small scale refers to the single structures; the large scale refers to the overall urban spatial orders, e.g. grids or radially organised structures. The scale of industrial complexes lies in-between – larger than the architecture of a single building yet smaller than overall urban spatial orders. My approach is, firstly, to describe the urban design of historic industrial complexes of different cases studies in its characteristics and to identify specific types of urban design structures. Due to the scale of the complexes, the following spatial categories are relevant for description:

- a. Borders of the complex toward the urban environment;
- b. Internal structures of the complex within its borders;
- c. Main solids (*Baukörper*) as the dominant number and form of the buildings;
- d. Positioning (*Fügung*) of the main solids, internal structures, borders, etc.;
- e. Accesses and entries to the industrial complexes;
- f. Representations within borders, structures, solids, entries, etc.

Secondly, the case studies are ordered toward a typology of urban design structures of industrial complexes. The structure of the suggested typology is shown in Table 1. Further adaptations are possible as the research project progresses. Specifically, a further type – the industrial park – will be considered.

Thirdly, best practice requires the conservation and enhancement of these typological characteristics of the historic urban design structure. Thus, best practice is discussed much more from the perspective of urban design than that of heritage conservation, which differs.

3. CASE STUDIES: APPLYING THE TYPOLOGY

The following applies the typology in Table 1 to the case studies, and gives reference to best practice. It is self-evident that, due to this approach of typology/case application, some cases display characteristics associated with more than one typology. Furthermore, historically, the characteristics of industrial complexes changed during their lifetime. Thus, my argumentation refers to the dominant characteristics that remain prior to conversion. The contribution does not discuss why the industrial complexes were developed according to a particular urban design type.

	BORDERS	INTERNAL STRUCTURES	SOLIDS	POSITIONING	ACCESS	REPRESENTATIONS
Solitaire	Structurally non-defined	Figure-ground structures	Main solitaire	Central	Circumstantial	Settings, façades
City within a city	Structurally defined and non-defined	Mixed structures	Heterogeneous	Heterogeneous	Several	Various
Urban block	Structurally defined	Courtyard-edge structures	Several solids are wedged	Courtyard versus block-edges	Circumstantial	Façades
Row construction (Zeilenbau)	Structurally defined and non-defined	Linear structures	Additive number of elements	Sequential	Linear and cross-linear	Circumstantial
Axial complex	Circumstantial	Axial structures	Artistic composition of solids	Symmetrical	Main axes	Main axes, heights, portals, signs

TABLE 1. Typology of historic urban design structures of industrial complexes. © Heike Oevermann, 2016.

Solitaire

A well-known example is Battersea Power Station, in London, subsequently converted to the Tate Modern museum. The case of the Rog industrial complex – the location for leather and, later, bicycle production – in Ljubljana, Slovenia is another example of this first type: Solitaires⁴. The long, rectangular, white building was mainly constructed in the 1920s, and is one of the earliest ferro-concrete constructions in Slovenia. The built industrial complex does not define borders towards the urban environment, but is a dominant figure on the ground, surrounded by minor buildings and shelters within the complex. It occupies a central position on the site, along the river waterfront, so that its waterfront façade is visible from far away. This façade is designed in a representative mode, with cornices and pilaster strips (*Lisenen*). So far, the entrance is circumstantial from the rear side. In the actual conversion project (2016), the minor buildings are removed, and the long, rectangular solitaire is strengthened by adding two new layers at the rear, together with underground parking. These new layers are smaller and lower in respect to the historic building. The new project opens the waterfront façade on the ground floor, thereby enhancing accessibility and the representative waterfront side. In this regard, the design for adaptive reuse represents best practice in conservation and enhancement of the historic urban design structure.

City within a City

There are several examples of a city within a city, including the *Sulzer Stadtmitte* industrial complex in Switzerland, and the *Zsolnay* industrial complex in Pécs, Hungary, a ceramic producer that was founded in 1953 and expanded in the 1880s and 1890s. The *Zsolnay* complex consists of four different parts, forming a heterogeneous complex. 3 parts partly form roadside structures at the borders



FIGURE 1. City within a city: Sulzer Area, Winterthur, Switzerland. © Heike Oevermann, 2009.

to the urban environment, while one is a single, dominant building in a park – the former owner's residence, designed in a representative style. One characteristic of this style is that 2 of the roadside structures face each other, such that here the through-road generates an axis, but without reference points at the beginning or end. These 2 components partly generate 2 different courtyard-edge figures. The third structure consists of interwoven elements: palace-like buildings and minor buildings, backstreets, mini-courtyards, passageways, chimneys, etc. Access is given at several points, the most important of which was added during the conversion: an iconic bridge over the through-road, which strengthens its spatial importance as a space-structuring element. Representative historic elements are given by the decorative façades and roofs, made from the company's own ceramic. Additionally, a ceramic column, located at an open square within the complex, functions as a representative element. Next to the new iconic bridge, the conversion strengthens the heterogeneous structure of the complex, not least through the decision to work as a group of ten different architectural offices⁵. They achieved both change and conservation of the spatial identity of the complex through a combination of partial demolition, adaptive reuse and new architecture. This city-within-a-city type can involve highly transformative processes (analogous to cities themselves), in which both change and conservation of spatial identity are evaluated as best practice.

Urban Block

A clear example of this urban block type is the Osram Industrial Complex in the Wedding district of Berlin. However, due to urban design decisions during conversion, the case of the AEG industrial complex at Voltastraße, Berlin is presented instead. Here, two Peter Behrens buildings were constructed and partly conserved over time: a facility for production of small engines (*Kleinmotorenfabrik*) from 1910-1913, and the assembly hall (*Montagehalle für Großmaschinen*) from 1911/12-1928⁶. The borders of the urban block (at Hussitenstraße, Voltastraße, Brunnenstraße and partly Gustav-Meyer-Allee) are spatially defined, and the different buildings are wedged by the same building line at the outer side. The courtyard has an indistinct layout and is filled with industrial buildings. Additionally, the Gothic brick Beamtentor entrance, on Brunnenstraße, is also an exception to the ideal-typical characteristics of this type.

However, very interesting is the conversion by Kleihues Architects in the 1980s, which continues with the roadside structure, although the function was changed radically from production towards housing. This design refers back to the former housing that was torn down before the industrial complex was erected, but Kleihues also respects the industrial period in creating a square to give space and dominance to the conserved Beamtentor, which now functions as a monument. The urban block design allows various functions and meets the different demands on buildings. Retaining this urban block structure contributes to best practice in both urban design and conservation.

Row Construction

Most heavy industrial complexes require a sequence of long and flat production halls. One example is the former Ganz industrial complex in Budapest, Hungary, today called *Millenáris*. Another is the Alstom industrial complex in Belfort, France. The linear structure of the complex is clear, as is the access along the main linear and cross-linear internal streets. The conversion by Reichen&Robert preserves this urban design typology and works with the demolition and sequential addition of new buildings for adaptive reuse⁷. The project continues with the spatial logic of “add-ons”. Furthermore, some emblematic features have been conserved.

Axial Complex

Some “cathedrals of industry” followed the urban design strategies of baroque times and “*Neuem Bauen*”. One example is shaft XII of the Zollverein coking plant at Essen, designed by Schupp and Kremmer (1928-32)⁸. The complex is composed of 2 axes that cross at the so-called “*Ehrenhof*” (palace courtyard), accessible through the main portal. The solids (production halls and clad machinery) were carefully composed in reference to form, façade and positioning. The tall shaft-tower hosts the Zollverein sign, thereby retaining its function as an iconic element within this composition. In terms of urban design, the best practice was to



FIGURE 2. Urban block: Former AEG Area, Berlin, Germany. © Heike Oevermann, 2015.



FIGURE 3. Axial-complex: Zollverein, Essen, Germany. © Heike Oevermann, 2013.

preserve this artistic composition. The newly designed access to the adaptively reused coal washing plant (today the Ruhr Museum and visitor centre) functions as a new, iconic element but also retains a formal analogy to the historic coke-conveyer belts.

4. FIRST CONCLUSIONS

The applied typology, the briefly presented case studies and the examples of best-practice demonstrate that the urban design scale is of great importance for the adaptive reuse of industrial complexes. The proposed typology serves to define and discuss best practice across a wide spectrum of cases studies. The types and their characteristics allow systematic comparison between different cases and practices for handling the urban design structures of historic industrial complexes in conversion.

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Research on the Existing Condition of MHCMSPP Modern and Contemporary Industrial Heritage Protection and Reutilization in China

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After the economic reform and opening up in 1979, China entered in a rapid urban development phase characterized by significant expansion of existing urban areas and creation of new urban centres of high density. Industrial heritage bore the brunt of destruction, since it covers large urban development zones. Since the theme of "The International Day for Monuments and Sites" was determined as "Protection of Industrial Heritage" in 2006, Chinese officials began to focus on the protection and reuse of industrial heritage. Through nearly 10 years of efforts by historic preservers, a large number of industrial heritage has been designated as historic relics. Typical industrial heritages are announced to be Major Historical and Cultural Site Protected at the National Level (MHCMSPP), which provides important clue to study China's industrial heritage. MHCMSPP modern and contemporary industrial heritage can reflect the changes in Chinese social system, economic structure and industrial form adjustment since the industrialisation of China in 1840 till now, which involves various kinds of ideological outcomes, such as foreign capital industry, industry of westernised Chinese officials and national capitalists, industry during the anti-Japanese war, new Chinese socialist industry, etc. The value of the heritage is in line with international standards, with important protective significance. But China lags behind international research for nearly 30 years over the establishment of TICCIH (The International Committee for the Conservation of the Industrial Heritage) in 1978, resulting in many problems in the process of reference and practice.

By taking national industrial heritage as samples¹, data and approved documents of the State Administration of Cultural Heritage for technical support, and international charters, Chinese laws and policies as theoretical guidance, this paper carries out a data entry of industrial heritage, based on which the paper approved documents researches on the ideological change of policy makers, experts, and technical issues during the implementation of protective measures by collecting data of protection and approved documents.

Through data compilation and analysis of the core issues, this paper presents overall situation of MHCMSPP modern and contemporary industrial heritage protection and reuse in China. Analysis of the core issues can illustrate the reasons that restrict the current implementation of industrial heritage protection in China. Examination of the problems in approved documents in accordance with international industrial heritage protection's principle of consensus can explore the ideological transition of international protection in China.

1. BACKGROUND

Chinese officials' concern about industrial heritage is a process of evolution from being international-influence to government-led. In October 2005, ICOMOS held its 15th General Assembly and Scientific Symposium in Xi'an, China to determine the theme of "The International Day for Monuments and Sites" in 2006 as "Protection of Industrial Heritage". Affected by this, Chinese officials held the first *China Industrial Heritage Protection Forum* in Wuxi on April 18, 2006, open-

ing the prelude to the Chinese industrial heritage. In May 2006, China's State Administration of Cultural Heritage issued *Notice on the Strengthening of the Industrial Heritage*, calling on relevant departments to organize and carry out census and identification activities of industrial heritage. In 2007, China launched the 3rd archaeological survey and inventory, from which industrial buildings and related facilities were explicitly included in the census list, and industrial heritage protection had received attention at the national level. In 2009, *Interim Measures for Heritage Identification and Management* promulgated by the State Administration of Cultural Heritage clearly put forward that identification of industrial heritage should be implemented in accordance with the "Measures". In 2015, *Protection Regulations for Chinese Cultural Relics Sites* and *Law of the People's Republic of China on the Protection of Cultural Relics* started revision. The documents made an official definition of industrial heritage, and elaborated the principle of protection, recycling and other issues for the first time. As of January 2016, Wuhan, Hangzhou, Tianjin and other cities have announced the implementation of industrial heritage protection planning. Shanghai, Nanjing, Jinan and other cities are at the planning and preparing stage. So far, China's industrial heritage protection system has been initially formed.

2. THE EXISTING CONDITION

Distribution of heritage

According to the definition of industrial heritage in *Nizhny Tagil Charter* and the 2015 *Protection Regulations for Chinese Cultural Relics Sites*, there are a total of 84 MHCMS industrial heritages located mostly in old industrial cities of China, with a concentrated distribution in coastal, eastern and central regions.

More and more industrial heritages are included in the MHCMS system; however, the overall proportion of these is still small. From 1961 to 2013, Chinese government released a list of 4296 historical and cultural sites protected in seven batches. On the list, the number of industrial heritage increased dramatically from

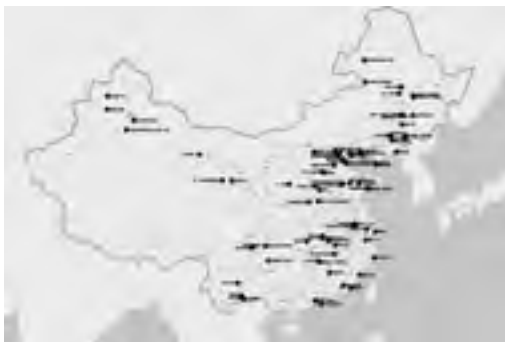


FIGURE 1. MHCMS industrial heritage distribution. © Songsong Li, Subin Xu.

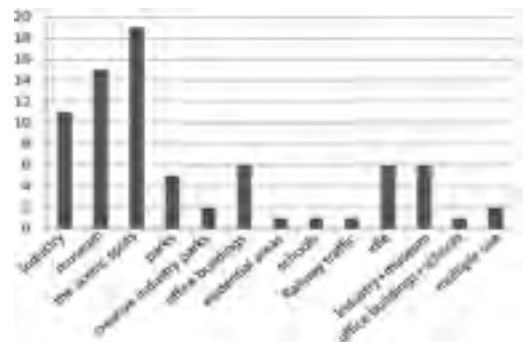


FIGURE 2. Statistical types of the existing condition of industrial heritage reuse. © Songsong Li, Subin Xu, <http://www.sach.gov.cn>.

1 in the second batch to 55 in the seventh. Especially since 2006, when Chinese officials began to implement a series of initiatives on the protection of industrial heritage, the number of industrial heritage has been growing rapidly. However, it still occupies a small proportion in the whole MHCMSPP system and the types of modern and contemporary heritage², approximately 1.28% and 11.70% respectively.

The Existing Condition of Heritage Utilization

Most of the MHCMSPP industrial heritages are now used as museums and scenic spots. According to the existing condition of usage, MHCMSPP industrial heritage utilization can be divided into 3 categories: industrial continuation, functional replacement, and idle. Industrial continuation means that the production line of industrial heritage has been adjusted, but remains the basic functions. For example, Yangshupu Water Plant and the North Navy's Taku Dockyard have respectively continued the production function as modern water plant and dockyard; functional replacement includes the forms of scenic spots, parks, cultural and creative industry parks used for open space experience, as well as schools, office buildings, residential areas. Taking the cultural and creative industry as an example, the Site of Jinling Arsenal, which was the Nanking Arsenal founded by Li Hongzhang in 1865, is now developed into a cultural and creative industry park that sets the museum, leisure life, creative development of science and technology, creative arts and crafts, and hotel business as one. Idle means that the heritage is in an abandoned state or planning stage after the industrial restructuring. For instance, as one of China's 3 major cement plants in modern times, Huaxin Cement Plant is now unused after the industrial restructuring, and its conservation plan is still being formulated.

3. IMPLEMENTATION STATUS AND PROBLEM ANALYSIS OF CONSERVATION AND MANAGEMENT MEASURES

Implementation Mechanism of Conservation and Management Measures

In the charge of the State Administration of Cultural Heritage, implemented by local sectors, MHCMSPP industrial heritage protection mechanism follows the hierarchical management mode, which is also a *de facto* system of protection of cultural relics. Conservation and management measures are divided into conservation master plan and conservation project. Conservation master plan is a comprehensive work plan for protection, management, research, exhibition and utilization of cultural relics. The preparation of a conservation master plan is a required procedure that all protected historical and cultural sites must fulfil. Only when the plan is approved by law that it can serve as the basis of administration and implementation of protection work with a legal effect. Conservation project is the working content that has been determined in the conservation master plan, including emergency reinforcement, treatment, relocation, security, fire protection, lightning protection, other protective facilities construction, environmental



FIGURE 3. North Navy's Taku Dockyard. © Songsong Li, Subin Xu.



FIGURE 4. Yangshupu Water Plant. © Songsong Li, Subin Xu.

remediation, exhibition and utilization, etc. In principle, the conservation project should be declared after the implementation of conservation project³.

Implementation Status of Conservation and Management Measures

MHCMSP industrial heritage protection work is being carried out in succession, but it is still in an early stage as a whole. It can be known from the statistics of approved documents published by the State Administration of Cultural Heritage that 1-5 batches of conservation and management measures for MHCMSP have been basically formulated and implemented; 6-7 batches of protection measures are being carried out in succession. However, most industrial heritage is included in the 6-7 batches. Currently, conservation has been started for 33 heritages, most of which belongs to the 5th batch, while those in the 6th and 7th batch are still pending for measures to be released. Generally speaking, the number of heritage that carries out conservation project holds the line with that as planned. Among the conservation projects, renovation constitutes the majority, indicating that MHCMSP industrial heritage conservation at this stage is more focused on the preservation of industrial relics.

Analysis of Conservation and Management Measures

GUIDING IDEOLOGY

The current ideological and theoretical guidance of Chinese industrial heritage protection is the principles proposed according to types of conservation and management measures based on the *International Charter*, *Law of the People's Republic of China on the Protection of Cultural Relics*, and *Principles for the Conservation of Heritage Sites in China*. The principle of authenticity, integrity and continuity is an international consensus evolving in the development of cultural heritage theories. The adjustment of a series of Chinese regulations and policies is also based on these 3 principles. Guidelines on Chinese cultural relics work in the *Law of the People's Republic of China on the Protection of Cultural Relics* are: to protect and rescue first, and enhance management to be free from utilization. In the *Principles*, it is clearly stated that principles of cultural relics protection in China are: no change to the original status, authenticity, integrity preservation with minimal intervention, and protect the cultural heritage with appropriate technology for disaster prevention and mitigation. Fundamental principles of the preparation of conservation master plans are: "reduce intervention to protect the noumenon and environmental authenticity and integrity; improve scientific, forward-looking and operational conservation and management measures to co-ordinate conservation and local economic development"⁴. Mandatory principles of conservation project are: "do not change the original form of cultural relics; conserve and continue true historical information and value of cultural relics comprehensively; protect the noumenon of cultural relics and related historical, cultural and natural environment in accordance with internationally and nationally recognized standards"⁵.

Policy-makers and experts have begun to focus on targeted industrial heritage, but the dominant idea is still the architectural conservation. Approved documents of industrial heritage project planning were firstly published on the official website of State Administration of Cultural Heritage in 2008 and the contents are: project approval and preparation should be in accordance with relevant requirements. Until 2013, requirements for core issues were added to the contents of the project plan on the original basis, and are increasingly specific. Take the requirements for exhibition as an example. Different from previous cultural heritage which are mostly for display, it is required in the plans to include the transformation from simply display to the exploration of industrial heritage reuse. The evaluation of industrial heritage used to focus on the assessment of the current situation and damage conditions before, but now it has turned to the assessment of process flow, lifestyle and production facilities. The understanding of integrity also starts to change from simple protection of the noumenon and the environment to the concept that "various types of facilities that have not yet been included in the heritage system should also go through an objective and comprehensive assessment so as to provide a basis for completely reserve the enterprise development of production and living". Various transformations indi-

cate that experts are beginning to realize the special nature of industrial heritage. But in consideration of the existing approvals, most project approvals aim at building structures, apart from the diversity in some of the conservation master plans. Concluded from an overall data analysis, existing dominant idea of protection is still architectural conservation.

TECHNICAL PROBLEMS OF CONSERVATION MASTER PLAN

The technology system of conservation master plan is comparatively complete, but specific technical solutions are not well targeted. The core contents of technical preparation stipulated in *The Preparation Requirements for Major Historical and Cultural Monuments Under State Protection* are: protected object identification, special assessment, planning principles and objectives, protection zoning and measures, a number of special plans, staging and estimation. Core issues in the approved documents mainly focus on 3 aspects, including the protected object identification and reuse, connection with the master plan and social problem solving.

Protected object identification cannot reflect the special nature and core content of industrial heritage protection. All of the existing review comments have such a similar beginning as "To further classify and clarify the constitution of cultural relics' noumenon based on *Basic Introduction to Major Historical and Cultural Monuments Under State Protection*". As can be seen from the approved documents that there are many problems in protected object identification in units. The documents pointed out that *Basic Introduction to Major Historical and Cultural Monuments Under State Protection* is the essential criterial for protected object identification. The announcement of the *Basic Introduction* has reflected policy-makers' awareness of industrial heritage and the legal protection rights of the heritage. But through data analysis, *Basic Introduction to Major Historical and Cultural Monuments Under State Protection* exists some problems, which tends to emphasize on the elaboration of architectural noumenon. But in addition to architecture, protected objects of industrial heritage also contain social industrial development, industrial production memory, industrial worker's life and other aspects closely related to industrial heritage.

Reuse of heritage often neglects its own development needs. Generally, existing displaying areas are positioned as parks, museums, cultural and creative industrial parks. "Protection and utilization of industrial heritage should be based on the protection of development venation of industrial heritage, which will focus on the production and development needs of enterprises, as well as the transformation of enterprises when production resource depletes. Thus we cannot simply make it a theme of development to construct recreation parks"⁶. Demarcation of protected area cannot reflect the principles of authenticity and integrity of industrial heritage protection. Protected area includes protection zone and buffer zone. Protection zone is to protect the integrity of heritage in the designated area; buffer zone is to coordinate the urban development in the des-

ignated areas outside the scope of protection. Through the approved documents of project review we can see that whether the zoning is reasonable or not a major factor of the program to be approved or not (Table 1).

PROTECTION ZONING	EXCERPT OF CORE ISSUES IN APPROVED DOCUMENTS	FACTORS THAT SHOULD BE MODIFIED	PHASE OF THE PROGRAM
Protection Zone	Integrity of “回-shaped” pattern of the site should be maintained. Three buffer zones within the enclosing wall should be included in the scope of protection, and then the scope of the west, north and south side of the buffer zone should be adjusted and expanded.	Integrity of the noumenon	Modifying
	Boundary coordinates of protection zoning should be supplemented. Potential area of bunkers should be appeared in the protection zoning; once its presence is confirmed, it should be classified in the scope of protection.	Authenticity and integrity of the noumenon	Modifying
Buffer zone	Relevant regulations should be further improved. The same protection zoning should adopt unified control requirements with a clear architectural style, size, color and other control indicators to strengthen control of architectural style.	Urban construction management and control	Modifying
	Demarcation line of buffer zones, such as Bacterial Shells Factories should try to be in position along the outside line of the whole building in order to improve the operability.	Operability	Passed
	Regulations of protection zoning should consider the special nature of industrial heritage and future utilization requirements.	Diversity of regulations	Modifying

TABLE 1. Analysis table of protection zoning.

Inadequate connection between conservation plan and master plan leads to inadequate feasibility of operation. Basically, the review comments of the approved planning document will mention: “please include the connection between this planning and urban planning, land use planning and other related planning to ensure feasibility of the conservation plan of cultural relics”. This shows that most of the plans do not consider city planning in the process, or its connection content is not reflected in the plan. Whether the connection is adequate or not directly affects the implementation of the conservation plan. The purpose of connecting with the master planning is to avoid “fighting” in the implementation between all the plans and the conservation of industrial heritage. Especially the positioning of land and road system planning in the overall plan, various lands use indicators and development intensity in regulatory plan are the direct factors affecting the industrial heritage and the environment.

Neglecting social problems is the key constraint to the implementation of the plan. Social problems include demands of enterprises in the process of transformation, and various ownership problems, although ownership problems are provided with different solutions in the document. For those management rights and usage rights that belong to different parties, the document “requires [them]

to clearly divide responsibilities and set up a specialized agency or department responsible for the conservation and control of cultural relics, and the regulatory agencies shall not be the enterprise with the usage right. Meanwhile, in terms of operation, the state-owned organizations for cultural relics protection cannot be considered as a business asset of enterprises". For those management rights and proprietary rights belong to different parties, the document requires "to further clarify the property rights of heritage buildings, actively promote the relocation of the factory, and solve the problem of conservation and management of heritage buildings completely".

TECHNICAL PROBLEMS OF THE CONSERVATION PROJECTS

Currently, the root cause of technical problems existing in protection projects is that the conservation measures are against the protection principles. Minimal intervention is the basic principle of the protection project. In the technological implementation perspective, it respectively reflects as the avoidance of excessive maintenance, the reversibility of the material and the reservation of all kinds of historical information and characteristics. Through the analysis of treatment type approval document, we can see the problems existed in the industrial construction or facilities with different functions at this stage. These problems are mainly concentrated in areas related to structural stability, treatment of materials used and techniques.

TREATMENT TYPE	TREATMENT PARTS	TREATMENT METHODS	EXCERPTS OF CORE PROBLEMS IN THE APPROVAL DOCUMENT	TREATMENT STAGE	PRINCIPLES SHOULD BE OBSERVED
Plant	Wall	Reinforcement	Cancel the reinforcing agent on the brick body and the maintenance lagging flow coating of the exterior water increasing agent. This kind of reinforcement is not conducive to moisture breathing of the brick body and adaption of the expansion and contraction law.	Scheme	Avoid excessive maintenance
		Repair	We should treat seriously with the problem of the brick wall with crisp alkali which has no effects on structural safety. There should not be too much intervention and try to retain its feeling of historical vicissitudes as far as possible.	Scheme	Avoid excessive maintenance
	pillars	reinforce	The practice of cast-in-place concrete pillars has changed the appearance of the pillars and it is not reversible. In order to preserve the original structure and appearance of the pillars, it is recommended to be reinforced by the additional concrete pillars and to use the profile steel between the additional pillars.	Scheme	reversible
	beam	detection	Detect the structure of timber structure, steel truss to provide the basis for the beam reinforcement.	Project approval	Avoid excessive maintenance

TABLE 2. Analysis table for treatment type approval document.

4. CONCLUSION

Industrial heritage protection gets more and more attention in China. By the end of 2015, industrial heritage was included in the manuscript of *Law of the People's Republic of China on the Protection of Cultural Relics*. Industrial Heritage Branch of Chinese Historical and Cultural City Committee (IHC of CRAC) and other academic organisations achieved abundant research results. Many modern and contemporary industrial heritages such as Karez, Hubei Huangshi Industrial Heritage Area have been listed on the China World Heritage Tentative List one after another. TICCIH-CHINA, affiliated to the International Organization of Industrial Heritage Protection is in the process of being established. At present, research on the industrial heritage in China is gradually aligned with the world, and the status quo of MHCMSPP industrial heritage reuse can exactly reflect the current core issues of the industrial heritage protection in China. Therefore, it is hoped that this paper and the follow-up studies can actively promote the theoretical and technological development of China's industrial heritage.

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NOTES

- 1 This Project Supported by the National Social Science Foundation (Major Program, 12&ZD230), the National Natural Science Foundation (General Program, 51178293) and Higher school subject innovation engineering plan (B13011). This paper selects mainland China as the case scope, in which Major Historical and Cultural Monuments under State Protection is called MHCMSPP for short.
- 2 China MHCMSPP is divided into 6 categories: ancient ruins, ancient buildings, ancient tomb, cave temples and stone carvings, modern historic buildings and other. According to ages, this is delineated in the category of modern historic buildings category.
- 3 The description of the conservation plan and conservation project is concluded from the 20th statement of "Principles for the Conservation of Heritage Sites in China, 2015" and "MHCMSPP Conservation Project Report".
- 4 State Administration of Cultural Heritage, *Planning Examination and Approval Measures for MHCMSPP*, 2014.
- 5 Ministry of Culture, *Regulations for the Conservation Project of Cultural Relics*, 2003.05.
- 6 Approval Document of State Administration of Cultural Heritage.

Modern Factories for the New Economy

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Large-scale industrial plants of the modern era became the epitome of modernism in their form following flow of production, their manufacturing technologies, their construction technologies, and their materials. Today the reuse of these factories can be considered for use by factories of the New Economy, which involves new types of businesses such as those involved in mass customization, lighter smaller industries, and those using the internet rather than the heavy manufacturing of forty years ago, while preserving the historic essence of the factory. While many factories have been converted to other uses, such as Luma Lighting in Sweden into residential lofts, Lingotto in Turin to a convention centre, and Van Nelle in Rotterdam to office spaces, numerous modernist factories continue to remain adaptable and flexible for today's companies that boast new manufacturing technologies. The continuously operating factories are those that I call the "integrated" factory, such as Fagus in Germany, Boots in England, Claude & Duval in France, among many others.

This paper will explore the continuous use of the factory – as the "layered" factory – for smaller, cleaner, and greener companies, which comprise the New Economy. These companies use smaller machinery with just-in-time manufacturing and lean production organizational systems, as well as a shorter supply chain requiring less storage space. Many modernist factories can sustain these smaller factories because the large spaces with wide column grids for expansion and contraction. Examples featured here include renewed production spaces of the modern era such as the Brooklyn Army Terminal, Industry City, Russell Industrial Centre, and co-working industrial spaces.

The premise for renewing these factory buildings as factories again results in potentials for adaptation for new types of manufacturers. This new manufacturing technology then in turn impacts the composition of a factory, just as it did in the Industrial Revolution.

Large-scale multi-storied industrial plants, or what I call "Vertical Urban Factories"¹, became the epitome of modernism in their form following flow of production, their manufacturing technologies, their construction technologies, and their materials. Today, the reuse of these factories require little redesign as production spaces of the New Economy. With few internal configurations the modern factory's historic essence and spatial flow can be preserved. While many factories have been converted to new uses, such as Luma Lighting in Sweden into residential lofts, Fiat's Lingotto in Turin to a convention centre, and Van Nelle in Rotterdam to office spaces – numerous modernist factories continue to remain adaptable and flexible for entrepreneurs who grasp new manufacturing technologies.

Many factories also continue in their original use in the "integrated" factory, such as Gropius's Fagus in Germany (now a World Heritage site), Owen Williams's Boots in England, Le Corbusier's Claude & Duval in France, among others. In these factories the materials are delivered to the ground floor and are moved the top for workers to produce the goods from the top to the bottom. Some gravity elements such as vertical spiral conveyors and chutes or mechanized driven machines such as elevators and moving conveyors, provided for fluid efficiency.

Other factory buildings are organized as what I call the “layered” factory – in which different companies occupy different floors, or perhaps use just two floors of a building, as in the 1931 Starrett-Lehigh Building in New York. These buildings are perfectly suited for companies that are smaller, cleaner, and greener – which predominantly comprise the “flexible” New Economy². This new manufacturing technology in turn impacts the composition of a factory, just as it did during the Industrial Revolution.

The modernist factory building of the concrete grid is flexible and has great potential for new manufacturing. These firms use smaller machinery, sometimes as small as desktop 3-D printers, with just-in-time manufacturing. The buildings can sustain numerous smaller factories because the large spaces with wide column grids make them adaptable for multiple uses and lean production systems, and a shorter supply chain require less storage space and less space in general. The factory infrastructure of service and passenger elevators, loading docks, and their urban situation make them easily accessible for local workers. Companies can even start small and expand within their own building, or shrink if the company reduces their spatial needs. Or, shared industries can take advantage of the vast spaces for common “maker” and new tech innovation spaces. Some examples for these renewed production spaces of the modern era include, the Brooklyn Army Terminal, Industry City, Russell Industrial, and the Factory Workers, which I will discuss below. By virtue of their robustness they can carry the future of manufacturing while maintaining the physical and symbolic industrial strength of the modernist era.

1. BROOKLYN ARMY TERMINAL

One example that has undergone a transformation of use is the Brooklyn Army Terminal (BAT) in New York City, originally called the US Army Military Ocean Terminal. It opened in 1919 on 39-hectares of Brooklyn waterfront at a deep water channel that could accommodate large ships. The project at that time cost over \$35 million to complete. General G.W. Goethals entrusted the design and construction of the new army supply base to architect Cass Gilbert (1859-1934) and Turner Construction. The Army Terminal complex was modern in design compared to Gilbert's other projects and its use of concrete reflected the need to save steel during wartime. Henry C. Turner was one of the more innovative concrete engineers and had built an empire constructing warehouses with the mass production of gridded more vernacular concrete factory buildings throughout New York city. Turner worked in tandem with the engineering firm Post and McCord to complete these immense structures³.

From the outset, the Brooklyn Army Terminal had a modern infrastructural system supporting new logistics delivery and good-movement systems. Materials and products flowed between the warehouses and buildings via tunnels and bridges and on-site roads and rails to the port. Machinery such as forklifts, cargo



FIGURE 1. Brooklyn Army Terminal, New York, USA. Atrium space with balconies. © Nina Rappaport, 2012.



FIGURE 2. Brooklyn Army Terminal, New York, USA. Electronics factory. © Nina Rappaport, 2012.

elevators, and lifts on the piers, supported and supplemented physical work, transferring goods onto the ships. Over 3-million troops and 38-million tons of supplies passed in and out of the terminal during its active wartime use.

BAT is comprised of two 8-story warehouses, A and B, with an administration building, boiler house, repair shop, and four piers in 16.4 million square meters of space and large floor space. At the time of construction, the 8-story Warehouse B was the largest structure ever built in reinforced concrete, providing 21 hectares of floor space. Its simple modern structure is articulated by the rhythm of windows separated into bays by vertical piers. It also features a huge enclosed atrium for a large crane to unload freight from trains running directly into the building. Staggered concrete balconies, like constructivist sculptures, were cantilevered from each floor in the atrium as staging areas from which goods were loaded onto the train cars below (as in Owen Williams' Boots factory in England). 96 centrally controlled Otis elevators, each 1.3-by-1.5-square-meters in size, carried up to 4,500 kilograms of material at a rate of 13.9 meters per minute, up and down the building. The shorter vertical distances could be reached efficiently, proving the value of the multistoried factory. The efficiency of material storage, assembly, packaging, procurement, and supply, as well as the distribution of goods (such as uniforms, hats, shoes, medical equipment, canned food, salt, sugar, and emergency supplies) at the end of WWI and throughout WWII, placed the building in constant service of production.

New York city purchased the complex from the federal government in 1981 and divided it into smaller units, ranging from 1,390 to 3,720 square meters, for a variety of manufacturers in this now "layered" factory. New York City's Economic Development Corporation (EDC) leases the complex and invested \$90 million for renovations. By 1999, BAT housed sixty companies, with EDC manag-

ing the facilities and common spaces. In 2014, the two main buildings, comprising 288,000-square meters of space, were home to over one hundred companies employing over 3,000 people who took advantage of the large floor plates and light filled spaces. The industrial businesses include garment, furniture, a variety of food, chocolate, electronics, balloons, high-tech digital equipment, and green furniture companies. Larger spaces are occupied by the textile company USA Made, the online marketplace Uncommon Goods, and New York city's 311 call centre, all of which employ hundreds of people.

The City maintains BAT's common spaces, parking areas, loading docks, and security services, has also installed state-of-the-art internet systems. It recently investing \$15 million to renovate the main administration building, now called the Annex Building, which they plan for use as an advanced manufacturing centre with CNC machines, robots, equipment similar to the shared spaces discussed below. It will be a space where manufacturing meets new technology in a modern factory.

2. BUSH TERMINAL – INDUSTRY CITY

Another larger scale modernist factory complex is the Bush Terminal Industrial Complex on the waterfront of Sunset Park, Brooklyn – now called "Industry City". It includes twelve buildings encompassing 100,000 square meters that are currently leased to 43 businesses employing four hundred workers. Bush Terminal was a massive complex of warehouses, rail and shipping links, and factory lofts built in stages from 1895-1925 by the wealthy businessman Irving T. Bush on the former site of his family's oil refinery⁴.

Bush conceived an intermodal transportation, warehousing, and manufacturing facility as a challenge to Manhattan's primacy, convincing railroad officials to establish direct routes to his Brooklyn piers via "car floats", which ferried railroad freight cars across the harbour. The series of 6-story factory lofts built

from 1904 to 1918 were reinforced concrete buildings erected by Turner Construction. This complex became America's largest multi-tenant industrial property and first "industrial park", spanning across 20 waterfront blocks and 8 piers, with 118 warehouses and 26 factory buildings for 25,000 workers and worker housing in the area.

Industry City is now owned by a private developer group, which leases the spaces to manufactur-



FIGURE 3. Interior of unrenovated space at Industry City, Brooklyn, New York.
© Courtesy Industry City, 2013.



FIGURE 4. Maker Bot, Industry City, Brooklyn, New York, USA. © Photograph by Louis Seigal, 2014, courtesy Industry City.

ers including furniture, garment, paint, bakeries, industrial suppliers, a plastic bag recycler, and the *MakerBot* 3-D printer company. The concept is similar to BAT, but here the current owners are also using the more public spaces for trade fairs, shops, cafés, event spaces, and showrooms. A food hall features artisanal food tenants who make their goods in full view, creating a dynamic place of production. The future of Industry City is filled with potential, as the scale of manufacturing shifts back to modernist complexes such as this one.

3. RUSSELL INDUSTRIAL CENTER

In Detroit where Albert Kahn's work proliferated his 1916 Russell Industrial Centre, on 1600 Clay Street is a typical concrete frame multi-storied factory complex. The 3-million-square-feet of production space with large steel casement hope windows housed Murray Body Corporation, which then had 1,000 workers producing 60,000 car bodies annually. With contracts from Ford in 1927 for the Model A and production of metal kitchen appliances in the 1939s, it thrived. During WWII, as part of Detroit's Arsenal of Democracy, the company produced parts for the B-1 bomber and Boeing's B-17. The company was sold in 1955 as Wallace Murray Co. and continued in special metal manufacturing with the original Michigan Stamping through the 1980s.

But with the demise of manufacturing in Detroit the building was sold and rehabilitated into a hybrid industrial centre with spaces for industrial manufacturing, artists, and events. The vast spaces, within the concrete frame, and large

ground floor as well as a kind of internal courtyard for deliveries makes it a desirable space for the new businesses including artists but also furniture makers and woodworkers, film studios, and industrial hardware companies with a constant buzz of activity. The building's grid supports the variety of companies and shared public spaces.

4. INDUSTRIAL COMMONS

The other new type of manufacturing that finds modernist factories an asset are shared fabrication spaces. These "fab-labs", co-working spaces, hacker spaces, and collaborative workshops are organized both formally and informally. Some are sponsored by companies such as GE or Ford as a way to train workers, and others are just a group of like-minded creative people who want to build a collective around shared resources. They find a space, often a former modern factory (both multi-storied or single-storied), in which they can share equipment and tools including computers, high-tech machinery, woodworking tools, 3-D printers, CAD/CAM machines, CNC milling machines, among other capital investments that are costly for an individual. Because manufacturing is done in cities in smaller batches and just-in-time, firms are smaller. The advantage is quality control and adaptability to consumer demand⁵. Sharing of resources and knowledge is also an element of the New and the Next Economy as production becomes more democratized rather than top down and company controlled.

From these buildings companies literally "start-up", ideas are incubated, all of which would not be possible unless these spaces are continued to be made available. One of these spaces is the Factory Worker space in New Jersey that houses food producers, solar power companies, coffee roasters, among others. *TechShop* is now a franchise of similar co-working spaces for advanced manufacturing, also housed in former factory buildings and large-scale modern complexes in cities around the United States.

The premise for renewing these factory buildings as factories again results in potentials for adaptation for new types of manufacturers. While demise of manufacturing continues at the larger scales in western cities, entrepreneurs with innovative foresight are embracing modern factory buildings that are easily adapted. Just as industrialists founded the factory typology in the second industrial revolution, at the turn of the last century – today's next industrial revolution thrives in these renewed multifunctional spaces.

NOTES

- 1 See Nina Rappaport, *Vertical Urban Factory*, Barcelona, Actar, 2015.
- 2 See David Harvey, *The Conditions of Post-Modernity*, Cambridge, MA, Blackwell Publishers, 1990.
- 3 Historic American Engineering Record Report, National Park Service, Philadelphia, PA, 1993 and "United States

Army Supply Base", *The Architectural Review*, London, January 1920, 1.

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- 5 See Chris Anderson, *Makers*, New York, Crown Publishers, 2012.

Design with History: The Redevelopment of the Industrial Area Oostenburg

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Preservation through development is advocated by Dutch heritage policy makers for about 2 decades now and it seems to be a useful strategy in reintegrating abandoned modern industrial areas in the city fabric. Daily practice has shown that it is very difficult to do so, because every actor and stakeholder in the process still tends to act from his traditional and narrow perspective. In many cases this frustrates the process and leads to unsatisfying results.

This paper refers to a study on the transformation of the former industrial area of Oostenburg in Amsterdam executed by a team from TU Delft's section Heritage & Architecture. The study showed that interdisciplinary academic research ranging from the assessment of values of cultural heritage and architectural space cultural values to the development of design scenario's and a cost analysis is the key to discover the full opportunities for redevelopment of industrial areas.

Oostenburg, a former VOC-harbour and ship building yard at the north-east of the city centre of Amsterdam, was redeveloped as industrial area during the 20th century. Only one building cluster from the turn of the 20th century was listed as a monument; following a traditional approach of preserving individual objects rather than acknowledging i.e. the context of industrial production processes. The process of redevelopment suddenly came into serious trouble last year when the municipality of Amsterdam started a procedure to list another cluster of buildings designed by the architect G. J. Langhout (1879-1962) in the 1920s-1930s and designated to be demolished in order to realize new dwellings. To help reconcile the contrary viewpoints of the municipality and the landowner/developer the authors collaborated with others on a study that unravelled the development opportunities of Langhout's factory buildings, based on an assessment of the rich heritage values of the site.

1. INTRODUCTION

In 2014, the section of Heritage & Architecture (H&A) of the Delft University of Technology got involved in the process of redevelopment of the former industrial area Oostenburg in Amsterdam. This paper first introduces the case Oostenburg and the commission, afterwards the method of research and the outcomes of the analyses and in the end discusses the process and comes to cross-disciplinary advice.

Oostenburg Island

Oostenburg island is a former VOC-harbour and ship building yard at the north-east of the city centre of Amsterdam. Oostenburg was created during the fourth city expansion in the 17th century (1652-1660)¹. Starting at the late 19th century, but mostly during the 20th century, Oostenburg was completely redeveloped from shipyard to an industrial area for machine building. More than a century of construction of locomotives, coaches and ship engines resulted in a dense fab-

ric of industrial buildings and infrastructure from very different time periods. The company “Werkspoor”, later part of “Stork”, among others known for its large innovative diesel engines was the main occupant of the area². During the 1990s the last buildings have been abandoned because of the area becoming more and more a delicate inner-city area surrounded by newly developed housing neighbourhoods, instead of a rough industrial area on the border of the city. Large parts of the area and the premises were bought by “Stadgenoot”, a large local housing corporation, with the intention to demolish the buildings on the site and to redevelop the area into housing and commercial programmes.



FIGURE 1. Oostenburg throughout the centuries, 1663, 1916, after 2004. © a) Daniel Stalpaert, 1663, *Kaartenkamer*, TU Delft, b) N. V. Nederlandsche Fabriek van Werktuigen en Spoorwegmaterieel, 1916, c) Rappange & Partners architecten b.v.



FIGURE 2. Masterplan by URHANH. © URHANH Urban Design & Strategy.

The Commission

At the crucial turning point in the history of Oostenburg in 1995, when *Stadgenoot* took over the ownership, it was omitted to assess the significance of the cultural heritage of the site with all its relicts in a coherent way (morphology, buildings, infrastructure, machines, stories etc.). This led to the demolition of several characteristic industrial buildings, the realization of a large office building and the listing of one building cluster from the turn of the 20th century as a monument. Besides, a masterplan for the redevelopment of the entire site was set up by the urban design practice URHAHN³. It introduced a new urban layout based on a small scale grid, advocating the *spontaneous city*. The link with the history of the site was made by referring mainly to the immaterial dimension of the industrial process like “productiveness” and “innovation”, the typology of working units on ground floor and the integration of a few historical buildings. Other aspects like infrastructure, morphology and specific architectural features of the former industrial site played no role in the design.

Because of the worldwide financial crisis that started off in 2007, the redevelopment process of Oostenburg stopped and it took years to start up again. When it finally continued, it came into serious trouble in 2014 when the municipality of Amsterdam started a procedure to list another cluster of buildings designed by the architect G. J. Langhout in the 1920s and 1930s – the so-called *Werkspoorhallen* or *Langhouthallen* – that was designated to be demolished in order to realize new dwellings.

H&A was commissioned by the owner *Stadtgenoot* to reflect on a Value Assessment of the *Werkspoorhallen* by the Heritage Department of the city of Amsterdam⁴. The main conclusion of the reflection was that by only looking at the heritage values of the *Werkspoorhallen* itself, the value of the area in its entity and with respect to their potential for redevelopment was neglected⁵.

As a result of the reflection and because of the challenge of private ownership of the site, the limited influence of local authorities on redevelopment and the wish not to frustrate the process, H&A was commissioned by both the housing corporation and the local authorities to analyse and report the possibilities to incorporate the heritage values of both the area and the buildings in a development plan for Oostenburg in general and the *Werkspoorhallen* in particular. The big challenge was to safeguard the industrial heritage, to explore possibilities for reuse with new programmes and to realize at the same time as many square meters as possible. The latter in order to compensate the housing corporation for the assumed financial loss when keeping (part of) the existing building cluster.

2. H&A METHODOLOGY

Within the section Heritage & Architecture at TU Delft, three chairs are working closely together: “Heritage & Design”, “Heritage & Cultural History” and “Heritage & Technology”⁶.



FIGURE 3. *Werkspoorhallen*: after completion, in use, currently unoccupied. © a), b) *Werkspoor Archive, Stadgenoot*, c) Sara Stroux, 2015.

For the Oostenburg-research, an integrated approach was proposed in which a team of researchers and architects from all the three chairs work together on this study⁷. They conducted urban, architectural and technological analyses in order to conclude on a set of heritage values leading to a framework for redesigning the area. The analyses were based on literature research, a collection of historical maps, drawings and photographs of the area and its buildings and on-site surveys. The scope of the analysis of the whole area took into account that an industrial site in its (left-over) physical structures still represents a complex production process which is an essential part of the history of the site and finds a common ground in the discipline of “Industrial Archaeology”. Assessment of heritage values should in this case thus not focus on individual buildings and their relevance within the architectural legacy of the 1920s but on the relation between infrastructure (i.e. delivering raw materials, half-finished products, goods, including structures as cranes), buildings and machines. This is crucial for understanding the significance of an industrial site and only by understanding this significance it is possible to respond to that by future oriented design. Additionally, including technology aspects such as the structural relation between the building and machines also seems very fruitful when it comes to industrial heritage: buildings should be rather read as shell for a production process (which can change) than as

an architectural object in itself. Besides, the construction is key to realize big column-free spaces and industrial companies tend to adapt innovative techniques and construction methods early.

The outcomes of the analyses were translated into schematic designs for redevelopment of the *Werkspoorhallen* and evaluated in order to come to conclusions on possibilities for further development⁸.

A study on the economic impact of design solutions by the local authorities was taken into account for the evaluation.

3. FINDINGS

The final report on this specific case has four main parts, namely the (historical) urban analysis of Oostenburg island; the architectural and technological analysis of the *Werkspoorhallen*; a statement of the essential qualities for redevelopment and strategies for future development⁹.

Based on the analysis of the development of the entire industrial site – from its creation to the current situation – the essential qualities that could direct future developments on the level of the masterplan and the individual buildings have been formulated as follows:

- The characteristics of an “enclosed island” with clearly marked entrances like ports and bridges should be kept and (re)used; new connections with the surrounding urban fabric should follow this concept by introducing new bridges or gates.
- The *Oostenburgermiddenstraat* as main axis of the site should be kept.
- The relation with water in many ways regarding the design and use of public outdoor space as well as buildings should be intensified.
- The large scale and the clustering of buildings should be respected as a typical feature of the morphology of the site.

Regarding the qualities of the *Werkspoorhallen* the most important findings due to the integration of technology are:

- The hall built in 1929 can be seen as the most important: not only because it is the oldest but because this is the building where part of the production process is still observable through the ensemble of the hall, a turbine testing building and a small harbour. The 1929-hall served as the last stop in the process of engineering a large diesel engine, before the engine got shipped. Another argument is that the newer halls structurally depend on the first hall.
- The clustering of buildings is an essential part of the building history. Every building was built directly next to the previously built building by sharing the loadbearing construction and the separating wall.
- It is not advisable to expose the steel structure of the hall to external conditions because of maintenance. This has a direct influence on possible programming of the halls.

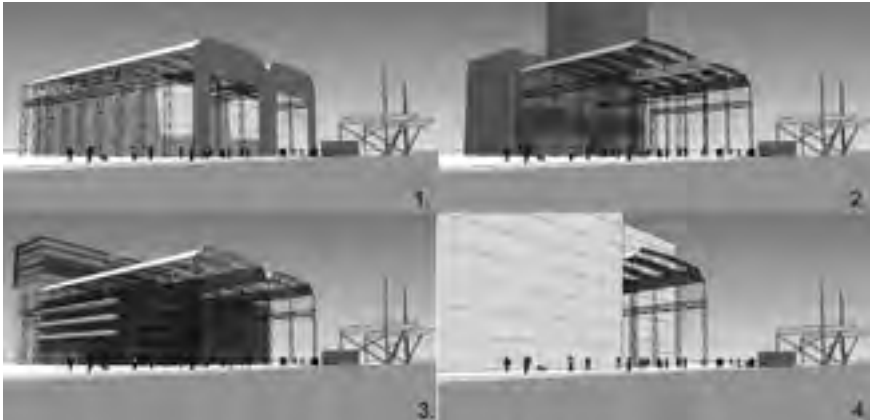


FIGURE 4. Visualisation of the design strategies. © Heritage & Architecture, 2015.

Next to the essential qualities of the industrial heritage the demand to realize as many square meters as possible to compensate for financial loss was leading for the development of alternative design schemes. This implied to sacrifice parts of the still existing industrial heritage and to investigate the potential of the two main halls.

	SPATIAL QUALITIES	READABILITY OF HISTORY	RELATION WITH OOSTENBURGER- MIDDENSTRAAT	RELATION WITH WATER	CLUSTERING
1. Preserving two halls, realizing programme inside	+	+	+	+	+
2. Preserving two halls par	+/-	+/-	-	+	+
3. Preserving two halls with new extension	+	+	Design challenge!	+	+
4. Preserving one hall as public space	+	+	+	+	-

TABLE 1. Evaluation of design strategies with regard to essential qualities.

The study had a direct impact on the current situation. On the level of the masterplan the designer of URHAHN promised to investigate to which extent the essential qualities as mentioned above can still become part of their design. Concerning the cluster of the *Werkspoorhallen* a partial “victory” was won: The oldest of the two halls will be listed as a local monument and as such has to be preserved and integrated in the redevelopment of the area. The listing of one hall goes with the advice to further study the possibilities to also include the second hall. This decision to leave as many options open as possible and on the other

hand securing that at least one of the halls will not be demolished is a political compromise that shows the limits of listing as a tool to direct the redevelopment and thus redesign process of an industrial site.

4. DISCUSSION AND CONCLUSIONS

Designing with history demands for an open-minded, integrated approach which takes into account the scientific fields of history, architectural design, structural analysis and building conservation as well as the professional fields of real estate management and urban development. During the study discussed in this paper the collaboration between heritage professionals, architectural historians, designers and financial experts has proven to be effective. Land and building owners as well as local authorities (heritage agency and urban development) appreciated the approach in which all kinds of (historical) research leads to future oriented design strategies as it gave direct insight in the possible consequences of stating the heritage values.

In general, it can be stated that incorporating heritage aspects and potential for redevelopment into the value assessment and starting points at an early stage can broaden the scope for the survey and it can influence the creativity of the designer in a natural way in order to guard heritage assets. On the other hand, it is questionable whether bridging the gap between identification and assessment of heritage values and formulating design solution bears the risk of losing independency as a researcher and it whether it limits creativity of the designer.

From the presented case and methodology, embedded in the Dutch context of preservation through development, it can be concluded that the legal instrument of listing a single building or a complex of buildings within a larger industrial area leads to a misbalanced focus on preserving that building as a more less “stand-alone” object. By following the traditional Western-European way of addressing the materiality of the existing and focussing on the authenticity of a single building, the essence of what an industrial area once was and what it makes valuable, can be missed out¹⁰. On the other hand, the threat of the municipality of Amsterdam to list the *Werkspoorhallen* paved the way for the discussed study and thus for a profound framework for further negotiations between the involved stakeholders.

Another lesson learned is that the timing in the redevelopment process is crucial. Large scale developments of industrial areas are very costly. A change of plans such as listing a building in a late stadium can frustrate the process and lead to – for many stakeholders – unsatisfying results. Defining values is a creative process that needs the view and opinion of stakeholders, but is the task of a (team of) specialist(s). Defining heritage values should be seen as an opportunity – early in the process – instead of a threat later on.

NOTES

- 1 See for example: Jaap Evert Abrahamse, *De grote uitleg van Amsterdam. Stadsontwikkeling in de zeventiende eeuw*, Amsterdam, 2010.
- 2 See for example: J. B. Kist et al. (ed.), *Van VOC tot Werkspoor. Het Amsterdamse industrieterrein Oostenburg*, Utrecht, 1986. Werkspoor N. V. (ed.), *Werkspoor N.V. 1827-1952 (ter herinnering aan het 125-jarig bestaan)*, Amsterdam, 1952. N. V. Nederlandsche Fabriek van Werktuigen en Spoorwagematerieel (ed.), *Werkspoor Amsterdam 1891-1916*, Amsterdam, 1916. M. G. de Boer, *Honderd jaar machine-industrie op Oostenburg Amsterdam 1827-1927*, Amsterdam, 1927.
- 3 Urhan, *Stadswerf Oostenburg – grof Verkevelingslan*, February 2015.
- 4 Bureau Monumenten en Archeologie van de gemeente Amsterdam, *Waardenstelling Werkspoorhallen Oostenburg*, 25 June 2014.
- 5 Heritage & Architecture, *De grote Werkspoorhallen op Oostenburg – reflection*, Delft, Tu Delft, Spring 2015.
- 6 See <http://www.bk.tudelft.nl/en/about-faculty/departments/architectural-engineering-and-technology/organization/heritage-architecture/organization/chairs>.
- 7 Namely F.W. Koopman, H. Michel, J. Roos, S. A. Stroux and W. J. Quist.
- 8 Frank W. A. Koopman, H. Michel, Job Roos, Sara A. Stroux and Wido J. Quist, *De Werkspoorhallen op Oostenburg – verleden heden toekomst*, Delft, TU Delft, Heritage & Architecture, 2015.
- 9 *Id.*
- 10 See also: Ellen Braae and Lisa Diedrich, "Site Specificity in Contemporary Large-scale Harbour Transformation Projects", *Journal of Landscape Architecture*, 7:1, 2012, 20-33. Sara Stroux, "Integrating Modern Heritage Resources into Urban Planning. Lessons learned from the transformation process of the factory site Strijp S of Philips Electronics", in *Proceedings of the 12th International docomomo Conference – "The Survival of Modern. From Coffee Cup to Plan"*, Espoo, 2013, 322-328.

Prefabricated Industrial Architecture in Italy. Preservation versus Transformation

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The problem of the conservation or transformation of industrial complexes is not a question simply of decay, but also of the significance and values that an architectural work acquires (or loses) over time. In the collective imagination, there is nothing that suggests featureless and blighted suburbs so much as the concept of “prefabricated architecture”. Drabness, seriality, reinforced concrete produced cheaply, architectural structures that are the fruit of chance or speculation, create a series of preconceptions which disturb, and sometimes distort, our reading and understanding of works that draw their strength from experimentation, variation in repetition, construction techniques and modular coordination. In Italy, certain industrial designers, including Marco Zanuso and Angelo Mangiarotti, produced excellence by applying industrial processes to the building sector and combining them with the sophistication of the industrial design of functional objects. Examples are the Olivetti Factory in Crema by Marco Zanuso (1967-1970) or the Armitalia Headquarters (1968-1971) and Snaidero Factory (1971-1978) by Angelo Mangiarotti. Each case is different and each building has its own history leading to alterations, conversions and deterioration. There is no one single solution, but instead many possible solutions. Certainly the key point that often determines the fate of buildings is the strategy for their reuse. In terms of instruments for ensuring a future for these prefabricated industrial complexes, ranging from institutional protection to a cultivated design fully aware of the need for conservation or maintenance practices, a fundamental factor is the process of acquiring knowledge about the architectural complexes, which can be read in a plurality of dimensions.

1. INTRODUCTION

The attention of those involved in the protection of 20th-century built heritage is inevitably engaged by the problems affecting what many would describe as “minor architecture”, that “non-monumental” heritage that has characterised large parts of our cities built from the post-war years down to the 1960s. These are places, such as industrial complexes, that are not subject to specific restrictions for their protection, yet which in various ways – social, economic, historical and cultural – constitute a cultural and economic asset in our territories. In particular, some of the workplaces built in the 1960s and 1970s using the techniques of prefabrication and the industrialisation of the building process represent important milestones and attainments in Italian architectural research. Industrial architecture often embodied typological, architectural and constructional experiments, becoming symbols of an economic and social system that has now disappeared. Buildings conceived and constructed to respond to the specific needs of industry in those years today present issues bound up with the decommissioning and conversion of their sites due to the demise of the companies which they hosted, or at best require intervention for improvement/adjustment to meet contemporary productive and managerial requirements, often highly different from those of the 1960s and 1970s. The challenge lies in identifying the best methods for governing

the necessary transformations, which sometimes have already been underway for quite some time, while continuing to preserve the meaning and significance of this tangible and intangible cultural heritage.

2. INDUSTRIAL ARCHITECTURE AS A “CONTAINER”. THE OLIVETTI FACTORY IN CREMA

The Olivetti Factory in Crema is an industrial complex that was designed between 1962 and 1970 by Marco Zanuso and Eduardo Vittoria¹. This amounted to a model of the factory organised as connected and interdependent spaces with specialised functions that no longer responded to the new corporate structure and which required decentralised and independent production units². Such buildings were designed to embody the image of a workplace based on the concepts of the nobility of work and the dignity of the place where it took place. For this reason, Marco Zanuso was commissioned to devise a system in precast, prestressed concrete that could be used in 3 industrial complexes³. The structure was simple, rapidly assembled and capable of allowing for future expansions, while guaranteeing a certain flexibility. For the purpose, a trilithic system was developed⁴. The construction of the complex was carried out in a promotional spirit, as evidenced by the many photos of the construction site, in keeping with the desire to convey a message of “modernity” and efficiency. The Olivetti Factory had always been an important centre for the city of Crema in economic and social terms, as well as being a valuable record of an architectural research project based on the concepts of standardisation and prefabrication. This research, begun in the years between the wars, had always been accompanied by controversy about the use of serial production, being accused of undermining the compositional freedom of architecture. Italian experimentation in this direction led to very different results from those achieved in the rest of Europe and was principally focused on the prefabrication of the load-bearing structure, usually made of reinforced concrete, since the use of steel systems never really took hold



FIGURE 1. Marco Zanuso, Eduardo Vittoria, Olivetti Factory, Crema, Italy, 1967-1970. © Archivio del *Moderno Mendrisio*.



FIGURE 2. Olivetti Factory, Crema, Italy. After reconversion, 2014. © Francesca Albani.

and encountered continuous hostility⁵. The decisive aspect of the architectural, formal and technical outcome was the integration of the systems into the load-bearing structure, while also striving for internal comfort suited to the characteristics of the work spaces. The principal distribution system from the single thermal power unit was installed above, with thermal ventilation ducts also being inserted inside the secondary beams⁶. Natural light entered the factory through transparent elements placed in the roof and resting on the secondary beams, made of a plastic material. The forms of these elements, which were different in the three complexes, had their origins in design considerations related to the orientation of the factory⁷.

The factory was closed in December 1992. This was a serious loss to the city, which would no longer turn out typewriters bearing the label “Made in Crema”. Thus ended a tradition begun after the WWI. In January 1994, to try and overcome the crisis caused by the closure of the Olivetti Factory, the public authorities, including the governments of the Lombardy Region, the Province of Cremona and the City of Crema, established an agency, Reindustria, to enhance and develop the resources of the territory. For the former Olivetti site, a programme was devised for its reconversion into an “Information Technology Centre at the Regional Level”, based principally on the installation of the University of Milan’s Faculty of Information Technology and Sciences on the site, together with a number of companies operating in the computer sector. The idea of decentralising the degree course in computer science obviously offered Crema and the Olivetti site an opportunity for economic, cultural and social recovery. Unfortunately, what happened next affected the most delicate point in the reuse of a brownfield site: the building was treated simply as a container for its new functions. Since these are places that, by their very nature, have high standards of flexibility and require great elasticity in their spatial organisation, their redesign for their new uses failed to take into account the potential and characteristics of the existing structure.

3. ADJUSTMENTS/IMPROVEMENTS FOR CONTEMPORARY WORK. THE ARMITALIA HEADQUARTERS IN CINISELLO BALSAMO

The theme of the prefabrication and modular coordination of architecture is one of the principal topics to be found in the work of the Milanese industrial designer Angelo Mangiarotti⁸. In the case of the Armitalia Factory, an industrial complex located close to a motorway junction on the outskirts of Milan, the emphasis was placed particularly on the envelope of the buildings and on the implications that its modularity had in relation to the definition of the architecture. The formal treatment of the complex was undoubtedly related to trains, and the building’s envelope was the place where the tensions were concentrated. The key role of the envelope was to unify the parts that make up the complex. The industrial complex consists of three buildings with different heights and fea-



FIGURE 3. Angelo Mangiarotti, Armitalia Warehouse, Cinisello Balsamo, Italy, 1968-1971 and 2014. © Trust *Fondazione Angelo Mangiarotti Milano*.

tures. The façade panel, with its curvilinear profile and its windows with rounded corners, consists of precast panels in reinforced concrete of pinkish aggregates stiffened by two protruding ribs and incorporating the insulation and the plaster of the interior finish.

The complex has been subjected to various restructuring operations⁹. The most recent, in particular, resulted in a substantial loss of the elegance and simplicity that characterised it. A series of works resulting from new requirements, due to changes in the nature of the work, has led to continuous changes that may well have detracted from the significance of the architecture. These alterations involved operations of different kinds, which were not designed in advance and which amounted to responses to local and occasional issues. The openings of the windows in the upper part of the office block, the paintwork of the façades, the changes to the form of the windows of the workshop, the addition of a parapet on the roof of the warehouses and a number of internal changes are examples of how numerous small alterations can radically alter the significance embodied in a building.

4. CARING FOR A SYMBOL. THE SNAIDERO FACTORY IN MAJANO

The Snaidero industrial complex at Majano in Friuli was designed and built by Angelo Mangiarotti between 1971 and 1978. It consists of three buildings with very different characteristics: showroom, service building and office building. The showroom building¹⁰ and the one housing the services are clear expressions of a rigorous study of the compositional potential of modularity and the legibility of the construction process. The office building combines innovation and tradition. The façade panels with elliptical portholes in fibreglass and polyurethane foam interact with the rough-stone walls of the base, the ramp and the outer wall,

which root the composition to the ground. The building, rectangular in shape with bevelled corners, is organised around a central courtyard lit by a skylight. The sophisticated load-bearing structure consists of four reinforced concrete columns that support the cross beams of the roofing, from which the slabs in hollow-core concrete are suspended by tie rods.

The complex, which is still the headquarters of a leading manufacturer of fitted kitchens, is well preserved. Over time, the office building, above all, has acquired symbolic values related to culture and tradition, but also to the work ethic that characterises this land. These buildings are all subject to careful maintenance, for the simple reason that they are much-loved and vital dwellings and workplaces. The Snaidero office building, however, is a further example of how well Mangiarotti built, lavishing care on all those elements that were capable of ensuring his complex would age gracefully. The signs of deterioration are of the kind found in all buildings made of prefabricated reinforced concrete built in the 1960s and 1970s: surface deposits, seepage, biological patinas, saline efflorescence, and some rare instances of spalling in the concrete cover. The fibreglass and polyurethane foam envelope has stood up very well to the passage of time, thanks to its elasticity and lightness. One point that might have proved critical is the system of connection between the panels and the supporting structure, where continuous mechanical tensions due to the temperature changes occurring in a façade of this size might well have caused widespread loss of continuity.



FIGURE 4. Angelo Mangiarotti, Snaidero Factory, Majano, Italy, 1971-1978. Office Building © Trust *Fondazione Angelo Mangiarotti Milano*.

5. CONCLUSIONS

The derelict industrial heritage raised the question of whether to undertake its demolition, after the company had closed down its activities, or to start a process of reclaiming the site and the abandoned buildings as part of a broader policy of capitalising on the industrial heritage. The distance between these two extremes leaves open a wide range of possibilities for managing the process with the aim of attributing new cultural, economic, social, and even symbolic values to places that have lost their function, and which will be complete only when these structures are perceived as cultural assets. New uses, changes to the planning regulations, innovations in standards of comfort, social changes and the different perception of the architectural work inevitably entail a series of actions which, unless governed by an overall strategy, can lead to the loss of a heritage characterised by a serialised and standardised construction process. Often a design practice can be observed which leads to striking disjunctions between form and content, with a banal approach that means that the new uses are installed in a building as if it was simply a container. It is clear that much can still be done to secure the future of these works.

The most interesting reuse projects appear when, drawing on the potential revealed by the cognitive survey preceding the project, the architects identify uses compatible with a building's characteristics. Hence the key phases are the study of the buildings through their material structure in order to bring out their values and potential. Within a vision of design that does not separate the intended use of the complex from the material and functional characteristics of the façades that help to define them, the architects devise solutions that make it possible to reconcile the permanence of the architecture, in its material components, with the needs of reuse, reduction of energy consumption and improvements to comply with standards. The risk of exclusively utilitarian alterations, dictated by a purely economic and financial logic, which now appear dominant and unstoppable, could result, within a relatively short time, in the cancellation of a significant phase in the history of the transformation of Italy's cities and territory, obliterating crucial evidence for the development of architectural styles, construction techniques and materials, as well as the documentation of specific economic, social and administrative arrangements.

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NOTES

- 1 Marco Zanuso had already designed two factories in South America for Adriano Olivetti. See Emilio Faroldi, "La Scuola di Architettura Italiana all'Estero: Il Laboratorio Sud-Americano", in Antonio Piva and Vittorio Prina (ed.), *Marco Zanuso: Architettura, Design e la Costruzione del Benessere*, Roma, Gangemi Editore, 2007, 31-47.
- 2 In those years, the development of automated systems raised the issue of creating a workplace designed as a fluid space – a continuum – in which the productive apparatus could develop and be altered in response to changing needs. See Marco Zanuso, "Progettare Fabbriche per Adriano Olivetti", *Quaderni di Critica, Denuncia, Proposte e Informazione*, n. 7-8, April-Settembre 1991, 36-41.
- 3 The first and largest factory was built at Scarmagno near Ivrea, the second at Crema, and the third at Marcanise in the province of Caserta, in southern Italy.
- 4 The system is based on a pillar with a shaped profile wedged into the foot, the main beams with an inverted Y-shaped section, and secondary beams with a triangular cross-section, closed at the top with reinforced concrete roofing panels, inside which were laid the thermo-ventilation ducts.
- 5 After the war, the situation in Italy regarding studies of prefabrication and its use in the construction process was highly articulated and multi-faceted. The controversy aroused by certain aspects of prefabrication, accused of undermining architecture's compositional freedom, gradually died away.
- 6 After the war, there were numerous studies made about the subject, accompanied by an extensive use of prefabricated elements in the construction of buildings. See Francesca Albani, "Prefabrication in Italy after World War II. Zanuso versus Camus", *5th Congress of Construction History*, Chicago, 2015, 39-46.
- 7 The roof was also completed by a shaft running along the transverse axis of the building and containing the central heating and ventilation system.
- 8 In Crema, the roofing panels were curvilinear, with the translucent south part being made of fiberglass and the transparent north part being made of methacrylate.
- 9 Franz Graf, "The Architecture of Angelo Mangiarotti: A Journey through His Works", in François Burkhardt (ed.), *Angelo Mangiarotti: Opera Completa*, Milano, Motta Architettura, 2010, 20-37.
- 10 Francesca Albani, "Forgotten Icons. The Patina of Industrialized Architecture", in Franz Graf and Francesca Albani (ed.), *Angelo Mangiarotti. The Tectonics of Assembly*, Mendrisio, Academy Press, Silvana Editoriale, 2015, 152-166.
- 10 The showroom is built out of six large steel portals with triangular sections: from these are suspended the secondary beams that support the square grid roofing, whose module is coordinated with that of the roofing of the service building, characterized in turn by steel pillars with inverted pyramidal capitals supporting truss beams with triangular sections.

Conservation Planning for C20 Buildings

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A Conservation Plan can be a key tool for the conservation and successful adaptive reuse of modern heritage sites. The process of moving from an understanding of the history and fabric of the site, to an explicit detailed assessment of the significance of both parts and whole, to the formulation of policies for retaining significance, has now been applied to a sufficient number of key modern sites to justify reviewing the advantages and specific challenges of using this methodology to deliver increased and shared understanding of significance, and to encourage owner/user buy in for future good practice. (E.g. National Theatre London, Sydney Opera House, Yale Centre for British Art, New Haven, USA).

To what extent does the format proposed by James Semple Kerr in Australia, in response to the *Burra Charter*, the guidelines promoted by Heritage Lottery Fund in the UK, and experience gained from strategic management of World Heritage Sites combine to provide a coherent methodology? And to what extent does this methodology need to be modified for different cultural and geographic contexts? Are there specific challenges unique to modern buildings which need to be addressed for instance working with members of the original design team, or with no-longer produced machine made elements?

Can conservation plans allow building owners to make the conceptual leap from managing an essentially “new” building, to perceiving their site as a heritage asset entailing long term stewardship responsibilities?

“Preserving the Ephemeral”: Capturing what Makes the Eames House Special through Conservation Planning

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Conservation plans are a critical and tried and tested tool used by practitioners to identify what is significant about a place, and develop policies for managing and sustaining that significance. They provide a framework for organizing all the information needed to make appropriate and consistent conservation decisions based on internationally recognized processes for conserving heritage.

However, conservation plans are not yet typically used as part of the process for conserving modern buildings. Owners are often unwilling to invest in the necessary investigation, analysis and research that is needed before developing works or intervention projects, which means that modern buildings are not always conserved to the same standards in terms of preserving significance and with the same analytic rigour of buildings of earlier eras.

The conservation plan being developed by the Getty Conservation Institute for the 1949 home of Ray and Charles Eames hopes to demonstrate the applicability and usefulness of this methodology to modern heritage. It will address some of the more challenging aspects of conserving sites that were created in living memory and that still hold strong ties between the place, its creators, its inheritors, and those now responsible for its care.

1. INTRODUCTION

Conservation management plans (CMPs) are a critical tool used by heritage practitioners to identify what is significant about a place and develop policies for managing and sustaining that significance. They provide a strategic and logical framework for organizing all the information needed to make appropriate and consistent conservation decisions based on the internationally recognized processes for conserving heritage.

However, CMPs are not yet typically used for conserving modern buildings. Owners are often unwilling to invest in the necessary investigation, analysis and research that is needed before developing repair projects, which means that modern buildings are not always conserved to the same standards or with the same analytic rigour of buildings of earlier eras.

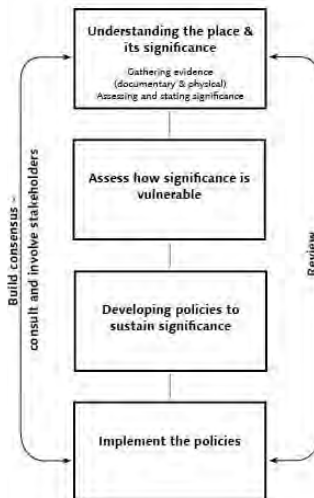


FIGURE 1. The conservation planning process. © Developed from James Semple Kerr, *The Conservation Plan*, 2013.

The 1949 house of Charles and Ray Eames provides a unique insight into the life and ethos of this famous designer couple, exemplifying the idea “Make design your life [...] and life, your design”¹. The house, landscape and collection play host to multiple values, both tangible and intangible. The CMP being developed by the Getty Conservation Institute for the Eames House aims to demonstrate the applicability and usefulness of this methodology to modern heritage places and to address some of the more challenging aspects of conserving sites whose creation is still in living memory and that retain strong ties with their creators, inheritors and those now responsible for their care.

This paper will outline how the conservation plan process has sought to capture the heritage values of the site beyond the architectural values, and identify policies and actions that encompass the usual physical conservation process, but also conserve the important intangible values of the place.

2. THE CONSERVATION PLAN METHODOLOGY

Conservation plans use a tried and tested methodology that provides a framework for organizing all the information needed to make appropriate and consistent decisions about conserving a place based on internationally recognized conservation processes. A CMP is both a simple process and a product, described by Dr James Semple Kerr as, “a document which sets out what is significant in a place and, consequently, what policies are appropriate to enable that significance to be retained in its future use and development. For most places it deals with the management of change”². Figure 1 illustrates the CMP process, as typically understood and used in most places around the world.

The first stage of the conservation planning process is to understand what is important about a place by analysing documentary and physical evidence including its history, use, fabric, and any meanings and associations. This culminates in identifying the values that give the place cultural significance and crafting a statement of significance that can be used as a benchmark for the management of change and decisions about its conservation. The second stage of the process is to identify how the significance may be vulnerable. The third stage is to identify all the issues that need to be considered that affect how the place can be conserved, for example legislative requirements such as heritage laws and building codes, physical conditions, special needs to sustain the use of the site, and conditions of ownership such as public access. Armed with this information, the next step is to develop policies and actions to protect and conserve the cultural significance of the place. The final stage of the process is to identify priorities and necessary resources, and implement the plan. The result is a roadmap to guide the care and conservation of the place. The process provides for consulting and managing the many stakeholders, an integrated component in the success of the conservation planning process.

CMPs move conservation from a reactive process (e.g., What repair do I need to do next?) to a proactive approach in which all the policies that need to be put

in place for upcoming or future conservation work are known and prioritized³. CMPs are umbrella documents, informing repair projects and more specific planning documents such as landscape management plans, collections management plans, and interpretation plans.

Conservation happens in many different cultural contexts. Although many of the guidance documents for CMPs come from the English-speaking world, the methodology is similar to that used in many other countries, and can be traced back to the earliest attempts to develop and codify common conservation standards⁴.



FIGURE 2. The Eames House and landscape, Pacific Palisades, CA, USA, 1950. © Julius Shulman. J. Paul Getty Trust. Used with permission. Julius Shulman Photography Archive, Research Library at the Getty Research Institute (2004.R.10).

3. CONSERVATION PLANS AND MODERN HERITAGE

There are distinct conservation issues that arise when dealing with modern heritage, which highlight the value of preparing conservation plans. Early efforts in conserving modern heritage tended to bias the architectural values and there are examples of projects where many of the original materials were replaced in an attempt to restore the place to its former glory, improving or even reinventing the place to a preconceived ideal of modern architecture. The challenges of conserving modern materials have undoubtedly affected such decisions. A CMP will help to balance the sometimes-conflicting values of a place – aesthetic, scientific and so on – by prioritizing some values over.

Another distinguishing aspect of conserving post-war modern heritage is the potential for direct contact with the original creator, occupants, or commissioners of the work. The creator's descendants or architects who once worked closely with the principal architect can provide critical insight into our understanding of a place. Access to first-hand knowledge about a place's creation is invaluable. However, this can sometimes be overwhelming, particularly for that next generation tasked with managing a family legacy: here conservation becomes intensely personal.

There are many examples of the next generation of an architect's office or family holding strong to a viewpoint based on what they think their master or family member would have wanted, contrary to historic evidence. Capturing memories, sorting myths from facts, negotiating different viewpoints, and navigating painful or sensitive aspects of the story can be difficult and inhibit balanced decision-making. A CMP can be an aid in recognizing and negotiating such conflicting positions and interests as part of the process of identifying values, helping to carefully tread this delicate path. Curators, architects and conservation professionals involved may be tempted to step into the shoes of the crea-

tor, comforted by the amount of historical information available (and justifying actions as being what he/she would have done, had he/she still been around); but this is presumptuousness is a huge risk. Equally the memory holder can be seen as trying to censor or redirect history.

CMPs are important tools to manage the influence and roles of all the stakeholders, as the process reaches and reflects the shared understanding of values. They are also vehicles for capturing the invaluable insights of those with first-hand knowledge of a place whilst it is still possible. The CMP process helps make informed and well-documented decisions and explains the evidence behind and rationale of these decisions.

4. THE EAMES HOUSE CONSERVATION PLAN

The Eames House, located in the Pacific Palisades neighbourhood of Los Angeles, California, is an international exemplar of modernist residential design⁵. Constructed in 1949, it was designed by Charles and Ray Eames, who occupied it for the remainder of their lives. In 1988, ownership of the house passed to Charles's daughter, Lucia, who together with her five children felt a keen responsibility to conserve the place as Charles and Ray had left it. In 2004, the family established the non-profit Charles and Ray Eames House Preservation Foundation to preserve and protect the site and provide educational experiences that celebrate the creative legacy of Charles and Ray Eames. The Eames Foundation is conscious of the importance of capturing the creator's narrative and strategically planning for the site's practical long-term conservation and interpretation, but on a day-by-day basis a range of materials conservation and management issues compete for attention.

To provide a strategic approach to its conservation, based on recognition of a broad range of heritage values, the Eames Foundation and the Getty Conservation Institute are developing a CMP with GML Heritage⁶. The CMP is being undertaken at a critical moment in the house's history, as it transitions from a private home

to a public house museum. Capturing the personal insights of the family responsible for its care and others who were involved in its construction and use is timely and revealing. The creation and enjoyment of the house by its former occupants and visitors is still vivid in family memories and is illuminated the Eames Office's extensive photographic collection.

The Eames House is writ large in the canon of modern architectural history. However, new research and a reevaluation of the place undertaken as part of the CMP



FIGURE 3. The Eames House in 2012. © Gail Ostergren.



FIGURE 4. Ray and Charles Eames inside the Eames House in 1958. © Julius Shulman. J. Paul Getty Trust. Used with permission. Julius Shulman Photography Archive, Research Library at the Getty Research Institute (2004.R.10).

process bringing a fresh focus on other aspects of significance such as the landscape of the site and the important interiors and collection of objects assembled during the Eameses' lifetimes; these significant attributes are only briefly mentioned in the designation of the house as a National Historic Landmark⁷. A reappraisal of the documentary evidence, including extensive photographic documentation and detailed maintenance and garden records, together with family recollections, has provided new insights and perspectives. This has highlighted the importance of the Eameses' personal approach to living and work and the ways this influenced the design and character of the house, its remarkably intact interiors, and its landscape. The CMP process has gone beyond the Historic Structures Report approach

typically used in USA by capturing many of the more ephemeral attributes that contribute to the unique character and quality of the Eames House.

Because the CMP process broadened the understanding of the property's significance, a thorough reexamination of the vulnerabilities of building complex, collections and the landscape setting was also needed, expanding the focus of attention beyond the usual building fabric conservation issues. Based on a refreshed and broadened understanding of the significance of the three major site components, their vulnerabilities and their performance needs as a public house museum, a collaborative process ensued to develop pragmatic management policies to conserve all the values of the place.

The CMP assessment process emphasized the need to focus attention on the remarkable interior, and its contents and collections assembled over the lifetimes of Ray and Charles Eames, which form an intrinsic part of the site's significance. The evolution of the way the Eameses used the house, and the examples of prototype furniture within the collection were identified as key elements in the CMP, with policies to recognize the priorities to conserve these components. The monitoring of the environmental conditions of the house by GCI provided scientific data to inform policies to manage the condition and storage of the significant collections and ephemera within the house⁸.

The significance assessment also focused attention on key landscaping features of the site, including the rows of mature eucalypts, most notably along the east elevation of the building complex⁹. The setting of the house on a dramatic mesa above the Pacific Ocean, cut into a steep slope facing a meadow, with splendid views to the sea beyond has also created landscape and water management issues. The need to implement a landscape management plan to manage the risks that the mature eucalypts present to the house has become a key policy recommendation and priority action in the CMP. These policies were iteratively developed following interviews with Ray's former gardener, review of the extensive Eames Office photographic collection, and site analysis by the CMP team. Similarly, the management of Ray's potted plant collection and garden planting practices, well understood by her former gardener and documented in plant lists, was augmented by her granddaughter Lucia Dewey Atwood's knowledge of Ray's floral arrangements, counterpoints which contribute so significantly to the interpretation of the house to the public. In turn, this ephemeral information provided the evidence for the development of CMP policies to manage the potted plant collection and interpret the house.

This example illustrates how the development of a CMP involves an intensive initial phase of gathering, analysing and assessing information about the place, its condition, history and associations. The ephemeral as well as the documentary and physical resources provide the evidence necessary to develop a concise statement of significance, a succinct summary of the property's attributes and values, to which the subsequent conservation policies and priorities directly relate.

5. CONCLUSIONS

The CMP methodology has provided a broad strategic approach to the care and conservation of this extraordinary site and is an invaluable tool for addressing some of the distinct challenges associated with conserving heritage places of the recent past. The CMP has captured the Eames House's spirit of place and provides a deeper understanding of its cultural significance. It identifies how this significance is vulnerable and provides respective policies to protect and sustain these heritage values, along with prioritized actions for implementation. The recognition of the "importance of preserving ephemeral moments that would otherwise slip away" has given confidence to the Eames Foundation that many of the important intangible values can be preserved beyond this generation's personal memories by implementing the CMP¹⁰.

NOTES

- 1 Copyright 2016 The J. Paul Getty Trust. All rights reserved. Keith Yamashita, *Fifteen Things Charles and Ray Teach Us*, Santa Monica, Eames Office, 2014, 34 [1999].
- 2 James Semple Kerr, *The Conservation Plan: A Guide to the Preparation of Conservation Plans for Places of European Cultural Significance*, 7th ed., Burwood, ICOMOS, 2013, 1, accessed on February 26, 2016, <http://australia.icomos.org/publications/the-conservation-plan>.
- 3 In some countries heritage legislation requires CMPs in advance of major projects, many funding bodies require them as part of applications for grants and all World Heritage Sites are required to have management plans or systems in place.
- 4 The most recent specific international reference to conservation plans is provided in ICOMOS International Scientific Committee on Twentieth Century Heritage, "Approaches for the Conservation of Twentieth Century Architectural Heritage", *The Madrid Document*, 2nd ed., Madrid, ICOMOS, 2014, accessed on February 26, 2016, <http://icomos-isc20c.org/sitebuildercontent/sitebuilderfiles/madriddocumentforpublication2012with2011copyright.pdf>.
- 5 The Eames House, also known as Case Study House Number 8 is one of the best known of the houses initiated by Arts & Architecture magazine's highly influential Case Study Program in 1945 in Los Angeles.
- 6 The Eames House CMP uses the Australian Conservation Plan process developed by Dr JS Kerr, which is founded on the need to fully understand and interrogate the range of heritage values of the site.
- 7 Historic Resources Group and National Park Service, *National Historic Landmark Nomination: Eames House*, Washington D.C., National Park Service, 2005, accessed on February 26, 2016, <http://www.nps.gov/nhl/fnd/statelists/ca/Eames.pdf>.
- 8 The GCI undertook climate and environmental monitoring of the site between 2012 and 2015.
- 9 These eucalypts are thought to have been planted by local developer Abbot Kinney in the 1880s.
- 10 Keith Yamashita, *op. cit.*, 13.

Conservation Plan and Restoration Work of the Ranzan Country Club Clubhouse

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Ranzan Country Club is a golf clubhouse built in 1961, designed by architect Taro Amano, a student of F.L. Wright. It was selected in 2014 for the **docomomo Japan 174**, a selection of 174 important modern buildings compiled by **docomomo Japan**. After completion, it underwent unplanned extension and reconstruction work a number of times. A new conservation and restoration plan began in 2010, and the project is now in the 5th stage. Following a master plan, construction work has been carried out whilst the clubhouse has continued in operation. The building is owned by a private company and has not been designated as a cultural property. The process of this conservation and restoration project serves as a leading example for similar projects in the future.

In this project, the original portions of the building will be left intact while the later extensions and alterations are removed, restoring it to original state while taking operational requirements into consideration. The plan is divided into three categories: safety/regulatory issues, managerial issues, and aesthetics/comfort. Prioritization of these three issues is decided partially based on surveys of club members.

As part of the restoration, studies were carried out including site surveys and detailed measurement surveys, as well as carbonation tests and destructive strength testing of concrete core samples. We also carried out interviews of the managers and documentary searches of the drawings, literature, contracts, etc. Through these preliminary studies, it was discovered that the building had undergone major extension and reconstruction works four times by 2010 losing a number of its principle elements, and that many of the surface finishes were added later to conceal wiring installed for newly-added facilities. One reason for addition of these additional finishes is that very few places were left to conceal newly-added wiring because the clubhouse structure itself composes the framework of the space.

Preserving the value of the overall building and its integrity for future generations, whilst keeping it in clubhouse use, demands the addressing of multiple issues, including improving the current method of operation, upgrading the equipment system, and enhancing seismic safety.

1. BACKGROUND AND OBJECTIVES OF THE STUDY

In recent years, discussions on the conservation of Modern Movement architectures have been active and the number of examples of restoration and utilization of such architectures has also been increasing. The conservation and repair work of modern architectures has the following features: in most cases, the buildings have not been designated as a cultural property; the buildings

are still in active use; various designers, not just conservators form part of the team. *Ranzan Country Club* was designed by architect Taro Amano, and built in 1961 as a clubhouse for the golf course. In 2004, it was selected for the **doco-momo Japan 174**. The needs the clubhouse must meet, and the way it is used have changed over time, and in order to respond to these changes, the clubhouse has been extended and reconstructed several times. As a result, the clubhouse, which people have continued to use while its functions and area have been expanded, has deteriorated due to aging of its structure, and has developed issues concerning the provision of facilities, which have not been solved by the extensions and reconstruction. It must be emphasised that this project is an independent conservation and repair work of a private company owned building, which is not designated as a cultural property. As such it was not eligible for public funding or subsidy. It is a long-term project started in 2010, and the 5th phase of the project is now in progress.

2. OUTLINE OF THE SUBJECT OF STUDY

Ranzan CC has one floor under ground and three floors above. It is constructed of reinforced concrete and steel, and is a golf clubhouse building with a total floor area of 2000m². The design emphasizes horizontal lines through deep eaves and balconies with a central circular core that penetrates through all the floors and emerges at the roof top. There are top lights on the roof top that give a rhythmical impression to the appearance, and become elements that create character both internally and externally. The circular core is placed in the centre of the building's plan building to demarcate a large space. Wet areas are placed around the arc wall of this core. The arc walls support the overall horizontal force; therefore, slender steel pillars can be applied around the ceiling in the second floor. As the result, continuous openings have been appeared, giving a sense of extremely high openness.

Taro Amano, the designer of the clubhouse, was one of Japan's leading post-war architects, and is known for having studied under Frank Lloyd Wright. He graduated from *Waseda University* in 1945, and joined *Kajima Corporation*. From 1952-1953 he was a *Taliesin Apprentice* in the USA. Then in 1955 he became an assistant professor at *Kogakuin University*. During this period, he established an architect's office and began architectural work. In 1964 he became a professor of *Tokyo University of the Arts*.

3. OUTLINE OF THE CONSERVATION AND REPAIR WORK

The project's policy is to reproduce the building in its original form as much as possible and thereby recreate the charm of the building, and maintain its traditions. The work was scheduled to be carried out in 12 consecutive closed days in off season. Extra closed days could be scheduled, but would have disrupted



FIGURE 1. Taro Amano, Ranzan Country Club Clubhouse, Saitama, Japan, Exterior View. © Shiraishi Kensetsu K. K, 1962.

the functioning of the club. Thus, the work had to be packaged into small sections, and the overall project became a long-term one. Every year, after completion of each section of work, the reactions of members were observed, and the plan was reviewed, before the next year's plan was finalised. Details of the work are considered in three separate categories to make issues clear: safety and legal perspectives; business management perspective and aesthetics and comfort. Also, through obtaining cooperation with a construction company that built the original clubhouse building, a case study on a relationship between process of a long-term work project and its cost was conducted.

4. CONTENTS OF SURVEY

The conservation and repair work project of *Ranzan CC Clubhouse* started in 2010, with a preliminary survey, and the policy of the overall project plan was determined in 2012. The survey contents were on-site actual measurement, documentary search, sampling survey and seismic examination. Also, in considering future utilization policy and prioritization of work items, surveys of club members were conducted.

As the result of the actual measurement survey and documentary search, it was discovered that the building had undergone major extension and reconstruction work four times by 2010, and that it had lost a number of its principle elements. The floor area had been increased to 700m². The interior and exterior design of the building had been marred by the following changes: 1) loss of parts

of walls removed in order to extend the building, 2) change of window frames on north side from wood to aluminium sash, 3) loss of texture of wooden part due to painting, 4) the addition of non-original lighting equipment such as chandeliers, and air conditioning equipment.

To access seismic performance, and examination of the current building was compared with of structural drawings, a destructive test using samplings was carried out, and investigations on reinforcement arrangement within building frame by RC radar were conducted. The destructive test confirmed that concrete and reinforcing bars within the building frame, as well as the steel frames of roof structure had sufficient strength. The RC radar confirmed that the reinforcement arrangement within building frame was made in accordance with the original blueprints. Structural analysis showed that the structural resistance met performance requirements, but the eccentric core rate exceeded the standard value, so seismic reinforcement work was necessary to correct the eccentricity.

5. CONTENTS OF THE WORK

The work has been conducted in 4 phases so far. Phase A, in 2012, comprised renovation of the front desk, cloakroom area and shop. The front area retained little original historic fabric. The shop was relocated to the area in front of reception on the first floor. This improved the orientation and operational efficiency of

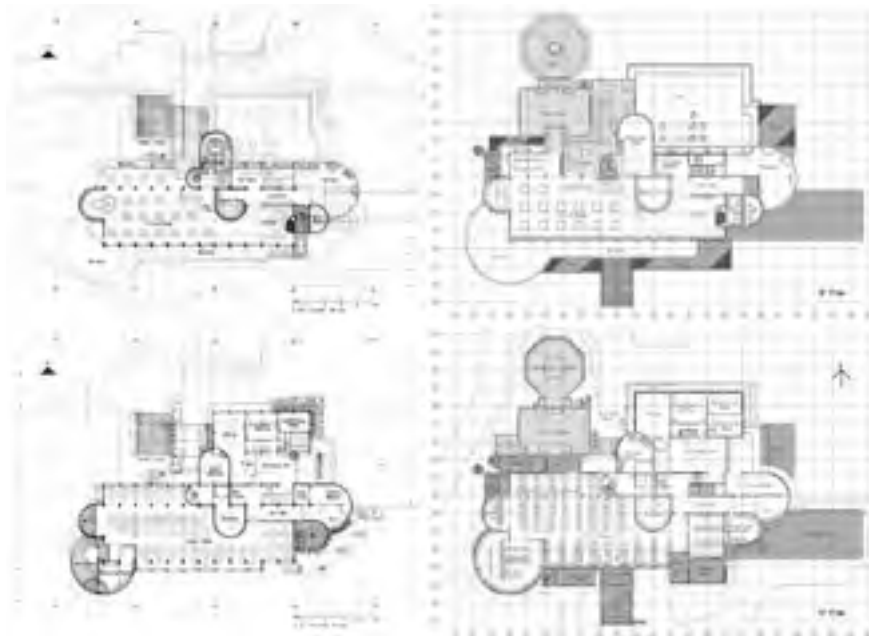


FIGURE 2. Ranzan Country Plan. The left side is completed at that time. The right side at the time in 2010. © Amano Yoshiwara and Partners, Architects, now owned by Meguro architecture laboratory.

the counter. It also allowed the space where the shop had been to be turned into an intimate chat corner. At the same time, it was found that original top lights remained above a non-original false ceiling over the front desk, so the ceiling was removed and the original top lights were restored.

In Phase B in 2013, the original appearance was reinstated by reproducing the finish of the floor, walls and ceiling of the conversation lounge. The floor finish of the entire building at the time of its completion was parquet timber, but this had been severely damaged shortly after the completion, by metal spikes on golf shoes. It had therefore been changed to carpet. However, current golf shoes mainly have soft spikes, making it possible to put a wooden floor back. A sample area was installed to confirm that this was practical, and to act as a reference for future policy. Also, tests were carried out to assess the possibility of peeling off the thick paint film from wooden elements which had not been originally painted, and assess the impact of this work and its costs. The conversation lounge was converted into a memorial room, to exhibit the history of the club. Furthermore, since the lounge had been narrow and the utilization was low, a trophy case and benches which formed a non-original partition between the lounge and the corridor were removed, and it was decided not to reproduce the original wooden lattice and benches. This allows the lounge to function in an integrated manner with the corridor. In Phase C in 2014, because of the success of the reproduction of the floor finish and paint removal in Phase B, these aspects of were carried out throughout the second floor. Also, chandeliers which were installed throughout the second floor after the building was first constructed were removed, and by utilizing small holes left after the removal, small downlights were added as supplemental lighting, to the original lighting fixtures which were reproduced. In addition, furniture and screens for a small dining room were reproduced. Seismic reinforcing work to recover the eccentric core rate of the second floor was conducted: steel frames which could be inserted within the framework of the existing wooden fittings were made.

In Phase D in 2015, in addition to the reproduction of area around pantry on the second floor, new furniture was added to increase the utilization of the lounge. The pantry could not be fully reproduced, as the kitchen is currently located in the extension building, which is different from the original location. On the assumption that the kitchen will be moved to the original location later, reproduction of these elements was left until this occurs.

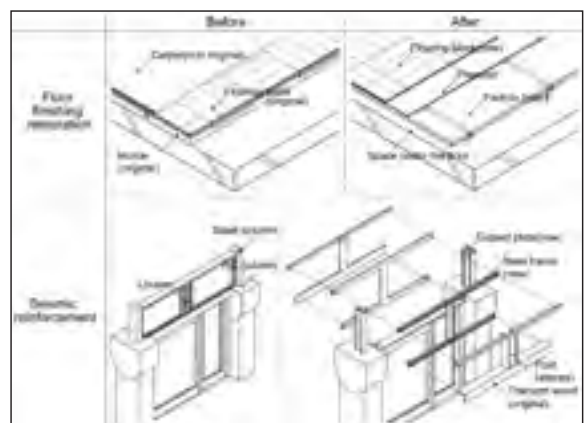


FIGURE 3. Renovation of floor detail and seismic strengthening detail.
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6. SOLUTION TO CONSERVATION METHOD

Contents of each phase of work can be classified in one of 3 ways (A) no change necessary – reproduction to exactly replicate the original; (B) reproduction based on the original design, partial changes were applied; and (C) changes or additions to the original design.

Type (A) works include the ceiling above the front desk and top lights, treatment of the wooden furniture and wooden part of its interior (where the paint film applied later was peeled off to restore the original, allowing reproduction of the original surfaces finishes).

Type (B) works included reproduction of flooring. Many flooring blocks were significantly deteriorated, their mortar foundation was problematic because of its weight and impact on seismic performance. Further, removal of the mortar allowed installation of a false floor and, by arranging wires under the floor, flexible furniture layout became possible. Without changing floor level.

Type (C) works include the front desk counter on the first floor, and fixtures that were constructed to hide the air conditioner, and furnishings on the second floor. As for the front desk counter on the first floor, the cross section dimensions were taken from the original drawings for the design work and ingenuity was exercised to avoid disturbing the harmony of the space, whilst changing their shape to suit current operational requirements.

7. SUMMARY

“A” is a method to recover both the usage and performance, of the time of the completion of the building, where this is compatible with current usage. It was also necessary to consider the implications of recovery of these elements on other parts of the building. Conservation and problem solving were compatible and thus it is possible to restore purely.

“B” requires the justification of performance improvement. In flooring and screens in the small dining room, a composite problem solution was justified by improved seismic performance and use.

“C” responds to uses that were not intended or facilities that did not exist at the time of the first completion of the building, and where partial solutions had been put in place. When we see the above mentioned methods shown in table 1, method C is often used for space, equipment and furniture where the uses have changed. Method B is generally used for construction elements.

This paper discussed the methods of conservation and repair work for *Ranzan CC Clubhouse* and its original furniture. This was a long-term and phased programme of work, which took into consideration the need to keep disruption of the commercial operation of the building to a minimum. It also conceptualised different approaches for retained and missing elements of the original fabric and implemented changes to satisfy new operational requirements while respecting

the harmony with the space. In the future there will be further issues to address when the removal of the extension will require reinstatement of more elements, including parts of the building skeleton.

TIME	PLACE	INTERVENTION CONTENTS	CLASSIFICATION
2012	Front desk	Change of the front desk direction	C
		Installing of the shop	C
		Restauration of the roof lights ceiling	A
	Cloakroom	Closing of the opening	C
	Conversation corner	Finishing carpentry and furniture setting	C
		Repair of the ceilings	A
	Lounge	Installing of the new furnitures	C
	Memorial room	Removal of the entrance door	A
2013	Memorial room	Restoration of the flooring block finishing	B
		Restoration of the lithin finish on the walls	B
		Installing of showcases and equipments	C
	Corridor in 2 nd floor	Change into the space integrated with the lounge	C
	Lounge	Floor finishing around the fireplace	B
		Restoration of the paint on the ceiling wood carpentry	A
		Removal of the trophy plates	A
2014		Dining room and lounge	Restoration of the flooring block finishing
	Replacement of the chandelier lightings to the downlights		C
	Restoration of the paint of wood carpentry		A
	Dining room	Restoration of the spandrel wall in the small dining space	B
		Seismic reinforcement in the transom of south façade	B
		Restoration of the ceiling light	A
		Redesign of tables and chairs	B
		Dining room for drivers	Restoration of the ceiling and ceiling light
Staircase	Restoration of the paint on the ceiling wood carpentry	A	
2015	Pantry	Restoration of the ceiling and ceiling light	A
		Restoration of the counter and the louver	B
		Replacement of the partition added later	C
	Lounge	Installing of the sideboard and furnitures	C

A – Restoration into the original state
 B – Partial change based on the original design
 C – Change of the original design

TABLE 1. Classification of the construction contents. © The paper's authors.

The Queensland Cultural Centre, Australia – The Listing of a Modernist Complex

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The Queensland Cultural Centre in Brisbane, Australia, designed by the architect Robin Gibson (1930-2014), is a complex of modernist buildings constructed between 1976 and 1988. It is the State's principal cultural venue and contains the Art Gallery, Museum, Library and a Performing Arts Complex. The group of low rise off-form concrete buildings, set amongst landscaped gardens and water malls, is an important example of intact late 20th century modernist architecture and an exceptional example of the work of Robin Gibson. The Centre was Gibson's most important project, embodying the defining modernist principles he developed and employed during his architectural career spanning almost 6 decades. In April 2014, days after the architect passed away, the Queensland Government released a draft master plan for the Centre. The proposal incorporated a set of commercially-driven alterations and additions to the buildings, including the construction of a pair of 30 storey towers that were to be funded by selling off the airspace over the existing buildings to private developers.

In August 2014 the Queensland Chapter of the Australian Institute of Architects nominated the Centre to be included on the State Heritage Register. Concerned that the Centre risked not receiving the attention necessary for the listing to go through, a campaign was begun by Kristina Gibson, the architect daughter of Robin Gibson, and her son Pascal Loschetter, an architecture student. The aim of the campaign was to increase public awareness and to provide support to the nomination. Professional institutions were notified, including **docomomo** Australia, who had it placed on their list of Heritage at Risk, and public support was generated by a successful Facebook page. The Department of Environment and Heritage Protection received an unprecedented 1200 letters of support for the nomination and on June 12, 2015, the Centre was included on the Queensland Heritage Register.

Since then the proposed draft master plan has been scrapped and a conservation management plan has been commissioned. This paper includes a description of the complex itself and a story of the campaign. It raises issues of listing living buildings with ongoing and changing needs, and the effectiveness of a listing in protecting buildings from inappropriate changes.

We would like to tell the story of the campaign to protect Robin Gibson's buildings at the Queensland Cultural Centre from the inappropriate changes proposed in a draft master plan in 2014 by the Queensland Government. In order to put this in context we shall provide some background on the architect Robin Gibson and a brief description of the Centre.

1. ROBIN GIBSON 1930-2014

Robin Gibson studied architecture at the University of Queensland, Australia. After graduating in 1954, he travelled through Europe and worked in London in the architecture offices of Casson and Conder, and James Cubitt and Partners. He returned to Brisbane in 1957 and set up his architectural practice. The office of Robin Gibson & Partners' contribution to Queensland's built environment is significant. From 1957 to 2013 the body of work included residential projects, churches, university buildings, office towers and urban projects. Some of the more important projects include: Mayne Hall, Central Library and

the Biological Sciences Library at the University of Queensland; Library and Humanities building, Griffith University; Post Office Square, Queen Street Mall, Wintergarden building, Colonial Mutual Life building and 111 George Street; St. Stephens Cathedral Renovation; Queensland Pavilion 1988 World Expo and the Queensland Cultural Centre.

Gibson and his body of work has been highly acclaimed and recognised through numerous awards including: 1968 Royal Australian Institute of Architects Building of the Year award, Kenmore Church; 1982 RAIA Sir Zelman Cowen Award, Queensland Art Gallery; 1982 RAIA Canberra Medallion – Belconnen Library, ACT; 1982 Queenslander of the Year; 1983 Order of Australia; 1986 Honorary Doctorate – Griffith University; 1988 Advance Australia Award; 1989 RAIA Gold Medal for outstanding performance and contributions; and the 2007 25 year RAIA award for Enduring Architecture.

His greatest architectural achievement, and that of which he was most proud, was the Queensland Cultural Centre, the complex of buildings around which this story evolves.

2. QUEENSLAND CULTURAL CENTRE

Description

The Queensland Cultural Centre (QCC), located in Brisbane on the south bank of the Brisbane River opposite the central business district, is the state's principal cultural venue and an important example of late 20th century modernist architecture. The complex, initially won as a competition in 1973, was constructed between 1976 and 1998 and incorporates the Queensland Art Gallery (1982), the Queensland Performing Arts Centre QPAC, (1984), the Queensland Museum (1986), the State Library and The Fountain Room Restaurant and Auditorium (1988). QPAC contains a 2000 seat theatre, an 1800 seat concert hall, and 2 smaller theatres of 850 and 300 seats. The low-rise complex is set amongst open landscaped spaces stretching for over 450 metres on the banks of the Brisbane River with the distant backdrop of



FIGURE 1. Robin Gibson Architect, Queensland Cultural Centre, Brisbane, Australia, 1988. Aerial view. © Dick Stringer Photographer.



FIGURE 2. Draft Master Plan, Queensland Cultural Centre, Queensland Government, Brisbane, Australia, 2014. © Arts Queensland, 2014.

the Taylor Range. A fundamental concept of the design was the relationship to the river and the natural environment. Gibson saw the Cultural Centre as an opportunity for “amalgamating a major public building with the river” with the external landscaping and built form carefully articulated to step up from the river. The comparatively low form of the complex was consciously designed so that the profile of the Taylor Range behind would remain visible when viewed from the city.

The complex is unified by a consistent architectural expression: repetitive cubic forms established through the use of a consistently applied and well resolved three-dimensional grid; monolithic, sand-blasted off-form/shutter work concrete of superior quality¹; extensive use of deep shaded glazing; an elegant, expressed primary structure of rhythmic, regular elements; internal and external integrated planting and landscaping; and external public spaces with direct relationships to internal spaces.

Modifications

With the exception of The Fountain Room restaurant and auditorium, each of the buildings within the QCC retains its original use. Subsequent modifications to cater for changing requirements have altered the buildings within the complex to varying degrees. The most significant of these was the Millennium Arts Project, which provided for a refurbishment of the entire complex. The major refurbishment of the Library, carried out by other architects in 2006, included substantial alterations to both the interior and exterior, including the removal of the stepped terraces to the river, replaced by a large extension. The original building has been rendered unrecognizable. New entrances to QAG and QM were designed by Gibson and completed in 2009.

Draft Master Plan (DMP)

The office of Robin Gibson and Partners was closed in May 2013 and Robin passed away in March 2014. Within days of his death the Queensland Government released a draft master plan proposing a raft of commercially driven changes in and around the buildings. The 72-page document proposed a pair of 30 storey towers to be built over the complex, a 1500 seat theatre to be inserted into open space, a 5 storey science centre to be built over part of the external water mall, and over 100 modifications to the fabric and spaces of the site. The funding for the changes to be provided by selling off the airspace over the complex to private developers for the construction of the towers.



FIGURE 3. Robin Gibson Architect, Queensland Art Gallery, Brisbane, Australia, 2012. © Martyn Milner Photographer.

Coupled with the overall lack of publicity was a shorter than usual consultation period of 28 days which was extended at the insistence of the Queensland Chapter of the Australian Institute of Architects. The release of the DMP was announced in a small article in the local newspaper and was picked up by a journalist for one of the national newspapers. Until that point there were very few people who were aware of the DMP. He alerted the family in May and requested information for a forthcoming article in the national newspaper that was primarily concerned with the issue of moral rights. A series of newspaper articles then followed, bringing the issue to the attention of a wider Australian public.

Moral Rights

Amongst the principle issue of commercial overdevelopment of a cultural asset, the articles also raised the issue of the family invoking their moral rights over the proposed changes to the buildings. Over the years my father had not been consulted over a number of changes to the buildings and had been unhappy with the results and he had at times threatened to invoke his moral rights. To briefly touch on this complex issue, under the Copyright Act of 2000 there is something called the Right of Integrity. This is the creator's right not to have his work subjected to derogatory treatment, which means doing anything in relation to the work which prejudices the creator's honour or reputation. This could include actions such as distorting, mutilating or materially altering a building. I wrote to the Government in June 2014 expressing my concern that his moral rights had not been addressed in the DMP, arguing that the scope and scale of the proposed alterations to the buildings and precincts so materially altered the buildings that it could arguably be defined as derogatory treatment. The absence of written notice of the intended changes to the buildings or consulting him in good faith about the changes also potentially represented a failure to respect his moral rights as the creator of the buildings. At no stage in the preparation of the DMP was he informed of the proposed changes to the buildings. Curiously he was approached by QPAC in October 2013 on another matter of a minor extension but no mention was made of the proposed master plan. A response letter from the then Minister for Arts stated that the government was "committed to ensuring moral rights are addressed with dignity and respect throughout the process". Moral Rights can endure for 70 years beyond the physical life of the author and can be passed to a legal personal representative or another lawfully appointed person.

Campaign Stage 1) Letters of Objection to the DMP

At this point I realised that it was important that as many people as possible were made aware of what was going on so I emailed contacts alerting them to the DMP and asking them to write to the Government to express their concerns. They received over 75 written submissions from professionals and concerned citizens objecting to the proposals of the DMP. The Government's response was

that they would incorporate the concerns raised into the final stage of the Master Plan, which was already under consideration.

Campaign Stage 2) Listing Nomination Letters of Support

In the meantime, concerned that the QCC was at risk of further inappropriate changes, the Queensland Chapter of the Institute of Australian Architects was preparing a submission for the QCC to be included on the Queensland Heritage Register. With the draft master plan programme forging ahead it was vital that the buildings be listed in order to afford some protection. This was the first time that the Institute had instigated such a nomination. The Institute's nomination was made to the Department of Environment and Heritage Protection on August 7, 2014.

I had been informed by contacts working in the heritage sector that it would be useful, if not essential, that the listing nomination be reinforced by letters of support. Again I circulated emails but Pascal suggested that we would reach a wider audience through social media so we launched the Facebook campaign in mid-August 2014. This was named the QCC Campaign and its aim was to protect the buildings of Robin Gibson at the Complex. Within 24 hours we had over 16,000 views and it was obvious that there was a lot of concern over the intended DMP. It continues to run strongly with over 700 followers from around the world.

Through emails and Facebook we asked people to send in letters of support for the listings nomination to the Department of Environment and Heritage Protection (DEHP). The heritage organisation called Brisbane Heritage placed it on their website and set up an online support letter. We had 6 weeks until the deadline of September 19. A staggering total of over 1200 letters of support were received by the DEHP. This was an unprecedented record and a very encouraging result. The other encouraging event was the change of State Government on January 31, 2015. The newly elected government had been outspoken against the DMP and supportive of the Listings campaign.

In February 2015 the DEHP recommended that the QCC be included on the Register and it would now be over to the Heritage Council to make the final decision. The Heritage Council, an independent statutory body of 12 representatives of various industries and interests throughout the State, decides whether or not a place is entered into the Queensland Heritage Register. In making their decision they consider the application, written and oral submissions, and the recommendation of the DEHP. The Council can make a decision that differs from that of the DEHP. It went to Council on May 1st but the decision was deferred at the last minute during the meeting till later in the year.

Campaign Stage 3) Letters of Concern to the Heritage Council

Following the surprise listing decision deferral we again asked people to contact the Heritage Council and express their concern and urge them to list the Complex. This was a very short turning around time, I know many letters were submitted however I have no record of the exact number.



FIGURE 4. Robin Gibson Architect, Queensland Art Gallery, Brisbane, Australia, date unknown. © Photographer unknown.

The next meeting of the Heritage Council was June 12, 2015 and the decision was taken to place the QCC onto the Heritage Register.

However, the story does not finish there. The good news is that the DMP has been scrapped, though there will inevitably be a revised plan that will emerge. There had been a scheme at the Museum to insert a new gallery into important open space before the CMP came into effect but we understand this project will not proceed.

Conservation Management Plan (CMP)

Throughout the process the AIA had been urging the Government for the need for a CMP carried out by those with the correct experience in a project of this scale and importance. There had never been any mention of a CMP in the DMP. Since the listing the Queensland Government through Arts Queensland has commissioned a CMP. A call for expressions of interest for a Specialist Heritage Consultant to develop the CMP was made in August 2015 and the Brisbane firm of architects Conrad and Gargett were selected from a number of tenderers. It is expected that the CMP be finalized by December 2016. Until it is completed there are supposedly no plans for any work to be carried out on the complex.

Roundtable

The Government is currently instigating the Cultural Precinct Design and Heritage Roundtable. This will be an informal roundtable that is to provide independent advice to the Premier and Minister for the Arts throughout the develop-

ment of the CMP. It is a limited life body to conclude once the final CMP has been endorsed by the Department of the Premier and Cabinet, however its term may be extended to advise on design and heritage issues related to future planning of the Cultural Precinct, including a review of the 2014 draft master plan. It is to be chaired by the Queensland Government Architect and will comprise a number of people who will bring their expertise to the discussion.

In December 2015 Kristina was recommended for consideration for appointment as a member of the Roundtable. An informal promise has been made that she will be on the panel but to date no official confirmation has been received.

We would like to end the story on an optimistic note. Through the dedication, hard work and sheer resolve of a large number of people the buildings of Robin Gibson at the QCC will be treated with the proper respect they deserve. The great irony is that my father, who considered himself a modernist architect and somewhat wary of the heritage movement, would be very amused to think of his buildings as being listed.

NOTES

- 1 The off white concrete was poured in situ using precise formwork and then sandblasted to provide the final finish. Rigorous quality control was critical for a successful outcome. The consistent quality of the concrete finish was achieved by securing a guaranteed supply of the principal materials, white cement from South Australia, fine white sand from Stradbroke Island near Brisbane, and aggregates from the Pine River also near Brisbane. To maintain overall consist-

ency of the various buildings comprising the Centre the desired concrete colour was reset by the architects for each contract using approved sample panels and strict guidelines. The strict control of the materials, the consistent quality of the concrete and the exacting supervision of the building process has meant that there has been very little staining and damage of the concrete. The building has weathered remarkably well over the last 30 years.

Conservation and Regeneration Plan of a Former Industrial Complex in Rome

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The complex of the former *Pantanella* pasta factory, in *Via dei Cerchi* in Rome, is an urban “large object”, located between *Circus Maximus*, *Piazza Bocca della Verità* and the *Velabro*, near the Tevere River and the archaeological site of Colosseum and Palatine Hill.

Among the most important industrial buildings located at the centre of the capital of Italy, the former pasta factory was built starting from 1879 and abandoned in 1929, when new larger and more modern headquarters were built on *Via Casilina*, near *Porta Maggiore*.

Later, the complex was purchased by the municipality and renovated (1928-1930) to become in part the Museum of Rome, in part a warehouse for the Royal Opera House (today the Rome Opera Theatre). During the restructuring beneath its foundations, an important sanctuary of the god Mithras, still little studied, was discovered; and in this period many important architects produced ideas and projects on the building and its surroundings, including Gustavo Giovannoni, Clemente Busiri Vici, Antonio Munoz.

Today the former pasta factory *Pantanella* is the focus of new hypotheses of transformation. The site embodies many of the changes that have occurred during the 20th century in the most central areas of Rome. The paper aims to describe the results of a research project of the University of Trieste, finalized to carry out a feasibility study for the restoration and regeneration of the complex, as well as a first hypothesis of conservation plan, that will be discussed with the Administration and the Archaeological Heritage Authority, in order to launch a joint project. The research aims to achieve the best use for the complex and establish its value as built heritage of 20th century within an archaeological classic site of great importance.

1. BETWEEN MITHRAS AND “ROMA OPERA APERTA”: A PLACE AS PALIMPSEST OF THE CITY LIFE

On February 8, 2015 the Italian Ministry of Culture presented in the set design laboratories of Rome Opera House (housed in the former pasta factory *Pantanella*), the *Fabbrica dell'Opera* [Opera Factory] project, a training school for young people who wish to work in the performance sector. This project is part of “*Roma opera aperta*” [Rome Open Opera] initiative, aimed at revitalizing areas of the city through the cultural activities of the Rome Opera.

The use of this location for the presentation was a positive signal for the permanent retention of storerooms and set workshops for the Opera in this central and strategic area of the city: they had found their home in the old industrial building in the mid-1930s, but their continued location here had recently been questioned the *Pantanella* industrial complex occupies the entire block between the *Circus Maximus* and the sacred area by the *Portus Tiberinus*, with the exception of the south-west corner, where the complex of the *Basilica* of Santa Maria in Cosmedin is situated. It was developed through a sequence of additions and modifications between 1880 and 1928, when production of pasta was moved to the newer and less central plant in *via Casilina*. At this date the area was purchased



FIGURE 1. The main front on the Circus Maximus of former Pantanella complex. © Alessandra Marin, 2015.

by the City of Rome to be restructured and redirected to different public purposes: Opera workshops shared the space with the new “Empire Museum” (which was closed in 1939, and after the war became the “Museum of the City” at Palazzo Braschi, in Piazza Navona). The premises also housed electoral and enlistment offices and, later on, proposals were put forward for its transformation into the seat of *Accademia Vinciana* or other educational and public activities.

This new use promoted a return to a far past for the area, as it is believed to have been an area dedicated to trade and other important public functions – the *carceres* (prisons) of *Circus Maximus*, the *Ara Maxima* sacred to Hercules, a court – in 2nd century AD. In the middle of the 3rd century a huge *mitreo*, an important underground structure, was constructed. Forgotten for centuries, in the 1870s the pasta factory *Pantanella* was built above it and it was rediscovered in 1930 during the adaptation works to the new public functions.

The study promoted by the University of Trieste on the area of Circo Massimo and the former pasta factory *Pantanella*, which started in the summer of 2015, aims to draw up a feasibility study for the return of the entire complex to full public use. It draws on historical and archaeological knowledge of the structure, its functions and forms, in combination with an examination of the correct conservation approach, and acknowledges the objectives of the preliminary draft of an integrated enhancement process.

At this point the complex was a place identified for disposal (and probably for sale) by the Capitoline Municipality, Rome Opera House, etc. It was a potential future “black hole” in the historical and archaeological heritage endowment of the area.

It was only in January 2016 that official proposals for the future of the former *Pantanello* radically changed. New projects of Rome Opera Aperta and other initiatives by the Archaeological Heritage Authority were announced. This positive change of direction leads us to reconsider the work already done to envisage new use scenarios and new guidelines for the conservation and the management of this historical heritage, provided with renewed vitality. However, the historical description remains valid.

For this reason, this text describes only the chosen working method, reserving to give more details on the results at a later date.

2. A SHARED WORKING METHOD TO PROTECT AND ENHANCING A LAYERED AND COMPLEX HERITAGE

The place is strongly integrated in an urban area of great importance from archaeological, touristic and infrastructural-logistics viewpoints (the area is Rome’s “gateway” to Ostia and the sea). It is also a place with a strong identity because of the number of important events which have occurred at the Circus Maximus, which may continue to be a significant venue.

Therefore, the conservation plan for must recognise the stratified and internally interconnected built system, but must also pass through three stages:

1. The reconstruction of the “operating conditions”, related to plan forecasts, projects in progress, technical verification of what the involved areas are (inside the complex and around it) and who are the ones living and managing them.
2. The analysis, through active listening actions, of the different types of users of the sites, in order to assess the strengths and weaknesses of the existing situation and the opportunities that lie ahead, as well as possible critical issues to which the management of the site should respond, to preserve and put a greater emphasis on the values recognized.
3. The preparation of a preliminary document to balance requirements relating to restoration and conservation of buildings in the complex, with requirements of the activities that take place there and that are believed to be intrinsically linked to their history. These activities are to be protected and enhanced together with the “container”.

The research has presently activated the first two phases, and is waiting for the authorization from the Rome Archaeological Authority to perform other activities, both diagnostic and experimental, of different restoration approaches within the complex.

The elaboration of a pre-feasibility planning study for an integrated development and public enjoyment of the site, started with the identification of a complex panel of participants, involved in the phase of preliminary hearing.

The first need was to define a mapping of the “tenants” of the block of the former *Pantanella*. The structure of the interview, in some cases carried out with video recording and not “statically”, but visiting the spaces of the premises, was aimed at identifying different values – monumental, historical, identity, economic – recognized to the site by the “tenants”, and which, in their view, “outsiders” might be interested to perceive and share.

The second phase (now in progress) consists of building a map of the “outsiders” interested in the exploitation of this context, with particular reference to those identified as “neighbours” that is, those who live and work nearby and use the spaces next to the former pasta factory. This phase is useful to understand whether and how a different use, a greater accessibility, a possible management of the complex extended to other participants can, in the city’s aspirations, transform the protection and enhancement of the former *Pantanella* into a broader opportunity to improve conditions of this part of the city. This would be achieved by integrating and supporting the network of relationships present in this part of the archaeological and monumental centre of Rome.

This confrontation with the participants of possible conservation and enhancement of the former *Pantanella*, is then superimposed over the construction of a clear, although synthetic framework of archaeological heritages present in the immediate vicinity and their values. Such framework was reconstructed with the help of officials of the nearby archaeological sites, especially the Palatine Hill and the *Circus Maximus*. On the basis of this survey we are now collecting and evaluating further information about current uses of the cultural heritage of the area, critical to establish one or more scenario for the potential establishment of the ex *Pantanella* complex as a hub of tourist itineraries and a venue that not only “shows”, but “produces” culture. This renewed vitality will be essential for its active protection, and will require appropriate forms of management and integrated conservation.

Following this direction, we believe that the case study could demonstrate a possible experimental application of scientific methods of modern buildings restoration on a stratified context, in compliance with the consolidated methodologi-



FIGURE 2. The inner courtyard and the building site of the Rome Opera Theater Laboratory of scenography.
© Alessandra Marin, 2015.



FIGURE 3. The Laboratory where the scenery of the Rome Opera Theater are painted. © Alessandra Marin, 2015.



FIGURE 4. The view of the Circus Maximus and the Palatine Hill, from the terrace of former Pantanella complex, once used for drying pasta. © Alessandra Marin, 2015.

cal criteria. These methods will be related with the different participants involved in the process of restoration and rehabilitation, including among them the supervisory bodies, professionals and construction companies.

The definition of guidelines, to guide the conceptual process and the intervention of restoration, should provide a strategy for conservation which encompasses the complex past and current circumstances. For this reason, the guidelines will define a shared critical approach, similar to those applied to ancient architecture, embodying the principles of maximum retention of existing historic fabric and minimal intervention, and envisaging a subsequent detailed plan for ordinary maintenance.

The purpose of the research is therefore to define a model of intervention characterized by methodological rigor and high scientific and technical quality, able to act as a reference in contexts of layered architecture, marked by a prevailing presence of works (or an overall reconfiguration) attributable to the 20th century.

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The Modern Campus: Landscape Identity and Architectural Adaptation

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In their most recent iteration as self-consciously global, explicitly competitive, teaching and research enterprises, universities have conceived their campus environments as machines for intellectual innovation. In the early 19th century Thomas Jefferson appealed to a very different idea, describing his University of Virginia Campus plan as an “academical village”. In that period most new universities looked to repeat some variation of the village green ideal or the English college cloister. In contrast, campuses that were developed around the world across the 20th century drew upon a varied range of architectural and planning models from Ernest Flag’s palatial complex for the US Naval Academy at Annapolis, Maryland (1901-1908), to the megastructure Bielefeld University Campus (1968-1979) in the German state of North Rhineland-Westphalia, and Charles Moore and William Turnbull’s Italian hill town concept for Kresge College (1965-1974) at the University of California, Santa Cruz. Arguably no period has produced a richer set of propositions about intellectual community and collegiate life than the post-WWII decades, with exemplars including Basil Spence’s Sussex University in England (1959-1971); John Andrew’s Scarborough College in Canada (1963); and UNAM campus Mexico (1949-52).

The modernist campus ideal was so potent in the post-war period that the concept escaped the confines of the university and was applied to a range of coherently planned and landscaped environments, including technical training complexes, industrial and biomedical research centres, business parks, governmental complexes, hospitals, new religious environments and even airports. The campus concept suggested the possibility of creating a comprehensively planned environment. More than a distinct terrain for institutional activity, it promised aesthetic and programmatic control realised at the landscape scale. But

despite this expanding definition of campus, the university and college campus remained the privileged site for creating total communities *de novo* in this period.

Given the importance of the campus model to Modernism, and the relative lack of scholarship undertaken to date on the type, we are very pleased that the 14th *International docomomo Conference* session proposal “The Modern Campus: Landscape Identity and Architectural Adaptation” generated such great interest, with 27 abstracts submitted for consideration.

The group of 4 papers that we selected, and that have been developed for the session, showcase the breadth of research that is now underway about the creation, conservation and adaptation of the modernist campus. The papers are varied in their international orientation, historical approach, and conservation implications. But likewise they possess common threads. The presence of a series of paper proposals focused on Latin American campuses was one of the more pronounced tendencies among the submissions. We selected 2 of those. Mônica Camargo’s paper explores the impact of the idea of the Core, which Josep Lluís Sert introduced as the theme of CIAM VIII in 1951, on the development of the University of São Paulo (1959-1963) campus. Camargo suggests moreover, that 2 key projects designed for that campus had a catalytic influence on Brazilian architecture in the 1960s. The green fields São Paulo campus acted as a proving ground for late modernist ideas in Brazil. Andrea Salas and David Francis, likewise focus on a campus that had significant nation-building aspirations, the *Ciudad Universitaria de Caracas*. But instead of focusing on the architectural and landscape ideas that informed the campus they focus their attention on the considerable conservation challenges and pressures that confront this World Heritage-listed site. The campus now carries several times more students than it was planned for, and suffers the depredations one would expect from such intense use.

John Allan’s paper on the adaptive reuse of St. Peter’s Seminary near Cardross in Scotland, is a kind of limit case for the campus session. This is true in the sense that the Seminary stretches the conventional definition of campus and in that the architectural project Allan describes is a test case for the limits of adaptive reuse generally. The powerful concrete seminary buildings, used for just 15 years for their original purpose, share something in common with the University of São Paulo projects examined in Camargo’s paper, in that they were focused around a space of conviviality, or (quite literally) communion. But until quite recently the whole complex seemed beyond adaptation, a ruin in the landscape on the brink of total oblivion. The project led by the arts charity NVA to revive the complex is a remarkable act of optimism that takes its cues from the social and cultural idealism embedded within late modern architecture generally.

Jon Buono’s paper takes a very different approach to the 3 case studies discussed so far. Buono examines at the patterns of campus development in the United States in the 20th century from a quantitative perspective, noting both the rate and magnitude of expansion on American campuses. What becomes

clear is that the whole post-war period and especially the decades from the mid-1950s until the 1970s really dwarfed earlier waves of development. While many American campuses maintained a traditionalist architectural stance through that period there is, nevertheless, a great legacy of late modern architecture and landscape design on the American campus. As the wave of recent demolitions of buildings from this period highlights, there is a pressing need to understand this legacy better and promote its care and sensitive adaptation. Others remain threatened or unresolved. The recent redevelopment proposal for the Orange Coast Community College in California, that threaten buildings designed by Richard Neutra and Robert Alexander and landscape design by Garrett Eckbo, is a clear case in point.

The session's focus on campus architecture, landscapes and planning is timely. Discourse on 20th century architecture and on conservation has recently renewed its focus on the work of late modernism and in particular the issues and ideas connected with brutalism. All the papers document campuses in varied ways: whether through analysis of extant material fabric; data indicating broader economic and historical trends; social and architectural histories; or spatial and morphological mappings linking the campus to the urban context.

We are very pleased to be a part of the 14th *International docomomo Conference* (2016) on the theme "Adaptive Reuse: The Modern Movement Towards the Future". We trust that this session will reveal a snapshot of international scholarship and practice that aims to carefully consider the spatial, material, social and design qualities of modern campuses so as to better inform conservation and adaptation responses that are sustainable for future generations. Developing a richer understanding of the breadth of architectural expression, planning and landscape concepts, and pedagogical thinking that informed this period of modern campus development is vital and timely. For in recent decades universities, worldwide, have embarked upon ambitious physical expansion plans using architecture as a means of repositioning themselves in a competitive global educational marketplace. And as a consequence, important modern sites and concepts are being thoughtlessly eroded by poorly conceived expansion and reconfiguration plans.

US Public College Expansion & Development, 1933-76

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This paper examines the modern legacy of higher education facility construction in the US relative to public investment. During the mid-20th century, American state colleges and universities were radically transformed through federally-funded programs which responded to the Great Depression, WWII, and population growth. However, research to date has primarily focused on individual buildings or campus districts from the era. This paper pursues a new historical understanding of the period's campus development through parallel analyses of national economic data and construction records of selected institutions. The use of such resources substantiates broader interpretative conclusions on the growth patterns common to American collegiate campuses and reveals the importance for study of serial programs in addition to singular architectural investigations. As the large post-WWII inventory of buildings becomes eligible for inclusion in the US National Register of Historic Places, the need for contextual data has gained greater importance.

1. INTRODUCTION

The modern legacy of college construction in the US shares a direct relationship to public investment. Since the first chartered state college in 1785, the inventory of publically funded 4-year colleges has grown to include over 500 institutions, with the majority under the management of state governments. During the mid-20th century, these US campuses were radically transformed through federally-funded programs that responded to economic and societal changes. However, the majority of current research on campus architecture from the era has focused on the significance of individual buildings or districts. This paper pursues a new historical understanding of the period's campus development through parallel analyses of national economic data and construction records of selected institutions. The use of such resources substantiates broader interpretative conclusions on the growth patterns common to American collegiate campuses and reveals the importance for study of serial programs in addition to singular architectural investigations.

2. HISTORIC CONTEXT

In the years of the Great Depression, the federal distribution of funds through initially the 1933 Public Works Administration (PWA) and later the Works Progress Administration (WPA) had a significant impact in restoring the US construction market. Funds from both programs, allocated through state university systems, constructed thousands of public post-secondary facilities throughout the country. Notably, the PWA program had a secondary effect regarding construction practice. Use of the funds for public school buildings mandated fire-resistant

steel and concrete construction and may be regarded as the first national effort to modernize construction standards inconsistently adopted among municipalities. Although the educational projects of the New Deal were typically designed in the popular historicist revival styles of the day, the national promotion of modern building technologies on public campuses did contribute to the acceptance of modern design principles.

New Deal construction projects on college and university campuses began to wane by 1940 as federal funds were increasingly redirected away from civic improvements and toward defense facilities in response to looming international tensions. By early 1941, military conscription was enacted to prioritize the use of construction materials and effectively initiated a moratorium on private construction. Both the PWA and WPA programs were terminated in 1943. However, as national focus shifted towards WWII, some public campuses received federal funding for gymnasiums, auditoria, and dormitories to support a national network of military officer training programs.

Although college construction was largely dormant during the war, there was an underlying demand for higher education within the population. Towards the end of WWII, admissions began to greatly increase at post-secondary schools following the passage of the GI Bill in 1944 to provide funds for veterans to begin or complete their education. After the war, colleges and universities rapidly got back to the business of academic facility expansion. The 1950s experienced a great diversification of academic units and departments particularly in the physical and social sciences. This growth supported the development of specialized building typologies – among them multiple variations of industrial, agricultural, medical, and even domestic laboratories. At the same time, new investments in academic libraries and collections technology were made to support research capabilities. Space demands naturally extended to student housing, such that the 1950 Housing Act included funding provisions for new dormitories and faculty residences. By 1955, a system of mass higher education had expanded across the nation to accommodate nearly two and a half million students annually.

The second major era of government-funded university expansion began in the 1960s after passage of the 1963 Higher Education Facilities Act. The legislation authorized a 5-year program of federal grants and loans for classrooms, libraries, and laboratories in public community colleges and technical institutes, as well as undergraduate and graduate facilities in other institutions of higher education. 2 years later, those programs were incorporated in the broader Higher Education Act of 1965 as part of President Johnson's "Great Society" program. With passage of the 2 laws and reauthorizations, a major new general college building program began. By the end of the 1970s, the federal contribution to post-secondary education increased over 300% from allocations in the 1950s¹. However, this historic trend was severely impacted by the economic crisis of the 1970s and the 1973 oil crisis.

3. CENSUS CONSTRUCTION DATA

From 1878 to 2012, the US Census Bureau produced annual statistical compendia summarizing the social, political, and economic organization of the United States. Among the hundreds of data series, “Construction Contracts Awarded” provided annual values for the mid-century period. The series compiled the annual quantity of new projects and correlated it to the value of construction (dollars) and total area (square footage). The US Census Bureau sourced this data from the F.W. Dodge Corporation. Founded in 1891 by Frederick Warren Dodge, the company pioneered statistics subscription services for the burgeoning national construction market. The census values were further differentiated per residential and non-residential use. The non-residential sub-category “Educational” is the source for the following observations. This data is not specifically tied to public college and university construction, but it may be considered generally representative for educational facility investment during the era of government funding. Based on analysis of the data, the following changes in construction volume are noted relative to the economic conditions and programs detailed in the historic context.

Although the US stock market crash occurred in late 1929, a severe drop in construction for educational facilities was delayed. Figures for the year 1930 continued to reflect increases in educational square footage. The category reached a peak 11.2% of overall construction square footage, doubling its percentage from 1925, despite a 45% decrease in total construction across all sectors. The education sector’s resilience to market forces emphasizes the ongoing modernization of the US system and the increased public demand for access to secondary and higher education. Educational construction values did not bottom out until 1933, with an 89% drop in growth from their position before the market crash. The severity of this drop, among the highest of all building sectors, signifies both the importance and the timeliness of the PWA funding program

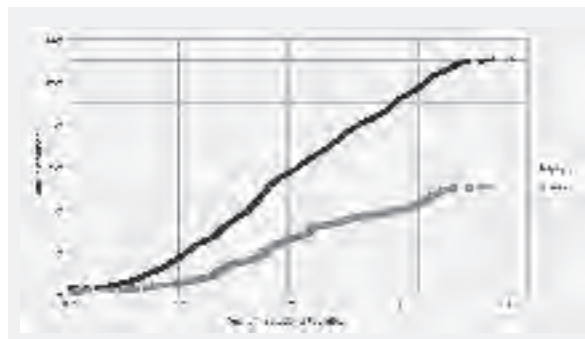


FIGURE 1. Graph of US 4-year College and University founding years, 1800-2000. © Jon Buono, from data provided by the Office of Postsecondary Education, US Department of Education.



FIGURE 2. © *America Builds. The Record of PWA*, Washington, US Government Printing Office, 1939.



FIGURE 3. Construction site funded by the Higher Education Facilities Act, c. 1968. © Special Collections, Valdosta State University.

enacted in the same year. In the following two years, the volume of educational construction nearly quadrupled and accounted for over 10% of the total US market in 1935. By 1938 the sector had nearly regained its position from 1929 with a recorded production exceeding 57 million square feet of new construction. This volume accounted for 13.2% of the total US construction output – the highest educational percentage recorded from 1925 to 1975.

But the trend of the sector's recovery would be halted by US involvement in WWII. The final project commissions of New Deal building programs contributed to a rise in US construction activity through 1942 to surpass pre-crash levels. But in 1943, total US construction growth declined by 66%. During the remaining years of the war, the education sector accounted for less than 3% of the total US market – the lowest percentage recorded from 1925 to 1975.

The demand for new construction across all sectors was exceptionally high when WWII ended in 1945. Notably, construction volumes in the first year following the end of conscription surpassed those of the pre-war years. By 1948, annual educational construction surpassed its pre-crash volume and added over 72 million square feet. This volume would continue to increase at a steady rate for the next three decades. The year 1954 represents the second peak in the study period, when educational construction accounted for 11% of the total US volume. This peak is representative of the demand from GI Bill recipients, which by 1956 had been extended to veterans of the Korean War and had funded roughly 2.2 million college and university enrollments².

The 3rd and final peak of the era occurred in 1966 with an addition of 245 million SF of education construction representing 9.3% of total production. However the increases yielded from the Johnson era legislation were more moderate than prior government campaigns and could not be sustained as long as the peaks of 1935-38 and 1948-54. Economic and societal factors of the early 1970s decreased educational growth to below 4% and represented its slowest period since the years of WWII conscription.

4. CAMPUS ANALYSIS

An analysis of existing building inventories at selected campuses seeks to correlates historic events with the construction trends documented by the census data. Facility records for six US 4-year institutions were available to the author through direct or affiliated campus planning projects: Princeton University (1746), Dartmouth College (1769), University of Georgia (1785), Amherst College (1821), State University of New York Buffalo (1846), and University of Massachusetts Amherst (1863). 3 of the campuses are public institutions and representative of the trends in government funding. The data for the remaining three private institutions provides comparative values for the trends independent of government subsidies³.

To understand the momentum of campus development throughout the study period, rates of change (ROC) were determined at 10-year intervals. ROC was measured as the change in constructed gross square footage between decades.

Physical area was differentiated into three broad spatial categories: academic, administration & support, and housing⁴. The existing facility inventories were further edited to focus on the central campus districts and to limit bias for peripheral research and/or agricultural facilities⁵. The inventories represented circa-2000 campus conditions and did not account for the history of building demolitions among the institutions. Collectively, the inventory included 1,000 buildings having a combined area of approximately 52 million square feet.

When assessing the combined inventories of both the public and private campuses, the decade which yielded the highest ROC was 1960-69. The era resulted in a 56% increase in square footage, and the buildings accounted for 23% of the combined existing building inventories. Most notably, 28% of the current academic space inventory of these campuses was constructed in the 1960s.

When the building data is differentiated between private and public institutions, the values are more expressive of the government initiatives. For the public institutions, the 1930s, 1950s, 1960s, and 1970s all experienced high rates of development, increasing their total building inventories by over 77% per decade.

The highest ROC of 86% occurred in the New Deal era 1930-39. Despite the substantial physical transformation this ROC suggests, the buildings from that decade represent only 4% of the circa 2000 total campus area. In this example it is important to note the linear growth trend typical to all 4-year institutions



FIGURE 4. Graph of building inventory growth rates among surveyed institutions. © Jon Buono.

during the 20th century. Whereas a ROC may reflect substantial change over prior eras, its product may be marginal in comparison to aggregate subsequent growth. Changes in median building size over time greatly affect campus growth trends. From 1930-39, median new building size was 31,000 SF and by 1969 that value nearly doubled to 61,000 SF.

The survey set of public schools does present an outlier condition in the values indicated from 1970-79. In this period, the campus at Buffalo experienced a substantial growth of 146% funded by the New York state government which was more than double the ROC at the peer state institutions of Massachusetts and Georgia.

5. CONCLUSION

The period from 1933-76 represents the largest concentration of public investment in higher education facilities in American history. The magnitudes of development revealed by the statistical analysis of this study suggest additional documentation and research.

ROC calculations may provide additional perspectives on growth phases, particularly for central campus districts. Although New Deal building campaigns resulted in the largest double-digit growth rates, their relatively small percentage of facility inventories can obscure their significance in campus densification and defining historic landscapes. Buildings from the era are typically protected from adverse effect, but there are currently no comprehensive inventories of the New Deal collegiate projects.

The data from this study also supports anecdotal evidence that the majority of existing collegiate campus buildings were constructed in the post-war era.

This era of resources is now subject to the benefits and protections of public properties eligible for the National Register of Historic Places. However, limited research has been conducted to assess the period as a whole, or to document the projects resulting from federal programs. Such context will be critical to future significance assessments for what will likely be the largest inventory of educational structures ever subject to historic review.

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- 4 Academic spaces include classrooms, laboratories, studios, libraries, and research facilities. Administration & Support spaces include offices, physical plant, athletic facilities, dining, student health, and structured parking. Housing includes institutionally-owned facilities for undergraduate, graduate, and faculty housing.
- 5 To eliminate statistical bias for the high volume of support structures at the research universities, the analysis excluded all buildings less than 5,000 SF and buildings less than 10,000 SF constructed after 1960.

Introducing a 3-Level Approach for the Identification and Analysis of Impacts on Modern Heritage Sites: the Case of the Campus of the *Ciudad Universitaria de Caracas*

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Designed by the architect Carlos Raúl Villanueva, the *Ciudad Universitaria de Caracas* is a complex urban ensemble of Outstanding Universal Value located in Caracas, the capital city of Venezuela. Modern ideals of urban planning and architecture, including the collection of the *Synthesis of the Arts*, gave this site national and global significance. In 2000 it was included in the UNESCO List of World Heritage Sites, becoming one of few modern sites registered on this list. This university's campus provides a case study of a heritage site where extensive changes are inevitable and a key part of its character as a living site. The paper presents a 3-level framework to guide assessments of heritage protection and offers a toolkit that can be used to study heritage sites with similar characteristics. The framework utilises a construct that multiple layers of value interact with each other thereby providing significance to a site. The 3 levels of analysis are: 1) urban ensemble; 2) architectural fabric and; 3) appropriation. The paper illustrates one approach for diagnosing the state of conservation of a dynamic property and contributes components of a toolkit for the management of heritage sites.

1. INTRODUCTION

Some heritage sites are in frequent use for functional purposes. Such sites have three main characteristics: 1) users may see their heritage status as incidental not primary; 2) the site changes as its functions are modernised and; 3) those managing/using the site may be unskilled in the preservation of heritage.

This paper presents a 3-level framework developed using data-clustering techniques for the analysis of impacts from a case study undertaken by the first author of the *Ciudad Universitaria de Caracas*¹ (CUC). The paper is structured as follows: 1) the case study is introduced; 2) challenges facing an analyst are specified; 3) the rationale for the 3-level framework is explained with examples from the CUC study and; 4) the utility and limitations of the diagnostic framework are considered.

2. A CASE STUDY OF A MODERN HERITAGE SITE

In 1943 the architect Carlos Raúl Villanueva began designing the *Ciudad Universitaria de Caracas* that became a complex urban ensemble in Caracas, Venezuela. It incorporated modern ideals of urban planning and architecture, including a collection of the *Synthesis of the Arts*. In 2000, CUC was inscribed in UNESCO's List of World Heritage Sites; one of few modern sites in the list. CUC's



FIGURE 1. The *Aula Magna* lecture theatre shows integration between architecture, technology and art. The features of the ceiling, commonly called “the clouds”, were designed by the artist Alexander Calder for acoustical purposes.
© Adriana Salas, 2013.

2-square kilometre campus was registered as an outstanding example of two UNESCO criteria, specifically Criterion I as: “a masterpiece of modern city planning, architecture and art” and under Criterion IV as: “an outstanding example of the coherent realization of the urban, architectural, and artistic ideals of the early 20th century, which constitutes an ingenious interpretation of the concepts and spaces of colonial traditions and an example of an open and ventilated solution, appropriate for its tropical environment”².

The breadth of Villanueva’s vision is breath-taking as shown in the photograph of the *Aula Magna* lecture theatre below.

Although a heritage site, this lecture theatre is a well-used workspace requiring up-to-date audio-visual equipment etc. The space is functional and dynamic: characteristics that pose challenges for its heritage status but are central to its design concept. CUC has many such living sites as, since the 1940s, it evolved into a different kind of university than that imagined by Villanueva. Local issues have influenced changes and as Eddie Blass³ observed: “the higher education sector has been through extensive change over a relatively short period of time and this is likely to continue in the future”.

Drivers of change affecting CUC include: 1) a perception that universities are community assets or public spaces – the site is open 24 hours a day and the city’s inhabitants freely transit around the campus, including using vehicles on paths as shortcuts to avoid traffic; 2) CUC has been the venue for political demonstrations and is a symbol of democracy. However, many demonstrations end with violence, negatively affecting the site and its fabrics; 3) CUC has to meet the educational requirements of an increasing population. Today, the infrastructure designed for a student population of 5,000 is serving 60,000. CUC has undertaken many structural developments, often characterised by a lack of managerial control. Many problems, directly or indirectly, arise from the actions or inactions of managers and users which is a critical issue for conservation.



FIGURE 2. Morphological comparison. (To the left) CUC in 1962; (to the right) CUC in 2013. © Adriana Salas, based on information available on *En Busca de lo Sublime*.



FIGURE 3. Typological assessment. © Adriana Salas.

3. CHALLENGES FACING THE HERITAGE ANALYST

Many of the constructs and tools used by heritage analysts were developed to increase the probability that exceptional examples of human endeavour can be preserved, appreciated and enjoyed by future generations. For dynamic sites like the CUC this body of constructs and tools is insufficient. Indeed, in relation to dynamic sites the construct of heritage itself may need to be re-examined as, for example, in a university a dimension of its heritage requires contemporary relevance, meaning that changes in function are endogenous to the construct of its heritage.

The definition of heritage used for the case study was: “increasing the probability that an exceptional example of human endeavour can be preserved and developed in ways that honour its creators and enable it to fulfil its destiny as a great national university”. The research prioritised human factors, as these were pressing, pervasive and extensive. In order to improve the utility of the analysis the researcher developed a framework with three layers of analysis, following the advice of Layder⁴. These are outlined below and illustrated using the case of CUC.

Level 1: The Urban Ensemble

CUC was designed as an educational city, with architectural elements including teaching rooms, leisure spaces, offices, dining rooms and sports facilities, working together, each contributing a distinctive function, rather like musicians in an ensemble. The whole, or gestalt, is “an urban ensemble” and provides a distinctive unit for analysis. The relationship between elements is a key area and attention must be given to whether the distinctive identity of inherited heritage is honoured in additions and changes. The importance of tracking changes in the urban ensemble is illustrated by the use of time-specific maps as in the figure below.

An examination of morphological blueprints enables a systematic “form and design”⁵ study of changes to the built mass and clarifies their relationship with the void spaces of the original project. For CUC, using a checklist of authenticity criteria, it became clear that many recent developments had diminished heritage value. A tool based on typological assessment was used to evaluate the degree to which changes were reversible. As recent structures are of poor quality, their negative impact was deemed reversible. Newer mass is located mainly on the perimeter of the campus, which reduces its negative impacts to the core area. The analysis categorised types of new built mass to facilitate their identification, complementing the information provided by the morphological assessment. Using such time-spaced blueprints helps to assess the scale and scope of degradation and assists in prioritising and managing remedial interventions. Figure 3 shows the typologies found in the property, providing clarity as to the managerial challenges and their location.

Level 2: The Architectural Fabric

The second unit of analysis is micro, not macro. A myriad of apparently minor issues collectively construct the architectural fabric, which like the clothes that people wear, communicates key aspects of heritage identity.

A key goal of micro-analysis is to identify vulnerable or degrading areas in depth, which are often the result of actions or non-actions by human agents. Fabric level assessments have 2 stages. Firstly, a codebook is required to identify and categorise types of impacts. Secondly, negative impacts are mapped to identify highly affected areas.

In CUC, multiple examples of fabric-level degradation were identified. For example, motorcycles were ridden on walkways, across lawns and within buildings. Members of the public used the campus as a shortcut. There are negative effects on the fabric of the buildings and,



FIGURE 4. Vulnerable areas. © Adriana Salas.

importantly, the impact on the psychological fabric affects students and staff so that their experience of being immersed in a stimulating artistic learning environment is degraded by a prevailing sense of carelessness. The description of vulnerable and degrading fabric areas can be mapped, as shown below.

Such maps provide input for managers, and facilitates rigorous monitoring and evaluation of improvement initiatives, which are key instruments for increasing the probability that remedial change programmes will be efficient and effective.

Level 3: Extending Appropriation

The term “appropriation” refers to the embedding of positive attitudes and behaviours amongst those whose behaviour can either enhance heritage values and/or prevent degradation. The unit of analysis is individuals or groups that have, or can acquire, agency in relation to a heritage site. The aim is to persuade potential agents to adopt values of preservation and inculcate behaviours that promote the use of a place in a sustainable way. If successful, appropriation results in people becoming co-responsible for preservation. Since human action or inaction is extremely consequential the degree of appropriation by influential agents is a key level of analysis.

A questionnaire explored the degree to which CUC students were aware of heritage issues. The results showed that the majority knew CUC was a World Heritage Site, but nearly 90% did not know its values and few students knew about the functions and programmes of COPRED⁶. The findings demonstrate the importance of measuring awareness amongst users of the site as an aid to heritage management, as it is recognised that improvement actions are less likely to be successful if people do not appropriate pro-heritage values as their own. Further data on appropriation could be gathered from key stakeholders to provide more clarity where communication and persuasion initiatives need to be targeted. Such a dataset provides a platform for establishing monitoring and evaluation programmes.

4. CONCLUSIONS

Due to the relative “newness” of conservation of modern heritage sites, international charters and documents do not provide practical guidelines for their conservation. However, it is understood that the analysis of landscape is key to understanding such sites. Michael Turner writes: “the urban landscape is the sum of all the parts, but it also needs to be understood as a whole which is greater than their sum”⁷. CUC was designed with a belief that art and high cultural values offer a unique quality to the higher education experience. It is a living heritage, adapting to the demands of an ever-changing context. A key question is “how to respond to new demands in ways that fulfil the destiny of the heritage site?” This question cannot be avoided as: “Change to a significant place is inevitable, if only as a result of the passage of time, but can be neutral or beneficial in its effect on heritage values”⁸.

Using the 3 level approach builds a depth of understanding as to which elements are essential to safeguard the value of a site. Additionally, it helps to devise and deploy strategies that promote heritage-orientated decision-making by all stakeholders.

Finally, it is important to understand the level of connection between users and the site they inhabit. The case of the CUC illustrates that positive heritage values need to be appropriated into the memory of the community. This need is clearly defined in the Eindhoven Statement presented by **docomomo**, that states it is essential 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”⁹.

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University of São Paulo: A Campus and Modern Architecture

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The University of São Paulo (USP) is a public higher education institution created in 1934. The campus was largely built between 1959 and 1963, within the scope of a government plan aimed at fostering São Paulo State progress. This plan allocated important resources for the improvement of human conditions, including education, justice, health and support for social development. Part of this was a strong investment to establish definitively the campus for the University, which was going through a deep education restructuring. Over 400 elementary, secondary and technical schools were also built. In parallel with the construction of the country's new capital city, Brasília, which definitively linked the image of progress to that of modern architecture, the plan constituted a unique opportunity for São Paulo State to expand its stock of modern architecture. Thus the USP campus was conceived with a clear intent: to become a great demonstration of the architectural culture of that time, whose parameters were the brutalist ideas and the recommendations proposed by the VIII CIAM, especially the idea of *core* as a space of conviviality to foster relationships among students and between the students and the wider community. Over 20 building designs were commissioned, bringing together a group of prominent architects. Among them was Vilanova Artigas, who designed the most paradigmatic building of the campus, the School of Architecture and Urbanism, which represented the consolidation of the brutalist language in São Paulo and Brazilian architecture. Developed in a moment of expectation for great social change, the USP buildings are exercises in the possibilities of architecture to contribute to the transformation of society via built space. From the declared intention of creating spaces for conviviality, these designs assumed the role of prototypes, emulating several situations that a city could suggest, and creating development possibilities for academic life.

1. THE CAMPUS AND AN IMPROVEMENT PLAN

The University of São Paulo (USP) is a public university created by São Paulo State in 1934, and is acknowledged as one of Brazil's leading higher education institutions. Bringing together existing, but isolated, units at the time, the university structure was defined with the creation of a Philosophy School, which was supposed to connect the existing units to future departments. Located in different places in the city, it was impossible to put them together in a single campus around one of the existing schools. There were many studies, debates and plans, until they decided on the American model of an autonomous campus. The chosen option for an exclusive area far from everyday city life had benefits and drawbacks. On the one hand it could nurture a suitable environment particular to the university. On the other hand its isolation from the existing city might inhibit the contact with existing social realities. Over the years the area was surrounded by fences and walls, isolating the campus from the everyday city and its problems. This has been a persistent source of complaint by the USP community. There is no commerce or recreation and public access is carefully controlled during the weekends.



FIGURE 1. Plan of Campus of the University of São Paulo, 19-. © Archive SEF/USP.

The large area required for the implementation of this ambitious campus plan precluded its location in the most central area, which would require expropriation and would have been very costly. The alternative was a piece of land, originally part of a farm, at the banks of the Pinheiros River, acquired in 1941. Over 10 plans were made for this area, none of them fully implemented.

The effective use of this area, named CUASO – *Cidade Universitária Armando Sales de Oliveira* – was gradual and fragmented until 1956, when Architect Hélio Duarte proposed a new plan, derived from the revision of several existing proposals and from the recommendations proposed by the CIAM VIII – *International Congress on Modern Architecture*. According to Duarte the CUASO was to allow “a harmonious coexistence of the functions mentioned by the *Athens Charter*: dwelling, work, recreation, and transportation, and to introduce the core as the main academic meeting place”¹, in line with the recommendations of CIAM VIII:

*The expression of the core must interpret human activities taking place there: both the relations of individuals with one another, and the relations of individuals with the community. Only full development of both these relationships can safeguard the dignity of individual life.*²

In all previous plans, the main reference for the implementation of the campus was the rectory building, and in Duarte’s plan this became the core. Next to student housing, this was intended to integrate two community centers: a commercial center with shops, restaurants, market and bus station and a cultural center with museums, theaters, auditoriums and theaters. The areas of student housing were ultimately set aside as they were considered points of rebellious outbreak by political leaders during the military period – Clock’s Square, Museum

of Contemporary Art and students' main restaurant, which remained from this plan. But they were isolated from the whole environment and were unable to condense student life. The road system consisted of wide boulevards and roundabouts further dispersing academic life.

The recovery of the center as an important reference to urban communities was part of a wider process of review of modernist rationalism, which came to dominate post-war planning. We can identify the first signs in the text by Sigfried Giedion, Fernand Léger and Josep Lluís Sert, *Nine Points on Monumentality*, 1943, which proposed a reconciliation of modern architecture with new meanings of collective life. But it was CIAM VIII in 1951 that consolidated the idea that the quality of an urban core is not restricted to its physical condition, but should also provide a good psychological and emotional environment for the full development of life in society. The appreciation of a reference area to the entire community had become a new paradigm with wide repercussions in the architectural culture of the period, not only in urban plans, but in building designs that began to be organized through the living areas. The most widely recognized example of such ideas would be the collective areas of commercial floor of *Unité d'Habitation* in Marseille designed by Le Corbusier and the streets in the air of the Smithson design for the Golden Lane architectural competition. Although not the winner and unbuilt, Golden Lane is referenced in almost all manuals of the 20th century architecture, and exercised considerable influence on successive generations of architects.



FIGURE 2. Plan of Campus of the University of São Paulo, 1963. © Archive SEF/USP.

Even though the Core idea did not become an important part of the campus plan for CUASO, in the individual buildings designs the collective areas took a leading role. Part of an audacious government plan, PAGE, the Action Plan of the Government of Carvalho Pinto (1959-1963), these buildings became paradigms of São Paulo's architecture, known as *Paulista* architecture. PAGE had strong ties with modern architecture and dedicated special attention to education, building over 400 elementary schools and creating a new university, UNICAMP, a research support agency, FAPESP, and a special fund, named FCRCUASO, to build the campus of the university city.

PAGE's works, developed in this moment of expectation for great social changes, were exercises in the possibility of architecture contributing to the transformation of society via built space. In Brazil, combining modern architecture with an image of progress has always had strong appeal among politicians. Successfully activated by the design of the Ministry of Education and Public Health, in 1936, which had Le Corbusier's participation, the ideal was repeatedly affirmed by works that marked the political ascendancy of Juscelino Kubitschek. This President chose Oscar Niemeyer as his single architect, starting with the Pampulha Complex (BH) and culminating with the construction of the new capital city, Brasília, one of modern architecture's greatest achievements. Through its works, PAGE's intent was also to display São Paulo State's architecture. As architect Paulo Camargo e Almeida, who was responsible for the CUASO works has explained, this would be "the current time's major demonstration of architectonic culture, without the reprehensible formalities and luxuries we have been watching in the achievements of the world contemporary architecture"³.

2. THE CAMPUS AND MODERN ARCHITECTURE

Considering its distance from the everyday life of the city, the CUASO buildings assumed the features of pilot-experiments on the possibilities of architecture in all its aspects. The particular conditions of this project, such as the specificity of users and the declared intention of creating living spaces, simulated the architects to work with different situations from that which a city might suggest, while creating possibilities for the development of academic life. Those were proposals concerned with creating public spaces, and conceiving ground floors as intermingling areas to integrate different program needs. To succeed, they made use of distinct possibilities: patios, reflection pools, ramps, landings, and different levels.

The placement of the building in the urban context of the university city had a decisive influence on the internal organization, to the extent that the creation and layout of the interior spaces is subordinated to the need for a fluid and continuous link with the neighboring buildings and the civic and cultural center without interruption the traversal or visual, allowing easy and natural links with other University departments.⁴

By following the brutalist principles in architecture, they restricted the use of materials, basically to exposed reinforced concrete, and took advantage of spatiality as one of the most important resources for their creative process. Appreciating and highlighting living spaces in the design layout has assured a special meaning to common areas which, by smoothly integrating with other spaces, have generated generous and impactful places. Based on reinforced concrete structure and these spatial characteristics, that production has become one of the corollaries of São Paulo State architecture which had nationwide repercussions and began to be known as *Paulista School*.

Some of these projects stood out among others, especially the 6 designs for the Humanities including the Faculty of Architecture and Urbanism (FAU) designed by João Vilanova Artigas and Carlos Cascaldi, the most paradigmatic building.

Commissions for the 6 projects needed to integrate the Humanities sector and to house the departments of the schools of Letters, Philosophy, and Architecture, went to young talented architects, all of them very close to Vilanova Artigas, with whom they had a prolific exchange of ideas. The 6 were Paulo Mendes da Rocha, Eduardo Corona, Carlos Millan, Pedro Paulo de Mello Saraiva, and Joaquim Guedes. All of them were professors at FAU and protagonists in the *Paulista School*. For those architects, constraints became a source of inspiration.

Unfortunately, due to a shift in the political orientation, only the FAU and the Department of History and Geography were completed according to the original designs.

The contribution of these designs is evident in the further investigations of space as a program, formal and technological problems. They represent 6 different solutions, in spite of some similarities: utilizing the highest part of the site; the preference for a single volume and a regular prism; a central core used as a means of vertical and horizontal spatial integration; three of them dismembered the ground floor into 2 levels; the prevalence of exposed reinforced concrete as material; and the structural solution as a determinant plastic element. They were all propositions with austere and compact form, defined by wide spans and structural systems that converged at the point of highest tension, leading in some cases to the replacement of the traditional solution, the slab-beam-pillar, by porticos. The pillars also accumulated stormwater, taking advantage of the rain sound effect as an element of the ambience. One of the strategies adopted by the architects was the clear exhibition of the construction procedure – loads, weight, ventilation, lighting and water movement – and the marks of the production system exposed on the raw materials. The structure as main element of composition induced the development of original and daring designs which stimulated research on the structural calculations and put Brazil at the forefront of concrete technology. This procedure also required a specific mode of architectural representation, to which the section is much clearer than the plan.

2 of these buildings represent a synthesis of the *Escola Paulista* production. Millan's design for the Department of Letters, in addition to the possibilities of



FIGURE 3. Photomontage of some modern buildings. From left to right, from top to bottom: Oswaldo Arthur Bratke, School of Metallurgy Engineering, 1961; Eduardo Corona, History and Geography Department, 1961; Eduardo Knesse de Mello, Students Dorm, 1961; Oswaldo Arthur Bratke, School of Mining Engineering, 1961; FUNDUSP, Rectorry Building, 1961; Ícaro de Castro Mello, Sport Center, 1962. © Photomontage by Renata Antonialli. Photos by Eduardo Costa, 2014.

communal life expressed therein, manifests its concern with the new pedagogical structure. The environments were designed following the guidelines proposed by the didactic-pedagogical reform, which was underway in 1962. The classrooms would permit different spatial arrangements to support different readings, debates, lectures, staging pieces, and every kind of literary activities; and the theater to accommodate assorted repertoire representations. With the help of a few removable panels it would be possible to meet the requirements for multiple theater arrangements, from Elizabethan style to contemporary comedy.

This design was structured in two linked – vertical and horizontal – volumes, the horizontal being responsible for the planning of the complex, offering countless possibilities of combination with other teaching units. A large plaza at the covering of the horizontal block would open up to the landscape revealing a privileged panorama of the campus. Consisting of 3 staggered floors, consistent with the topography, the horizontal volume would accommodate the classrooms, the theater, the Dean's office, the administration, services and the central library, which would be the space structuring element, and responsible for the connection with the vertical volume.

The FAU design is the group's most cited because it was realized. The outcome of a long investigation and a great deal of experimentation, this building achieves at a public scale what the architect had been rehearsing in his residential designs: the sole volume with social dimension, the large cover or indoor plaza that accommodates the program and relates to the city, at the same time a building and a public place. Exploring ramps, half-height floors, pervasive zenithal lighting, and a structural system with a complex design at the limit of structural calculation, Artigas instituted a new school typology. FAU was designed according to the new educational orientation, based on studies and debates, which report entitled *O Papel do Ateliê na Formação do Arquiteto – The Role of the Studio*

in the Architect's Training – was self-explanatory of the spatial form of the school.

The FAU building is essentially a *promenade architecturale*, both spatial and symbolic, pervading all the phases of the architect's training: library, studios, classrooms, and workshops. While completely open to the public, the building offers the necessary privacy required by a learning environment. The 1,000 m² and 13 m-high central hall, totally open to public access, was designed with no particular purpose in mind. On the contrary, it opens to the unpredictable, accommodating any sort of event, as a public square. The simple combination of horizontal plans and their supporting points, whose unusual drawing has become one of the *Paulista School's* most identifiable characteristics, shapes a single integrated space that combines training, research and design, and simultaneously is publicly shared. On the one hand, this condition fosters sociability and debate, however on the other hand it requires responsibility and solidarity, introducing new patterns of relationships. FAU corroborates the researcher Erik Herrmann's theory upon the influence of brutalist buildings in the architects' training. According to his research, 22 schools were built in the US from coast to coast between the 1950s and the 1970s, including the famous designs of Yale, Harvard, and UCLA⁵. Such percentage of schools led him to the conclusion that one out of 5 architects in the US have graduated in schools located in brutalist buildings. While they are only a few in Brazil, FAU has had considerable influence on a significant number of professionals, due to its historic relevance and also for having offered until the beginning of the 21st century the only Brazilian program of PhD studies, welcoming architects from all over Brazil.



FIGURE 4. João Vilanova Artigas e Carlos Cascaldi. FAU, 1961. © João Moscardi, 1968. FAU Library Archives.

The PAGE program was a rare opportunity for the development of modern architecture in São Paulo, including the University City. The imbricated relationships between the process of restructuring of education, campus organization and the architecture of its buildings, aiming to stimulate university coexistence, allowed the experimentation in many fields of knowledge from education to spatiality. The principle of Core that defined the campus physical structure, whose purpose was to reconcile the intermediate scale between architecture and urban space with special attention to interstices⁶ dissipated with the changes that occurred in 1964 in the political environment. These changes inhibited the effort to create a university city, transformed today in to a single campus although maintaining the name University City. However, this principle remains present in some of its buildings, which reverberates to this day in the younger generations, who value the open spaces, the conviviality centers and ask for a closer relationship between the various units. Thanks to graphic documentation, those designs, including the unbuilt ones, have established a point of reference to this day, making it possible to identify a strong link between the CUASO architecture and work of well-known contemporary Brazilian architects, who believe in space as a promoter of human relations, and see architecture's public dimension as its principle challenge and responsibility. The FAU building has constituted not only a paradigm in architecture but also in architectural education.

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NOTES

- 1 Helio Queiroz Duarte, *Roteiro do Planejamento da Cidade Universitária "Armando de Salles Oliveira"*, São Paulo, USP, 1956, 203.
- 2 *Id.*
- 3 Cidade Universitária Armando Salles de Oliveira, *America Magazine*, São Paulo, 1962.
- 4 *Id.*
- 5 Erik Herrmann, "Brutalist Architecture Schools of US", *CLOG*, February 2013, 102-103.
- 6 Alexander D'Hooghe, *The Liberal Monument*, New York, Princeton University Press, 2010, 27.

Joining the Past with the Future. The Rescue and Adaptive Reuse of St Peter's Seminary, Scotland

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St Peter's Seminary, near the village of Cardross, Scotland was commissioned as a training college for young priests, being designed by the architectural firm Gillespie, Kidd and Coia and opened in 1966. Its dramatic setting adjacent the 19th century *Kilmaheew* House over a gorge in ancient woodland, experimental concrete structure and beautiful use of space and light has led to its designation as a "Category A" protected building, the highest grade in Scotland. However, the college was abandoned in the late 1980s after barely 15 years of active use and the ensuing years of neglect and vandalism have reduced this modernist masterpiece to a ruin, now registered on the World Monument Fund's watchlist of 100 most endangered buildings. Over the same period the extensive surrounding site of some 60 hectares with its various ancillary structures and designed landscape also became overgrown and neglected. The current rescue project is based on partial restoration and judicious new design. The seminary will be adapted to become a vibrant arts and performance venue within the ancient estate with a range of spaces for creativity, education and leisure. The scheme will reclaim the surviving seminary shell and create an outdoor courtyard within the footprint of *Kilmaheew* House, the now lost Victorian mansion at the heart of the site. The former chapel and sanctuary will become an auditorium/event space capable of housing up to 600 audience members depending on the type of production. The old sacristy will be adapted to create a permanent exhibition space presenting stories of the site history and building rescue. Other elements of the complex will be consolidated as ruins illustrating the extraordinary narrative of the seminary and its abandonment. This paper presents the project for St Peter's adaptive reuse – a unique story in the history of modern architecture which promises to become the most audacious and compelling example of heritage reclamation in Britain. It also considers the extent to which the creation of this educational institution in a remote sequestered setting may be compared with the widespread UK development of new campus learning environments in the post-war period.

There is no place like it on these islands, for the mutual battery of multiple forces, for the thumping, pummelling and attrition of creation and destruction, the incessant beating of weather, vandals and arson against rocks of obstinate architecture. It is like watching medieval knights club each other to death yet stay standing. It is a mud-wrestle of culture and nature. It is also serene. There is still poise in its balance of forces, in the way its crowning concrete ziggurat comes to earth on columns that look too slight for the task. Its basilica, caked in graffiti, but with openings to the sky and trees, alternately radiant and sombre in the changeable weather, remains spiritual¹.

1. HISTORY

Although this paper focusses on the current rescue project, it is important to appreciate the long and rich history of the site at *Kilmaheew*. Documented land transactions date from the 13th century and aerial photography suggests evidence of human settlement and farming activity from pre-historic times. The remains of a mediaeval castle are still standing and the outline of *Kilmaheew* House, built by

the founding family of the Cunard shipping line, still forms the visible focus of the surviving seminary complex. It is this sense of St Peter's Seminary as but one chapter in an ongoing narrative enfold-ing centuries of history that informs our quest – and my title – of “joining the past with the future” and underscores the extended heritage significance of this unique and magical place in its totality.

St Peter's Seminary (opened in 1966) is widely regarded as the pre-eminent work of Gillespie Kidd & Coia (GKC), who had already established a considerable reputation in ecclesiastical architecture for the Catholic Church in the west of Scotland. The designers were 2 young staff architects Izi Metzstein and Andy MacMillan, who freely acknowledged their architectural debt to Le Corbusier, and specifically the Convent of *La Tourette*, near Lyons. There are evident parallels in the creation of these sequestered religious communities in a radical modern idiom, not least the expressive concrete materiality of both schemes. But St Peter's differs in important ways. Here the complex was situated within an already established setting of landscaped gardens around an existing Victorian mansion which formed the heart of the college. Whilst like *La Tourette* the overall development comprised several distinct components at St Peter's the main seminary building ambitiously combined the core religious functions – chapel, sanctuary, sacristy and crypt – with the students' social and living quarters in a single architectural entity. The resulting zig-gurat design is one of the most remarkable conceptions of its period, fusing both the programmatic and symbolic content of the institution in a daring virtuoso megastructure.

For the brief period of its original operation St Peter's College offered a sequestered environment for its select community of priests, sisters and students. Yet this unique and inspired fit of the building to its brief was also a cause of its demise. At the very moment the project was being designed the 2nd Vatican Council (1962-65) was deliberating the future direction of the Roman Catholic Church. Specifically, the “decree on priestly training” proclaimed by Pope Paul VI in 1965 led to increased emphasis on a secular setting for their education, which with the declining trend in religious vocation meant that St Peter's Seminary would never be fully occupied. Added to various technical shortcomings in the building construction these factors meant that its days were numbered even before completion.

In fact, the seminary itself closed in 1980, being reused briefly as a drug addicts' rehabilitation centre before being finally abandoned in 1987.



FIGURE 1. Gillespie, Kidd & Coia, St Peter's Seminary, Cardross, Scotland. Original view, c. 1966. © RCAHMS.

2. OWNERSHIP

In most conservation projects the issue of ownership is crucial, and St Peter's is no exception. Whilst belonging to its original client, the Roman Catholic Archdiocese of Glasgow, the site at *Kilmahew* has been the subject of numerous abortive schemes for acquisition and rehabilitation over the years. But whereas previous bids have usually been commercially motivated and pursued by property developers, the current project is essentially cultural in nature and is led by an arts charity, the Glasgow based organisation NVA who will become the new owner. A recurrent feature of earlier failed attempts has been insufficient acknowledgment of the site's holistic heritage significance compounded with overly ambitious plans for the conversion of the seminary buildings themselves – aiming at *grands projets* rather than a more subtle and flexible approach.

NVA is an acronym of *nacionale vita activa*, expressing the Ancient Greek ideal of lively democracy, where interaction among equals stirs debate and new ideas. NVA was established in 1992 to advance education through culture and the arts, to protect natural landscapes and heritage and promote the preservation of buildings and other structures of historical or architectural significance for public benefit. NVA's ambition is to engage people's connection with built and natural heritage, redefining urban and rural settings, revealing how places shape and are shaped by people and history. The company has produced many unusual and dynamic events in extraordinary landscapes over the last 20 years – in the



FIGURE 2. St Peter's Seminary, site axonometric showing proposed works. © Avanti Architects.



FIGURE 3. St Peter's Seminary, view of interior damage, 2015. © Avanti Architects.

mountains of Skye, at city lighting festivals and through cultural interventions in international events including the 2012 Olympics and the *Tour de France* Grand Depart in Yorkshire, 2014.

Whilst NVA is entirely realistic about the need for financial sustainability its core mission is primarily cultural and altruistic, and it is this approach that crucially differentiates the current project from earlier rescue attempts.

3. FUNCTION FOLLOWS FORM

Combining partial restoration, consolidation and new design, our project vision accepts loss and ruination as part of the site's history. Rather than imposing a pre-conceived typology of use – hotel, conference centre, housing or such-like – and then trying to reconfigure the architecture to serve it, we have instead sought to exploit the original spatial characteristics of the buildings and fit new functions to the existing forms. This reversal of the old modernist adage “form follows function” is a silver thread running through **docomomo**'s transactions since its inception and is a familiar concept in such adaptive reuse projects.

Thus at St Peter's, whilst the former chapel was designed as a place of collective worship, if considered simply spatially it is in essence an arena or auditorium and well-suited to serving the requirements of a communal event or performance venue adaptable to a wide range of operational configurations. Similarly, the former sacristy on the lower ground floor is no longer a repository of sacred vessels and ceremonial robes. Yet as a largely enclosed rectilinear volume it is in essence a “black box space”, readily re-purposed as an exhibition gallery and quite capable of accommodating the necessary display installations and lighting technologies. The series of side chapels on upper and lower ground floor levels, can serve a range of primary or support functions – small interactive displays, performers' dressing rooms, additional cloakroom or seating storage – without alteration.

The former refectory, originally the seminary's principal social space, can happily remain as a multi-use assembly or break-out area that will be covered but not enclosed. The former kitchen block, which originally functioned as the sole link between the convent and the seminary itself, is ideally rehabilitated as a *café-bar* facility for the complex as a whole. Meanwhile, the teaching block will be unrestored in the first phase, but its raised platform offers a perfect belvedere from which to view the surrounding landscape. It will thus be seen that this method of spatial analysis and functional re-assignment results in minimal disturbance of original architectural character.

4. TECHNICAL ISSUES

The technical challenges in rescuing a building complex in such an extremity of dilapidation are considerable. Photographic evidence shows the descent of St Peter's into a state of utter dereliction. The first major event following clo-

sure was an arson attack in 1995 which damaged the original *Kilmahew* House so severely that what remained was perforce reduced to the mere building outline at ground level. Continuing vandalism has been compounded by the effects of weather as more and more of the building fabric has been removed or exposed. The difficulty of effectively securing the property, as well as its remote location, have further contributed to its almost complete desecration as well as increasing its danger to intruders.

So the first task has been to de-risk the site by installing proper security measures and removing numerous hazards, including large quantities of asbestos and contaminated debris much of which had been spread by wind action. This has all been carried out in compliance with approved conservation protocols, whereby surviving items of significance have been salvaged, tagged and stored on site for reuse, exhibition or templating.

Survey investigations have however shown that whilst almost all of the building “soft tissue” (ie. timber, plasterwork, glazing and finishes) has been lost or damaged beyond retrieval, the basic structural carcass and characteristic concrete cladding is surprisingly sound. In the latter case it is generally not the pre-cast panelling itself, but its metallic fixings that have deteriorated through movement or corrosion.

Again, rather than attempting comprehensive repair or “sanitisation” in a single operation (which budget constraints would preclude anyway) the conservation task will be managed through a “traffic light process” whereby areas requiring immediate attention (red) will be addressed directly in the phase 1 contract, with areas of latent or potential damage (amber) receiving holding repairs, and currently sound fabric (green) being monitored in an ongoing programme of cyclical remediation. Likewise, a selective approach will be taken to the ubiquitous graffiti, some of which has clear artistic or political interest, the rest being merely unsightly or offensive.

The task of saving the (non-loadbearing) barrel vaulted ceilings that occur throughout the seminary and convent has presented particular challenges. Formed in cement render on ribbed metal framework this highly characteristic feature has been especially vulnerable to vandalism and weather, leading to progressive render de-bonding, metalwork corrosion and in some cases complete collapse. After considering many alternatives involving mechanical fixing devices a solution using Permaseal foam has been adopted in cases where sufficient original fabric survives to achieve a viable result. This technique has the benefit of consolidating both the render and the metalwork together, as well as being capable of application from above via scaffold gantries thereby avoiding the hazards of working underneath vaults that are still in an unsafe state.

Alongside the conservation of salvageable surviving fabric, there are major elements of heritage significance to be reinstated in replica. Most dramatic is the restoration of the sanctuary which includes stabilisation and re-harling of the massive apsidal wall (now substantially exposed by render delamination);

replacement of the splayed leaf-spring roof beams (which have either been destroyed by fire or weakened beyond repair); and reconstruction of the roof itself with its extraordinary pyramidal glazed lantern (now entirely lost). Fortunately, considerable documentary evidence survives to enable this to be undertaken authentically – both through the substantial GKC drawing archive in Glasgow, and also original photographic and film sources. This particular feature is crucial to recovery of the dramatic effects of light and shadow that enlivened the chapel interior.



FIGURE 4. St Peter's Seminary, image of restored Sanctuary. © Soluis Group.

Elsewhere our conservation protocol is to replicate original design where items of high significance are to be replaced (the randomised mullion screens, the profiled lighting cradle, the timber guardings), while detailing new insertions needed for compliance or amenity (safety barriers, lift access, and the new staff base and *café*) in a current but sympathetic idiom.

5. LANDSCAPE

The decades of neglect have wrought an equivalent degradation of the natural environment as of the buildings themselves. The site is rich in soft landscape and built features, including two rivers, a lake, three historic stone bridges, the castle remains, the former stables and a walled garden that originally served the kitchens of *Kilmahew House*. There are exotic species of trees and plants collected from overseas through the Cunard connection, and also a significant fauna ecology that requires specialist conservation.

Measures are already under way to remove invasive vegetation and repair damaged infrastructure. The landscape scheme will re-establish historic pathways, views and settings, as well as make provision for suitable wayfinding, on-site parking and new services. The walled garden will be restored for productive cultivation by the local community. The intention is nonetheless to avoid too prescriptive an interpretation of the site and allow visitors to discover and create their own experiences.

6. FUNDING

Funds for developing the project to date have come from a variety of sources including the Scottish Government, Historic Scotland, the Heritage Lottery Fund, Creative Scotland, Argyll & Bute Council, the Architectural Heritage Fund and

a wide range of charities and private donors. In March 2016 substantial further funds from the Lottery and Creative Scotland were confirmed to secure delivery of the project.

7. CONTEMPORARY CAMPUS CONTEXT

Unique as it is in so many ways, the story of St Peter's still invites comparison with the contemporary development of new educational institutions in campus settings in the post-war period. In the UK some two dozen new universities were created during the 1960s many of which took the form of out-of-town settlements on greenfield sites. Whilst in many cases such sequestered locations were as much a consequence of land availability as of educational doctrine the resulting formation of more or less isolated new communities exemplifies a particular social phenomenon of the period. Perhaps the closest comparator with St Peter's, in terms of timing, location and setting was the new University of Stirling founded in 1967 on the historic Airthrey estate which includes the Robert Adam-designed 18th century Airthrey Castle.

There is clear resonance in the re-assignment of extensive pre-20th century landscaped sites to new collective educational use, whilst the focal historic properties similarly lend an immediate vicarious prestige. Indeed, this post-war pattern is to be found not only in the so-called "plate glass" universities but in the more conservative private school sector where former country estates or large baronial houses were often converted to educational use.

But it was ultimately the underlying religious, as opposed to secular, purpose of St Peter's that surely determined its dramatically different fate. Having overcome their initial "pioneer ethos" the new campus universities invariably consolidated their academic status, increased their resident populations and expanded their built infrastructure in ways that would have been inconceivable at Kilmahew. Indeed, it may be suggested that St Peter's future prospects now derive directly from its "re-secularisation" and the extended reach that this new inclusivity will surely bring.

8. CONCLUSION

St Peter's rescue follows many years of campaigning and failed prior bids. (Avanti Architects have been involved since 2006). But having been made safe for public access, the site became the opening venue for the Scottish Festival of Architecture in March 2016 attracting some 8,000 visitors in just 10 days of the "Hinterland" sound and light performance. As with the main project itself, the manner in which this too was conceived perhaps offers wider lessons inasmuch as NVAs distinguished track record in conceiving such events around the intrinsic qualities of a place – whether it be a building or a mountain – suggests an alter-

native to the more conventional approach of seeking pre-conceived typologies of use as a primary rescue strategy.

After the main works contract and planned opening in 2018, St Peter's will surely provide the most complete exemplar of modern adaptive reuse that it is possible to imagine, embracing all the challenges of new ownership fit, site recovery, creative re-purposing, audience cultivation, multiple funding, authentic conservation and specialist repair. But perhaps most vital will have been the tenacious conviction of all involved in its eventual feasibility against seemingly impossible odds.

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NOTES

- 1 Rowan Moore, "St Peter's seminary – a second coming for Scotland's modernist masterpiece?", *The Guardian*, 17 January 2015.

Retrofitting the Modern: The Preservation of Post-war Social Housing Estates and their Adaptation to Contemporary Environmental Standards

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Since the advent of the Industrial Revolution, the need for housing has remained one of the main preoccupations of modern architecture. The leap from London's 1870s suburbs, famously and dramatically depicted by Gustave Doré, to the *Existenzminimum* adopted as the topic for CIAM 2 in Frankfurt (1929) shows the growing concern with low income housing in the early 20th century. Thus, defining the minimum requirements of habitability, as well as designing affordable-yet-respectable housing estates, rapidly turned into a major concern of modern architects. This concern became even more prevalent in the post-war period, when the need for massive amounts of inexpensive dwellings appeared perhaps as the most urgent task in the reconstruction of a war-devastated Europe. As a consequence, the 1950s and 1960s saw an unprecedented increment in the urban housing stock, led by the creation of social housing complexes.

More than half a century later, many of these housing estates remain as an asset in Europe's housing stock and, in some cases, as important landmarks of our modern architectural patrimony whose preservation and retrofitting appear as an especially relevant issue in today's economic scenario. Unfortunately, most of these post-war dwellings do not meet current living requirements: adding to their lower habitability standards, most of them need to be adapted to the new energy efficiency regulations emanating from the EU Framework Programme for Research and Innovation (Horizon 2020), which has set the goal of adapting their existing buildings to the new environmental requirements.

However, retrofitting modern social housing is a complex task that demands an integrated design vision, not only focused in its energy efficiency, or other technical aspects. A valid analysis must take into consideration many other parameters outside the specific requirements of the housing units, such as the socio-economic vulnerability of the areas where these housing estates are located, or the legal and urban-planning related issues that stem from their location within the city. But even these considerations are not enough: any intervention in our architectural patrimony must deal with the importance of preserving certain morphological and aesthetic characteristics, as well as those aspects related to its cultural and historical significance.

This will to define an integrated approach to the renewal of modern housing underpins the origin of contemporary initiatives such as the *EcoRegen* Research Project¹. Drawing from a study initiated by the city council of Zaragoza (Spain) together with the SMZV² and the University of Zaragoza, it studies 22 social housing complexes designed between 1942 and 1964, and built between 1945 and 1964 in the city of Zaragoza³. All of them were built during Franco's Regime, promoted by public institutions such as *Obra Sindical del Hogar* and *Patronato Municipal de la Vivienda*⁴ at a point where Spain struggled to overcome the consequences of a war that had devastated the country. Deeply constrained by the economic depression, architecture had to face limitations both in the type and quality of the construction materials, as well as in architectural expression⁵. However, the way in which the authors of these projects managed to interweave vernacular forms and techniques with modern fundamental ideas turned these complexes into elements of particular interest whose preservation has drawn the attention of local authorities⁶.

In this context, the *EcoRegen* project set out to design a series of strategies to retrofit these complexes, updating them to contemporary living standards, in order to define a protocol that can be applied on a general basis. The main concern is, in any case, how to face this amelioration when we deal with buildings and complexes of architectural and historical significance. Upgrading obsolete housing to meet contemporary living standards entails dealing with a variety of aspects ranging from the very layout of the units, accessibility and minimum area requirements, to energy efficiency and acoustic insulation⁷. In certain occasions, some buildings do not meet the conditions for the necessary improvement, being definitely rendered obsolete. However, even when the necessary retrofitting can be achieved, there are other aspects to be considered. Retrofitting techniques also come in a wide variety, with varying levels of efficiency and different effects on the appearance and morphology of the buildings. Dealing with architectural elements of historical significance adds a new dimension to this process, which also has to address the importance of preserving certain aspects that define the character of the building, be it the arrangement of interior spaces, the use of materials, surfaces qualities, the characteristics of the public space, etc. It can be difficult to find techniques that maintain these features; as difficult as establishing

which characteristics determine the value of the building or, when a more aggressive intervention is needed, how to measure the balance between inhabitability improvement and identity loss.

Those are the issues addressed by the papers collected in this session, which deal with examples of similar interventions in opposite sides of Europe: Denmark and Spain. This is the case with the Hortaleza Social Housing, built in Madrid in the 1960s. Guiomar Martín and Isabel Rodríguez go through the history of the interventions in this extensively published complex. In doing so, the authors identify a set of “intangible values” in the original design (“abstract concepts rather than physical components”) which they deem necessary to consider when facing any intervention in the complex. This flexible approach to preservation, which diverts from the traditional understanding of the concept, can be found in the proposals made by two of the original architects. The intervention projects seem to operate at a deeper level, looking for a structural-conceptual continuity where transformation may be considered an integral part of preservation.

The problem posed by the preservation and upgrading of modern housing complexes is even more prominent in countries such as Denmark, where the housing shortage resulted in “government policies and building industry initiatives” focusing on building housing “quickly, cheaply, and to house as many people as possible”. As Terri Peters notes, drawing from an extensive research on 20 complexes built in the late 1960s and early 1970s, “the housing of this time is considered to be the largest and best equipped social housing ever built”. However, this has not prevented the appearance of inevitable problems as the decades went by. The sheer size of the development programme, which amounted to more than 600,000 dwellings distributed in different modern social housing estates throughout Denmark, underlines the need to design an intervention protocol on these complexes.

An added obstacle when facing the preservation of modern housing complexes appears when the very architectural features that determine their inherent character are deemed undesirable by their inhabitants. These issues become apparent in one of the largest social housing estates in Copenhagen, Brøndby Strand. Built in the late 1960s, Brøndby Strand is an example of a modern construction system based on industrial prefabricated concrete slabs, with an urban layout also clearly engaged with modern urban principles. However, the proposals selected in the 2014 competition held for its renovation seemed to show the “need to assert a rejection of modernism” as the only way to improve its living conditions. As Poul Sverrild argues, Grønby Strand, the winning proposal, expressed such a rejection of “modernist ideas”. But the actual intervention, rather than opposing modern urban principles, seemed to emphasize them, underlining the robustness of certain “modernist ideals”.

All these examples help point out the need to develop strategies to preserve a modern housing stock that constitutes an invaluable asset of our architectural heritage. But they also underline the need to develop an organic relationship

with our architectural past: one that does not treat modern buildings as museum pieces, but rather examines them with a more inquisitive gaze, identifying those structural values that we should preserve. Only such an understanding will allow us to keep our modern inheritance alive, by making updates that extend its service life without undermining its character.

NOTES

- 1 The *EcoRegen* project, *Integrated Design Protocol for the Retrofitting of Social Housing and Urban Regeneration* (2013-16) was one of the initiatives chosen by the MINECO (Spanish Ministry of Economy and Competitiveness) in their call for publicly funded research projects. Its director is Dr. Arch. Belinda López-Mesa, and is currently being developed at the University of Zaragoza in Spain.
- 2 SMZV (*Sociedad Municipal Zaragoza Vivienda*) is a public corporation, owned by the Zaragoza Municipality, whose goal is achieving a greater efficiency in the management of urban renewal. Focused on depressed areas, one of its main goals is the integral retrofitting of the housing stock.
- 3 Gerardo Ruiz Palomeque, Juan Rubio del Val, *Nuevas Propuestas de Rehabilitación Urbana en Zaragoza. Estudio de Conjuntos Urbanos de Interés*, Zaragoza, *Sociedad Municipal de Rehabilitación Urbana de Zaragoza*, 2006; Javier Monclús et al. (coord.), *Paisajes Urbanos Residenciales en la Zaragoza Contemporánea*, Zaragoza, *Prensas Universitarias*, 2012.
- 4 *Obra Sindical del Hogar* was created in 1942, in order to deal with the urgent housing demand of the early post-war period. Later on, many cities developed their own "Patronatos", or "Municipal Institutes" to manage public housing construction. In the case of Zaragoza, the *Instituto Municipal de la Vivienda*, S.L. was founded on January 1953, subsequently renamed *Patronato Municipal de la Vivienda*, and *Sociedad Municipal de Vivienda*.
- 5 For further reading on Spanish Social Housing see: Carlos Sambricio (ed.), *Un Siglo de Vivienda Social*, Madrid, *Nerea*, 2003.
- 6 The PGOU (Plan General de Ordenación Urbana – General Urban Development Plan) of Zaragoza regards these complexes as *Conjuntos Urbanos de Interés* (CUI – Urban Complexes of Interest), both as assets of the city and because of their historical and cultural values as examples of modern housing estates built in Spain. Gobierno de Aragón, *Acuerdo del Consejo de Ordenación del Territorio de 13 de Junio de 2001, por el que se Aprueba la Revisión del Plan General de Ordenación Urbana de Zaragoza*, Boletín Oficial de Aragón, 71, 2001.
- 7 Fernando Kurtz, Marta Monzón, Belinda López-Mesa, "Obsolescencia Energética y Acústica de la Vivienda Social de la Postguerra Española en Áreas Urbanas vulnerables. El Caso de Zaragoza", *Informes de la Construcción* 67 (extra-1), m021. DOI: <http://dx.doi.org/10.3989/ic.14.062>.

Transforming to Preserve. An Inquiry into the Complexity of Heritage Values in Modern Social Housing: Hortaleza's UVA, Madrid

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The preservation of heritage values and its compatibility with current demands represent an inevitable challenge for cities like Madrid, where social housing played a prominent role during the second half of the 20th century. In this context, Hortaleza's UVA (*Unidad Vecinal de Absorción*) – designed by Higuera, Miró, Cabrera, Crespi, Espinosa and Weber in 1963 – may be the most renowned housing estate of the period, acknowledged by Louis Kahn and Le Corbusier as the most humane among the proposals presented at the 10th UIA Congress (Buenos Aires, 1969). Refusing the temporary nature of the program for the “UVA developments”, the project embodied a deep inquiry into housing types and an innovative urban scheme that is now a vital part of Madrid's modern legacy. Currently, a renovation plan for the entire area is underway, prompting the debate on how to ensure preservation in relation to conceptual values beyond sheer physical appearance. This article brings to light several unpublished projects by two of the original authors (Higuera and Miró, 2005-09), who confronted the renewal of Hortaleza's UVA with ambition and realism. Although implying extensive alterations, the proposals share a set of “intangible” values aimed at a respectful transformation of the whole. Instead of assessing the quality of each renovation proposal or praising the final solution as an exemplary model of intervention, a critical comparison of the different projects will disclose both the major lines of change assumed by the architects and the intangible values from the original design that they refused to give up. The projects are thus seen as a coherent yet ramified whole, an ensemble of thought from the original architects facing the transformation of their own masterpiece. Ultimately, this paper claims the importance of intangible values when acting upon modern architectural heritage, understanding that many of these – both architectural and urban – are not easily measurable and tend to escape from traditional protection procedures.

1. INTRODUCTION

In the early 1950s, Madrid underwent a great demographic expansion that led the finest young architects of the time to develop extensive research on social housing. Its importance is not only quantitative. *Poblados Dirigidos*, *Poblados de Absorción*, *Poblados Mínimos* and *Unidades Vecinales de Absorción (UVAs)*¹ constitute major evidence for understanding the development of Madrid's urban form and its social evolution in a broader sense.

Unfortunately, local policies are far from considering these housing estates a heritage priority, as does occur in other countries². In fact, most of them have undergone a complete transformation by their residents without any public control³. Their functional and material obsolescence, along with a generalized bad social reputation, have often led to their demolition and subsequent replacement by “standard” city fabric⁴.



FIGURE 1. Higuera, Miró, Cabrera, Crespi, Espinosa and Weber, Hortaleza's UVA, Madrid, Spain, 1963. The most commonly published photographic frames of Hortaleza's UVA. Left: The spaces resulting from the combination of blocks with different orientations onto which the blocks' corners and eaves are projected. Up-right: View from the outside of the block's end. Common access staircase, where the gallery and the patio meet and the block's social life takes place. Down-right: A street between two blocks with the galleries full of vegetation. © Higuera Foundation.

Within this context, IVIMA (Madrid Housing Institute) is currently engaged in the renovation of one of these areas: Hortaleza's UVA. Besides the recognition of heritage values and the will to preserve them, the process still leaves many questions lingering, but nonetheless, for the first time decision-making has been developed in a framework of coordination between institutions⁵, neighbourhood associations, and two of the original architects: Fernando Higuera and Antonio Miró.

This paper's main object of study is precisely these architects' work on renewal alternatives for the area (2005-09)⁶. The goal is to unveil the invariant within the variable, focusing on how they confronted the main problems that endangered the development's preservation while respecting their own original ideas.

2. A SET OF RECOGNIZABLE VALUES

Despite the extremely low budget, the poor technical means available and the rushed development of the plan⁷, these inconveniences were turned into an opportunity for innovation, resulting in a rather singular urban scheme. The strong character of Hortaleza's UVA is largely due to the architects' effort in introducing geographical, social and economic issues as determining parts of their work. In such way, the project became a valuable deviation from the orthodoxy of the International Style, described by Higuera himself as "realistic" architecture⁸.

A primary realistic feature is found in the design of the master plan, derived directly from a low-cost solution to a geotechnical problem. With priorities in mind other than solar orientation – namely the reduction of earthworks – the architects devised a construction system on concrete pile foundations that adapted to the uneven terrain, avoiding the serial monotony of the typical open block layout. The streets' humane scale and the triangular and trapezoidal open spaces between the blocks – admired by neighbours and critics – were consequences of this decision.

Another realistic choice was made during the definition of the block type. The plan to blend modern urban density with a rural lifestyle led to the creation of a two-storey double-block with an in-between patio. Externally the blocks were surrounded by perimeter access galleries, which were also conceived as gathering space.

Although in scholarly literature on the project Madrid's *corralas*⁹ have often been referred to as the origin of these galleries – given their exterior setting, generous width (1.5 m) and railings lined with plants – there is also an implicit reference to traditional Andalusian windows¹⁰. They were in fact conceived both as a natural extension of the small-sized dwellings and as a visual expansion of the narrow streets, acting like a blurred filter between interior/exterior and private/public realms. Likewise, their elegant steel construction was responsible for the neighbourhood's general appearance of lightness and transparency. Ultimately, these covered galleries presented a realistic response to the specific Madrilenian climate, distant from the generic solutions of the International Style.

The access stairs, built of the same metallic structure, were placed at the point where the gallery and the interior court meet. This element allowed for a view into the patio and articulated the transition from public to private, proposing a clever alternative to the typical blind end of modern blocks.



FIGURE 2. Higuera and Miró, Hortaliza's UVA, Madrid, Spain, 2005. Perspective drawing for the 2005 renewal proposal. View towards the side blocks of the neighbourhood, showing the conservation of low blocks at the front and the introduction of new towers to increase density at the back. © Higuera Foundation.

As for the program, the original floor plan was based on a grid of square modules, 2.80 m wide, with a floor area of 7.50 m² each. This extreme rationality did not distinguish between day and night functions, as the functionalist schemes advocated. However, it proved to be very flexible, allowing some of the modules to be absorbed by the adjacent dwellings, creating 2, 3 and 4-bedroom units.

Finally, the construction system combined a hot-rolled steel structure with pitched roofs, deep eaves, honeycomb bond brickwork and other conventional techniques. All these elements intensified the dialogue between innovation and tradition that gave the original project its distinctive character.

3. TRANSFORMING TO PRESERVE

Analysing publications from 1963 to present times, one can see that the most recurrent documents tend to highlight the above-described values¹¹. Indeed, a set of photographic frames is constantly repeated, displaying the intimate scale and intensity of the open spaces, the careful transition between public and private domains and the strategic articulation of the blocks' ends. Other than in contemporary publications, these emblematic features have been confirmed by Higuera himself, in his personal letters to IVIMA¹².

The difficult task of codifying such "intangible" values – which relate to abstract concepts rather than to physical components – into conventional protection regulations, should not deter us from defending their significance. Instead of preserving modern heritage in an allegedly original and untouchable state, it may be possible to adapt and transform it without disrupting the original concept. The following sections provide some insights in this line, using Higuera and Miró's proposals for the renovation of Hortaleza's UVA as a revealing case study.

Urban Model: Open Space Quality

In 2005, when Higuera and Miró started working on the area, the west sector had already been demolished as a result of IVIMA's decision to protect the central sector of the complex while replacing the rest with new high-density blocks¹³. The preservation of the road layout and the erection of twice-as-high standard blocks on that same footprint reflect a total misunderstanding of the original urban form, perverting the streets' humane proportions.

Given this situation, the point of departure in Higuera and Miro's proposal was to extend the protection area, incorporating the open space that resulted from the combination of the blocks' different orientations. This intention is reflected in a perspective drawing showing the conservation (and reconstruction when needed) of the block ends at this strategic point. Meanwhile¹⁴, new density requirements are met with the introduction of high towers at the back of these volumes, resulting in a gradual change of scale.

The most significant lesson from these proposals lies in the way old and new buildings relate without causing disruptions. The new designs follow the princi-



FIGURE 3. Higuera, Miró, Cabrera, Crespi, Espinosa and Weber, Hortaleza's UVA, Madrid, Spain, 1963 (2005). Masterplan. Comparison between the 1963 original project, one of the recent 2005 designs by Higuera and Miró and the Masterplan of the Refurbishment Plan currently in force. © All drawings were made by the authors over original plans. Up and middle: courtesy of Higuera Foundation; right: courtesy of IVIMA.

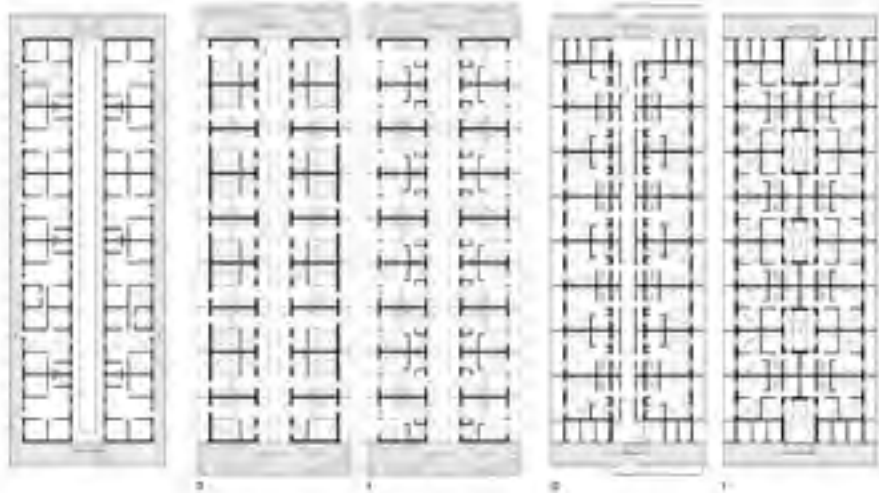


FIGURE 4. Higuera, Miró, Cabrera, Crespi, Espinosa and Weber, Hortalaza's UVA, Madrid, Spain, 1963 (2009). Floor plans. Comparison between the 1963 original project, one of the 2005 project variants by Higuera and Miró (Solución 2) and the final design by Miró, 2009 © All drawings were made by the authors over original plans. Left and middle: courtesy of Higuera Foundation; right: courtesy of IVIMA.

ples of the original project – roof eaves, green terraces and a light metallic structure wrapping the façades – but go one step further, carefully preserving the identity of the open space in terms of scale, perception and construction detail at pedestrian level.

Unfortunately, the final design approved by IVIMA has reverted to preserving only the central sector (12 of the 48 original blocks) like a “museum piece”, adrift in an urban order to which it no longer belongs¹⁵.

Gallery and Patio: the Transition from Public to Private

In all analysed project variants, Higuera and Miró modify the block's circulation system: the internal courtyard is transformed into an access corridor for the new duplex dwellings, while the former access galleries become private terraces.

Bearing in mind the galleries' role as an extension of the small dwellings, a filter between public and private space and a visual expansion of the narrow street section, we believe that such transformation remains consistent with the original concept while assuming the current tendency towards privacy that has gradually turned these collective corridors into spaces of conflict, invaded by grilles, tents and other territorial marks.

All of the proposals maintain the original side elevation and the physical integrity of the patio – although with a change of use and meaning due to the new access system. However, in the finally approved design, storage rooms are located next to the stairs, an apparently minor detail that actually distorts the collective character and the delicate immaterial appearance of the block's end.

Research on Housing Types: from Rationality to Flexibility

Program wise, the renovation projects propose an ingenious typological transformation of the original plan in order to meet current housing standards. The 45 m² 3-bedroom flat with ceiling height at 2.20 m – by all means insufficient – gives way to duplex dwellings, resulting from the vertical merging of 4 of the original structural units.

The original dimensions of the structural grid remain the same, but the architects increase the interior volume by raising the ceiling up to 4.50 m in the living room module. Thus, the original housing units formed by 6 square cells are combined into dwellings ranging from 52.5 to 65 m² consisting of 7 single-floor modules plus 1 double height module.

All these variants deal with 1 to 2 bedroom solutions, in response to a growing demand for small dwellings for young tenants on a leasehold basis. However, the potential for programmatic diversity of the original grid is lost, probably due to the belief that only young people will appreciate living in such special, non-standard homes.

Out of all the analysed projects one stands out as the most respectful to the original concept: by using wardrobes that increase the bedroom area while reducing the bathroom, the grid of identical squares is preserved¹⁶. Furthermore, the bathroom is set above the kitchen – overlooking the patio – which seems a more suitable location than amid a structural bay or invading the patio, as proposed in the final version approved by IVIMA¹⁷.

4. CONCLUSIONS

Being aware that more often than not the original architects will not be there to tell us how we must protect their work, this paper suggests that a thorough study of historical and contemporary publications – attending to the photographs, plans and written statements – can unveil the most significant and influential features of a historical project.

But moreover, it proves that the only way to preserve Hortaleza's UVA lies in understanding, reinterpreting and eventually transforming its most emblematic features, in relation not only to the visible elements, but also to the intangible values, which are harder to identify and measure.

Higuera and Miró's proposals surely contest the conventional approach to heritage values. They are based on a realistic assimilation of eventual problems derived from the passing of time and the evolution of social needs – i.e. scepticism towards collective spaces, low ceiling height in dwellings and insufficient built density – and on the translation of these problems into opportunities that inspire the renovation project itself – i.e. conversion of galleries into private terraces, creation of duplex homes and the insertion of towers at strategic points. In most of these cases, the architectural element (or its use) is transformed while the intangible value is preserved.

To sum up, protection procedures should be more flexible and include abstract features related to programmatic, perceptive, morphological and typological aspects, accepting transformation as a method of preservation. The challenge lies in knowing how to consistently re-elaborate the original project's ideas in order to guide, without apprehension, the future renewal of our modern housing legacy.

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- "Unidad Vecinal de Absorción en Hortaleza", *Arquitectura*, 70, 1964, 20-26.

NOTES

- 1 Translation of the original Spanish terms: Guided Settlements, Absorption Towns, Minimal Towns and UVA Developments (UVAs).
- 2 In this regard, a review of the Dutch experiences, including the Kiefhoek, Bergpolderflat and the recently awarded Justus van Effeblok interventions, may be of particular interest.
- 3 As a case in point, it is worth mentioning the current state of the *Poblado Dirigido de Entrevías* by Francisco Javier Saénz de Oiza.
- 4 As has occurred for instance at the *Poblado Dirigido Fuencarral A* by Francisco Javier Saénz de Oiza and the *Poblado de Absorción Fuencarral B* by Alejandro de la Sota.
- 5 Institutions involved include Madrid's local government, the Institutional Commission for the Protection of Historical, Artistic and Natural Heritage (currently CIPHAN) and IVIMA, as noted in Jesús Calatayud, "The Refurbishment of Hortaleza's UVA", *Holland in Madrid: Social Housing and Urban Regeneration*, Madrid, Mairera Libros, 2014, 249.
- 6 The documents under analysis consist of an official dossier, titled "Salvation, Reordering and Extension of Hortaleza's UVA" – made available to the authors by IVIMA – and a series of project variants – provided by the Higuera Foundation – which include drawings, project reports and personal letters that help to understand the whole design process.
- 7 According to the project report, public authorities gave the architects only 4 days to complete the preliminary design, 18 days to deliver the detailed construction project and 3 months to build it.
- 8 This particular deviation of rationalism has also been described as "left-wing realism" by Miguel Ángel Baldellou in "Neorrealismo y Arquitectura. El Problema de la Vivienda en Madrid, 1954-1966", *Arquitectura*, 301, 1995, 20-58.
- 9 *Corralas* are a traditional type of affordable housing in Madrid with access doors on an exterior gallery.
- 10 Isabel Rodríguez Martín, "La UVA de Hortaleza. Un Modelo Urbano a Conservar y Transformar", *Holland in Madrid: Social Housing and Urban Regeneration*, Madrid, Mairera Libros, 2014, 232.
- 11 Among these publications: *Hogar y Arquitectura* 46, 1963, 3-26; *Arquitectura* 70, 1964, 20-26; *L'Architecture d'Aujourd'hui* 120, 1965, 31; *Zodiac*, 15, 1965, 96-97; *Nueva Forma* 46-47, 1969, 46-55; *Sumarios* 14, 1977, 17-18; *Arquitectura* 301, 1995, 32-40; Andrés Cánovas (et al.), *Vivienda Colectiva en España*, General de Ediciones de Arquitectura, Valencia, 198.
- 12 In his letters to IVIMA, Higuera recalled that the most important features of the original project were the hanging gardens, the roof eaves over the galleries, the blocks' side elevations, the spaces between the buildings and the light and almost "aerial" quality of the resulting volumes.
- 13 As defined in IVIMA's masterplan for the area (*Plan Parcial de reforma interior de la UVA de Hortaleza* by Astasio y Ruiz-Rivas, Arquitectos SL, 2005) in which the conceptual vagueness of a so-called "environmental protection" was interpreted as the possibility to demolish certain areas as long as the new blocks respected the old buildings' footprint.
- 14 Where the blocks had already been demolished, Higuera and Miró proposed the mimetic reconstruction of the lower frontage intended for new commercial use, which was lacking in the area.
- 15 Higuera died in 2008, in the middle of the negotiation with IVIMA. The finally approved document, signed only by Miró, was titled *Proyecto Básico de Rehabilitación de 156 viviendas en la UVA de Hortaleza*, Abril 2009.
- 16 This project variant corresponds to the so-called "Solución 2" from the official dossier submitted to IVIMA in October 2005.
- 17 Such a final decision – placing the bathrooms in the middle of the courtyard in order to create larger dwellings – implies a transformation of the building's typology into an H-block, which is surely less respectful with the original concept.

Regenerating Modern Housing in Denmark: Considering Sustainability and Energy Retrofitting in the Lifecycle of Social Housing Estates

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Danish social housing estates built in the 1960s and 1970s are a significant part of the cultural legacy of the welfare state. Often the prefabricated, multi-family *etageboliger* apartments are not considered architecturally valuable or worthy of preservation, but this paper adds to the emerging sentiment that they are an important part of Danish housing heritage. Sustainability was, and is, an important consideration for these buildings, although the definition and ways of measuring the term have shifted considerably since they were built. This paper considers the renovation of these buildings from an architectural and historical perspective, in particular looking at how sustainability and energy use were considered throughout the building's history. This paper summarizes findings from analysis of a broad examination of 20 such renovations in Denmark, examining how sustainability was considered in the housing at certain points in time: 1) when the buildings were originally built in the 1970s; 2) when the buildings were systematically renovated in the 1990s largely for exterior repairs; 3) during the current program of National Building Fund supported "sustainable renovation"; and 4) relating to the near future, considering the qualitative, socially focused Danish Architecture Policy (2014) and the quantitative EU European Energy Policy for 2020 and priorities of Energy Strategy 2050. While the current wave of renovations offers environmental and architectural improvements compared to the 1990s renovations, they do not meet EU 2020 benchmarks, and there is a gap between the aspirations and abilities of the architects, and their designs for energy performance, compared to their other sustainable ambitions.

1. INTRODUCTION

There is an urgent need to renovate the modern social housing estates in Denmark, which amount to more than 600,000 dwellings, to enhance the quality of the buildings so that they can stay in use, and to improve their energy performance. Energy retrofitting of modern housing is taking place in many countries. This paper focuses on the renovations to prefabricated, concrete, social housing built on housing estates in the 1960s and 1970s in Denmark. Two issues specific to the Danish context are: the unique role of social housing in society, and Denmark's recent ambitious energy targets which directly impact these buildings. Relating to the first point, social housing in Denmark plays an important part of the national identity, fundamental to the social democratic welfare state¹. A guiding principle of the Danish welfare state is that the public sector (in this case the municipality) is responsible for housing its citizens, therefore keeping these buildings in good use is very important². Relating to the second point, there are qualitative and quantitative national policies and guidelines on reducing energy performance and renovation, including national targets to reduce greenhouse gas emissions by 40% by 2020 (exceeding the EU target of 20%), and being independent from fossil fuels by 2050.

2. THE HISTORY OF RENOVATIONS TO THESE ESTATES

The 1970s: Mass Construction

In Denmark, between 1966 and 1975, more housing was built per year than ever before. An urgent housing shortage inspired government policies and building industry initiatives to build homes quickly, cheaply, and to house as many people as possible³. Repetition of construction elements, monotonous site planning, undorned building expressions, and locating the buildings on single use sites were seen as necessary and justified design decisions⁴. In many respects these dwellings were very successful. In Denmark, the housing of this time is considered to be the largest and best equipped social housing ever built⁵.

The Late 1970s: Repair-oriented Renovations

The untested construction methods coupled with changing social aspirations had unpredicted negative results. Built in a time of inexpensive non-renewable energy, without concern for energy efficiency, these buildings were enormously reliant on fossil fuels. When the oil crises of the 1970s hit, and energy regulations came into effect, the housing proved expensive to operate, uncomfortable for residents, and in need of urgent repair. Within a few years of completion, there were serious issues with the building construction, and also emerging social problems as many people opted for single-family homes⁶. In most estates, the concrete needed repair, and the flat roofs needed to be rebuilt and insulated. Many estates had used poor quality concrete and structural repairs had to be undertaken. There were issues with thermal bridging, especially in relation to windows and balconies. Typically, these urgent repairs were hurriedly carried out in the late 1970s.

The 1990s: Inexpensive Replacement

The first major wave of renovations to these buildings was in the 1990s and they were generally rushed, used replacement materials of inferior quality, and included decorations with unsightly colours not in keeping with the original scheme⁷. Many of them also had additions, enclosures, and new structures added which were not architecturally designed or considered. Some reasons could be that architects were missing appropriate frameworks and metrics. The renovations to prefabricated housing of this kind was, admittedly, a new brief. The formula for renovation focused on performance, typically enclosing the balconies with glass to improve thermal performance and adding insulation panels to the façade and sometimes to the roof. Windows were replaced, and the appearance of the estates was impacted by decorative elements added around the building entries like canopies or walls in an attempt to personalize the buildings and improve way finding. Unfortunately, in many cases, garish colours were added on certain elements like railings, window frames and columns, in order to make the buildings seem less monotonous and grey. Generally, there were few interior reno-



FIGURE 1. Renovation Architects Nova5, Canal Quarter Apartments, Albertslund Syd, Denmark. © Terri Peters, 2014.

vations, such as modernizing kitchens and bathrooms, or adding a mix of uses to the estates, which in hindsight would have been really important. In some cases, the expensive and time-consuming program of renovations made the buildings worse.

2008-2013: Socially-focused Regeneration

The second major wave of renovations took place between about 2008-2013. In 2008, changes to the Social Housing Act gave residents increased rights to approve or veto spending common money and 2013 concluded a large government allocation for these estates⁸. These renovations generally took a more holistic approach, focusing on dwelling exteriors and interiors with new kitchens and bathrooms; improved courtyards, walkways and public paths to help the estates improve their image; replacing the facades and roofs; and changing balconies either by removing the 1990s glass enclosures or replacing and enlarging them. Unfortunately, it was not common to make the interiors wheelchair accessible, or to add a mix of uses in order to reduce reliance on cars and add diversity. In 20 renovation examples studied, all but one achieved only minimum building regulations for energy performance; none sought LEED or similar certification. This is surprising because in these renovations, in contrast to the ones made in the 1990s, it was typically well-established architects with experience in low energy housing who were appointed to work on them. In detailed interviews with some of those architects at JJW, CF Moller, Witraz (now Ramboll), and NOVA5, while all considered their renovations “sustainable” and socially focused, all of them were

frustrated at the gap between their aspirations for low energy performance and the performance that they managed to achieve in the buildings for various economic and practical reasons.

The current program of renovation is funded partly by the tenants through increased rent, and partly by the National Building Fund, *Landsbyggefonden* (LBF), an independent organization that manages joint capital and public subsidies for social housing areas⁹. Estates can apply for financial support in larger renovations by submitting a master plan of the renovation, which shows the physical, social and neighbourhood context. There is currently very little support for energy upgrading, energy generation, or any ambitious environmental performance renovations. Research has found that generally residents focus on the costs of energy retrofitting and not the savings, and since they must vote to increase their rent in order to undertake these measures, they largely do not¹⁰.

3. STRATEGIES OF REUSE: SUSTAINABLE RENOVATION IN DENMARK

In a study of 20 of these renovations from the last decade, 4 renovation strategies were identified to characterize these buildings and analyse their quality and sustainability: 1) Building Recycling; 2) Rehabilitation; 3) Energy Renovation; 4) Social Retrofitting. For example, in Building Recycling, the buildings underwent a major renovation, improving their energy performance through new façades, roofs and windows; the building's appearance is impacted; new or enhanced uses are created; and the common areas and social environments are enhanced. "Building recycling" is a strategy of radical changes, as an alternative to demolition, and suitable when preservation is not a priority. This approach involves partial demolition, rebuilding, and adding new structures. Examples include the Canal Quarter apartments in *AlbertslundSyd* which were built in 1968 and renovated by Nova5 in 2009.

"Rehabilitation" is also a strategy of comprehensive change, but in this case there is an emphasis on connecting to, or sympathy towards, the original architecture. In this strategy, the renovations typically use additive approaches as opposed to the "building recycling" approaches of replacement and removal. "Rehabilitation" typically involves a series of small additions, such as enlarging balconies or adding terraces and penthouses, combining units to create larger apartments, enhancing the façade by introducing small scale textural details in keeping with the original material and expression – sometimes making it even more faithfully "modern" than the original. The renovation of *Gyldenrisparken* Estate is an example of a renovation that displays such a "rehabilitation" approach – Witraz, Vandkunsten and Wissenberg renovated this complex between 2005 and 2010.

"Energy renovation" is a renewal that aims above all to improve the building's energy use. This tends to result in a superinsulation or thermal environmental performance approach that wraps the building in insulation. This strategy revolves around repair, insulation, and façade replacement that dramatically changes the



FIGURE 2. Renovation Architects Witraz, Vandkunsten and Wissenberg. Gyldenrisparken, Copenhagen, Denmark. © Terri Peters, 2014.



FIGURE 3. Renovation Architects CF Møller, Block 15 Varbergparken, Haderslev Denmark. © Terri Peters, 2014.

appearance of the building. In some cases, it is implied or explicitly stated that these quantitative improvements will positively impact the qualitative measures of the social environment around the building. In these cases, it is hoped that the new performance will both lower energy bills and give the building a better reputation. After adding a new insulated façade, the replacement is typically a contrasting material and colour. The point is usually to give it a “facelift”; hence this is often linked to the strategy of Social retrofitting. *Varbergparken* Estate, built between 1970-1980 in Haderslev and renovated by C.F. Møller between 2008 and 2013, uses this approach. Block 15 was renovated to meet Low-Energy Class 1 construction standards¹¹.

“Social retrofitting” explicitly proposes architectural intervention and change of expression as a remedy for a poor social environment. These renovations stretch beyond the typical boundaries of sustainable transformation, and there are some successful examples such as the Urban U2 renovation of *Hørgården 1 & 2* at *Urbanplanen*, renovated by JJW Arkitekter between 2007 and 2012 – with Witraz Architects advising the housing association client. The site originally had an unwelcoming social environment and poor building performance. The buildings were run down and not well-maintained. The façade renovation and roof improvements aimed to improve the visual and social environment, attract new tenants, and improve resident comfort. The renovation has proven to be a popular and important case study of urban transformation. Residents were given the opportunity to influence and customize the individual physical environment in a consultation program called *Enhance Your Home*. In this program, each resident could choose balconies or French balconies and have input into the modernisations of the kitchens and bathrooms. This approach has allowed residents to feel a greater sense of ownership in the renovation process and product, and has contributed to architectural diversity.

Future Guidelines

In 2014 a new agreement aimed to double the amount of LBF renovation funding, mainly to aid in demolitions and social efforts to improve vulnerable areas, again supporting socially focused renovations¹². Also a small pool of money was

established to improve energy standards in social housing¹³. It is too early to report on findings, but these initiatives seem too modest.

In the 2014 Danish Architectural Policy, sustainable building renovation is specifically addressed: "The existing buildings will be updated both at the functional level and energy wise, and more than half of all construction projects will consist of renovation and rebuilding projects"¹⁴. In more quantitative terms, the important targets are: 1) the European Union's "European Energy Policy for 2020", which aims for a reduction in greenhouse gas emissions by at least 20%, an increase in renewable energy to at least 20% of consumption, and energy savings of 20% or more¹⁵; 2) the Danish Climate Policy Plan which states Denmark will lower greenhouse gas emissions by 40% in the 1990-2020 period, which exceeds the EU targets¹⁶; and "Energy Strategy 2050" which states that Denmark will use 100% renewable energy by 2050¹⁷, so all existing buildings will need to be retrofitted so that they do not need fossil fuels. This means Danes should expect a third wave of energy focused renovations in order to meet 2020 standards. However, it will be challenging enough to meet EU minimum targets, rather than the Danish target of 40% reduction. In order to achieve this performance, interiors might need modification, so as to make dwellings accessible to wheelchairs, in light of the aging population. However, since the interiors were modernized in the second wave, this will likely be saved for the fourth wave of renovation around 2035. The fourth wave will have the daunting task of moving from 2020 regulations to generating renewable energy and becoming independent from fossil fuels.



FIGURE 4. Renovation Architects JJW, Urban U2 *Urbanplanen*, Copenhagen, Denmark. © Terri Peters, 2014.

4. RECOMMENDATIONS FOR ARCHITECTURAL RENOVATIONS TO THESE ESTATES

There are three main recommendations that spring from this research for future renovations to these buildings. First, it is to consider holistic sustainability considerations, including but not limited to concerns of energy. Second, renovations should address architectural qualities as a priority. Thus, a definition of architectural renovation is offered: “architectural renovations” must seek to 1) improve the quality of light, through replacing or enlarging windows or removing barriers to light entering the apartments such as reopening balconies which had been enclosed; 2) create new or enhanced spatial experiences by adding balconies, renovating kitchens to improve layout, or creating new entry, lobby or communal spaces; 3) reconsider or improve connection to the outdoors, through adding balconies, adding new windows to previously blank gable ends, or improving routes through the site. A recommendation is that not only can and should architectural parameters be measured, but that they must form a part of a sustainable calculation. Third, there must be more investment in these buildings. How a renovation brief is developed and funded greatly impacts its potentials for a holistic approach and improved performance. The decisions made about what to renovate, and why, are tied directly to social-sustainable potentials. Strategies that are now considered very difficult, such as increasing density, adding mix of uses, or removing buildings (although these are proposed in the *Varbergparken* renovation master plan of other buildings in the Estate 2006-2017) will likely become more mainstream.

The problem of energy performance extends beyond building: while it may be technically possible to renovate these buildings to 2050 standards now, there are social, political, economic, architectural and cultural issues that make it a challenge. When transforming these buildings it is necessary to consider the building in its context, and to consider the next wave of renovations. Further research is needed into retrofitting renewable energy sources for these buildings, keeping in mind their distinctive architectural characteristics and their important role in the housing heritage.

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Brøndby Strand to Grønby Strand

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The master plan for the suburban development of the *KøgeBugt* area (1961) southwest of Copenhagen holds the largest concentration of social housing estates in Denmark. A string of industrialized housing projects was carried out over the following decades. The largest single project was *Brøndby Strand*, comprising 2,800 apartments (1964-70). In a state of the art modernistic layout and an effective building process based on industrial pre-fab concrete slabs, *Brøndby Strand* was planned with a blend of high-rise towers, lower blocks and low-density apartment buildings in a stringent plan along an esplanade of 2.5 km designed for leisure. It ended up as the most varied Danish grand-scale industrially produced housing project of the time. Renewal projects were required within the first 10 years due to bad materials, construction flaws, and financial and social problems; since then, waves of repair projects have been undertaken.

In 2014 a renewal project for the now nearly 50 year-old housing-project was launched in a competition with an overall budget of more than € 600,000,000. The project has to meet the need for material renewal, a desire for an environmentally sustainable project and to address criticism of the original housing project.

The winning repair project (2014) claims to understand and respect the values behind *Brøndby Strand*.

This paper will focus on *Brøndby Strand*'s modernistic ideals and heritage interests in relation to the environmental and social challenges in the case. On the one hand, the renewal competition has demonstrated the solidity of the modernistic master plan and architecture of *Brøndby Strand*. On the other, it shows the apparent need to assert a rejection of modernism as the fundamental idea behind the project. The case demonstrates the need for reintroducing the principles behind modernism as realized in large-scale social housing, as they seem to affect the general image of modernism.

1. INTRODUCTION

The on-going renovation projects in the large social housing plans from the post-war era are motivated by run-down materiality, social dysfunctionality, and cultural aversion to the aesthetics and functionality of the modernistic projects. Very often new agendas referring to climate change and energy consumption are brought up too, while original urban improvements such as mono-functionality and traffic separation are dismissed.

The first victims of the renewal often seem to be the original planning ideals, which were based on modernistic rationality. The case of *Brøndby Strand* presents the challenge of the renovation of one of the most radical Danish new towns.

2. BRØNDBY STRAND NEW TOWN¹

The area southwest of Copenhagen was the last of the neighbouring areas of the Danish capital to be developed. The combination of rich soil and a flat landscape made it less attractive to the first generations of bourgeois suburbanites.

Along part of the coast, small summer residences were built, but most of the area remained in agricultural use.

Around 1960 the prognosis for the growth of Greater Copenhagen, in combination with the backlog of dwellings, made the Danish Government issue regulations to promote slab-constructed housing plans, as well as plans for a series of new towns. Central players in the construction process were the social housing companies. They had to provide dwellings located as close as possible to the stations, and their plans for the housing complexes had to also provide all the facilities of the new welfare town – shopping, social institutions and cultural facilities². The overall regional plan operated with a detailed matrix of schools, kindergartens, nursery homes, recreation centres, and a hierarchical system of shopping centres according to the number of inhabitants/dwellings. This regional plan would be facilitated by a new train line connecting the string of new town centres with the centre of *Copenhagen*. Also, a parallel highway was to be built in the hinterland.

The largest of these new towns was *Brøndby Strand*, planned in 1964 in order to hold 2,800 housing-units and built in the late 1960s. The landmarks of the plan were the 12 high-rise blocks situated in four groups along a 2.5 kilometre-long green area bordering the town, which ran parallel to the railway line, and to the planned recreational beach located about one kilometre away from the new town.

Filling in between the 4 groups of high-rise towers, the rest of the dwellings were situated in 66 4-storey apartment blocks and 8 2-storey terraced houses. 25% of the dwellings were in the towers, 70% in the 4-storey blocks, and 5% in the 2-storey blocks. The dwellings presented a variety in size, ranging from 1 to 5 rooms, with areas from 35 to 138 m², aiming at living up to the ideal of “cradle to grave” housing schemes. The construction principle in the high-rise towers consisted of 180 mm thick concrete load-bearing cross-walls, which were scaled down to 150 mm in the 4-storey blocks. The floor slabs were pre-cast hollow-core, with spans ranging from 12 to 24 m. A pedestrian deck raised one level above the street took care of the traffic separation and in combination with the concrete materiality that signalled the modernity of the construction, together with the high rise towers, it communicated a modern approach to urban life.

Brøndby Strand is considered the most varied slab-constructed new town in Denmark, with a wide variety of façade elements, great variation in dwelling sizes and a layout with different building types, huge balconies and intimate courtyards. Symbolic of its extravagance, it contained working class apartments with 2 toilets. In general, the new town not only provided dwellings with all amenities, but also a neighbourhood with an ample supply of facilities for associations, parks, sports facilities, etc. Despite its evident qualities, *Brøndby Strand* was accused of monotony and criticized for its concrete brutality right after its completion. This was partly due to the chronology. The new town was built in the final years of the economic boom and the simultaneous housing shortage, and it was finished immediately after the first oil crises in 1974, when the Danish housing-agenda had totally changed³.

3. 40 YEARS WITH NEW TOWN AND RENEWAL⁴

From day one, *Brøndby Strand* was met with a variety of challenges, such as high rents, construction flaws, poor materials and social problems. Due to the recession and the aforementioned problems, it was difficult to attract tenants to *Brøndby Strand*, and the town soon had numerous empty dwellings. After less than ten years, it was necessary to renew all the roofs, the rotten window frames, or the problems stemming from water penetrating the panels.

The economic problems in the new town led to actions where tenants threatened to withhold rent payments, and it all led to a series of renewal projects from the end of the 1970s onwards. The first step in the renewal took care of the 2 km long concrete deck that separated the parking level from the pedestrian level. Later on, the balconies were closed with glass panels, and the grey environment was softened by painting the balcony walls. Subsequently, also the high-rise towers were painted in pastel shades.

The aesthetic initiative directly opposed the original idea, which focused on the ability of concrete to underline surrounding colours: "The grey nuances of concrete are actually the best background for the colour symphony of nature, assisted by the dwellers' plants in the big flower boxes, the multi-coloured sunshades, and the landscape-gardeners evergreen plants"⁵.

Later, *Brøndby Strand* appeared on the Danish governments ghetto-list based on the dwellers' incomes, ethnicity, crime-rate, etc., and the renewal efforts were then directed more towards the social aspects of the new town rather than



FIGURE 1. *Brøndby Strand* new town under construction. The south-western quarter still under construction. The green esplanade-belt is shown as a flat hollow area divided from the apartment buildings by the new main traffic-road.
© Forstads Museet, late 1960s.

the physical side. In all three renewal plans, physical and social face-lifts were launched over the decades in order to keep the new town up to the standards, and to soften the appearance of the concrete town. Meanwhile, the actual quality of the apartments in terms of size and facilities has remained unchanged up to date, and tenants express great satisfaction with their homes.

A New Project

The basic layout and functional logic of the *Brøndby Strand* new town were never challenged in the renewal processes. But that has changed in the latest renewal project that deals with the combined need for continued physical upgrading, energy efficiency, and climate adaptation.

In 2012 a renewal project for *Brøndby Strand* on a bigger scale was launched. A long process of vision creation involving the tenants in accordance with the deep-founded tenants'-democracy in Danish social housing began.

With a budget of € 600,000,000, the project would be the largest in Denmark. The idea was to make a project that could change, not only the physical standards, the social framework, and the brand, but also confront energy and climate challenges. For the first time, a project operated with major changes to the original plan. An architectural competition was announced pointing at 6 fields: architecture, additional buildings, sustainability, rethinking green spaces and infrastructure, economy, and inclusive processes⁶.

8 prequalified teams competed in the first phase, and four went on to the second phase. The winning entry was chosen in 2014, when a majority of the judging committee chose the project "*Grønby Strand*"⁷.

the 4 proposals

The winning proposal has been praised for dissolving the transition between town and park and for providing a new "natural" park that can handle the whole town's rainwater. It breaks with the original standards for window sizes, balconies, etc., and accentuates the meeting places of the town, while opening the ground floors of the houses. The energy aspect is treated with solar cells, energy-efficient windows, effective insulation, passive solar heat and recycling or ventilation.

The second proposal was praised for its vision for the four neighbourhood squares, and its transparency connecting the building types. The park-scape and surrounding roads are laid out in an artificially hilly landscape that the committee did not find convincing. In all, the proposal was not found ambitious enough for a project of this scale, and the climate initiatives seemed not to deserve any comments. The third proposal respected the original plan with its sharp edge between town and park, but at the same time, it operated with two traffic-oars, which would weaken the sense of (urban) life. It is a weak project in terms of sustainability-related solutions, although all the well-known solutions are mentioned. Finally, the fourth proposal showed little respect for the existing architecture, but took the most "urbanized" approach to the development of the suburban structure.



FIGURE 2. Model of 4-storey unit in the Brøndby Strand new town with small walled gardens and balconies. Designed by architect Svend Høgsbro (1911-1998), who was a pioneer in Danish pre-fab industrial housing plans. © Forstadmuseet, mid 1960s.



FIGURE 3. Deck between parking level and pedestrian level is being renewed after less than ten years of tear. © Forstadmuseet, 1978.



FIGURE 4. High-rise tower under construction. The concrete slabs were standardized in accordance with the ideals and industrial logic of the time. Today industrial production in smaller series makes it possible to go for more individuality in the planned new facades. © Forstadmuseet, 1968.

A New Town?

The qualities in *Brøndby Strand*'s originally modernistic master plan are challenged in the preamble of the winning project: "*Brøndby Strand* presents itself unapproachable and tied down by the modernistic idea of functional separation and separation between nature and town"⁸.

Thereby, the project claims that the separation of nature and town is a modernistic dogma. The interesting point is not whether some modernists may have aired this idea (it certainly was not the idea of Le Corbusier⁹), but that the need for discrediting modernism as a stepping stone for new projects is so insistent. Upon such criticism, one might expect a massive attack on the modernist principles behind the original master plan of *Brøndby Strand*. However, this is not the case.

In fact, the *Grønby Strand* project stages nature around *Brøndby Strand* much in the line of modernist thinking. The project turns the original 2.5 km-long, very regular and repetitive "parkscape" of the esplanade into proper nature able to handle climate challenges, which will connect directly to the town structure as the dividing road is turned into a path system.

When it comes to the dogma of separating traffic types, the winning proposal only moderates the original layout, keeping its intention. By concentrating the town's arrival areas, the project underlines urban qualities, which is in no way challenging the original master plan. The architectural dimensions of the renovation project are not focused on heritage thinking; however they take good care of the heritage values that lie in possibilities for future communication of the original layout principles.

Actually, the original modernist project appears to be very robust when confronted with the renewal. New facade variations and materials do not threaten the communication of the planning and construction ideas of modernism, mainly confronting the industrialized and repetitive ideals of Danish housing construction of the period.

4. A THREAT TO MODERNISM?

As seen in the preamble to the winning project, the widespread negative mental images of modernism spawned by what might be called "democratic modernist projects" – as displayed in the social housing-sector – are a main actor in the current opposition to the values of modernism.

The need to renounce modernism to promote a renovation project in a modernist structure while actually upholding modernist ideals is scary. The negative attitude towards modernism is of course harmful to the protection of modernist heritage, but on the other hand, as this example demonstrates, modernism as a way of thinking and organizing large-scale structures will survive even confronted with today's modernity.

The challenges presented by new agendas such as climate change and energy efficiency may threaten the heritage values of individual modernist works, but the large modernist housing projects are robust in their master plans, and this suggests that they will survive even complex renovations.

What seems to be in need is continued specification of the core values and expressions of modernism, and in the case of mass housing, the identification of modernist elements. Through renewed communication of the modernist values we can rank and protect the heritage potential.

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NOTES

- 1 Lisbeth Hollensen, Signe Sparrevohn, Poul Sverrild, "Definition of Suburban Building Stock, Case Study: Brøndby Strand, Denmark", *Improving the Quality of Suburban Building Stock*, Malta, University of Malta, 2010, 33-39. The article describes the environmental, social, architectural and technical characteristics of the original Brøndby Strand housing plan.
- 2 The level of Danish spatial and societal planning was ever growing in the period, and in 1961 a law was passed in the Danish parliament establishing the framework for 10 new towns along the coast to the southwest of Copenhagen. The new towns were to have a mix of privately owned one-family houses and high-rise apartments in social housing estates. At the time of these town plans the ideology of social housing as the solution to housing-needs in the urban areas was at its strongest in Denmark. Government policy had enabled the creation of a social housing sector with strong ties to slab-producers and the housing-sector had turned into a strong factor in the national economy. The authoritative introduction to the industrialization of the Danish housing sector is found in Svend Bertelsen, *Bel-lahøj, Ballerup, Brøndby Strand*, Copenhagen, SBI, 1997. A brief overview is found in Poul Sverrild, Bitten Larsen, "On Large-Scale Housing in Denmark", *Journal of Architectural and Town-planning Theory*, Bratislava, 2012, 211-217.
- 3 In 1971 a housing-competition held by the Danish Building Research Institute led to changed ideals for the housing sector going from large-scale serial production and high-rise to individuality, variation and small scale low-density. The winning project "Tinggården" is seen as the Danish farewell to "the white modernism and the often colourless concrete architecture of the 1960's". *Danmarksalmeneboliger*, Copenhagen, Danish Architecture Centre, 2012, 120.
- 4 3 renewal projects are described in Henning Sørensen, *Fra Fiskerlejetilhøjhus – Historien om Brøndby Strand*, Brøndby Lokalkiv, Brøndby, 2000, 71-88.
- 5 "19 1/2 min. fraKøbenhavns centrum tilFamiliebyen Brøndby Strand", Copenhagen, 1972. Pamphlet advertising the qualities of Brøndby Strand. Article by the architect behind the new town, Svend Høgsbro, 27.
- 6 The description of the proposals is based on "Arkitekt-konkurrence Brøndby Strand Parkerne". Jury's report, Copenhagen, June 2014.
- 7 The title of the winning project "Grønby Strand" is a pun based on the rhyme with the place name Brøndby – and "Grønby" meaning "green town".
- 8 "Grønby Strand", the winning proposal by DOMUS, BCVA, Krag & Berglund, Moe, accessed on April 14, 2016, https://issuu.com/bcva/docs/bcva_br_ndby_gr_nby_strand.
- 9 Emma Dummett, *Green Space and Cosmic Order: Le Corbusier's Understanding of Nature*, PhD diss., University of Edinburgh, 2007.

Revisiting African Modernism

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For the first time in **docomomo's** history, a conference panel is devoted solely to Africa-focused papers. In this panel, the papers being discussed predominantly highlight the work undertaken recording the histories of indigenous expatriate architects, of Portuguese and French extraction in Lusophone Africa and the Sahara. 3 papers explore the work of this type. Zara Ferreira's paper traces the biography and work of the architect Francisco Castro Rodrigues in Lobito, providing an interesting record of the life of a Portuguese architect in exile in Africa, and his built legacy. Margarida Quintãs' paper focuses on a school project in Saurimo, Angola, tracing its transformation and repurposing over time to respond to the changing needs of the evolving Angolan nation state. It would seem that this pioneering infrastructure project is now in particular need of renovation and upgrading if it is to stand the test of time. The final paper of this trio, by Daniela Ruggeiri, discusses André Ravereau's involvement in the M'Zab project in Algiers, a linear planned city that never was realised.

These papers possibly help us to gauge what has been achieved so far in relation to the research and documentation of the Modern Movement in Africa. They show that a solid start has been made, preliminary to more detailed future analysis of the spread modernism across the vast continental land mass – research which is sorely needed. It is clearly important to acknowledge and engage with the life works of the expatriate European architects who helped realise “modernist” Africa, an area which the first 3 papers admirably seek to achieve. However, the expatriate presence in Africa also carried continuing overtones of the discourse of “civilising mission”, a discourse that is clearly susceptible to more critical interpretations. Also still to emerge are the voices and actions of the players who do not conform with the post-colonial canon of architecture. This part of the

session does, however, significantly help to begin this discourse in relation to the Lusophone and Sahelian-Francophone parts of Africa.

The papers in themselves are rich in detail about the lives and activities of the architects they discuss, and provide vivid descriptions of their architecture and planning, which will make for a good session discussion of these and other issues, and could help contextualise these expatriate architecture narratives in their socio economic, cultural and historical settings.

Kuukuwa Manful's paper, by contrast, brings to the panel a refreshing contemporary examination of modernist Ghanaian architecture, seen through the hitherto-ignored lens of the early local Ghanaian architects who had been trained in tropical modernism at the AA School of Tropical Architecture and elsewhere. Through her examination of key buildings of 3 of this select group, and her reflection on her interviews with them, a new view of modernism from non-Western – in this case Ghanaian – viewpoint is adduced. Her conclusions, which suggest a different and more complicated encounter with the modernist architectural canon by subsequent generations of Ghanaian architects, set out a range of issues for the panel to discuss. For example: is Ghana a unique case, or do Kuukuwa's findings challenge recent scholarship on "African modern"? At any rate, this inaugural **docomomo** "Africa panel" in Lisbon looks certain to be a good place – given the historical complexities of the Portuguese colonial legacy – to commence the debate about the values and built forms of post-war *African Modernism*.

Visions through Innovation, André Ravéreau's 10 km Plan for the valley of M'Zab

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The valley of M'Zab is located about 600 km south of Algiers on the edge of the northern Sahara. Characterised by a dry climate and arid land, the valley is unsuitable for human settlement, and for this reason it was chosen by a group of religious dissidents, the *Ibadis*, who took refuge here around the year 1000. The *Ibadis* founded 5 fortified cities (*ksour*), known as the Pentapolis of Ghardaïa.

In the late 1950s, the M'Zab valley attracted new and strong economic interests due to the discovery of hydrocarbon resources: Hassi Messaoud oilfield, 250 km southeast of Ghardaïa, and the Hassi R'Mel gas field, 60 km north of Ghardaïa. The new extraction activities caused a further boost of migration to the cities of the Pentapolis. The valley became a new desert hub and the direct consequence was its fast and unorganised urbanisation. Just before Algerian Independence, the *Agence du Plan d'Alger* scheduled the drafting of a Plan (*Plan Directeur General*) for the M'Zab valley under the direction of Gérald Hanning. The architect André Ravéreau was contacted in 1960 to assist Jean-Jacques Deluz and Robert Hansberger in drawing up the plan. André Ravéreau (Limoges 1919-) studied at the *École des Beaux-Arts* in Paris where he attended Auguste Perret's atelier. The Plan for the valley of M'Zab is deeply influenced by André Ravéreau's vision, related to the territorial investigation he made together with his wife, the photographer Manuelle Roche. The goal of Ravéreau's Plan idea was not only to control the urban expansion within the valley through technical planning instruments, but to propose a design that would take account of the Pentapolis's traditional settlements and its architecture, as well as of the landscape with particular attention to the valley orography.

While the plans designed by the *Agence du Plan d'Alger* (1954-59) for Algiers have been widely documented and studied – even those that were never realized – the plans for the M'Zab valley (1958-62), are almost unknown. Nowadays there exists only an incomplete and fragmentary documentation. The aim of the paper is to investigate the innovative potential of the Plan for the valley of M'Zab, through unpublished drawings, kindly provided by Ravéreau's private Archive, and interpretative drawings to be developed during my PhD research, opening questions to its contemporary value.

The Plan for M'Zab valley is the last but most prominent contribution of the *Agence du Plan d'Alger*¹.

Architect André Ravéreau was contacted to join the *Agence d'Alger* team for the M'Zab plan 2 years after the design development had started. Ravéreau was not always in agreement with the guidelines previously established by Gerald Hanning and developed by Jean-Jacques Deluz and Robert Hansberger which drafted "the purely urbanistic part [...] conceived on the basis of the Algiers method"². Therefore, Ravéreau's contribution is commonly considered as marginal in the *Plan Directeur* design scale, but as central in the *Plans Details* – those of Beni-Isguen expansion and Ghardaïa square – drafted as detailed parts of the whole Plan.

An accurate analysis, through the existing literature and the unpublished documentation kept in Ravéreau's private archive, proves not only a strong con-

tinuity with the design method developed by *Agence du Plan d'Alger* for Algiers, but peculiarities and innovations, due to the influence exerted by Ravéreau's vision. This paper does not aim to discern the own contribution of each architect within the plan but to highlight Ravéreau's vision, which does not match with a technical planning point of view, and which emerges at various stages and in all design scales of the 10 km plan.

The M'Zab *Plan Directeur* attempted to define an urban scenario for the whole valley, which extends for about 10 km along its intermittent stream, the *wadi* M'Zab, including the outline of a new road infrastructure; in fact, design projects focused on the valley tract between the ancient city of Ghardaïa and the city of Bou Noura with its peripheral areas, supporting the largest urban development process around Ghardaïa, already started during the colonial period.

The Plan combined different planning strategies, such as the creation of a new modern city centre near Ghardaïa, and a *linear city* extending along the *wadi* M'Zab as a support to the other three *ksour* and their expansion, which in turn developed as autonomous entities. The Plan final version, published in 1963 in the number 64 of the *Cahiers du Scientific and Technical Centre du Bâtiment*, is an original planning hybrid solution and does not include El Ateuf *ksar* as part of the design.

The unique social and climatic conditions of northern Africa opened up to the *Agence d'Alger* team the possibility for an experimentation and synthesis of western planning models. Furthermore, the many valences of the Plan reflected different approaches to territorial design within the team. Ravéreau's peculiar vision considered the valley in its entirety not only in terms of physical extent, but taking account, in an organic way, of the parts composing it.

Ravéreau interpreted the M'Zab as a unitary system whose complexity cannot be reduced to the sum of its individual parts. Through a process of subdivision, he

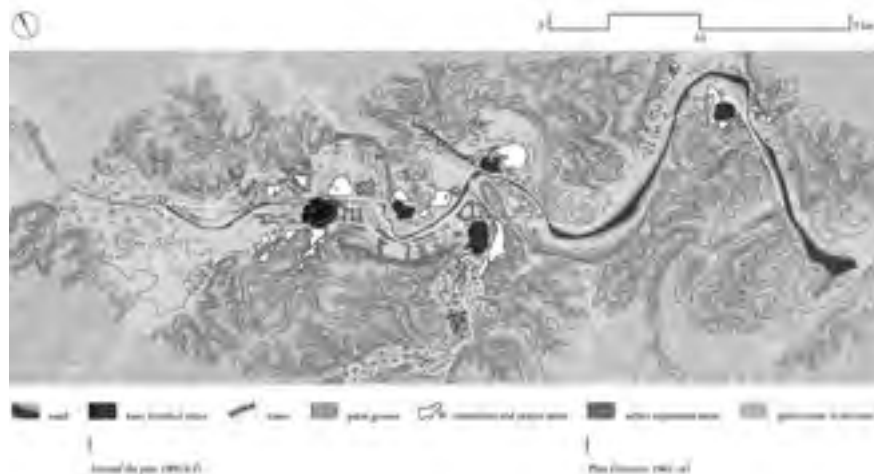


FIGURE 1. Interpretative drawing of the Plan for the valley of M'Zab, 1958-62, Algeria. © Daniela Ruggeri, 2015.

identified the constituent elements of the valley of M'Zab – at a territorial scale, as well as at urban and architectural scale – while at the same time insisting that there should be no fixed hierarchy between the elements, since they were parts of a unitary and harmonious system. The theory of the non-hierarchical relationship between the constituent elements of the Pentapolis system, recurrent in Ravéreau's writings on M'Zab³, also emerged in some parts of the Plan's report, which can be attributed to the architect:

Poetry is everywhere: in the construction of bridges, as well as in the wall dams, in the seguia and in the aqueducts that cross the palm grove, in the parapets of the terraces and in staircases and even in the countless cemeteries, the tombs of holy men whose shapes are constantly renewed on the theme of the Mihrab, with niche oriented to the east. There is no hierarchy in search of simplicity and beauty⁴.

His ability to read in a transversal and inter-scalar way the constituent elements of the valley, made it possible for the architect to reuse them in the Plan through a process of subdivision and re-composition, exploiting the theory of non-hierarchical relationship between the elements, to allow a change in scales and, consequently, meanings in the phase of assemblage. For Ravéreau, the reading of the M'Zab valley as a unitary system, corresponded to a unitary design project idea.

Despite expressing ideas radically different from the classic urbanism promulgated within the *Agence du Plan d'Alger*, the plan's report included terms such as *zoning*, indicating the overall planning strategy, and *circulation*, indicating the design of the new roads. Both technical terms defined consolidated planning instruments in the tradition of urbanism⁵; however, the plan's report, and above all its drawings, altered the meaning of the technical terms used and the semantic value of the plan.

The principal planning criteria that shaped the M'Zab Plan strategy were as follows. The method of identifying zones started from the morphological study of the M'Zab valley, through a mapping of the built-up areas, the green and agriculture areas and the free spaces. The natural predisposition of the areas was made the basis for defining their functional purpose: the aim of the plan was, then, to activate forces to increase the constitutive features of each area. The 5 ancient *ksour* of the Pentapolis were under preservation, as well as ancient cemeteries and traditional buildings spread within the territory. The new residential areas were conceived following the two existing settlement patterns in the valley: the dense tissue of the *ksour* and the spread-out layouts of the palm grove, which Ravéreau called *la ville d'été* (the summer city). The choice of either of these two models, in any one case, depended on the territorial features of each new area, as well as its position and relationship with the existing settlements. New settlements with dense tissue, like the *ksour*, were planned through a densification process along the edges of the peripheral areas, without crossing the existing boundary. On other occasions they had to be settled on the sides of the rocky peaks or on its tops. As for the *ksour*, new urban development was shaped by a formula that set out to combine modern construction methods with the *mozabite* tradition.



FIGURE 2. Jean-Jacques Deluz, Robert Hansberger, André Ravéreau, zoning Plan within the *Plan Directeur* of the M'Zab valley, Algeria, 1958-62. © *Cahiers du Centre Scientifique et Technique du Bâtiment*, n. 64, 1963.

Low-density, spread-out settlements, like the *ville d'été*, had to be set within the free existing green areas or in those potentially cultivable by the desert, and, by tradition, in the palm groves. The planning of new areas with low population density, as well as the protection of the palm groves and cemeteries and its expansion, were necessary to avoid the new urban expansion areas running together. Although the uses of the zones were not planned exclusively on a functional division basis, but on an environmental matrix, reflecting the way in which a kind of geographical determinism was replacing the conventional parameters of zoning and territorial division. So, while it is not possible to identify the Plan with the classical zoning strategy, on the other hand, despite its innovative components, it is still not possible to talk about a real break with the past.

According to Jean-Jacques Deluz⁶, Ravéreau criticized the plan's strategy of occupying the unbuilt mountainside with dense urban expansion areas, preserving the free areas downstream. This is understandable, considering the territorial investigation made by Ravéreau, which brought out the complexity of the balanced M'Zab system, where the individual parts contribute to the unity; It is not difficult to imagine that the attitude of his *Agence d'Alger* colleagues appeared to Ravéreau too simplistic. Ravéreau opposed the simple repetition of existing settlement patterns in the valley, proposing the design of parts in a comprehensive territorial plan, which would always be present in the background, even in architectural-scale design. The essential elements of his 10 km Plan idea become yet clearer if one compares the published drawings with some unpublished drawings



FIGURE 3. André Ravéreau, Post office of Ghardaïa, M'Zab valley, Algeria, 1966-67. © Manuelle Roche/ADAGP, Ravéreau's private archive, Manuelle Roche photographer.



FIGURE 4. André Ravéreau, Villa M., Ghardaïa/Beni-Isguen, M'Zab valley, Algeria, 1966-67. © Manuelle Roche/ADAGP, Ravéreau's private archive, Manuelle Roche photographer.

from his private archives. These depict a version of the *Plan Directeur General* – which takes into account all 5 *ksour* of Pentapolis and its outskirts – where the shape of the new settlements fits completely to the orography of the terrain, to the point where the design of the new areas of expansion merged with the contour lines; the two *plan Details*, Ghardaïa and Beni-Isguen, both focused on a wider portion of territory than just outside the city perimeter, highlighting the relationship between urban design and the valley, which the architect sought to capture through his method of tracing visual angles and section valley sketches.

Ravéreau conceived the design for the M'Zab as a multi-scaled intervention spanning from the territorial to the architectural scale. All these scales were considered as parts of a unitary design in which there was no difference of scale between the overall system and its parts, but a strong similarity, because everything corresponds to one idea.

The plan provided, in addition to areas for economic activities, the so-called *équipement régional* (regional services), which comprised administrative services, schools, hospitals, cultural spaces and sports. School

buildings were to be distributed within the neighbourhoods while the headquarters of administrative services, such as Chamber of Commerce, Courthouse and Post office, were concentrated in the new square of Ghardaïa – placed in a south-east area just outside the ancient wall of the city, which was the former French military manoeuvre field. This group of administrative buildings is coupled with a series of buildings such as shops, coffee shops and an outdoor cinema, designed to create interacting forces that bring the square to life during the various hours of the day. The new square of Ghardaïa, associated with a variety of activities, was intended to regenerate the area into a strong attraction pole for the whole valley, giving the plan its definitive “comet shape”. This strategy, following political directives, unbalanced the main development of the valley towards Ghardaïa, to the detriment of El Ateuf city, which was already compromised by its proximity to the gradual *wadi* pollution.

In Ravéreau's version of the *Plan Directeur*, a discrepancy emerged between urban development around Ghardaïa and that of the new expansion areas, closed

entities that run along the *wadi* M'Zab until El Ateuf. The university that was planned near Bou Noura, where Ravéreau designed the School of Architecture, seems an effort to re-balance the plan and supports the hypothesis that Ravéreau's initial idea was to restore the isotropy of the Pentapolis system. However, the design of the square, drafted in the Ghardaïa *Plan Detail*, would attain a higher level of definition than the School of Architecture of Bou Noura.

The M'Zab plan was partially put into effect; its infrastructures are still visible today, although Ravéreau was only able to build the post office (1966-67) within Ghardaïa's new square. One year later he built Villa M. within a residential area in the palm grove between Ghardaïa and Beni-Isguen. The Villa M. and the post office were both conceived as part of a search for territorial support cohesion, not exclusively by means of the architectural shape and traditional material, but also by studying the views that express the relationship between inside and outside, accepting the transformations of the ancient city and the new one. Both these buildings are quite famous, while the M'Zab plan is almost unknown, but in the light of my analysis, I believe that they should be considered as parts of the same design idea.

The M'Zab plan, thanks to the different features that helped generate such hybrid solutions, deserves to be reconsidered, not so much as a fully reproducible model, but as an example of a design approach which is still valid because it includes tradition while at the same time building the modern city. Its projects offer, on the one hand, a possible approach to project design in a specific geographical context with its own climatic conditions, namely the Saharan oasis; and on the other hand, they open up a debate on a subject that can, by analogy, be extended to other geographic areas and building tasks, such as that of a new design project within a historic system.

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NOTES

- 1 The *Agence du Plan d'Alger* was established in 1954 by Pierre Dalloz under the will of the newly elected mayor of Algiers, Jacques Chevallier. See Jean-Jacques Deluz, "Alger 1962: L'Héritage", *Techniques & Architecture*, n. 329, 1980, 41-46. In 1958 with the resignation of mayor Chevallier, the main protagonists of the *Agence du Plan d'Alger* left the scene, including the architect Fernand Pouillon, as well as the *Agence d'Alger* Director Gerald Hanning. Since 1959 Jean-Jacques Deluz assumes in fact, the direction of the *Agence du Plan d'Alger*. See Jean-Louis Cohen, Nabila Oulebsir and Youcef Kanoun (ed.), *Alger: Paysage Urbain et Architectures, from 1800 to 2000*, Paris, Les Éditions de l'Imprimeur, 2003, 229-242.
- 2 See Rémi Baudouï and Philippe Potié (ed.), *André Ravéreau, l'Atelier du Désert*, Marseille, Éditions Parenthèses, 2003, 52. "Si la partie purement urbanistique que nous avons conçue sur les modèles des méthodes d'Alger revient essentiellement à Hansberger et moi-même, Ravéreau nous apporta sa sensibilité pour l'élaboration de deux plans de détail, l'extension de Beni-Isguen et l'aménagements du champ-de-Manœuvre."
- 3 See André Ravéreau, *Le M'Zab, Une Leçon d'Architecture*, Arles, Actes Sud Sindbad, 2003, 35.
- 4 Jean-Jacques Deluz, Robert Hansberger and André Ravéreau, "Vallée du M'Zab, Urbanisme et Architecture", *Cahiers du Centre Scientifique et Technique du Bâtiment*, n. 64, 1963. "La poésie est partout: dans la constitution des puits, du mur des barrages, des seguias et aqueducs qui couvrent la palmeraie, des acrotères et escaliers des terrasses et jusque dans les innombrables cimetières, les tombeaux des saints aux formes sans cesse renouvelées sur le thème constant du seul 'Mirhab', niche dirigée vers l'Est. Il n'y a pas de hiérarchie dans la recherche de la simplicité ou de la beauté."
- 5 These terms date back to Athens Charter edited by Le Corbusier at the fourth CIAM conference in 1933.
- 6 Rémi Baudouï and Philippe Potié (ed.), *op.cit.*, 53.

From Endurance to Resilience: Saurimo School Complex, Angola

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This paper traces the story of the Saurimo School Complex in Angola, from its foundation up until the present day, and proposes an intervention methodology for the redesign of the buildings.

Francisco Silva Dias and Antonieta Jacinto designed the master plan for the Saurimo School Complex in 1958. At that time, the Portuguese colonial government established a central boarding school in northeast Angola to cater for the growing number of people living in diamond mining communities in Lunda region. The original scheme for the school facilities in Saurimo (former Henrique Carvalho) included a secondary school, male and female student dormitories, a sports pavilion and a chapel, but only part of this ensemble was completed according to the original plan. The school facilities built during the 1960s are still functioning today, notwithstanding the great convulsions in Angolan society since the country's independence in 1975. Currently, the school is struggling with overcrowding, having more than 60 pupils per class and operating in 2 shifts. Due to the scarcity of school infrastructure in the country, the development of viable strategies for the adaptive reuse of modern schools is now a pressing topic. Using mainly primary sources, this research draws on the original documents of the project and on building surveys on-site to provide a potential framework for contemporary architectural intervention. By opposing the notions of endurance and resilience to each other, the paper distinguishes between the building's current actual ability to remain functional and its potential ability to spring back into its original shape. It argues that restoration would constitute a valid procedure to allow the complex to adapt to future change.

1. A BOARDING SCHOOL IN FAR NORTHEAST ANGOLA

In 1957, the Governor of Lunda, Eduardo Martins Soares, was planning the foundation of a boarding school in the northeastern province of Angola. His plan was to build new educational facilities in Saurimo (former Henrique Carvalho) with the support of the Public Works Department and the financing of the national diamond company (*Diamang*)¹.

Although Lunda was the richest diamond region in the country it was, at the same time, one of the most deserted areas of Angola. A growing number of mine workers were living in small urban settlements, far away from Malanje and Luanda, which were the closest cities where their children could get secondary education in religious boarding schools. Consequently, *Diamang* considered supporting the construction of a secondary school with male and female dormitories in the capital city of Lunda Province.

Saurimo had a central position in the region. The city acted as a strategic stopover between Luanda – Angola's capital, located at the shore –, and Dundo (former Portugália) – a small town, just next to the northern border, which housed the headquarters of *Diamang*. Moreover, Saurimo was located halfway between Dundo and Luena (former Luso), which was the closest town with access to the Benguela rail-

way (CFB). Being the crossroad of the 2 axes, Saurimo naturally became an important trading area and the administrative centre of the whole region.

The city was laid out on an orthogonal grid on a plateau 1000 metres above sea level. Although an urban settlement had existed there since the beginning of the 20th century, Saurimo only became the capital of Lunda in 1917 and a city in 1956². A few public buildings were organized around the central square – the city hall, the governor's house, the post office and the church. The new lyceum was to be built nearby, just behind the church, in an unoccupied quarter. The large plot was halfway between the city centre and the Christian mission, which, at the end of the 1950s, were 2 of the most structured areas of the developing city.

The project of building a boarding school in Saurimo was carried out through a public-private partnership that would benefit both the province's development and the diamond company's welfare. In order to get the agreement of the Governor of Angola, the local administration urgently needed technical advice to endorse their intentions.

They approached Antonieta Jacinto and commissioned her to design the boarding school. She was a young architect who had newly graduated in Lisbon and was back in her home country to join the Public Works Department (DSOPTA). In spite of Jacinto's official title, this was a private assignment that she managed directly with the Governor of Lunda³. She immediately developed a schematic architectural design for the school, which was much inspired by her thesis project⁴. Francisco Silva Dias, her future husband, joined the process a few months later and together they designed the final master plan for the Saurimo School Complex.

2. BUILDING THE LYCEUM (1958-1960)

Urgency and Economy of Means

Jacinto and Silva Dias' project envisioned an ambitious school complex, which included several buildings in a project of 5,000 square metres overall. The architectural scheme included a lyceum, male and female student dormitories, a chapel, an indoor sports pavilion, an outdoor swimming pool, four playing fields and large gardening areas.

According to the financial planning regime established by the Governor of Lunda, the construction works had to take place in 2 phases. The design was to be adaptable to an expected growth of school population but, at the same time, all technical solutions ought to be as "inexpensive as possible"⁵. In addition to financial restrictions, there was also only a restricted range of building materials available in the region. Even the simplest ones – such as brick, cement, or sand – had to be brought from Luso or Malanje, and were overcharged for transportation⁶.

Therefore, urgency and economy of means were the most significant aspects of the whole process and constituted the basis of the architectural design. The



FIGURE 1. Silva Dias and Jacinto, School Complex, Saurimo, Angola, 1959-1960. Model. © Francisco Silva Dias and Antonieta Jacinto Archive, 1959.

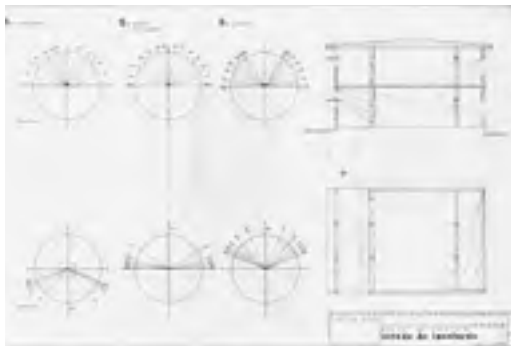


FIGURE 2. Silva Dias and Jacinto, School Complex, Saurimo, Angola, 1959-1960. Sun path diagrams. © Francisco Silva Dias and Antonieta Jacinto Archive, 1959.

architects developed a straightforward structural system and very simple technical devices to shape the entire school complex. Modularity and repetition were the key strategies to overcome the economic constraints and maximize the area of the school facilities.

In 1959, the architects delivered the site scheme and detailed plans of the lyceum and the dormitories. The drawings were to assist the immediate construction of the two buildings, while the developments foreseen for the later phase were only articulated on a very small scale. The works started very promptly, that same year, but only the lyceum was built in accordance with the original design⁷.

Environmental Design

Local climate was one of the first constraints the architects considered relevant in developing the school design. They not only studied the meteorological data of the region but also included these in their project presentation⁸. Dominant winds and temperature reports informed the architectural design from the start, by influencing the building's orientation and its form.

The influence of climate in architecture was a topic of interest to the couple. They were familiar with Fry and Drew's work in sub-Saharan Africa and their books on the subject. The manual *Tropical Architecture in the Humid Zone*, published in 1956, was instrumental in the earliest developments of Silva Dias and Jacinto's careers in Angola⁹.

However, their involvement with tropical climates was not purely academic. Antonieta Jacinto had an empirical understanding on the variances in Angolan climates because she had lived in different regions of the country during her childhood. Francisco Silva Dias was also fascinated by this subject as a result of his contribution to the *Inquiry into Popular Architecture in Portugal*¹⁰. From that experience, he learned how small deviations in geography produced significant formal changes in Portuguese vernacular architecture.

The school they developed together in Saurimo echoed this awareness and introduced several passive design strategies. The building is a pragmatic and plain response to a particular place, from which they collected relevant information and to which they tailored precise architectural solutions.

The lyceum has a cross-shaped plan oriented by the city's urban grid. An inner courtyard connects four pavilions, each containing different parts of the school programme¹¹. According to the architects, the formal arrangement favours health and hygiene purposes, by bringing additional natural light and airing into indoor spaces¹². Nonetheless, the school is essentially an open-air structure. Circulation areas are shaded and widely ventilated, and only classrooms are enclosed.

The 10 classrooms are organized in a 2-storey pavilion, with 5 rooms per floor. An access gallery and large verandas act as buffers in all interactions with the outside, working together as cooling devices for the classrooms. The building section was designed using the solar diagram, which allowed development of efficient shading solutions to both façades. To the northwest, a concrete grid divides the corridor from the outside; to the southeast, a wooden *brise-soleil* prevents direct sun from entering the classrooms early in the mornings.

The façades were conceived as interfaces that would address the local climate. Fixed shading devices made from durable materials provided a low-cost and long-lasting building envelope. The reinforced concrete structure, with short spans, is shown in the elevation's regular composition and on the organization of modular spaces designed to fit the school functions.

The construction was completed rapidly, after 2 years of work. Building the school simply involved moderately skilled staff, a restricted number of building materials and customary technical solutions¹³. However, the exceptional nature of this operation lies precisely in its plainness. The building shows great clarity in responding to functional demands, thermal comfort and budgetary constraints. It presents a consistent architectural discourse using the greatest possible economy of means. Limitations fostered rationality and facilitated the design of a modern building of ascetic beauty.

3. ENDURING TRANSFORMATION (1961-2016)

The school opened in 1961 and is still operating today, despite all the dramatic ups and downs in Angolan society ever since. However, new challenges are currently provoking discussion, since the Ministry of Education is carrying out a school infrastructure development programme.

Preparing the building for these upcoming demands calls for a close reading of its history. It is essential to understand the original principles and, likewise, the succeeding transformations that took place during the last 55 years. In order to assess the building's performance today, it is crucial to apprehend how the physical transformations responded to specific circumstances, by setting them into chronological frames.

From Colonial War to Independence, 1961-75

During the first period, from the school's opening in 1961 to the country's independence in 1975, the building operated as a private boarding school. The master plan was never completed as originally foreseen but the dormitories were built in 1964 and the school facilities were extended in 1972.

Although the Colonial War also started in 1961, the immigration from Portugal was at a peak and continued growing over the following years. Access to education was increasingly widened as the Portuguese government tried earnestly to maintain its control over the colony. Strong investment in all development areas, and particularly in education, took place in this period¹⁴. For this reason, the school population increased significantly in Saurimo and the extension built in 1972 doubled the number of classrooms¹⁵.

Jacinto and Silva did not plan the new school extension. The architects had originally developed an elastic building, which was easily adaptable to growth¹⁶. The new addition repeats the original façades and uses the same materials but, at the same time, presents significant changes in scale and proportion when compared to the initial structure. The modulation is altered, the gallery is narrower and classrooms have different proportions. Moreover, certain exceptional building parts of the new addition, such as the angle and the upper façade, include traditional features that are visibly incoherent in relation to the pre-existing architectural language. Furthermore, a particularly poor articulation of space in the



FIGURE 3. Silva Dias and Jacinto, School Complex, Saurimo, Angola, 1959-1960. Construction works. © Francisco Silva Dias and Antonieta Jacinto Archive, 1960.



FIGURE 4. Silva Dias and Jacinto, School Complex, Saurimo, Angola, 1959-1960. Covered walkway. © Margarida Quintã, 2014.

corner and the use of the same façade in different solar orientations also show clear evidence of the new addition's lesser architectural value.

The new intervention clearly misunderstood the concept of the original project. It creates a poorer ensemble and, by using the same envelope, it strongly diminishes the clarity of the original building.

Angolan Civil War, 1975-2002

In 1975, Portuguese hegemony ended and Angola became an independent country. The new constitution provided for democratic access to education, which resulted in a tripling of the number of Angolan pupils between 1974 and 1980¹⁷.

However, the Angolan Civil War also started in 1975, and would last for 27 years. Political and social instability produced enormous difficulties in the country, undermining its development in all areas. With regard to education, the lack of teachers and the destruction of educational facilities led to an exponential rise of children with no access to school¹⁸.

In Saurimo, the lyceum became public in 1975 and, despite the difficulties, it continued running during the long-term Civil War. The building endured almost three decades of neglect, but no significant transformations occurred during that time.

National Reconstruction, 2002-2016

The Angolan Civil War ended in 2002 and since then the country has been recovering from its wide-ranging effects. New schools are under development and renovation of many existing facilities has taken place so far as part of the national reconstruction plan. However, the operation has not yet reached all educational buildings in the country.

In fact, this is the case in Saurimo. Today, the building is a secondary school and is struggling with overcrowding, having more than three thousand enrolled pupils from the 7th to the 9th year¹⁹. Each class has more than 60 pupils, which far exceeds the limit of 45 pupils per class set by the Ministry of Education²⁰.

During this period, the building only received insufficient and poorly executed maintenance works. Additionally, in 2010 7 extra classrooms were built on the covered playgrounds but offer the most inadequate learning conditions. Their area is too small (with a ratio of 0,7m² per student), natural light is scarce and cross ventilation non-existent. The use of electrical light is compulsory during the day and so is air-conditioning. Considering the school's budgetary limitations and the frequent breakdowns of public electricity supply, this is obviously an unsustainable solution.

In recent years new buildings devoted to different educational stages have been built on the plot²¹. Although the positioning and formal arrangement of new schools does not follow an articulated plan, school administrations do cooperate and promote a flexible use of shared space. This informality is evinced in the collective usage of outdoor spaces and, more explicitly, through the sharing of the secondary school facilities.

The secondary school operates only during the mornings, from 7.30 am to 1 pm. Therefore, university classes²² also take place in the empty classrooms during the afternoons. Additionally, people from different educational stages also use the facilities for studying during the weekends. In fact, the building operates as an informal open structure that is perceived as public space.

A contemporary democratic use of space is favoured by the openness of the original building and its comfortable environment. Despite all the changes we have traced above, the school has shown a remarkable ability to accommodate transformation over the years. However, can it continue to do so much longer? How can contemporary architectural intervention, in a post-colonial society, cope with this complex legacy?

4. DESIGNING RESILIENCE (2016-)

Based on the recommendations of UNESCO's World Education Forum, the Angolan programme, Education for All (PAN-EPT), was under development from 2001 to 2015 and has recently been extended until 2025. The scarcity of school infrastructure is still a major topic in the country and so is the renovation of existing facilities. In this framework, developing viable strategies to 20th century schools adaptive reuse is currently a pressing subject.

As we have seen above, an understanding of the buildings' current predicament cannot be fully achieved without a complete consideration of its history. Nevertheless, historical research is not enough, if it is only limited to the appraisal of buildings' historical relevance. Construction history, however, can provide relevant information to contribute to contemporary architectural practice²³.

In the case of Saurimo, it has been shown that the premises of the original architectural design – thermal comfort, economy and durability – are still up-to-date. However, as we saw, subsequent interventions were based on misinterpretations of the original form, which undermined the overall quality of the school. Moreover, low-cost works carried out as remedies for immediate problems have proved to be inefficient and even counterproductive.

In this complex context, bringing the school back to its original shape is the most suitable response to present-day demands. Restoration is thus, in this particular case, the best way to update the building. Today, as before, the original school is a low-maintenance and environmentally-friendly structure that provides appropriate learning conditions²⁴.

Alternatively, school occupancy levels could be improved through a more efficient use of the school campus. Demolition of the extensions would allow the development of an optimized reorganization of the entire plot, especially if taking collective informal uses into account.

Considering that 20th century schools account for the largest share of the country's educational resources²⁵, re-designing them represents a major task for contemporary architectural practice. However, the latest demands for moderni-

zation cannot be fully achieved without practical research on building materials, construction techniques and passive systems of environmental control. Once again, resilience is the first challenge that must be met.

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NOTES

- 1 *Diamang (Companhia de Diamantes de Angola)* was established in Angola in 1917 with Portuguese, Belgian, French and American resources. The company had a colonizing mission of the Lunda region and received many privileges from the Portuguese colonial government. In order to develop the mining industry, the company created and fostered many social and cultural departments (such as Healthcare, Education, Urbanism and Culture, amongst others) and built basic infrastructure, urban settlements and welfare buildings. Manuel Areia, "Introdução", *Diamang: Estudo do Património Cultural da Ex-Companhia de Diamantes de Angola*, Coimbra, Museu Antropológico da Universidade de Coimbra, 1995, 7-10.
- 2 The town of Henrique Carvalho became a city in May 28, 1956 (*Diploma Legislativo* 2757).
- 3 A state architect engaging in a private commission was a legitimate and common practice in the country due to the scarce number of architects living in Angola at that time.
- 4 Antonieta Jacinto, *CODA: Um Centro Escolar num País Tropical*, Lisbon, ESBAL, 1956.
- 5 Free translation: "a verba com que inicialmente se poderá contar é de 5000 contos para toda a obra, razão por que convém estudar uma construção a mais económica possível sem contudo prejudicar a eficiência dos diferentes serviços." Eduardo Martins Soares, "Algumas Directrizes para a Elaboração do Projecto de Construção de um Colégio-Internato em Henrique Carvalho", Henrique Carvalho, Governo do Distrito da Lunda, 6 de Janeiro de 1958, 3.
- 6 *Ibid.*, 4.
- 7 Francisco Silva Dias supervised the construction of the lyceum (Interview with Francisco Silva Dias and Antonieta Jacinto, Lisbon, 15th May 2014). The division of the Public Works Department of Moxico managed the construction of the dormitories in 1964, performing some critical changes to the initial design (*Bloco de Internato do Colégio-Liceu de Henrique Carvalho*, DPSOPT Moxico, 1964).
- 8 "Ventos dominantes registados na estação meteorológica de Henrique Carvalho nos anos 1953-1959" and "Temperatura registada na estação meteorológica de Henrique Carvalho nos anos 1953-1959", Silva Dias Archive.
- 9 Interview with Francisco Silva Dias and Antonieta Jacinto, Lisbon, 15th May 2014.
- 10 The Inquiry into Popular Architecture in Portugal was a groundbreaking study on vernacular architecture in the country. The fieldwork performed by several architects started in 1955 and led to the publishing of the book *Arquitectura Popular em Portugal* in 1961.
- 11 Administration services; covered playground; laboratories; classrooms.
- 12 Antonieta Jacinto and Francisco Silva Dias, "Memória Descritiva e Justificativa do Colégio de Henrique Carvalho", Luanda, n/d, 2. Silva Dias Archive.
- 13 Interview with Francisco Silva Dias and Antonieta Jacinto, Lisbon, 13 June 2014.
- 14 Martins dos Santos, *História do Ensino em Angola*, Luanda, Serviços de Educação, 1970.
- 15 10 classrooms and 2 laboratories were built in 1972.
- 16 Antonieta Jacinto and Francisco Silva Dias, *op. cit.*, 3.
- 17 *Currículo do 1º Ciclo do Ensino Secundário*, Ministério da Educação da República de Angola Luanda, 2005, 7.
- 18 *Ibid.*, 8.
- 19 Saurimo's first cycle secondary school has 51 classes with 60 to 70 students per class, from ages 13 to 15 (Interview with the head teacher, Fernando Zeca, Saurimo, 8 October 2014).
- 20 Interview with the Director of GEPE (*Gabinete de Estudos Planeamento e Estatística do Ministério da Educação*), Irene Figueiredo, Luanda, 25 September 2014.
- 21 Second cycle of secondary school and higher education.
- 22 These classes are smaller, with 10 to 15 students.
- 23 On this subject: Franz Graf, "Introduction", *Histoire Matérielle du Bâti et Projet de Sauvegarde – Devenir de l'Architecture Moderne et Contemporaine*, Lausanne, Presses Polytechniques et Universitaires Romandes, 2014, 11-17.
- 24 Even despite excessive occupation, students and teachers perceive good comfort conditions in the original classrooms (results from interviews in October 2014).
- 25 Currently more than 60% of school facilities were built from 1945 to 1975 according to Irene Figueiredo. Interview with the Director of GEPE (*Gabinete de Estudos Planeamento e Estatística do Ministério da Educação*), Irene Figueiredo, Luanda, 25 September 2014.

The Right to the City.

Lobito and Francisco Castro Rodrigues

Zara Ferreira

DOCOMOMO INTERNATIONAL, LISBOA, PORTUGAL

Francisco Castro Rodrigues (FCR) (1920-2015) was born and died in Lisbon, Portugal. However, his life belonged to the city he helped to expand and develop, in Angola: Lobito. Willing to “fight for the possibility of architects being treated as lawyers or doctors: with free will”, FCR was an opponent of the *Estado Novo* Portuguese dictatorship [(1926)1933-1974]. Unable to find employment in the country, like many other architects he left for Angola, which was a Portuguese colony at that time. Having Le Corbusier and modern Brazilian architecture as role models, FCR struggled to be a real modern architect, which, he believed, meant to contribute, through urbanism and architecture, to a democratic, healthy and happy way of living. As the Chief Office’s Architect, the Urbanization and Architecture Services’ Director and a member of the Cultural Committee, Disclosure and Tourism, he was responsible for transforming Lobito into a modern city. In the urbanization plan of Lobito, FCR applied the principles of the *Athens Charter* – which he translated into Portuguese for publication in the magazine *Arquitectura* in 1948 – organizing the city according to the 4 vital functions. Also, through his architecture, he explored the Modern Movement’s principles, combined with local concerns, in social, economic and climatic terms.

Besides urbanism and architecture, FCR organized exhibitions, created an Anthropology Museum, actively published in journals and magazines, was head of radio, cineclubs and other cultural groups and Professor of different levels of education, continuously contributing to the cultural evolution of the city and its people. Most of all, he was a humanist collaborating with the population in the development of a good city.

With the independence of the colonies, he did not return to Portugal, unlike most other architects. Complicit with the view of Agostinho Neto – who invited him to organize the Architecture Course in Luanda, in 1978 – FCR was invited to stay, in order “to continue giving his competence to the city, widely known throughout Angola”.

This paper aims to discuss how the urbanistic principles FCR applied in the development of Lobito can still assist its sustainable development today. Analysing how tradition and innovation have been combined, relating diverse transnational influences, this paper explores the concepts of endurance and resilience of the city of Lobito. It argues that, in post-colonial circumstances, this city was developed along lines that still remain valid and can be adapted and reused today and in the future.

“...an uneasy life, industrious, often impertinent, but always with a free wrist”¹.

1. SPRING

In the field of architecture, the heart became too bogged down in the forms of easy poetic sense and convenient perception. So, among us, modern architecture is still in its infancy. We constantly revisit the Manueline, the Pombaline, the Raulinos... It's almost always comfortable and successful... Architecture has been designed from the outside in. That's why I want to become a good modern architect. I will do it, no matter what. If it fails... then: I'll retire from it at birth!²



FIGURE 1. "Memories of Lobito", cover of the Personal CV of Francisco Castro Rodrigues. © FCR Archive.



FIGURE 2. Francisco Castro Rodrigues showing the Plan for Catumbela and Lobito. © FCR Archive.

Francisco Castro Rodrigues was born in Lisbon, Portugal, in 1920. After being expelled from *Instituto Superior Técnico* in the first year of training as a Naval Engineer, for being involved in protests against fee increases, he joined *Escola Superior de Belas Artes*, in Lisbon (ESBAL), graduating in architecture in 1951. He used to recall how, during that time, in Lisbon, architectural teaching was based on "copying the classic".

As an opponent of the *Estado Novo* Portuguese dictatorship [(1926)1933-1974] and a militant member of the Portuguese Communist Party, he was pursued and arrested by the International Police and State Defense (PIDE) for belonging to the Direction of Democratic Unity Movement (MUD). Being part of the new generation of Portuguese architects³, following the 1st *National Architecture Congress* (1948)⁴, "claiming a new social, ethical and political consciousness and criticism [...], according to the premises of the Modern Movement"⁵, Francisco Castro Rodrigues left for Angola in 1953, as part of the wave of Portuguese architects who emigrated to the African colonies after WWII, and reflecting also the increasing autonomy of these territories⁶.

From the beginning, he believed that architecture was also politics; both, in combination, would be a potent weapon to achieve a humane society. This only would be possible through a revolution in the way architecture was done, through modern architecture, heroically fighting the totalitarian regime of Salazar.

After being involved in several initiatives in Portugal, including his participation in the group ICAT – *Cultural Initiatives Art and Technique* –, his coordination (1951-1954) of the magazine *Arquitectura*, a key vehicle of reception and dissemination of international modern ideas and works, his participation in the 1st *National Architecture Congress* (1948) and his direction of the National Society of Fine Arts (1945-1953), it was, finally, in Angola that FCR was able to really embrace the pro-

fession: “we were fighting for the possibility of architects being treated as lawyers or doctors: with a free wrist”⁷.

In 1953, invited by the Mayor of Lobito, Francisco Castro Rodrigues left for Lobito, Angola’s second city, to chair the Urbanization and Architecture Services, where he would stay for 34 long years.

2. SUMMER

*For three months now, we have been continuously enduring temperatures of 30-33°C, in the house; humidity is 70 to 80%. We have no water here in the second city of Angola sometimes for three days a week. The electric lighting, too, goes off for one or two hours a day, generally when we have decided to go to the movies*⁸.

In the Portuguese colonies, which relied on limited human and material resources, pragmatism had to necessarily reign. Climatic, functional and practical economic issues were much more important than any celebration of national values. Those would be addressed through the exploration of Modern Movement principles, combined with local concerns, in social, economic and climatic terms.

The clarity and continuity of the interventions of Francisco Castro Rodrigues, simultaneously in the municipal, urban, infrastructural and architectural fields – in building programmes ranging from housing to commercial, educational, cultural, religious, health, industrial – all helped make Lobito into a real modern city.

In the City

In the 19th century, Lobito was called the “place of the oysters”, because there was nothing else there. From the moment FCR arrived in the city, he had to confront the task of reviewing and correcting its urbanization plan, which had already been begun in Lisbon.

In the Urbanization Plan of Lobito, Francisco Castro Rodrigues applied the principles of the *Athens Charter* (1933) – which he and his wife translated into Portuguese, to be published in the magazine *Arquitectura* in 1948 – organizing the city according to the 4 vital functions: housing, leisure, work and circulation.

As the Angolan city with the highest urban population growth in the 1940s, “it was growing from every pore”, increasingly becoming crowded with clandestine neighbourhoods. The legalization and sanitation of these shanty-towns was one of the first works that FCR was responsible for. It was a city difficult to build in, being dominated by swamps, marshes, salt-pans, and reserves for the railways and for the port.

The city had grown from the sandbanks at the lower level, on sandy and marshy ground, advancing to windward and spreading up the hills, “the best part of the town, cooler”. The railway, coming from within Africa through Angola and ending at the great international port of Lobito, brought in its wake an extraordinary city development potential.



FIGURE 3. Francisco Castro Rodrigues, Universal Building, 1957-1961.
© FCR Archive.

FCR broadly understood this urban system, in all the complexity of its new and growing roles, and he tried to help realise its greatest potential, providing the city with controlled and planned expansion possibilities. One major change was to transfer the railway from the centre to the periphery, in order to establish a new industrial hub and to reduce the penetration of the line into the city.

In climate terms, the direction of development was maintained in continuity with the shoreline sandbank, with buildings favourably orientated towards the prevailing winds, and the city was

designed with the goal of development towards the hills, where the moisture was 20% lower and the fresh winds more intense.

In social terms, FCR always pursued the ideal of integration, avoiding segregation of housing for the poorest populations, and spreading them into the urban fabric.

Through urbanism, FCR was able to define governing principles for the aggregation of population and life, reflecting the urban, physical and civic character of the people.

In Architecture

The climate of Lobito is characterized by high average temperatures, combined with torrential rains bringing about high levels of moisture in the air. The main challenges for architectural design in tropical and subtropical regions lie, then, in the optimization of solar gain and rain protection, while ensuring maximum ventilation to counter the effects of humidity.

In the Universal Building (1957-1961), marking the entrance of the city through a mixed block of monumental scale designed as a *Unité d' Habitation* that combines housing, services and commerce, we witness FCR at work exploring the *Corbusian* lexicon, in a manner adapted to the tropical climate.

The Terrace Cinema Flamingo (1963), with its undulating walls, zigzag roofs and colourful surfaces, represents his idea of global design, through the synthesis of the arts. Today it is used as an open-air school, representing the capacity of these buildings to adapt to different uses. In the Novo Redondo Cathedral, we find the same principles, in combination with a demand for directed ventilation with fresh air, expressed through harmonium walls ventilated with grilles.

In the Lobito High School (1966-1967), with its permanent open walling, these social and climate principles were explored to the maximum. FCR advocated that teaching should be entirely carried out outdoors, where possible: "if the teacher is

good, and comprehensively prepared, this will captivate and hold the attention of the pupil; if the teacher is bad, the student will learn more through observation of nature than by being subjected to great physical and mental effort”.

In Life

Because of the colour of his skin, a man is refused work and decent housing; education and instruction are denied to him. Because of the colour of their skin, politicians arguing for universal human rights are thrown into prisons all their life, people are put into ghettos, set apart from human society. And because of the colour of their skin, other men are killed, with no scruples, with no shame⁹.

Besides urbanism and architecture, Francisco Castro Rodrigues, in his commitment to the city's cultural development, conducted several initiatives, which continuously enhanced the cultural evolution of the city and its people.

His cultural activism was also a form of political intervention, but, more than that, he was also a humanist collaborating with the population in the development of a good city: he actively published in journals and magazines – such as the cultural newspaper *Kilamba* and the local newspaper *Lobito* – and organized exhibitions and cinema cycles; he was head of radio and other cultural groups and was professor in different levels and fields of education in the city: mathematics, drawing, Portuguese, Angolan literature and Umbundo.

In 1961, as director of the Angolan-Brazilian Studies Centre, he organized the itinerant exhibition *Brazilian Modern Architecture* (1961), composed of material



FIGURE 4. Francisco Castro Rodrigues, Terrace Cinema *Flamingo*, 1960s. © FCR Archive.

gathered from publications, mainly magazine clippings, accompanied by a catalogue with 112 entries. Among many other exhibitions of architecture, painting, sculpture, ethnography, etc., these exhibitions contributed significantly to the reception of international trends, influencing the work of local artists, who were constantly stimulated and encouraged by FCR.

All of this work was fundamental to the pursuit of his wider agenda of achieving a deep knowledge of the territory and grounding his architectural and urban practice. The research project, *History of Lobito and Catumbela*, finished in 1982, was an especially noteworthy outcome of what he had learnt from its people and from his own experience. As provincial delegate of the Commission for National Cultural Heritage Conservation, in 1978 FCR organized the Regional Ethnography Museum of Lobito.

3. FALL

As a delegate of Humberto Delgado since 1958, FCR involved himself in the struggle for the independence of Angola, which was finally achieved in 1975. That year he had to return to Portugal, to escape from UNITA, but the independence of Angola did not lead him to settle permanently back in Portugal, unlike most other Portuguese architects that time. Reflecting the views of Agostinho Neto, who invited him back to organize the architecture course in Luanda, in 1978, FCR was invited to come back by the Municipality of Lobito, in order “to continue giving his competence to the city, as is widely known throughout Angola”. In 1995 he received the award *Lobito City* in recognition of his “contribution to the outstanding aggrandizement of the city”. Reflecting on his career, FCR often said that the 11 years after independence were the best of his life, because they were the most useful and helpful; he felt that he was finally part of a revolution, that he was “assimilated” and fully-estimated, because he was participating as a worker in a truly global project, for the whole population¹⁰.

FCR only returned to Lisbon finally in 1988, because his wife became ill. Maria de Lourdes died a few years after and Francisco Castro Rodrigues never went back to Angola again. “I just don’t go there because no one calls me! If someone whistled for me, I would go in an instant. I never got used to living here [in Portugal]. I am isolated, above all from my colleagues”.

Francisco Castro Rodrigues died in 2015, aged 94 years, after injuring his knee during the April 25th celebrations, full of lucid and happy memories from his life in Africa.

Today Lobito is one of the most important and attractive cities of Angola; some even say that it is one of the most beautiful creations of 20th century urbanism. Even if its individual buildings are facing an uncertain fate, FCR shaped a well-designed, modern city, with clear sectors and a sustainable development capacity. Even if the individual structures will someday all be replaced by others, the outline of a city ready for the future will remain.

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NOTES

- 1 Eduarda Dionísio, *Francisco Castro Rodrigues. Um Cesto de Cerejas. Conversas, Memórias, Uma Vida*, Lisboa, Casa da Achada, 2009.
- 2 *Id.*
- 3 Ana Tostões, *Idade Maior. Cultura e Tecnologia na Arquitetura Moderna Portuguesa*, Porto, FAUP, 2015.
- 4 Ana Tostões (coord.), *12 Congresso Nacional de Arquitetura [edição fac-similada]*, Lisboa, OA, 2008.
- 5 Ana Tostões, "Exchanging Visions. An architectural Lab between Global and Local", in *Modern Architecture in Africa: Angola and Mozambique*, Lisboa, Caleidoscópio, 2013, 62-121.
- 6 "The reason why architects embarked on this African venture is a paradox that is important to explain. Although most of this work was commissioned by official entities in African colonies which were run by the Fascist regime, these territories were more open to modernization as they were further away from Portugal's central power and influence. This period was a huge and wonderful challenge for this 'African generation' of architects (Fernandes, 2002) as not only did they have the possibility to work according to a new modern language with a true progressive edge, but also in *avant-garde* large-scaled project commissions. Furthermore, stimulated by the large open immense African landscape, they had the chance to believe that they were building a new place, a new world, that would make the difference and plunge them into contemporaneity. Fiercely and audaciously, they would create the *Modern Utopia in Africa*." Ana Tostões and Maria Manuel Oliveira, "Transcontinental Modernism. M&G as an Unité d'Habitation and a Factory Complex in Mozambique", **docomomo** Journal, n. 43, Barcelona, **docomomo** International, 2010, 70-73.
- 7 Eduarda Dionísio, *op cit.*
- 8 Letter to Mário Dionísio, in Eduarda Dionísio, *op cit.*
- 9 Francisco Castro Rodrigues, *O Lobito*, 8/12/1976.
- 10 "Aldeias Novas – Comunitárias ou Não", *do Plano da Presidência para a Fixação das Populações ao Território*.
- 11 The date when a military coup in Lisbon, on 1974, overthrew the *Estado Novo* regime.

Early Ghanaian Architects

Kuukuwa Manful

SOCIARCHI, ACCRA, GHANA

The story of tropical modernism has been told mainly as the history of European architects in Africa, yet from the 1940s a number of African architects were beginning to practice in their home colonies. These architects have been largely excluded from the histories and discourses of architectural practice in this period. What was their relationship to tropical modernism, and how did their sociological relationship to the colonial system and to European architects influence their reactions to tropical modernist ideas? Understanding this is important to understanding the trajectory of tropical modernism in Ghana, its apparent demise in the 1970s, and its legacy, because these architects were responsible for training subsequent generations of architects after European architects had left post-independence Ghana. I address these issues using historical records and interviews of several Ghanaian architects from this period. I discuss their positioning in relation to tropical modernism as a movement as well as to the British colonial system, and how this impacted their thought and practice. I supplement this with analysis of a selected number of their buildings. Though these Ghanaian architects all self-identify as tropical modernists, their architectural responses and relationship to the movement were coloured by their positions in the socially and racially stratified systems that existed in the architecture industry into the 1970s, and by their personal relationships with European architects. These sociological and stylistic tensions mirror the apparent discord between tropical modernism and its parent Modern Movement: whereas modernism was predicated on opposition to a traditional past, in its tropical modernist incarnation it transformed into an architecture that responded respectfully to climate, context and culture. The dynamics of this transformation – and the role and positioning of Ghanaian architects in it – sheds new light on the trajectory of post-independence Ghanaian architecture, and the relevance of tropical modernist buildings to contemporary architectural discourse and practice in Africa.

1. INTRODUCTION

Tropical modernism is a foundational part of modern Ghanaian architectural identity and yet the story of the style has been told solely through the lens of the European architects involved, even though it is known that during this period there were an increasing number of indigenous architects beginning to practice in Ghana. Who were these architects, how did they relate to tropical modernism, and how can this help us understand the uncertain legacy of tropical modernism in Ghana?

Modernism is usually pitted against the traditional, and in west Africa where colonial cities were virtually empty and the traditional was perceived as primitive, modernist architects had freedom to experiment. Though the initial work of architects such as Jane Drew and Maxwell Fry in the colonies was directed by modernist ideals¹, they soon discovered that the “power of their modernist abstract functionalism to transcend climate, political, and cultural variation proved less potent than they... supposed”². The flat roofs and aesthetic didn’t often work³ and thus, tropical modernism evolved in response to the tropical climate, context, and intended users. In later projects in the Gold Coast, Fry and Drew even “inflected local motifs and references”⁴. Similarly, indigenous architects



FIGURE 1. Jane Drew and Maxwell Fry, Kumasi, Ghana, 1990s.
Honeycomb wall at Opoku Ware School with Asante Stool Motif.
© Kuukuwa Manful, 2015.



FIGURE 2. John Owusu Addo, Cedi House, Accra, Ghana, 1953.
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responded to tropical modernism in different ways coloured by race, class and personal circumstances by adapting it to suit their specific contexts.

A halt of all major infrastructure projects in the 1970s and a series of coup *d'états* resulted in a mass exodus of foreign architects, leaving Ghanaian architects in charge of the profession for the first time. They influenced much of the current architectural landscape in Ghana through the design and construction of buildings, by training of the majority of architects who are practicing teaching and today, and by setting trends in the built environment⁵. In spite of power crises and rising energy costs, the naturally ventilated and solar-shaded edifices of tropical modernism as well as its minimalistic aesthetic have been missing from much contemporary Ghanaian architecture. Once the bastion of modernist discourse in Africa, and second only to the Architectural Association (AA) globally, the Kwame Nkrumah University of Science and Technology now proclaims an ethos of “Commodity, Firmness, Delight and Culture” without much documentation about the process of arrival at this ethos. In the last section of this paper, I theorize about how the legacies of tropical modernism and early Ghanaian architects have influenced the current status of the Ghanaian built environment, particularly in Accra, using interviews with 3 architects across 2 generations in academia and in active practice. Tropical modernism’s closeness to colonial centers of power affected how it was received, and in Ghana’s political upheaval, many turned away from it.

2. EARLY INDIGENOUS MODERNIST ARCHITECTS

Some of the first “formal”⁶ architects in the early colonial period were from elite Gold Coast families and trained in Europe, fuelled by familial wealth and connections⁷. After WWII, others were beneficiaries of scholarships from the colonial government and other institutions⁸. These became the Ghanaian contemporaries of European tropical modernists.

One of the last surviving architects from this group⁹ is John Owusu Addo. After studying architecture at the University of Westminster in 1954, Owusu Addo returned in 1957 to work with Kenneth Scott. At Scott and Partners, he worked on the 37 Military Hospital and the Kumasi Stadium, among others. Eventually, after not being allowed to take the lead on any projects, he left to the University of Science and Technology (UST) Development Office. In 1963 he studied for a year at the Tropical School of the AA after which he took up an appointment at the UST Department of Architecture (DOA) as the first African lecturer.

The DOA at the UST was set up in 1958, based on the British Architectural Education system, placing it in a Commonwealth network even long after independence. Among the first batch of students were Daniel S. Kpodo-Tay and Samuel O. Larbi, who studied there from 1959 to 1965.

Kpodo-Tay is part of a family tradition of building professionals whose artistic instincts and propensity for anticolonial rhetoric showed in his designs and his relationship to the European establishment. He thinks he was purposely failed in his final year thesis and not selected for a scholarship at the AA even though he was an excellent student. He was formally trained as a mason by his father, one of the first building contractors in the Volta Region, and worked as an artist, drawing signs for beer bars in his town. His work includes the Ghana Museum of Science and Technology.

Larbi had a natural instinct for physics and mathematics, and though he struggled with designing “airports and other buildings he had never seen before”, he excelled at calculations necessary for designing the angles for solar shading devices. He was part of a group of eight students who were sent to the AA, and in 1970 he returned to teach at the UST. He worked on several buildings, including the Bank of Ghana Cedi House (with Owusu Addo) and the UST Library annex.

3. TROPICAL MODERNISM BY GHANAIAN ARCHITECTS

Form Closely Follows Function: The Dominant Ghanaian Tropical Modernism

Some Ghanaian architects adopted much more of the philosophy of tropical modernism than others, by virtue of their training and relationship to the colonial system. AA-trained Owusu Addo and Larbi interacted with masters of the style such as Drew, Koenisberger and Scott. This put them in a position of privilege within the Ghanaian architecture industry hierarchy¹⁰. Owusu Addo, being the first Ghanaian lecturer at the DOA as well as the first Ghanaian chief architect at the Development Office of the KNUST had privileges that other Ghanaian architects did not. His public buildings such as the Cedi House easily fit aesthetically with those designed by Europeans.

Owusu Addo’s indigenous influences feature mainly in the planning of the spaces he designed. A first-hand awareness of family and community dynamics led to his placing of a courtyard in almost every residence he did. He felt “local



FIGURE 3. D.S Kpodo-Tay, ECOWAS Headquarters Competition Entry, Lomé, Togo. © D.S Kpodo-Tay, 2015.

aesthetic” should be applied only to “local” buildings – for instance office buildings were “foreign to Ghana” and thus should not be imbued with “local aesthetic”. Applying art after the building was erected was preferable to incorporating traditional motifs in the form of the building. Similarly, Larbi used courtyards, solar shading and verandas to control climate. In his public architecture however, he was more open to incorporating traditional art and symbols. In the Bank of Ghana in Kumasi, for example, he uses Asante Adinkra symbols generously on the façade of the building.

Form Loosely Follows Function: Tropical Modernism of Dissent

Other architects sought to establish an aesthetic that was visually distinct. They accepted the climatic control, technological and material aspects of the style, but were decidedly expressive in the aesthetic of the buildings they designed. Kpodo-Tay’s artistic confidence, his distance from colonial centres of power and his anti-colonial politics led him to this different approach. He was fascinated by symbolism, and often started his design with an overt symbol or a symbolic thought. The forms he adopted were sculptural and often departed from the vertical and horizontal planes preferred by the dominant school of tropical modernists. His entry for the ECOWAS headquarters competition illustrates his sculptural tropical modernism.

Analysing the personal residences of Ghanaian architects – buildings that they designed for themselves – is a helpful way to gauge what their own personal

preferences were, as public projects were often messages to other architects and the public. In designing their own houses, they were far less constrained by societal pressures, finances and politics. The personal residences of these three architects are studies in form, volume, light and profusion of vegetation. Subtle dissent with the dominant aesthetic often appears. Owusu Addo for instance adopts a Mediterranean-style clay-tiled roof rather than the low mono-pitched or hidden varieties favoured by most tropical modernists. He even inserts a protruding curved wall as ornamentation on the façade of his house. Larbi's house is similar in this regard. Kpodo-Tay's case is of particular interest as his choice of the dominant modernist rectilinear profiles for his personal residence hints that his public dissent from the dominant aesthetic of tropical modernism may not have been reflected privately.

4. LEGACIES OF TROPICAL MODERNISM

In its contemporary manifestation, the Ghanaian architecture industry began to form in the time of British colonial rule, and gained momentum in the era of nationalism and independence in the late 1940s to late 1960s – a period which coincided with the peak tropical modernism. It matured in the 1970s when a combination of activism by indigenous architects and an exodus of European architects resulted in the leadership of the Ghana Institute of Architects becoming, for the first time, almost entirely black. The association of tropical modernist buildings with independence also meant that although the style was initially conceived of by Europeans, it became the *de facto* basis of architectural identity in the country for many.

Yet tropical modernism was closely linked with British colonial power, and in the industry hierarchy, the Ghanaian trained in Ghana was at the lowest level. This may explain why architects who by virtue of their academic backgrounds

had better relations with the colonial centre adopted the tenets of tropical modernism more than those that did not. In the political and economic instability of the 1980s, high-ranking indigenous architects were also driven out of the country, targeted because they were highly educated and wealthy. The people that rose in their place were unlikely to have fond feelings for modernism, as it was associated with centres of power they had little access to. However, they did not have much to draw on to form a new basis of identity – for beyond the pyramids, they had not been taught much about African architectural



FIGURE 4. John Owusu Addo, Personal Residence, Kumasi, Ghana, 1975.
© Kuukuwa Manful, 2015.

history before European influence. In fact, it had been disparaged. Fry thought there was nothing useful in the African architectural past¹¹ and even Ghana's first national artist Kofi Antubam insisted that "as far as it is known, Ghanaians have no great concrete architectural, sculptural, ceramic, painting, musical, or literary works to be shown"¹². In Kumasi, which was fully urbanized pre-colonization, all the great edifices had been destroyed by the British. Financial concerns also led to design being driven by easily obtainable materials and clients' directions. This could explain the apparent lack of architectural identity in much of the built environment from the 1980s to the 2000s in particular.

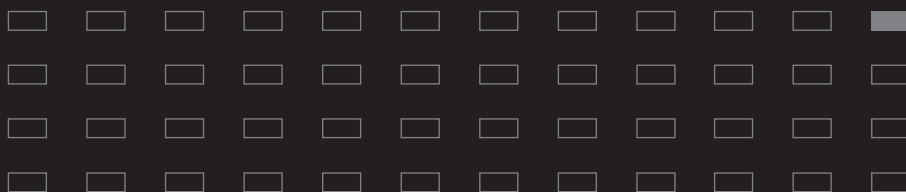
Interestingly, among some young architects there are signs that tropical modernism is making a resurgence. A small new school of architects are revisiting the aesthetics and philosophy of tropical modernism in their practice as they search for a basis for their personal architectural philosophy. For example, Augustus Richardson's design ethos is inspired by a visit to the Scott house as a child. As the architectural world grows more connected and competitive, architects like him are looking to the tropical modernist past to craft an improved future.

NOTES

- 1 Jackson Iain and Jessica Holland, *The Architecture of Edwin Maxwell Fry and Jane Drew: Twentieth Century Architecture, Pioneer Modernism and the Tropics*, Farnham, Ashgate, 2014.
- 2 Liscombe Rhodri Windsor, "Modernism in Late Imperial British West Africa: The Work of Maxwell Fry and Jane Drew, 1946- 56", *Journal of the Society of Architectural Historians*, 65 (2), 2006, 188-215.
- 3 Ken Scott for example lost his staff-housing contract at KNUST and all his buildings had to be re-roofed.
- 4 Jackson Iain and Jessica Holland, *op. cit.*
- 5 In an interview with Augustus Richardson, he recalls that the Wangara hotel, designed and constructed by architect Ekow Sam started the trend of covering buildings in (floor) tiles.
- 6 Prior to this, there is ample evidence of precolonial building design and construction specialists such as the Fante builders of the Aban, the Adansi and the Atakpame.
- 7 5 such examples are named in Hutchison's *Pen Pictures*: Rev. Ebenezer Amos Sackey, George Ekem Ferguson, Charles Arthur Albert Barnes, John Buckman, and C. Annan Vanderpuye. See Doortmont Michel and Charles Francis Hutchison, *The Pen-Pictures of Modern Africans and African Celebrities by Charles Francis Hutchison: A Collective Biography of Elite Society in the Gold Coast Colony*, Leiden, Brill, 2005.
- 8 After WWII, British thinking about their colonies changed significantly and under new education policies, some Gold Coasters from ordinary backgrounds had the opportunity to travel abroad for training. There was a conscious drive towards the "Africanization" of the civil service and the opportunities for training were due to the fact that there were actually very few Africans qualified to take up positions in government agencies. See Stanley Shaloff, "The Africanization Controversy in the Gold Coast, 1926-1946", *African Studies Review*, 17 (3), 1974, 493-504.
- 9 Under these scholarships, Peter Turkson, Kwame Frimpong, Victor Adegbite, D.W.K Dawson, T.S. Clerk and John Owusu Addo went to architecture schools in the United States and Great Britain. From the mid-1940s through the 1950s they returned to Ghana to take up positions in the Public Works Department the Architectural and Engineering Services Company, foreign-owned firms and later on to some of the few indigenous companies that hired architects.
- 10 In this stratification in the architecture industry, (white) European architects were at the top of the pecking order, followed by indigenous architects who trained in the UK, then those that trained in the US and other Western countries, and finally at the bottom of the hierarchy were the architects who had trained (or, more accurately at the time, architects who were about to finish training) in Ghana.
- 11 Stanley Okoye, "Architecture, History, and the Debate on Identity in Ethiopia, Ghana, Nigeria, and South Africa", *Journal of the Society of Architectural Historians*, 61 (3), 2002, 381-396.
- 12 Hess Janet Berry, "Imagining Architecture: The Structure of Nationalism in Accra, Ghana", *Africa Today*, 47 (2), 2000, 35-58.



BUILDINGS



“A Mass of Tradition and Association”: Reviving and Reliving the Buildings of Brutalism

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The past decade has witnessed growing public and scholarly interest in the modernist buildings termed brutalist that were constructed from the 1950s to the mid-1970s. While the definitions and timeframe of the term brutalism are still debated, its application generally refers to an international phenomenon characterized by the use of exposed materials such as brick and, perhaps more commonly, concrete, as well as a set of additional common denominators that address shape, surface and monumentality. The cultural and socio-historical circumstances of the erection of brutalist buildings vary greatly, and they were constructed for diverse uses in the realms of civic and public architecture, as well as for mass housing complexes and private dwellings.

In view of the environmental advantages of reuse, and through the growing public awareness of the built heritage of the Modern Movement, brutalist buildings are beginning to be included in preservation schemes, and have become a significant source of inspiration for an international contemporary revival of the use of exposed concrete in both domestic and public architecture.

Over the years, brutalist buildings have met with harsh criticism and bias. Their ongoing usage in the twenty first century therefor calls for a fresh discussion of the critical and polemical issues pertaining to both their historical research and their adaptation. The latter has been a challenge, to say the least, or as Owen Hatherley states in *A Guide to the New Ruins of Great Britain* (2007): “when the heritage industry lays its hands on Brutalism, it unsurprisingly gets its fingers burnt...”.

This session included papers that addressed the challenges of the reuse and adaptability of brutalist buildings in their diverse international guises. They pre-

sent 5 case studies that discuss buildings in various locations across the globe, and the social and national circumstances of their evolvement differ dramatically from each other.

Aušra Černauskienė's paper discusses the introduction of brutalism to Lithuania, in light of changing political and social conditions during the heyday of Soviet rule and the regaining of independence. She shows how brutalism embodied the importation of European ideas from the West, creating a marked change in residential approaches and their formal expression. In the case of Lithuania, renewal and revival issues are intertwined with negative attitudes towards brutalism, and this can be seen in the negotiation and handling of the *tower blocks* in Vilnius. Černauskienė underscores that a comprehensive approach to reliving the *tower blocks* is sorely missing, and calls for a formal introspection, as well as for a social approach that will involve the buildings' residents when embarking upon projects of revival and reuse.

The political impact upon modern architecture and, more specifically, brutalism, is also investigated by Sara Saragoça Soares. She researches the brutalist souk (market) structures in Kuwait city, and reveals the dialectical reworking of traditional and vernacular architecture *vis-à-vis* Western modernism, as these evolved in pre- and post-independence Kuwait. These brutalist mega-structures are currently inhabited by low-income residents, and their revival and reuse have yet to be tackled.

Monika Motylinska's paper deals with the town hall of Bensberg, Germany, built in the 1960s on the remains of the city's Old Castle and, not-too-lovingly, termed "Ape Rock". Motylinska discusses a case where unique integration of old and new structures had a significant impact upon the town hall's reception, as well as on approaches to its conservation. In her investigation of public discourse and its affect upon renovation and reuse, she shows the multiplicity of approaches to these issues, and how research and interpretation are vital for their formulation.

Leigh Hanekom's study raises questions that are similar to Motylinska's in her interrogation of the dilemmas that accrue when attempting to decide which aspects of the history of a certain place or building should be preserved. She researches Sydney, Australia's Sirius Towers, and raises thought provoking issues, such as *conceptual* conservation as opposed to a solely *physical* one. As with "Ape Rock", the Sirius Towers' brutalism turns our attention to the immense significance of the material finishes of concrete, and their centrality in adaptive reuse considerations. This is also a case study that illustrates the marked changes in lifestyle that have taken place since the 1970s, revealing the difficulties in *reliving* brutalist architecture.

Jean-François Lejeune's paper highlights the public works of architect William Morgan in Florida, USA, which invoke American and pre-Columbian architecture as cultural inspiration, yet simultaneously address climatic considerations. According to him, Morgan's legacy suggests a "highly democratic discourse: cultural and ideological, on the one hand; environmental and ecological,

on the other". Despite their critical acclaim and **docomomo** US/Florida's advocacy efforts, some of Morgan's buildings are not receiving proper conservation and are threatened by radical change in the near future.

The selected papers consider a small but significant portion of the vast and contemporary debates on the conservation and proper contemporary uses of brutalist buildings. They explore varied approaches for considering brutalist design features and forms and their adaptive reuse, and attest to the important contribution of academic research in the shaping of decisions regarding questions of preservation. They address the transformations in the functions of these buildings, as well as different conceptual and material methods of reviving and adapting them. Moreover, they consider their role in urban or rural renewal and the changing social and political function of these buildings, by addressing a range of topics that include the diverse public debates surrounding demolition versus the salvation of some exemplary brutalist buildings.

William Morgan in Florida: Tropical Brutalism in the Age of Consensus

Jean-François Lejeune

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Godfrey Hodgson argued in his book *America in Our Time* (1976) that throughout much of the 1950s and 1960s the vast majority of citizens and politicians shared a historically rare moment of consensus. Driven by the cold war and the baby boom, this consensus prompted the implementation of an ambitious program of institutional and educational buildings that embraced almost unanimously the brutalist language to represent the values of the democratic welfare state. Paul Rudolph's late architecture in Florida was unique in introducing raw concrete and acknowledging the climatic context, but it is Jacksonville's architect William Morgan who enriched this regional brutalism by supplementing additional discourses and spatial techniques. The synthesis of his multilateral experience and research of earth architecture and pre-Columbian architecture enabled his unique mode of practice as an embodiment of environmental and ecological, as well as cultural and ideological, principles. His Police Memorial Building in Jacksonville (1971-75) and the Federal Courthouse in Fort Lauderdale (1976-79) were late but important examples of how brutalism was used to display the openness of the government. Both buildings have fluid limits with the streets as they employ stepped terraces to increase public interaction and natural ventilation. The traditional concept of façade disappears, and is replaced by silhouette, shadows, and depth of the voids. The Police building is still in use, but the roof gardens have been destroyed since the 1980s. The Federal courthouse will eventually be replaced by a new structure on a site to be determined, as the judges have argued that the current building has become impractical and that its openness does not match current security requirements. The Florida chapter of **docomomo** US is currently assembling the documentation to launch a competition and preservation campaign of the courthouse. The presentation in Lisbon is seen as critical to establish a valid strategy for its preservation and reuse.

1. INTRODUCTION: THE AGE OF CONSENSUS

Historian Godfrey Hodgson argued in his book *America in Our Time* (1976) that throughout much of the 1950s and 1960s the greater number of Americans in the midst of the baby boom, along with the representative majority within the Democratic and Republican parties, shared a historically rare moment of consensus. Driven by the cold war and the competition with the Soviet Union, this consensus led to the implementation of an ambitious program of institutional and educational buildings – such as community colleges, public university campuses, federal courthouses and public libraries, which embraced almost unanimously the brutalist language so as to embody the values of the democratic welfare state¹. Florida was no exception. Paul Rudolph was first in the state to introduce the language of concrete, with the addition to the Sarasota High School (1959-59), a horizontal structure that utilized large overhanging sunshades and internal yet outside corridors with natural ventilation. Likewise, the Milam residence of 1959-61 and the Bostwick residence of 1962 marked a radical departure from his wood-based structures in Sarasota; nonetheless, these houses reiterated, albeit in

a different language, the principles of tropical architecture that he had put forward in these early works².

In 1961, the south Florida firm of Pancoast-Ferendino-Grafton-Burnham – joined by the young Cuban immigrant architect Hilario Candela – was commissioned to develop the ambitious urban and architectural program of the Miami Dade Junior College. Between 1962 and 1967, Candela took the lead in designing the north and south campuses as a tropical adaptation of international brutalism. The colleges were built as raw concrete structures, clad with pre-fabricated gravel-washed concrete and ceramic panels. All buildings are interconnected through a continuous grid of outdoor spaces and covered walkways that owes both to the “mat-building” strategy and the reinterpretation of Cuban and Latin American plazas. For Candela and his colleagues, it was not Rudolph but rather Le Corbusier and the Spanish Felix Candela who provided most of the impetus. Concrete, open-air public spaces and circulation, natural ventilation and solar protection were for the architects “a question of civic and cultural responsibility”³. On a practical basis, poured-in-place concrete was, at that time, a comparatively cheap material to use⁴. It was also seen as a relatively maintenance-free technique, in contrast to the traditional masonry and stucco construction of the region. The colleges provided an extraordinary field of experimentation that was comparable to the construction of the Marine Stadium Grandstand (1962-64), the only structure in the United States that can be equated with Candela’s and Nervi’s works in Europe and the Americas⁵.

2. WILLIAM MORGAN: RESEARCH AND PRACTICE

Of all Florida architects of the post-war era, William Morgan’s (1930-2016) pedigree is undoubtedly the most prestigious⁶. Following undergraduate studies at Harvard College (1952), he served 2 years in the military, first in Japan and then in Guam, where he met Richard Neutra and discovered the antique Polynesian civilization and culture. Upon his return in 1955, Morgan entered Harvard Graduate School of Design where he studied under José Luis Sert. He concurrently worked in the office of Paul Rudolph, from whom he would eventually borrow many spatial strategies as well as specific drawing techniques, such as the one-point perspectival section. After completing his degree, he became a Fulbright scholar in Italy and lived in Rome. There he studied advance techniques of concrete construction under the guidance of Pier Luigi Nervi. Back in Jacksonville, Florida, he opened his practice in 1960. A couple of years later he started his research on pre-Columbian and earth architecture with a Wheelwright Fellowship from Harvard University, and later with grants from the Graham Foundation and the National Endowment for the Arts. He authored 5 books as a result of his multiple travels and sketches, published from 1980 to 2008⁷.

In a lecture titled “A Search for Origins in Modern Architecture”, Morgan discussed the origins of architecture from the point of view of the “practicing archi-

tect” and – in line with Le Corbusier, Kahn, and especially Rudolph – argued in favour of the significance of the primitive and the vernacular for modern architecture. Yet, he departed radically from previous references to the vernacular of the South such as the cracker house, the dogtrot and equivalent building types⁸. His research focused on a more ancient American vernacular – published in his books *Ancient architecture of the Southwest* and *Pre-Columbian Architecture in the Eastern United States* – and more specifically on the vernacular structures in which “earth is a major building material, and platforms, mounds, shafts, and terraces are integral architectural elements of the environment”⁹. For Morgan, earth architecture suggested, “an ecologically sustainable relationship between human beings and their environments, a more enduring relationship rooted in place and in meaning through time”¹⁰. This research, led over his entire career, inspired him to develop a very personal language of architecture, anchored, buried or connected to the ground through a system of berms, platforms, ramps and plinths that, in many cases, provided the extension of public spaces over the roofs and terraces.

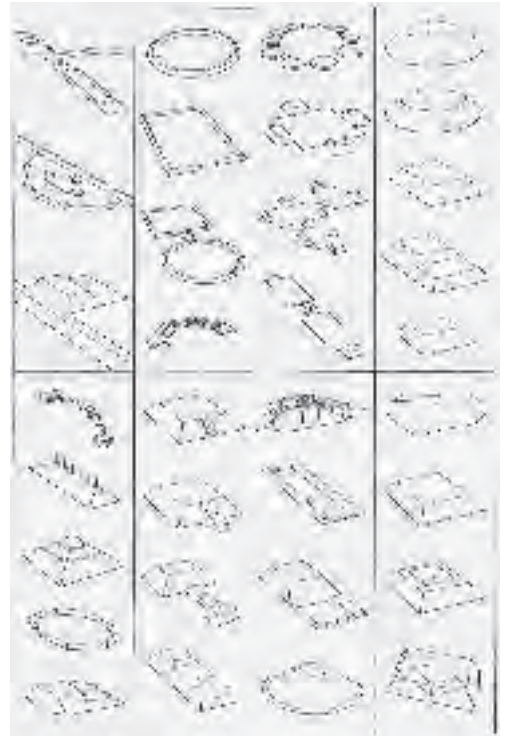


FIGURE 1. William Morgan, manuscript page from *Earth Architecture*, sketches of Pre-Columbian earthworks from North America, ca. 4000 BC to AD1500. © William Morgan Collection, Architecture Archives, Special and Area Studies Collections, University of Florida Smathers Libraries.

3. OPENNESS AND TRANSPARENCY

Informed by such “vernacular dialogues”, Morgan designed and built over 150 buildings including private houses, apartment and office buildings, university structures, and public institutions. Most bear not only timeless qualities, but also exhibit a profound sense of place. Overall, his oeuvre can be approached as an extraordinary example of contemporary humanism in the globalizing world, achieved through the embodiment of a two-thronged, multicultural and highly democratic discourse: cultural and ideological, on the one hand; environmental and ecological, on the other.

This essay highlights two public structures whose pre-Columbian precedents not only determined the form of the buildings in alliance with the complexity of their program but also gave them a rare and unique urban status of monument within the drab urban landscapes of Florida cities. The Police Memorial Building in Jacksonville (1971-75) and the Federal Courthouse in Fort Lauderdale (1976-79) were late but historically important examples of how bru-

talism was used to display the openness of the government within a tropical environment. The first was the result of a competition held in 1971 for a rectangular site 210' × 700'. The design was based upon a system of low, terrace-like, windowless horizontal masses, naturally-lighted by skylights. The structure, developed along with engineers William Le Messurier and William Lam, consisted of a grid of 27-foot concrete "trees", utilizing cruciform-shaped columns from which beams cantilever to support floor and roof slabs. The trees were separated from each other in all directions by a network of 6'-wide and 3'-high spaces that were either left visible or became utilitarian spaces for lighting and air conditioning. 2/3-story atriums, connected together by a large 2-story high interior street, provided generous interior plazas and gave to the structure a strong urban character.

The Federal Building and U.S. Courthouse in downtown Fort Lauderdale was organized as a terraced, 4-story, L-shaped structure wrapped around a large patio open to the street. Concrete "trees" with cruciform columns emerge from a 30-foot grid, supporting cantilevered beams and slabs with integral utility chases. In addition to public access from the half-buried car park, the building has a monumental public entrance at the southeast corner, a reinterpretation of the typology of the tall sheltered loggia. The entrance, "assertively conveying a nobility of public service in behalf of the law", opens on a large interior courtyard – a genuine public plaza planted with trees and fountains¹¹. Around the courtyard, three levels of planted terraces, deep overhangs, and cascading pools invite visitors during court hearings and other sessions:

The result is like an oasis that is an interesting mix of the formal and the informal... it has an effect that Piranesi or the Mayans might have envied... It is a building that has both an appropriate presence and an inviting transparency – in line with the idea of accessibility...¹²

In the courthouse, Morgan pushed the concept of outdoor organization to its limit. The analysis of the plans reveals that there are no inner circulations between the various elevators and waiting lobbies to the courtrooms. Those can only be accessed from the various levels of terraces, which are partially protected from sun and rain by recessed sections and are interconnected by a grand pyramidal staircase that once again exposes his fascination with pre-Columbian architecture. Likewise, a pyramidal stepped-up fountain, located on the corner of the two primary streets, also allows access to the first terrace through a bridge¹³.

With the Courthouse and the Police Building, both built entirely in poured-in-place and prefabricated concrete, Morgan developed a unique version of tropical brutalism whose symbolic forms reflect a precise understanding of their functions and public role. Both buildings have fluid liminality with the street, as they employ stepped platforms and terraces at various levels, so as to increase public interaction and natural ventilation. The traditional concept of planar



FIGURE 2. William Morgan, Police Memorial Building, Jacksonville, 1971-75. View of the upper terrace and section through main lobby. © William Morgan Collection, Architecture Archives, Special and Area Studies Collections, University of Florida Smathers Libraries.



FIGURE 3. William Morgan, Federal United States Courthouse, Fort Lauderdale, 1976-79. View from street with entrance loggia and street perspective. © William Morgan Collection, Architecture Archives, Special and Area Studies Collections, University of Florida Smathers Libraries.



FIGURE 4. William Morgan, Federal United States Courthouse, Fort Lauderdale, 1976-79. View of ground floor patio with upper-level terraces. © William Morgan Collection, Architecture Archives, Special and Area Studies Collections, University of Florida Smathers Libraries.

façade disappears, replaced by silhouette, shadows, the depth of the voids, etc.¹⁴. Furthermore, the system of outdoor access through terraces, particularly developed at the Fort Lauderdale Courthouse, fully embodies, perhaps in excessive and naïve optimism, the principle of openness of government and justice.

Morgan explained that his design works could be categorized in two precise tectonic strategies linked to the natural world and its vernacular: the tectonics of gravity-bound and bermed earthworks, and that of the tree or modular skeletal constructions. As Eduard Sekler has argued, “it is precisely the tension between the two contrasting tectonic systems that is one of the main sources of vitality in much of Morgan’s architecture, and this is one of the reasons why the distant past of prehistory is of such special relevance for his work”¹⁵. Using the same concrete “tree” system of construction, the Police Building functions as an artificial earth building and the Federal Courthouse emulates the primitive pyramidal typologies:

*William Morgan’s works... may hark back across the remotest valleys of prehistory but at the same time they never arrogantly close themselves to contemporary life; rather they welcome and celebrate it in all its astounding complexity*¹⁶.

4. PRESERVATION AND REUSE

The Police Building continues to function, but in the early 1980s, a 10-story and intimidating jail structure was built on one of its sides, with its mass looming menacingly over the roofs. As a result, all roof gardens were destroyed and closed to access since the 1980s. In Fort Lauderdale, the future of the Federal Courthouse, dedicated in August 1979 by Vice-President Walter Mondale, is more than uncertain. Following the post-9/11 transformation of American politics, judges have been arguing that the building has become impractical and unfit to its function, as its openness and transparency are ill suited to the new security requirements. Access through the terraces continues to exist but some connections have been blocked in order to enhance security. Accordingly, the judges have been lobbying with success for a new more controllable building on a site yet to be determined¹⁷.

Referring to his study on *Earth Architecture*, William Morgan argued that the contemporary “green” tenets of conservation of natural resources, renewable energy alternatives, and passive solar systems were “remarkably similar to those that gave rise to the initiative of my study half a century ago”. It is thus a major paradox that the Fort Lauderdale Courthouse, both an environmental precursor and a unique symbol of the openness of the government, is now threatened¹⁸. The Florida chapter of **docomomo** US is studying the possibility to launch a competition and preservation campaign in 2016. The presentation in Lisbon is seen as critical to establish a valid strategy for the preservation and reuse.

NOTES

- 1 See Timothy M. Rohan, "The Rise and Fall of Brutalism, Rudolph and the Liberal Consensus", *CLOG*, June 2013 (Brutalism), 61; Timothy M. Rohan, *The Architecture of Paul Rudolph*, New Haven, Yale University Press, 2014.
- 2 See Christopher Domin and Joseph King, *Paul Rudolph: the Florida Houses*, New York, Princeton Architectural Press, 2002.
- 3 Author's interview with Candela, January 25, 2016.
- 4 In Miami, one must acknowledge the important role played by the Ferré family, owners of various concrete plants in south Florida and Puerto Rico.
- 5 See Gray Read, "A Center in the Middle of Nowhere: Miami-Dade Junior College South Campus", in Allan Shulman (ed.), *Miami Modern Metropolis: Paradise and Paradox in Mid-century Architecture and Planning*, Miami/Glendale, Bass Museum of Art/Balcony Press, 2009, 256-261, and in the same volume, Jean-François Lejeune, "Miami's Marine Stadium", 352-259. Also see "Preserving the Miami Marine Stadium (1962-64): Tropical Brutalism, Society of Leisure, and Ethnic Identity", *docomomo* US, accessed on February 10, 2016, http://www.docomomo-us.org/news/preserving_miami_marine_stadium_196264_tropical_brutalism_society_leisure_and_ethnic_identity.
- 6 See Paul D. Spreiregen, *The Architecture of William Morgan*, Austin, University of Texas Press, 1987; Robert McCarter, *William Morgan: Selected and Current Works*, Victoria, Australia, Images Publishing Group, 2002. Morgan was also a talented draftsman who made use of Rudolph's "angel-like" drawing techniques, in particular the one-point perspective open section.
- 7 Morgan's books are remarkable and accessible survey projects with clear black and white drawings that provide great information about typology, morphology and the public spaces of ancient civilizations. The list includes: William N. Morgan, *Prehistoric Architecture in the Eastern United States*, Cambridge, Mass., MIT Press, 1980; William N. Morgan, *Prehistoric Architecture in Micronesia*, Austin, University of Texas Press, 1988; William N. Morgan, *Ancient Architecture of the Southwest*, Austin, University of Texas Press, 1994; William N. Morgan, *Pre-Columbian architecture in Eastern North America*, Gainesville, University Press of Florida, 1999; William N. Morgan, *Earth Architecture: from Ancient to Modern*, Gainesville, University Press of Florida, 2008.
- 8 See for instance Steven Holl, *Rural & Urban House Types in North America*, New York, Pamphlet Architecture, 1983.
- 9 William Morgan, *Earth Architecture*, *op cit*, 6.
- 10 *Ibid*. The most obvious result was the series of hill houses that he built in North and Central Florida, and in particular the two attached "dune houses" on Atlantic Beach in Jacksonville, dating from 1974-75.
- 11 From Morgan's description of the building, quoted in Paul D. Spreiregen, *op cit*, 142.
- 12 Charles K. Hoyt, "Celebration of justice: Federal Building Courthouse in Fort Lauderdale, Florida", *Architectural Record*, October 1979, 81-86. Also see "Three Federal Buildings: How'd they get so good", *Architectural Record*, December 1978, 112-116.
- 13 Surprisingly, although there are security accesses to the back of the courthouse, some prisoners are still brought to the courtrooms across the open and public terraces (observation of March 2016).
- 14 The heavily planted terraces blend architecture and landscape in a unique manner that prefigures both landscape urbanism and what Stan Allen has called "Landform Building". See Stan Allen and Marc McQuade (ed.), *Landform Building: Architecture's New Terrain*, Princeton, NJ, Lars Müller/Princeton University School of Architecture, 2011.
- 15 Eduard Sekler, "Foreword", in Paul Spreiregen, *op. cit.*, 7.
- 16 *Ibid*. The importance of Andrea Palladio in the work of William Morgan – particularly in his hill houses remains to be studied in depth and reinforces Sekler's argument.
- 17 In the summer of 2015, the Federal Government gave the authorization to start the process of searching for another site and studying an economically reasonable new solution. Once the construction would be completed, the existing building would be sold to help finance the costs.
- 18 Unpublished lecture, William Morgan, n.d., William Morgan Archives, Smathers Library, University of Florida, Gainesville.

Sirius Towers: Surviving Redevelopment

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Relics of the past, or catalysts for creative adaptations? This is the question, at once intellectual and ethical, put to state governments, private sector investors, scholars and the general public in consideration of the significance of brutalist era architecture in Australia. This paper analyses the Sirius Towers, a public housing development commissioned by the New South Wales government in 1978, under threat of substantial alteration or demolition. With no statutory protection in NSW for post-war architect-designed buildings, the fate of the Sirius Towers, a seminal work of brutalism in Australia, is unclear. In the context of the NSW architectural milieu, the Sirius Towers are both an architectural icon and a prototype of a new housing form demonstrating the defining characteristics of English brutalism and taking stylistic cues from the Japanese metabolists. Its location makes it an attractive redevelopment proposition. The decline in public funding for social housing has resulted in the recruitment of private capital by the NSW Government, with the goal of redeveloping sites like the Sirius Towers, so as to profit from their land values. This merits a discussion on recent state housing policy, governed by neo-liberal principles, particularly the arrangement of public-private partnerships in urban development, in contrast to the urban strategies of an era of social democracy underpinning the development of the Sirius Towers. What will become of the NSW post-war architectural legacy if we continue this trend of significant redevelopment or demolition of brutalist era buildings for corporate rebranding purposes?

Written from the perspective of an architect in commercial practice, the paper explores effective strategies for the adaptation of these structures and considers how spatial and philosophical concepts appropriate to a specific time in history and a distinct social program, could once again become relevant to the cultural landscape of Sydney, ensuring the on-going relevance of our brutalist heritage.



FIGURE 1. Tao Gofers, Sirius Towers, Sydney, Australia, 1978, bird's eye view of the towers in The Rocks historic precinct.
© Powerhouse Museum Collection, 2013

1. INTRODUCTION

This paper analyses the Sirius Towers, a public housing development planned by Tao Gofers, commissioned by the New South Wales (NSW) government in 1978, and currently under threat of substantial alteration or demolition. Detractors have dubbed it a brutalist eyesore and called for its demolition; supporters see it as an essential part of Sydney's architectural history and demand its state heritage listing. The professional debate as to the cultural significance of the Sirius Towers in Sydney, a seminal work of brutalism in Australia, has entered the realm of the general public by way of the media, following the state government's controversial announcement that the building will be sold to a private developer. With no statutory protection in NSW for post-war architect-designed buildings, the fate of the Sirius Towers is unclear. The question, at once intellectual and ethical, put to state governments, private sector investors, scholars and the general public in consideration of the significance of brutalist era architecture in Australia, is whether these structures of the recent past should be protected. If so, how can we develop effective strategies for their adaptation, while considering how spatial and philosophical concepts, appropriate to a specific era and social program, could once again become relevant to the cultural landscape of Sydney, ensuring the on-going relevance of the city's brutalist heritage.

2. THE BUILDING IN CONTEXT

The Sirius Towers are located in The Rocks historic precinct in Sydney¹. The Rocks is the site of Australia's first public housing and represents the evolution of public housing form and policy in NSW. From the low-rise terrace-like flats that replaced the single-storey terraces after the outbreak of the plague in 1900, to the construction of medium-density "flats" in the 1920s that complimented the area's colonial history, The Rocks remains a significant public housing precinct – an accomplishment from a social, architectural and heritage perspective. The construction of the Sirius Towers in the brutalist style in the 1970s was seen as the next phase in government-sponsored public housing provision in this area and was the last medium-density public housing development to be built in Sydney, due to the negative public reaction this form of housing received. It represented a residential mode and architectural style that was slow to percolate through to Australia from Europe and America, yet ultimately sought to solve the public housing shortage issue, proposing an alternative set of urban, social and aesthetic values. The commission emphasized that the building should complement its environment by responding to the topography of the site, through the integration of view corridors and by forming a dramatic addition to the variegated Sydney skyline. In other words, the building formed part of a picturesque *mise-en-scène* with the Sydney Opera House, the Harbour Bridge and Circular Quay precinct.

In Gofers' examination of brutalism, more often characterised by orthodox rectangular forms, the building morphology constitutes a dynamic arrangement of cascading repetitive forms, taking its place amidst the visual iconography of its Sydney Harbour context. It thus becomes "connected to place", albeit as a new urban form which identifies a novel aesthetic and spatial ordering within the public housing environment.

3. TRANSFORMATION

As proponents of progress, the modernists advocated for the idea that demolition would be ongoing as new needs and functions generated new forms. Despite this belief in progress, the question arises whether the Sirius Towers should be included in Australian built history, if not on its own merit then to foster a sense of continuity where the link with the past has been weakened.

Philippe Robert, in *Transcriptions of Architecture*, refers to adaptive reuse as "transformation" using the prefix "trans" to express the importance of continuity in the process of converting a building². Robert points to five key components for the transcription of a work essential to architectural continuity and the preservation of the "spirit of the place". Two of these components – *historical continuity* and *material authenticity* – will form the framework (strategy) for the hypothetical building transformation of the Sirius Towers.

Historical Continuity

The successful conversion of the Sirius building would seek to create a place inclusive of its history. Therefore, the first consideration for historical continuity is conserving the significance of the site as the oldest residential and public housing precinct in Sydney. This suggests conserving its as-built physical reality – enough to convey its historical use as public housing, which maps social practices and the histories of the lives of people who lived there, or what Fitzgerald refers to as "mapping the ephemeral"³.

Furthermore, reference could be made to the site's original use (before the construction of the Sirius Towers) as a bond store, creating a design congruent with its mercantile past. Cramer and Breitling propose that this outweighs the preservation of the "image of the building" and that what informs the continuity of a building's identity is the spirit of the place, even when only fragments of the building's fabric remain⁴. The success of this integration relies on a clear conceptual separation between the assimilation of intangible elements of the history of the site and the adaptation of the built fabric to suit new programmatic requirements.

Material Authenticity

John Ruskin stated that it is the material along with the craftsmen's workmanship from raw to finished state that embodies the concept of material

authenticity. However, with the modernist movement in architecture, a system of production imparts value or “authenticity” to a material. The suggestion here is that modernist materials with their man-made finishes bear the idea of craft⁵. This abstract notion is visible in the board-formed concrete finish of Sirius. Where the concrete elements of the design express an industrial construction technique and the wood grain imprint on the surface suggests the human hand. There are no superfluous embellishments on the tower and the logic of its structural system and visual reality is bold and apparent. It is what Ada Louise Huxtable refers to as “bone beautiful” – “they [brutalist buildings] do not wear skins”⁶. This clarity and what Robert refers to as “material authenticity” of the design is brought about through the graphic expression of the raw concrete used to shape each of the in situ reinforced concrete blade walls and interlocking modular concrete façade units. System building became popular internationally in the 1970s with numbing modularity. This gross modularity is mitigated in the plan of the Sirius building, where the residential modules have been articulated to respond to acoustic constraints on the site⁷.

The use of in situ concrete as a structural material, however, makes for a relatively inflexible design proposition. This calls into question the versatility of brutalist architecture and the real extent to which the Sirius building can be adapted in an effort to appease both the prospective purchaser and the state heritage community.

4. COMMERCIAL REDEVELOPMENT

What would “transformation” entail in the adaptive reuse of the Sirius building? Would it involve the partial or complete demolition of the building (should its nomination to be added to the State heritage register fail) or the enshrinement of its Brutalist form? Or could it mean the recasting of the “image of the building” as a way of bringing an appreciation of this landmark piece into the public consciousness?



FIGURE 2. Tao Gofers, Sirius Towers, Sydney, Australia, 1978, elevation view. © Wikimedia Commons – Martin Pueschel photographer.



FIGURE 3. Tao Gofers, Sirius Towers, Sydney, Australia, 1978, the interlocking modular concrete façade units. © Leigh Hanekom.



FIGURE 4. Chris Bosse and LAVA Architects, adaptive reuse proposal for the Sirius Towers, Sydney, Australia, 2014. © 2014, LAVA Architects.

The location of the building makes it an attractive redevelopment proposition but a heritage listing will make it difficult to sell the property to a private sector developer, as it will limit the extent to which the existing structure can be altered, if at all. Furthermore, the relative inflexibility of the brutalist design means that the cost of adapting the building to suit current and future market expectations might be prohibitive. Brutalist buildings, after all, were “meant to stand, not to change”, rendering their adaptation to new circumstances and uses a difficult

task⁸. Given the nature of the construction system, the reduced ceiling heights and the internal arrangement of the building, it is unlikely that it could be redeveloped into anything other than private residential units, which could be marketed on the basis of their novelty value.

In recent years, the international property market has seen an increase in popularity for brutalist housing developments as fashionable places to live. Many brutalist exemplars, like Balfron Tower in London, have received an amenity upgrade to articulate a compelling and substantive value proposition. The extent of refurbishment at Balfron Tower was limited to the installation of new services without disturbing the listed building exterior. However, the Sydney property market differs somewhat from the European, in that the appeal of Sydney is its outdoor lifestyle, where access to private open space from the living room is an expectation. At Sirius there are no such spaces and the implication is that balconies would have to be tacked onto the east-facing facade, overlooking Circular Quay – a feature that would not be approved if the building were listed.

Sydney architect Chris Bosse has prepared a concept design for Sirius, which proposes the addition of clip-on curved balconies onto the building's east façade. This application would maintain the rhythm of the façade, producing what has been described as a “Sydney style” appearance. It has, however, been criticised by the architectural community as compromising the strength of the original building's expression⁹. In addition to the balcony application this scheme comprises a services upgrade, replacement of existing picture-frame windows with a high-performance type, as well as a thermal performance upgrade. Suffice is to say that this would arguably be the most cost-effective approach to redevelopment and would provide a sustainable alternative to mechanical demolition and reconstruction.

5. CONCLUSION

Tao Gofers has created one of the most architecturally singular buildings in Sydney. A home-grown hybrid of international and local architectural ideas in the city's housing exemplar continuum. It should be recognised for this contribution, if for no other reason.

When considering recent state housing policy, governed by neo-liberal principles, particularly the arrangement of public-private partnerships in urban development and the lack of statutory protection for mid-century buildings, it becomes highly likely that this coveted site will be sold to a private developer. Assuming that the existing building is not heritage listed, the question that will be put to the new owner is whether to adapt or demolish. Should they choose to adapt the structure to appeal to new aesthetic forms, the challenge will be to maintain some suggestion of the original use of the building. This would entail a spatial reimagining capable of translating both the immaterial aspects and narratives of the building, as well as its material fabric, into new spatial concepts that will result in a unique, site-specific design. This approach relies on a multi-disciplinary consultation with contributions from a broad spectrum of fields, so as to develop a strategy to safeguard the NSW brutalist architectural legacy in the midst of an aggressive redevelopment climate.

If nothing else, the public debate that this building has sparked charts the development of new and emergent public cultures in Australia, one in which through the making and unmaking of buildings and their associated urban spaces, architecture takes its place at the forefront of our collective consciousness.

NOTES

- 1 The Rocks historic precinct is in Sydney's city centre, in the state of New South Wales. It is immediately adjacent to Circular Quay on Sydney Cove, the site of Australia's first European settlement in 1788. From the earliest history of the settlement, the area had a reputation as a slum, often frequented by visiting sailors and prostitutes. In 1900, bubonic plague broke out, and the state government resumed areas around The Rocks with the intention of demolishing them and rebuilding them. In 1968, the state government gave control of The Rocks to the Sydney Cove Redevelopment Authority, with the intention of demolishing all the original buildings, re-developing them as high-density residential dwellings. The Sirius Towers was part of this redevelopment push.
- 2 Carole Aizenstark, "Materials Matter in Adaptive Reuse: Two Case Studies", *Research Paper*, Florida, School of Architecture – Florida International University, 2006, 2.
- 3 Sheridan Burke (ed.), *Fibro House: Opera House – Conserving Mid-Twentieth Century Heritage*, Sydney, Historic Houses Trust of New South Wales, 2000, 18.
- 4 Carole Aizenstark, *op. cit.*, 2-3.
- 5 David N. Fixler, "Material, idea and authenticity in treatment of the Architecture of the Modern Movement", *CRM Journal*, 6 (1), 2009, 8.
- 6 Joe Rollo, *Concrete Poetry - Concrete Architecture in Australia*, Sydney, Cement Concrete and Aggregates Australia, 2004, 29.
- 7 The site is adjacent to a railway line connecting Sydney's north shore and city centre.
- 8 Ruth V. Zein, "Brutalist Connections: What it stands for", Curitiba, *Proceedings of the 10th docomomo International Conference*, 2013, 4.
- 9 "LAVA architect Sirius about saving Sydney's brutalist landmark", accessed on July 29, 2015, <http://www.architectureanddesign.com.au/news/lava-architects-sirius-about-saving-sydney-s-bruta.html>.

Reliving and Reviving Brutalist Concrete Tower in Lithuania

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The text introduces and analyses concrete *tower blocks* in Lithuanian architecture of the late 20th century, which bear the characteristic features of Brutalism aesthetics, interwoven with local cultural and artistic tradition, as well as the doctrines of socialist ideology. The paper states that the architecture of *tower blocks* in Lithuania has its own features: they are consistent with the style of brutalism, and reflect the sociocultural turning points of the time as well as the formation of a new world image. The towers also signify the novelty of artistic forms and liberation from standardised box-shaped forms. Some compositional regularities and specific artistic qualities are defined in the architecture of *tower blocks*. In addition to this, the paper explores the artistic value and the survival possibilities of such buildings through the analysis of visual form and its content – relating *revival* to renewal of the material and external form, and *reliving* – to the renewal of content and usage of the form.

1. INTRODUCTION

Over 80% of Lithuania's urban population resides nowadays in multi-apartment buildings, more than half of which are residential blocks of mass construction belonging to the Soviet period¹.

Most residential mass housing districts have a small group of *tower blocks*², which have become an inseparable part of the panoramas of Lithuanian cities and their residential zones. However, due to their brutalist appearance they are assessed quite ambiguously, often with negative connotations identified with the



FIGURE 1. From the left: Česlovas Mazūras, 16-storey tower block in Lazdynai district, Vilnius, 1978-85; Edmundas Stasiulis, 16-storey tower block in the Konstitucijos Ave., Vilnius, 1983; Bronius Krūminis, Danas Ruseckas, 16-storey tower block in Šeškinė district, Vilnius, 1983; Česlovas Mazūras, 16-storey tower block in Justiniškės district, Vilnius, 1980. © Aušra Černauskienė, 2013.

Soviet era, and without consideration of the issues of the content of their form. The goal of the present text is to provide an overview of one of these building types – the *tower block* – and to discuss the peculiarities of the reflection of brutalist ideas in its visual form, as well as the conveyance of such ideas in Lithuanian architecture of the second half of the 20th century. The paper analyses the manifestations of brutalist ideas based on K. Frampton's insights on an architectural style unfolding through the merge of topography, type and tectonics of the building³, as well as through the theory of interaction of form and pattern languages by N. Salingaros. The latter theory claims that form is visual and tectonic, while the language of patterns encodes the interaction between people and environment, and between practical activities of local people developed through centuries, as these are influenced by native traditions, climate, geography and culture⁴.

2. SPECIFICITY OF THE IDEAS OF BRUTALISM IN LITHUANIAN ARCHITECTURE

The style of brutalism in Europe emerged following WWII, during the 1950s–70s, along with the need for low-cost provision of residential housing and as a result of disappointment in the existing “elite” dogmas of modernism, which glorified form. In considering the interconnection between form and content, the following features can be named as characteristic to brutalism's visual form: monumentality, separation of the staircase and elevator node, and a certain “weight” on the top of the building; the content of the form is conveyed by a “fair” exposition of material, structure and function of the building, and a certain measure of resistance against the concept of “elite” architecture.

The ideas of brutalism reached Lithuania rather late, due to a rooted and systematic negation of Western ideas during Soviet occupation and the lack of free access to professional foreign literature. In the 1950s, Lithuania faced industrialised mass housing construction along with nationalisation of the land, an approach selected as an apparatus for forming the new and egalitarian social community, as well as for the organization of collective work and recreation⁵. This, of course, had a significant impact upon the artistic expression of architectural forms, and even encouraged the emergence of new types of structures, among these what can be termed the *tower block*. Alongside the social utopia implanted on ideological grounds, Lithuania also experienced the manifestations of the Western tendencies of modernism and postmodernism, although with some delay and quite fragmentarily. One such Western idea – brutalism – took root in Lithuania, borrowing its ideas of resistance, declaration of reforms⁶, as well as ethical and aesthetical aspects, all of which reveal Lithuanian architects' opposition to Soviet ideology and its implementation of a new, egalitarian and submissive, society, living in typical five stories block houses. Such ideas, merged with local creative potential, searched for the niches of realization, and were impacted by the dominance of standardization and industrialization. Speaking

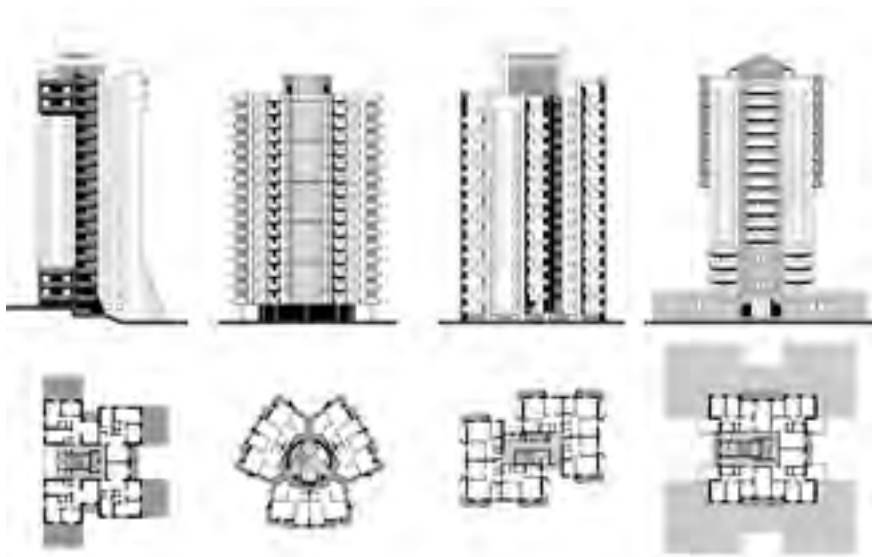


FIGURE 2. From the left: Česlovas Mazūras, facade of the 16-storey tower block in Lazdynai district, Vilnius, 1978-85, facade and plan; Edmundas Andrašius, 16-storey tower block in Kalniečiai district, Kaunas, 1984, facade and plan; Bronius Krūminis, Danas Ruseckas, 16-storey tower block in Šeškinė district, Vilnius, 1983, facade and plan; Ramūnas Beinortas, 16-storey tower block in Pašilaičiai district, Vilnius, 1987, facade and plan. © Re-drawn by Aušra Černauskienė.

in Gilles Deleuze's terms, these ideas embodied the search for a convenient place and time to turn on the mechanism of "the war machine"⁷. Such a "war machine" was launched in the process of development and realization of *tower blocks*, as an alternative to the 5- or 9-storey typical block projects.

3. CONCRETE TOWER BLOCK ARCHITECTURE IN LITHUANIA

In the 1970s, small clusters of high-rises began to be developed in the new residential districts of Lithuanian cities, providing architectural accents that added variety to the monotonous urban landscape⁸. The first experimental *tower blocks* were designed and constructed in Vilnius, in the Saulėtekis area in 1974. These were followed by the construction of additional *tower blocks* during the years 1974-90, with various experimental monolithic reinforced concrete technologies being used.

Tower blocks within the urban structure are often concentrated into 5-8 building clusters in active parts of the district – close to the main streets, city gates or shopping centres⁹. In Lithuania, *tower blocks* form a new pulsating panoramic layer, and their tectonic, monumental form, typical to brutalism, exposes it, becoming the essence and content of the form. The external structure of the *tower blocks* displays the nodes of staircases and elevators, as well as a formal "weight" in the upper part of the building. The internal structure of the *tower*

block is usually arranged around its core – the staircase and elevator node – and the tectonics of external form reiterate the structure of the interior, achieved by a repetitive window pattern. The internal structures of the residential towers are quite small – usually containing four to six flats arranged around the core, thus shaping an elegant silhouette for the tower.

The interaction between form and content is revealed in the ground floor and in the upper parts of the building. Although the visual form of residential towers is tectonic and reflects the interior planning composition, some elements of the reiterating facade rhythm are disrupted. For example, in the Lazdynai residential district, expanding loggias can be observed on the lower part of the monolithic towers, making the buildings look like as if they are “planted” into the relief; these balconies, widening at the bottom, reveal the search for contextuality, and their exterior expresses a certain surrendering to the peculiarities of local climate and geography. According to Frampton, such elements are the attributes of *the topos*; according to N. Salingaros, they are links to *the pattern* language. Such an analogy between language and architecture is as old as Vitruvius in Western architectural theory, revealing that composition of architectural components can be compared with linguistic structures of sentences¹⁰.

Other characteristics are volumetric or planar elements, shaped as a half or quarter of the circle, which may be related to the embodiment of free creative thought in resistance against box-shaped forms and standardization. These curvy, plastic lines and elements are typical not only to the buildings of the end of the 20th century, but also of the buildings of the baroque, as well as interwar modern. They may be associated with an act of transformation, and can be perceived as an embodiment of freedom and resistance to false, unfair social, economic and cultural politics. Moreover, such rounded forms can be related to the experimen-



FIGURE 3. From the left: E. Andrašiūs, fragment of the facade of the 16-storey tower in Kalniečiai district, Kaunas, 1984; Česlovas Mazūras, fragment of the balconies in the 16-storey tower in Lazdynai district, Vilnius, 1978-85; B. Krūminis and D. Ruseckas, fragment of the balconies in the 16-storey tower block in Šeškinė district, Vilnius, 1983. © Aušra Černauskienė, 2013.

tal MRC technology, selected for realisation of *tower blocks*, which allowed for more freedom in the creative process and in the implementation of plastic forms.

To summarize, the *tower blocks* in Lithuania distinctly convey features of the aesthetics of brutalism. These features are manifested by the monumental and expressive silhouette of the building, its exposed core, evident through the design of the staircase and elevator node, as well as by the tectonics of form, as their interior structure is essentially aligned with their exterior; the volumetric plastic elements on the upper and basement parts of the building deconstruct the monotonous rhythm of their exterior, shaping “the weight” of the form and allotting the building an impression of a spatial matrix (linking it to Frampton’s idea that while tectonics do not favour any style, they do so with site and type).

All these attributes are unified and their artistic expression is well supplemented by the experimental technology of monolithic reinforced concrete. Demonstration of technology and material acts as a medium of history and, as Adrian Forty has observed, “thanks to concrete, the world was witnessing the birth of a new architecture”¹¹. In this particular case, concrete works as a medium of the brutalist style. The content of form is unfolded through the display of otherness and opposition to the predominance of pre-fabricated standard architecture, thus signifying the idea of “reformation”, typical of brutalism. Sculptural *tower blocks* add the new cultural layer in urban panoramas, not unlike the domes of churches that for centuries dominated Lithuanian cities. The *tower blocks* mark the force of 20th century technology as well as the tangible freedom of thought, which was restricted, yet found its expression in concrete *tower block* architecture.

4. THE FUTURE VISION

The architecture of *tower blocks*, as well as the development of a specific “monolith school”, which attained the characteristic features of brutalist aesthetics, is the accomplished experimental project typical to Lithuanian architecture of the late 20th century. *Tower blocks* have become an inseparable part of the urban image, or part of the genius loci of individual residential districts. Brutalist *tower blocks* shape the modernist panoramic layer in Lithuanian cities, which alongside the silhouette of traditional architecture provides an important and valuable reference to the changing cultural pulse at different historical periods. With more than two decades having passed since the restoration of Lithuanian independence, the economic, political and sociocultural climate has changed dramatically, including the requirements set for architecture. The majority of these buildings no longer meet contemporary needs and face the possibility of renewal.

Speaking of renewal solutions, *reviving* could be a reference to complex renewal of the visual form with reconsideration of energy saving issues, whereas *reliving* – to the content of the form, i.e., the improvement of the social climate. Even if the residential towers in Lithuania still have not been turned into slums¹², it does not mean they have no social problems. Today, the renovation of residen-

tial buildings in Lithuania places emphasis only on the renewal of their visual form, without taking into consideration their valuable qualities, typical for their time (for example – rounded forms of *tower blocks* are replaced with regular shapes). In fact, such qualities have not even been described. With reference to Salingaros' ideas, the analysis of pattern language is very important for this issue, as it reflects different modes of living, customs and behaviour and is specific to climates, geographies, cultures and traditions¹³. This means that the essence of the renewal of the *tower block* is to link its pattern language to its visual form and create an adaptive renewal strategy. Strategy for the *tower blocks* should be a complex, prepared focusing on the questions of renewal of unique, volumetric elements of plastic expression of the visual form. These should be addressed while also focusing on the problems of renewal of the social atmosphere. The solutions of the latter are related to the involvement of local residents in the process, and to identifying their real expectations and needs, which would dictate the scale of changes in the visual form as well.

Although in Lithuania the renewal process of mass housing apartment blocks began in 2005, there is to date no comprehensive approach to this problem and there still exists a narrow understanding of the renewal process, one that focuses upon spot renovation and building insulation issues. As an exception, one pilot project should be mentioned here. It is the project *RE-Block* – a neighbourhood regeneration project of the Žirmūnai triangle¹⁴ in Vilnius, prepared by PUPA in 2013-2015. The project offers a new approach, and implements the involvement of residents and businesses in the renewal process of public spaces and infrastructure. This new experience can be used as the basis for further projects, which combine revival and reliving processes.

NOTES

- 1 The Soviet occupation, including the nationalization of the land in Lithuania, lasted from 1940 to 1990.
- 2 *Tower block* is the high-rise residential building of one section, having no possibility of attachment to another building. This definition is based on the vocabulary and formation principles of the typology of mass residential housing, as presented in the book by Philipp Meuser and Dimitrij Zadorin, *Towards a Typology of Soviet Mass Housing*, Berlin, DOM Publishers, 2015, 447.
- 3 Kenneth Frampton, *Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture*, Cambridge-MA, The MIT Press, 1995, 2-27. Frampton claims that buildings come into existence out of the constantly evolving interplay of 3 converting vectors – the *topos*, the *typos* and *tectonics*.
- 4 Nikos Salingaros, *Theory of Architecture*, Solingen, Umbau-Verlag, 2006, 74-83, 159-171.
- 5 Marija Drėmaitė, Vaidas Petruilis, Jūratė Tutytė, *Architektūra sovietinėje Lietuvoje*, Vilnius, VDA, 2012, 157 & 177-180.
- 6 Alison and Peter Smithson related brutalism more to reforming CIAM than to the aesthetics of raw concrete – *béton brut*.
- 7 G. Deleuze and F. Guattari use the term "war machine" to define the act of resistance, when going against the established rules and ideologies.
- 8 Arnas Dineika, *Architektūrinių Formų Sistema Monolitinių Visuomeninių Pastatų Statybai. Pagrindinių Architektūrinio Projektavimo Parametų Išryškinimas*, Report of the research, Vilnius, the State Institute of Engineering and Construction (VISI), 1989, 20.
- 9 Indrė Ruseckaitė, Aušra Černauskienė, "Monolito eksperimentas Vilniuje: tarp idėjos ir pragmatiskumo", *Journal of Architecture and Urbanism*, Routledge, 2012, n. 36:3, 194-208.
- 10 Word in language can be understood as signifier (a jumble of letters) and signified (the meaning of the word) as well as visual appearance (form language) and similarly – deeper idea of the form (the pattern language) in architecture.
- 11 Adrian Forty, *Concrete and Culture. A Material History*, London, Reaktion Books, 2012, 83.
- 12 The subject of *tower blocks* turned into slums in the United Kingdom is revealed by Miles Glendinning and Stefan Muthesius in their book *Tower Block: Modern Public Housing in England, Scotland, Wales and Northern Ireland*, London, Yale University Press, 1994.
- 13 Nikos Salingaros, *Theory of Architecture*, Solingen, Umbau-Verlag, 2006, 74-83, 220.
- 14 Žirmūnai is one of the first socialist housing estates in Vilnius, Lithuania, built in 1960. More details about the project in <http://pu-pa.eu/housing-estate-regeneration>.

“Ape Rock” or an Icon of Brutalist Architecture in Germany?

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The aim of this paper is to present an analytical case study of the reception of the town hall in Bensberg, and the discourse surrounding it.

For many architectural historians of the post-war period in Germany (both East and West) the town hall of Bensberg (1964-1969), designed by Gottfried Böhm, is one of the icons of brutalist architecture. It is internationally acknowledged and widely accepted in the local community. From today's perspective it is almost impossible to imagine that this prominent piece of 1960s architecture was, back then, more an object of indignation than an architectural highlight. It was labeled as “ape rock” in countless press articles.

Interestingly, the town hall was listed for conservation as early as 1982, which is quite unusual for a building from the 1960s. However, a close investigation has proven that the listing may have actually considered only the parts of the old castle, integrated in the concrete structure. This leads to the question of whether this was an accidental slip or a progressive step by the monument conservation office.

This paper investigates the argumentative patterns and strategies of acceptance and refusal of the building. Interdependencies between expert discourse of monument conservators, architects, architectural historians and critics, as well as public discourse in the print media, are identified. Broad research on the handling and reception of post-war modernism in Germany has proven that once negatively labeled (as “ugly” or “a heap of concrete”) a brutalist building, in most cases, remains subject of harsh criticism. Because a revaluation, especially in public discourse, seems to be extremely rare, such examples are worth special investigation.

1. INTRODUCTION

For many architectural historians of post-war Germany, both East and West, the town hall of Bensberg (1964-1969) – a relatively small town near Cologne – designed by Gottfried Böhm, is one of the icons of brutalist architecture. It is internationally acknowledged, widely accepted in the local community and has been recently renovated according to the best practice guidelines. From today's perspective it is almost impossible to imagine that this prominent 1960s edifice was, back then, much more an object of hate than an architectural highlight. It was labeled “ape rock” in countless press articles. A local pastry chef even made a marzipan model of it.

This case study investigates and queries how a criticized and satirized building became an architectural icon. It is based on broad research conducted in both East and West Germany¹ using the method of discourse analysis. It investigates contexts and dimensions, and especially performative utterances – that is, when statements not only describe but also influence or change reality. According to J. L. Austin, this is one of the most important functions of language². Despite its popularity in many areas of the humanities and social sciences, discourse analysis is rather non-established in the field of architectural history³.

Prior research – if any – concentrated on the reconstruction of sequences of discussion or involved stakeholders. Discursive practices, language modes, patterns of rejection as well as of acceptance for specific buildings have previously been of secondary interest. This paper aims to challenge this approach.

2. CASE STUDY

The Building

The town hall in Bensberg was built in two phases. First, the main structure was erected between 1964 and 1966, following an architectural competition won by Gottfried Böhm (b. 1920), an architect and sculptor from Cologne. Some parts of the Old Castle were removed along the way, but the three towers and other remnants were incorporated in the new construction. In 1969 a council chamber was added. The town hall has an irregular floor plan with a central courtyard. It is an administration building with a single row of small offices on each floor, accessible from the corridor. The central compositional element is a tower that encloses the main staircase. It has a sculptural, pointed roof, which contrasts with the flat terraced roof of other parts of the building. Both facades, as well as the interior, are made mostly of exposed aggregate concrete, with some parts in exposed concrete with cast wooden formwork. Only the floors are paved with brick. The horizontal windows are partially unframed, the glazing having been set directly in concrete.

Between 2001 and 2005 the town hall was renovated according to strict practice guidelines, and no structural changes were applied. The aim of the renovation was to conduct only the necessary interventions, respecting the original substance of the building⁴. An invisible insulating layer was added in the staircase and on the roof, the glazing was renewed and surface damage was repaired and sealed. All these interventions sought to remain as invisible as possible⁵.

Nowadays, the town hall is used as the offices of the planning departments of the city council, while the actual town hall has been relocated to Bergisch Gladbach, after a municipal unification of two administrative departments. However, the building remains publicly known as “town hall”.

Due to its expressive form and usage of raw concrete, some authors interpreted the building as Brutalist, while at the same time stating that it would be an oversimplification to regard Gottfried Böhm as a brutalist architect⁶.



FIGURE 1. Gottfried Böhm, town hall, Bensberg, Germany, 1964–1966, 1969. View from the courtyard. © Wikimedia Commons, Grkauls, 2009; CC BY-SA 3.0.



FIGURE 2. Gottfried Böhm, council chamber of the town hall, Bensberg, Germany, 1969. View from the main staircase in the tower, renewed glazing visible in the foreground. © Monika Motylinska, 2015.



FIGURE 3. Gottfried Böhm, town hall, Bensberg, Germany, 1964-1966, 1969. Panoramic view with the baroque palace in the background. © Wikimedia Commons, Uwe Aranas, 2014; CC BY-SA 3.0.

It seems to be impossible to discuss brutalism without relating to controversies about the meaning of this term. In this paper I apply the definition suggested by Ruth Verde Zein, who introduced a non-essentialist classification of the brutalist movement, based on dating and extrinsic appearance⁷. According to this conceptual framework, the town hall in Bensberg should be regarded as brutalist.

Public Discourse versus Expert Discourse

For the analysis of public discourse, quoting a single headline or a few randomly chosen articles, without considering their scope and context, is not only unproductive but also misleading. Therefore I consider it necessary to support the qualitative approach with a quantitative one.

The local, national and international press reported every stage of the construction and the building was broadly commented upon. While this was not unusual for the post-war period, it should be underscored that it was extremely seldom for so much attention to be drawn to a communal building in a rather provincial town. Hundreds of articles and letters to editors remain as evidence to this intense interest.

The tone of the media reports was initially reserved. They stated that “the Old Castle will become a town hall” or that “a new accent in the castle city” was to be constructed⁸. As soon as construction began, the attitude changed rapidly. Comparisons to a bunker – later so typical in reference to many brutalist works – were mentioned in almost every article from the second half of 1965⁹. Ensuing reports reveal a sharp linguistic escalation in public discourse. Just before construction was completed, in the summer of 1966, the local press was flooded with objections to the town hall. The most common tendencies among these claimed that the structure was too large or even too monumental for a small and historical town¹⁰; others focused on concrete as a construction material, using expressions

such as “a heap of concrete” or “a concrete flower”¹¹. Others labeled the building “a devil’s grimace”, “an abominable monster”¹², or even a “Ku-Klux-Klan building”¹³. Certainly, the most frequent predicate was “the ape rock”¹⁴ – invoking caricatures, the previously mentioned pastry creations, as well as April Fool’s Day jokes that told of a “true” ape compound that had opened on the roof of the building¹⁵. Many of the articles were openly or subtly ironic¹⁶. A closer investigation of their contents leads to their interpretation as part of a broader discursive labeling practice, which substituted a deeper analysis or reflection. Once labeled as “a heap of concrete”, a building can be easily rejected, without actually considering its form or architectural language.

Rejection and critique dominated this discourse, yet were not exclusive: positive voices, praising the “truly modern architecture” or “architecture for the year 2000”, were also present from the very beginning¹⁷.

It was only much later that both architectural historians and journalists described the town hall in Bensberg as brutalist architecture¹⁸. Redeeming the building of the label “brutal” therefor proved unnecessary. Quite surprisingly, this label has never been used as a pejorative designation in this case, but as a rather neutral stylistic identification¹⁹.



FIGURE 4. Gottfried Böhm, council chamber of the town hall, Bensberg, Germany, 1964–1966. View from the courtyard.
© Monika Motylinska, 2015.

On the other hand, the town hall in Bensberg was quickly and very positively received by experts in the fields of architecture, architectural critique and history, and even by monument preservationists, the latter being certainly unusual for that time²⁰. Architectural historian and critic Wolfgang Pehnt, has had the most significant contribution to popularizing Böhm's work, and has explained the architect's formal language and the context of his structures in several articles and monographs²¹. Professional acclaim has thus gradually penetrated the media discourse. It can therefore also be assumed that expert activity towards spreading the acceptance for this building was a reaction to its public rejection.

Factors Leading to Revaluation

It is possible to identify at least four factors that have led to the reevaluation of the town hall. The first one, the involvement of expert discourse, has already been mentioned above. Constant expert recognition of the town hall was accompanied by a growing recognition of its architect who, as a result, became the first German architect awarded a Pritzker Prize (in 1986). This acknowledgement was followed by many publications, coffee-table books among them, that have popularized Böhm's work, particularly the town hall in Bensberg.

The second factor is certainly linked with the first one: time has also played an important role in the revaluation process. It is a widely known phenomenon in heritage preservation that the older the building or the site is, the less controversy its preservation triggers. Regarding the town hall in Bensberg, one can speak of a psychological effect of habituation. Once one becomes accustomed to it, especially to its unusual form, acceptance or tolerance can replace rejection.

The third factor is accessibility to the public. The town hall, contrary to many other municipal buildings in Germany that are entered only by appointment, is fully accessible to the public. It has become a tourist highlight, along with the baroque palace on the adjacent hill. Furthermore, many events take place in the council chamber.

The building's early listing, which is an additional, fourth, factor, should not be underestimated either. Due to a vague description in the authorization for preservation (German: Denkmalsbegründung) dating 1982, which stated that "the design by Gottfried Böhm united the parts of the Old Castle", it remained unclear whether the whole building or only its old parts were under protection²². It was not until 2001 that this was specified. The new authorization for preservation then clarified that the whole building is protected as a monument²³. Its listed status ensured that no significant changes would be made and the structure would retain its original form.

However, the question of whether or not this building would have been accepted to this extent, had it not incorporated the remains of the old castle, remains unanswered. For example, if you search a Wikipedia entry on the town hall in Bensberg, you are immediately redirected to the headword "Old Castle"²⁴. In general, with regard to many other buildings of the post-war period, it can be

observed that a combination of historical structures with modern fabric, evokes better reception than entirely modern structures.

I would like to close my study by referring to an additional, seemingly minor aspect, that should not be overlooked: namely, the efforts to make the rough concrete surface of the building more “visually agreeable”. One of the proposed solutions was to partly cover the facade with “Vegationsschmuck”, that is, with a decorative growth of vegetation. This idea initially appeared in the protocols of the architectural competition in 1964 and persisted on the margins of discourse, only to be suggested occasionally²⁵. As this is characteristic of the discourse on handling post-war concrete architecture, the town hall in Bensberg is just one in many examples of such visual attempts to soften the *beton brut* by covering it with plants. In Bensberg this idea was rejected by the architect as well as by the monument conservators. However, it has infiltrated – albeit in a small scale – to the entrance of the town hall caretaker’s apartment. An unexpected union between *beton brut* and German “Gemütlichkeit” – coziness – may be proof of an ongoing process of adapting architectural heritage.

3. CONCLUSION

In every case of handling a building or an ensemble from the 1960s, whether Brutalist or not, it is crucial to identify discursive patterns and strategies, such as pejorativ labeling of concrete and an oversimplification in the identification of Brutalist buildings as “brutal”. Reevaluation, especially in public discourse, seems to be extremely rare. Hence, examples such as the town hall in Bensberg demand special attention, as they prove that initial rejection can be successfully challenged through popularization and explanation, thereby constituting an important paradigm for contemporary preservation practices and education.

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NOTES

- 1 The author of this paper is currently working on her doctoral thesis that investigates the handling of post-war architectural heritage in Germany, at the Technical University Berlin. For more information on some aspects of the research and the applied method, see: Monika Motylinska, "Rehabilitierung des Architekturbesitzes der DDR – eine Diskursanalyse", in Mark Escherich (ed.), *Denkmal Ost-Moderne II – Denkmalpflegerische Praxis der Nachkriegsmoderne*, Berlin, Jovis, 2015, 52–63.
- 2 J. O. Urmon and Marina Sbisà (ed.) & John Langshaw Austin, *Things with Words: The William James Lectures delivered at Harvard University in 1955*, Oxford, Clarendon Press, 1962, 61.
- 3 Philipp Sarasin, *Geschichtswissenschaft und Diskursanalyse*, Frankfurt am Main, Suhrkamp, 2003.
- 4 Compare: Adrian von Buttlar, "Acht Thesen zum Denkmalschutz der Nachkriegsmoderne", in Hans Rudolf-Meier and Ingrid Scheurmann (ed.), *DENKmalWERTE: Beiträge zur Theorie und Aktualität der Denkmalpflege*, Berlin/München, Deutscher Kunstverlag, 2010, 123–133.
- 5 Michael Schuchardt, *Stadt Bergisch Gladbach. Fassaden-sanierung Rathaus Bensberg. Sanierungsgutachten Metall-Glassassaden. Im Auftrag der Stadt Bergisch Gladbach, Hochbauamt*, 3 March 2000 (expert's report, Untere Denkmalbehörde, Bensberg, 2000).
- 6 Wolfgang Voigt (ed.) & Gottfried Böhm, *Felsen aus Beton und Glas. Die Architektur Gottfried Böhm im Deutschen Architekturmuseum*, Berlin, Jovis, 2006; Ben Farmer and Hentie Louw (ed.) & Svetlozar Raev, *Gottfried Böhm: the Quest for Synthesis*, in *Companion to Contemporary Architectural Thought*, London, Routledge, 1993, 416–419.
- 7 Ruth Verde Zein, *Brutalism? Some Remarks About a Polemical Name, its Definition, and its Use to Designate a Brazilian Architectural Trend*, "Brutalist Connections Research", accessed on January 30, 2016, http://brutalistconnections.com/PDF/Zein_Brutalism-english.pdf.
- 8 "Altes Schloß wird Rathaus", *Bergische Landeszeitung*, 24 June 1961; "Ein neuer Akzent für die Schloßstadt", *Bergische Landeszeitung*, October 23, 1965.
- 9 "Der Schein trügt: Es wird doch kein Bunker", *Kölner-Stadtsanzeiger*, December 21, 1965.
- 10 "Unfaßbar, was man da verbrochen hat...", *Bergische Landeszeitung*, September 6, 1966.
- 11 "Büro-Burg mit Betonblume", *Tagesspiegel*, Berlin, August 28, 1966.
- 12 Christa Jerrentrop, *Rathaus in Bensberg (a letter to editor)*, no date, Folder F1/180, Stadtarchiv Bergisch Gladbach.
- 13 "Die „supermoderne Rathausburg“, *Wolfsburger Zeitung*, September 2, 1966.
- 14 E.g. "Bensberger Rätsel: modernes Rathaus oder Affenfelsen?", *Bergische Landeszeitung*, August 27, 1966.
- 15 "Die Affen sind da", *Bergische Landeszeitung*, April 1, 1967.
- 16 "Auch das noch", *Bergische Landeszeitung*, August 30, 1966.
- 17 E.g. "Das beste und schönste Bauwerk der Neuzeit", *Bergische Landeszeitung*, October 28, 1966; "Die „Acropolis“ von Bensberg", *ibid.*
- 18 Adrian von Buttlar, "Brutalismus in Deutschland", *Brutalismus. Architekturen zwischen Alltag, Poesie und Theorie*, Berlin, May 11, 2012; "City Hall Bensberg", accessed on January 30, 2016, <http://sosbrutalism.org/cms/15889685>; Sack, Manfred, "Deutschland im Bau", *Die Zeit*, 11 November 1999; "Zurück zum Beton", *Der Standard*, February 21, 2015, 48.
- 19 There is little evidence of the usage of the term *brutalism* in the German press during the 1960s (an exception is to be found in: "Rauh und rissig", *DER SPIEGEL*, 47/1967, November 13, 1967, 188–193); instead, "Monumentalism" appeared frequently. Not until the late 1970s did the term "Brutalism" become widespread, being used mostly with a clearly pejorative designation. E.g. *DER SPIEGEL* cited Frei Otto: "Man nimmt wie immer ausländische Modeströmungen und interpretiert sie nach eigenem Geschmack. Von Le Corbusier kommend, entstand das englische Understatement des sogenannten Brutalismus. Bei uns wurde das grobe, wirklich brutale Bauen, die deutsche Brutalität, daraus." "As usual, one takes some foreign temporary fashion and interprets it according to their own taste. Coming from Le Corbusier, the English understatement of so-called brutalism was created. Here [that is: in Germany] it has evolved to rough, really brutal buildings, to the German brutality." ("Mir wird speiübel", *DER SPIEGEL* 13/1977, March 21, 1977, 223–226).
- 20 Rudolf Wesenberg to Stadtdirektor Wagner, June 20, 1967, Folder: Bergisch Gladbach Alters Schloss, Rathaus Bensberg, Wilhelm-Wagner-Platz 1, 1960–1969, L2117, Rheinisches Amt für Denkmalpflege, Pulheim-Brauweiler.
- 21 E.g. Wolfgang Peht, "Eine Burg für die Bürger", *Frankfurter Allgemeine Zeitung*, November 10, 1983.
- 22 Rheinisches Amt für Denkmalpflege, *Mitteilung über die Eintragung eines Denkmals in die Denkmalliste*, June 23, 1982, Folder: Bergisch Gladbach Alters Schloss, Rathaus Bensberg, Wilhelm-Wagner-Platz 1, from 1972, L35761, Rheinisches Amt für Denkmalpflege, Pulheim-Brauweiler. Compare also: Stadtdirektor der Stadt Bergisch Gladbach to Rheinisches Amt für Denkmalpflege, *Eintragungen in die Denkmalliste*, February 17, 1982, *ibid.*
- 23 Christoph Machat to Karl Stabenow, *Baudenkmal Rathaus Bensberg: Denkmalwert von den 1964 von Gottfried Böhm gestalteten Neubauten. Antrag auf die Ergänzung des Eintragungstextes*, 27 July 2001, Folder: Bergisch Gladbach Alters Schloss, Rathaus Bensberg, Wilhelm-Wagner-Platz 1, from 1966, 46924, Rheinisches Amt für Denkmalpflege, Pulheim-Brauweiler.
- 24 "Altes Schloss Bensberg", accessed on January 30, 2016, https://de.wikipedia.org/wiki/Altes_Schloss_Bensberg.
- 25 E.g. the record of an oral consultation between construction engineers and the director of Public Construction in North Rhine Westphalia, September 19, 1968, Folder: Bergisch Gladbach Alters Schloss, Rathaus Bensberg, Wilhelm-Wagner-Platz 1, 1960–1969, L2117, Rheinisches Amt für Denkmalpflege, Pulheim-Brauweiler.

The Brutalist City: The Case of Kuwait's New Souqs

Sara Soares

DAR AL-ATHAR AL-ISLAMIIYAH, KUWAIT CITY, KUWAIT

In the mid-20th century, the reconstruction of cities through large highway networks and stand-alone buildings was commonly perceived as a way to modernize and renew the post-war enterprise. In a joint effort, governments, contractors, architects and planners rejected old urban fabrics, leading to the demolition of large extensions of old towns that were consequently replaced by large-scale building developments.

In the Middle East, following the discovery of oil, the western presence generated similar urban processes in a significant number of cities. Kuwait City is among the first and most extreme examples of this post-oil modernization.

Under the 1952 British master plan by Minoprio, Spencely and Macfarlane, road networks and new neighbourhood units were rigidly implemented, while the old and cohesive settlement was radically abandoned and transformed into a business district.

Up to the 1970s, the desired modern Kuwait failed to integrate the older city, which rapidly became dominated by an affluent individualism of citizens and city officials, who devoted their efforts to the erection of modern monuments.

The idea of self-contained units was encouraged for recovering the lost city life, an initiative that resulted in multiple modern souqs (markets), scattered all across Kuwait City. Today they are commonly termed by scholars as brutalist.

In recent years these structures, almost forgotten by the local population, suffered gradual deterioration and are now facing the challenge of conservation. Only recently, in the framework of narratives of "nation building" through memory and identity, an emerging community of young, well-educated artists and professionals from the most varied sectors of society has commenced projecting an "archaeological status" onto these buildings, urging for their preservation.

Recognizing Kuwait City as a case study of significance in the debate of adaptive reuse of the "modern heritage", this paper aims to reevaluate the achievements and failures of Kuwait's modernization, through the rich repository of multi-use self-contained units, exploring their response to the desired modern city and its implications for the local community.

1. INTRODUCTION TO MIDDLE EAST

Most Arab countries, between the 1930s and 1970s, underwent profound political and social changes, which significantly impacted the image of territory, particularly in major cities. The decolonization process and the large migrations of people throughout the region¹, along with the discovery of oil, were a major turning point, challenging the organization of these cities.

In response to multiple patriotic aspirations, architecture and planning were enlisted for redefining and articulating new or existing national identities, reflecting the establishment of independent states.

This context generated hundreds of new buildings and urban master plans, designed by a generation of architects trained between the two World Wars. These included the great masters of the 20th century and their pupils, as well as a new generation of Arab architects and planners trained in Europe and in the US as well as in the established universities of Beirut, Cairo, Baghdad, and Damascus. Those educated in the Middle East searched for a more regional architecture.

These multiple practitioners contributed to the implementation of large-scale projects in the region, ranging from national assemblies and ministry buildings to central banks, schools, universities, hospitals, stadiums, public housing and urban plans, creating an entirely new landscape of modern architecture.

2. KUWAIT MODERNIZATION

Urban development and modernization in the State of Kuwait can be divided into three distinguished stages: The period under British protectorate, the years that preceded independence, and nation-state building.

With the first exportation of oil in 1946 under the British protectorate, an ambition for developing a modern city was envisioned by Kuwait's leader. It was executed according to the New Town² principles, and led by the Anglo-Saxon planners Minoprio, Spencely and McFarlane.

The concept for the Kuwait first master plan, approved in 1952, ignored and rejected the existing old coastal town. Seemingly creating a tabula rasa condition, this decisive plan laid out a totally new city, divided into functional zones and articulated within a modern road system.

The model of the old courtyard house was replaced by the large suburban detached villa on the outskirts of the city core. Priority was also given to the water system, energy supply and the seaport, together with an intensive program for new hospitals and schools.

The primary design considerations for these buildings were dictated by climatic conditions implementing the Western perception of tropical architecture, as promoted by leading practitioners such as Maxwell Fry and Jane Drew.

During the early 1950's, the country experienced profound physical transformations, yet these were lacking in clear strategy. Not only did the locally established Development Board³ show inefficiency, but also criticism surrounding the

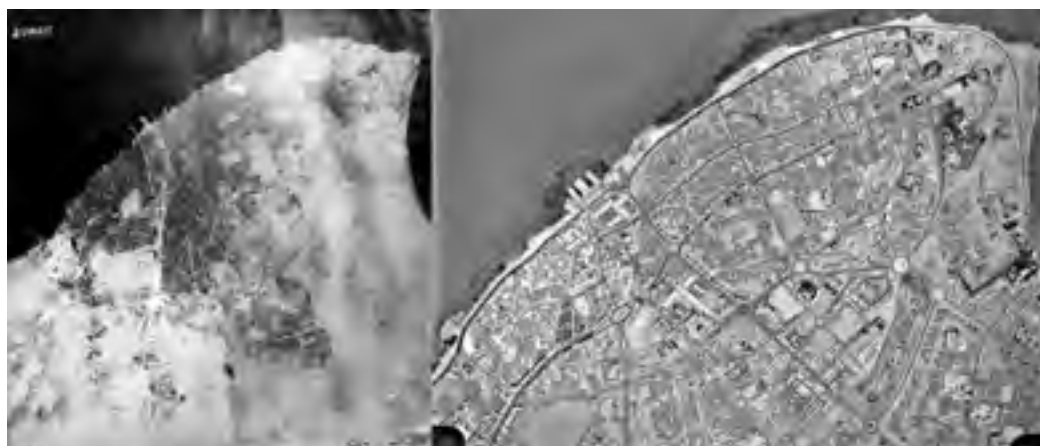


FIGURE 1. Kuwait city, Kuwait, 1951/1967. Aerial view of Kuwait City in 1951 and 1967. © Kuwait Oil Company, 1951/1967.

British practice emerged. This anti-Western sentiment was reinforced by an emerging pan-Arabianism and was augmented by the establishment of an independent state in 1961.

In this changing course of events, Kuwait witnessed the arrival of numerous Arab engineers, architects and planners, who increased in number after the Suez crisis. Within this context, urban planner Saba George Shiber⁴ became the major state planning adviser after 1960. Author of a seminal work on Kuwait urbanization⁵, Shiber took charge of the design and implementation of a strategy for developing the city centre, i.e., the Central Business District (CBD).

The design of eleven areas was engaged by the municipality and regulated by Shiber's principles of "architectural control"⁶. These principles sought to establish a modern yet locally rooted architecture, combining reinforced concrete free plan buildings with traditional Islamic decorative motifs in their façades.

The majority of these areas were developed after Shiber's period in office, in a new vibrant and experimental era, during which the first generation of Kuwaitis educated abroad began returning to the country. Preceding public institutions and through their own offices⁷, new opportunities arose. Benefiting from the 1973 oil embargo and the nationalization of the Kuwait Oil Company in 1975, public and private initiatives began to be developed in large-scale and multi-programmatic building typologies, exposing the local design offices to the large corporate US architectural and engineering firms.

Within these developments, concrete was singled out as the material that could best embody the affinity between American architectural production and the booming economies of the Middle East⁸. Concrete was no longer regarded as just "concrete"⁹.

3. THE "BRUTALIST SOUQS": A SELF-CONTAINED MIXED-USE BUILDING

Several new gigantic mixed-use structures took on a leading and determinant role in the formation of a new architectural culture that aimed to replace urban density, as well as the urban lifestyle, that were forfeited with the construction of the neighbourhood units of the 1950s and 1960s.

The romantic and experimental terrain which Alison and Peter Smithson, as well as BBPR, developed from 1968 to 1972, became too complex¹⁰. New plans thus



FIGURE 2. The Architects Collaborative (TAC), souq Al-Manakh, Kuwait city, Kuwait, 1973-1975. Model of souq Al-Manakh. © PACE Archive, 1970s.



FIGURE 3. The Architects Collaborative (TAC), souq Al-Wataniya, Kuwait city, Kuwait, 1974-1979, Model of souq Al-Manakh. © Aga Khan Visual Archive AKVA, Aga Khan Documentation Center, MIT – Cambridge; TAC, The Architects Collaborative, 1970s.

shifted towards a more pragmatic and commercially driven approach.

The Smithsons' mat-building system¹¹, and mainly BBPR's self-contained units, proposed as new "landmarks"¹², were never implemented but proved to be essential for the introduction of new mixed-use ideas, which lead to the construction of the new souqs (markets) from 1973 to 1979¹³.

The first was Souq Al-Kuwait (1973-1976), constructed in CBD area 8 and initially designed by BBPR. It follows the use classification as per the general development plan. This plan, produced by BBPR, organized the downtown area in a multi-

level categorization of building uses, which became the determining factor for the emergence of this new city typology. The project was adapted and completed by SSH in association with SOM, in the framework of the first Build-Operate-Transfer initiative¹⁴. With a program of a multi-storey shopping mall and offices, interconnected at the open car parking levels, Souq Al-Kuwait extends the commercial use of the adjacent old Mubarakiya souqs into a vertical structure. This approach proved to be successful: it encouraged the idea of multifunctional programs applied to self-contained units, which promoted urban revival and occupied big portions of empty land that were left deserted upon the demolition of the old town.

The souqs Al-Muttheda and Al-Masseel were developed by John Bonnington with a clear agenda regarding the building's constructive system and elements assemblage. These were conceived as an experimental prototype building that could eventually lead to the establishment of a precasting factory¹⁵.

The Souq Al-Safat (1973-1975) and Souq Al-Manakh (1973-1975), inserted in the congested CBD areas 9 and 5, were designed by The Architects Collaborative, in association with PACE. Both buildings made use of the pliable characteristics of reinforced concrete, having large panels that formed permeable arcades at the ground level, according to a regular metric rhythm.

Completed in 1979, the Souq Al-Wataniya expands the TAC building experiment beyond permeability and urban insertion, literally recreating an "Arab settlement" on the building's rooftop. The material effect of the old adobe houses was imitated using sandblasted white concrete. Duplex apartments were grouped around pedestrian walkways and internal courtyards with gardens and fountains, thus expanding the experience of a typical Gulf town to the roof. At street level, an arcade encompassing 300 retail units organized according to the type of products, as in the traditional souq, was planned. It was connected by two covered courtyards.

Such material and volume characteristics induced the architects to place a strong emphasis upon environmental graphic design, using signage, banners and murals, developed by the “TAC Graphics” department¹⁶.

All these urban shelters led to a strong visual presence in the city, that one can refer to as brutal. This rough existence will endure as the new urban *renaissance*: “its design was not about the individual, it was about multitude”¹⁷.

4. THE CHALLENGES OF BUILDING PRESERVATION IN KUWAIT

The physical disappearance of the old city went unnoticed during the revolutionary process of Nation building:

*What we wish to preserve is first our religion. Then our hospitality. Then our family relationships (...) Then, the simplicity of simple men and the respect of the younger for the older. Finally, our individualism (...). We hope all these will remain*¹⁸.

In the aftermath of the 1990 invasion, buildings, such as the souqs Al-Wataniya and Al-Safat, that were damaged in the war, went into rapid processes of building reparation and re-establishment, encouraged by patriotic motivations but uninformed as to preservation methods. These practices lead to a policy of building



FIGURE 4. John Bonnington Partnership, souq Al-Muttaheda, Kuwait city, Kuwait, 1973-1979.
© Dar Al-Athar Al-Islamiyyah, research *Modern Architecture Kuwait 1949-1989*, Nelson Garrido, 2015.

refurbishment based on the alteration of exposed surfaces, during a time when *alucobond* was massively introduced as coating material.

With the 2003 Iraq invasion, a construction boom resumed and the demolition of the post-oil buildings became a common practice. These extensive demolitions led to the emergence of a collective nostalgia and the protection of the remaining pre-oil constructions such as the Sheikh Khaz'al Palace, which did not escape deterioration, due to lack of intervention.

The "brutalist souqs" have resisted real estate pressure in recent years, and no major exterior interventions; inside, the rationality of former times was compromised by a new user. The souqs are today inhabited by a large expat community with extremely low resources, sort of "urban refugees" who brought a new life to these brutal platforms and have brought with them their culture, motivations and frustrated hopes for a Western urban lifestyle.

But if those low-income communities revived the new souqs, they may be the reason for its future demolition, as is happening in the Al-Sawber Residential Complex¹⁹. Moreover, new BOT agreements are promoting renovation processes, which may cause dramatic changes in the integrity of these buildings²⁰.

Maintenance is a rare exercise, as concepts of preservation and adaptive reuse are non-existent, in a country where exceptional economic circumstances droved its society into superficial mass consumption.

"Arab cities are full of buildings started and never finished, and finished and then abandoned, for it would seem the Arabs are more spontaneous, less worldly than the East or West".²¹

The negative approach towards buildings classified as "brutalist" all over the world, does not apply to Kuwait's souqs, yet neither have they attained architectural significance. Significance can be attained rather quickly, through reviving the housing function of complexes such as the souq Al-Wataniya, a function that never actually materialized. Such a revival can promote the future and relevance of these urban mega structures.

The state of Kuwait does not hold any basic legislative control over building protection; neither does it promote building classification or any kind of conservation industry²². These buildings are of little interest to the general population; coupled with the legislative and regulatory gap, as well as with the development of projects that are markedly profit-driven, they have become victims of chronic difficulties that remain as rampant today as in the past.

Post-oil buildings have begun to be conceived as part of the local heritage only since 2012, with the international conference *Modern Kuwait* organized in the framework of the country's first participation in the *Biennale di Architettura di Venezia*.

In 2014, the Kuwait Towers became the first 20th century building in the Gulf region to be included in UNESCO's tentative list²³. Even though this attempt is more of a political exercise, it represents a huge step towards recognizing modern architecture as a part of cultural heritage.

An initial published survey of modern architecture was carried out this year, titled *Modern Architecture Kuwait 1949-1989*²⁴.

With the precedent of a demolished old city, Kuwait could be the perfect ground to elaborate on the protection and adaptive reuse of 20th century buildings, commonly referred to as the “old buildings”. The brutalist souqs, constructed with the intent of being solid, permanent and, most of all, public, provide a unique opportunity to test and pursue these hypotheses.

NOTES

- 1 The first big exodus took place in 1948, the year of the establishment of the state of Israel, known as the *Yawm al-Nakbah* – the day of the catastrophe – that led to a vast immigration wave of 900,000 Palestinian Arabs, according to the report of 1952 of the United Nations Commission for Palestine. The Six Day War (1967) caused a new migratory wave of 325,000 Palestinians.
- 2 The New Town Act of 1946 constituted the new urban agenda in the United Kingdom following WWII. It aimed for the (re)construction of London satellite cities in accordance with the guidelines of the 1902 publication, *Garden Cities of Tomorrow*, by Ebenezer Howard. The British architectural firm of Minoprio, Spencely and McFarlane (MSM), founded in 1928, was involved in this movement with the planning of Chelmsford, Crawly and Worcester.
- 3 The Development Board was established in 1951 to manage the implementation of the Kuwait first master plan.
- 4 Saba George Shiber (1923-1968) was an Arab Palestinian planner with American citizenship who worked particularly in Lebanon and Kuwait. His studies and works dealt with the built environment of Arab cities. He was elected “Arab of the year” in 1963 by the magazine *Middle East Business Digest*, which called him “Mr. Arab Planner”.
- 5 “Kuwait Urbanization, Documentation, Analysis, Critique” is Shiber’s most famous publication. In 650 pages he conducts a deep analysis of Kuwait City’s urban development, with harsh criticism of Western practices.
- 6 *Ibid.*, 167.
- 7 The Pan Arab Consulting Engineers (PACE) was founded by the Kuwaitis Hamid Shuaib and Sabah Al-Rayes and the Palestinian-American Charles Haddad. Today it is still one of the largest architecture and engineer offices in the region, directed by Tarek Shuaib, son of Hamid Shuaib. SSH was the first Kuwait office, founded by the Lebanese architect Sabah Abi-Hanna in 1961. It was later converted in SSH in association with Salem al-Marzouk. The Kuwait Engineering Office (KEO) was founded in 1964 by Faisal and Abdul Aziz Sultan, recently BD World ranked in 44th place. Gulf Consultants was created in 1967 by Hamad Alghanim.
- 8 Michael Kubo, “The Incorporation of Architecture: Bureaucratic Modernism and Global Practice after 1945”, *Aga Khan Program 2013-2014 Travel Grant Report*, 8.
- 9 Tony Morris, “Precast concrete’s Middle East Future”, *Middle East Architectural Design*, May/June 1979, 19.
- 10 In 1969, the Smithsons, Candilis-Josic-Woods, Reima and Raili Pietilä and the Italians BBPR, brought new proposals for the city centre known as the “Urban Form Studies” and its “demonstration areas”.
- 11 See “Kuwait: The Smithsons’ Scheme”, *Architectural Review*, September 1974, 183-190.
- 12 Studio Architetti BBPR, “The Future Development of the Old City of Kuwait”, report submitted to Ministry of Planning, Kuwait, 1969, 43.
- 13 Souq Al-Kuwait; Souq Al-Kabeer; Souq Al-Safat ; Souq Al-Manakh; Souq Al-Wataniya; Souq Al-Watiya. For more information see: Ricardo Camacho, Sara Saragoça Soares and Roberto Fabbri, *Modern Architecture Kuwait 1949-1989*, Zurich, Niggli, 2015, 220-235.
- 14 BOT are public-private partnerships, where a private entity receives a concession from the public sector to develop and operate a certain facility.
- 15 Tony Morris, “Precast concrete’s Middle East Future”, *Middle East Architectural Design*, May/June 1979, 25.
- 16 According to Charles Gibson (designer at TAC Graphics from 1976 to 1979), “Many architects of the time, including some at TAC who designed those large mixed-use projects for Kuwait, were into ‘brutalist’ structures with a lot of exposed concrete. I think the principals realized that something more was needed to soften and humanize all of this concrete. So I believe TAC’s architects considered banners to be not just decoration or ‘window dressing’ but an integral and necessary part of the architecture. Certainly, we in TAC Graphics held this view”. Interview with Charles Gibson, February 2016.
- 17 Christopher Beanland, “Concrete buildings: Brutalist beauty”, *The Independent*, 19 January 2014.
- 18 Rashid Al-Rashid in John Frazer, “Kuwait, Aladdin’s Lamp of the Middle East”, *National Geographic*, Vol.135, No. 5, National Geographic Society, Washington, 1969, 636-667.
- 19 In 1977 Arthur Erickson presented, at the request of National Housing Authority, the Al-Sawber Housing Complex, a mega residential project with 900 apartments units, of which only 500 were built. This attempt to return Kuwaitis to live in the urban center was not realized and the complex came to be rented to low-income immigrants. At present, it is being reacquired by the state, which could lead to its total demolition. See “The Sawaber Project Development Study”, by Arthur Erickson for National Housing Authority- Kuwait, Canada, 1977.
- 20 See more in <http://www.aqarat.com.kw/properties-kuwait-other-projects-souk-al-kuwait.html>.
- 21 The Alison and Peter Smithson Archive, Frances Loeb Library, Special Collections, Graduate School of Design, Harvard University, Folder BC000.
- 22 “Princely Decree No.11 of 1960, Law of Antiquities” is the single document drawn up for the protection of antiquities. The content is abstract and limited, and has no law enforcement.
- 23 See more in <http://whc.unesco.org/en/tentativelists/5933/>.
- 24 Ricardo Camacho, Sara Saragoça Soares and Roberto Fabbri, *op. cit.*

Conservation and Reuse of Modern Movement Houses

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The objective of this session is to make an in-depth study of various paradigmatic houses designed by masters of Modern Movement architecture from the point of view of conservation and the possibilities of reuse. In the 20th century, the house became an architectural genre that was able to integrate concepts and promote cutting-edge ideas, so a review of these domestic spaces spanning the Modern Movement will shed light on its development and contributions. On the one hand, the production of individual houses in the last century has been quite extensive and attractive, but on the other, difficult to maintain and preserve. The examples that follow offer various possibilities in the realm of their actual and future utilization, as well as showing different states of conservation and intervention.

The theme of livability and the various physical aspects of the house make it the architectural typology par excellence, which becomes apparent in the diverse forms of social organization throughout the world. For that reason, the presentation of specific examples with innovative concepts and analysis of the conservation of these spaces and their possible adaptive reuse transcend mere description of physical phenomena. In particular, formal or constructive developments and new industrial materials, at the time, play a fundamental role in the assessment of various examples, as well as the ability to preserve or to reproduce them. In most cases, the compositional richness and freedom of design have produced works that successfully combine traditional materials in novel ways. Here is the point at which interior design reaches its ultimate consequences, including the design of furniture and other accessories; likewise, these private buildings have been submitted, in some cases, to the challenge of being adapted both to the geographical environment and to the climate, seeking an ecological coherence for the well-being of the inhabitant. Therefore, the 5 proposals in this session emphasize, in addition to the relevance of the house regarding its design and construction,

the various aspects and difficulties of its conservation, restoration or remodeling in relation to its current circumstances.

It is only fair to say that all the houses were designed and built by important actors of the Modern Movement and that their conservation has been, in most cases, recognized and supported by local heritage institutions. In addition, it is interesting to note, in the different articles, that there is always a debate between conserving the house as a living space or to turn it into a museum. In this last case we have some of the most important examples of last century, Le Corbusier's *Villa Savoye*, Mies Van der Rohe's Farnsworth House, Frank Lloyd Wright's Falling Water, Luis Barragán's *Casa Barragán*, Lina Bo Bardi's Glass House, Charles and Ray Eames' Eames House, Gerrit Ritveld's *Schoeder House*, and many other significant examples from that period that we are able to visit.

On the other hand, we find some of the examples presented here, that the authors have been able to review and evaluate under very particular circumstances, being the reason for advocating a continuing use as private residences. It is the case of the *Korsmo House* in the outskirts of Oslo, 1952-55, an icon of Scandinavian modernism designed by CIAM member Arne Korsmo, depicted by Elisabeth Tostrup; in 2010, the wife of the architect decided that the building should remain as a private home, which made the conservation and adaptation in front of the new norms quite remarkable. This is also the case of *Casa Zentner* built in Zurich by Carlo Scarpa between 1965 and 1967, that Giacinta Jean is presenting, where the house and its decoration has been maintained by the same family; here an in-depth study of Scarpa and the owner's archives provide new insight in one of the very few houses completed by him out of Italy.

There are 2 papers on Portuguese houses that embody the modernity that was only possible after the temperance of the dictatorship after the WWII. The first example, proposed by Hugo Farias, deals with Dr. Barata's House in Vila Viçosa, designed by Nuno Portas and Nuno Teotónio Pereira, 1958-1962, that proposed a renewed modern architecture related to the specific site, culture and tradition; the author shows how this residence, through its internal spaces, became a reference work and advocates the proper conservation to maintain its residential character. As for Tiago Freitas, he presents four vacation houses that show a specific design according to its use. 2 maintain their vocation as holiday abodes and are undergoing restoration: Ribeiro da Silva House at Ofir, by Fernando Távora in 1957, declared a monument in 2012, and João Simões House at São Pedro de Moel, by João Pedro Mota Lima and Pinto e Cunha in 1953. The 2 others have new functions, *Marinhas House* in Esposende, by Alfredo E. Viana de Lima in 1954, transformed into a museum and *Bessa Ribas House* at Ofir, by Agostinho Ferreira de Almeida in 1967, converted into a kite-surf school and a hostel.

An explicit proposal to transform a house into a Resource Centre is the one by Sangeeta Bagga and Sathish Sethuraman that bring into light the problems of conservation of the Pierre Jeanneret House, 1956-1957, where he lived for 10 years as the Chief Architect of Chandigarh, India. This house allows us an insight into

architecture built for tropical extreme climates with local materials, as we appreciate some of the furniture made by this designer. The authors fear the transformation by new inhabitants without interest in the place, and recommend the instauration of this Centre as a cautionary measure for preservation.

The design and construction of individual houses in the last century plays a significant role in the Modern Movement, but unfortunately, most of the original owners are not present and the new codes for construction and comfort have changed; furthermore, it is difficult to maintain and preserve their integrity, considering furnishings and works of art. The various examples we present offer diverse possibilities for their actual and future use, where the main debate remains in the realm of their conservation as houses or as museum of sorts. Answers and solutions are not simple, only the study of the materiality of the building and of the architect's ideas can bring some light into the path to follow.

“A House to Be Lived in, Not a Museum”.

Reuse of a Protected Icon

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This paper examines a Scandinavian icon of the Modern Movement and discusses how its core qualities have been preserved during its adaptation for reuse by a new family in the 21st century. The house in question is *Planetveien 12*, on the edge of the wooded hills on the outskirts of Oslo, Norway, an experimental “live-work home” designed in 1952-55 by CIAM member Arne Korsmo (1900-1968) for him and his wife, Grete Prytz Kittelsen (1927-2010), a prominent enamel artist. In fact, the entire row of 3 houses (*Planetveien 10 A, 12 and 14*), designed by Korsmo in cooperation with Christian Norberg-Schulz (1926-2000), is notable, but n. 12 is the most interesting in terms of architectural quality, and because it has been preserved nearly unchanged for more than half a century. A protection order covers the exterior of the entire complex, and in the case of n. 12, the entire building, the interiors with built-in furnishings, a few tables and chairs, and the hundred cushions in the living room. The category “artist home” explains this extensive protection, the purpose of which is to preserve not only the architecture but also the interior, along with the equipment of an outstanding artist. The house was highly innovative for the 1950s in both its technical and spatial features. These experimental features present a challenge for preservation and especially reuse. Some of the materials are no longer available. New environmental and energy-saving codes and regulations now apply. And the house has to satisfy the everyday functional needs of a family with 3 children – a teenager and two pre-schoolers.

The paper is based on thorough research conducted for the book *Planetveien 12. The Korsmo House. A Scandinavian Icon*, which was first published in Norwegian in 2012. Further studies covered the imposition of the protection order and the repairs and renewals carried out in cooperation between the Cultural Heritage Office, the owner and the new architect.

1. “A LIVE-WORK HOME” FOR A PIONEERING COUPLE

Arne Korsmo was a leading figure in Norwegian architecture, already famous for a large number of groundbreaking functionalist houses in the 1930s. He was also a renowned exhibition architect and designer of silverware products together with his second wife, Grete Prytz, herself a pioneering goldsmith and enamel artist¹. They were internationally oriented and had extensive contact with leading designers and architects of the time, including Alvar Aalto, Charles and Ray Eames and Jørn Utzon. The *Korsmos* won a series of prizes in international exhibitions such as the *Milano Triennale* in 1954 and 1957.

The house at *Planetveien 12* was highly experimental in its design, use of materials, and ingenious solutions; its design highlighted the connection between nature and architecture. Intended to function as a workshop, design studio and gathering place, “a live-work home”, the flexible open-plan interior was considered very innovative in the 1950s, whilst the use of steel and glass and other translucent materials was controversial. Korsmo’s design emphasises the 4-foot modular grid that the entire row of three houses is based on, while at the same time allowing for individual adaptations in order to enhance the spatial qualities.

The synthesis of openness and warmth brought about by the spatial design, the choice of materials and the built-in furnishings, is striking.

Prytz Kittelsen, who lived in the house until she passed away in 2010, was determined that the house should remain a house to be lived in, and not become a museum. In 2011, a young family purchased and moved into the house. Simultaneously, the city authorities started proceedings under the Norwegian Cultural Heritage Act to obtain a protection order in order to ensure the preservation of the building and some of its contents.

2. THE PROTECTION ORDER AND ITS CHALLENGES

The protection order covers the actual building and all built-in furnishings as they were at the time the order was issued, as well as a selection of furniture and objects of special significance, such as the hundred square cushions in the living room. "The objective [...] is to secure the architectural and architectural historical values of the complex, as well as to secure *Planetveien 12* as an extremely important artist home from the post-war period"². This implies that a few alterations made to the house in the 1970s-1980s were also protected.

What are the particular conservation challenges involved in this case? First, the construction aspect: the experimental build in the 1950s employed technical solutions and materials that did not stand wear over time, some of which are impossible to replace because they were industrial products that are no longer manufactured. The second challenge was accommodating contemporary family life in a manner that could be accepted within the framework of the protection order.

3. THIN CONSTRUCTIONS AND GLASS WALLS

Norway's climate represents a challenge in itself, with the wide range in temperatures from winter to summer. Lightweight construction ideals such as paper-thin Japanese walls and Californian steel-and-glass architecture are attractive, but not directly transferable. The load-bearing steel structure in *Planetveien* had to be encased in a wooden frame. Typical of Korsmo's detailing are the narrow dimensions and bare, minimalistic details: he wanted the architectural expression, and hence the structural components, to appear slim and light. An unwanted result was a thermal bridge by the gutter. Over the decades there were signs of leakage: in some places one could see rainwater running in. The new owner set out to repair the walls and parts of the roof that were rotten, and to simultaneously improve the insulation where possible³.

The extensive use of large glass panes, a hallmark of the house, represented a major challenge because of their weak thermal performance. The Cultural Heritage Management Office would not approve changing the windows from double to triple glazing, as this would have altered the facade. Moreover, triple glazing would have been too heavy for the wooden facade structure. All the win-



FIGURE 1. Arne Korsmo, Planetveien 12, Oslo, Norway, 1955. Seen from the road. © Finn Arne Johannessen, 2008.



FIGURE 2. Arne Korsmo, Planetveien 12, Oslo, Norway, 1955. The living room. © Ane Hjort Guttu, 2002.

dows in the house have now been replaced: the trims were carefully dismantled, sanded and reinstalled with a modern rubber sealant, and finally treated with alkylid oil as before. The new sealant and double-glazed “energy glass” windows have significantly improved the thermal performance of the glass walls⁴.

The translucent *Termolux* wall facing the road on the ground floor, which was intact apart from a minor area of damage, was not changed⁵. However, these panes were also dismantled, rotted parts of the posts were replaced and carefully interleaved, everything cleaned and reinstalled with new rubber sealant.

Another energy challenge was the heating. A large oil-fired furnace in the basement supplied hot water that ran through pipes in the floors throughout the house. Given the lightweight construction and extensive glass facades, the energy bills were enormous and the fuel source was also environmentally unsound. The new owner decided to invest in a geothermal system, drilling 200 meters into the ground and installing a heat exchanger to convey heat from the ground to the existing hot-water pipe system. This expensive investment is expected to pay for itself over time.

4. NEW FAMILY LIFE IN THE 1950S “LIVE-WORK HOME”

The original Korsmo house was designed as a “live-work home”: all the spaces were designed for a combination of living and professional work. The master bedroom was also a design studio, with the beds folding up into a cupboard during the day. The large living room was envisioned as full of people – colleagues and students – listening to lectures and viewing slides and films. The kitchen could be converted into a metal or wood workshop, or a stage for performances or dancing. Finally, Prytz Kittelsen had her enamel studio in the basement.

The new residents are a couple with small children aged 3 and 5, and a teenage boy living part-time in the house⁶. There were 2 priorities: creating spaces for the children and making the kitchen more functional. Oslo architect Reiulf Ramstad was hired to develop solutions that were functional as well as aesthetically compatible.

Fortunately, there were potential spaces not subject to the strict requirements of the protection order that could accommodate the children. There was the original garage adjacent to the kitchen, which for several decades had served as a general workshop area; and there was the small, rather simple guest room in the basement that had been partitioned from the enamel studio. Some of the changes carried out in the early 1970s had been constructed in a somewhat temporary fashion, although they had also involved inserting a wide glass sliding door between the garage/workshop and the garden. Thus both spaces had daylight and needed only final treatment and furnishing to serve as habitable rooms. A special feature is the new large glass pane that replaces the old garage door to the road, fitting exactly into the existing framework, its opaque glass providing a translucent effect resembling that of the *Termolux* wall of the living room.

5. KITCHEN IMPROVEMENTS

The second challenge in making the protected house suitable for contemporary family life concerned the kitchen, especially because the dimensions were unusual and some basic kitchen appliances did not fit. Teak plywood is the predominant material in the kitchen, which was custom-made with sliding doors and recessed Japanese-style finger pulls – all very unusual in 1955. The worktop is 83 cm high, 10 cm below standard height. There was no modern dishwasher, the hob was unreliable and the oven was outdated.



FIGURE 3. Arne Korsmo, Planetveien 12, Oslo, Norway, 1955. The kitchen.
© Teigens fotoatelier AS/The National Museum of Art, Architecture and Design.



FIGURE 4. Arne Korsmo, Planetveien 12, Oslo, Norway, 1955, Reiulf Ramstad, Oslo, Norway. New kitchen section. © Marius Lyngar, 2016.

Large teak sliding doors concealed a space that was originally designed to accommodate freestanding appliances that could be moved around as required. The idea of flexibility was central to the design of the house, and this area of the kitchen was perhaps the most concrete and practical realization of this idea. Ramstad redesigned the area with stainless steel countertops, sink and fronts, with spaces for a fridge-freezer, oven and dishwasher. On the opposite wall the defective hob was replaced by an Italian gas cooker that fits well into the old stainless steel cabinet, and the old oven above was replaced by an electric kitchen exhaust fan with a custom-made teak plywood front. The kitchen was made functional for the new family, and two persons can now work simultaneously⁷.

6. A MONUMENT TO HISTORY AND HISTORICAL PROCESS

The preservation of *Planetveien 12* as a house to be lived in raises a dilemma between two conflicting interests: the art historical, with its emphasis on authorship, authenticity, uniqueness and stasis; and the social historical, with its emphasis on the everyday and commonplace⁸. The protection order did not aim to restore the house to its original 1955 state in order to display all the details and entirety of the architect's vision as truthfully as possible. In addition to being a major work of Arne Korsmo, the house had also served as a residence for 55 years, and the protection order recognized this experience as an important part of what should be preserved for posterity. The house had been inhabited by the original owner, and her private and professional everyday life throughout the years had left its mark on the interiors as well as the overall architecture. Thus the protection order also has pragmatic elements: some of the changes made in the 1970s definitely improved living conditions in the house. For example, the insertion of a sliding door in the upper-floor facade made it possible to get fresh air into the bedroom⁹.

Much of the restoration has been of a technical nature, including maintenance. "Age-value" in Alois Riegl's sense, implying signs of decay and patina, is generally not desirable in icons of 20th century architecture, which tend to feature light industrial materials and flawless surfaces¹⁰. "Each period of history has its own way of seeing things – its own 'period eye', as it were – which, by some strange process, seems to affect pretty well everyone"¹¹. Just as the original architecture of *Planetveien 12* represents spatial and technical solutions that were experimental and typical of the 1950s, the later alterations of the 1970s and 2010s reflect their respective "period eyes". The renovated areas, such as the children's rooms and parts of the kitchen, introduce a new architectural style. Along with the new appliances, these renovations place the creativity of Reiulf Ramstad, the architect responsible, squarely in the 2010s, in contrast to the original architecture and the 1970s renovations. The new insertions also display the sensitivity of the new architect and his respect for the original, historic monument.

Some of the authenticity of the house has undoubtedly been lost. And the particular atmosphere of the interiors when Grete Prytz Kittelsen lived there,

with her arrangements of furniture, flowers and exquisite art objects, is no longer there. More than 100 years ago Riegl wrote about “use-value” in the cult of monuments, arguing that we should prefer older buildings to be used rather than abandoned to destruction¹². *Planetveien 12* promoted the idea of people being allowed to determine their own use of the spatial framework provided by the architect. Korsmo’s writings in the 1950s and the structuralist ideas embodied in his house testify to this concept.¹³ Perhaps Korsmo, with his open and inquisitive mind, his positive attitude to change and flexibility, would have welcomed the concessions to the new life in *Planetveien 12*, so long as the fundamental qualities of his concept were not compromised.

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- 1 See also Karianne Bjellås Gilje (ed.), *Grete Prytz Kittelsen: The Art of Enamel Design*, New York, W.W. Norton & Company, 2012. Grete’s family name was Prytz. She and Arne Korsmo divorced in 1960, and in 1971 Grete married Sverre Kittelsen, taking his surname in addition to hers.
- 2 [Oslo Cultural Heritage Management Office, Gnr. 41, bnr 420, 583 and 419/774 Planetveien 10A, 12 and 14, and gnr. 41, bnr. 1325 and parts of gnr. 41, bnr. 738 and bnr. 156, Proposal for protection by the Cultural Heritage Act § 15 and § 19–Hearing cf. § 22, Oslo, Oslo Municipality, 05.01.2012.] Oslo kommune, Byantikvaren, Gnr. 41, bnr. 420, 583 og 419/774. Planetveien 10a, 12 og 14, samt gnr. 41, bnr. 1325 og deler av gnr. 41, bnr. 738 og bnr. 156, Oslo Kommune. Forslag om fredning med hjemmel i kulturminneloven § 15 og § 19–Høring Jf. § 22, 05.01.2012.
- 3 Built during a period of severe rationing and shortage of materials due to WWII, the structure had very poor thermal insulation, with only 7.5 cm glass-wool insulation in the walls and 10 cm in the roof. By comparison, standard insulation in the Oslo region today is 25 cm in walls and 30 cm in roofs. The kitchen wall and ceiling were reinsulated using a type of glass wool with a higher-than-usual insulation capacity, but of similar thickness. Further, proper draught-proofing is important for thermal conditions in a house, and this was improved using a modern fibre wrapping (Tyvek).
- 4 In double-glazed “energy glass”, the inside surface of each pane has a thin coating of metal, which reduces heat transmission considerably. In addition, the space between the panes can be filled with a type of gas that further reduces heat transmission
- 5 Termolux is a special insulating glass that scatters light and reflects the sun’s rays. It is composed of at least two glass panes and a layer of spun glass fibres between them, creating an opaque yet translucent effect. For *Planetveien 12*, Korsmo specified *Termolux* with three layers of glass, the outer panes made of wired glass.
- 6 Neither of the parents works at home, although when necessary they can find spaces to work in the house (the mother is a textile designer, the father works in IT). Moreover, Prytz Kittelsen’s former studio in the basement provides a space for miscellaneous activities.
- 7 Conversation with the author, 10/06/2013.
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- 9 The original mechanical air-conditioning system failed after a few years of use and was never repaired or replaced. It would have been unacceptable for the new owners to restore this wall section back to the original fixed window pane.
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- 12 Alois Riegl, *op. cit.*, 39-42
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Casa Zentner: Development of a Conservation Strategy

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What conservation issues and challenges have to face modern houses that could be in principle “museum houses” but are instead still lived in? This paper will discuss the case of *Casa Zentner* by Carlo Scarpa, built in Zurich between 1965 and 1967. It is the only work built abroad by the famous Venetian architect and it has never been studied before. The villa was designed to the very last detail, including furniture, and it has always been inhabited by the original clients, who have never proceeded to any significant variation. Zentner house is now at a turning point. The current owners will no use the house and are therefore considering different options to preserve all the richness of its distinctive features, without turning it into a museum. On the basis of a comprehensive study and assessment of the architectural and cultural value of the house, the risks that could endanger the preservation of *Casa Zentner* are identified and discussed. It will be considered how the legal and administrative changes (like change of ownership or the presence and type of heritage protection on the building), the integrity and conditions of its material features and its future use (different functions and needs or the effects of technical norms related to the use of the house) could negatively impact its aspect and integrity and, on the other hand, what legal instruments, technical knowledge and managing care could be used to address these risks. It is considered how a maintenance-based approach to conservation could prolong the life of the building and prevent unnecessary replacements. Such a preventive approach assumes a special relevance for privately owned houses, since they often contain many original elements and fixtures that need care more than restoration and they don't have a curator responsible for the upkeep of the building and its interiors. In these cases to promote the active role of the owner or of the tenant is crucial.

1. CASA ZENTNER: STUDY AND ASSESSMENT OF ITS CULTURAL VALUE

Casa Zentner by Carlo Scarpa was built in Zurich in 1965-67, the only work built outside Italy by the famous Venetian architect. The villa was designed to the very last detail, including furniture, and it has always been inhabited by the original clients, who have never made any significant alterations¹.

Set on the slope of Doldertal, in a panoramic position, the Zentner house is characterized by monumental and shifting spaces: large interconnected rooms, with double height or with very long perspectives and changing views. Everything was purpose-made for a special couple, living there with their art collection and their *salon* of artists and friends.

The client who strongly wanted and guided the creation of the building was Savina Zentner, the widow of the architect Angelo Masieri, who was first a disci-



FIGURE 1. Carlo Scarpa, *Casa Zentner*, Zurich, Switzerland, 1965-67. Façade along Aurora Strasse. © Giacinta Jean, 2015.

ple, then a collaborator of Scarpa². After his death, Savina married a Swiss engineer and businessman, René Zentner. In 1964 they commissioned Carlo Scarpa to redesign a *fin-de-siècle* villa located in a residential area in Zurich. Of the existing building only parts of the walls were kept, incorporated in the brand new volumes of a refined modern villa. The façades are arranged with articulated blocks of pink plaster, concrete, metal and wooden surfaces, with large transparent windows. The fair-faced concrete is decorated with precious Venetian tiles (white and yellow gold, green, blue...) that give the surfaces shining and coloured effects under the sun. The precious treatment and the design of the materials, typical of the works of Scarpa, contribute to a “domestic” monumentality, as do the translucent plasters in *stucco veneziano*, the floors composed with different colours of wood, the composite window frames in brass and oak, the lamps with different shapes inserted into the walls and the ceiling. The project for *Casa Zentner* also included part of the furniture: just to mention some of the elements, the “Doge” table later produced by Dino Gavina, all the furniture for the dining room, and the bar cabinet.

The documentation about the house is really extraordinary, both in quality and in quantity. At Centro Carlo Scarpa in Treviso there are 776 drawings (from technical plans and elevations to hundreds of sketches). 2 sets of photographs by Aldo Ballo (1973) and Vaclav Sedy (2004), together with a number of photographs taken by Eugenio De Luigi during the construction in 1964, are kept at the photo library of the *Centro Studi Andrea Palladio* in Vicenza. 16 other drawings are at the

MAK Museum in Vienna. The family kept four large folders with all the construction records carefully filed by the owner with admirable precision: bill of quantities, payments, letters discussing the quality of the work done. Also Theo Senn, the Swiss architect who helped Carlo Scarpa on site, still has many executive drawings and sketches, and with his memories he is a fundamental source of oral history. Last but not least, the 2 sons of Savina and René are also an important reference, as are the younger (at the time) collaborators and artisans working with Scarpa.

The villa represents a cultural and material example of the highest value. The articulated spaces and refined materials make this building particularly important in the architectural history of this period and among the works of Carlo Scarpa. Despite the lively complaints of Mr. Zentner, this is also the only private villa completely realized under the supervision of the architect, who designed every single detail and regularly visited the site. This house is also very well preserved in all its original features.

Due to its location in Switzerland, the privacy of the owners and the inaccessibility of the Scarpa archives until few years ago, the house has never been the subject of a monographic study. Now the family has granted permission to carry out complete research on this building³. This is a unique opportunity to study the villa for what it has been, what it is now, and what it might be in the future. The intimate connection between the architecture, the precious fixtures and furniture, and the fact that it is not a historic house-museum, represent a challenge for its study and its conservation.

2. RISKS THAT COULD ENDANGER THE PRESERVATION OF CASA ZENTNER

Understanding the cultural values of *Casa Zentner* is fundamental to consider how these values could be preserved in the future. It is also crucial to identify and discuss the risks that could endanger the conservation of the building, coming from the actual condition of its materials and architectural features, the compliance with new functional and technical requirements, the misunderstanding of its importance or the lack of a strong legal protection.

The house was carefully built. The main decay phenomena are related to some infiltrations from the roof coverings, to local damages of the external plaster, to flaking paint on the wooden boards, and a couple of window frames in need of repair. The fair-faced concrete does not show any alarming signs of alteration. On the internal walls there are dirt deposits that make the finishing less shiny and some damages on the delicate surfaces, mainly near the floor. The physical plant elements (hydraulic and electrical systems) require upgrading to comply with new standards and functional requirements.

The detailed documentation on the works done makes it possible to know about all the defects that appeared soon after the completion of construction, and to evaluate whether poor original materials and workmanship are responsible for



FIGURE 2. Carlo Scarpa, *Casa Zentner*, Zurich, Switzerland, 1965-67. South façade looking at the garden. © Giacinta Jean, 2016.

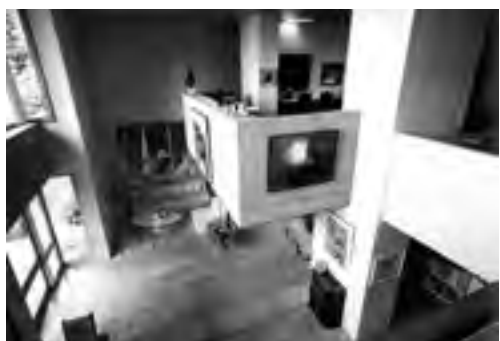


FIGURE 3. Carlo Scarpa, *Casa Zentner*, Zurich, Switzerland, 1965-67. Lower sitting room. © A+U 10, 1985, 246.

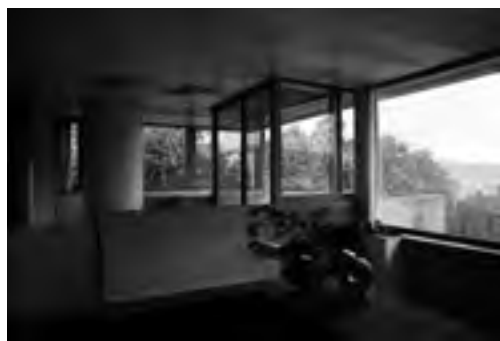


FIGURE 4. Carlo Scarpa, *Casa Zentner*, Zurich, Switzerland, 1965-67. From the balcony of the dining-room, large windows looking into the garden. © Giacinta Jean, 2016.

the present decay phenomena. The plasterwork in shiny *stucco veneziano* was done by Eugenio De Luigi, an artisan involved in the main works of Scarpa. He did all the internal and external plastering from June to November 1966, coming from Venice to Zurich with a team of 5 workers. In December the external plaster was already detaching in large pieces and had to be completely redone⁴. Other documents regard the poor workmanship of the concrete: the main problems had to do with the formwork, not correctly kept in place during the pour, which produced an irregular and uneven surface on the walls. Through all the windows on the west façade towards the garden, litres of water entered on rainy days, always finding different pathways to get in⁵. The study on the condition of the house is still ongoing, but to date it appears that these original defects did not have major consequences for the continuing good condition of the house. Anyhow, despite the absence of major decay phenomena, the costs involved in caring for such an important building should not be overlooked: their impact on the lack of conservation could play a crucial role.

The risks that could endanger the conservation of *Casa Zentner* are also related to possible future uses and the change of ownership, which might not necessarily respect the “spirit” of the house or, on the opposite, related to long periods of closure or neglect. In these cases, changes that could negatively impact its appearance and integrity are likely to happen. Other uses, different from those of a residence, could be also possible; the hypothesis of establishing a house-museum has been rejected by the current owners (a museum of what, for who, supported by who?).

The City of Zurich has included this building in the *Inventar Denkmalpflege* among the *Objekte im Inventar, Potenziell schutzwürdiges Objekt*. This presence in the inventory means that the owner has to inform the municipality before altering the building in any way, including minor changes that would otherwise not have to be submitted for approval.

3. THE PRESERVATION OF A PRIVATE HOUSE STILL IN USE

Many important private houses of the 20th century are the subject of study and protection, but the interest in their conservation is generally connected with the fact that they are now house-museums⁶. Despite the great variety of these experiences, the majority are open to the public and not, like Zentner house, still in residential use. For houses still occupied as residences, the conservation challenges have not been identified to this day, due to the extreme difficulty of access to these private buildings for study purposes. It is necessary to make the owners realize that they can share and discuss conservation issues with people who have to face similar challenges. For older, historic private houses, for example, owners have gathered together in the “*Domus Antiqua Helvetica*”⁷. What about a future “*Domus Moderna*”?

In private houses the issues of continuous use play a crucial role in the development of a conservation strategy. It becomes fundamental for the architect and the stakeholders to find a balance between conservation of the artistic and architectural value of the house – preservation and repair – and new users’ needs – upgrading technical performance or designing spaces for new requirements⁸.

The assessment of cultural value and careful analysis of the building are essential to identify the elements that are strictly connected with the significance of the house, the elements that cannot be modified without interfering with the character of the spaces, their authenticity in relation to material, form or function. In this case, these will be the parts of the house on which Scarpa and his clients put special emphasis, the ones that contain a wealth of information about the construction or the design process, and about special requests or functions to be fulfilled. The assessment also points out the elements that could be changed cautiously in order to guarantee spaces that can perform their residential function, establishing a sort of hierarchical red, yellow and green “traffic light system” to guide future interventions⁹.

A maintenance-based approach to conservation is also crucial to prolong the life of the building and prevent unnecessary replacement of its parts. *Casa Zentner* is in fairly good condition, it retains all its authenticity, but the risk that it could be lost due to lack of attention or knowledge is high. Such a preventive approach assumes a special relevance for privately owned houses, since they often contain many original elements and fixtures that need care more than restoration, and they do not have a conservator in charge of the upkeep of the building and its interiors. In such cases, to promote the active role of the owner or the tenant is fundamental. New instruments have to be deployed to make untrained people better prepared and aware of these issues. It is important to mention that sometimes even the simplest everyday cleaning procedures, if improperly done, may cause significant damage (e.g. incompatibility of synthetic materials with some detergents, or the abrasion of surfaces that appear firm but are actually fragile, etc.).

This ongoing case study is meant to raise awareness of the conservation issues of 20th century “living” houses. The guidelines and leading questions arising from the study of Casa Zentner address the problems of maintaining a high level of originality of materials and features, and at the same time a daily use.

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- 9 *Ibid.*, 38.

Between Tradition and Modernity: Design, Construction, Life and Conservation of a 1960s Portuguese House

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The transition between the 1950s and the 1960s is a time of transformation for Portuguese architecture: it witnesses the end of the dictatorship state-imposed models of regionalist and nationalist architecture and the emergence of modern architecture, finally established in Portugal, in its deeper ethical, ideological and social meaning. However, this is also the time for the critical reviewing of the universal principles of modern architecture, a time to reflect upon an architecture centred on man's cultural, social and psychological condition, adapted to its place, in geographical, constructive, social and cultural terms, and capable of integrating tradition and modernity.

Nuno Portas (1934) and Nuno Teotónio Pereira (1922) are two Lisbon architects that stand out in this period, playing an important role in the search for a renewed Portuguese modern architecture. From their production of this period, one single-family house stands out in the way it seeks a synthesis between the imperative to be modern and the possibility of an architecture adjusted to its specific site, culture and tradition: Dr. Barata's House in Vila Viçosa. Designed and built between 1958 and 1962 as an experimental house, it would become a privileged place for the establishment of a new methodological approach and the rehearsal of innovative architectural solutions.

The article examines the design and construction of the house, framing its methodological proposal and conception, analysing its formal and spatial proposal, and focusing on its innovative constructive aspects, that would influence Portuguese architecture in the following decades. Furthermore, the article discusses the life and use of the house since its construction until today, pointing out the main difficulties in its conservation and the problems that the owners face today, when the house's spatial structure and size have become inadequate for present-day use and family circumstances.

1. INTRODUCTION

With the end of WWII and the collapse of European fascist regimes, Salazar's regime allowed for a period of less repression and greater openness to outside influence in Portugal. In 1948, organized by the Union of Portuguese Architects¹ and sponsored by the Government, the *First National Architecture Congress* was held in Lisbon. The congress was seized as an opportunity for the affirmation of modern architecture and for public manifestation of the political and cultural beliefs of a new generation.

The beginning of a new phase of Portuguese architecture is thus established, that witnesses the closing stages of the dictatorship state-imposed models of regionalist and nationalist architecture, and also a period when architects seek to adopt the principles of modern architecture, with a deeper ethical, ideological and social sense.



FIGURE 1. Nuno Portas and Nuno Teotónio Pereira, Dr. Barata's House, Vila Viçosa, Portugal, 1958-1962. View of the north façade. © Hugo Farias, 2006.

From the mid-1950s the need for a critical revision of the universal principles of modern architecture becomes central to Portuguese architects' concerns, leading to a reflection focused on the possibilities of an architecture centred on man's cultural, social and psychological condition; an architecture adapted to its place, in geographical, constructive, social and cultural terms, and capable of integrating tradition and modernity.

Between 1955 and 1960, the survey of Portuguese Regional Architecture² was carried out constituting an accomplish-

ment of disciplinary, cultural and political significance. A work of collection and systematization of information never before realized, it provided reliable sources for the study of popular Portuguese architecture. In addition, it formed the basis for a sustained critical revision of the international style, proposing a reflection focused on context, history, and characterization of national reality. Finally, it affirmed the existence of a multiple and varied traditional architecture, contradicting the official position of a single national production.

Nuno Portas (1934) and Nuno Teotónio Pereira (1922-2016) are two Lisbon architects that stand out in this period, both as designers and through their writings, playing an important role in the search for a renewed Portuguese modern architecture. From their production of this particular period, one single-family house stands out in the way it seeks a synthesis between the imperative to be modern and the possibility of an architecture adjusted to its specific site and culture, reflecting simultaneously the values of modernity and those of tradition: Dr. Barata's House in Vila Viçosa, designed and built between 1958 and 1962. A first-born work in the course of the authors' early design career, designed as an experimental house, it would become a privileged place for the manifestation of new convictions, the establishment of innovative methodological and architectural proposals, and the rehearsal of solutions that would be central to later works of Portas and Teotónio Pereira, and to Portuguese architecture of the following years.

This article examines the design and construction of the house, framing its methodological approach and conception, analysing its formal and spatial proposal, and focusing on its innovative constructive aspects, that would influence Portuguese architecture in the following decades. Furthermore, the article discusses the life and use of the house since its construction until today, pointing out the main difficulties in its conservation, and the problems that the owners face nowadays, when the house's spatial structure and size have become inadequate for present-day use and family circumstances.

2. THE HOUSE

Nuno Portas and Nuno Teotónio Pereira designed the house between 1958 and 1960³. The building work was completed in 1962. It assumed an experimental condition for Teotónio Pereira's office⁴, proposing solutions that would be used, later on, in other buildings, during the 1960s and 1970's. The house is a reference of a new architectural condition in the way it addresses the question of contextualization, integrates modernity and tradition and assumes internal space as central to architectural conception⁵.

The idea of contextualization is central to the design conception of the house. In the text that accompanies the publication of this work in the magazine *Arquitectura*, Portas states: "the determining factor for the solution was the concern of ensuring the integration of the new building in a spatial environment strongly characterized by the dialogue between popular tradition and erudite contributions, as is the case of Vila Viçosa"⁶. Portas later explains that the demand for an integrated architecture had originally risen from the realization of the exhaustion of the formal codes of the Modern Movement, as a reaction "to the reduced vocabulary of geometric compositions of pure prisms or large windows, with or without *brise-soleils*; that is, as search of less intellectualized forms, closer to common experience, worked with materials and various techniques according to local traditions"⁷.

In *A Arquitectura para Hoje*, Portas argues that a correct design methodology must study and understand the architectural features and ways of living, so as to be able to relate a contemporary formal and spatial language with pre-existing cultural structures⁸. This methodology should be based on a dialectical process, which seeks to understand the needs, motivations and way of life of contemporary man, while reflecting on the traditional lifestyle and its motives. It should also try to understand the formal, spatial, constructional and material values of traditional architecture and, through the evaluation of their contemporary value, propose new solutions, adapted to present time⁹.

The house is set in an urban plot of an almost square shape, in the historical centre of the town, located next to the castle. Higher in relation to the village centre, the place visually dominates much of the urban surroundings, allowing views to the main monuments. Taking advantage of the sloping plot, the house is organized in three levels: the lower level, opening onto the street to the north, houses a service floor; the main level, communicating with the street to the south, is the



FIGURE 2. Nuno Portas and Nuno Teotónio Pereira, Dr. Barata's House, Vila Viçosa, Portugal, 1958-1962. From top to bottom, left to right: Upper-floor plan; Main floor plan; South (entrance) elevation; North elevation. © Hugo Farias, 2016.



FIGURE 3. Nuno Portas and Nuno Teotónio Pereira, Dr. Barata's House, Vila Viçosa, Portugal, 1958-1962. Exterior views showing the volumetric complexity of the house. © Hugo Farias, 2006.



FIGURE 4. Nuno Portas and Nuno Teotónio Pereira, Dr. Barata's House, Vila Viçosa, Portugal, 1958-1962. Interior views of the double-height living room. © Hugo Farias, 2006.

central floor of the house, including the main entrance, social, service and intimate spaces. This level is arranged around a courtyard that serves simultaneously as entrance to the house and as an extension of interior space. And the third level is a turret that houses a small studio apartment.

The shape of the house – and its inner space – is remarkably interesting as a result of the geometric option of superimposing two orthogonal grids arranged at a 45-degree angle. The house results as a fragmented volume ensemble, where the spatial variety of interior space is expressed in the formal exterior composition. The volumes are built with thick-whitewashed walls, covered with different roof planes that also enhance the volumetric and spatial complexity of the house. Doors and

windows are designed mainly according to the features that are sought for the qualification of the interior space, being characterized by a diversity of shapes, dimensions and constructive detailing. Paradoxically, the result is of a unitary construction, organically integrated into the surrounding urban tissue.

The house is built using traditional processes, materials and labour. This intentional option can be understood as another mean to ensure the desired contextualization of the house, seeking to “recover certain external aspects of the language of the vernacular and spontaneous architectural tradition of Alentejo”¹⁰; it was also the realistic position of assuming the possible construction at that time in Vila Viçosa¹¹.

Construction and material options are deliberately opposed to the ideas of lightness and immateriality related to the proposals of Modern Movement architecture; the house is built with thick walls, clinging to the ground and taking on a tectonic materiality that reinforce the idea of protection, intimacy and comfort of the living space. Constructive innovation lies in the way the design takes traditional materials and processes and applies modern solutions¹². The use of different materials – all local, of common or traditional use – is oriented towards exploring their expressive and constructive potential. Structurally, a solution of load-bearing masonry stone walls supporting reinforced concrete slabs for floors and roof is used. Exterior walls are plastered and whitewashed; the use of colour appears in the design of a *socle* and on the lower surfaces of slabs and cantilevered volumes. Exterior doors are of solid wood; windows apply a mixed system

of wood and steel with shutters of painted wood and latticework of varnished wood. The stonework of the window mouldings is in white marble, continuing the most common solution in the surroundings. All metalwork is in steel, painted in blue.

The house's spatial proposal clearly moves away from modern functionalist undifferentiated and hygienic space: the house is designed from its interior, seeking to convey a more meaningful spatial experience to its users. The purity and abstraction of modern space is overcome in the quest for a richer, more diverse, complex and significant space. This is achieved through: the design of a fluid and continuous interior space that articulates different ambiances along a dynamic *promenade architecturale*; the use of expressive materials in their natural condition, such as wood, stone and coloured glass; the meticulous and space-specific design of windows, shutters and lattice screens that convey light-controlled intimate spaces; and the design of the inside-outside relationships, with carefully framed outside views.

3. LIFE, USE AND CONSERVATION

The house was built as a permanent residence and has always been inhabited by the same family: Dr. Barata¹³ and his wife, who originally commissioned the house, lived in it all their lives, until 2000. After that, their daughter, who lived during this period in Lisbon, returned to the house, making it her permanent domicile ever since. She now lives there with her daughter and two grandchildren.

The house's spatial structure and size have become too large for present-day use and circumstances; the family uses almost only the main floor, giving little use to the lower level and to the apartment in the turret. The family has tried to keep the house in its original condition and has succeeded because it has always been in use. When there was a fire in 2000, Nuno Portas was called in to direct the repair work that needed to be done, especially in interior wooden elements of the living room.

According to the owner¹⁴, the greatest difficulties in the conservation of the house have been problems with electrical and plumbing infrastructure and also the painting of exterior walls, windows and doors, because of the significant cost.

The owners and the architect have made the proposal for the house to be declared municipal heritage, but the process is still inconclusive.

4. FINAL CONSIDERATIONS

The house's methodological, spatial and constructive scheme and the way the design addresses the question of *contextualization*, integrates *modernity and tradition* and assumes *internal space* as central to architectural conception establishes it as a reference work and a new matrix for Portuguese modern architecture.

The fact that the house has been in continuous use, always by the same family, has kept it in a reasonable conservation state, both the architecture and its furniture, with many of the original pieces still in use.

Today, its spatial structure and size have become inadequate for family use and conservation cost is becoming unaffordable for current owners. The possibility of an adaptive reuse of the house needs to be considered, either supported by the municipality, the state or other social institution. Any kind of intervention must understand and maintain spatial, constructive and material features to ensure the preservation of the house's architectural significance.

NOTES

- 1 *Sindicato dos Arquitectos Portugueses*.
- 2 *Inquérito à Arquitectura Regional Portuguesa* (1955-1960).
- 3 The house was designed with the collaboration of Luís Moreira and Pedro Vieira de Almeida, at the time architects in apprenticeship.
- 4 Nuno Portas, "Habitação em Sesimbra. Testemunho de um dos Autores", *Arquitectura*, Lisbon, 3ª Série, n. 93, 1966, 115. Free translation.
- 5 Hugo Farias, *La Casa: Experimento y Matriz. La Casa de Ofir (1958), de Fernando Távora, y la Casa de Vila Viçosa (1962), de Nuno Portas y Nuno Teotónio Pereira, en el Proceso de Revisión Crítica de la Arquitectura Moderna en Portugal*, PhD Thesis, ETSAM-UPM, 2011.
- 6 Nuno Portas, "Moradia em Vila Viçosa. O Projecto Visto pelos Seus Autores", *Arquitectura*, 3ª Série, n. 79, Lisbon, 1963, 3-12.
- 7 Nuno Portas, "Arquitectura Integrada?", *Jornal de Letras e Artes*, Ano II, n. 84, 1963, 8-9, 15.
- 8 Nuno Portas, *A Arquitectura para Hoje. Finalidades, Métodos, Didácticas*, Lisboa, ESBAL, 1964.
- 9 It is important to note that the house was designed during the development of the mentioned survey of regional Portuguese architecture, and that Nuno Teotónio Pereira took an active part in it, as architect in charge of the team that performed the survey of Zone IV, which included the regions of Estremadura, Ribatejo and part of Beira Litoral.
- 10 Nuno Portas, "Moradia em Vila Viçosa. O Projecto Visto pelos Seus Autores", *op. cit.*, 3-12. Alentejo is a geographical, historical and cultural region of southern Portugal. The town of Vila Viçosa is located in the district of Évora, near the Spanish border.
- 11 Nuno Portas, "Entrevista a Nuno Portas", *Arquitectura*, Lisbon, 4ª Série, n. 135, 1979.
- 12 The outer walls, for example, are constructed of traditional stone masonry, using white marble from local stone quarries; a second pane of ceramic brickwork is added in the interior, leaving an air chamber to act as insulation. The double outside wall was at that time an innovative option, denouncing the knowledge of the latest research work on construction. These walls resulted in a total thickness of 75 cm, which enhances the strength and density desired for the house. The pitched roofs are another point combining tradition and modernity: on the one hand, we have the traditional sloped roof, with ceramic roof tiles in natural colour, and the use of cork as thermal insulation, a local natural material. On the other, its implementation demonstrates a mastery of advanced construction processes at the time: the roof slab is constructed as a *sandwich* that uses corkboards as lost formwork panel, a slab of reinforced concrete, and thermal insulation over the slab, also of corkboards.
- 13 Dr. Barata, a lawyer and a judge, was Nuno Portas's uncle. The current owner, Dr. Barata's daughter, is his cousin.
- 14 Interview with the current owner of the house, in January 2016.

Holiday Houses Reuse and Rehab of Modern Heritage

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The program of the holiday house will mark the acceptance period of modern architecture in Portugal. Modern life is put into practice by a group of architects to an enlightened bourgeoisie clientele, in some summer resorts that will start to be developed in the Portuguese coastline. These holiday houses have resisted as built heritage from the decades of the 1950 until now. It is important to understand how this modern heritage, must adapt to modern life requirements. My investigation will focus on four case studies of modern architecture. The examples will show different approaches of restoration and reuse of summer houses today. Two examples give new functions to this legacy: *Marinhas* house in Esposende (Alfredo E. Viana de Lima, 1954), transformed into a house museum and *Bessa Ribas* house at Ofir (Agostinho Ferreira de Almeida, 1967), transformed into a kite-surf school and hostel. On the other hand, two examples will be presented in which the same program of holiday house is maintained and which were object of a restoration process of their main architectural aspects. Ribeiro da Silva house at Ofir (Fernando Távora, 1957), considered a monument from 2012 and João Simões house at São Pedro de Moel (João Pedro Mota Lima, Pinto e Cunha, 1953).

The modern holiday houses built between 1940 and 1974 in Portugal must be preserved. Most of these houses represent a legacy of the Modern Movement in Portugal. The mapping and registering of these houses is a necessary strategy to avoid touristic investments that don't regard their main architectural characteristics as modern examples. Classifying part of these houses as monuments is almost impossible and cannot be a solution for the problem. However mapping their existence and highlighting their architectural interest can avoid the adulteration and foster their correct conservation. Adapting these houses for modern life requirements is a necessary task for the actual generation of architects.

1. INTRODUCTION

The object of this paper is the analysis of the holiday houses built in Portugal in the decade of 1950/60, concentrating in four case studies and their actual state of conservation. The theme focuses on the context and the recognition of built heritage in a specific context of the modern Portuguese period. This exceptional architectural production is configured as a real experimental laboratory where clients that promote and architects that design, witness a unique moment in the national context, producing a research area of morphological and typological uniqueness around the private house.

2. THE MODERN HOLIDAY HOUSE IN PORTUGAL

The 1940s was an important transition period in Portuguese architecture. It is in this decade that architects will question the historicist architecture model sponsored by the *Estado Novo* and introduce the acceptance of the Modern Movement codes. The Survey on Popular Architecture in Portugal in 1958 will be an important issue for Portuguese architects. Moreover, a critical and conciliatory reading of the

Charter of Athens and the International style will bring a deeper attention to local and regional architecture, which will itself review the modern period.

The holiday house will appear in Portugal during the dictatorship period. Derived from large villas, those were later transformed into chalets. These chalets will give attention to a picturesque style and will appear in the countryside. In Portugal, Sintra becomes the ideal scenery, Cascais or the Granja, and later Estoril will be Portugal's seaside resorts between 1865 and the 1930s. A search for a new architectural model for the holiday house, derived from the chalet, will begin, from the 1930s.

According to Ana Tostões,

the leisure and the contact with nature, becomes a morally recommended phenomenon as well as the contact with the sea. Urban populations will seek the evasion and the enjoyment of the sea and the beach, settling with their families in new summer resorts¹.

This is where the phenomena of the modern holiday house will appear. These houses will test the theories of the “*esistenzaunminimum*”.

The furniture is designed as an integral part of the architecture, the doors lose their formal value and become curtains, beds are stacked or make use of bunk beds, the living room is assumed as the central core of the house. The communion between the exterior and the interior becomes open and frank through the use of large windows, establishing the continuity in patios and terraces. Examples of this formal research around the concept of modern holiday house in Portugal, can be witnessed in houses built from the north to the south of the country.

3. REUSE OF MODERN HERITAGE

To reuse modern heritage, makes us think on what type of heritage we want to leave to future generations, and on what can we do to preserve this legacy. According to Marieke Kuipers,

Private houses are better suited for conservation, not necessarily in the form of museum-house [...] the result always depends on the owners because they decide about the architect to be involved, aside from budget and degree of living standard².

Marinhas House, Esposende (Alfredo E. Viana de Lima, 1954)

This holiday house is located in the village of Marinhas, near the city of Esposende. The architect Alfredo E. Viana de Lima³ bought a plot where the house would be built. An existing windmill is the source of the entire project. The plan divides the house in pre-existence and new pavilion, connecting the two by a corridor. The main entrance to the house is established in the windmill, as well as the connection with the upper floor. The new pavilion is assumed as a rectangular box. The ground floor is organized in one big space, divided by the use of fixed furniture in dining, living and kitchen areas. A very fluid visual contact is

established between the upper and the lower floors by the 2-story high ceiling. 2 bedrooms, study and one toilet are designed in a rationalized manner, in the upper floor of the pavilion.

The introduction of traditional materials such as wooden frames, granite stone walls or the pre-existing windmill in the new construction, make a clear contrast with the explicit references to the Modern Movement codes, the flat roof, the concrete slabs, the windows *en longuer* or the use of the primary colours in windows and shutters.

Having been donated by Alfredo E. Viana de Lima to the University of Porto, it experienced a phase of abandonment and decay. Considered a monument in 2012 the house is nowadays open as a museum and maintained in a perfect state of conservation by the Esposende Municipality.



FIGURE 1. Alfredo E. Viana de Lima, *Marinhas House*, Esposende, Portugal, 1954. West façade, house after process of rehabilitation. © Tiago Freitas, 2014.

Bessa Ribas House, Ofir (Agostinho Ferreira de Almeida, 1967)

Bessa Ribas house is located at the summer resort of Ofir. It is built in a big plot towards the north of the pine forest, by the architect Agostinho Ferreira de Almeida⁴. The plot has an excellent location facing the river. The house is assumed as a rectangular shaped box with a horizontal outline due to an imposition from the Municipality, concealing itself in the vegetation and creating a minimum impact in the riverside skyline. The plan organizes itself as several pavilions around courtyards that functionally divide it in different areas, living, services and sleeping. The services that include kitchen, pantry and maids rooms are organized in a specialized way. The living room, the core of the house, is very large and communicates with the indoor/outdoor patios separated by shutters from the exterior, creating an expansion of the living area in continuity with the garden. The modern language is assumed in a clearly rationalist aesthetics, giving no concessions to the ornament.



FIGURE 2. Agostinho Ferreira de Almeida, *Bessa Ribas House*, Ofir, Portugal, 1967. Main entrance. © Tiago Freitas, 2015.

Recently put on sale, as it holds a very vast program and an area of approximately 258 m², it was rented by a surf school and hostel that have transformed the initial project into a guest house. The outdoor garden has been scattered with individual bungalows and a big outdoor furnace to bake pizza. The dining room is transformed into a bar; the living room is used as a common room with television, internet and games. The four large bedrooms are optimized with bunk beds. The main characteristics are maintained, apart for the painting of the upper rooftop in green. “How should modern buildings be remembered?

As aesthetic and idealised objects, or as places created in which people live work and play?”⁵

4. REHABILITATION OF MODERN HERITAGE

Modern houses cannot be seen as icons, they must be seen as houses to be lived in and adapted to nowadays life. According to France Vanlaethem

*can we not ask ourselves if the difficulty of modern architecture in imposing itself as heritage is not linked to the fact that it perpetually remains as unfamiliar architecture? Is not its strangeness, an obstacle to attachment, not grounded in the owners or inhabitants own behaviour, all too often treating their building simply as a utilitarian object, modifiable a infinitum, for reasons of practicality or taste?*⁶

Ribeiro da Silva House, Ofir (Fernando Távora, 1957)

Ribeiro da Silva house at Ofir is one of the most important holiday houses built in Portugal in the decade of 1950. Having been in advanced state of ruin, this house has undergone a complete rehabilitation process in the past months.

The house is divided in a completely modern organization, assuming the T shape plan. 3 clearly different areas are recognizable from the exterior: Living, sleeping and services. These areas establish continuity with the exterior expanding themselves towards the garden and artificial dune. For the construction, the architect Fernando Távora⁷ uses traditional materials and construction techniques in contrast with modern ones.

The roof is covered with clay tiles, wood joinery is used for the window frames and the roof trusses, natural stone pavements in the floors and granite stone walls painted in white resembling the traditional houses of the region. To establish contrast, modern materials such as concrete are used in the roof slabs and the chimney or agglomerated cork, a new material, is used to cover the interiors of the roofs. The Modern Movement language is easily detected in the abstract design of the openings, the organization of the house in different functional zones and the standardized distribution of the sleeping areas.

Ribeiro da Silva house stands as a milestone in the transition of modern architecture in Portugal, and was declared Monument in 2012. Having suffered a big fire, the actual owners inherited a monument and have had problems in solving the ownership of the property, as consequence the house reached a phase of ruin and decay. Fortunately, the owners were able to reach a solution for the property and restored it with absolute precision, bringing back the spirit of a holiday house of the 1950,



FIGURE 3. Fernando Távora, Ribeiro da Silva House, Ofir, Portugal, 1957. The house during the rehabilitation process. © Tiago Freitas, 2015.

restoring the original furniture designed by Fernando Távora. The architect that made the intervention, Ana Ribeiro da Silva, is the granddaughter of the original owner of the house. Nowadays it continues to be used as a holiday house by the fourth generation of the family.

**João Simões House, São Pedro de Moel
(João Pedro Mota Lima, Pinto e Cunha, 1953)**

João Simões house was built at the summer resort of São Pedro de Moel. The initial development of São Pedro de Moel is near to the beach. From 1947 on, and supported by the figure of the General Urbanization Plans, the resort grew in different phases, having divided the pine forest in plots.

João Simões house is built in a rather big plot near the main avenue that access to the sea. The pine forest, its topography and vegetation are maintained in an attempt to approach the existing natural settings. The construction dominates the vast plot being built in an upper slope of the terrain.

Architects João Pedro Mota Lima⁸ and Pinto e Cunha, divided the plan in living and sleeping connected by a passage. The living is subdivided in different areas, each very fluid and connected making use of the two-story height. The services are located in the ground floor and the basement with kitchen, maid's rooms and garage. The modern codes are easily visible in the exterior of the house, the windows *en longuer*, the inverted roof, the balconies that project to the exterior establishing continuity with the terraces, the use of the colour (pale pink) that relates easily with the colours used by Le Corbusier. The use of traditional materials, as local stone walls in the ground floor, unite the house with the surroundings and make a possible attempt to establish a relation between vernacular and modern architecture.

Nowadays it is still a holiday house. The conservation of its original characteristics is possible as it is only used in the summer vacations, dispensing exceptional heating and thermal conditions. The shutters of the bedrooms have been replaced by aluminium ones but this can be seen as a minor issue as it preserves its original features.

5. CONCLUSIONS

The important models of modern holiday houses built in Portugal in the decades of 1950 and 1960, in summer resorts from north to south of the country must be preserved. Being owned by families for generations, they persist and maintain their initial program of holiday houses.

New generations are now returning to these seaside resorts, to live in the once owned family summer houses, using them as first residence, due to the short dis-



FIGURE 4. João Pedro Mota Lima, Arq. Pinto da Cunha, João Simões House, São Pedro de Moel, Portugal, 1953. South facade. © Tiago Freitas, 2015.

tance of some of these resorts from the main cities. Liberal professions, where the home office can be introduced, make this new way of life possible whilst, keeping contact with nature and being sufficiently far away from the chaotic urban city.

This is the main issue that these houses face: will they remain as family houses or will they be replaced by “modern museums”?

“Modern monuments cannot be used in its original form and function. At least one of the two should be adapted to make them fit again to the future due to new construction codes and new technical requirement”⁹.

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NOTES

- 1 Ana Tostões, “Casas de Férias Modernas, Anos 50 e Estilo contemporâneo. A Utopia de uma Doce Vida”, *Jornal de Arquitectos*, n. 196, Lisboa, Ordem dos Arquitectos, 2000, 45-53.
- 2 Marieke Kupiers, “Fairy Tales and Fair Practice. Considering Conservation, Image and Use”, in Jean Yves Andrieux and Fabien Chevalier (ed.), *La Reception de l'Architecture du Mouvement Moderne: Image, Usage, Heritage*, Saint Etienne, Saint Etienne Université, 2005, 213.
- 3 Alfredo E. Viana de Lima, Esposende, 1913-1991; occupies a prominent position in the second generation of Portuguese modernist architects such as Keil do Amaral, Armenio Losa or Januário Godinho. His design activity and civic intervention was crucial to the redefinition of thought and national architectural practice in the post-war period.
- 4 Agostinho Ferreira de Almeida, Porto. 1913-1969; student at the Porto school, was pupil of Marques da Silva, who he later joined to work in his studio. In 1946, does his final project at the University where he obtains high results (18 marks), he is author among other works of the factory Lionesa in Matosinhos.
- 5 Alexandra Teague; “Rose Seidler House: The Representation of Use Value in Modern Places”, in Jean Yves Andrieux and Fabien Chevalier (ed.), *op. cit.*, 223.
- 6 France Vanlaethem, “Heritage and Conservation Strategies”, in Jean Yves Andrieux and Fabien Chevalier (ed.), *op. cit.*, 198.
- 7 Fernando Távora, Porto, 1923-2005; In the educational context, Távora was very relevant in the statement of the course of architecture in Porto, being considered one of the most relevant figures of the school, he was member of the Organization of Modern Architects in Porto, being an important architect in the transition period of Portuguese modern architecture.
- 8 João Pedro Mota Lima, Tomar, 1929-2012; the architect was an important figure in the city of Tomar and its surroundings, he dedicated himself for many years to the projection of religious buildings in this region, meriting here a reference to the serene quality of his work, always using a modern expression and a great simplicity of means.
- 9 Marieke Kupiers, *op. cit.*, 209. Free translation.

Heritage@Risk – Adaptive Reuse of Pierre Jeanneret House – Chandigarh

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Chandigarh's big *Daddies* – the Capitol complex and the city centre are obvious candidates for heritage conservation, lesser known gems such as the house designed and lived in by Pierre Jeanneret, deserve special attention. Representing the “Chandigarh style”, an architectural vocabulary derived from challenges of a shoe-string budget, local materials and techniques of construction and the variations posed by 6 climates, this house sits in a garden landscape oriented north-south.

A compact duplex structure with minimal circulation area to achieve maximum liveable accommodation and a desirable segregation of private and service spaces, the Jeanneret house is a symphony of a “building in the garden”. The house has a unique spiral staircase leading to the second floor terrace for open-air activities. Carved out of a cuboid with rectangular areas of plastered, white lime-washed surfaces contrasting with the perforated brick screens, coarse rubble walls, the residence symbolises the history and iconic value of the modernist housing stock, pioneered in India at an enormous scale. Arrayed alongside dwellings forming a heritage ensemble in Chandigarh's garden landscape, the House is under threat, undergoing changes upon every new occupant's arrival. The challenge lies in conserving the Jeanneret house, while making it an exemplar for accommodating changing user needs.

Adaptive reuse of the Jeanneret House would:

- a) Show, through condition assessment, the way forward for conserving the city's housing stock,
- b) Serve as a self-sustaining intervention such as a visitor centre-museum for the archival record and furniture sharing resources from the Pierre Jeanneret archive at the CCA Montreal. Much alike the *Villa Savoye* or Tugendhat House, the Jeanneret house is a befitting case to showcase the values and importance of conservation and valorisation of modern heritage.

1. INTRODUCTION

From chaos doth the cosmos emerge!

Chandigarh was the love-child of one of the most horrific events of the modern world¹. For brother slew brother in that dénouement which the British Empire called withdrawal from the Indian sub-continent, while Indians and Pakistanis call it, at the same time, dismemberment of their homeland. Partition brought forth the crisis of identity.

The land of the five rivers Panjab was bereft of Lahore, its capital, its identity. In this pall of gloom, did Jawaharlal Nehru, the first Prime Minister of India, conceive the idea of a new modern capital city that was to represent the ethos of Punjab as also the birth of a new India. Thus was born Chandigarh, the largest and arguably the greatest Indian experiment in urban planning and architecture.

Buzz Aldrin, the second man on the moon, once hinted that no one remembers the guy who comes second. Did Pierre Jeanneret play second fiddle to Le Corbusier? Nay, he was the ideal foil to balance out Corb's flashes of genius with painstaking, methodical precision².



FIGURE 1. Pierre Jeanneret, Own House, Chandigarh, India, house and its garden setting. © Franco Panzini, 2008.

2. DEVISING THE CITY FABRIC

The task of city building, besides providing a seat of administration, included government housing for 20,000 people who moved into Chandigarh within a span of three years³. That was a huge challenge!⁴ While, Le Corbusier was the “spiritual director” of the entire enterprise, it was the trio of Pierre Jeanneret, Maxwell Fry and Jane Drew that designed the government housing, the largest and most innovative component of the Chandigarh Capital project⁵. The modernist city on a virgin site had a well-ordered matrix of a generic neighbourhood unit – the sector – and a hierarchical circulation pattern generated through Le Corbusier’s concept of the 7Vs⁶.

3. THE CHANDIGARH STYLE

The socialist ideals enshrined in the city’s manifesto ensured that the house of a *peon* and that of a minister were constructed of the same materials, the only difference being the built-up area⁷. Common materials and functional design elements thus obliterated class distinctions.

Despite budgetary constraints, locally available materials, manual labour and vagaries of a prevailing climate, architectural aesthetics prevailed, inspiring even private house constructions. The resultant low-rise cubic forms in brick and concrete, plastered white surfaces punctured by *brise-soleil*, free standing sunscreens and *louvres* created the “Chandigarh style”, lending an identifiable image to the government housing⁸.

4. PIERRE JEANNERET'S OEUVRE – HOUSING THE CITY BEAUTIFUL

Jeanneret's houses display his astute understanding towards creating a modern, classless society. He and his partners set the pace for developing architectural controls and creating an exclusive, ordered image of housing. This was extended to later developments and even the domain of private housing. He worked on the development of "peoples architecture" tirelessly, which addressed climatic comfort, local labour, material and cost economy. The experiments in structural innovation, material choice, sun-shading and ventilation systems at the Old Architects' Office were replicated in the city housing⁹.

Jeanneret's architectural vocabulary emanated from the rounded stones and sand of the *Ghaggar* riverbed, sun-dried bricks from the kilns in the hinterland, as well as cement from the nearby factory at Surajpur. The rich diversity of house forms and volumes generated are truly representative of a handyman, with an eye for detail and a love for human comfort. His cuboidal houses displayed the use of local bricks, curved stone walls in a myriad of patterns whose height was accentuated by slender deep-set window-vent glazings. The staircase in the duplex units was a unique feature. It was set behind small square windows that ran diagonally on the front façade hinting the presence of the element within.

Effective shading was achieved by perforated sun-screens, terracotta *jaalis* casting shadows on the wall behind, and deep *verandahs* that served as sleeping terraces in summer. Each house had a kitchen and bathroom, with underground water-borne sewer system, one of the first in the country. Built-in cupboards, brick and concrete partitions as well as furniture, created an ordered geometry within house interiors economising on wood. While Jeanneret was engaged in developing the city's housing, educational and healthcare buildings, his affable, modest nature was winning him friends, persuading him to design their homes¹⁰.

5. ATTRIBUTES OF JEANNERET'S BUILTFORMS

The hallmark of the experiments at the Old Architects' Office created *leitmotifs* for his own house in Sector 5 where Jeanneret lived as the chief architect of Chandigarh, until 1965¹¹. In his house, as elsewhere in the city, he treated a cuboidal block punctuated by a repetitive pattern of rectangles of exposed brick screens, plastered, lime-washed surfaces and projecting bands. Fascinated by brick as the most "economical material for construction", he used it to cut off the sun and allow cross ventilation. Similarly, he played with the thermal differential of two opposite walls to achieve cross-ventilation. The below sill aerators in the Old Architects' Office allowed cool breeze to enter from the north and rise upwards, after warming, to escape through the south wall roof vents. Thereby, a continuous current, creating comfort within interiors was achieved by natural air flows. Jeanneret's engagement with building interiors manifests itself in his use of indigenous materials and techniques to make built-in furniture, storage units,

niches and cupboards reflecting *équipement rationnel* of the 1920s¹². Further, he introduced concealed lighting within staircase balustrades, lighting coves on walls and unique lighting fixtures called the “fifth miracle” at Chandigarh¹³.

6. JEANNERET'S PRIVATE HOUSE DESIGNS

The private houses he designed in Sector 5 were duplex units tailored to the owner's lifestyle¹⁴. The interiors were the outcome of his camaraderie with Bansi, his cook and friend though Jeanneret's fetish for good furniture arose out of an earlier association with Charlotte Perriand¹⁵. Alongside Bansi, he spent evenings experimenting with local bamboo and timber, building hammocks, utilitarian furniture, boats, and lampshades and weaving *durries* to adorn his residence and that of his friends in the city¹⁶. Through this repository, he left behind a furniture legacy and his designs were mass produced to occupy the buildings in the city generating a “way of living” in the new capital.

7. JEANNERET'S HOUSE 57, SECTOR 5

Between 1956 and 57, he designed 4 houses in sector 5 and soon lived in one of them. Each house is a compact duplex structure with minimal circulation area to achieve maximum liveable space and desirable segregation of public and private spaces. Their setting is enhanced by the garden landscape, flower and fruit trees, together with bougainvillea creepers covering walls and flowerbeds – colourful during flowering season. These four adjacent houses face four similar garden houses designed by Jane Drew¹⁷.

The front façade is a rectangular plastered and painted surface punctuated by the long window ventilator topped with a stone railing, tiny, square windows with the spiral staircase behind, and an upper level terrace with a perforated brick screen. A modest porch accentuating the front elevation and closed in by a curved stone wall offers additional protection to the house from the southwest sun. It is also the fulcrum where the front lawn meets the main house.

The interiors are functional with emphasis on natural light and ventilation. The arch window is the high point of the living room, bathing the space with the morning light from the east and offering a splendid view of the garden and sky in a single sweep. Tall, slender, deep-set window ventilators facilitate cross ventilation. The kitchen, dining and service areas are located towards the east in proximity to the servant unit with a minimal access into the main house. The upper floor has sleeping quarters, with bathrooms and dressing spaces. The bedroom *eye window* offers a view of the mountains and is a dramatic element in the rectangular rear façade¹⁸. The interiors were animated with Jeanneret's chairs, lamps, hammocks, *durries* and built-in furniture.

A unique element is a spiral staircase with pre-cast reinforced concrete treads supported on a single central column with a cast *in situ* handrail and a



FIGURE 2. Pierre Jeanneret, Own House, Chandigarh, India, the stone wall, inset arch window and oval window. Elements of the rear façade. © Franco Panzini, 2008.



FIGURE 3. Pierre Jeanneret, Own House, Chandigarh, India, the Spiral staircase. The surprise packet behind the rectangular façade of the cuboidal house; the *chef d'oeuvre*. © Franco Panzini, 2008.



FIGURE 4. Pierre Jeanneret, Own House, Chandigarh, India, interior of the house showing the changes made by new occupants. © Sangeeta Bagga, 2013.

cove light below it¹⁹. A teakwood handrail supported on teak balusters accentuates the spiral form. Minimising space, the spiral staircase was the surprise packet behind the rectangular façade of the cuboidal house; in fact, the house's *chef d'oeuvre*.

8. CONDITION ASSESSMENT OF JEANNERET HOUSE

The present state of the Jeanneret house is far from satisfactory. As per practice, it was allotted as a residence to senior officials of the Chandigarh Administration. Alterations by way of temporary porches, car garages, additional toilets, covering of *verandahs* for additional living space, have taken a toll on the cuboidal composition as well as in the elements of design. Interior modifications include timber partitions, concealed electrical rewiring and recessed water supply pipes replacing earlier mounted-batten wiring and exposed water pipes. Earlier terrazzo floors, dados and bathroom walls are now replaced with tiles²⁰.

The Jeanneret house is an outstanding example of minimal design and its restoration will ensure the:

- a) Conservation of a modern heritage property, an icon of the “Chandigarh style”, a marker to one of the world's largest housing stock. Its planning, design, architectural vocabulary, construction technology and detailing represent the 13 categories of housing and their variants in the city. It displays material and site integrity and a strong relationship to the original garden landscape setting.
- b) Creation of the *second living laboratory* in the city for researchers and conservation architects to gain hands-on-experience.

9. CONCLUSION

The Jeanneret House encapsulates the 3 axes of Chandigarh architecture – climate, shoe-string budget and the use of indigenous techniques and materials. Every facet of the house – windows, pre-cast roof system supporting the red sandstone tiles above, the deep set *verandahs* and the perforated screens for sun shading and inflow of dust-free breeze, or its garden views – is evocative of and responsive to the hot and humid climate in summer and the cold winters. The cost of construction was minimized by use of hand-crafted timber railings, use of *durries*, balustrades, locally fired kiln-bricks, riverbed stones, sand, pre-cast roofing systems and by indigenous construction techniques utilising human labour.

This house is unique in style and different from the 4 other houses in the same sector that were “made to order” for “old money”. The simplicity of construction blends with the modern technique of pre-cast elements. As architect Jeet Malhotra, now 87, quipped – Jeanneret never repeated himself²¹. This house is a 1957 Jeanneret *limited edition*.

Limited editions might be sold off to the highest bidder, but this one is different. Jeanneret was once called Mahatma Gandhi by architect Aditya Prakash because he was the common man wearing clothes made from local fabric, patronizing *durree*-making, eating Indian food, using furniture made of bamboo-strings, bicycling to sites and in the words of Jeet Malhotra, treating *peons* and governors alike²².

A temporary structure serving as a laboratory for Chandigarh's architecture is now conserved as Le Corbusier Centre. Similarly, it would be most befitting to turn his house into the Pierre Jeanneret Resource Centre showcasing his architectural journey and hobbies.

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NOTES

- 1 The division of British India between the two new dominions was accomplished according to what has come to be known as the 3rd June Plan or Mountbatten Plan. It was announced at a press conference by Mountbatten on 3rd June 1947, when the date of independence was also announced – 15th August 1947. UNHCR estimates 14 million Hindus, Sikhs and Muslims were displaced during the partition; it was the largest mass migration in human history.
- 2 In fact, the running of the Old Architect's Office from Sector 19 (now the Le Corbusier Centre) was Pierre's handiwork. It was a testing ground for the design and execution of Chandigarh's residential, commercial and educational cores.
- 3 Madhu Sarin, *Urban Planning in the Third World: The Chandigarh Experience*, London, Mansell Publishing Limited, 1982. This meant public housing, intended exclusively for government employees, built by the government and made available to the employees on a monthly rent equal to seven and a half percent and later, ten percent of their monthly salary.
- 4 Of the 3, Fry and Drew worked for 3 years on the Housing and public buildings and left Chandigarh, while Jeanneret stayed until 1965 on the Punjab Capital project as its Chief Architect.
- 5 Le Corbusier was occupied with the revision of the master plan, the design of the Capitol complex, city centre, Government Museum and the establishment of the Architectural Control, besides a few other structures in the city.
- 6 The 7 Vs is Le Corbusier's concept *les sept voies*, a system of distribution and conveyance of traffic from the inter city to the dwelling through seven different types of streets. Sourced from Le Corbusier, *The Statute of the Land*, Chandigarh, 17 December, 1959.
- 7 Peon means "An Indian office messenger, attendant or orderly", as defined in the Oxford English Dictionary. Its usage was confined to the Indian sub-continent in the days of the British Empire.
- 8 Although the bulk of the initial building in Chandigarh consisted of government housing, it was projected that eventually about 70 percent of the buildings would be private. Residential plots ranging in dimension from 75 square yards to 5,000 square yards were sold at fixed prices, 8,355 private plots having been purchased by the end of May, 1957. It was hoped by the planners that "good taste engendered by the Government buildings will prevail and good architects will settle in Chandigarh to fulfil the needs of private builders". Observed a project architect, "How mistaken we were soon became evident". Evenson Norma, *Chandigarh*, The Sector, chapter VIII, Los Angeles, University of California Press, 1966.
- 9 The Old Architects' Office was a temporary building that housed the Capital project office at the time Chandigarh was making its early beginnings. The architects – Jeanneret, Fry and Drew – worked on the city here assisted by local architects, draftsmen, and modellers. It was to be demolished once the permanent office of the chief architect was built. However, in 2008, it was decided to retain the single storied structure as a heritage building and henceforth call it Le Corbusier Centre.
- 10 In the absence of trained architects in the city, Jeanneret generated standard house designs to encourage private house builders as well as create the continuity between government housing and private houses, the latter owned by individuals.
- 11 Pierre moved back to Geneva in 1965. He was a bachelor and bequeathed his possessions and archives to his niece Jacqueline in Geneva. She visited Chandigarh after Pierre's death to fulfil his wish of immersing his ashes in the Sukhna lake.
- 12 Maristella Casciato, Francesco Gulinello and Elisa Alessandrini (ed.), *Abitare a Chandigarh. Residenze progettate da Pierre Jeanneret*, E. Maxwell, Jane B Drew, Bologna, Clueb, 2014.
- 13 *Id.*
- 14 The private residences designed were for Gautam and Nayantara Sehgal, ID Oberoi, Nirlep Kaur and PL Verma. Occupied with the stupendous task of designing the city's housing and social infrastructure, he was not inclined to private residences. However on the insistence of Pandit Nehru he designed the Sehgal House which Nehru fondly christened *Anokha* meaning unique. The Nirlep Kaur House belonged to a lady MLA from Panjab who requested him to design her house while on a friendly tennis match at Nangal as recalled by Jeet Malhotra, who closely collaborated with Jeanneret and went on to become the senior architect of Chandigarh.
- 15 Charlotte Perriand (24 October 1903 – 27 October 1999) was a French architect and designer. Her work aimed to create functional living spaces in the belief that better design helps in creating a better society. An accomplished furniture designer in wood and metal, she worked at Le Corbusier's atelier as in charge of their interiors work and promoting their designs through a series of exhibitions. In 1940, Charlotte Perriand travelled to Japan as official advisor for industrial design to the Ministry for Trade and Industry. While in Japan she advised the government on raising the standards of design in Japanese industry to develop products for the West. In her article "L'Art de Vivre" from 1981 she states "The extension of the art of dwelling is the art of living – living in harmony with man's deepest drives and with his adopted or fabricated environment".
- 16 Durries are heavy cotton rugs of Indian origin. These hand-woven traditional rugs are used to sit on the floor, cover the floor and lent a sense of aesthetics to scant interiors. They were commonly used as sitting on the bare floor was not considered appropriate in the Indian home.
- 17 Together these eight houses form a heritage village. The fruit trees native to the site included mango, guava, *cheeku* and lemon.
- 18 While Jeanneret lived here and was accompanied by Le Corbusier during the latter's visits, it was the eye window room the latter chose to stay in.
- 19 While the other Government houses have dog-legged (two flight) staircases, Jeanneret's house has a spiral staircase.
- 20 The furniture, lighting fixtures, and durries have been relocated at other places in the city; some have been damaged and lost in the process. Old interior photographs at the Pierre Jeanneret archive, CCA, Montreal, Canada may be the sources for restoration along with the Foundation Le Corbusier, Paris, France.
- 21 Jeet Malhotra, born in undivided Panjab in 1929, joined the Chandigarh Capital project in 1951 as an assistant architect and had the distinction of working in close conjunction with both Le Corbusier and Pierre Jeanneret. He was awarded by the first President of independent India, Dr. Rajendra Prasad, for his work on "innovative low-cost housing". He fondly remembers Pierre Jeanneret as his *Guru* (mentor).
- 22 Aditya Prakash was a close associate of Pierre Jeanneret. He worked on the Capital project and was also the Principal of the Chandigarh College of Architecture (CCA) for several years. The CCA was set up under Le Corbusier's direction to serve as the laboratory to train architects in the city, as during the early years, there was a near vacuum of trained architects. AR Prabhawalkar was the first principal of the CCA and many architects who were engaged on the Capital project also taught at the CCA.

Modern Healthcare Architecture: Obsolescence and Transformation

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Modern healthcare architecture is a program of modernity and innovation that discussed the ideology of modern architecture. The preservation of health architecture cultural heritage has increased in the last decades around the world, through entities and institutions that are concerned with preserving and protecting this type of architectural production. Due to social, economic and cultural transformations, and consequently to different spatial requirements and technological demands, it is certain that there will be resultant extension, reuse, deactivation or demolition. Modern health architecture has ceased to represent programmatic and scientific innovation, facing the risk of becoming permanently obsolescent. Does modern health architecture still form a paradigm? Why it is so important to preserve?

Worldwide paradigmatic restoration of iconic projects, such as *Zonnestraal Sanatorium* (1925-1927), designed by the architects Jan Duiker (1890-1935) and Bernard Bijovet (1889-1979), representing the birth of **docomomo** International and Eindhoven Statement (1990), and *Paimio Sanatorium* (1929-1933), designed by Alvar Aalto (1898-1976), together with worldwide movements demonstrate the importance of these actions to preserve this cultural heritage. As Juhani Pallasmaa stated in his keynote lecture, entitled "Newness, Tradition and Identity", at the *International docomomo Conference* in Helsinki, "Cultural iden-

tity, a sense of rootedness and belonging is an irreplaceable ground of our very humanity". Following this idea, the mission is to preserve memory, by processes of understanding, documenting and promoting public awareness of the value of modern health buildings, "from restoration and renovation to deeper transformations and reuse interventions", as stated by Ana Tostões in the editorial of **docomomo Journal**, 52 – "Reuse, Renovation and Restoration".

The first initiatives in this area were the *History and Rehabilitation of Sanatoriums in Europe*, held by **docomomo** (France, 2004); the creation of the *Latin American Network of Health History and Cultural Heritage* (2007), triggered by the San José Hospital (1875 – threatened by demolition in 2005) – under the coordination of Oswaldo Cruz Foundation (Brazil), one of the most important Latin American health institutions, that is a pioneering protagonist in research on health cultural heritage; and the inventory realized by **docomomo** International, *Health and Modern Architecture* (2011). Other Latin-American studies are privileging some typologies relating to hospitals, such as the one coordinated by the *Universidad Nacional Autonoma de Mexico*, regarding pavilion hospitals (2009). It should be noted that many modern architects in Latin America worked in public programs, attuned to modernization processes in their countries, whose health policies in the first half of the 20th century are similar.

These efforts underlie the importance of the proposition for a specific thematic session at the 14th *International docomomo Conference*, in Lisbon, as the first public discussions in Portugal on modern health architecture, the meaning of modern health cultural heritage within the discussion on modern architecture, as well as debating the Eindhoven-Seoul Statement (2014), in what concerns authenticity of a sustainable and dynamic heritage to which is expected a re-invention and re-creation and not a frozen state, on behalf of the strengths of modernity.

This session tried to establish at least two goals. First, to recognize modern healthcare buildings as a modern typology that is yet to be understood in its role of defining Modern Movement ideals, and second, to identify modern healthcare buildings as the subject of continuously transformed space and to still recognize it as a paradigmatic building type when discussing strategies of conservation and rehabilitation within Modern Movement ideas.

The session chairs' coordinators (from Brazil, Chile and Portugal), with the scientific committee, selected papers from 18 proposals submitted from different parts of the world: Europe, Asia and the Americas, bringing a worldwide spread examining different objects, among hospitals and sanatoriums, mainly, and the challenges in use and reuse of modern health buildings. The paper selected from Italy reports the results of research on sanatoriums built in Sicily, which are representative of early 20th century Italian healthcare architecture, with the aim of contributing to the knowledge of, as yet, not yet deeply studied cultural heritage, although protected under Italian law. Its authors want to identify morphological, typological and technological characteristics for its reuse and conservation.

From Croatia, a case study from the Ernest Weissmann's Hospital buildings, discusses the first local case of applying prefabrication in the field of healthcare architecture.

From Finland, a paper concerned about the future of Paimio, since its use as a sanatorium/hospital has been gradually changed from June 2010. The new use, which commenced from April 2014, must combine, in a natural way, the working building and spaces that are more profitable as tourist attractions. Alterations should be made only when they are technically or functionally necessary or lead to the better perception and understanding of the original architecture. The Yokosuka hospital, built in 1939, in Japan, faces the same problems and challenges in its trial of reuse. Their authors describe the feasibility of the “conservative surgery” method, established by biologist Patrick Geddes – commonly demonstrated for modern architecture as authenticity, integrity and living heritage – with the purpose for the reuse as a modern hospital. The recent transformation of the former *Penhas da Saúde* sanatorium, located in the north of Portugal, into a hotel, by the important Portuguese architect, Eduardo Souto de Moura, can bring some elements into the discussion that this session aims to initiate, contextualizing the line of succession theories and transformations inherent to a tuberculosis typology.

Health architecture is evidence of the necessities for modern society, from the Utopian healing machines to avant-garde and scientifically poetic tuberculosis sanatoriums. Urban renewal, wars, health policies, pests and migration have provoked new architecture for health, and are a bitter and painful mirror of our humanity. To preserve the identity of modern health heritage, through sustainable actions to reach the issue of authenticity, is the aim of this session.

As Hubert-Jan Henket, stressed, in his Introduction “Reuse, Transformation and Restoration” in *docomomo Journal*, 52, concerning the “validity of the changes”: “Any transformations should respect the intentions of the original architect, interventions should be in balance with the cultural values of these intentions and these should add to the architectural quality of the new whole”. Henket underlines the importance of cultural context together with the original project adding the adaptive reuse of the existing buildings. We look forward to making our contribution, bringing this discussion to health architecture.

Conservative Surgery Method for the Reuse of a Modern Hospital in Yokosuka

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This paper aims to focus on the existing modern hospital built in the pre-war at the naval port in Yokosuka, Japan and to investigate the methodological feasibility of applying the idea and method of “conservative surgery” of the Scottish biologist and civic planner, Patrick Geddes, for the hospital’s reuse. This investigation will consider three major issues in the conservation of modern architecture: authenticity, integrity and living heritage.

Kaijin-kai Hospital the modern hospital in Yokosuka was built in 1939. It was designed by Japanese architect, Kikuji Ishimoto, for navy veterans, and it reflects a modern style with its emphasis on curved walls and horizontal lines. Although materials were lacking during the war, the building was taken over by the Christian Social Welfare Corporation to use as its main building with extended parts, however they have recently planned to build a new extension and then reuse the main building.

The idea and method of “conservation surgery” by Patrick Geddes were adopted to develop void space into a court-yard or open space in Edinburgh’s Old Town, to remake a park in Dunfermline from the 1880s to 1910s. The concept was invented to achieve maximum effect through minimum action and criticise Haussmann’s development of Paris in the 19th century. Although the term “conservative surgery” stems from medical practice, the idea can be applied to spatial and functional transformations and reuse of the Kaijin-kai Hospital, which has been evaluated for its history, design and impact on the social community as one of the significant examples of a modern hospital under planning to be renovated, including redevelopment and modification of large parts in the near future. This paper will not only describe the method of reuse in a modern hospital but also demonstrate the Geddesian method’s feasibility through a civic study of issues in the conservation of modern architecture, authenticity, integrity and living heritage.

1. INTRODUCTION

docomomo activities might have begun the new stages towards future development¹, the Scottish conservationist, biologist and sociologist; Patrick Geddes (1854-1932) had already highlighted the ideas and methods for the conservation and reformation of several cities and towns about a century ago². These ideas and methods could be applied to contemporary issues.

Therefore, this paper aims to focus on the existing modern hospital that was built during the pre-war period at the naval port in Yokosuka, Japan, and aims to investigate the methodological feasibility of applying the idea and method of “conservative surgery” for the hospital’s reuse by examining Geddes’ “City Development: a Report to the Carnegie Dunfermline Trust” (CD)³ and “Cities in Evolution” (CE)⁴. This investigation will be used to propose the conservation process and discuss three major issues in the conservation of modern architecture: documentation, authenticity and integrity, and intervention and living heritage.

2. SOCIAL BACKGROUND AND HISTORY

The Yokosuka Kaijin-kai Hospital, designed by Kikuji Ishimoto (1894-1963)⁵, is one such hospital, originally built for navy personnel and their families in 1939. The port city of Yokosuka, in the vicinity of Yokohama, has historically been an important naval port since the Edo period onward, as it had been for the Japanese Imperial Navy. After WWII, it has continued to be of significance for the Japan Maritime Self Defence Force. It is also the only non-US territory mother port for the United States Seventh Fleet.

Although the Kaijin-kai Hospital was built right before the outbreak of WWII, when building materials were beginning to be scarce, it boasted the latest technology of the period as depicted in the use of the steel-reinforced concrete construction since it was an important military facility. Moreover, the Kaijin-kai Hospital became the first large-scale general hospital built in Japan that was equipped with the latest modern medical equipment and a modern hospital design concept, which contributed to its social significance in terms of modernisation in its patients' health care and medical treatment. In July 1946, the Kaijin-kai Hospital was converted to St. Joseph Hospital, a private hospital open to the public.



FIGURE 1. Kikuji Ishimoto, Kaijin-kai Hospital (St. Joseph Hospital), Yokosuka, Japan. © Kenji Watanabe.

3. RE-DEFINITION OF GEDDESIAN CONSERVATIVE SURGERY METHODS AND ADAPTATION TO THE CONSERVATION AND REUSE OF THE HOSPITAL

Re-definition and Adaptation of Conservative Surgery

Geddes referred to the notion of “conservative surgery” and we can imagine this idea from the medical field in 19th century Edinburgh. As his initial and continuous interest was to study and research biology, in a broad sense, life itself, and also as he had a part-time job teaching biology at the University of Edinburgh’s College of Medicine⁶. Geddes applied his idea to the treatment of run-down parts of cities and towns without any hesitation.

Geddes was conscious of the need for economy and efficiency in the regeneration of older settlements. He contended that the conservative surgery approach had multiple advantages for historic environments such as the Old Town. In comparison with the prospect of large-scale redevelopment, it offered not only a cheaper and less disruptive alternative but also a more appropriate form of physical regeneration.

His idea of conservative surgery appeared in the text of reports in Indian City⁷ after 1915, but Geddes explained the concept in the “Introduction” of CD as follows:

I would respect and preserve examples of the honest and characteristic work of each and every period, whether from our present point of view (also a passing one) it seems to us beautiful or no⁸.

I plead merely for fair trial before condemnation, for the thrifty and open-minded – that is, many sided-consideration of each survival of the past and of its value whether as an actual asset or a possible one⁹.

For, even if not available in its present form for immediate use, I have once and again found buildings too hastily despaired of by others to be capable of cleansing and repair, or of alteration and incorporation with such new buildings as may be required – in short, of renewed usefulness and even beauty¹⁰.

In response to the pressing needs of the Old Town in Edinburgh and the redevelopment of the park in Dunfermline, Geddes’ conservative surgery concept had three aims and could be re-defined as a method of adaptation to the following issues of conservation heritage:

1. Documentation: respecting the community’s social and cultural traditions to admit authenticity and history, in not only tangible but also intangible objects.
2. Authenticity and integrity: minimizing the unnecessary destruction of the building’s heritage, to inevitably fulfill the process (integrity) in the survey (documentation, identifying buildings) before the plan.
3. Intervention and living heritage: avoiding significant disruption in local resident’s daily lives and also intervening through positive action to promote an environmental condition of their life as living heritage.

Respecting Social Culture and History = Documentation and Survey

Geddes claimed the importance of social culture and history for documentation as one of his principles, "Survey before Plan" in CE as follows:

We cannot too fully survey and interpret the city for which we are to plan –survey it at its highest in past, in present, and above all, since planning is the problem, foresee its opening future¹¹.

In short, then, to decipher the origins of cities in the past, and to unravel their life-processes in the present, are not only legitimate and attractive inquiries, but indispensable ones for every student of civics –whether he would visit and interpret world cities, or sit quietly by his window at home¹².

The needed preliminary inquiry is readily outlined. It is that of a City Survey. The whole topography of the town and its extensions must be taken into account, and this more fully than in the past, by the utilisation not only of maps and plans of the usual kind, but of contour maps, and, if possible, even relief models¹³.

Our survey, then, is a means towards the realisation of our community's life-history. This life-history is not past and done with; it is incorporated with its present activities and character¹⁴.

docomomo Japan found documents for the hospital's original design, extension plans including blue-prints of original drawings and perspective view, which were published as post-cards to mark the building's completion in 1939.

The process of documentation and survey for the project should be as follows:

1. Making a full-version fiche of the building.
2. Researching architects and engineers, as well as neighborhood buildings.
3. Making a model (original design, contour figure).
4. Organizing an exhibition on the history of the building and Yokosuka City in cooperation with Yokosuka Natural History Museum.

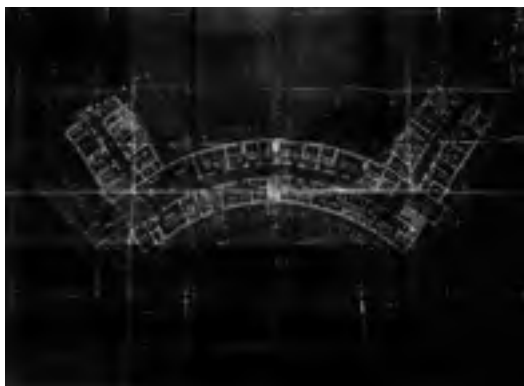


FIGURE 2. Kikuji Ishimoto, blueprint of drawing of plan. © Provided by St. Joseph Hospital, Kenji Watanabe.



FIGURE 3. Kikuji Ishimoto, perspective postcard. © Provided by St. Joseph Hospital.

Conservation (Maintaining) Reformation = Authenticity and Integrity

According to Geddes, the idea and method of conservative surgery should not be retrospective but creative action towards the future after a careful survey, especially, historical and geographical research. In addition, Geddes emphasised a voluntary organisation to reform people's lives and environmental conditions. Therefore, the conservation surgery method can signify both tangible and intangible objects.

The definition of culture in terms of "the best that has been known and done in the world" is but half the truth, that which mourns or meditates among the tombs; the higher meaning of culture is also nearer its primitive sense, which finds in the past not only fruit but seed, and so prepares for a coming spring, a future harvest. History is not ended with our historian's periods; the world is ever beginning anew, each community with it, each town and quarter. ...How, then, shall we continue the past tradition into the opening future?⁵ Largely the improvement of those slums, already referred to as the disgrace and difficulty of Old Edinburgh; a work of housing, of repair or renewal, of increase of open spaces and when possible of gardening them; of preservation of historic buildings, of establishment of halls of collegiate residence with associated dwellings, and so on⁶.

The analysis of the drawings and coloured perspective view showed that nearly 80% of the original design remains, however the fifth floor of the main building and the office parts above the main entrance were extended in the post-war period, and two extending parts have led to a change in the impression of the original design. Moreover, the main facade's staining and dusting wall as well as the piping and ducting for engineering mechanics have given dark impression to the main building. Therefore, the conservation works should be conducted in the following phases:

1. Cleaning the outside wall, re-coloring and tiling.
2. Removal of extending parts (fifth floor).
3. Renewal of the engineering system (minimize).
4. Minimum reinforcement against earthquakes to reuse the existing structure or elevator core shaft.

Intervention = Living Heritage

The notion of conservation, which forms a part of **docomomo's** name, generally comprises retaining past heritage. Yet it can implicate various questions, such as why, how, what, when or who remains. Since 2010, modern architecture conservation issues have prompted participation by practical architects, especially, professional organisation like UIA (International Union of Architects) and JIA (Japan Institute of Architects) in collaboration with UNESCO, because there are common threads with the global environmental sustainability issues. Conservation issues are evolving ideas that are implied as being open, flexible, and imaginative, called the "composite mind"¹⁷ to intervene and making our lives sustainable. Geddes mentioned in his book CE and CD as follows:

4. CONCLUSION

The Geddesian idea of the conservative surgery method can be interpreted as a social condenser for the conservation and reuse of the Kaijin-kai Hospital to prompt our imagination for bridging the gap between space (nature) and time, memory and hope, past and present (future), people (life) and architecture, through the process of composite mind that stems from the Geddesian method which is reinterpreted as “notation of conservation”²⁰.

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NOTES

- 1 Since announcing the *Eindhoven-Seoul Statement*, in 2014, **docomomo's** mission has changed from the more academic works of documentation and research for the conservation of modern heritages to the more practical aspects of sustainability and adaptability in reusing them. Almost simultaneously, the International Council on Monuments and Sites (ICOMOS) International Science Committee for Twentieth Century Heritage (ISC 20C) developed guidelines for the conservation of 20th century heritage sites. As a contribution to this debate, the International Conference *Intervention Approaches for the Twentieth Century Architectural Heritage: CAH 20th C* adopted on June 16, 2011, the following text: "Approaches for the Conservation of Twentieth Century Architectural Heritage, Madrid Document 2011". This raised the issue of modern heritage conservation, and particularly, identification of the notions of intervention, authenticity, integrity and living heritage. See the ICOMOS, *Approaches for the Conservation of Twentieth-Century Architectural Heritage Madrid Document*, 2014.
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- 3 Patrick Geddes, *City Development A Study of Parks, Gardens, and Culture-Institutes, A Report to the Carnegie Dunfermline Trust*, Edinburgh, Geddes and Company, Outlook Tower, 1904.
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- 6 Jim Johnson, Lou Rosenberg, *op. cit.*, 24-25.
- 7 Edited by Jaqueline Tyrwhitt, *Patrick Geddes in India*, London, Lund Humphries, 1947 40-59.
- 8 Patrick Geddes, *City Development A Study of Parks, Gardens, and Culture-Institutes, A Report to the Carnegie Dunfermline Trust*, *op. cit.*, 11.
- 9 *Id.*
- 10 *Id.*
- 11 Patrick Geddes, *Cities in Evolution, An Introduction to the Town Planning Movement and to the Study of Civics*, *op. cit.*, Preface, VI.
- 12 *Ibid.*, 4.
- 13 *Ibid.*, 350.
- 14 *Ibid.*, 363.
- 15 *Ibid.*, 372-73.
- 16 *Ibid.*, 326.
- 17 See investigation on Geddes' idea "composite mind" by Mary O. Ashton, "Tomorrow Town": Patrick Geddes, Walter Gropius, and Le Corbusier, in Volker M. Welter, James Lawson (ed.), *The City after Patrick Geddes*, Berlin, Peter Lang, 2000, 191-209 and *Theory into Practice: Rowse and the Move Outwards*, Kenneth Watts, *Outwards from Home A Planner's Odyssey*, Sussex, The Book Guild, 1997, 54-63. Jacqueline Tyrwhitt, "Introduction" in Jacqueline Tyrwhitt (ed.), *Patrick Geddes in India*, London, Lund & Humphries, 1947, XI.
- 18 Patrick Geddes, *Cities in Evolution, An Introduction to the Town Planning Movement and to the Study of Civics*, *op. cit.*, 142.
- 19 *Ibid.*, 11.
- 20 "The Geddes Diagrams Part1 The Notation of Life" in Jacqueline Tyrwhitt (ed.), *Cities in Evolution*, *op. cit.*, 194-199.

Case Study: Ernest Weissmann's Hospital Buildings as a *Neues Bauen* Platform

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In the interwar years, when the issue of prefabrication was a key topic in the international housing debate, Croatian architect Ernest Weissmann (1903-1985), Adolf Loos's and Le Corbusier's collaborator, undertook a unique venture – he designed a standardized prefabricated sanatorium and hospital building conceived to meet different health programmes, locations, and numbers of occupants. Introduced to the idea of socially responsible architecture in the service of creating a more just society by the leftist architects Nikolai Kolli and Mart Stam, and the CIAM's *La Sarraz Declaration*, Weissmann transformed the existing hospital, typical of the period, into a technologically sophisticated prefabricated building. He achieved this by applying all the basic principles of modern architecture: *plan libre*, skeletal structure, flat roof, curtain wall façade, etc. One of the objectives was to solve the acute shortage of hospital beds in Yugoslavia. In the late 1920s and early 1930s when *Neues Bauen* was struggling for recognition in Yugoslavia and was exclusively perceived as a new morphological phenomenon, through a series of sanatorium and hospital designs for Kraljevica and Zagreb, Weissmann introduced a total spatial, structural and formal concept that emerged from the needs of modern society, new structures, materials and construction techniques. He explained it in detail in the publication named after the Sanatorium for the Tuberculosis of Bones and Joints in Kraljevica, the first manifesto of *Neues Bauen* in Yugoslavia published in 1930. Both the design and construction of Weissmann's healthcare architecture that embodied the constructivist discourse and changed the traditional notion of a hospital building were ahead of its time. Although never built, his standardised prefabricated sanatorium and hospital buildings remained a unique experiment within the scope of 20th century architecture, and probably the first case of applying prefabrication in the field of healthcare architecture.

1. INTRODUCTION

In the 1920s and 1930s, healthcare architecture in Europe entered a major period of transition. Thanks to the physicians who welcomed the innovations that guaranteed the improvement of hygienic and healthy conditions, it became a field that facilitated the realization of the principles of the *Neues Bauen*: functionality, economy and the application of the latest technological advancements. The language of modern architecture, synthesized in Le Corbusier's *Five Points of a New Architecture*, used in the service of therapy based on sun exposure was not questioned. Therefore, together with schools, attended mostly by the children in poor health due to grave social conditions, buildings for health institutions were recognized as a perfect testing ground for achieving synthesis between social programmes and modern architecture in order to provide a more just society. This was also the case in Yugoslavia thanks to the Croatian architect, Ernest Weissmann (1903-1985). Almost simultaneously with Richard Döcker, Johannes Duiker, Bernard Bijvoet, and Alvar Aalto, respectively the architects of Waiblingen hospital, Zonnestraal sanatorium in Hilversum and sanatorium in Paimio, Weissmann designed a series of hospitals and sanatoriums using the



FIGURE 1. Ernest Weissmann, Foundation and Clinical Hospital, Zagreb, Croatia, 1930-1931. International competition design, photomontage. © Tamara Bjažić Klarin Archive.

same pavilion hospital model and slightly modified hospital building typical of the period¹.

He made an important step forward by introducing types and standardisation, that is, a standardized prefabricated building able to adapt to a particular health programme, capacity and location. As in the interwar period, prefabrication was considered only in the field of social housing, Weissmann's prefabricated sanatorium and hospital buildings were the first case of using prefabrication in the field of healthcare architecture, and stand out as a unique enterprise in 20th century architecture. Furthermore, Weissmann used a series of healthcare buildings as a platform for presenting *Neues Bauen* in its totality – a new spatial, structural, and formal concept that emerged from the needs of modern society, with new structures, materials, and construction techniques in Croatia². Due to the absence of large-scale social turmoil it was almost exclusively accepted as a formal concept and not as a principal means of creating a new society.

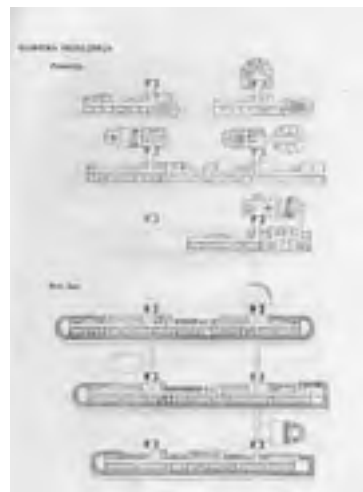


FIGURE 2. Ernest Weissmann, Foundation and Clinical Hospital, Zagreb, Croatia, 1930-1931. International competition design, ground floor plan. © Stjepan Planić (ed.), *Problemi Savremene Arhitekture*, Zagreb, 1932, 33.

2. SOCIALLY RESPONSIBLE ARCHITECTURE – STANDARDIZED PREFABRICATED SANATORIUM AND HOSPITAL BUILDING

Weissmann defined his socially sensitive and responsible engineering approach in contact with members of architectural left-wing movement, constructivists Nikolai Kolli and Mart Stam³. After graduating from the Technical Faculty in Zagreb, known for its neo-classicist approach towards architecture, he moved to Paris where he worked in the offices of Adolf Loos and Le Corbusier from 1926 to 1930⁴. They introduced him to the basics of modern architecture including *Five Points of a New Architecture* and the method of designing large structures by linking monofunctional elements into a unified structure through corridors. While Le Corbusier himself was willing to accept prefabrication only at the level of individual construction elements, Kolli and Stam introduced Weissmann to the idea of solving acute social problems by using rationalisation, standardisation, industrialisation, and prefabrication addressed in CIAM's *La Sarraz Declaration*. As implementation of the CIAM⁵ programme became a moral obligation for all progressive architects after participating at the CIAM 2 Congress in Frankfurt in 1929, where he became acquainted first-hand with prefabrication of entire housing units, Weissmann started an experiment concerning the design of a standardized prefabricated sanatorium or hospital building⁶. Beside fast construction and reduction of the high costs of the pavilion hospital model, a no less important advantage was the fast solution of the project. Aware of the acute shortage of hospital beds and the very large number of people suffering from infectious diseases, Weissmann was not discouraged by the fact that construction of hospitals was almost exclusively a privilege of the staff of municipal or county departments. As such a demanding venture required team work, Weissmann established a long-lasting collaboration with physician Miroslav Delić, architect and sanitary engineer Bogdan Teodorović, and mechanical engineer Slavko Vukelić⁷. Weissmann's and Delić's one-year study of sanatoriums for tuberculosis in Italy, France, and Switzerland preceded the projects⁸.

During his stay in Paris from 1928 to 1930 Weissmann elaborated and improved a standard building in a series of three designs – the Sanatorium for the Tuberculosis of Bones and Joints in Kraljevica at the Adriatic Coast⁹, the Jewish Hospital, and the Foundation and Clinical Hospital in Zagreb – transforming it from a prototype to a prefabricated building technology system perfected in detail¹⁰. As a model he used the 1920s T-shaped hospital building improved by separating the nursing unit and therapy department into two independent structures linked by bridges, simplifying the inner spatial organization, and rationalizing the floor area¹¹. While the layout of therapy departments varied depending on the medical program, nursing units' single-loaded corridor layout, terraced cross-section, terraces, and curtain wall façade corresponded to the needs of therapy, where insolation played an important role. Together with a possibility to vary the number of beds in patients' rooms, this all led to the use of the

plan libre and a concrete or steel structure with columns and flat slabs. In order to obtain construction elements in dimensions suitable for production, handling and assembly, Weissmann introduced modular coordination and replaced double with single row patient's rooms¹². The basic module for all construction elements was 3.6 metres¹³. Weissmann did not bother himself with aesthetics thanks to the monofunctional usage of buildings, modular coordination, and the unifying façade treatment. All in all, Weissmann's technologically sophisticated constructivist hospital and sanatorium buildings, with visible structure and curtain wall façades, were a perfect example to elaborate *Neues Bauen*.



FIGURE 3. Ernest Weissmann, Foundation and Clinical Hospital. Pavilion for tuberculosis, Zagreb, Croatia, 1930-1931. International competition design, model. © Stjepan Planić (ed.), *Problemi Savremene Arhitekture*, Zagreb, 1932, 36.

3. ACCEPTANCE OF NEUES BAUEN IN YUGOSLAVIA – FROM EXCLUSIVELY FORMAL TO THE INTEGRAL CONCEPT

From the very beginning, simultaneously with his work on prefabrication, Weissmann participated in all events important for affirmation of *Neues Bauen* in Yugoslavia in the late 1920s and early 1930s. Public opinion considered the first appearance of the *Neues Bauen* in 1928 as a “fashionable novelty from Berlin”¹⁴. Although architects were familiar with a new plastic treatment of façade free of ornamentation and the use of flat roofs, division of the building body, basic layout, and construction techniques remained mostly unchanged until the 1932 when *Neues Bauen* was finally generally understood and applied in its full extent. This delay was a consequence of a new political situation after the WWI, that is, the founding of the national schools of architecture, as this led to a decrease in the number of architects educated abroad who were direct intermediaries in spreading new architectural tendencies¹⁵. While the year 1930 was decisive for the presentation of *Neues Bauen* to the public, it wasn't before 1931 that it was generally accepted thanks to the series of competitions, exhibitions, and the first public buildings constructed by municipal and county architects in line with the new architecture¹⁶.

As *Neues Bauen* was mostly misunderstood, Weissmann was eager to explain it on every possible occasion. At the time when Peter Behrens was reconstructing the façade of the Stern building on Zagreb's main square, the first formal presentation of *Neues Bauen*, Weissmann introduced the school building type and *Five Points of a New Architecture* in the competition for designs of two elementary schools in Split in the summer of 1928¹⁷. The following year, in the competition for the Foundation block at the same square, Weissmann took the opportunity to pro-



FIGURE 4. Ernest Weissmann and Miroslav Delić, *Sanatorij Tuberkuloze kosti i Zglobova*, Zagreb, Škola Narodnog Zdravlja, 1930.

mote the concept of a modern open city – free standing structures raised on columns with curtain wall façades¹⁸. Finally, together with Delić he wrote the first manifesto of *Neues Bauen* – *Sanatorij Tuberkuloze Kosti i Zglobova* – published by the School of Public Health in the summer of 1930¹⁹. Weissmann used the design for the sanatorium in Kraljevica to introduce a socially responsible approach towards architecture, that is, his constructivist engineering discourse, to the public. The focus was on the therapy and the architect was obliged to provide an optimal, functional hospital space using accessible technology, materials, and structures. The architectural form is just a result of a set task and applied technology. Following Mart Stam and Hannes Meyer, Weissmann summarized his definition into a formula: Function + Technology = Form.

He also discussed the relation between arts and architecture claiming that “there are other possibilities of artistic expression that are cheaper and consume less energy”²⁰, as well as the problem of fashionable followers that actually missed the point of *Neues Bauen* perceiving only the aspect of form. For Weissmann, the question of style was irrelevant because architectural form depends on function and technology that could be changed at any moment.

Weissmann returned to Zagreb in late 1930 because of the competition design for the Foundation and Clinical Hospitals that, together with design for Jewish Hospital, had the crucial role in promoting the understanding and acceptance of *Neues Bauen*. The highly placed Weissmann designs were presented in newspapers, journals, and exhibitions, and thus were brought into focus of the public²¹. This time he used it to elaborate the concept of prefabrication as the only possible solution for solving urgent social problems, pointing out to the *epigones*, architects who still did not understand *Neues Bauen*'s tasks and unlimited possibilities of new spatial concepts and structures, and socially responsible ones²². Prizes for hospital designs brought Weissmann a status of *persona grata*, the most well-known architect of the new generation. Unfortunately, his glory was short-lived.

4. AFTERMATHS

After the announcement of competition results for the Foundation and Clinical Hospital, Weissmann faced the reality that, although his project was an “original contribution to solving the problems of modern hospitals”²³ it was not possible to construct it because of the low standard of construction technology

in Yugoslavia – inadequate know-how and materials. The issue of prefabrication was in the focus of the profession just after the WWII and in 1947 it was introduced in the first five year plan. The first prefabricated small apartment houses were built in the early 1950s, while the first systems of prefabricated apartment buildings entered production in the 1960s.

Until 1935 Weissmann unsuccessfully insisted that he should be assigned the contract for hospital construction but, already by 1932 he had changed his field of interest²⁴. He established Radna grupa Zagreb, the CIAM national group of Yugoslavia and a professional cooperative devoted to a new socially relevant topic – multi-functional public buildings, such as the Workers' Institutions building in Zagreb, that were decisive for the acceptance of *Neues Bauen* in its full extent²⁵. Weissmann opened a new chapter in his professional career in his home country but also at an international level. His active participation in CIAM, and engagement in the renewal of its left-wing political faction, started in 1932 at the CIRPAC meeting in Barcelona where the executive committee discussed the issue of the Foundation and Clinical Hospital, the most avant-garde project of Yugoslavian interwar architecture and the most significant part of Weissmann's architectural oeuvre²⁶. Its long lasting influence was achieved thanks to the 1932 book *Problemi Savremene Arhitekture*, an overall presentation of *Neues Bauen* in Yugoslavia including Weissmann's sanatoriums and hospitals designs²⁷.

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NOTES

- 1 Until the 1930s the pavilion hospital model was generally accepted in Europe for the construction of hospitals and sanatoriums. The traditional pavilion hospital was transformed into a complex of autonomous specialized centres with nursing units and therapy departments. The centres had common service, technical, and residential facilities in separate buildings.
- 2 From 1928 to 1931 Weissmann designed the Sanatorium for Tuberculosis of Bones and Joints in Kraljevica (1928-29), the Jewish Hospital in Zagreb (1930), the Foundation and Clinical Hospital in Zagreb (1930-31), the State Sanatorium for Lung Tuberculosis at Šuplja Stena in Serbia (1931), the Student Dining Hall in Zagreb (1931), and built the Sokol Sports Centre with an outpatient clinic for the Hygienic Institute and public bath in Pisarovina, a village near Zagreb (1931).
- 3 Kolli and Stam were members of Soviet OSA Group and Swiss ABC Group. Weissmann met Kolli and Stam in Le Corbusier's studio. Kolli was Le Corbusier's collaborator on the *Centrosoyuz* project in his studio in late 1929 and early 1930. Weissmann was introduced to Stam thanks to Alfred Roth in the summer of 1928. *Livre d'Atelier*, Paris, Fondation Le Corbusier; Alfred Roth, *Begegnung mit Pionieren*. Le Corbusier, Piet Mondrian, Adolf Loos, Josef Hoffmann, Auguste Perret, Henry van de Velde, Basel, Birkhäuser, 1973, 137-139.

- 4 Weissmann worked for Loos from November 1926 to the summer of 1927. He was Le Corbusier's collaborator from the late 1927 to November 1930. Ernest Weissmann, Biography, 1947, New York, UBU Gallery, Marc Dessauce Collection, Ernest Weissmann Archive.
- 5 *Congrès Internationaux d'Architecture Moderne* [International Congress of Modern Architecture].
- 6 Ernest Weissmann, *Letter to Sigfried Giedion*, October 15, 1929, Zürich, ETH, gta Archiv, CIAM Collection.
- 7 Delić was a physician at the State Sanatorium for the Tuberculosis for Bones and Joints in Kraljevica. Teodorović worked at the Sanitary Technology Department of the School of Public Health in Zagreb. Ernst Weissmann, *Problemi Savremene Arhitekture*, Zagreb, Tip bolnice Paris, 1932, 28-31.
- 8 Miroslav Delić, "Razvoj Medicinske misli i Gradnja Bolnica", *Arhitektura*, Zagreb, Udruženje Hrvatskih Arhitekata, 1953, 4-8, 44-52.
- 9 It was designed under Le Corbusier's supervision during Delić's specialization in orthopaedics in Paris. Le Corbusier himself was not involved with healthcare architecture at that time. Weissmann's design was deposited in Le Corbusier's archive and attributed to him as Sanatorium Zürich. Fondation Le Corbusier, *Buildings and Projects, 1933-1937*, New York, Garland (etc.), 1983, 205-213.
- 10 Ernest Weissmann, *Sanatorium for Bones and Wrists Tuberculosis*, 1928-29, Paris, Fondation Le Corbusier; Ernest Weissmann, *Jewish Hospital in Zagreb*, 1930, Paris, Cité de L'architecture et du Patrimoine, Archives d'Architecture du XXe siècle, SIAF, Fonds Jean Bossu; Ernest Weissmann, *Foundation and Clinical Hospital in Zagreb, 1930-31*, New York, UBU Gallery, Marc Dessauce Collection, Ernest Weissmann Archive.
- 11 Other innovations were an underground passage beneath the building and vertical ducts in the walls between rooms and corridors for utilities, and use of ramps as the main vertical means of communication.
- 12 In the Sanatorium in Kraljevica beds were set in two rows perpendicularly to the external wall while the Zagreb hospitals had just one row. The room depth was constant.
- 13 The module was defined by the width of a single room and the column span. Ernst Weissmann, *Tip bolnice Paris, Problemi savremene arhitekture*, Zagreb, 1932, 28-31.
- 14 "Osnova arhitekta Sunka. Dvadeset pet osnova Jelačićevog trga i nijedno rješenje", *Jutarnji list*, Zagreb, January 11, 1930, 8.
- 15 Up to 1918 Croatia was part of the Austro-Hungarian Empire and after 1918 it became part of the Kingdom of the Serbs, Croats, and Slovenes. Croatian architects were mostly educated in Vienna and Prague. The Technical School in Zagreb was founded in 1919.
- 16 *The International Builders Exhibition*, the third exhibition of the Association of Artists Zemlja, exhibition of *German Contemporary Art and Architecture*, and several exhibitions of the competition entries were held in Zagreb in 1930 and 1931. The first exhibition of Yugoslavian contemporary architecture was held in Belgrade in 1931. Tamara Bjažić Klarin, "Internacionalni stil – izložbe međuratnog Zagreba (1928 – 1941)", *Radovi Instituta za Povijest Umjetnosti*, Zagreb, *Institut za Povijest Umjetnosti*, n. 31, 2007, 301-313.
- 17 Peter Behrens was then a professor at the Viennese Academy of Fine Arts. Ernest Weissmann, "Osnovna škola u Splitu. OSGS 1928" and "Osnovna škola u Splitu. OSLS 1928", *Problemi savremene arhitekture*, Zagreb, 1932, 68-69.
- 18 The competition was launched for the regulation plan and the type of building on the site of the former Foundation Hospital at Jelačić Square. (Ernest Weissmann, "Izgrađivanje modernog grada. Veliki gradovi budućnosti – povodom izgradnje Jelačićevog trga", *Jutarnji list*, Zagreb, January 27, 1930, 3; Tamara Bjažić Klarin, "Zakladni blok u Zagrebu – urbanističke i arhitektonske odlike", *Prostor*, Zagreb, Arhitektonski fakultet Sveučilišta u Zagrebu, n. 40, 2010, 322-335.
- 19 The publication *Sanatorium for Tuberculosis of Bones and Joints*, named after the project for Kraljevica, had four chapters – *On Architecture*, *On the Sanatorium*, *On the Project* and *On Structure*. Ernest Weissmann, Miroslav Delić, *Sanatorij tuberkuloze kosti i zglobova*, Zagreb, Škola narodnog zdravlja, 1930.
- 20 Ernest Weissmann, Miroslav Delić, *Sanatorij tuberkuloze kosti i zglobova*, Zagreb, Škola narodnog zdravlja, 1930, 8.
- 21 Both competitions were international. In the competition for the Jewish Hospital Weissmann won a reduced third prize and in the competition for the Foundation and Clinical Hospital one of the three equal prizes along with Bernhard Stein and Richard Zorn from Hamburg, and František Čermák and Gustav Paul from Prague. Tamara Bjažić Klarin, "Međunarodni natječaj za Zakladnu i kliničku bolnicu u Zagrebu 1930 – 1931", *Prostor*, Zagreb, Arhitektonski fakultet Sveučilišta u Zagrebu, No. 44, 2012, 282-295; Tamara Bjažić Klarin, "Židovska bolnica u Zagrebu", *Ha-Kol*, Zagreb, Židovska općina Zagreb, No. 87, 2005, 30-36.
- 22 On the occasion of the *Exhibition of German Architecture in Zagreb*, that took place simultaneously with the announcement of the competition results, Teodorović pointed out only the buildings of Walter Gropius and Ernst May as worthy of attention. Weissmann's friend, art historian Bogdan Rajakovac, even accused Le Corbusier of formalism. Ernest Weissmann, "Rezultat natječaja za osnovu Zakladne bolnice: Opet jedan zagrebački arhitekt odnio prvu nagradu u velikom međunarodnom natječaju", *Jutarnji list*, Zagreb, May 14, 1931, 4; Bogdan Rajakovac, Bogdan Teodorović, "Izložba njemačke savremene likovne umjetnosti i arhitekture u Zagrebu", *Merkurov vjesnik*, Zagreb, No. 6, 1931, 125-127; Bogdan Rajakovac, "O savremenim arhitektima. Marginalija k izložbi projekata za novu Zakladnu i kliničku bolnicu u Zagrebu", *Merkurov vjesnik*, Zagreb, No. 7-8, 1931, 187-188.
- 23 This was claimed by a jury member, French architect Roger-Henri Expert. The other two international jury members were Swiss architect Walter Hénauer and German architect Wilhelm Kreis. "Nova Zakladna bolnica u Zagrebu stajaće 100 miliona dinara. Prvu nagradu na konkursu dobio je zagrebački arhitekt g. Vajsmann", *Politika*, Beograd, May 16, 1931, 9.
- 24 The contract was given to the most powerful architects of that time in Zagreb. Although he had a considerable international practice Weissmann had just one constructed building – the before mentioned Sokol Sports Centre.
- 25 Radna grupa Zagreb = Work Group Zagreb. Tamara Bjažić Klarin, "Radna grupa Zagreb – osnutak i javno djelovanje na hrvatskoj kulturnoj sceni", *Prostor*, Zagreb, Arhitektonski fakultet Sveučilišta u Zagrebu, No. 29, 2005, 41-53; Tamara Bjažić Klarin, "Home and Life, or: How Do People Live in Zagreb?", *Atlas of the Functional City. CIAM 4 and Comparative Urban Analysis*, Bussum and Zürich, Uitgeverij Thoth and gta Verlag, 2014, 412-425.
- 26 Weissmann's project, that is, results of the international competition, was discussed together with Le Corbusier's Palace of Soviets. Eric Mumford, *The CIAM Discourse on Urbanism, 1928-1960*, Cambridge Massachusetts, MIT Press, 2000, 70.
- 27 The book editor was architect Stjepan Planić. Weissmann published in the book designs for the sanatoriums in Kraljevica and at Šuplja Stena, the Jewish Hospital and the Foundation and Clinical Hospital.

Obsolescence and Future of Paimio Sanatorium (1929–1933) by Alvar Aalto

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Paimio Sanatorium was a result of major actions that a newly born independent Finland took in front of the fatal threat of tuberculosis. According to the law in 1929 the state covered the majority of the costs of building and running of a sanatorium. One of the many new sanatoria rose in Paimio, becoming world famous because of Aalto's skills and activity. The history of the large municipal institutions is discussed; Paimio has many parallels in Finland.

By the late 1950s the daily procedure altered; surgical operations and medical cures developed. The new wing of operating theatres was built and the balconies were converted into extensions of the wards. By the 1970s many sanatoria became hospitals resulting in extensive refurbishments. Still by the 2010s the requirements of contemporary hospitals took over, and many sanatoria have been or will be re-converted for various uses. Also Paimio Hospital was gradually closed by June 2015.

How are the radical interventions designed in Aalto's architectural office until 1994 in Paimio to be valued? Is the 1958 layout of the entrance hall to be kept? Ventilation machinery and the partial suspended ceilings altered the shapes of some of the most valuable spaces. The protection orders from 1993 do not specify the content of the definition "original interiors, structures and building parts". Is the "original" in some cases beyond the limit of realistic possibilities? Should we consider some later layer original, if the changes are extensive?

During the conservation management plan process by the Alvar Aalto Foundation, Paimio sanatorium was studied more carefully than ever before. The guidelines for the restorations were determined. It is a balance between an architectural presentation piece and an actively working building.

1. INTRODUCTION

Tuberculosis sanatorium, a child of industrialization, emerged as a distinct medical institution in Europe during the 1850s. By the time of its decline, a century later, it had inspired modernist architecture like probably no other building type.

One of the major architectural manifestations within the field was Paimio Sanatorium, completed in 1933. The competition in 1928–29 was the first in Finland in which all the awarded entries followed functionalistic architecture and the building itself became a key work in the career of Alvar Aalto. Raija-Liisa Heinonen summarized:

In Paimio the foreign influence which Aalto had absorbed is visible – particularly his journey to France and the Netherlands briefly before the architectural competition. On the other hand, Paimio represents the coherent development in Aalto's architecture, both spatially and in detailing. Paimio is in a way the culmination and endpoint of a process and synthesis of new features which had over previous decades developed in various situations¹.

Law on Governmental Aid

In Finland the death rate due to tuberculosis was still high in the first decades of the 20th century, being yearly up to 3%. Over 40% of the deaths of people aged from 15 to 60 were caused by TB².

Finland gained its independence from Russia in 1917. The young nation took major actions in preventing tuberculosis, a major threat to the labour force and potential soldiers. The first large communal sanatorium in Finland, Satalinna, was opened in 1925. It became a model for many of the later ones, including Paimio, whose building committee visited it³.

The Law on Governmental Aid for Tuberculosis Sanatoria from 1929 was a most important step in the organized treatment of TB in Finland. The communal federations started building eight new sanatoria; the first was the Kinkomaa Sanatorium and the last one was Paimio⁴.

2. PERIODS OF SANATORIA

Sirkka Törrönen divided in 1984 the history of the large communal institutions in Finland since 1933, into three periods. The first one lasted until the 1940s, when the large sanatoria were built. The second was the time of the refinement of the organization and the major period of TB treatment, which lasted until 1964, when the district hospital system was set up. The third was the running period of the sanatoria from the mid-1960s⁵.

Today the reuse of sanatoria as hospitals can be seen as the fourth period, lasting from the late 1970s to the 2000s. It is now shifting in towards the fifth period, as the uses as hospitals are ending and new uses are introduced.

The 2nd Period: Sanatorium

Before WWII the treatment was based on hygiene and diet, including long periods of rest in fresh air. The pharmaceutical cure was developed during the 1950s and became increasingly effective⁶. Surgical operations were developed in order to rest and later remove the damaged parts of the lung. Operations continued until the late 1960s and needed new facilities.

NEW WING AND THE ALTERATIONS IN THE LOBBY

The Paimio new wing completed in 1958 provided totally new operating facilities and maintenance workshops. Simultaneously, quite extensive changes took place on the ground floor in the middle part of the main building, in the so-called B-wing. The physicians' offices were altered, the X-ray facilities were enlarged and the old operating theatre was reused as a meeting room. The porter received a new setting – with prominent curved glass walls – in the middle of the main entrance hall. The open character of the corridor was closed off and even the entering directions in the lobby were altered.



FIGURE 1. Alvar Aalto, Paimio Sanatorium, Paimio, Finland. The main entrance of the completed Paimio Sanatorium in 1933. © Alvar Aalto Museum, Photo Archive 50-003-215, Weilin, 1933.

GLAZING OF THE BALCONIES

The role of fresh air therapy had diminished by the early 1960s. The administrative spaces and new facilities replaced the abandoned balconies in 1964. The very end of each balcony was elegantly left open, but most of the handsome original concrete structure became protected from the harsh Nordic climate.

The changes in the 1950s and the 1960s resulted in the closing off of some of the original open views. Nevertheless, those were still serving the use as a sanatorium.

The 3rd and 4th Periods: a Hospital

The number of deaths caused by TB diminished strongly from the late 1940s onwards⁷. The law was changed in 1965 so that the sanatoria could be partly used to also treat diseases other than TB. Two years later the new law allowed the tuberculosis districts to be combined into health care districts⁸. In the early 1970s both discussions and legislative changes continued. Within the next ten years the large public sanatoria had mostly been converted into hospitals, focusing on rheumatism and internal diseases, which was also the case in Paimio⁹.

RENEWAL OF THE WARDS 1974–1979

In 1971 the sanatorium was renamed Paimio Hospital¹⁰. The renewal of the wards had been planned for a decade as the refurbishments were started in autumn 1974. The complete renovation of the wards lasted until 1979 and took

place in every space. New bathrooms, for example, replaced the apartments, and the mechanical ventilation resulted in changes to the top floor balcony and roof top. Also the corridors received partial suspended ceilings with new light fittings.

RENEWALS TO B-WING IN THE 1980s

The renewals to the B-wing department were again extensive. The introduction of mechanical ventilation demanded ceilings be lowered. This time also some of the most valuable spaces, such as the day room, were altered. On the upper floors various spaces were converted into offices and treatment rooms.

The ground floor department was converted into spaces for contemporary treatments. Major changes took place in the basement, and a new underground extension was built beneath the courtyard. These and later changes have resulted in a very complicated basement level.

The relatively simple original uses had over the decades faded, and the extensive refurbishment was carried out to convert the sanatorium into a contemporary hospital. Some of the changes were executed with sophisticated details, such as the second-floor offices. Nevertheless, the additions are often incompatible with the straightforward original sanatorium layout.

CHANGES AFTER AALTO'S OFFICE

In 1987 Paimio Hospital became part of the Turku University Hospital¹¹. The changes were still designed by Aalto's office, yet the architect himself had not been personally responsible for the process. Alvar Aalto passed away in 1976. Even before his death, the architect Heikki Tarkka had been mainly responsible for the design¹². The office was led by Elissa Aalto until 1994, when she herself passed away.

Paimio Hospital was protected as a national monument on March 18, 1993. From 1996 onwards the architects' office responsible has been LRP Architects¹³.

The 5th Period: the Second Reuse

The sanatoria became part of the hospital network, and some of those are still used as hospitals. Since many of the complexes were situated in rather remote locations, they were no longer considered appropriate for hospital use, despite continuous modernization.

In the 21st century many of the large sanatoria have again been (or are about to be) reused for treatments which may not be as dependent upon contemporary technologies or the close connection to densely populated cities. The new health-care units are often run by enterprises, foundations or other third sector operators. They may provide their services for individuals, communities or other institutions operated by public money. Even the communal structures in regard to the ownership of the health institutions may change due to political decisions.

Despite the multiple alterations Paimio Hospital was gradually closed in the 2010s. In April 2014 the first new user moved in. The Mannerheim League for Child

Welfare has been using parts of the main building and the apartment buildings since then. The last rehabilitation ward moved on June 5, 2015. The maintenance is still run by the personnel of the Hospital District, as it is a valuable and irreplaceable part of the ongoing history, dating back to the early 1930s. Nevertheless, a new period has started.

Possibilities for Future Changes

During the process of the conservation management plan (CMP) in the Alvar Aalto Foundation funded partly by the Getty Foundation's *Keeping it Modern* initiative, the guidelines and recommendations were created. Two examples are discussed here.



FIGURE 2. Alvar Aalto, Paimio Sanatorium, Paimio, Finland. The entrance hall received the new cabin for the porter in 1958. © Alvar Aalto Museum, Photo Archive av816, Kapanen, c.1978.



FIGURE 3. Alvar Aalto, Paimio Sanatorium, Paimio, Finland. The patients' wing corridor with the partial suspended ceilings from 1970s. © Alvar Aalto Museum, Photo Archive, Malmberg, 2016.

ENTRANCE HALL

The entrance hall is one of the main interior spaces, significant in terms of both its functional aspects and its history of use. The alterations in 1958 established a status against which any future changes will be compared. Presently the space is somewhat disjointed and alterations that would be favourable in terms of the totality can be considered.

The situation regarding the B-wing ground floor corridor is linked to that of the lobby established already in 1958. In connection with any future alterations, the opening up of the corridor in the direction of the rear yard should be investigated.

PATIENTS' WARD CORRIDORS

The side corridor of the wards is an essential part of the original architectonic and functional idea. The over view of the corridors changed mostly in the late 1970s. The flooring material in the corridors changed to the present vinyl tiles and the original birch-veneer doors were replaced by wider ones. The shape of the space was disrupted due to the suspended ceiling. Also the adjacent spaces have been refurbished with various changes.

Returning the aesthetic of the original corridor, for instance in regard to its grey-green linoleum and flat ceiling, would be justified if no technical need can be shown for the presence of the suspended ceiling. The appearance of the office is for the most part appropriate for the space. The "lack" of a toilet at the end of the corridor is not a problem in regard to the overall space. The options to renew the ventilation so that the suspended ceilings would no longer be needed were studied in the CMP.

AN APPROACH

The early alterations were still solutions for the use of the building as a sanatorium. However, in 1958 the Aalto office altered, for instance, the exterior architecture and key interior spaces linked to the main entrance to such an extent that the original situation would no longer be attainable without – in today's perspective – unnecessarily large-scale reconstruction. On the other hand, most of the subsequent alterations have involved solutions to topical functional or technical questions without long discussions about architectural issues.

The 1993 protection orders do not specify the content of the definition "original interiors, structures and building parts". In this context, it has been considered important to treat any alterations carried out up until the completion of the 1958 renovation as comparable objects to the original building parts; evaluating Aalto's work from different periods according to their importance is not an appropriate principle for restorations.

It is no longer possible to ascertain the original colours and surface treatments of all interiors of the different buildings. Restoring large entities to the appearance they had may be technically unfeasible. Partial restorations can lead

to conflicts that are difficult to resolve. Reconstructive restoration can be an option if the initial situation has been carefully examined and adequate information is available. The overall architectural integrity must not suffer.

The well-kept hospital and widely refurbished sanatorium will be reused again. It will remain an architectural sight but receive another layer. The new uses must combine in a natural way, the working building and the spaces that are used more as tourist attractions. Alterations should be made only when they are technically or functionally necessary or lead to the better perception and understanding of the original architecture – but that original may be from the 1950s or 1960s.

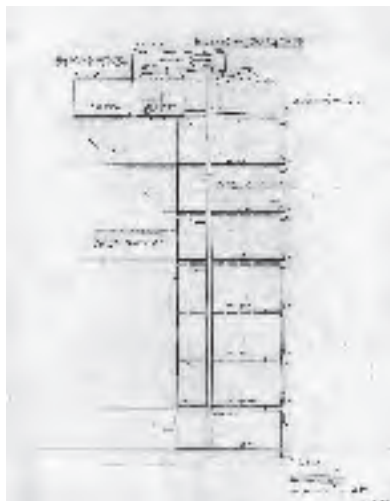


FIGURE 4. Alvar Aalto, Paimio Sanatorium, Paimio, Finland. The fundamental changes to the ceilings, rooftop and roof terrace are well seen in the drawing by Aalto's office 1977. © Alvar Aalto Museum, Drawing Archive 50-1502.

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Sicilian Sanatoriums of the 1930s.

Knowing them to Preserve them

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This paper reports the results of the research on sanatoriums built in Sicily which are representative of Italian healthcare architecture of the early 20th century.

The aim of the paper is to contribute to the knowledge of an, as yet, not deeply studied cultural heritage, even though it is already protected under Italian law, in order to identify morphological, typological and technological characteristics for its reuse and conservation. At the beginning of the 20th century, the efforts to fight tuberculosis led the Italian government to build a large number of sanatoriums. Six sanatorium structures were built in Sicily between 1930-37 in Caltanissetta, Catania, Palermo, Ragusa, Syracuse and Trapani.

These sanatoriums were modelled on a new type of architecture. Based on the experience on sanatoriums built in Europe in the early 20th century, two types of sanatorium were provided: the south and the northern type, "depending on whether or not the main facade corresponded to the exposure of the verandas, which must necessarily be oriented to the south". The architectural aspect of sanatoriums is different reflecting the sensitivity of the individual designer. Sanatoriums constituted a field experiment for designers and companies in the use of reinforced concrete elements inside load-bearing structures.

In the 1960s sanatoriums were gradually abandoned or transformed, in most cases, into health or welfare buildings, such as those of Palermo, Ragusa and Syracuse, whilst the sanatoriums of Trapani and Caltanissetta are in a complete state of abandonment.

The paper investigates the modifications to all the sanatoriums, focusing on those of Trapani and Caltanissetta which run the risk of destruction. For them, in addition to archival, bibliographic and iconographic analysis, analyses of historical, structural engineering and degradation were carried out.

These studies were preparatory for the proposal of conservation and rehabilitation strategies consistent with the maintenance of the buildings' identity.



FIGURE 1. CNAS, perspective of North type sanatorium. © AAVV, *Le Assicurazioni Sociali. Pubblicazione Bimestrale della Cassa Nazionale per le Assicurazioni Sociali*, May-June 1930.

1. SICILIAN SANATORIUMS OF THE 1930S

Many government buildings built in Italy between the two world wars as hospitals, schools, post offices in rural villages were abandoned because they were no longer used for their original functions. Specific strategies aimed at the preservation of the original character of the buildings shall be defined in the restoration project, especially when these buildings exhibit historical, architectural and environmental values, as in the case of the sanatoriums built in the 1930s.

The Sicilian sanatoriums are part of the project materialized by the fascist regime to realize a network of specialized hospitals to combat tuberculosis.

The institution for the construction of sanatoriums was the *Cassa Nazionale per le Assicurazioni Sociali (CNAS)*¹. About 60 sanatoriums for tuberculosis were built in Italy in ten years, being 15,336 in April 1930².

Six sanatoriums were built in Sicily between 1930 and 1937, almost one per province. The *Dubini* in Caltanissetta (136 beds), the *Rizza* in Syracuse (136 beds), the *La Russa* in Trapani (150 beds), the *Ingrassia* in Palermo (220 beds), the *Odierna* in Ragusa (112 beds), and the *Tomaselli* in Catania (136 beds); the seventh sanatorium planned in Messina (150 beds) was not realized.

Typological Aspects

Such an extended project to be realized so quickly required standardized types, construction techniques and even the furniture.

The CNAS was endowed with a special office for sanatorium construction (*Ufficio Costruzioni Sanatoriali*) directed by engineer Guidi, under the supervision of the commission composed of Professor Morelli (major health advisor of the Institute) and engineers Giovannozzi and Marcovigi, to the definition of such projects for the various types of sanatoriums (on the plain, in the high mountains and post-sanatorium).

The Sicilian sanatoriums, all on the plain, reproduce the two types, called “southern type” and “northern type”, depending on whether the main facade corresponded or not to the exposure of the verandas, which necessarily had to be oriented to the south or south-east. The prototype projects developed by the CNAS, which were then to be replicated throughout Italy, concerned two Sicilian sanatoriums, to be built in Caltanissetta and Syracuse, for which blueprints and perspectives were created³.

These designs certainly were at the base of the general projects for the realization of other Italian sanatoriums; in fact, there is a close analogy between the typological and morphological sanatorium in Syracuse and those in Gorizia and Ascoli Piceno or between those in Caltanissetta and Foggia.

The blueprint of the southern type of sanatoriums in Syracuse, Trapani and Catania, shows a simple T-shape, while that of the northern type of sanatoriums in Caltanissetta, Ragusa and Palermo, is a double T-shape with shortened wings in the main façade.

The sanatorium prototype was built around the basic module of the hospital room, connected to verandas, repeated along the longitudinal part of the sanatorium; services were placed in the transverse part.

The sanatoriums, having to meet the needs of climatotherapy to cure tuberculosis, had to possess a series of requirements, nowadays well-known as “bioclimatic”. These buildings had to provide protection from the wind to the verandas, had two protruding parts into the heads, thus citing the curved sanatoriums built at the end of 1800s in Europe⁴.

Morphological Aspects

While from the typological point of view, these buildings constituted a rationalistic innovation, from the formal one, they proposed an architectural language that reflects the eclectic and monumental style of the time.

The engineers of the *Ufficio Costruzioni Sanatoriali* made use of the neo-classical architecture lexicon to emphasize the monumentality of the buildings. Giovannozzi and Marcovigi⁵ were, in fact, closer to the neo-classicism inspired by the rich architecture of decorative elements borrowed from 16th-century architecture, than to the prevailing simplified neoclassicism inspired by Piacentini.

The projects of Caltanissetta and Syracuse, in fact, showed formal aspects taken from the stylistic repertoire that, in the rest of Europe, were being overcome with the success of the Modern Movement⁶.

The other sanatoriums reproduced the neoclassical style proposed by the CNAS with different formal solutions according to the sensitivity of local designers.

From the analysis of the documents preserved in the Central Historic Archives of the INPS, the design events of Sicilian sanatoriums lack information. Probably the contractors, based on the preliminary design of the Institute, entrusted executive design to trusted designers⁷.

All the main façades of sanatoriums showed a symmetrical composition arranged around the central part corresponding to the entrance, variously adorned with arches, pilasters or columns, culminating in a pediment, as in the case of Syracuse and Ragusa or simply with cornices as in the case of Caltanissetta and Palermo. Other formal elements such as string-course, arches, and corner pilaster strips completed the monumentality of the main façade.

An evident approach to the rationalist lexicon is clear in the facades endowed with verandas where formal simplification emerges, resulting, rather than by architectural choices, from functional necessity. The horizontal slabs of the therapy verandas and the thin structures of sun protection systems characterize these facades.

Especially in the southern type, *La Russa* sanatorium, the architectural language shows the evolution from eclectic and basically regionalist formal characteristics, still evident in the other Sicilian sanatoriums, to timid rationalism.

The main facade is free, characterized by the horizontality of the long balconies of the verandas, with no interruptions in the main entrance, as in all other

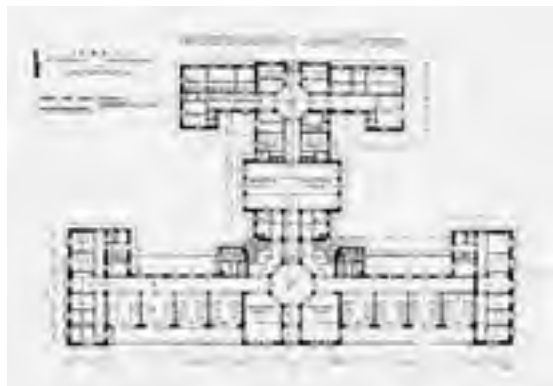


FIGURE 2. Blueprints of the sanatoriums of Caltanissetta and Syracuse.
© AAVV, *Le Assicurazioni Sociali. Pubblicazione Bimestrale della Cassa Nazionale per le Assicurazioni Sociali*, May-June 1930.



FIGURE 3. Main façade and details of the eastern façade of the *La Russa* sanatorium (1932-37) © AAVV, *Istituto Nazionale Previdenza Sociale nella Lotta contro la Tuberculosis*, INPS, Roma, 1947.

analysed sanatoriums. The linearity and formal simplicity is repeated in the windows and doors without cornices and in the solution of long balconies bordered by light metal railings. Clear references to the themes of the Modern Movement mostly consist of the rounded brackets of balconies and the circular portion on the east facade⁸.

Technological Aspects

From the technological point of view, by direct surveys of the *Dubini* and *La Russa* sanatoriums, we noticed mixed supporting structures based on load-bearing walls, and reinforced concrete elements performing a secondary structural role, whilst in the rest of Europe, in the same years, reinforced concrete was employed to its full potential by means of large spans, wide overhangs and large glass panels, featuring figurative aspect of the buildings.

The technological choices were probably made in the execution phase by contractors whose role was relegated to structural calculations.

The structures were, however, extremely regular and based on load-bearing local stone or brick masonry, showing pillars and beams placed in the continuation of the walls, just to close the structural grid.

These solutions were also carried out to allow distribution solutions not otherwise achievable, such as large span slabs, from 6 m to 8 m, for dining halls, kitchens, pantries and patient rooms.

Reinforced concrete is evident in all its potential in the dovetail beams detected in the *Dubini* sanatorium⁹, to increase the joint section with the masonry.

Also in the slabs of the stairs and therapy verandahs, with rectangular or trapezoidal section, as in the case of the *La Russa* sanatorium, protruding from the beams inserted in the thickness of the masonry or in the sloping beams, supporting the stair ramp behind the wide window.

A wide repertoire of slabs was found: beam-and-girder slabs, cast-in-place hollow brick slabs endowed with one-way or two-way steel reinforcement bars and slabs made of double-T steel beams with clay hollow tiles.

The sloping roofs of the *Dubini* sanatorium represent the most significant example of the mix of traditional and innovative construction techniques. In these roofs, reinforced concrete struts embedded in the beams, connecting the upper parts of the masonry walls, wooden beams, planking and cane ceilings, typical of the local building tradition, are present.

2. CURRENT STATE OF THE SICILIAN SANATORIUMS

This wide architectural and environmental heritage, built for climate therapy in healthy areas and within large green areas, after the discovery in the 1960s of drug therapy for tuberculosis, suffered various fates.

Some Sicilian sanatoriums have retained their health designation (such as the *Ingrassia*, the *Odierna* and the *Rizza* ones), others were gradually abandoned, such as the *La Russa* and the *Dubini* ones, or transferred to other public sectors, such as the *Tomaselli* one¹⁰.

The *Ingrassia*, the *Odierna* and the *Rizza* sanatoriums, currently used respectively as a General Hospital, the Office of the General Directorate of the Health Agency and as a multifunctional building for preventative healthcare and fragility, show substantial internal changes to adapt to the needs of the new functions.



FIGURE 4. The *Dubini* sanatorium in a state of abandonment and the damage to its façade. © Tiziana Basiricò, Antonio Cottone.

On the outside, the replacement of the original wooden window fixtures with anodized aluminium ones with plastic blinds, the inclusion of heat pumps on facades, the construction of newer buildings alongside and the enclosure of verandahs has modified the original image.

The original image is best preserved in the *La Russa* and the *Dubini*, sold in 1968 to local hospitals, and which operated, respectively, until 1980 and until 2008.

The *Dubini*, remained operating as a hospital for respiratory diseases until 1996. Then it was closed and only the basement was used from 1998 to 2008 for veterinary activities of the local health agency.

These sanatoriums, because of the long period of inactivity and lack of maintenance, present multiple types of degradation, as well as the damage caused by vandalism such as the breaking of glass windows and plumbing, the disruption of the interior fixtures and the destruction of the technical and health systems.

3. INTERVENTION STRATEGIES AND HYPOTHESIS OF NEW FUNCTIONS

As can be seen from the foregoing analysis, these buildings have been tampered with in their individuality or abandoned to decay and collapse, despite being protected by the current Italian legislation on cultural heritage, as they were built more than 70 years ago.

With respect to the abandoned sanatorium, it is necessary that the owners, persons in charge of the interventions and those institutions responsible for safeguarding cultural heritage become aware of the historic, architectural and environmental value of these sites so as to determine the appropriate intervention strategies.

The indications for the conservation and use of such buildings have to agree with the guidelines of the architectural restoration, with particular regard to the specific characteristics of modern architecture.

Archival analysis should follow careful investigation aimed at the recovery of materials and construction techniques in order to return to the original typological, morphological and technological configuration and the environmental and botanical recovery of the site where they arise.

The intervention strategy that best combines the instance of preservation requires minimal and essential changes and adjustments. In this regard, therefore, the choice of compatible uses with the original characteristics becomes of primary importance.

Surely the impact of future health usages that have to meet hygiene, technical and plant design regulations, is less marked.

The most suitable uses that maintain the public nature of the buildings might be university centres, or research or higher education centres, as it was done for the former sanatoriums of Trento, Cremona¹¹ and Sondalo. One of the biggest risks is the decommissioning and disposal of these assets to private companies

who, for speculative reasons could demolish them and take advantage of the building area or turn them into uses incompatible with the demands of conservation, such as for hotels or residences, as is happening to the former sanatorium of Siena.

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- 6 And it is coeval of the Paimo sanatorium in Finland, by Alvar and Aino Aalto.
- 7 For the sanatorium in Palermo, G.V. Ugo was entrusted (by "Amoroso and children" contractor) as executive project architect. His classicist training derived from the School of E. Basile and G. Capito, who was collaborated by the engineer Perricone Engel.
- 8 Only the corner solution of the Forlì sanatorium and mostly the anti-tuberculosis Dispensary of Alessandria built by Gardella, who hid the formal solutions to the regime until its completion, are examples of a modern architectural language.
- 9 Built by the engineers of the Roman structural company of Luigi Carnelli.
- 10 It was recently designated as headquarters of judicial offices.
- 11 Catholic University of the Sacred Heart and Technical Institute "Stanga".

From White Wall to Light Room: Transfiguration of Sanatoriums for Tuberculosis, between Cottinelli Telmo and Eduardo Souto de Moura

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Sanatoria for tuberculosis, for more than one hundred years (1859-1970), monitored the great architectural transformations, having thus been deemed models and archetypes of the relationship between architecture and medicine. However, the opening context of these buildings to its various protagonists, from architecture, programmes and buildings, were perfectly modelled and transfigured throughout its existence: from shelter, therapeutic and prophylactic reliance, up to its exile. Notwithstanding, there are buildings that are slowly gaining their place in scientific studies while, near paradoxically, are left abandoned: victims of their own metamorphosis, to become concrete stone graves.

The programmatic mutation, since the earlier hotel considerations to the hospital transfiguration crossed typologies that, in its entirety, were cumulatively in agreement and differentiated in its various fluctuations, working currently as a conductive plumb line to new formulations, perfectly suited to a building with suspended functions.

Among the different publications, just and only emerging prior to the state of degradation, there is an international arousal as a changeover of approach, and as well as an heritage preservation effort that in Portugal begins to gain particular space and time.

This communication aims to contextualize the line of succession theories and transformations inherent in the tuberculosis typology, considering its origins and indicating stages, characters and intricate twists and turns, from birth until the hypothetical death certificate. Furthermore, a tangible status decadence and frivolous look from various scholars in interdisciplinary fields are intended as a prismatic rotation of previous light which, therapeutic, effusively portrayed these architectures.

As a case-study in this paper, in addition to it being as a current hinge, the contemporary project of Portuguese architect and Pritzker awarded Eduardo Souto de Moura has been selected, that transmuted the former tuberculosis sanatorium of Serra da Estrela (1927-34), originally projected by the architect Cottinelli Telmo into a high-class hotel, as a paradigmatic scrutiny of its architectural reusability.

Poor consumptives! I understand the torment of their intimate tragedy, for days brooding, large eyes, in their outcasts' loneliness, apart from family, friends [...] and the fictitious pleasures that life could give them; longing for everything, lying during an infinite amount of time on a long healing chair, following with the eyes the free flight of the birds passing [...] over their heads, covered with shawls and fed with remedies¹.

Tuberculosis, as a disease and social manifestation, both stigmatic and deadly, indelibly marked Portuguese society and, in some way, operated as a theme to spotlight doctors, architects and policy makers. Consumption, as internationally renowned, was mostly in a person's mouth – quite literally – and even pierced their entrails. Its deed of disenchanting charm, the sepulchral lamp in the wakes



FIGURE 1. Cottinelli Telmo, *Sanatório das Penhas da Saúde*, Penhas da Saúde, Covilhã, Portugal. © Mário Novais, Biblioteca de Arte da F. C. Gulbenkian, Estúdio Mário Novais, Ref. CFT003 123257 001.

of Portugal in the 19th century, acted as a catharsis bed in the 20th century – when it slowly vanished during the last 25 years.

The demand to find national solutions for a prophylaxis of recognized international value, the scientific knowledge considerably developed and pioneering Portuguese doctors, along with their interest in legality, led Portugal to rediscover itself in order to fulfil those ambitions. Pulmonary tuberculosis was undoubtedly the disease that emancipated the *cradle* of the epidemic white plague and, between these two mentioned moments, were maritime sanatoriums for bone-ganglionic tuberculosis to gain their deserved space.

On the other hand, the appearance of these concepts, as special as specific, with their own characteristics, furthermore functional, morphologic and typological systems, act like an *Alice* mirror for an architectural mechanism. Predominant styles and schools were involved, as well as the quintessential hygienist spaces which, in addition to treatment, found architecture and environment as a palliative and hope for *dwelling* within four walls, a window and the loneliness of a forced rest in a systematic monotony².

Science, including medicine, with their developments (also often drawbacks, when nothing could be done to fight the disease), concerned new typologies, in an emphatic relation with architecture. It was, thus, architecture as a prophylaxis to be taken, whereas treatment was assumed as four walls and cure galleries, with rest, food and air. This Brehmer trio filled the gaps, trying to soften a rapid and catastrophic spread of the disease, which consumed part of the Portuguese popu-

lation. Sanatoria served as a refuge of hope, epidemic control and took advantage of the architecture – as, indeed, never before – to fight the white plague, which delayed being extinguished.

From the 1920s, and as a variable analysis factor in this article, the Sanatorium of *Ferrovários*, originally to be built in an altitude zone (confronting its significance for the treatment of pulmonary tuberculosis), assumed an example of transformation, metamorphosing itself with the vicissitudes of an extended time, almost as a particular object among its peers from several architectures' clinical responses. As the designation implies, it was primarily aimed at railway employees, and conducted by their own funds.

There are two conditions stipulated from the very beginning, which are important for understanding both rapid changes, and major programmatic consequences on their development, from the physician Carlos Lopes and engineer Avelar Ruas, who assumed their superior coordination.

First of all, Carlos Lopes choose to configure the architectural and social program around a *popular type* sanatorium, a condition which will be polarized in great distinction, and did not suit the richness of consumptives that would dwell.

On the other hand, the commission understood that national studies, encompassing the various sanatoria that, at the time, were built, would not be sufficient to tolerate the required modern conveniences. It was organized as a study expedition, in order to study the subject, in which the architect Cottinelli Telmo was already indicted. Lopes visited reference sanatoriums, in Switzerland, France and Germany, focusing on the most current international standards that at the time, availed for the parallel consolidation among the Portuguese ones.

The architect is immediately indicated, presumably for its recognition in the public arena, as well as effective collaboration with the same railway company, narrowed down years earlier. And it is with the same physician that the architect would work in the closest interest and collaboration, and also visit sanatoria, as is the documented case Fruenfria³, in Spain. The architect based on studies similar to the Carlos Ramos that, at the same time, was used in similar projects⁴.

Given the scope of this work, there should be attended a peculiar aspect of the specification of the architect: deambulation between hospital and hotel models, that will close the *Ouroborus snake*.

The words from Cottinelli are categorical to the understanding of such language from the architect, such as the position in relation to apparent dichotomy between hospital and hotel: “the building has – or plans to have – the most

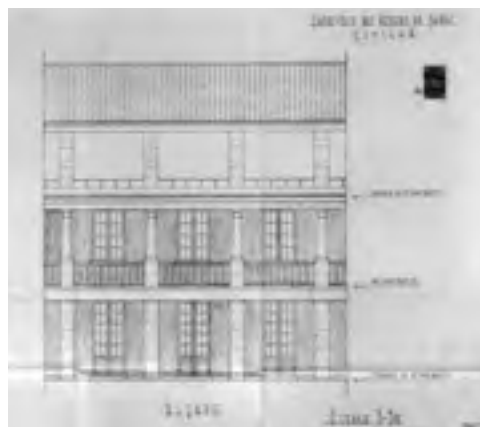


FIGURE 2. Cottinelli Telmo, *Sanatório das Penhas da Saúde*, Penhas da Saúde, Covilhã, Portugal, 12.1956. Frontal plan with detailed changes in cure galleries. © Ex-DGEMN, SIPA, Forte de Sacavém, Ref. DES.816029.

appropriate to his destination point (the region) and where will it be raised. It's a great hotel for mountain, after all, with its rustic granite bottling grossly [applied] (...)”⁵. Telmo features, in the respective project report document, that the hospital type uses innovative systems in Portugal, resulting from previous visits to similar international institutions, as from translational reading of facades in relation to plants, linings of an hospital nature, while coating the facade with granite. Most important is his thoughtfulness: the sanatorium is positioned – clearly – as a mountain hotel. The draft was superiorly approved on 1928, with reservations about his exacerbated grandiosity, and hesitations about its actual construction, to the detriment of investment in existing sanatoria.

However, it is explained by Cottinelli Telmo that the railway company leased the building to Lopo de Carvalho, who requested the introduction of small changes of his own, “to facilitate exploration in a wider sense than the one that had been created”⁶ and forfeited even by the company. It also confirms that the interior decorations and equipment (furniture and other aspects) are related to the physician, despite the architects’ choices.

This lead to a “more modern outfitted” sanatorium, for treatment of both osteo-ganglionic and pulmonary tuberculosis, “meticulously”⁷ organized by the clinical internal staff. This reference is significant and, at the same time dubious, because there is no major differences between the various types of TB and its corresponding classification systems (marine, plain or altitude), perfectly separated from the 1920's and beginning of the 1930's.

It is also notable that non-pulmonary TB treatment was running in parallel with the respiratory tuberculosis, which is expressed by the intensive use of the operating theatre. In this case, and as expressed in several reports, the approximation of the concepts of treatment for healing galleries in relation to operating rooms and specialized treatment is notorious, “according to studies conducted by technicians responsible”⁸.

The cure galleries were displayed as resting areas as terraces for applying heliotherapy. These separate considerations could be related to different approaches for both TBs, but remarkable as a functional dichotomy between them.

In a different understanding, its interior design and category is a clue to the direction, imprinted to the sanatorium, and consequence of differential fluctuations. Its character was expressed as “carefully and with taste”⁹ in its rooms, which included “apartments”¹⁰ with small living rooms furnished with private bathrooms and individual gallery, accessible by “long and wide”¹¹ airy corridors. Therefore, the resemblance is clear to a hotel regime, both in structure and in facilities, while the operating rooms were a symbol of “up-to-date”¹² treatment, in straight relation to tuberculosis.

Even within the announced “modern model”¹³ profile that the sanatorium, it is indeed attention-grabbing a sentence in a generalist illustrated publication¹⁴, from the end of the decade, referring that the sanatorium was “obeying what the more modern science prescribes, hygiene advises and architecture conceives”¹⁵.



FIGURE 3. Cottinelli Telmo, *Sanatório das Penhas da Saúde*, Penhas da Saúde, Covilhã, Portugal, 2001. © SIPA, Ref. FOTO.00562537.



FIGURE 4. Cottinelli Telmo, *Sanatório das Penhas da Saúde*, Penhas da Saúde, Covilhã, Portugal, 2015. After Souto Moura's intervention © <http://c7.quickcachr.fotos.sapo.pt>

Apart from adaptation of Brehmer's consideration, articulation of concepts (considering the one-pointedness of the construction), was a mirror of the manifestation of both science and medicine prescription, and also hygiene as a symbol of asepsis, quality of life and hygienists principles applied to these buildings. Consequently, architecture was a response to previous medical and typological concepts.

Architecture manifested both response and treatment, as possible solutions to tuberculosis.

Also in this decade, the sanatorium is targeted from major changes in relation to their cure galleries. It's transformation along the main rooms designed in 1946, and in 1954 increased to a capacity of 200 to 320 beds with services reformation and the "closing of healing balconies"¹⁶. Only in the 1950s is postulated the major construction, with coordination of the government dome.

It is also remarkable the aftermaths transfigurations: in addition to breaking distinction of sanatorium type, and closer to a hotel model, these interventions were directly related to an ascending disbelief in treatment methods. The standardization of intervention in relation to existing openings is preferred to the proposal of the opinion of General-Direction of National Buildings and Monuments¹⁷, which placed a "fence with large windows framed by exterior columns"¹⁸ for best exterior architectural solution, but the placement of openings of the same size was approved.

This attempt to perform a visual match into modernization, even on a small scale is considerable, due to the same judgment – as a rule – endeavours to "harmonize"¹⁹ it's architectural language. Other architects such as Manuel Montalvão, Castro Freitas, Carlos M. Ramos and Vasco Regaleira were involved in the same sanatorium.

After the sanatorium metamorphosis, the loop between types is indeed closed, but it is especially Lopo de Carvalho who was responsible for ostensible maintenance, and not the original design from Cottinelli. At the entrance of the century, is another architect who finally intervenes on their spatial distribution, making it return to its beginnings, in addition to ensuring a stabilization of its function: Eduardo Souto de Moura.

The transformation brought about a sharp programmatic update, as a return to a previous image. The architect recovers the initial configuration from Telmo's original, with volume reduction, which modified the last floor of the building. However, the adaptation – or rather, return to their initial bases – became peaceful and a little aggressive. Project principles were based on a return to the differentiating elements sanatorium, as curing galleries (torn again), while adapted new chromatic gradations.

The sanatorium carried forward from ruin the lodge, reviving from his ashes.

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Intangible Heritage and Re-design

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1. INTANGIBLE HERITAGE AS ASSET FOR RE-DESIGN

At the 12th *International docomomo Conference* John Allan argued in his keynote lecture “From Sentiment to Science – **docomomo** comes of Age” that one of the biggest challenges in the years to come will be the big amount of existing – often not listed – modern buildings awaiting intervention and upgrade, not only repair. The architect plays a key role in this assignment of adaptive reuse. Fortunately, nowadays there seems to be a growing awareness amongst architects and clients that integrating the tangible cultural heritage values of the existing fabric can lead to very successful reuse projects. Yet, little attention is still paid to the question of how the immaterial heritage of an existing building or site, manifested in memories and narratives, social practices, use, building skills or design concepts and ideologies, can play a role within the process of re-design. This in contrast to the growing significance attached to intangible cultural heritage by heritage professionals. The session “Intangible Heritage and Re-design” aims at investigating the potentials of various intangible heritage values for adaptive reuse. Exploring these potentials seems of particular interest for modern buildings where the public often has difficulties recognizing the heritage significance of the physical structures – think for instance of the extensive building stock of post-war housing, industrial buildings or the little-beloved inheritance of brutalist architecture.

2. TRANSLATION INTO NEW SPATIAL CONCEPTS

Recent redevelopment projects show that the translation of the immaterial aspects and narratives of a building into new spatial concepts can add a sense of identity and result in unique, site-specific designs. Rem Koolhaas’ re-design for the transformation of a former coal washing plant into the Ruhrmuseum at Zeche

Zollverein in Essen, Germany (2010) is a successful example of such an approach. Koolhaas took the original use of the modernistic industrial building from the late 1920s as the starting point for his re-design: the route of the coal through the building – from selection and treatment to distribution – became the new route of the visitors through the building. An escalator was added to the existing structure which takes visitors up to the top floor from where they descend back to the ground floor offering unexpected spatial experiences. Another less known example is the redevelopment of the printing press of the Dutch newspaper *Trouw* (Van den Broek en Bakema, 1969) in Amsterdam into a crowd pulling dance club. Interior designer Bas van Tol who had only a very limited budget at his disposal adapted the former interior with little means: he had a new pattern of ink printed onto the original wall panels referring to the original use of the building, thus creating a unique art work at the same time. These days it is common ground to acknowledge the former use and user of a building by preserving and integrating traces of usage into redevelopments, often cherished by the public. The challenge for designers is to go beyond that: both projects in Amsterdam and Essen prove that the history of use can inspire designers to come up with new design solutions that link the past to future use.

3. IDENTIFYING THE INTANGIBLE CULTURAL HERITAGE OF BUILDINGS

The history of use and users is, of course, just one possible heritage asset that can lead to a spatial interpretation of intangible heritage. The papers of this session examine a range of aspects of intangible cultural heritage that can contribute to the re-design of a project. Three papers each took a specific building type – all typical assignment during the era of architectural modernism – as starting point for their research on imbedded immaterial heritage values: cinema theatres, social housing estates and a factory complex. Joana Gouveia Alves' study on cinema architecture focuses first and foremost on the social practice of "going to the cinema" rather than the architecture itself. This approach reveals the significance of psychological aspects like seduction and atmosphere when it comes to early cinema architecture. Ilze Wolff's case study on the biography of a clothing factory in South Africa draws our attention to the impact that the political ideology of the apartheid regime had on the everyday life of factory workers. In both the cases of Wolff and Alves we can see a clear interdependence between intangible (psychological and ideological aspects) and tangible cultural heritage, on the spatial configuration of the original buildings themselves. The papers by Dorotea Ottaviani and the group of lecturers in design education of the Israel Institute of Technology explore how to possibly re-interpret theoretical concepts and ideas of architectural modernism like flexibility, prefabrication and mass production when building structures from that era are due for an

upgrade or transformation.

4. FUTURE CHALLENGES

The outcomes of the papers call for further discussion during the session and dialogue beyond. Should we turn our attention not only to the transformation of existing buildings but also to new developments which translate the narratives of the place (*genius loci*) into space, like Oren Ben Avraham and his colleagues from Technion postulate? And – as for instance Søren Vadstrup suggests with the case of the Danish detached single-family house – can we better involve the community and future users and increase commitment to a redevelopment project by explicitly integrating intangible heritage in the form of stories, memories, atmosphere and ideas? Furthermore, providing a successful implementation of intangible heritage values into the design process requires design tools and methods based on a broad knowledge of the past: which instruments and methods besides the traditional working methods of building survey and archiving can be applied for identification and assessment of the broad range of intangible aspects? What are appropriate design methods to integrate the intangible dimension of heritage? And, how to enhance the interdisciplinary collaboration between architects, historians, heritage professionals and the community on this issue?

Seduction and Fantasy in the Conversion of Cinema Theatres

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Taking into account the differences between functionalist architecture and rationalist architecture developed by Adolf Behne, cinema architecture can be defined as eminently functional. Cinema was the space for the projection of film and a house of fantasy for the working class. Both purposes were explored to the limit and, as a consequence, the buildings acquired a restricted temporal dimension.

In this way, there is a relation between the function and the vulnerability to the passage of time in cinema architecture. The function implied the seduction of patrons, according to the Charles Lee motto “the show starts on the sidewalk”, and the offer of an imaginary tour to a place far from quotidian reality. Thus, this paper focuses on the intangible aspects of cinema architecture in relation to their present building condition and present day reuses, in three main ideas.

The point of departure was the study of cinema theatres, featured in leading architectural periodicals, built in the Western Europe before WWII. Socially speaking, cinema theatres were of extreme importance for people's education, healing the wounds of war, or simply as a place of entertainment. Books have been published to preserve the memories of great cinemas, containing descriptions of the buildings and atmosphere, photographs, postcards of the opening nights, and projectors. These intangible values are the cause of restoration or reconstruction of cinemas such as the *Louxor* in Paris or *Metropole* in Brussels.

The second point idea is the creative composition and décor of the auditoriums in order to build a dream reality and how this became one of the causes of obsolescence according to the ever-evolving ideas of the future, beauty and desire.

We conclude by realizing that there were a number of ideas concerning psychological aspects, such as appealing façades and interior organization, which are appropriated today in the reuse of former cinemas for commercial and religious functions.

1. CINEMA AS AN EVOLVING SOCIAL PRACTICE

A screening may be considered in many ways a unique experience in spite of the technological reproducibility of film. In the past, most films were screened only for a limited period of time and then the damaged reel would be forever destroyed.

Today some cinephiles feel nostalgia for the time when spectators were focused on the screen in a solemn act. Yet, in descriptions from the past, the show appear to be quite noisy and informal:

The cinema is primarily a sort of public lounge. [...] It has affinities with both church and alcove. One can go alone, à deux, en famille, or in bands. One can take one's children there to keep them quiet; or one can take one's girl there to be quiet oneself. Punctuality and decorum are of little or no consequence. One can drop in and out at will. In England, though in practically no other country, one can smoke there. One can chew sweets, or peel oranges, or manicure one's nails¹.



FIGURE 1. Henri Zipcy, *Louxor*, Paris, 1921. Restoration works 2012. © Joana Gouveia Alves, 2012.

In this quote it is possible to identify common practices that no longer take place in cinema theatres, as for instance the non-stop projection, permitting people to drop in and out at any time. Reading out loud the intertitles, playing the cinema organ or live-music and presenting short plays during the intervals, were part of a show that is all but absent today.

The meaning of cinema in a geo-social context has also changed. Pierre de Montaut has described, in 1949, two kinds of cinema – the specialized cinemas (newsreel, first-run, etc.) and the neighbourhood or provincial cinemas². The neighbourhood cinemas had social purposes that combined leisure with popular education, connected to a community that could only go to the cinema on market days or holydays. The auditorium is almost empty during work days, but most of the customers go once a week to the cinema. Montaut estimated that the clientele corresponded to 20-25% of the local population.

Watching films or even making films are common social practices that have evolved in the last century along with the development of multimedia and the internet. The early devices became museum artefacts. For all these reasons, going to the cinema may fall under the UNESCO definition of intangible cultural heritage³.

A general nostalgia for cinemas that were closing down inspired research into the subject in the period between 1969 and 1989. The works of Dennis Sharp (1969)⁴, Davis Atwell (1980)⁵, Francis Lacloche (1981)⁶ and Richard Gray (1996)⁷, among others, aimed to explain the evolution of cinema according to style and programme. Other books focus on memories, containing descriptions of the buildings and atmosphere, photographs, postcards of the opening nights and projectors⁸.

These intangible values are the cause of restoration or reconstruction of cinemas such as the *Louxor* in Paris (Henri Zipcy, 1921). The association *Les Amis du*

Louxor, founded by individual citizens passionate about this specific cinema, has organised a number of successful actions against demolition of the *Louxor*. Even if the result was the construction of a replica, a “box inside the box”, what mattered to the “friends of *Louxor*” was to recover the idea of a place; integrity was not their concern. The decision of the architect Philippe Pumain and his partners – Fabre/Speller and Christian Laporte – was to destroy everything including the foundations which were in stone vaults. The association has even monitored the renovation work by organising visits and publishing reports where it is clear how proud they are of all the reconstitution works⁹. In this way, the new project “re-establishes” a small cinema with an Egyptian auditorium reconstructed à “l’identique”. The proportions of the screen and the seats have changed, the insulation of external walls obliged the narrowing of the auditorium and a redesign with a new proportion of the decorative elements. In defence of the architect’s position, the journal *Les Cahiers du Cinéma*, analyses the problem as follows: “The city of Paris bought the *Louxor* in 2003, for 1.3 million euros. There are two competing options for the interior of the auditorium: to restore the *Louxor*, i.e. conserve the walls and paintings, knowing that the cinema cannot re-open because it will not be soundproof; or to return the *Louxor*, which implies a formwork with 70cm thick walls for soundproofing, with the interior exactly reproduced”¹⁰. The word game between restore (*restaurer*) and return (*restituer*) is deliberate. Return is a concept that is not connected to the original materiality but to intangible values: symbolism, memories, proud.



FIGURE 2. Siegfried Fehr and Gerhard Jäckel, Gloria Palast, 1953. © Joana Gouveia Alves 2013.

2. CINEMA'S FUNCTION: "PLEASE PATRONS, PAY PROFITS"

Nevertheless, "sentimental memories may overlook a fundamental point: in the United States, popular entertainment is, first of all, a commercial culture, created and disseminated for private profit"¹¹. Cinemas closed their doors as profitability declined, given the lack of cinema-goers and speculative pressure of great economic groups willing to buy large properties and wide-span structures in the city centres.

Frequently, the development of TV sets, video and home cinema are pointed as the reasons for the decrease in cinema admissions. However, due to its functionalist character, architecture itself may be at the origin of cinema theatre decay. Taking into account the differences between functionalist architecture and rationalist architecture developed by Adolf Behne, it is possible to define cinema architecture as eminently functional.

The functionalist prefers to exaggerate the purpose to the point of making it unique and momentary (a house for each function), but the rationalist takes the purpose broadly and generally as readiness for many cases, simply because he gives thought to the enduring qualities of buildings¹².



FIGURE 3. A. Blomme, *Métropole*, Brussels, 1932. Detail of curved window panes where the foyers used to be. © Joana Gouveia Alves, 2013.



FIGURE 4. Gerrit Rietveld, *Vreeburg Bioscoop*, Utrecht, 1936. Rebuilt façade. © Joana Gouveia Alves, 2013.

Cinema architecture had to respond to technical as well as economical requirements. The former dealt with the provision of good visibility, distance and position of the projector in relation to the screen, screen dimensions, and acoustics, among others. The latter were linked to the ability of attracting customers by responding to their expectations and desires. Both purposes were based on quite transitory conditions.

The fantastic settings that were created in the auditoriums had the purpose of creating a space of illusion that would attract more customers. John Eberson, the inventor of the atmospheric cinema¹³ in the USA, promised in his slogan to "Prepare Practical Plans for Pretty Playhouses – Please Patrons – Pay Profits"¹⁴. The atmospheric décors representing Mediterranean, Asiatic, Egyptian or other architectural settings, fulfilled the curiosity for exotic places. According to Morand, a psychological study of the masses indicated that they were attracted by luxurious environments:

*The study of crowd psychology is well-developed in the United States [...] the magnates of cinematographic art address themselves above all else to the masses and they believe that the masses require anything that gives them the appearance of luxury and wealth"*¹⁵.

Even if there were many apologists for flexibility¹⁶, distribution chains just wanted to build cinemas that would cause a great impression in the audiences, within a tight budget and in a short period of time.

In Europe there were several architects criticizing cinema design inspired by references from the past such as Erich Mendelsohn¹⁷, Auguste Perret or Uno Ahren¹⁸. Cinemas started to be designed with innovative features in order to make people feel in a refined and futuristic environment emphasising the screen and technology. Therefore cinemas based on psychological assumptions of people's fantasies, a functionalist approach, soon became obsolete.

3. CINEMA ARCHITECTURE: SEDUCING CUSTOMERS NOW

The techniques that the early cinema architects used to attract customers were based on the psychological knowledge of the clients and were the origin of what we presently call consumer behaviour and marketing. These techniques have been appropriated in recent reuse interventions.

Pierre de Montaut and Adrienne Gorska developed what they called *architecture publicitaire* entailing the façade composition as a support for publicity to attract customers¹⁹. The conversion of cinemas into stores frequently takes advantage of the appealing façades. Illuminated signs to attract people in the city from far away, the vertical lettering attached perpendicularly to the façade to communicate with the passer-by, or the expressive canopies above the entrance, are ideal for mounting the trademark and logotype of the store.

Also, the idea of a *parcours* in cinemas is useful for shop design. Certain stores have an interest in presenting products in a sequence, so that the client has a view of all the available products rather than just what he is looking for. Charles Siclis, who designed the lighting for the main theatres and cinemas in the centre of Paris such as the Pigalle Theatre, saw the transition between the circulation and waiting areas as a sequence. As he stated in 1936, the atmosphere of a cinema should be contrary to the one of a theatre: "The cinema décors should be all set outside the auditorium"²⁰. Between the stairs and corridors there were opportunities for patrons to stop, which he called the psychological landing ("*palier psychologique*")²¹.

The conception of the entrance as a trap to hunt consumers was also adapted to shop design. Charles Lee stated that "Psychology enters into the placing of the ticket booth at the centre of the entrance near the street. It must never be necessary to pass through doors or by any other obstructions to purchase a ticket"²². His principle that "the show starts on the sidewalk" can be seen on the recessed entrances where the posters are hung, always opened and without barriers, so that the consumer would unconsciously step inside.

The *Métropole* was designed by André Blomme as a multi-purpose building linking a cinema with a hotel, bar and banqueting hall beneath the cinema with a seating capacity of 500. The avant-garde character of this building, was expressed through the façade. In order to open the perspective from the foyers towards the narrow shopping street, recessed curved glazed surfaces were set into the centre of the façade. A few hoardings announcing the main film were mounted against, or behind, this glazed facade. The rest of the facade was clad with travertine in a wide range of warm yellow tones. This building affirmed its modernity through innovative work with glass and façade composition, being clearly different from the rest of the shop. Today a fashion store uses this façade to seduce clients, replacing the cinema posters by hoardings advertising the new collection.

These are just a few examples to illustrate how the "arts of seduction" of the modern cinemas are being adapted today.

4. CONCLUSION

In conclusion, cinema theatres might be considered places where a sort of ritual takes place, loaded with common memories that stimulated research and conservation movements. The function of cinema was connected to culture, leisure and business. Architects designed fantasies for the working class creating specific places for this social practice, intensifying the sense of travelling. The psychological aspects, even if not sustained scientifically, at least clearly show the intention to make clients feel in a certain way – modern, progressive and futuristic – or to create an illusion that could be connected to sophistication and status – palatial environments. All these aspects contribute to the sense of place.

Unfortunately, most of the architectural interventions that have been mentioned in this text can be considered highly destructive in terms of integrity. In the case of *Louxor* a new concept is even released, the concept of restitution which is connected not to restoration but replacement with a replica in order to appeal to a sense of memory, pride or to return something that was thought to be forever lost. Taking into account the encouraging popular support given to Pumain architecture, it becomes more difficult to judge this option.

The massive conversion of cinemas into fashion stores can also be due to the potential of its architecture, not only as spaces without intermediary loadbearing supports but also the appeal of the facades and the interior organisation (*parcours*). As it is possible to see in the case of *Métropole*, the architectural intervention takes advantage of the appealing façade, but it does not fully explore in the interior the relationship that was originally intended to open the perspective towards the street. The interiors were erased. In this context it would be fruitful to study whether the insertion of existing elements from the past in new shop designs increases sales and attracts more costumers. Hypothetically, these elements could help to reconfigure particular atmospheres by dealing with intangible values.

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Unstitching Rex Trueform: A Short Biography of a Building from Clothing Factory to Call Centre

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The current adaptive reuse of modern industrial buildings in Cape Town presents a moment of reflection for histories of labour, the construction of identities and the entanglement of regimes of power and the production of capital. Rex Trueform, a clothing manufacturing company, occupies two large industrial sites in the inner city of Cape Town. The first factory was constructed in 1938, a building designed by Max Policansky who is considered a pioneer South African modernist architect. In 1948, a larger factory was built, a design by the newly formed practice Andrews and Niegeman. The buildings followed a localised international style aesthetic, the form following the industrial function of clothing manufacturing. The time that the new factory was opened, intersects with the rise to power of the Nationalist Party, responsible for the harsh apartheid laws and decades of racist brutality that followed. This paper will present an architectural reading of the sites embedded in a socio-political understanding of the conditions from which the buildings emerged. There will be a focus on the second factory completed in 1948 but also on the political connections that Rex Trueform formed and maintained during its expansion and occupation of the site. What I will try to draw out is the fact that state and private enterprise did not work within autonomous modes but are entangled in the production of the apartheid modern city. The question that I would like to pose here is: can we read the story of Rex Trueform as a parable? If so, in which ways does it show up the entanglements of the production of space and state-endorsed enterprise, with the construction of race, the expression of national identity and the forming of local subjectivities?

The contemporary adaptive reuse of the factory into a call centre, mutes its history as an active participant in the production of the modern African city, in favour of an over-aesthetized version of what is global. Within the adaption of the building, little has remained of its past life as a busy clothing factory. This paper raises questions about the role of heritage as a site of development versus heritage as a primary site to reflect on the human condition.



FIGURE 1. Andrews and Niegeman, Turok, Rex Trueform factory, Salt River Cape Town, South Africa, 1947-1963. © Architect & Builder, 1965 right, Supplement to the Buyer, 1947, left.

1. A SPACE TO PRODUCE, A SPACE TO ADMINISTER

We are told that in the mid 1940s, the lead proprietors of the Rex Trueform Clothing Manufacturing Company (Ltd), Bernard Shub and Philip Dibowitz, met each day at 6 a.m. where they initiated business with “a cup of tea, a smoke and a chat”¹. The two Jewish Lithuanian immigrants, were already successful middle-aged South African businessmen. They ran a large factory employing one thousand workers for almost fifteen years. It could be that these habitual encounters played out on the expansive first floor balcony of their large 1930’s international style, modernist factory. The dramatic setting of the balcony overlooked Main Road and the nascent victorian industrial suburb of Salt River. The theatre of Cape urban life being performed below would make it difficult for anyone to pass by the balcony without lingering for a moment of contemplation. It is on this balcony, also, that the two could watch the progress of the construction of their second, bigger and more impressive factory across the road. This new multi-level structure opened in 1948 and would eventually obscure their balcony view of the working class residential suburb and the northern hinterland of the Cape Flats beyond. The opening of the new factory is the point at which I begin this story.

The 1948 building was designed by Dutch architect, Henk Niegeman, of Andrews and Niegeman. This, their debut commission in Cape Town, came directly after Rex Trueform had made large profits with the supply of military wear during WWII. Niegeman designed a six-storey building that had two distinct masses, one solid and one with a translucent triangular facade system. A subtext to their brief was that the building should be a flagship for the ever-expanding company. The functions were separated in two parts: solid section for administration and a glazed section for production. The two parts of the T-shaped building each had its own distinct entrance, each with its own character. The factory staff entrance on the side street lead to the production halls. One entered down a flight of steps into a low entrance lobby. In the lobby there are two identical staircases right next to each other, with the treads wide enough for three to four persons to walk side-by-side. In 1946 plans, the staircase on the left is labelled “Men” and the one on the right is labelled “Women”. The design of the stairs is generously proportioned and crafted, a testament to Niegeman’s talent, but doubling the stairs in order to separate along gender lines is a curious spatial moment in the factory.

The entrance facing Main Road lead to the administration section of the building. In contrast, to the factory staff entrance, this was a tall, generous space. Entry is along a luxurious stainless steel covered walkway (demolished in 1962), then through glass doors and into a circular shaped room. This entrance to the factory lead to a set of offices. A narrow stair lead to a sound proof, air-conditioned boardroom above.

In 1947 the building accommodated one thousand workers which was “soon to be increased to two thousand”². Thus the second and third floors of the service wing are entirely dedicated to “Change Rooms for 350 Women” and “Change Rooms

for 150 Men". The kitchen on the fourth floor served a daily meal to all the workers at a nominal charge³ and on the fifth floor was the "Mess Room". The seating was placed against full height windows, with spectacular views of the surrounding neighbourhood. Tea cups were placed in a large tea-wagon, which would rotate for the quick distribution of coffee and tea. A screen separated women from men.

2. LABELLING SPACE, ASCRIBING RACE

The design of the 1948 factory was conceived strictly around a notion of separation. Production was separated from administration, men were separated from women and black workers were separated from white workers. The sequence of spaces, the arrangement of circulation and the labelling of spaces on the drawings, choreographed a very specific movement of people. It is a sequence of movement that reveals a desire to control and to separate by ascribing class, race, and gender onto all who inhabit the building. Manrose Street was the side from which black factory workers entered the building, an entrance hall that was of modest architectural significance, low in volume but large enough in area to accommodate the masses of workers that would enter and exit there. Factory workers were funnelled straight through the entrance hall towards the lobby with its double staircase. The double stair became the link between the service wing and the manufacturing halls but also an important philosophical moment of transition. Workers have already been ascribed their race and class at the entrance but here, they were also ascribed their gender. Once they moved through the cloak-rooms above to shed off their city clothes and put on their work overalls, they clock in and enter the manufacturing halls as "non-European men" or "non-European women", workers for the Rex Trueform production line. Workers entered Rex Trueform as complex individuals and, through the factory architecture, were ascribed simplified identities based on race, class and gender.

The entrance off Main Road, with its specially designed stainless steel walkway, is an ideological mirror to the inequality of the Manrose Street entrance. Here persons were not ascribed their gender and no form of separation occurred in the space. Instead the space was mute, air-conditioned and soundproof. The location of entrances, specific spatial planning within an ultra-modern building was able to materialize certain aspects of Cape apartheid modernity: the inscribing of class, race and gender onto bodies through design; the invisibilising of black workers and their labour through the concealment of entrances from prominent public view.

3. CONFIDENCE IN THE FUTURE

The company continued its rapid growth and in 1963 they extended onto Main Road, on land that previously housed the Department of Native Affairs. This was a government department dedicated to the control of South Africa's black African population. *Architect and Builder* of 1965 published the extension with



FIGURE 2. Andrews and Niegeman, Rex Trueform factory, Salt River Cape Town, South Africa, 1948. © Wolff Archive, Chantal van Staden, 2012.



FIGURE 3. Andrews and Niegeman, Turok, Rex Trueform factory, Salt River Cape Town, South Africa, 1953. © Supplement to the Buyer, 1953.



FIGURE 4. Views of the new interiors designed by DHK interiors, in Cool Cape Town office, accessed on April 10, 2016, <http://www.visi.co.za/cool-cape-town-office>.

a photograph captioned: “View from the Main Road. The new factory is on the right. Smaller building on the left is the old factory”⁴.

To make space for the new extension, the triangular glass facade was mostly demolished. Only the last two modules survived the expansion and, though not as elegant, the facade displays a practical and workable solution to wind exposure and sun control. In the new extension space is carved up into cellular offices, with functions such as “Accounts Department”, “Costing Department” and the largest room, the “Sales Administration Department”. On the service wing of the factory, more space is dedicated to “Non-European Women’s Toilets”. The 1963 extension changed the character of the site in such a way that it read as a “new” bigger building adjacent to a “smaller” older building.

The integration of the new extension into the older fabric was crude and showed a casual disregard for the aesthetic achievements of the 1948 facade design. It was “*kragdadig*”⁵ and expressed the confidence that businesses in general had in the future of the South African apartheid government. Prime Minister HF Verwoerd, South Africa’s architect of apartheid, said that he appreciated Rex Trueform’s “confidence in the future” and that it is “important [...] to follow the lead given by Rex Trueform”⁶. In the local press, Rex Trueform advertised their expansion as a bold outlook to the future of the country. The headline read: “We look ahead with confidence in the future of our Country”⁷.

Why this public dialogue between Rex Trueform and the apartheid government about national economic confidence? The events surrounding the Sharpeville Massacre of 21 March 1960, a watershed in South Africa’s public history⁸, could suggest that the apartheid government was in a vulnerable position and was working in a focused way to reverse its situation.

*On 21 March 1960, 69 people died when police opened fire on unarmed marchers protesting against the Pass laws at Sharpeville, Tvl. The march formed part of an anti-Pass campaign organized by the PAC. That same day, a similar march took place in Langa, Cape Town, resulting in three deaths from police shootings. A national state of emergency was declared on 24 March, lasting until 31 August.*⁹

The consequences of this tragic event are multiple and layered. Sharpeville made black suffering shockingly obvious and immediate to white South Africans¹⁰, and, through the media, exposed the brutality of the apartheid system internationally¹¹. It was a powerful signal that the apartheid state was vulnerable to civil unrest. Shortly after Sharpeville, white South Africans showed a lack of confidence in the stability of the social order of South Africa¹². Verwoerd calmed down the anxieties of white South Africa and economic investment, in consequent speeches¹³ and retaliated by enforcing new laws meant to repress black resistance even more forcefully¹⁴. Consequently the government banned important resistance movements and imprisoned political leaders including Nelson Mandela.

But Sharpeville also preceded a national economic boom, lasting until the mid-1970s¹⁵. Government strengthened their policies about import substitution, therefore stimulating local production and manufacturing in particular¹⁶. The financial crisis shortly after Sharpeville was completely reversed by 1962 with an impressive growth rate in 1963. The national mood of fear amongst the white population was also quickly reversed. But this “economic miracle” and “period of triumphalism”¹⁷ had an immediate impact on the nature of South African cities. In Cape Town, The Group Areas Act proclaimed the Peninsula’s Southern Suburbs as a “white area” in 1961¹⁸. Under this declaration the industrial zone in Salt River, Rex Trueform’s urban context, was earmarked for white settlement and white economic development. We see then in the 1960s era, particularly after Sharpeville, not only the confluence of white capital and apartheid policies¹⁹ but also its effects on the production of the city. Rex Trueform’s new extension was built on the site of where the offices for the Department of Native Affairs once stood²⁰, thus its foundations are not only literally embedded in the history of violent racialising and subjugation of black people in South Africa but its expansion in 1963 is as a direct consequence of these three forces at play.

4. A NEW OFFICE PARK

On February 11, 1990 Nelson Mandela was released from prison wearing a Rex Trueform suit²¹. His release marked freedom from apartheid but also a moment of dramatic change for Rex Trueform and their workers. From 1994 onwards, the new democratically elected government, the ANC, implemented economic programmes geared towards the reintroduction of South Africa into the global economy. State-endorsed export tariffs were discarded thus state support for labour intensive manufacturing industries ceased. Minimum wage and race and gender based remuneration was also strictly policed. Without the historic government support Rex Trueform began its rapid transition from large-scale manufacturing towards large-scale retail²². Nwati writes, that Rex Trueform’s restructuring, coupled with post-apartheid global trade agreements with countries such as China, caused the closure of many production plants and loss of jobs²³. The dawn of democracy brought about enfranchisement for all, but also a rapid decline in

the manufacturing side of the clothing industry generally. Workers and their jobs became redundant and Rex Trueform finally closed its main manufacturing plants in 2006²⁴.

Rex Trueform is today a call centre with a fresh and trendy interior design, filled with trademark funky furniture. From the sun-screened 1963 façade, one could look back towards the balcony of the 1938 factory where Shub and Dibowitz contemplated their future in 1947. The 2013 re-adapted building is teeming with new life. Its past entanglement with an unjust political system and an architecture complicit in the racialising and genderising of its citizens remains an unspoken catastrophe in the new version of the space. Perhaps, through imagining other occupations of the site - low income housing, economic opportunity for past employees, artistic interventions or educational and leisure facilities – it could leave the building open as a site of redress rather than as a continuation as a site of mere private capital enterprise.

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- 22 Rex Trueform opened its first retail shop, Queenspark, in the V&A Waterfront in 1991, with merchandise mainly imported goods. Paul Nwati, *op. cit.*, 2007.
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Changing Image. Different Ways to Face the Intangible Heritage of Modern Social Housing

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Which features and legacy of the original design are we bringing in the future? What are the changes in the image and in the social imagery of a place after the transformation? This paper reflects on the mutual relation between the image of a place and its imagery¹ (Warren 1934) and how the transformation of the first derives from the assessment of the latter and consequentially redefines it in a circular process.

The projects presented show how the physical transformation aims to modify the tacit information that a place brings along.

The case of social housing in the modern era is particularly interesting because it brings along a complex multitude of implications. On one hand there's the legacy of the experimental attitude towards the resolution of the problem of affordable housing through design and planning. While, on the other hand, modern era housing represented the ideological assets of a period in which architecture was seen as a tool to transform society and to respond to social problems. In this sense the transformation is an action that has to deal in specific terms with the cultural heritage and social imagery delivered and spread by the architecture. The three projects presented are displayed on a scale from those most interfered with regarding the original imagery of the place, by massive interventions to the physical image, to the less intrusive interventions: Südstadt, Leinefelde, Germany (Subtracting: paradigm shift); Park Hill, Sheffield, UK (Translating: bringing the icon in the present); Märkisches Viertel, Berlin, Germany (Branding: the identity's pride).

1. THEORETICAL FRAMEWORK

Every citizen has had long associations with some part of his city, and his image is soaked in memories and meanings. [...] Most often, our perception of the city is not sustained, but rather partial, fragmentary, mixed with other concerns².

In the contemporary literature about the renewal of social housing the problem of the image of the deprived housing estate is often overlooked^{3,4}. This paper depicts some possible ways in which the image of the place endeavours to tackle its social imagery, the "other concerns", through interventions on a variable scale of intensity and analysed under the actions highlighted by Lynch. The framework of analysis supports the idea of a mutual and circular relation between the intangible heritage, in the form of the imagery of the social housing, with the construction and transformation of its image.

In Europe, in the period between the 1950s and 1970s, social housing estates were the physical transposition of a cultural and political agenda, the expression of desires and requests by the welfare and paternal State and, partially, by society⁵. The image of the original project, in the following cases, was the transposition of the tacit and explicit target of a top-down approach toward residential supply. The resulting composition of the social imagery was a matter of stratification and conjunction of "images taken collectively"⁶.



FIGURE 1. Plattenbau, Leinefelde, Südstadt, Germany. Original building before the transformation in the *Stadtvilla - Haus 07*. © Jean-Luc Valentin, Frankfurt am Main, <http://www.sfa.de/projects/haus-07-en>.



FIGURE 2. Stefan Forster, Haus 07, Leinefelde, Germany. © Jean-Luc Valentin, Frankfurt am Main, <http://www.sfa.de/projects/haus-07-en>.

In light of those reflections we might ask: to what extent can the imagery of council housing be considered an element in the analysis of its transformation?

In order to understand how the transformation of the imagery is related to the shifting of its image, and how those are components of the intangible heritage of a place, it is useful to give a definition of image and of imagery.

Thompson states: “Social imaginary is the creative and symbolic dimension of the social world, the dimension through which human beings create their ways of living together and their ways of representing their collective life”⁷ which helps to depict the interrelation between the creation and narrative of a place.

On the other side, for image we can rely on the theory of Lynch that deploys several tools from different disciplines applied in the realm of architecture and urban studies⁸. Lynch structured his comprehension of what he called “environmental image”, combining several aspects and means. He affirms that it is in the overlap of the areas of influence of the different tools that the environmental image is structured and perceived. Those tools are grouped in two levels⁹: identity, structure and significance, in the first, and in the stronger level under which lie transparency, congruence and legibility.

Furthermore, Lynch states that the image of a place can be transformed and strengthened by three main actions: by the use of symbolic devices, retraining the perceiver and/or reshaping one's surroundings. It is under these three lenses that the following case studies are analysed.

The transformation of the imagery of a place can be analysed studying what elements are manipulated and how, by whom and with which purpose. The analysis of the transformation of parts of the city under this lens allows us to weave the relation between the tangible and intangible features that lie in the circular process of production and renewal of the space.

The projects are presented from the places whose intangible heritage has been most interfered with to the places that have been least interfered with;

namely a scale about the transformation of the imagery of a place itself through the manipulation of its image.

Subtracting: Paradigm Shift

Reshaping one's surroundings and concealing the legacy of the past was the declared target of the intervention in the Südstadt of Leinefelde. This small town of the former DDR had to face two different problems when it was decided to renew part of its public housing estate¹⁰. On one hand the shrinkage of the population after the dismantling of the textile industries and the consequential abandonment of the Plattenbauten, the prefabricated high-rises characteristic of the urban landscape of the DDR and, on the other hand, dealing with the major shift towards the heritage of the former political institution, a political agenda of forgetting the past¹¹. In 1994 the council approved an urban plan that considered the occupational capacities of the economy of the area and its new dimension. The urban scheme comprehended a plan for the renewal of the Plattenbauten

in the Südstadt and the task was delegated to Forster, an architect from Frankfurt am Main, who affirmed that his aim was to intervene in the univocal and monotone socialist lifestyle (*"einheitlichen sozialistischen Lebensweise"*)¹² giving, through a simple architectural actions, additions and subtractions, new features to these not recognisable places. The architect refers to the project as a transformation of the buildings from plattenbau to "villa-like" space, on several scales (from the urban morphology of the public spaces to the spatial configuration of the apartments up to the facades and finishing materials) addressing the two bids of the brief. The renewal affected the levels that help in the orientation and recognition of this space, by the alteration of the architectural image to an extent in which it is impossible to link the current image to the original place. The ideological and political assets embedded in its intangible heritage were something that needed to be removed in order to achieve the target of the stakeholders involved in the process. The aim was to conceal the past and its legacy and to reshape the current image making it hardly recognisable.



FIGURE 3. Ivor Smith and Jack Lynn, original façade, 1957-61; Hawkins/Brown, renewed façade, Park Hill, Sheffield, 2013, UK. Comparison between the pattern and texture of the façades of Park Hill, before/after intervention. © Richard Hanson, <http://www.hansonphoto.co.uk>; Daniel Hopkinson, <http://www.danielhopkinson.com>.



FIGURE 4. Heinrichs, Düttmann, Ungers, Gagès and others, Märkisches Viertel, Berlin, Germany. Detail of a façade with the possible application of the Dynamic Logo created by Realgestalt to celebrate the 50th anniversary of the neighbourhood. © Agency Realgestalt GmbH, <http://www.realgestalt.de/en/projects/dynamic-logos-for-a-diverse-neighborhood>.

Translating: Bringing the Icon in the Present

A subtler intervention of reshaping the built environment has been taking place in Sheffield. The aim of the Park Hill estate renovation project is to deal with the past and to translate it according to the contemporary needs of a city that is reorienting its economic model. The past of Park Hill speaks of a particular occasion in which the ideas of a kind of architecture encounter the programme of the municipality¹³ and a specific site. The building (1957-61) was one of the first occasions for experimenting with the ideas about a new composition of society through the creation of space and its environment¹⁴. Those certain conditions of synchrony among the different stakeholders' aims are what have been researched again in the renovation of the estate. Like other social housing estates, after a period of general fascination for their modernity, Park Hill faced a long period of decline, which corresponded to the economic recession of the city and its industries in the 1970s and 1980s.

With the shifting of the economic agenda of the council of Sheffield the renovation of Park Hill has become a symbolic element in the transition of the city into a tertiary and cultural hub¹⁵. The estate was transferred for free, after having obtained grade II listing, by the council to the developers, the Urban Splash group, "an interesting amalgam of two New Labour fixations – the 'creative industries' and property speculation, as opposed to Old Labour's heavy industries and social housing"¹⁶. The transformation was directed in a combined approach among the

architectural practices engaged by the developers, English National Heritage, the council of Sheffield, and Great Place Housing Group.

The project intervenes by translating and readapting several features of the original estate, acting on the deeper level on the typology of the flats up to the connection of the entrance to the landscape and to the city. The more evident feature of this intervention is yet the treatment of the façade. It is possible to read the dichotomy of trying to react to the brick wall in a pop version, leaving open some issues about the conservation of modern architecture¹⁷, and retraining the perception of the users by associating the translation of the old pattern scheme to a new imagery. To this is added the contradictory demands of conservation and commerce addressed by the intervention on Park Hill. There is the fact that, out of the 874 flats created, just 200 of them are to be managed by a housing association, while the remaining are for the private market.

Branding: the Identity's Pride

In the following case, symbolic devices that retrain the perceivers are the main tools deployed in renewal of the imagery of the estate. Märkisches Viertel in Berlin consists of a large housing estate of about 17,000 apartments with high-rises of up to 18 floors that were built from 1964 to 1974 by the GESOBAU (Association for Social Apartment Construction) in West Berlin. For a short period it was applauded as an innovative and a "symbol of hope for designers"¹⁸ with a particular focus on the dichotomy of architectural features compared to the "great urban design tradition" of the Brandenburg Gate¹⁹ and praised for the modernity of its urban layout. Then, after a rapid swing in public opinion based mainly on non-architectural issues²⁰, the settlement was considered as disadvantaged and neglected for almost thirty years. In the 2000s an energy-retrofitting program, which included the "re-skinning" of the buildings, interventions into the entryways and the public spaces, came along with a project of empowerment of the social infrastructures²¹. The conjunction of the interventions on a social and architectural level helped mitigate the stigma. The general perception about the neighbourhood changed and got better to the point that in 2014 GESOBAU decided to celebrate the 50th anniversary of the neighbourhood promoting its identity and the reconstructed social imagery through a project of "corporate branding". They commissioned Realgestalt GmbH²², an agency specializing in brand and corporate design, to create a logo and a website with a "soundwalk" program. The walk in the neighbourhood becomes an interactive experience with information and stories to be listened to through the geo-location based application. Along with the virtual devices info point/exhibition centre has been built, called "Viertel box", opposite the main commercial area of the district. The narrative of the space, both with the virtual device and the physical one became the instrument to retrain the perceiver and, at the same time, they are symbolic elements that recall the original and peculiar identity of the neighbourhood. Those original features of the place are the heritage that the stakeholders

wanted to bring into the renewal of the Märkisches Viertel and they decided to do it with an operation of branding joined to the most traditional element of renovation of a neighbourhood.

2. CONCLUSIONS

In these case studies it can be claimed how the shifting of the image aims to lead to a shift in the imagery. It is possible to focus on the relation between those two components of the perception and narrative of the social housing estate while analysing the targets of their transformations. The immaterial heritage of social housing can be analysed by the decision about what elements of their original image communicate after the projects of reuse, transformation or renewal. The shift in the imagery and its immaterial asset can derive from the transformation of its image with physical and virtual intervention. The different stakeholders involved in the renovations play with different architectural tools in order to enhance or redefine the place's image with the actions that Lynch categorized as the use of symbolic devices and retraining the perceiver (Märkisches Viertel, Park Hill), and/or reshaping one's surroundings (Park Hill, Leinefelde). This theoretical framework opens up the possibility to reflect on the urban renewal issues in a holistic manner where the transformation is intended as a circular and mutual process where image and imagery influence each other.

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NOTES

- 1 "Warren (1934) defines the terms image and imagery. According to him, an image is 'an element of experience which is centrally aroused and which possesses all the attributes of sensation; an experience which reproduces or copies in part and with some degree of sensory realism a previous perceptual experience in the absence of the original sensory stimulation'. In his terminology, the term imagery refers to 'images taken collectively, or the imaging operation in general', and mental imagery refers to 'the preponderance of a certain mode of sensory content (visual, auditory, etc.) in the imagery experiences of a given individual.' (1934; 132,164) The single term imagery is defined by English and English as "the imagining processes taken collectively; or the process of imagining, in general; the kind of mental images characteristically used in a particular kind of task, or by an individual." Horace B. English, Ava C. English, *A Comprehensive Dictionary of Psychological and Psychoanalytical Terms: A Guide to Usage*, New York, Longman, Green, and Company, 1958, 252.
- 2 Kevin Lynch, *Good City Form*, Cambridge, MIT Press, 1984, 2.
- 3 In the literature on the renewal of social housing "image" is often intended just as a matter of stigmatization and reputation: Frank Wassenberg, *Large Housing Estates: Ideas, Rise, Fall and Recovery*, Delft University Press, IOS Press, 2013.
- 4 Whitehead Christine, Scanlon Kathleen (ed.), *Social Housing in Europe*, London, LSE London, London School of Economics and Political Science, 2007.

- 5 Ulduz Maschaykh, *The Changing Image of Affordable Housing. Design, Gentrification and Community in Canada and Europe*, Farnham, University of Bonn, Ashgate Publishing Limited, 2015; Frank Wassenberg, *op. cit.*
- 6 See note 1.
- 7 John B. Thompson, *Studies in the Theory of Ideology*, Berkeley, University of California Press, 1984, 6.
- 8 The image of a place could be described as a complex combination of factors dealing with all the aspects of the daily-life of a person combined with the cultural and contextual background of the society: it is a matter of composition (Cullen 1961; Alexander 1964), perception (Lynch 1960; 1984), reputation (Permentier 2009), semiotic (Eco 1980, Barthes 1986), and memory (Pallasmaa 2009): Christopher Alexander, *Notes on the Synthesis of Form*, Harvard, Harvard University Press, 1964; Barthes Roland & Mark Gottdiener and Alexandros Ph. Lagopoulos (ed.), "Semiology and the Urban" in *The City and the Sign: An Introduction to Urban Semiotics*, New York, Columbia University Press, 1986; Gordon Cullen, *The Concise Townscape*, London, Architectural Press, 1961; Umberto Eco & Geoffrey Broadbent, Richard Bunt and Charles Jencks (ed.), "Function and sign: the semiotics of architecture" in *Signs, Symbols, and Architecture*, New York, Wiley, 1980.
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- 9 "Identity and structure are the 'formal' components of sense. Congruence, transparency, and legibility are specific components, which connect environment to other aspects of our lives. All of these can be analysed in some rather direct and objective way. Symbolic significance, on the other hand, the deepest level of legibility, can be intuited but is at root elusive." Kevin Lynch, *op. cit.*, 143.
- 10 Gaetano Licata, "Da Plattenbau a Ville Urbane/From Plattenbau to Urban Villas", *Lotus 132*, Editoriale Lotus Srl, Milano, 2007, 66-70.
- 11 "Experiences III – Urban Redevelopment in Leinefelde", accessed on February 1, 2016, <http://www.leinefelde-wor-bis-tourismus.de/leinefelde.pdf>.
- 12 "House 7–Leinefelde", accessed on February 1, 2016, <http://www.sfa.de/regeneration-east/haus-07-en>.
- 13 Owen Hatherley, *A Guide to the New Ruins of Great Britain*, London, Verso Books, 2010, 87.
- 14 Banham states that the attitude of the design of Park Hill merged both ethic and aesthetic. This attitude was then labelled by him *new brutalism* later specified by Hatherley as a political aesthetic (2010, 87). Reyner Banham, *The New Brutalism – Ethic or Aesthetic?* London, Architectural Press, 1964; Owen Hatherley, *op. cit.*
- 15 "The notion that an economy can run itself through the 'creative industries', financial services and tourism has taken an extremely heavy knock. It's particularly symbolic that these 'industries' sit next to the rail station of a once-proud heavy industrial metropolis that has never quite worked out what to do with itself since the steel industry's 'restructuring' in the 1980s. (Unlike South Yorkshire's coal mining, steel never ceased production and through the 2000s the city made as much from it as it ever did – only with a tiny fraction of the workforce.) What Sheffield has had since the late 1970s is perhaps the most consistently brilliant popular music of any city outside of London." Owen Hatherley, *op. cit.*, 110.
- 16 *Id.*, 97.
- 17 "From a building conservation point of view too, much has changed, and we may yet regret the lost authenticity, but Park Hill is better preserved in an altered state than not at all, and for the sake of its inhabitants' memories as well as for its architecture. Another wanton reduction to a tabula rasa has been avoided, kinder to the planet in terms of embodied energy and lower running costs. A more thoughtful and interesting architecture has arisen than standard new-build, and it is happily less constrained by the existing than inspired by the challenges of reinterpretation. Every place has its qualities: there are always layers, memories, a potential palimpsest, but there is also always need for change, which makes pure conservation a rarely realisable ideal. Reinterpretation is the middle way, and it need not imply compromise. The debates surrounding what to do with Park Hill revealed a heartening will to understand and to work with the given, whether or not the right predictions have been made about what it will become." Peter Blundell Jones, *A Second Chance for Sheffield's Streets in the Sky*, *The Architectural Review*, September, 2011, accessed on March 26, 2016, <http://www.Architectural-Review.Com/Archive/Reviews/A-Second-Chance-For-Sheffields-Streets-In-The-Sky/8620160.Fullarticle>.
- 18 "The Märkisches Viertel was a typical modernist compound based on the concept of the self-sufficient neighbourhood unit propagated by pre-war theorists such as Clarence Perry, Moisei Ginzburg or Le Corbusier. Imbued by a belief in progress and modernization, it was based on strict top-down planning, which aimed to meet 'scientifically' calculated needs of a defined population. [...] In this respect the Märkisches Viertel belonged to a paternalistic welfare state that provided for the needs of its citizens. [...] Ironically, they [the architects] had consciously attempted to avoid some of the key features they were later blamed for." Florian Urban, "The Märkisches Viertel in West Berlin" in Mark Swenarton, Tom Avermaete and Dirk van den Heuvel, *Architecture and the Welfare State*, Abingdon, Taylor and Francis, 2015, 187.
- 19 Anna Teut, "Huldigung an die städtebauliche Tradition", *Die Welt*, November 8, 1966, 13.
- 20 "The negative image of the Märkisches Viertel was surprisingly similar in conservative and lefties papers. The media reaction can be summarized as follows: there was comparably little attention to the architectural features. There was considerable attention to the attitudes that underlay the architectural practice, such as top-down decision making and expert planning. There was much criticism of urban features, such as peripheral location and unfinished facilities. Most importantly, there was a socio-political dynamic unrelated to architecture but projected upon it." Florian Urban, *op. cit.*, 188.
- 21 Gesobau, "Modernisation of the Märkisches Viertel in Berlin Integrated Development Concept for a 1960s era Large Residential Development", accessed on March 26, 2016, https://www.gesobau.de/uploads/media/GESOBau_Modernisierung_des_Märkischen_Viertels_2009_web.pdf.
- 22 Realgestalt, "Dynamic logos for a diverse neighbourhood", accessed on March 26, 2016, <http://www.realgestalt.de/en/projects/dynamic-logos-for-a-diverse-neighborhood/> and "Website mein-märkisches-viertel.de", <http://www.realgestalt.de/en/projects/website-mein-maerkisches-viertel-de/>.

Beyond Buildings Themselves: Rethinking Contemporary Architecture through the Preservation of Modern Architectural Ideas

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Intangible heritage, when discussed in an architectural context, is usually interpreted as being attached to a specific site or built environment. By sensibly following its historic tale, the technology and skills used for its construction, everyday life and memories connected to it, we try to illuminate its significant values and use them in the preservation, reuse or architectural additions. Even though this process is often led by architects, they tend to neglect one of their most powerful tools – architectural ideas.

Modern architecture is often criticized for turning its back on local historic heritage, putting aside building traditions and ignoring the certain needs of local communities. Simultaneously, it is commonly appreciated for its radical theoretical ideas and aspirations to cure social wrongs. Dealing with modern architecture, while attending to contemporary needs, can we put aside, even just for a while, the physical building, and try to preserve its architectural ideas, not only its spaces or materiality? How can we benefit from such an approach?

These questions will be discussed by three architectural proposals, developed by students in an experimental final project studio at the Faculty of Architecture and Town Planning, Technion – Israel Institute of Technology. The discussion in the studio was dedicated to rethinking Israeli modern architecture through the processes of preservation and urban design.

The first project deals with the idea of flexible design through time, following prefabricated building methods developed by a group of architects in the early 1950s and implemented in a failing peripheral rural settlement; the second project tries to imagine a revitalized community in the agricultural settlement of Sarona, by creating a new reading for its formal centric master plan, drawn about seventy years ago; and the third proposal returns to the historic ideas of Megastructures, using a contemporary interpretation of these ideas to resolve the urban interruption caused by a brutalist megastructural building from the 1960s in the city of Haifa, Israel.

1. INTRODUCTION

The intangible is what is permanent, while the tangible is non-permanent. That is probably the simplest way of describing how we treat architecture. Architecture is the manifestation of our needs and our beliefs¹.

Intangible heritage, when discussed in an architectural context, is usually interpreted as being attached to a specific site or built environment. By sensibly following its historic story, the technology and skills used for its construction, everyday life and memories connected to it, we try to illuminate its significant values and use in the course of its preservation, reuse or in the design of architectural additions. Even though this process is often led by architects, they tend to neglect one of their most powerful tools – architectural ideas.

This neglect is particularly jarring when discussing modern architecture. A movement that abandoned the stylistic and formal discussions of previous

architectural schools in favour of radical theoretical ideas and aspirations to cure social wrongs through physical means.

Before examining this further, we wish to discuss what Theodore Prudon has defined as “the seemingly antagonistic relationship between historic preservation and modern architecture”². This antagonism works both ways: on one hand, modern architecture’s opposition to architectural traditions and search for the “constant new”. And on the other hand, historic preservation’s evolution as a counter reaction to modern architecture’s “crimes” such as rational planning and the omission of ornamentation. This was especially apparent in the United States where the first landmarks law enacted in New York city was part of the public campaign led by Jane Jacobs against what she saw as the bleak and banal modern urban environments brutally replacing the rich historic ones.

Perhaps the crux of this confrontation lies in the contrasting ideals of temporality and the constant need of renewing with the possibility of controlling and possibly slowing down change. A possible mitigation may be that preserving modern architecture should trigger different preservation approaches along known practices.

In the architectural studio³ discussed in this paper, we try to explore such an approach, temporarily putting aside the physical building, its technological solutions and spaces, and focusing instead on the preservation of the architectural ideas, often with the social implications that elaborated them, while questioning how they can become relevant again in the contemporary setting.

2. EXAMPLES

The methodology offered in the studio will be described by three architectural proposals, developed by students through the graduation year of their architectural studies. These final thesis projects approached three different urgent current issues, that are all prominent in environments moulded primarily by modern architecture and planning. Though modernism is often blamed for the problems these studies respond to, they unexpectedly identify with some of the fundamental modern architectural ideas which established these three scenarios.

Shrinking Settlements

Yardena and Beit Yosef are peripheral rural settlements next to the Jordanian border, established in the early 1950s as part of the first national master plan for Israel, made by the architect Arie Sharon and others⁴. Sharon’s plan expressed the Israeli population distribution policy and the perception that agriculture is a decisive factor in the young state’s development. These settlements were inhabited by new Jewish immigrants, providing them land to cultivate and concrete prefabricated houses to dwell in. As long as they served part of the national and economic frontier, Yardena and Beit Yosef grew and the local community bloomed nearly according to Sharon’s vision.



FIGURE 1. A new flexible dwelling environment next to Yardenia and Beit Yosef main road. © Naama Boxer.



FIGURE 2. Richard Kauffman's Sarna plan, Israel, a map of the settlement structure and agriculture fields. © Naama Sharvit.

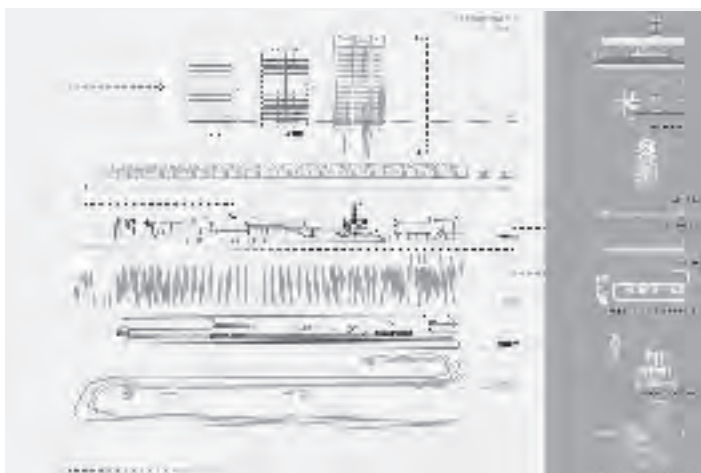


FIGURE 3. Building analysis of "Beit Egged", Haifa. © Carmel Bernstein.

This trend was turned over about two decades later with agriculture becoming less profitable and with improving security conditions and shrivelling national investment, thus causing continuous abandonment. Public facilities went out of use, kindergartens and schools were emptied and big family houses were left for a few to maintain.

Moshe Zarhi, the architect who designed these prefabricated houses, counted the advantages of prefabricated building methods in an article published in 1964⁵. Zarhi claimed that despite all the achieved goals of prefabrication, such as low cost, high standard housing that was rapidly built, its outcome was merely a "clay automaton", which architects should use for the better according to constant new analysis of human, social and environmental needs.

This approach, that the building method was meant to serve shifting trends, met the interpretation of the prefabricated concrete elements of the houses as elements of a flexible deconstructable structure. Maybe it indicates that the current plan is not as rigid as it seems. This comprehension was embraced by N. Boxer, who assimilated the idea of open edge architecture into her proposal for the rehabilitation of the settlements today, by establishing geometric foundations to the shrinking process. Boxer suggests disassembling abandoned structures back into their basic elements and to reuse them for the decreased needs of the now smaller population. Her proposal is to concentrate efforts next to the settlements' main road, to allow building between the separated existing houses, and to generate a flexible secured environment for the local community. Another implementation of this idea is to develop this dwelling field as an open structure, a container for different interpretations of space, inviting the tenants to construct, disassemble and reconstruct their homes continuously according to their changing needs.

A Living Organism

Richard Kauffman was an architect and a town planner who led the implication of modernist planning conceptions in Eretz Israel from the 1920s. Kauffman viewed town planning as a rational centralizing activity aimed at creating organic settlements that will have the capacity to develop for many years⁶. Moreover this perception was commonly accepted regarding cities, Kauffman claimed it should be applied to agriculture settlements as well, and saw the model proposed by the Garden-city movement as ideal for that matter. In an article, dealing with planning in Eretz Israel, Kauffman describes his suggested plan for agriculture settlements as a combination of two typologies – the European dispersed village and the dense centralized settlement. His suggested scheme meant establishing strong relations between the agriculturists and their fields, as in the European dispersed village, but still strengthened the possibility for a prosperous community life, like in the dense centralized settlement.

The agricultural settlement of Sarona, planned by Kauffman, is a good example for this type of scheme. The master plan is constructed of a peripheral road



FIGURE 4. A section through “Beit Egged” that realizes the idea of extensibility by reusing original building elements (on the top) and a view form the ramp that serves as a connective park (on the bottom). © Carmel Bernstein.

around a green centre that includes the public facilities, and an exterior ring of dwelling houses and long shaped agricultural lots. The plan was adjusted to the specific landscape and terrain conditions and tried to ensure possibility of its future development by continuing side roads.

During recent decades Sarona has changed. The wide open public centre no longer functions, the community is diversely composed of agriculturists and others as agriculture lost its exclusive economic role, yet the scene it created has been recognized as a unique cultural landscape. It may be still defined as an agriculture settlement, but also as a suburb. Recent expansion plans for the settlement, encouraged by development pressure, are threatening Kauffman’s vision of a “living organism” by breaking the hierarchical connections between the centre, the agricultural lots, and finally, the natural surroundings.

N. Sharvit, who developed her proposal referring to this case-study, took the challenge of suggesting an alternative that contains the need for new residences, still preserving the aforementioned ideas. Sharvit proposes a mixed-use area of dwelling and public spaces in the abandoned heart of Sarona, increasing the den-

sity of the dwelling fabric and preserving the contrast between it and the agricultural fields by forbidding building there.

Sharvit doesn't sanctify Kauffman's scheme itself, but tries to reinterpret Kauffman's combination of the two rural settlement typologies, mentioned before, by intensifying Saron's centre and preventing sprawling on account of the agricultural landscapes.

Megastructure

Beit Egged, the central bus station of Haifa, designed and built from 1962 to 1974, was the largest in Israel at the time and the first to be attached to a national railway station. The mostly horizontal exposed concrete structure, almost three soccer fields in length, was composed of three upper levels, including bus platforms, shops, banks, restaurants, ticket office, an employees' dining room and function halls; two underground parking levels; and a twelve floor high tower which was occupied by the bus company offices and the Israel Electric Corporation offices. While fulfilling the purpose of improving connectivity through transport, Haifa's central station cut off neighbourhoods around it, disconnected them from each other and from the sea shore. After thirty years of serving as the main entrance gate to the city, changes in transport arrangements have brought its closure. For more than a decade now this brutalist megastructural building is standing shut and obsolete.

Haifa's central bus station was designed to match the declared principles of the megastructure as defined by Banham⁷, namely modularity, extensibility, longevity of basic structure and variability of subsidiary accommodation. The building's analysis presents this in retrospect. Nevertheless, the minute it lost its original function the building ceased to contribute in any way to its surroundings.

The question raised by C. Bernstein's project is how can we reinterpret the principles of the megastructure and use them to heal the urban rift it created. The proposal uses a systematic approach, suitable for the original methodology of the megastructure, by offering a set of architectural tools within different scales. On the territorial scale she suggests dealing with the building as part of its surroundings, not excluded as was before, and to plan it referring to regional planned development. By that she grants a new relevant meaning to the idea of extensibility. On the urban scale the plan includes new connections between the building and the neighbourhoods around it, physical as well as programmatic ones – the bus ramps turn into a linear public park that inter-crosses the structure and provides accessibility to a new community centre serving the residents from surrounding neighbourhoods. On the architectural scale, Bernstein establishes a mix-use program that provides dwellings in the tower's upper levels, but also reorders playfully the original repetitive tectonic elements of the building, following the ideas of modularity and extensibility, breaking the boundaries between interior and exterior spaces, between the building and its environment.

Reflective Ideas

Each of these three projects discusses the relevancy of modern architecture ideas in different scale and method, but still they all identify with the common potential quality of the three settings they are dealing with – their adaptive planning and design. The prominent modern architectural idea of flexibility that rises through this discussion reinforces the suggested attitude of putting aside the tangible, just for a while, when highlighting the intangible.

3. CONCLUSION

Intangible cultural heritage can only be heritage when it is recognized as such by the communities, groups or individuals that create, maintain and transmit it – without their recognition, nobody else can decide for them that a given expression or practice is their heritage⁸.

Rereading architectural ideas, as demonstrated in the text above, as intangible architectural heritage worth preserving, opens up an opportunity for professional discussion between architects themselves. The above definition of the crucial role of community regarding intangible cultural heritage, in this case the community of architects, necessitates our continuous deliberation and agency. That seems to be one of the main reasons for our focus on preserving architectural ideas in the studio, which is the beating heart of architects' professional education.

NOTES

- 1 Johannes Widodo, "Modernity, Temporality, and Materiality, a Discussion about the Conservation of Modern Architecture, Conservation Perspectives", *Conservation Perspective*, the GCI Newsletter, Vol 28.1, Spring 2013.
- 2 Theodore Prudon, *Preservation of Modern Architecture*, New York, John Wiley and Sons, 2008.
- 3 This final project studio, focusing on preservation and urban design methods, was directed at the Faculty of Architecture and Town Planning, Technion – Israel Institute of Technology, from October 2014 to July 2015. The advisors were DR Arch. Jeremie Hoffmann, Arch. Oren Ben Avraham and Arch. Iris Kashman.
- 4 Smadar Sharon, "Planners, the State, and the Shaping of National Space in the 1950s", *Theory and Critics*, 46, 10-22.
- 5 Moshe Zarhi, "The Architects and the Prefabricated Building", *Engineering and Architecture*, May 1964.
- 6 Richard Kauffmann, "Planning of Jewish Settlements in Palestine: A Brief Survey of Facts and Conditions", *The Town Planning Review*, Liverpool University Press, vol. 12, n. 2, November 1926.
- 7 Reyner Banham, *Megastructure - Urban Futures of the Recent Past*, London, Thames and Hudson, 1976.
- 8 UNESCO, *Kit on the Convention of Intangible Cultural Heritage*, accessed on February 11, 2016, <http://www.unesco.org/culture/ich/en/kit>.

In Search of Identity – A New Method to Analyse and Assess Intangible Heritage

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At the Royal Academy in Copenhagen, Department of Restoration and Transformation, we have developed a new, and fast, yet very systematic method to analyse and assess existing buildings before restoration and transformation. The process includes a historical, a technical and an architectural analysis. After which follows a short assessment of the fundamental values, concluded by some, also short, recommendations for the project.

As a part of the historical analysis we are looking at the cultural history, and as a part of this, the intangible heritage of the building. The cultural history includes the visible traces in the building from the use and from people, living in the building, but also the patina, wear and tear. The intangible heritage includes the invisible “traces”, which means the philosophy and ideology of the architecture but also the history and the atmosphere of the environment and surroundings.

The Danish detached single-family house from the 1960s and 1970s is one of the most undervalued and criticized building types in the country – especially by architects. These houses are in a poor technical condition and the architecture is considered boring because the design is standardized and without any individual character. But the owners love them. However, in recent years the owners are also starting to alter and re-design these houses.

Most people are not aware, that these houses have some very interesting intangible aspects. These include the architectural and cultural roots from England, Germany, Japan and the USA. Moreover, it includes many new ideas and solutions regarding functional lay-out and interior design.

Our research shows, that if the owners are more aware of the intangible heritage of these houses, they will obtain a more qualified refurbishment and transformation in terms of remarkability, identity and conservation standards. The house owners will look at the houses in a new light, so where the house before seemed totally anonymous, they will discover its personality and character - typical of the time.

1. THE ANALYSIS AND ASSESSMENT METHOD

In Denmark a lot of refurbishment projects have taken place in the last few years in ordinary and privately owned buildings, for example the detached single-family houses from the 1960s and 1970s. Here, there is not time, money or need for a very deep and comprehensive building archeological survey before the actual work.

For this reason, we have developed a quite quick, but also very systematic method to analyse and assess these buildings and their surroundings, before any interventions. The purpose of the method is to obtain a site-specific and locally adapted restoration and transformation of the buildings. The method can also be used to improve the architectural whole in architecturally “devastated” houses, urban areas or urban spaces¹.

The analysis and assessment method consists of 5 elements:

1. General description of the building and the surroundings
2. Analysis of the historical, the technical and the architectural values

3. Assessment – a summary of the fundamental values
4. Recommendations for future actions
5. Restoration or transformation principles

All 5 points are reported in writing, but as short and precise as possible, because the building owners very often do not want to spend a lot of money on redundant writing and reading.

The method comprises 5 new elements compared to most other methods²:

- a. The order of examination is important. One must consequently start with the historical analysis, then the technical and at last the architectural analysis. Never in the opposite or other order.
- b. The historical analysis has a special focus on the visual traces of the cultural history
- c. And furthermore, the invisible, intangible values and properties.
- d. The method provides a brief assessment – a summary of the fundamental values, taken from the analysis.
- e. The method provides a set of recommendations for future action, consisting of five points

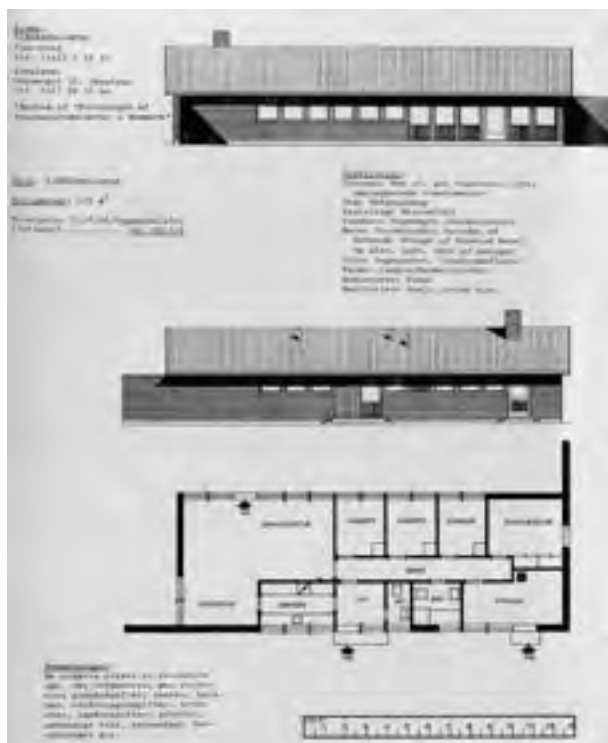


FIGURE 1. Frank Lloyd-Wright, Jacob's House, Wisconsin, USA. Usonian House 1935.
© Søren Vadstrup.

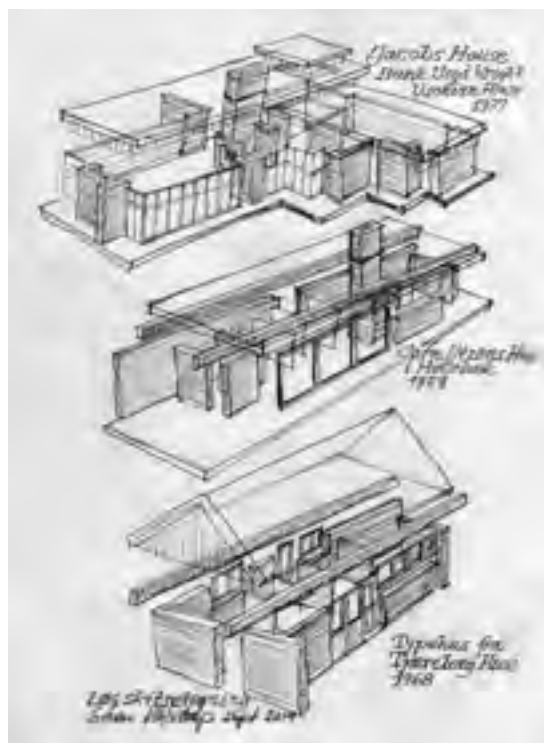


FIGURE 2. An unfolded comparison of the similarities between Frank Lloyd-Wright's Jacob's House (1935) in Wisconsin USA, Jørn Utzon's own House in Hellebæk, Denmark (1959) and the Danish detached single-family house from Tjæreborg Houses, (1968). © Søren Vadstrup.

Re. a. and b.

It is our experience from building examinations made by engineers, that if you start the analysis and examination with the technical aspects, and therefore focusing on, the technical problems in the buildings, you will often lose some of the most valuable historical traces – and especially traces from the cultural history. These are often fragile, deteriorated or odd. But if you systematically start the examination by focusing on the traces of the cultural history, you will be aware of these as essential cultural values in the building – despite their possibly technical weaknesses.

Re. c.

As described earlier this method is also focusing on the invisible and intangible heritage of the building. That means the ideology, ideas and the philosophy of the architecture, the attitudes of the actual architect, the typical, but now disappeared colours etc. This will often imply a study of written sources and traditions.

Re. d.

The short concluding assessment of the historical, the technical and the architectural values of the building is in most cases supplemented with the intangible aspects. They are interesting in themselves, but they can also serve as arguments to the owners, to keep invaluable traces from the cultural history.

This is also done because our research shows, that if you can keep the most important traces of the cultural history in the building, after the refurbishment, this will enrich and raise the quality of the project and the final result – just as “salt and pepper” adds taste and character to a meal.

Re. e

Under the recommendations (point no. 4) we use 5 categories:

1. Inalienable structures, spaces and building parts to be preserved
2. Disruptive structures, spaces and building parts to be removed
3. Removed structures, spaces and building elements to be reconstructed
4. Structures, spaces and building elements to be transformed
5. New structures, spaces and building elements to be added

This very short conclusion of the building examination serves also as an essential dissemination and simplification for the owners – and a very important tool for the architect, to convince the owners of what to keep and repair, and what to demolish or transform in the house.



FIGURE 3. Typical Danish detached single-family house from Tjæreborg Houses, 1968. © Søren Vadstrup after Tjæreborg Houses.

2. ARTS AND CRAFTS AND BAUHAUS

To find the roots of the Danish detached single-family houses from the 1960s and 1970s, we must start in England around the year 1850. A group of English architects and art historians were seeking the “original” English house. Most English homes at that time had several rooms which were not or seldom used on a daily basis, but only when guests were visiting: dining room, library, music room etc. The unused rooms, often one fourth of the area of the house, was waste of good living space.

In the remote countryside of England, architects as Baillie-Scott, Philip Webb, Ernst Gimson, C.F.A Voysey and not least the artist William Morris, found the medieval “English country houses”, furnished with a central gothic hall. They saw, that the residents here were dining, resting, playing, partying, having guests, playing music, keeping and reading books etc. in the same large room. This inspired them to design a new lay-out of the modern english villa, in which this new multifunctional room could replace the prestigious and mostly unused dining room. Many arts and crafts villas all over England were designed with this large, high roofed hall in the middle of the house, with all living functions in one room and they invented a new word, “living room” for this space. The living room always has a big fireplace at the end of the room, and a large bay window towards the garden, facing south. Directly connected to the living room is a kitchen and at the other end of the house are smaller bedrooms for the children and parents, just like in medieval houses³.

In the 1920s, a new wave of architects in Belgium, France and Germany were again inspired by the British arts and crafts movement – and the medieval coun-

try house. They created the Bauhaus style and the Modern Movement – the subject of this conference. Here we find the same elements: the large multifunctional room in the middle of the house, connected to a small and effective kitchen and smaller bedrooms in the other end of the house, just like in the Arts and Crafts villas.

3. USONIAN AND UTZON

In the mid-1930s and throughout the 1940s, the American architect Frank Lloyd-Wright designed plans for a new type of Garden-city in the suburbs, called broadacre Cities. For this purpose, he also designed a new type of modern and innovative family houses, called *Usonian Houses*⁴. The plans for the Usonian Houses are “free” or dissolved, inspired by the Arts and Crafts villas, with a large multifunctional living room in the middle, connected to a small and effective kitchen and with smaller bedrooms in the other end of the house – just like in the Bauhaus houses. The *living room* has a direct and level less access to the garden on the south side of the house, only separated by a large glass wall. The north side is closed and without windows. In addition, the Usonian Houses were built at a very low cost, because many of the wall panels were prefabricated.

After the WWII many Danish architects went to the United States to study and work. Among them was the young architect Jørn Utzon. Back again, they built a wide range of single-family homes for themselves and others in Denmark, inspired by Frank Lloyd-Wright⁵.

4. THE DANISH SINGLE-FAMILY HOUSE FROM THE 1960S AND 70S

The Danish detached single-family house was created about 1960 as a mix of all this. The architects, or rather the building firms, because only a few of these houses were designed by architects, studied Jørn Utzon's own house from 1959 and houses from other leading architects in the 1950s, and the result was a cheaper version but with many similarities, as seen in this drawing⁶.

The positive properties of the house are that the south side, turning to the garden, is very open with large glass windows and glass doors. There is only one single step out to the terrain, the terrace and the garden, which brings the garden directly into the living room. All of these villas have the most delicate and nice-looking masonry work in red or yellow bricks at the north side and the gables. The roof “hovers” on top of two long straps of dark wood, with the ends jutting out into gables in a Japanese manner⁷.

The – often by the residents themselves – criticized properties of Danish detached single-family houses from the 1960s and 70s are that they have a very dark and closed north side with only a few elevated windows. Both of the gables are completely closed and without windows. The kitchen is very small and has almost only room for one person. In the quite large living room, many very differ-

ent activities must take place: dining, sitting, talking, playing, television viewing etc., while the small dark rooms in the house's east end mostly are used to sleep in. Just like in the arts and crafts and the Bauhaus villas described above. Because of these adverse properties, many house owners want to open the north side of the house with larger windows. They want to make the kitchen larger – to a so-called “conversation kitchen” – and they want to put the small rooms together to form fewer, larger rooms. What we also see are new “romantic” windows with glazing bars and smaller windowpanes, new plastic doors with fan-shaped windows and the masonry and brick facades are plastered with cement render. These radical interventions are disruptive and damaging to the architectural values of the house – and furthermore also for its identity as a typology, typical of the time.

5. IN SEARCH OF IDENTITY

Our research shows, that if the house owners are told about and being aware of the historical and intangible roots of the house – from the middle ages, over arts and crafts and Bauhaus to Frank Lloyd-Wright and Jørn Utzon – they often recognize and experience their house in a new way. And they also see a lot of new qualities in the house, *as it is*. This can be done by sketches and through the written assessment, which are a central part of the method.

This intangible heritage, in the form of stories, memories, atmosphere and ideas from England, Germany, Japan and the USA are present, invisible and visible, in Danish detached single-family houses from the 1960s and 1970s. If you are aware of this, you suddenly understand the clear identity and character of the house, and you are more careful and respectful, when you make changes to the house. Many house owners, nowadays, wish to change the identity of their houses according to their own dreams and wishes. However, if you as an architect can get the house owners to identify themselves with the original identity of the house, its background and ideas, and its original atmosphere and ambience, they often will implement more sensible actions and changes, in accordance with the history and architectural values of the building, instead of excessive or violent interventions. An important tool for this are the intangible properties of the house. And the newly developed, fast and very systematic analysis and assessment method is a good tool to identify that and to explain this to the owners.

NOTES

1 Søren Vadstrup, “Analyse-og Værdisætnings-Metoden”, in C. Harlang et al. (ed.), *Om Bygningskulturens Transformation*, Copenhagen, Gekko Publishing, 2015.

2 For instance the often used, but very time-consuming and expensive building archeological research method.

3 Peter Guillery (ed.), *British Architecture and the Vernacular*. London, Routledge, 2009.

4 John Sergeant, *Frank Lloyd Wright's Usonian Houses: The Case for Organic Architecture*, New York, Whitney Library of Design, 1976.

5 Michael Sheridan, *Mesterværker – Enfamiliehuset i Dansk Arkitekturs Guldalder*, Copenhagen, Strandberg Publishing, 2011; Michael Sheridan, *Landmarks The Modern House in Denmark*, Ostfildern, Hatje Cantz, 2014.

6 Søren Vadstrup, *Byhuset*, Copenhagen, Lindhardt og Ringhof, 2014.

7 *Ibid.*

50 Years after the Second Vatican Council. Taking the Modern Church into the 21st Century

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50 years ago, the Second Vatican Council (1962-65) came to a close. Although this gathering of the Church hierarchy essentially ratified ideas that had already found their way amongst progressive Catholics in many respects, it infused a spirit of innovation and liberation throughout the Christian world. The Council's central idea, namely that the Catholic faith would be better expressed by collective worshipping rather than individual devotion led to a fundamental rethinking of the church as a building type. It was no longer to constitute a monument to the glory of the Divine but a piece of social infrastructure fostering community building along Christian values. Its internal organization was to encourage the active involvement of the faithful in the celebration and bridge the traditional (hierarchical and spatial) gap between the clerics and the laity. As a consequence, in the 1960s, church architecture became a field of creative experimentation; many architects enthusiastically broke away from tradition and introduced new spatial concepts, expressive shapes and novel structural principles in their designs.

Given the very large amount of church buildings that were constructed in the decade after Vatican II, the new religious paradigm had a significant impact on the built environment of the welfare state of the 1960s – not in the least in the sprawling suburbs. Today, this enthusiasm and experimental vigour are long gone. Apart from the general secularizing tendency and the competition with other religions, Christianity is also affected by a severe institutional crisis. Moreover, attendance

at church services has dropped to a historical low. The resulting number of redundant church buildings is one of the most tangible results of this unpropitious climate. The future of this vast architectural patrimony constitutes a key challenge for today's Church leaders and civil society as well as for the design community. This session maintains that this phenomenon of redundancy particularly affects the more experimental churches of the post-conciliar period. Because of their young age and their location in peripheral and low-density suburban areas, these churches are not as firmly rooted in the collective memory as their older counterparts. As a consequence these buildings are not yet "heritagized": scholarship on their architectural significance is limited, their social and cultural values have not yet been made explicit and financial support to do so is often lacking. As a result, these "modern" churches suffer from a lack of appreciation by the general public while restorations and transformations are often carried out negligently. The fact that many of these buildings were realized with cheap materials and according to experimental construction methods causes them to age badly and to require onerous maintenance. The literature on the various aspects of adaptive reuse of religious buildings (social, cultural, economic and technical) is generally based on experiences with "historical" churches, i.e. the traditional typologies and the familiar (neo-)styles. This session therefore seeks to broaden the scope of this expertise by examining to what extent the existing know-how on adaptive reuse is applicable to the post-conciliar Christian churches from the 1960s and early 1970s.

The variety in perspectives adopted in this session's papers not only testifies to the impressive aesthetic and liturgical diversity of post-conciliar church production, it also allows us to uncover some of the mechanisms behind this plurality. All authors stress that, apart from architectural paradigms or particular theological ideas, the program (and thus the analysis) of a church building always transcends the purely religious. In their paper, Ariel Luís Lazzarin and Renato Luiz Sobral Anelli show, for example, how the *Espirito Santo do Cerrado* church by Lina Bo Bardi in Uberlândia, Brazil, was conceived (and functioned) as an instrument of local empowerment in the context of Liberation Theology and the bottom-up democratization movement it supported through the so-called "base groups". Also, in the paper by Elisabeth Urbán and Zoran Vukosavljev, the parish church appears as a site of conflict. The suppression of Catholicism behind the Iron Curtain created a context where clinging to tradition became an act of resistance since openly embracing liturgical and aesthetic renewal was simply impossible. The contrast with the *Senhora da Boavista* church, analyzed by João Luís Marques, could not be bigger. Part of the newly laid-out Boavista neighbourhood on the outskirts of Porto and entirely designed by famed modernist architect Agostino Ricca, it featured not only housing slabs and office buildings but also amenities that were meant to infuse the scheme with a sense of urbanity such as shops, a luxury hotel, a swimming pool, a cinema and ... a church. The prominent presence of this religious equipment in the heart of such a private

real estate operation is telling for the (then) prominent position of the Catholic Church in Portuguese society. Quite surprisingly, the multi-purpose church is the only part of the public amenities that is still fully operational today. Its concept, namely that of a platform for communal activities based on a shared spirituality (rather than a place exclusively reserved for the cult), which was promoted by the Second Vatican Council, is also highlighted by Eva Weyns in her paper on the *Blijde Boodschap* church in the Parkwijk in Turnhout, Belgium. Although this church has nothing of the architectural *bravura* of Ricca's – the church forms part of a public housing scheme – it provided a modest but crucial infrastructure in the associative life of the local community. Finally, on the basis of a morpho-typological analysis of the interaction between urban planning and church building in modern Barcelona, Alba Arboix-Alió and Cristina Jover Fontanals illustrate the importance of churches in the structuring of the urban fabric and public space. As they rightly state, the debate on the future use of churches should not be limited to their architectural dimension but rather focus on new modes of appropriation and usage; indeed, considering the church space as an extension of the public realm opens up a whole new field of possibilities.

As the papers in this session show, the fact that Christian religious practices and their sites increasingly are becoming heritage confronts us with two challenges. On the one hand, it raises the question regarding the (advisability of) conservation of the original characteristics of these buildings in a context where their original religious significance is increasingly evaporating. On the other hand, the time has come to consider this heritage beyond the focus on its religious meaning and explore the modern church from a more prospective point of view. As the authors in this session show, typical characteristics of this heritage are its non-monumentality, the attempt to blend with the surrounding built environment and a more abstract approach to religious symbolism. Moreover, in the post-conciliar period, church buildings were often conceived to accommodate also other functions than only religious services; hence they are often firmly rooted in the social and cultural life of the neighbourhood. By contextualizing these features and discussing how they can be relevant in a context of adaptive reuse, these papers provide important keys for speculating about the potential of this patrimony as a social, cultural and spatial resource for the 21st century.

Modern Sacred Heritage in Barcelona. Balances and Future Challenges

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Subsequent to Cerdà's well-known expansion plan for Barcelona, the most important urban growth expansion of the city took place in the mid-20th century. Contrary to what many people could imagine, more than 70% of Barcelona's current parish churches were built in the last century. Moreover, most of them were constructed between the 1920s and the early 1970s, coinciding with the Modern Movement, and the latter were erected in total accordance to the post-conciliar concepts.

Based on research that aimed to study the impact of parish churches on the urban growth of Barcelona, this paper addresses how 20th century churches became focal points of new neighbourhoods and how this vast ecclesiastical heritage, which nowadays has a lower intensity of use, can be adaptively reused in order to stretch its lifespan. In other words, this paper is about the balances and future challenges for Barcelona's modern sacred heritage. The typo-morphological methodology used to approach the subject is organized on three scales of analysis: "city", "urban space" and "building". It is demonstrated that parish churches have a great impact on all of them. Focusing on the third one, which refers to the ecclesiastical typology, one can conclude that Barcelona has a wide range of valuable modern churches. Concerning Barcelona, the chosen case studies of reused religious buildings will show how new uses are able to transform their spaces in a very respectful manner maintaining at the same time their structural essence. Modifying a building just by changing the activity it hosts is one of the simplest, most effective and enthusiastic challenges an architect can accept. Linking reuse strategies with post-conciliar churches, which were often conceived to accommodate other functions apart from religious services, can give us some useful guidelines for the future of this built heritage.

Overall, these post-conciliar churches can be re-assigned so that they can be once again the focus of the neighbourhood. Because the matter of question is not only about reusing, giving a new purpose or restoring the building itself, but also about taking into account its contiguous urban space.

1. BALANCES

Churches are a type of architecture which is deeply rooted in the urban landscape and in the sub-conscious of the collective culture of societies that have an occidental Catholic tradition. Within those societies, the presence of religious buildings is part of everyday life. Thus, even for those who do not frequent them or consider them modern buildings, these temples have a key role in the visualization of the city¹.

In the specific case of Barcelona, the contribution made by churches to the formation, development and coordination of the various districts is a central issue, both at an urban and architectural level as at a circumstantial one. Throughout history, temples have been exemplary buildings when relating the built architectural forms with the political and economic moment that have promoted them,

the mentality of the society that has defrayed them, and the culture of the architects who have designed them².

Founding Church

In the formative years of Barcelona, and throughout the Middle-Ages, the foundational role played by part of the Church in the formation and growth of the city is very revealing. If one observes the layout plan attached – the survey plan of the city during the mid-19th century, drafted by Rovira i Trias, in which the churches that today have Parish status have been highlighted – it is easy to understand the importance of these temples in the urban form of the city of Barcelona. Settlements around *Santa Maria del Mar*, *Santa Maria del Pi*, *Sant Pere de les Puel·les* and *Santa Anna* appear on the outskirts of the first ring drawn around Roman *Barcino*. Other urban settlements created around a church and that can be seen depicted on this same layout plan are the current historic districts of Barcelona's *Sant Vicenç de Sarrià*, *Sant Joan d'Horta*, *Santa Maria de Sants*, *Sant Andreu del Palomar*, *Sant Martí de Provençals* or *Sants Gervasi i Protasi*³. It is demonstrated that previous to the extension development plan proposed by Ildefons Cerdà, which like a large adaptable canvas unified everything, churches determined the position and shape of the centre of Barcelona and that of its new towns and inner suburbs, and all the villages that would be added to it eventually.

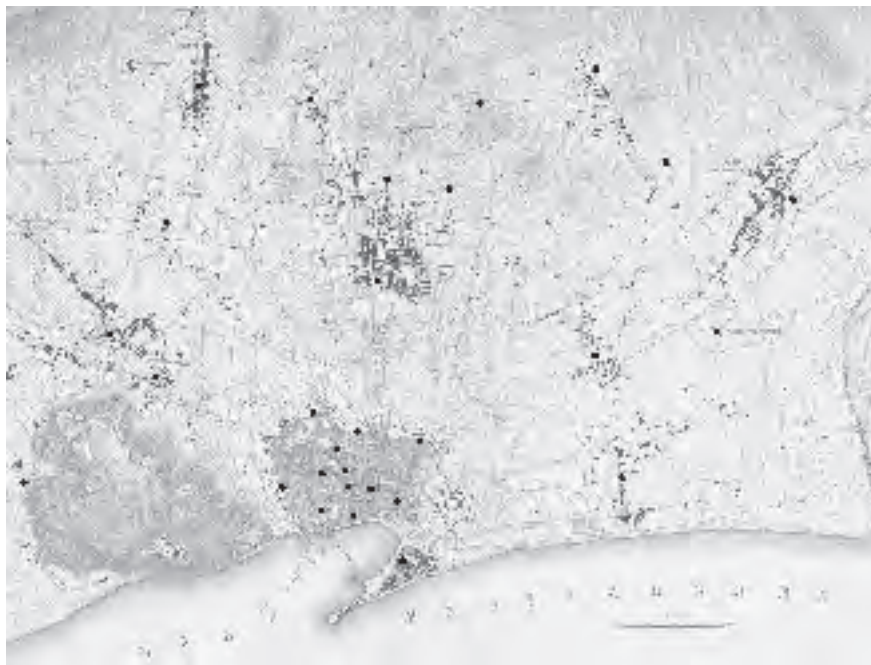


FIGURE 1. Location of the existing parish churches of 1861 that represent anchoring points from which different sectors of the city evolved. © Base Drawing: Cartoteca Digital de l'ICC. Ref: <http://cartotecadigital.icc.cat/cdm/ref/collection/catalunya/id/1805>.



FIGURE 2. Urban implementation of Parish churches that articulate districts of the city of Barcelona. © Alba Arboix-Alió.

Articulating Church

Nevertheless, the relationship between neighbourhood and church can be much more complex than the linear case of the founding city. After the well-known expansion of the city under the aforementioned homogeneous plan by Ildefons Cerdà, Barcelona suffered a great demographic and urban explosion in the mid-20th century. A first wave of immigration during the 1920s, and two even more intense ones in the decades of the 1940s and 1950s and the 1950s and 1960s deactivated the medieval model of growth. Obstructing the regular grid of the *Eixample* district, were neighbourhoods that suddenly appeared around a factory or a commercial axis, and districts that were designed on paper and at the same time transferred to the city, these would be the new ways of operating. But apart from that, viewed nowadays in perspective, it is clear that the presence of the Church also has a leading role in the consolidation of these newly-created neighbourhoods. Both in those neighbourhoods that appear before the existence of church buildings as those districts that are designed taking it into account, one can observe that in the majority of cases the church is the only public building that articulates the whole complex, which is predominantly residential. It is the element that is associated with the emergence of open space – defining, in many cases, the only square of the settlement –, it is the landmark that is located at the most visible point, it is the building that is usually set apart from the alignment and urban homogeneity of the whole and it is also the symbolic element that distinguishes the urban enclave. And all this not only due to it being a unique building, but also and perhaps even more importantly, due to the fact that it is accompanied by a singular urban element: the square.

Church with a Square

Wherever possible, and within any type of urban fabric, the temple has been accompanied by a square. In these cases, the sacred façades, although belonging to the church, are at the same time the main decoration of the square, forming together an inseparable entity. It is significant that in many cases, both the square and the church share the same name and are part of the same urban landscape. This happens both in the founding urban enclaves as well as in the most recent neighbourhoods of the districts created.

This idea that focuses on the empty space and walls that delimit it appeals directly to the origin of the Mediterranean city, the genesis of which resides in the presence of the public agora. So much so, that some authors advocate that in a country accustomed to go out onto the street to celebrate festivities, nothing more is needed than a public space in order to live in community. José Ortega y Gasset, Louis I. Kahn or Jahn Gehl have repeated on many occasions that the city needs nothing more than façades as a means of decoration, the street is a community room open to the sky, and that the city is actually the social life that takes place between buildings⁴. Thus, the square becomes the community space *par excellence* and the buildings that delimit it an unbeatable backdrop. In this scenic support so representative of the city, the church becomes the landmark that distinguishes the urban enclave and symbolizes the neighbourhood⁵.



FIGURE 3. Squares of Barcelona symbolized by the singular building of a Parish church. © Alba Arboix-Alió.

2. FUTURE CHALLENGES

Besides having an influence on the territorial situation and on the configuration of the urban space that is formed with its implementation, churches are also very important elements of the typological riches and future challenges of the city. Broadly speaking, Barcelona has churches with a directional spatial structure, others following more expansive rules and, finally, churches with a radial layout. As a norm, the latter two categories correspond to churches built after the Second Vatican Council (1959-1965), a point in time in which, due to the liturgical changes, a new ecclesial building type was created which was more constrained and austere and which facilitated communication among attendees.

Post-Conciliar Church

In general, the above-mentioned ecclesial changes advocate the construction of noble but austere temples of a more expansive distribution. Thus, churches appear that derive from the circle, ellipse, square, trapeze and the triangle, some of them evolving into more complex and irregular shapes. Reducing secondary chapels and the multiplicity of altars to the point of their disappearance, returning to the three areas of basilica churches: the atrium or narthex of access, the nave or common space of assembly and the chancel with the altar, the pulpit and the chair for the officiator, although no longer sequential spaces, are presented mixed and intersected. They, therefore, tend towards simplicity and functionalism, proclaiming that it is the architecture itself which, with its resources and its language, configures the form and image of the sacred space. Stylistically speaking, these directional lines go hand in hand with much of the restlessness of the Modern Movement; the reason why, in countries where this new religious thought is implanted, so too is the new architectural paradigm. As shown in the picture, Barcelona has some paradigmatic cases of post-conciliar modern churches.

Multi-Used Church

Currently, this rich heritage, of which the city boasts, has seen a reduction in its usage. Today's society is less traditional in their customs and religion than in the past. The uncontrolled growth of the city finished decades ago, and some parish boundaries have proved to be over-sized. Consequently, many churches are empty most of the week and they are no longer used to meet the daily spir-



FIGURE 4. Floor plans and interior views of the churches included in the Modern Post-conciliar Postulates. © Alba Arboix-Alió.

itual needs of the citizens. When a sacred building loses its function of service to the neighbourhood that promoted its construction, one wonders what can be done to ensure its maintenance and to keep it up-to-date. The magnificence and employment of good materials is evident in many of them, as is also the historical memory that they enclose, the symbolism that they possess and their relevance to the landscape of the city. One must not forget that this sacred heritage is, at a European level, more than 70% of the catalogued listed patrimony. Though diminished in use, these temples abound and, being such a representative percentage of the heritage to be preserved, it is necessary to investigate what alternatives exist. Due to their patrimonial value, as well as their importance on a symbolic level and the pragmatism that is always necessary in times of crisis such as nowadays, the implementation of strategies that are committed to the reuse of church buildings with a change of activity are called for. What is proposed, basically, is to acquire a change in the spaces with the simple alteration of their use with hardly having to affect their spatial structure, putting more emphasis on the action than on the object. In fact, it is proposed to implement on sacred heritage what Richard Sennett named as “dynamic repair”⁶. This term, coined by the American sociologist, accurately summarizes what we intend to explain. The idea precisely refers to the operation of completing and correcting that which is in disuse in order to lengthen its life, seeking to update the object in order to serve new requirements which could be considered at any given moment. In short, it is an action which takes into account the potential functions of the shape of the object in order not to have to change it.

In this sense, the post-conciliar churches that were already designed to accommodate many other functions besides the religious ones, adapt very well. Because it is a question of taking advantage of the ecclesial space with different uses linked to the liturgy that do not alter their usual distribution in order not to forcibly invalidate the reversibility of their functions. Flexible and light elements such as tape-strips [what is meant by “tape strips”] or screens, the effective distribution of these and the existing furniture in the sacral interior, the intelligent translation of certain activities to the outer platform of the accompanying public space and the proper management of the times of occupation are sufficient so that the church building is used dynamically and at its very best.

There are many examples of churches that alternate hosting ecclesial functions with other secular ones in the Catalan capital. The best known case is that of the presentation of concerts, plays and conferences or award ceremonies, where the nave is used as an auditorium and the chancel as a provisional stage. The parishes of *Santa Maria del Pi*, *Sant Jaume* and *Santa Anna*, for example, are a recurring scenario for the annual concert festival *Masters of the Guitar*. In others, the simple mechanism of a reversible change in the position of the benches or the elementary fact of withdrawing them, disassociates the pressure of the action of the chancel and transforms the directional hierarchy of the space, making it suitable for other activities. This is the case of the Christmas solidarity meal that the

community of *Sant'Egidio* organizes for the poorest of the city. In Barcelona, this annual event is held in *Sants Just i Pastor*, which has its interior converted into a large dining room for a day. The celebration of the arrival of the light of peace is also paradigmatic; after leaving the church without furniture the floor becomes a sea of candles. This ephemeral installation has been held in the interiors of *Sant Augustí* and *Santa Maria de Sants*.

Although all the listed cases are pre-conciliar churches it is not hard to imagine that their translation to the most recent construction types has not been difficult and one must also take into consideration that many of them have already been designed to house other functions besides those of a religious nature. Also it has been seen that many churches have an exemplary urban, architectural and social setting; they are strategically placed in the central core of the neighbourhood, they are accompanied by a square on which to extend their activities, and they represent a typical open and flexible architectural type that needs to be preserved⁷. What better way to restore their utility than with the possibility of hosting daily activities which again place these sacred buildings and their adjacent squares at the service of society.

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NOTES

- All of the images are unpublished and were undertaken between 2013 and 2015 for the doctoral thesis in progress of one of the authors: Alba Arboix-Alió, *Església i Ciutat. El Paper dels Temples Parroquials en la Construcció de Barcelona*.
- 1 Although the Catholic religion no longer has a primary role in Catalan society, its imprint remains in the cultural context for being an active part of the tradition and popular celebrations. See Francesc Torralba, Josep Ramoneda, "L'herència del Cristianisme, a Debat", *Diari Ara*, 02.04.2015, 18-19.
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 - 3 All these villages share the name with their Parish church. At present, some of them have lost their hagionomastic component, these are called: *Sarrià, Horta, Sants, Sant Andreu, Sant Martí de Provençals* or *Sant Gervasi*.
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 - 7 This is an architectural type that must be preserved as a whole and as a global collection. Some policies seem to favour the historic temples of the city centre, but it has been demonstrated that Barcelona has rich examples of modern religious buildings and, though that is for another reflection, based on Barcelona's churches, one can understand the architectural evolution and the cultural influences that the city has gone through.

Resistance to Oppression – Case Study of the Hungarian Catholic Church Architecture 1945-1989

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After the WWII the status of the churches took a significantly different direction in Western and East-Central Europe. With the communist takeover a new social order emerged, whose aim was to liquidate Christian Piety. Besides weakening the economic influence of churches, their public, political and educational activities were suppressed. The anti-clerical politics affected ecclesiastical architecture, thus church architecture, too. The State Office of Church Affairs was responsible for supervising the churches. This process took a turn in 1963, when the status of Catholicism began to normalize. The Hungarian government reached out to the Vatican and a partial agreement was conducted, the first amongst the countries of the Socialist block.

The Catholic Church had to face strong political pressure. In most settlements worship and church building could only be undertaken undercover. Immediately after the war, it was hardly possible to build new churches. Obtaining state permission for community centres and schools was easier, thus often the church stood behind those developments. New community centres were rebuilt as churches with the slackening of central influence.

Society's transformation process is well modelled by the shift in architecture. As a result of the liturgical and religious reforms, church architecture required a new vision. Compared to the innovative church buildings in Western Europe in the 1950s, in Hungary the form experiments began slowly and in small numbers. While fighting for existence, renewing the churches in the spirit of the Second Vatican Council seemed less important. In many places the effects of the new regulations were only applied a decade later, furthermore, insistence on "the old" remained important to the believers. Architecturally high-quality works experimenting with new space forms appeared only in the mid-1970s.

This study provides an insight into the church buildings of the Eastern Block during the period of political oppression.

1. RELIGIOUS ASPECTS OF HUNGARY AFTER WWII AND BEFORE THE HOLY SEE'S *OSTPOLITIK*

After WWII the leading role and influence of the Catholic Church continued in the West, but Churches of the Eastern block fought for survival. After a few years of democratic realignment a political turning point occurred. The break of the Church in the Eastern block region was planned and coordinated directly from Moscow. The first step was the collectivization of Church land, followed by the weakening of its cultural-social influence¹.

After the war, the first task regarding church architecture was to repair the damaged churches, and to rebuild the collapsed ones. Already started building constructions were also completed. In the first years after WWII there was an unbroken continuity in religiousness, which was overshadowed only by intensi-

fying political repression. The land reform of 1945 was the first serious action of the Provisional National Government that sorely shook the Churches. Often the Church stood behind the community developments, as it was easier to get building permission for community centres or schools than for church construction.

The separation of Church and state happened in barely four years. While “mutual agreement” was reached with the Protestant Churches in 1949, only partial agreement was made with the Catholic Church in 1950. Despite the agreements, new restrictions came about. The suspension of the religious orders’ operation was an organizational issue, while it also served to hamstring direct contact with the community’s social base. The restriction of religious education in schools was the last step in prohibiting the Church any contact with the future generation. The State Office for Church Affairs was established in 1951 and, from that time, all internal and international connections had to go on through this office. Between 1953 and 1955 there seemed to be some relief, but also in this time the division of the Catholic Church was the real aim. Two orientations were formed inside the Church: the resistance, represented by Cardinal József Mindszenty, who stood for traditional values, and the Peace Movement of Priests whose followers represented a conformist attitude. These unpredictable conditions increased internal pressure².

The State’s changing anticlerical attitude defined the operation of the Church. After the bloodily suppressed revolution of 1956 the government became more conciliatory. The Peace Council was established in 1958, which tried to push the collaboration between the State and the Church. However, from 1958 to 1961, cruel arrests of clerics demolished all earlier hope for the peace. The turning point came in 1963-64, when the situation of Catholics began to normalize. After a general amnesty in 1963, the Hungarian government and the Holy See undertook partial agreements in 1964.

2. SIGNIFICANCE OF THE SECOND VATICAN COUNCIL

After 1964 the Holy See started a common ecumenical opening and a dialogue began with 20th century society. Thanks to “ostpolitic”, diplomatic relations revived, which projected a unified Church³. Political steps were more predictable from the mid-1960s both in the architectural opportunities and religious questions. Soviet state power changed its church politics, and tried to show compromise. Thanks to the lessening of repression, the Church was disposed towards the compromised solutions and the news of the everyday secular events was mentioned more frequently during mass.

The Second Vatican Council’s guidelines – in relation to the Church and Society and in the shaping of the architectural environment – were rooted in the reinterpretation of a Christ-centred life⁴. While in Western countries a towerless shape, adjusted in scale to the surrounding houses, was evolved as a result of the Council, in Hungary it had already developed earlier because of domestic political

necessity. A hidden tower and smaller architectural scale became common before the religious reforms. The church was a barely-tolerated building inside the town, thus its position often became peripheral.

The effects of the Second Vatican Council arrived to Hungary later. The first circular letter from the Bishops' Conference, which ordered the exordium of the new liturgy, was revealed in 1971. The new liturgical needs were handled from the mid-1960s, but the really extraordinary new buildings appeared in greater numbers only in the 1980s⁵.

The new religious pathfinding of the house church movements of the 1960s-1970s – which were commenced for many reasons – spread slowly in Hungary. This slowly unfolding process affected mainly the Hungarian Lutherans (the experiments of linking the sacral nave with the community function are traceable as late as the turn of the century). The nave was always in closer relation with the meeting room of the community in the Lutheran Church architecture, thus reflecting the possible practice of religion, according to the New Testament, happening in a small congregation room⁶.

The structural innovations in architecture symbolised the dynamic development and modernization of the State. The use of new technologies in sacral architecture became more general, as these – often industrial – materials were less rejected by the State authorities. Without the well-known traditional decorations the appearance of these churches became more profane.

Our case study focuses on one architect's work, whose church plans show his continuous effort to reach a closer linking of sacral and profane spaces within the confines of the fixed Catholic liturgy. István Szabó studied interior architecture, a designer. Thus he planned pavilions and interiors in the early stage of his oeuvre and later made plans of public buildings as well. He attended to religious architecture only after retirement.

The first steps towards the temporalism were in the mid-1970s. The most typical example is the architecture of István Szabó, who experimented with the innovative use of different building materials. The most exciting building of this extraordinary architectural manner is the All Saints Roman Catholic church in Budapest-Farkasrét, built in 1975-77. This building is a formal experimentation with traditional materials. István Szabó sought the elemental in the texture of materials and in the aesthetics of natural surfaces. Coloured glass windows can be seen on the facades in contrast to the raw industrial concrete blocks. This is the period of the really new church models with up-to-date innovative visual appearances. In the case of the All-Saints Catholic church the spatial structure shows a longitudinal nave arrangement, but actually it focuses on a central point. In a few years a conceptual approach appeared in design. After a short period of shifting interpretation, industrial technical innovations – like trusses, skeletal building structures, and large glass walls – appeared in church architecture as well. This new structural shaping can be seen in the Holy Cross Roman Catholic church in Budapest-Németvölgy, built in 1976-79. Despite the traditional pitched



FIGURE 1. István Szabó, All Saints Roman Catholic church, Budapest-Farkasrét, Hungary, 1975-1977. © Zorán Vukoszávlyev, 2015.



FIGURE 2. István Szabó, Holy Cross Roman Catholic church, Budapest-Németvölgy, Hungary, 1976-1979. © Erzsébet Urbán, 2016.



FIGURE 3. István Szabó and László Borsányi, St. Martin of Tours and St. Nicholas of Flüe Roman Catholic church, Budapest-Vízafogó, Hungary, 1982-1985. © Erzsébet Urbán, 2016.

roof, the steel structure is dominant in the interior. A complex building is hidden behind the simple spatial forms. The parish community function was built in one mass with the church. The community room and the nave cannot open into one space, as the always hierarchical Catholic liturgy does not require it. The church was transformed in the 1990s, so the renovation defines the recent appearance (the brick covering is also additional). The St. Martin of Tours and St. Nicholas of Flüe Roman Catholic Church in Budapest-Vízafogó, built in 1982-85, is a bit more introverted than the previous examples. The community room, the parsonage and the offices are on the ground level and the church space with the additional liturgical functions is upstairs. The tower, as a significant attribute of churches, is missing; the building is one compact form and just a huge steel cross rises up to the sky on the main façade. The entrance of the church level is in the corner of the quadratic space, so the liturgical elements are arranged on a diagonal axis⁷. The spatial organization focuses the eyes on the altar.

Comparing these three churches to each other, a continuously closer relation of the community function and the church space can be identified in the architect's works. The first case is quite simple with its sub- and super-ordinated relation (it is still a slightly fragmented shape), the second church models a co-ordinating arrangement (in spite of it the community function is secondary because the entrance leads directly to the nave), and the third example is also organised on two levels, but it is in one compact form (the community function obviously

comprises the base of the higher liturgical practice, thus the role of the Church is in one concise unity). First and last, a recognisable evolution can be seen in the relation of the profane and sacral functions by reading these examples.

3. CONCLUSION

Churches were never separate buildings; they were always surrounded by public functions. Architects started to combine the community functions and the service unities with the nave from early modernism, and this process spread quickly from the 1970-1980s. This connection became architecturally stronger over time, but the direct connection of the nave and community room was typically not evolved in Catholic Church architecture at that time. Profane and sacral functions complemented each other within one complex, but always the liturgical spaces had the hierarchical accendency. All these related to the aesthetic ambitions: the spaces of churches were more open, the decorations disappeared, the interiors were almost industrial, and the whole construction became simpler in terms of the materials and structure. The significance of Church art grew slowly. The general theory was that concentrated simple art works, just like signs, helped to focus on God. Natural light had an important role in the composition, but these observations lead us back to the modern architectural principals, and it starts the evaluation of the 1980-1990s church architecture⁸.

Despite the increasing religious freedom relatively few architecturally valuable churches were built between the WWII and the change of regime in 1989. Due to the lack of professional construction techniques and the modest financial background these buildings have a low building structure quality. Because of growing expectations of comfort and the ageing engineering-electrical systems, it was necessary to modernise a lot of churches and it sometimes went hand-in-hand with significant transformations as well. While in Western Europe we are talking about the transformation of churches because of the disappearance of the faithful, church attendance in the former communist countries of East-Central Europe is still satisfactory. Theological, liturgical and architectural changes were slowly put into practice. The Hungarian Catholic Church stayed relatively conservative despite the religious renewal movements around the world⁹. New, sometimes striking forms were always hard to accept in this period. The faithful preferred the traditional spaces, so new architectural forms were often greeted with serious conflict.



FIGURE 4. Sketches of the original plans of three churches of István Szabó, Budapest, Hungary.

Upon the whole, reconstruction of old churches was sponsored and supervised by the State during the socialist era (it was the real dawn of the monument protection in the country), but new constructions were the community's responsibility. Nevertheless, the tradition of the longitudinal arrangement with simple pitched roof was still widespread and the preservation of the few experimental buildings is obviously important because they are significant stages of our church heritage.

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Exploring New Territories: The Shared Use of the Parkwijk Church in Turnhout

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The redundancy of Catholic parish churches is, in Belgium, just like in other Western countries, an increasing issue. This process seems to affect especially the most recent buildings, often located in peripheral neighbourhoods. However, some church communities seem able to bypass the issue of redundancy, by successfully sharing their building with other new users. This paper examines such shared use as a way to tackle the vacancy of modern churches, by means of a case study.

Despite a serious decline in religious use, the case of the *Blijde Boodschap* church (designed by René Van Steenberghe, 1972) remains functional for other community activities. This church is located in the large-scale social housing project the *Parkwijk* in the periphery of Turnhout, which is a rare example of architectural and planning consistency in the Belgian context. Notwithstanding this exceptional character, the *Parkwijk* is representative for two influential phenomena of the post-war period. Firstly, the *Parkwijk* is characteristic for the impact of pillarization of Belgian society on the built environment. By means of the Catholic signature on the urban design, the church building became a cornerstone in the neighbourhood's lay-out. Secondly, the non-monumental church building represents the evolution towards multipurpose churches after the Second Vatican Council. The flexible spatial concept of this post-conciliar church enabled its evolution towards shared use.

This paper argues that the effective evolution in the use of the *Parkwijk* church is not only attributable to the architectural concepts of the building itself, but also to its strategic location and spatial integration in the neighbourhood. Hence, this analysis indicates the significance of the specific urban context of modern religious buildings in the debate on their alternative use.



FIGURE 1. René Van Steenberghe, church of the *Blijde Boodschap*, Parkwijk, Turnhout, Belgium, 1972. © Eve Weyns, 2015.

1. INTRODUCTION

Just like in other Western countries, a growing number of Catholic parish churches in Belgium have become redundant. This vacancy of religious heritage has been a pressing challenge, occupying, amongst others, church authorities, worshippers, policy makers, and architects¹. Discussions on reuse opportunities for unoccupied churches have, however, been often polemic². Usually the youngest churches have been closed first, as they are mostly located in peripheral areas, built with cheap materials and experimental techniques, and not legally protected³. Some church communities have, nevertheless, been able to bypass this issue of redundancy, by opening their church for new users. This paper examines such shared use as a way to tackle the redundancy of modern churches.

As a case in point, the church of the *Blijde Boodschap* (Glad Tidings church), designed by architect René Van Steenberghe in 1972, was analysed. Despite a serious decline in religious use, this church has remained functional for other community activities, such as meetings, exhibitions, and private festivities. This church is located in the *Parkwijk* residential neighbourhood in the periphery of Turnhout, a small town in the Campine area, north of Antwerp. This large-scale social housing project is a rare example of architectural and planning consistency in the Belgian context, in the sense that the good quality houses and the landscape design were realised as an ensemble. Notwithstanding this exceptional character, the *Parkwijk* is representative for two influential phenomena of the post-war period, namely the imprint of “pillarization” on the built environment, and the typological transformation of church architecture.⁴ This case study attempts to show that both these mechanisms have stimulated the transformation of the use of the *Parkwijk* church in a positive way.

2. THE PARKWIJK AS A COMPLETE AND HOMOGENOUS LIVING ENVIRONMENT

In the commemorative book that marked their fiftieth anniversary, the Turnhout Corporation for Housing (TMH) presented the *Parkwijk* as a unique project⁵. The TMH was established in 1921, when Turnhout became industrialized and grew rapidly, as a local department of the National Corporation for Housing. In tackling the extensive housing shortage after the Second World War, the TMH explicitly chose modern architecture and planning, which made it one of the most progressive housing corporations in Flanders⁶. Therefore, their numerous social housing projects of the 1950s and 1960s, for which almost exclusively architects of the later-called Turnhout School were appointed, had a distinct influence on the characteristics of Turnhout.

Large-scale housing projects, such as those of the TMH, however, were in contrast to the general way of planning in post-war Belgium, which was mostly driven by private initiative⁷. These different modes of urbanisation demonstrate how



FIGURE 2. Eugène Wauters, Carli Vanhout, and Paul Neefs, *Parkwijk* neighbourhood, Turnhout, Belgium, ca. 1964, preliminary plan. © Architecture Archive of the Province of Antwerp in Antwerp, archive of Eugene Wauters, record of the Parkwijk Turnhout, 164.

Belgian society was segregated into several “pillars” according to religious and ideological beliefs. Although the Catholic pillar especially encouraged small-scale private initiative, Catholic related organizations also initiated the building of large estates of one-family homes⁸. Socialist inspired housing corporations, on the other hand, preferred estates with apartment blocks. The impact of “pillarization” on the built environment is also clear in Turnhout, where the Catholic political party CVP held the majority from 1946 until 1982⁹. In consultation with the city council, the TMH decided to design the *Parkwijk* as an independent neighbourhood for 800 families with collective facilities, viz. a school, a commercial centre, and a church¹⁰.

In 1962, the TMH bought a large plot of farmland for the *Parkwijk* in the south of Turnhout, since it was especially this area that was urbanised under the influence of the emerging welfare state¹¹. In this urbanisation process, the centre of Turnhout was connected to its surrounding villages through ribbon development¹². The development in the southern direction was triggered by the construction of the southern part of the ring road and the E3 highway in the 1960s¹³. This improvement in accessibility coincided with the construction of a new factory for the major electrical company Philips in 1955 and an industrial estate in 1968¹⁴.

The first designs for the *Parkwijk* were made in 1963 and 1964, for which the TMH had appointed three architects associated with the Turnhout School: Eugène Wauters, Carli Vanhout, and Paul Neefs¹⁵. Their urban plan evolved to a rational design, based on the prevailing modern models and principles of “neighbourhood planning”¹⁶. The architects proposed “mixed developments” (a combination of high, middle-high, and low buildings) in a collective green environment, surrounded by a perimeter road in order to restrict car traffic. As in many other projects of that time, the buildings were not constructed as high as planned. The park and the community facilities, on the other hand, were actually realised, in contrast to most contemporary projects. The monotonous character of the architecture, however, was later criticized as unsuitable for a living environment¹⁷.

In the different urban designs and in the final realisation, the church building was given a central location, by positioning it in front of a square at the intersection of the two main axes. At first sight, the non-monumental church itself does not seem of special merit: the straightforward architectural language, the dark bricks, and the scale of the church are similar to those of the surrounding houses¹⁸. Nonetheless, the church can be considered as a cornerstone in the

neighbourhood's design, by which the plan's Catholic signature becomes apparent. Because of this strategic location and this intrinsic spatial integration, over the years, the church has been an asset for the organisation of community activities in this peripheral neighbourhood.

3. THE *BLIJDE BOODSCHAP* CHURCH AS A SHARED COMMUNITY FACILITY

Turning now to the architectural concepts of the *Parkwijk* church, the most notable aspect of the 1970 preliminary design by architect René Van Steenberg (1911-1995) was the idea of a transformable liturgical space¹⁹. Van Steenberg, who was one of the most active church builders in the province of Antwerp during the post-war years, designed a central space for liturgical services, which could be enlarged on both sides with foldable walls²⁰. Although this design had no separate bell tower, it included other features that are particular to Van Steenberg's churches, such as large stained glass windows. In the final design from 1971, however, these large windows were replaced by narrow vertical windows similar to the ones of the surrounding houses²¹. Van Steenberg not only adapted his design to match the surrounding architecture, but also the functionality of the building was altered by adding three more meeting spaces. When the church opened in 1972, these secondary rooms were intended for associations linked to the Catholic pillar²².

Since the Second Vatican Council, church architecture had experienced an impressive typological transformation. In 1972, it had become common to include rooms for non-religious activities in a church, as a way to encourage Catholic social life²³. The transition from mono-functional buildings for worshipping to meet-

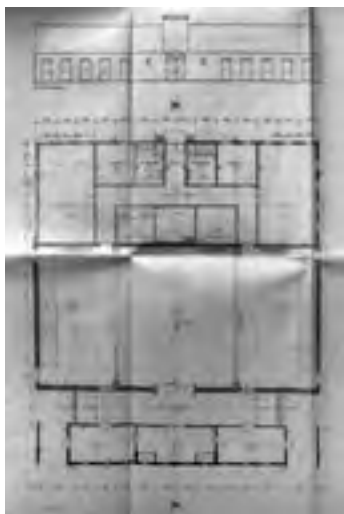


FIGURE 3. René Van Steenberg, *Blijde Boodschap*, Parkwijk, Turnhout, Belgium, 1970, preliminary plan. © Archive of the *Blijde Boodschap* Parish, Turnhout.

FIGURE 4. René Van Steenberg, *Blijde Boodschap*, Parkwijk, Turnhout, Belgium, 1971. © Archive of the *Blijde Boodschap* Parish, Turnhout.



ing centres for the parish community is apparent in Van Steenberghe's oeuvre. The creation of multipurpose churches was even encouraged by the dioceses and the diocesan building agency *Domus Dei*²⁴. Another evolution in church typology of the late 1960s was the "house church" which reduced the church building to its essentials: a modest gathering place for the Christian community²⁵. Both the house church and the multipurpose church typology wanted to encourage interactions between parishioners, stimulating the experience of a collective parish identity.

Interestingly, the functionality of the *Blijde Boodschap* church has shifted gradually over the years. At present, masses are only organised every other month on Saturday nights, and attended by approximately 70 people²⁶. This schedule has existed since 2014, when the church joined the Emmaus parish (established by merging the three Cloverleaf parishes in the south of Turnhout)²⁷. However, other activities take place in the building daily, for which the practical organisation is managed by volunteers²⁸. The following activities take place in the church's secondary spaces regularly: christian prayer group meetings, social activities for the local community (like exhibitions, dance classes, and activities of the woman's organisation *Femma*)²⁹, meetings of local organisations (like the pensioner's organisation OKRA), and the local youth initiative of the city of Turnhout³⁰. Besides these regular activities, private parties are organised approximately 40 times a year.

Without altering the building, the church council has been able to enlarge its functionality over the years, especially use of the areas alongside the liturgical space and the four smaller meeting rooms. Since 1994, the church council has been charging rent for the shared use, and currently this income covers half of their costs³¹. To some extent, they have, however, remained cautious with their rental activities, since the city of Turnhout also contributes to the maintenance costs³². While the religious use of the building has been seriously decreasing, its meaning as a local community facility has broadened. Moreover, the activities in the church are no longer solely targeted at practising parishioners. In that respect, this interesting transformation of the use can be attributed to the flexible spatial concept of this post-conciliar church.

4. CONCLUSION

This paper has analysed how the design concepts of the *Parkwijk* church, and the church's spatial integration have contributed to its potential for shared use. This analysis has shown that the effective evolution in the church's use is attributable to the architectural qualities of the building. The *Parkwijk* church is representative for the evolution towards multipurpose churches after Vatican II. Multifunctional use was an intrinsic concept of this church, but the ratio of religious and secular use has gradually shifted over the years. This analysis has also shown how the church has stayed an active place by means of the church's strate-

gic location in the housing project, acquired by the Catholic signature of the urban plan. Located in the heart of the *Parkwijk*, the church has been increasingly used for community activities, including activities for non-practising parishioners.

In the coming years, the church council expects that the city of Turnhout will request the de-consecration of their church.³³ Notwithstanding the church's architectural flexibility and its strategic location, it will still be a challenge to draw up a complete reuse project. Namely, the benefits of both the architecture and the location will have to be further exploited to create a community centre for *all* the inhabitants of the *Parkwijk*. To realise this a social basis, like an engaged group of volunteers, will be necessary.

In conclusion, the case study offers two insights into the overall potential of post-conciliar churches for applying shared use. Firstly, this case indicates the functional flexibility of community centre churches, especially of religious architecture with a similar non-monumental character. Secondly, this case suggests the opportunities for church buildings located in peripheral residential neighbourhoods of the 1960s and 1970s. In these neighbourhoods, the presence of a different building typology, such as a church, offers one of the few ways to locally organise community activities. This analysis enhances our understanding of the significance of the specific urban context of modern religious buildings in the debate on their alternative use.

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NOTES

This research was developed within the PhD of Eva Weyns, supervised by Professor Sven Sterken, at KU Leuven Faculty of Architecture.

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- 12 Yves de Bont, *100 Jaar Wonen in Turnhout: Architectuur van 1895 tot 1995*, Zellik, Roularta Books, 1995, 16.
- 13 The construction of the ring road was already part of the architect J. Ritzen's development plan for Turnhout, and commissioned by the municipality at the end of the 1930s. Of Ritzen's project only the park and a part of the ring road were realized. *Ibid.*, 14.
- 14 Sam Van Clemen, *op. cit.*, 185.
- 15 For more information on these architects see: Yves de Bont, Francis Strauven, *op. cit.*
- 16 Several designs of the *Parkwijk* are preserved in Architecture Archive of the Province of Antwerp in Antwerp, archive of Eugene Wauters, record of the *Parkwijk* Turnhout (164). Karina Van Herck, *op. cit.*, 229-243.
- 17 *Ibid.*, 243.
- 18 Only a single bell in a small metal construction and two crosses on the façade give away the identity of the building.
- 19 Plans of the preliminary design of the church from 1970 are preserved in the parish archives: archive of the *Blijde Boodschap* Parish, Turnhout.
- 20 Architect René Van Steenberghe realised an impressive architectural oeuvre between 1933 and 1984. For a short description of his work, see Dirk Laureys *et al.* (ed.), *Bouwen in Beeld: de Collectie van het Architectuurarchief van de Provincie Antwerpen*, Turnhout, Brepols, 2004, 306-308.
- 21 Plans of the final church design from 1971: archive of the *Blijde Boederschap* Parish, Turnhout.
- 22 Interview on January 8, 2016, with Frans De Backker, a member of the church council and inhabitant of the *Parkwijk* parish since the 1960s.
- 23 The Second Vatican Council also encouraged experimenting with new ideas for collective worshipping, although the liturgical concept of this particular case is rather straightforward. For the relationship between liturgy and church architecture in Belgium see for example: Anne-Françoise Morel, Stephanie Van de Voorde, "Rethinking the Twentieth-Century Catholic Church in Belgium: The Inter-Relationship between Liturgy and Architecture", *Architectural History*, n. 55, 2012, 269-97.
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- 25 Geert Bekaert, *op. cit.*
- 26 In 2014, the *Parkwijk* parish had 2734 inhabitants. Additional masses are held at Christmas, Easter, and for special occasions like baptisms, weddings, funerals, first communion and Confirmation. See *Eindrapport Fusie Klaverbladparochies*, Antwerp, 2014. More information on the parish is available on their website: "Welkom op de site van de Emmaüsparochie", accessed on February 9, 2016, <http://archieff.kerknet.be/federatie/6017>.
- 27 The Emmaus parish has a single priest, and was established by merging three parishes that had been collaborating since 1998 under the umbrella of a parish federation. All three parishes have a church designed by architect René Van Steenberghe.
- 28 Information on the use of the church was acquired during an interview with Frans De Backker on January 8, 2016.
- 29 *Femina* is the former Christian Workers' Wives association (*Kristelijke Arbeidersvrouwen*), see "Turnhout Blijde Boederschap", accessed on February 9, 2016, <http://www.femina.be/nl/groep/turnhout-blijde-boederschap>.
- 30 In the *Speeltheek Wobbeltje* children can rent toys and games, see "Speeltheek Wobbeltje", accessed on February 9, 2016, http://www.turnhoutspeelt.be/nl/product_catalog/266/speeltheek-wobbeltje.html-2.
- 31 Archive of the Antwerp Diocese in Antwerp, record of the *Blijde Boederschap* parish in Turnhout, accounts of the church council.
- 32 Interview with Frans De Backker on January 8, 2016. On the parish website, for example, only a limited amount of information is provided about the rental possibilities. "Huren van de parochiezalen", accessed on February 9, 2016, <http://archieff.kerknet.be/federatie/6017/content.php?ID=9780>.
- 33 Since 2015 the city of Turnhout, in collaboration with the different parishes, is working on a long-term plan for the rationalization of the parish landscape.

Senhora da Boavista, a Church by Agostinho Ricca for the 21st Century

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This work focuses on a pilot district, designed and built by private enterprise in Porto (Portugal) from 1962, at a time when the city grew in several expansion bubbles, particularly as a result of a large-scale housing plan promoted by the municipality.

It is a project of modern design for a neighbourhood of the emerging upper middle class, jointly conceived by one single architect, consisting of housing, offices, shops, a luxury hotel, a swimming pool, a cinema, a church and parish centre and a kindergarten (not built), all arranged around a central garden.

The project for the church, designed in detail from 1974, would only be completed at the end of the 1990s, with the construction of the parish and social centre. This clearly post-conciliar church abandoned the longitudinal plant to build a cozy, familiar and flexible space, with an architectural language marked by the dominant concrete, softened by stained glass, wood and white marble.

Recent work on the archive of the architect Agostinho Ricca (1915-2010) allowed a deeper reading of this global project by making evident the care taken from the initial studies, throughout the development of the project (which involved many recognized artists) and until the construction phase.

The project was developed at different scales, from the urban area to furniture design, from the choice of the church location to the mobile altar proposal. The sliding doors in the church allow the use of the Sunday liturgical space for concerts and conferences. The originally requested auditorium gave way to a multipurpose room used nowadays as recreation space for children of catechesis. These are some of this building's keys to success, which were to the profit of the whole community.

The different choices in the course of the project reflect a deep understanding of the architectural discussion in that period. Having visited modern churches in central and northern Europe, Ricca refused the huge structures of traditional parish centres.

It is worth noting that the present church, the most flexible public building from the ensemble, is the only one that remains in use nowadays. This paper aims to reveal the success of this project of Portuguese religious architecture of the second-half of the 20th century, which is still capable of serving the population at the beginning of the 21st century.

1. FRAMEWORK

The modernist architect Agostinho Ricca (1915-2010), student and teacher at the Fine Arts School of Porto, designed the Our Lady of *Boavista* church (Porto 1974-1999), when he was 60 years old.

In the late 1950s, the expansion towards the outskirts of the city was the highest priority. The city suffered from a general housing shortage and poor housing conditions. This was the background for the changes that began to take place in more remote areas of the city, with small detached family houses giving way to new housing blocks. This important moment caught the attention of the Bishop¹ as the opportunity for the church to henceforth play an active role in the city's life by helping create a more coherent social urban grid. The city master plan of 1962

forecasted more religious facilities to be built. A few years later, new churches and parish houses were commissioned according to the renewal principles of the Vatican II Council².

To the west of the city, following the construction of the freeway leading to the then recent *Arrábida* bridge, new land became available for housing.

2. THE PROJECT

"Graham", as the site is known, was an old textile industrial estate that operated until the late 1950s. The Dehonian community settled then in the old factory site converted into a seminary³. With the *Boavista* project came the opportunity to integrate an emerging upper-middle class matrix into a new area, basing it upon a diverse and generous design programme. In 1959 Ricca was invited by banker Cupertino de Miranda to review the initial neighbourhood proposal⁴, and submit his own design. He proposed a long office and housing block in the west area of the site, devoting the eastern sector to leisure, a hotel and other facilities. This proposal is evidence of how far we'd come since the times of the council housing estates.

The above-mentioned seminary received, during the 1960s, many Italian priests, among them priest Giulio Carrara, later responsible for commissioning the *Boavista* church in 1974⁵.

Ricca's original scheme comprised two main volumes, courtyards and a detached clock tower. The main square beside the church did not form a churchyard. The church wasn't meant to be the main feature of the public space. Instead, buildings such as the cinema, the hotel and the residents' club were the key pieces, and it isn't without some grief that we see them in a derelict state today.

The church project would only be completed at the end of the 1990s with the construction of the parish and social centre. We obtained a better grasp of the history of the design development by going through over 220 drawings in the architect's archive. The church became a very discreet beautiful building, set back from the hotel street facade and lower than the surrounding ones.



FIGURE 1. Agostinho Ricca, Boavista Neighbourhood, Porto, Portugal, initial proposal model and aerial view. © Agostinho Ricca Archive, Teófilo Rego 1950s, Luís Ferreira Alves 1990s.



FIGURE 2. Agostinho Ricca, *Nossa Senhora da Boavista* church, Porto, Portugal © Ricca Archive, Teófilo Rego 1980s.

The first church proposal was a lower building, with few openings. Identically, the parish house was almost completely self-enclosed. Archive sketches illustrate that a more open elevation was proposed to the internal area of the site, making it strongly resemble a house. It's safe to say that Ricca conceived this building as he would design a house⁶.

Some religious buildings lack the sense of domestic feeling and unity that the Church seeks to transmit. Ricca had this in mind. The entrance is a welcoming space, with a seat and a low canopy over marble flooring. In the interior, the dining room communicates with the outside garden and there's even a fireplace, which Ricca always included in his housing projects. All of these details bear meaning in architecture.

Ricca integrated knowledge acquired abroad, when he visited many kindergartens and community buildings, into the design of the Sunday school rooms. In the central meeting area, a foyer covered by pyramid-shaped roof lights, is similar to the ones in the Residential Club/Hotel⁷.

3. THE CHURCH, THE CORE OF THIS LARGE HOME...

The *Boavista* church wasn't the first church committed to⁸. From books and magazines, like *L'Architecture d'Aujourd'Hui* and *Werk*, he collected examples of what was being built throughout Europe. His personal library is a mirror of his refined taste and reveals the reason why he travelled so frequently.

Ricca, particularly interested in the worship space, whether Catholic or Protestant, in his first long professional trip abroad in 1949, visited modern Swiss churches, like those in Altstetten and Basel (*Johanneskirche*)⁹. In the 1960s he found in Justus Dahinden's work the meaningful qualities that meant so much to him: the communal spaces organized around the altar and the predominant presence of concrete, timber, and light. These were key elements that he applied in the *Boavista* church and were also present in the two other later churches he designed¹⁰.

In his project description one reads:

*We want to build a church that, despite looking different from the traditional buildings of its kind, would still be unequivocally recognized as a space for worship and prayer, full of mystical sense. Eventually, this came to influence the general scheme proposed. We had to choose materials that helped to carry the message through.*¹¹

The Committee for Sacred Art reviewed the first design, issuing some concerns regarding the building's identity, the welcoming areas, the flexible use of the space and internal organization. The committee stated that a small cross should be added to the façade and the choir balcony should be deleted. The deep chancel that resembled too much a theatre stage was mitigated, as a compromise to get the community closer and more participative in liturgical ceremonies. The altar wasn't aligned with the centre of the congregation and there was no central aisle dividing the community. This was introduced later on, in the construction phase. Ricca also designed the church furniture. The seats distributed in a shell-like layout reflected a feeling of communion. The separation of the main liturgical hall from the holy chapel was an idea of the committee and Ricca's design responded in a functional way, proposing the separation by folding doors. The parish hall and services located in the crypt weren't approved. Like the liturgical areas they should have natural light and ventilation.

Ricca reviewed the project accordingly, as demonstrated by sketches and drawings. All those changes brought the design closer to the final built work.

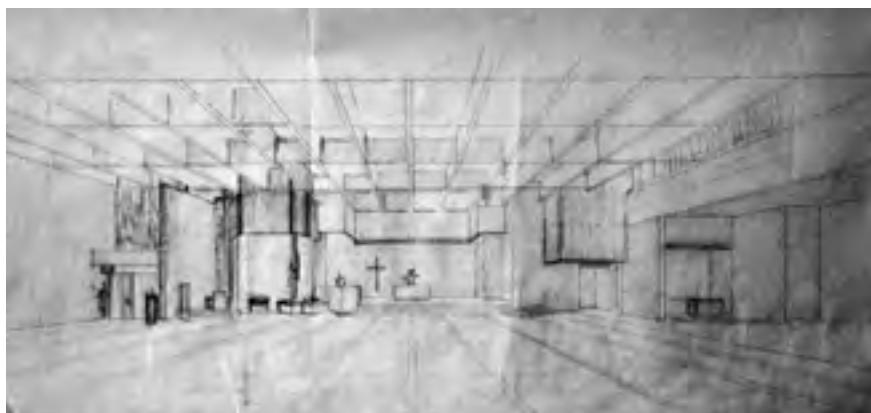


FIGURE 3. Agostinho Ricca, Nossa Senhora da Boavista church, Porto, Portugal, interior perspective. © Agostinho Ricca Archive, Agostinho Ricca 1975.

It's worth noting how Ricca integrated into the design the ideas of welcoming and mystery we mentioned before. The entrance to the church is not a straightforward transition. One must go up a few steps, then through a sheltered link connection that prepares the visitor to enter the liturgical space. Once inside, our eyes fix on the stained glass window and then shift towards the altar. The dense and comfortable carpet in the central aisle invites one to walk up to the altar, thus uniting the timber hall's floor with the marble of the chancel.

Ricca conceived the neighbourhood, drawing each of the buildings. In the church project he went through all scales, from the building to the furniture.

For the holy chapel he detailed the altar, a marble block reminiscent of an ancient ceremonial stone. This piece contrasts with the main altar – a sculptural piece in copper, like the ambo, very rich in detail. Concerned about a more functional side, Ricca added a set of wheels to allow it to be moved, in case the main room was used for functions other than liturgical services, thus answering the committee's request for a more flexible use of the space.

The attention given to detail in this building is impressive. Notice the presence of the white linens in the composition and how they fold over the softened edges of the altar, elegantly and enhanced by the natural light.

A poetic feeling comes to our minds when thinking of such an image, recalling Gaston Bachelard's words:

*...Everything breathes anew,
the cloth is white,
the cloth, this handful of whiteness was enough to anchor the house in its centre*¹²

30 years after Ricca began designing the Boavista church, already in his 1990s, work was yet to be completed. The pipe organ was missing¹³. Ricca then sketched what it should look like. Being as much passionate for music as for architecture, he dreamed of a pipe organ occupying a high noble space in the room – after all, music was an inseparable component of architecture, as he pointed out in 2001 when presenting his book:

*To Paul Valéry, mute buildings [...] have no Architectonic interest (and, in cities, they are always the majority). Those that "speak" are the ones that adequately serve the purpose they were designed for. But those that "sing", they are the high examples of the great Architecture – that of transcendent beauty*¹⁴.

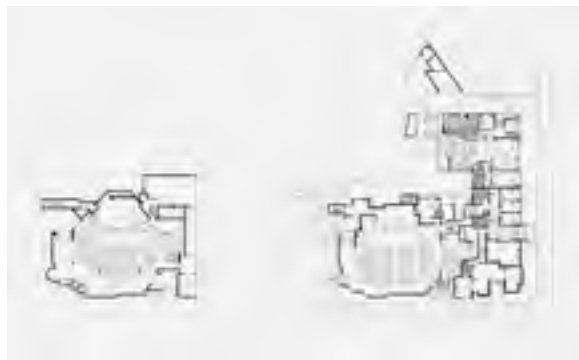


FIGURE 4. Agostinho Ricca, Nossa Senhora da Boavista church, Porto, Portugal, plans – 1st and final solutions. © Agostinho Ricca Archive, Helena Peixoto 2013.

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NOTES

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- 1 D. António Ferreira Gomes (1952-82) and the apostolic administrator D. Florentino de Andrade e Silva (1959-69).
- 2 11 of the now existing 26 parish churches in Porto were inaugurated in the second half of the 20th century: 5 replaced smaller churches, 2 were provisional chapels in council housing estates and 4 were built in new areas of the expanding city, being handed over to religious orders: Dominicans, Capuchins, Claretians and Dehonians (*Nossa Senhora da Boavista*).
- 3 *"Seminário Apostólico Padre Dehon"*, *Voz do Pastor*, Ano XLII, n. 9, Porto, 24th March 1962, 1.
- 4 The first proposal for this site was a design by Nikita Gröer (son of the polish urbanist Ettiene Gröer) and it consisted of a series of blocks perpendicular to the adjacent *Boavista* avenue. A long 10 storey building divided the site in two. To the north, a series of smaller parallel blocks was proposed at an angle with the freeway. To the south, the school, the kindergarten, the restaurant and the commercial services were connected to the church, which was the scheme's most predominant building.
- 5 The italian priest Giulio Carrara (1930-) was ordained in Bologna in 1958 at Cardinal Lercaro's time, to whom building churches on the outskirts was an opportunity not to be overlooked.
- 6 An archival picture of a house that Ricca designed in the early 1950s can be used to analyze the general principles that the architect employed in his work, which he continued integrating in many projects since, the church being no exception. There's a large garden, extending all the way to the walls of the house, a terrace over an extension of a lower single storey volume, and an inviting and welcoming porch. These very elements can be found in the church and parish house project. It seems that the garden is missing but drawings reveal a garden, which hasn't been built. Although the inner garden wasn't built, green spaces surround the building, which soften the junction of the concrete walls with the ground.
- 7 Recently rehabilitation works replaced this glass structure, ignoring the architectural value and the unity of the buildings.
- 8 In the research process we identified *Monte da Virgem* church (Vila Nova de Gaia) a 1940s project with clear affinity with G. Muzio churches, with whom A. Ricca worked in the city council master plan office. Later versions, from the 1960s, show a spine scheme with a double-pitched roof and exposed masonry walling. Ricca aimed to merge together traditional construction techniques with a modern way of design, something that the architects of the Portuguese Movement for Renovation of Religious Art were also exploring at that time. **A. Ricca was not a member of this movement.**
- 9 Cf. João Luís Marques, *"Viagens e Memórias. Arquitecturas do 'Centro'"*, Agostinho Ricca: *Arquitectura, Obra e Desenho*, Lisboa, Uzzina Books, 2015, 28-31.
- 10 St. António Sanctuary, Vale de Cambra (1986-93), Sagrada Família Church, Chaves (1994-).
- 11 Agostinho Ricca, *Memória Descritiva*, Porto, Oporto Diocese Archive, 14h June 1974.
- 12 Gaston Bachelard, *La Poétique de l'Espace*, Paris, Presses Univ. de France, 1958, 62. Free translation.
- 13 The existing pipe organ does not correspond to Ricca's design. It was built in 2004 by a Spanish organ maker Joaquín Lois Cabello from Tordesilhas.
- 14 Agostinho Ricca, *"Somente duas Palavras [2001]"*, Agostinho Ricca: *Arquitectura, Obra e Desenho*, op. cit., 143.

Use and Adaptation of the Experimental Space in the *Divino Espírito Santo do Cerrado* Church – Lina Bo Bardi, 1976

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This paper¹ presents the Franciscan church designed by Lina Bo Bardi in Uberlândia between 1976 and 1982; a religious complex built on the outskirts of the prosperous country town. Its design and construction took place in the final phase of the authoritarian regime, when the *Comunidades Eclesiais de Base* [Ecclesial Base Communities] were established in the country as a result of the Vatican II Council, which were linked to people's real needs of fighting the dictatorship. This position relates to Franciscanism and the Latin American theological movement called *Teologia da Libertação* [Liberation Theology], which united its choice for the poor to political actions as a means to achieve social changes.

The design came from the simplicity of the circular shape and has references to Paleo-Christian architecture as means of having meeting spaces, adapted to the sloping topography, for the intended uses – celebration, meetings, parties and housing for the religious women – and for the pre-existence of a soccer field. Such geometry has broken the traditional relationship between the rectangular corner lot and the streets, generating permeability to the religious complex through the interlacement of three round volumes. The belfry and the church were implanted on the highest elevation of the terrain utilizing the natural overhead light, which enters through a triangular face of translucent roof tiles, giving sacredness to the space. On the level below, another circle functions as housing for religious women, with cells facing a cloister followed by the third volume used for training and festivities.

Local materials – which were donated or acquired through funds obtained from the German organization *Adveniat* – were used in the construction, which counted with the fruitful work between the architect, engineer, foreman, carpenters, bricklayers, maids and the support of the neighbourhood community through *mutirão*².

The first years after 1982 represented the harmony between the Franciscans, the community and the architecture, but this scenario has been altering since then through changes in the church itself, when the complex started to be administered by the secular order. This paper presents such changes and the consequences for the original architecture, as well as the modifications caused by the growth of the community and the recognition of the cultural and historical value of the architectural ensemble.

1. INTRODUCTION

It was Flávio Império who introduced Lina Bo Bardi to the work *Crucifixo*, authored by the artist Edmar de Almeida, in 1973; during the hard years of military dictatorship. In order to depart from the political tensions of São Paulo, the architect took refuge in Santo Antônio Grange, in Uberlândia, where she met the artistic process that Edmar de Almeida had developed in the countryside of Minas Gerais, which, two years later, would culminate in the exposition *Repastos – Edmar e as Tecedeiras do Triângulo Mineiro*³.

Intermediated by Edmar de Almeida, Lina Bo Bardi met the Italian Frei Egidio Parisi, a central agent in the local Franciscan work, who invited her to develop the design of a space for community and religious activities in Jaraguá, a new

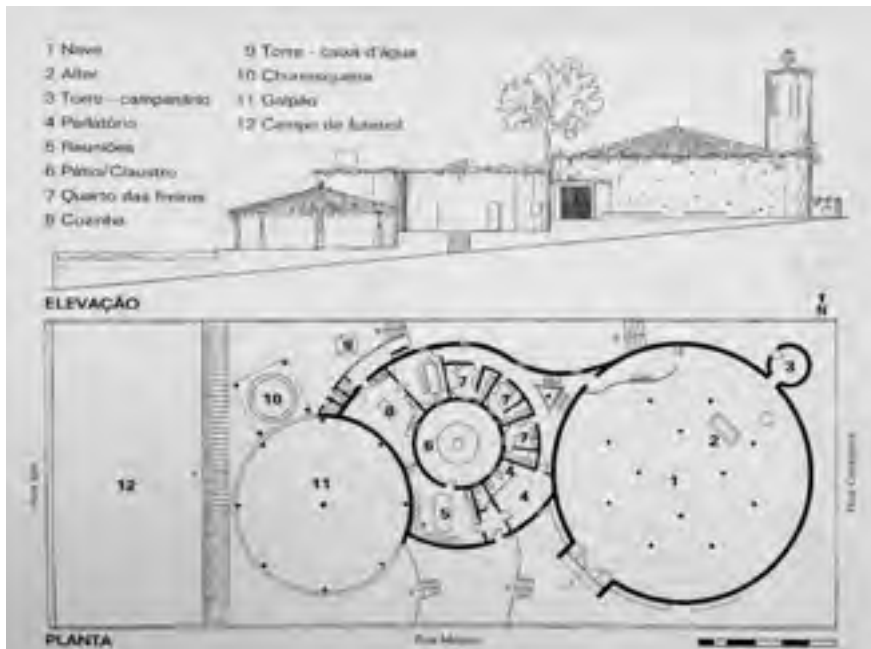


FIGURE 1. Lina Bo Bardi, Project for *Divino Espírito Santo do Cerrado* Church, Uberlândia, Brazil, 1978. © Marcelo Ferraz, 2008.

neighbourhood on the outskirts of Uberlândia entrusted to the Franciscan Order, which held celebrations in a plank chapel built by the community of believers. The professional background of the architect encouraged Frei Egidio Parisi to choose her; however, there was an initial refusal, for Lina Bo Bardi possessed great historical knowledge and voiced criticisms against the Catholic Church. Furthermore, she feared that the project would not be considered in its entirety, or that the management of the complex would somehow compromise its architecture. She was unaware that, before Frei's arrival to Brazil, he had been a chaplain and had participated in the resistance at *Monte Cassino*, or that he had supported Roberto Rossellini in the production of the movie *Francesco, Giullare di Dio* (1950), an important Italian neorealism film production; these facts were later revealed to her by Edmar de Almeida, which contributed to her acceptance of the invitation.

This meeting took place in the authoritarian environment of the 1970s, when the *Comunidades Eclesiais de Base* were formed in Brazil which, according to Coutinho, mixed "the existence of communities rooted in tradition (chapels, rural communities, new outskirt neighbourhoods formed by migrants...) with the action of pastoral 'modern' agents (bishops, priests, sisters and lay people formed by Catholic Action, and sometimes theologians and sociologist assessors)"⁴.

The convergence of positions between Franciscanism and the choice for the poor discussed in the *Teologia da Libertação* is inevitable. Said theology, accord-

ing to Boff, builds a new position about the assistance performed by the church, starting to look at the society through the eyes of the poor. To him, they, the poor, are the ones who have “power of utopia, of reflection and of practice”⁵; power necessary to generate a new church capable of fighting against the perversity of that moment by a sense of justice and community.

2. A VIABLE ARCHITECTURE

The Jaraguá neighbourhood provided a concrete alternative for the relationship between architect and community, which involuntarily referred to the principles of the *Comunidades Eclesiais de Base*, which understood that, by not being possible to “influence society as a whole [...], the transformations could be prepared, in another timescale, by working through the ‘bases’ of the social building”⁶.

Lina Bo Bardi planned the project for that community as a set of activities organized on four levels, according to the topography and all accessed directly from the street – the *pelada*⁷, the feast, the house and the prayer. The existing soccer field in the lower level of the site remained, followed by, on the level above, the meeting hovel. Just above it lies the middle building which surrounds a courtyard and holds the cell-like houses, kitchen, living room and attendance area for the believers. The belfry and the church were implanted on the upper street level.

The plan of the complex originated from the entanglement of three circular volumes, where the two outmost keep their integrity, while the middle one links them and is interrupted in one of its intersections. The south-west side of the central volume does not follow a regular perimeter, generating a subtle sinuosity.

Easily accessible materials and construction techniques were used: *aroeira* (a Brazilian tree) timber structures, brick and ceramic tiles manufactured in the region, concrete in the foundations, retaining walls and structure of the volume dedicated to the church, which would be crowned with *Cerrado* vegetation. The form has humble details, putting in evidence the cheap mate-



FIGURE 2. Lina Bo Bardi, Construction *Divino Espírito Santo do Cerrado* Church, Uberlândia, Brazil, 1980. © Courtesy of Community Jaraguá Neighbourhood.



FIGURE 3. Lina Bo Bardi, Interior *Divino Espírito Santo do Cerrado* Church, Uberlândia, Brazil, 1980s. © Marcelo Ferraz, 2008.

rials worked, as she imagined to be consistent with the reality of the region. Since the late 1950s, particularly during her period in Salvador (1958-1964), Bardi regulated herself to the popular production of objects, tools and architecture, seeking to build an alternative to the pageantry of public buildings during the years of the Brazilian “economic miracle”, or the indulgence of the official social housing buildings.

The design was donated both by the architect and by the engineer Rodolfo Ochoa, and the construction was directed by a board of construction formed by the neighbourhood community under the leadership of the Italian Frei Fúlvio Sabia, combining the work of hired professionals and the community. Despite the distance between Uberlândia and São Paulo, where the architect lived, the construction was supervised by Bardi and her young collaborators, Marcelo Ferraz and André Vainer, in a fruitful exchange between professionals, community and church.

Other Latin American countries showed similar occurrences since the WWII, in part by the exercise of Europeans who, like Bardi, have proposed interpretations of modern architecture⁸ to the underdeveloped continent. In Cuba, architects Vittorio Garatti and Roberto Gottardi developed the project for the National Art Schools of Cuba (1961) as an alternative to art education in the Third World. The experimental nature of this architecture comes from bringing together local



FIGURE 4. Lina Bo Bardi, *Divino Espírito Santo do Cerrado Church*, Uberlândia, Brazil, 2008. © Núcleo de Teoria e História da Arquitetura e Urbanismo – FAUED-UFU.

culture and modern functionality expressed by an articulated plan under ceramic arched roofs, just like the church in Atlântida, Uruguay (1952-58), designed by Eladio Dieste, where a post-conciliar spirit joins technique as a mark of a critical review process. Rogelio Salmons, in turn, designed the Distinguished Guests House of Colombia (1978), in Cartagena, a project that does “a reinterpretation, in stone, of the colonial house with courtyard and stone masonry”⁹.

In Uberlândia, Bardi also sought the past for spatial possibilities for the creation of sacred spaces utilizing the circular shape as a “characteristic of the Western Roman architectural tradition”¹⁰, which can also be oriented to the exposition of the materials consolidated through popular constructive techniques. The former was the theme of various works, such as the exposition *Architecture without Architects*, by Bernard Rudofski, realized in 1964, and the publication *Cobijo*, by Lloyd Kahn, published in the 1970s. Even if biased towards the traditional, the modern design harmonizes with international post-war architecture, also developed by architects like those from Team X, exemplified by the “Wheels of Heaven”, church designed by Aldo Van Eyck in 1966. In Uberlândia, the space serves in favour of the free community life proposed by the circular shapes which, multiplied in the complex, serve as well, according to Oliveira, as a questioning of the “centralizing, universal and hierarchical vision, characteristic of western religions”¹¹.

*A new architecture should be connected to the ancient problems of man-creator of his own spaces; of pure contents, contents that would create their own forms. An architecture in which free men would create their own spaces. This type of architecture requires absolute humility from the architect. An omission of the architect as the creator of life forms, as an artist. The creation of a new architect, a new man bonded to technical problems, social problems, political problems*¹².

The longing for that which Bardi believed to be the job of an architect made this project the accomplishment of a line of action that differed even from her great work of that same period, the SESC Pompéia, where the process was complex, mediated by the work scale and structure of the contracting institution. According to Marcelo Ferraz, it was “an exercise of freedom and an architectural exercise dedicated to others [...], an invented work”¹³, which would reverberate much further away from its religious function.

In a testimony by Bardi in *Arquitetura e Tecnologia*, when asked: “How, given the kind of system that now prevails, can we produce this base-line architecture that responds to people’s roots and needs? What channels should be used, what means?”¹⁴. The architect’s response sums up the importance of the work developed with the Jaraguá District’s community:

*First off all, I’m not talking about a ‘spontaneous’ architecture, which is the invention of the architectural bourgeoisie. I’m talking about people’s needs. People should be able to build, and the architect has an important role to play in making this happen. It was in this sense that I spoke of a base-line architecture. First you have to have a certain modesty and moderation in your goals. Then you can set up a large technical studio (this is not absolutely essential, but it’s a possibility). Brazil is a big country, you could work through organizations. The Church, for example, does stuff, has ongoing projects, but few people know about them. You have to travel around Brazil, head inland, see things, not stick to the cities*¹⁵.

She believed in a transformation of society based on the principles of modern architecture, where the social responsibility of the architect should lead a change in collective consciousness. Bardi proposed to keep her search for changes in the basis of society and culture. “I think that the people should do architecture. It is important that architecture begin from the foundations, not from the dome”¹⁶.

The little church proves that “her projects now have more latitude, hiding from the sun, being something that perhaps Kenneth Frampton would include on its ‘critical regionalism’ label”¹⁷. Although Frampton himself has replaced his “critical regionalism” by the concept of “tectonic” to describe his preference for “authentic” architecture¹⁸, one must recognize that this work has qualities that he values in his writings: it is marginal and progressive; limited to local conditions – society, topography, climate, light –; it addresses the senses beyond vision in favour of body experience; it reinterprets local vernacular elements and also subjects them to foreign references in order to construct regionalist foundations of a world culture. It also lies far from a large urban centre, reinforcing the hope that, in this kind of context, it was more viable for an architect to fully exercise an architect’s social role.

3. THE BUILDING IN TIME

In 1982, nuns came to live in the complex and to work with the community; the meeting hovel was used for festivals, vaccination of children and events to raise funds for the completion of some construction details, beyond the *peladas*, celebrations and meetings within the church building. In 1985, the building was designated as Holy Ghost Parish, having Frei Fúlvio Sabia as its first vicar. The complex was transferred to the *Cúria Arquidiocesana de Uberlândia* (Archdiocesan Curia of Uberlândia) in the 1990's and began to be administered by the secular order. The community adapted itself to the complex unaware of its architectural and historical value, causing serious consequences to the conservation of the architectural integrity of the building.

One of the most significant statements made by Bardi on the conservation of the attributes of that space relates to the interior of the church, that it should be kept the way it was, with its exposed bricks, "without whitewash, plaster or anything. The FREI must forbid anything to be done on the walls"¹⁹. That was one of the most compromising interventions executed on the complex since then, which changed the environment built upon the exposure of the materials under natural light. Moreover, the continuous ventilation that should occur from the lattice door and the openings left by the scaffolds on the brickwork was obstructed, and the vegetation from the parapet of the church was removed, due to maintenance difficulties.

Still in the 1980s, the sisters gave way to the priests who eventually came to the community, and then the housing began to serve as the administration of the parish and storehouse, holding as well community and liturgical activities such as meetings and catechesis. The new uses required minor modifications, such the ones in the electrical infrastructure and the addition of some partitions. A small building was constructed alongside the belfry; the meeting hovel's low bamboo enclosure was replaced by wood log walls from floor to ceiling, its floor received a concrete finish as indicated by the original project drawings – replacing the earthen floor – and the glaxis next to the soccer field was replaced with bleachers.

Given the poor conservation of the church complex, in 1994 began a pro-preservation mobilization lead by students, teachers, architects and artists that, after resistance from the administration of the parish, led to its legal protection by the *Instituto Estadual do Patrimônio Histórico e Artístico de Minas Gerais* [Historical and Artistic Heritage State Institute of Minas Gerais] in 1997. Between the late 1990s and the 2000s, several conservation actions for the building complex were implemented, and in 2009 a restoration and intervention project was developed by Marcelo Ferraz and André Vainer, partially completed in 2014. According to the authors, they considered the critical positioning of the architect regarding the patrimony and her understanding of a "historical present" which, according to Silvana Rubino, had its origin in the idea of Benedetto Croce that "historical judgement is determined by the contemporary situation, by a subject that observes the

present as a platform from which to assess the past"²⁰. Observing the transformations in the context in which they are found, besides restoring and adapting the old building, the design proposed a new construction where the soccer field was situated in order to hold activities of the community that previously took place in the old residence, which, in turn, started to hold the *Museu de Arte Sacra de Uberlândia* [Museum of Sacred Art of Uberlândia].

4. CONCLUSION

Some irreversible actions about the complex compromised the original purposes of the design and are justified by the changes in that context which coexists with the balance between its welfare of conservation, its new purposes and the memories of children playing football in the minds of the few original residents. However, the building remains as the centre of community activities in the neighbourhood, stressing that the social character of this architecture is its main feature.

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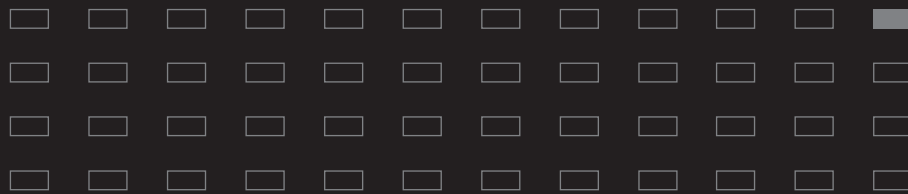
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NOTES

- 1 This paper is the result of the dissertation entitled *A Igreja Divino Espírito Santo do Cerrado e suas Alternativas à Arquitetura Brasileira* guided by Professor Renato Luiz Sobral Anelli at the *Instituto de Arquitetura e Urbanismo da Universidade de São Paulo* [Institute of Architecture and Urban Planning of the University of São Paulo].
- 2 A traditional Brazilian system where members of a community work together, helping each other to achieve a common goal, in an informal way and without receiving money or other benefit.
- 3 The exposition took place at the *Museu de Arte de São Paulo* [São Paulo Art Museum]. Around fifteen tapestries (including the *Crucifixo*) were exposed as a big ambient, showing the process of production of the works along with videos, photos, Cerrado's plants, artefacts, work tools and research into dyes. It received the *Best 1975 Year's Exposition Award* from the *Associação Paulista de Críticos de Arte* [Paulista's Association of Art Critics].
- 4 Sérgio Ricardo Coutinho, "Comunidades Eclesiais de Base: Presente, Passado e Futuro", *Interações: Cultura e Comunidade*, PUC-Minas, 2009, 179-180, accessed on February 10, 2015, <http://periodicos.pucminas.br/index.php/interacoes/article/view/66792009>. Free translation.
- 5 Leonardo Boff, 2002, in Sérgio Ricardo Coutinho, *op. cit.*, 180. Free translation.
- 6 Sérgio Ricardo Coutinho, *op. cit.*, 179. Free translation.
- 7 A Brazilian informal soccer match.
- 8 Jean-Louis Cohen, *O Futuro da Arquitetura desde 1889: Uma História Mundial*, São Paulo, Cosac Naify, 2013. Fernando Lara, Luis Carranza, *Modern Architecture in Latin America: Art, Technology, and Utopia*, Austin, University of Texas Press, 2014.

- 9 Jean-Louis Cohen, *op. cit.*, 435. Free translation.
- 10 Olívia Oliveira (ed.), 2G Books. *Lina Bo Bardi – Built Work*, Barcelona, Gustavo Gili, 2010, 91. Free translation.
- 11 Olívia Oliveira (ed.), *op. cit.*, 92. Free translation.
- 12 Testimony of Lina Bo Bardi in the documentary *Architecture - The Transformation of Space*, by Walter Lima Jr. (1972, Globo Shell Especial).
- 13 Marcelo Ferraz (org.), Lina Bo Bardi – Igreja Espírito Santo do Cerrado, São Paulo, Instituto Lina Bo Bardi, Editorial Blau, 1999. Free translation.
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- 15 *Id.*
- 16 *Ibid.*, 93.
- 17 Silvana Rubino, Marina Grinover, *Lina por Escrito – Textos Escolhidos de Lina Bo Bardi*, São Paulo, Cosac e Naify, 2009, 6. Free translation.
- 18 Considerations of Kenneth Frampton, in *Modern Architecture: A Critical History*, London, Thames & Hudson, 2007.
- 19 Note of a meeting held in 1986.
- 20 Lina Bo Bardi, (translated by Anthony Doyle and Pamela Johnston), *op. cit.*, 15.

CONSTRUCTION
AND TECHNOLOGY



Structures of the Modern Movement in the Post-WWII, Post-colonial Societies

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A new world order was ushered in by the demise of the colonialism when the WWII ended, and a wholly new generation of buildings of an optimistic world view had been constructed throughout the world: Asia-Pacific region; the Indian sub-continent; and the African continent. In the period of scant seven decades, some structures had served their initial purposes, and were eventually demolished to make way for other buildings, or for the purpose of urbanization. Some of the noteworthy architectural accomplishments, however, have gone through creative transformations for different, yet appropriate new uses.

The session “Structures of the Modern Movement in the post-WWII, Post-colonial Societies” is intended to examine cases of successful reincarnation of architecturally significant works by the first group of post-WWII modernist architects in different countries. Scholarly presentations dealing with cases of appropriate reuse in buildings of significant modernist values throughout the different geographical regions of the world would be given in the following broad headings:

- New function given to the original structure.
- Structural intervention to improve longevity.
- Enhancement of environmental performance through better building envelope.
- Building code compliance in different jurisdiction.

Adaptive Reuse of Modern School Building in Post-Colonial Cyprus

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The most prominent traces of the modern architecture in Cyprus were seen throughout the end of the British colonial period from the mid-1950s to 1960s, which also disseminated and dominated just after the WWII across the globe. Due to the lack of higher education opportunities, Cypriot architects went to complete their studies abroad, mostly in Europe, and afterwards returned back to the island to apply their western inspired modernist design approaches in their professional experiences. One of them was the renowned Cypriot architect of the modern Cyprus, Ahmet Vural Behaeddin, who not only remained faithful to the principles of modern architecture but also took into account the local, vernacular, climatic and environmental factors in his designs. After the declaration of independence from colonialism in 1960, he designed a school building, the Lefkosa Turkish Boarding School for Girls, which stands out as one of the most important modern buildings in Cyprus, celebrating to be a young state within the modern world. Nowadays, the school still serves for educational purposes, but separated into two parts and reused as the fine arts lycee dormitory block, and mixed used lycee in a larger block of the complex. The building illustrates the main features of the modern architecture with its rational, functional and simple geometric forms, environmental and contextual design principles responding to the Mediterranean climate and establishing dialog with its historic urban context. Apparently, even simple maintenance and refurbishments give damages to such high quality modernist buildings. In that sense, any planning interventions ignoring such concerns will cause more dramatic and serious damage for post-colonial modern architecture of Lefkosa Turkish Boarding School for Girls. In the light of this, more effective new strategies will inevitably be developed to create “design over design”, in order to preserve the integrity of the existing architecture and create a better potential adaptive reuse of this modern heritage.

1. THREATS AND CONSERVATION OF THE 20TH-CENTURY BUILDINGS AND PLACES IN NORTH NICOSIA (LEFKOSA)

After WWII particularly non-western nations and post-colonial cultures dealt with the modern architecture product pretentiously beyond the limits of mainstream carrying more local and also remarkably modern characteristics. However, mostly in these localities today, due to the lack of principles of conservation and transformation guiding successful adaptive reuse of the mid-century modern heritage is becoming an urgent issue that has intensively been taken into account in many occasions. Relevantly, the paper focuses on this issue by dealing with the well-known school building Lefkosa Turkish Boarding School for Girls, constructed in the post-colonial period and recently has become a challenging issue of adaptive reuse on the outskirts of the historic walled town in North Nicosia¹.



FIGURE 1. Nicosia Master Plan, including Lefkosa Turkish Boarding School for Girls, Ahmet Vural Behaeddin, Nicosia, Cyprus, 1960-63. © Naciye Doratli's archive.

Historic Nicosia, bounded by the Renaissance city walls has been the administrative, commercial and cultural centre of Cyprus and has also provided countrywide services for centuries. However, due to the increase in population by the beginning of the 20th century, Nicosia expanded and developed into the newly established neighbourhoods at the outside of the city walls. Evidently, conditions for the modern way of life were emerged and a remarkable attempt was achieved at the beginning of the 1960s by the Turkish and Greek Cypriots for the modernization of both communities. On that account, the area located at the north fringe of the city wall, in front of one of the main historic city gates, belonged to an Ottoman *wakf* (charity foundation) and used as a graveyard, had been cleared out and intended to be utilised for cultural and educational enhancements of the Turkish Cypriot community.

Lefkosa Turkish Boarding School for Girls was one of the first notable modern building complex designed by a Turkish Cypriot architect and constructed in 1963 in the area to meet the requirements of the modern society. Gradually, the area was physically and socially enriched with the presence of other buildings such as the towns' library, cultural centre and another high school. Evidently, this area with its specific functions would not be a suitable and supportive expansion of the historic city core. Furthermore, it became a strong barrier and prevented a successive spatial cohesion between historic and modern parts of north Nicosia as the expansion followed a linear development pattern pulling along the main radial roads away from the old city core².

In the course of time, revitalization of the walled city of Nicosia, together with the redevelopment of the central core surrounding the walled city has been on

the agenda of both Turkish and Greek Cypriots (to a considerable extent on a bi-communal basis) since the 1980s. Subsequently, the Nicosia master plan, focused on the central part of the historic town, and the businesses and shopping areas in the immediate surrounds of it. In north Nicosia, the mentioned surrounding area, which also includes Lefkosa Turkish Boarding School for Girls, proposed as the central business district. Whereas, the Nicosia master plan also indicates the area as the medium of architecturally valuable institutional and cultural buildings, reflecting a collective urban image and identity. According to the plan, the area deserves more redevelopment-based on urban transformation that focuses on urban upgrading and socio-economic restructuring, in order to integrate it to the contemporary centre of north Nicosia. Correspondingly, an urban transformation plan, based on adaptive reuse implications was proposed for some of the mid-century modern buildings in the area. Lefkosa Turkish Boarding School for Girls is suggested to be converted into a new congress centre for supporting social, economic and contextual sustainability of the district rather than demolishing the whole area.

All in all, this paper focuses on Lefkosa Turkish Boarding School for Girls and deals with its challenging, appreciative and re-interpretive opportunities for further understanding of integration problems that have appeared in the area. For future adaptive reuse implications, it is crucially important to comprehend this mid-century heritage by responding its attitudes through three-stages which are (i) challenges, (ii) evaluation towards appreciation and (iii) re-interpretation through design, respectively.

2. CHALLENGES, APPRECIATIONS AND RE-INTERPRETATIONS OF LEFKOSA TURKISH BOARDING SCHOOL FOR GIRLS

Lefkosa Turkish Boarding School for Girls was designed by Ahmet Vural Behaeddin, who was one of the pioneering architects of Modern architecture in Cyprus³. It is not only a generic modern building of the period, but also a significant award winning piece of architecture⁴, efficiently designed with a similar sensitivity to climate and urban context.

Considering the challenge stage, this modern school building is neither registered nor listed by the governmental and professional institutions. Therefore, if any uncontrolled intervention would be held today, this modern building may seriously deteriorate and also irreversible destruction can occur. The latter, it is necessary not to lose this building depending on its significant place as a modern architectural heritage and socio-cultural characteristics of the modern Cyprus period. Apart from its award winning project, it is published in an international prestigious architectural magazine, *Baumeister*⁵, which proved its importance in terms of the history of modern Cyprus architecture. In addition, it is the first example of an ethnic group, the Turkish Cypriots, to express themselves to modernity through a well designed educational building. Moreover,

another striking feature of the school building is that it was already used for another function instead of educational facilities, just after the construction process in 1963. Due to the continued ethnic conflict between the two communities (Turkish and Greek) on the island, the building was used by the security forces of the Turkish Cypriots until 1968 for health and rehabilitation purposes. This shows that the building's layout characteristics were convenient in terms of functionality and flexibility to adaptive reuse in the past. Nevertheless, in today's conditions, open and separated layout of the school complex, has led to having management issues such as controlling the services and circulations. Furthermore, the building is under threat as a school, due to its continuously changing context in a high-risk region which causes other management problems. For instance; the building is stuck in a heavy traffic zone due to its central position that creates safety problems and makes it increasingly difficult to be used for educational purposes.

As a second stage, evaluation of the building plays an important role to understand which existing features will be appreciated for preservation. Therefore, in order to conserve this 20th century architectural heritage, it should be respected the holistic design quality of the building which represents the modern architecture principles, before any type of spatial and functional transformations. In fact, there are negative and positive features in the structure. The school complex is actually unfinished; there are missing parts that have not been applied according to the original proposed design. Hereby, it is ready and waiting to be completed, creating an useful reuse process. Due its clearly structured layout and functional organization, consisting of administration, classrooms, library and labs, there will be more flexibility in the future extensions of the building.

On the other hand, vertical circulation cores are not sufficiently used and only serve two classrooms on each floor. These fragmentations of spaces might not be useful for the efficient management of the school buildings today, but it can be advantageous for a proposed reuse project. Despite are some maintenance and deterioration problems of the materials, the building offers energy efficiency as a result of passive design strategies such as the controll of the sun and the wind. It was designed with respect to climatic and environmental conditions of the site and the region. For example, linear classroom blocks are facing the east and west, providing the cross ventilation of the spaces. In order to control the intense Mediterranean sun, vertical external shading devices were used on the eastern façades, while ribbon windows were used on the western elevations. Thus, it is necessary to preserve and protect these special façade characteristics not only for the environmental requirements, but also due its authenticity that enriched the entire design. As Macdonald stated, "**docomomo**, who specifically argued in favour of design authenticity over material authenticity and suggested a new philosophical approach was therefore necessary"⁶. With this in mind, any modifications must be implemented according to the identity of the façade and design. Furthermore, the architect's passion and perfectionist approach to this



FIGURE 2. Ahmet Vural Behaeddin, Lefkosa Turkish Boarding School for Girls, Nicosia, Cyprus, 1960-63. Open plan layout and linear blocks. © Ahmet Vural Behaeddin's archive.



FIGURE 3. Ahmet Vural Behaeddin, Lefkosa Turkish Boarding School for Girls, Nicosia, Cyprus, 1960-63. Vertical shading devices on the east façade and concrete lattice for vertical circulations. © Sevil Aydinlik.



FIGURE 4. Ahmet Vural Behaeddin, Lefkosa Turkish Boarding School for Girls, Nicosia, Cyprus, 1960-63. Ribbon windows on west façade and folded plate roof. © Sevil Aydinlik.

school example, should not be ignored. Although many mid-century buildings do not resist well against time, the school building complex is ageing gracefully due the good quality workmanship and material selection. Once the architect is no longer alive, prominent features of the building should be especially conserved, respected and appreciated on his behalf. Consequently, “design over a design” can be easily adapted to the school building, because of its innovative and integrative design approaches.

In the re-interpretation process, intervention decisions should be taken without disturbing the integrity, consistency and authenticity of the design. Proposed new design and function should be integrated into the existing structures with new additions or extensions. Furthermore, this remodelling process should regard its context. It can be seen some deterioration on the surfaces due to the passage of time. Some parts of the lower floors were closed due to the necessities of the current school use. In addition, water taps were later cancelled, which were located on the ground floor of the classroom blocks depending on the school function. Whereas, these water taps will be meaningful for building's reuse because of the new proposal plan functions, consisting in social and public activities. Fireplugs were applied for safety reasons by the architect, showing how he has given importance to details of design. Therefore, even if these fireplugs will not be used, they should be kept in a new proposed function. Moreover, new materials should always be recycled and integrated with the design intent instead of disrupting it. There is no assessment of how this modern school building has stood against the time. However, when it is carefully investigated, it can be observed that the use of right materials and subtle solutions in the details has extended the building life that still persists without being destroyed. Accordingly, limited interventions and replacement should be done to recover only problematic areas of the buildings. Thus, should be avoided any interventions or excessive design, that cause damage to the general layout and modernist identity of the building, so only physical deterioration parts should be rehabilitated first before being modified.

3. CONCLUSION

Recent past architectural heritage should be increasingly regained by adaptive reuse, which utilizes the best potential of the original building and changes the functions properly. This is especially more convenient and applicable for public buildings such as schools. Bearing in mind the fast moving changes in the urban centre and context, these modern architectural treasures can be intelligently transformed for new functions. In order to conserve Lefkosa Turkish Boarding School for Girls in a high-risk region, the proposed reuse plan can be more suitable instead of keeping it as an educational facility. However, today the building is open to any kind of threats because it has not been registered yet, even though existing proposed reuse plan. Any uncontrolled intervention in the school building may cause degradation or permanent destruction. Therefore, it is important to apply "do as little as possible" and "reversibility" rules in order to preserve this modern heritage. In addition, it should be urgently registered and precautions should be taken for its conservation and adaptive reuse process. Therefore, an administrative control mechanism should be established to evaluate and reintegrate the building in terms of prospective reuse with minimal interferences. This is already one of the main principles of the contextual design; thereby new

proposed town planning and architecture should be integrated with each other considering the socio-cultural and environmental factors. If we fail to implement this, the memory regarding the built environment will disappear. Because our legacy is our future, we should learn how to appreciate and advocate for the preservation of our modern legacy.

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NOTES

- 1 Division of the island into two sectors, which took place in 1963 as green line, ended up as the "buffer zone" between the two sectors, the Turkish sector in the North and the Greek sector in the South. In 1974 it became more visible in the capital city: in addition to the buffer zone, "the historic walls that surround the historic core of the city, offer a further element of division. These two distinctive 'walls' have played varied and important roles in the development of the city". See Resmiye A. Atun, Naciye Doratli, "Walls in Cities: A Conceptual Approach to the Walls of Nicosia", *Geopolitics*, n. 14, 2009, 108-134).
- 2 The core area, despite its central geographical location in Nicosia as a whole, occupies a "marginal" position accentuating the diminished centrality of each part in the north and in the south as they occupy the fringes of the respective areas they serve. This situation has strongly contributed to, or better to say accelerated the deterioration and decaying process of this city historic centre, which had already started to struggle with many problems like physical and functional obsolescence, population decline and social marginalization, loss of economic vitality, and land use disorganization, long before the formation of the buffer zone in 1974. However, the Walled City on both sides of the buffer zone still suffers from many and multi dimensional (physical, social and economic) problems, simply because every action has been undertaken by public authorities, which were restricted to physical revitalization and failed to incorporate integrated conservation. See Resmiye A. Atun, Naciye Doratli, *op. cit.*
- 3 He was the first member of the Cyprus Turkish Chamber of Architects, graduated from Istanbul Technical University in 1951, then worked for 2 years in Germany and another year in the UK before returning to Cyprus in 1954. However, he decided to move abroad again in 1964, when the socio-political situation in Cyprus deteriorated and it was even harder to practice architecture at a decent level. See: Turkan U. Ulusu, Hifsiye Pulhan, Pinar Ulucay, "Architecture of Ahmet Vural Behaeddin: Local Expansions of a Modernist", *V. Cyprus Turkish Cypriots, who left their mark in Cyprus*, Symposium, Eastern Mediterranean Publications, 2010.
- 4 The project won the competition for a New High School for Girls Project which opened in 1960 by the government of Turkey. See Meryem Oksuzoglu, *From Rushd to Nicosia Turkish High School Today (1862-2002)*, Nicosia, Ajans Yay Ltd., 2008, 15-16.
- 5 Baumeister is a German based architectural magazine. The Lefkosa Turkish Boarding School for Girls building took part in April issue, 1964.
- 6 Susan Macdonald, "Materiality, monumentality and modernism: continuing challenges in conserving twentieth-century places", *Getty Conservation Institute*, Los Angeles, 2009.

Umaid Bhawan Palace: From a Temple-mountain Palace to a Palace Hotel Museum

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In 1925, when Umaid Singh, the 37th Maharaja from Rathore's lineage, contacted British architect and planner Henry Vaughan Lanchester to design the Umaid Bhawan Palace on the Chittar hills in Jodhpur, India, he was thinking how to fuel the economy during a worldwide depression and the drought and famine of the 1930s with a private project.

The magnificence of Jodhpur's Umaid Bhawan, its splendidly appointed rooms, some painted by Polish artist Stefan Norblin, and elaborate gardens, its seemingly endless corridors and very modern comforts, make it one of the most striking royal residences in the world.

art deco in style, Umaid Bhawan also follows the architectural guidelines formulated by the temple-mountain palaces of ancient Southeast Asian god-kings, with Hindu symbolism derived from Angkor Wat in Cambodia. The architect's familiarity with Hindu ritual and symbolism was instrumental in his planning of the palace. But the influence of India's traditions is present in its tectonic form, sculpture and decorative motifs, all chosen by Lanchester.

The use of cutting-edge technologies in the 1930s allowed part of the palace to be effectively converted into a hotel in the 1970s by the actual Maharaja, Gaj Singh, and then again by the Taj Group in the first decade of the 21st century.

This paper intends to analyse the new functions given to its original structure and how the latest developments in electrification, food preparation, communications and air-conditioning enabled it to become one of the most prestigious hotels in India. Without the benefits of technological advancement, Umaid Bhawan could have remained just another gigantic monument, but an impressive electric network, together with imposing air-conditioning compressor, ensures ample lighting and comfort.

Actually, the palace continues to be Maharaja Gaj Singh Jodhpur's home, a palace and a centre for entertainment as a palace-hotel-museum.

The symmetrical layout of Umaid Bhawan included a hall of public audience (now the museum), and an auditorium on the north side. The mardana quarter (outer apartments for guests and men) is now transformed into the Taj Hotel and the vast Rathore Durbar Hall with the Marwar Hall became the banquet area.

Ingeniously conceived, symbolically important, technologically advanced, supremely well-crafted and with 20th-century decoration, Umaid Singh's temple-mountain palace ushered in a new era for the Maharajas of Marwar – that of democracy.

1. UMAID BHAWAN PALACE

To be a Jodhpur Maharaja¹ in the early 20th century was to know that you were unquestionably part of the highest elite and responsible for the wellbeing of your clan, with the certitude that no power on earth could erase that status. In 1923, Umaid Singh (1903-1947) gained full monarchical power and, approximately two years later, he set in motion the measures for leading Jodhpur into the 20th century. The leadoff project was to be a palace large and impressive enough to replace Mehrangarh² as the symbol of the new Jodhpur.

In 1925, when the 37th Maharaja from Rathore's lineage chose British architect and planner Henry Vaughan Lanchester³ (known simply as HVL, 1863-1953) to design the Umaid Bhawan Palace on the Chittar hills in Jodhpur, India, he was

one of the most active architects of his day, having travelled in Sri Lanka and Myanmar and having worked some years in India, all of which gave him knowledge of Hindu architectural traditions.

“From the Linga Purana⁴ we learn that Lord Vishnu⁵, when he flew to Shiva’s⁶ heavenly city on Mount Kailash⁷, was charmed by its palaces and mansions”⁸. As a god – the ruler by divine right, Umaid Bhawan would like a sacred palace, but also a project that would fuel the economy during a worldwide depression and give employment to the people of Marwar during times of severe droughts and famines.

Art deco in style, Chittar palace, built between 1929 and 1943, also follows the architectural guidelines formulated by the temple-mountain palaces of ancient Southeast Asian god-kings, with Hindu symbolism derived from Angkor Wat with a central mass of five towers symbolic of the Shaivite⁹ temples of Cambodia which replicates the basic Indian form used at the Buddhist Mahabodhi temple (260 BC) in Bodh Gaya. Chittar Palace mirrors Angkor Wat with its horizontal façade of 262 meters; its 5 towers as well as its three arcades stacked one above the other. Cosmologically speaking, we can also see 9¹⁰ towers, if we consider one being the dome’s spire that rises 57 meters above the central rotunda, surrounded by eight other towers like *ashtadikapalas*¹¹.



FIGURE 1. HV Lancaster, Umaid Bhawan Palace, Jodhpur, India. The sense of geometrical proportion is seen at the entrance facade facing the east with the eight towers surrounding the rotunda. © Cláudia Porto, 2015.



FIGURE 2. HV Lanchester, Umaid Bhawan Palace, Jodhpur, India. The rotunda's dome decoration is impregnated by Shaivite symbolism, the *Kailash* mountain protected by stylized Art Deco animals. © Cláudia Porto, 2015.

The symbolism is also present in the final shape of the dome, with 3 layers: the first world is protected by stylized *nagas*¹², also associated with Shiva as lord of the underworld, the second world has kites, the sacred bird of the Rathor Rajputs, and the third world, symbolized by a flattened, segmented *amalaka*¹³ stone, supports a kite *kalasa*¹⁴, a lotus and the *bindu*¹⁵, or the point where this world vanishes into the other. "In sculpture, nagas often attend to Shiva and Parvati at their lofty palace on Mount Kailash. By placing such motifs at the peak of the temple-mountain and around the neck of the central

shaft emerging from Mount Kailash, HVL gave the central mass an unmistakable and instantly recognized Shaivite symbolism"¹⁶.

The architect's familiarity with Hindu ritual and symbolism was also instrumental in his planning of the palace. HVL explains:

*Tradition demanded that it should be aligned on the points of the compass with the main entrance facing the east. On this side, therefore, were placed the entrance gates and their guardrooms, beyond which a circular drive led to the porte-cochere. [...] Continuing westward [from the entrance] one passes into an elliptical hall, accommodating a double staircase to the upper floor of the main block, and then on to the central hall under the dome. To the south of this are the Maharajah's official rooms on the ground floor, and his private rooms over, communicating with the *zanana*¹⁷ wing. To the north are the rooms for guests of high importance, and beyond, in the north wing, suites for officials, staff and minor guests. Under this wing a lower floor provides for a range of service rooms. The *zanana* was placed at the south end of the palace [...] and its garden had to be separated from the main ornamental and pleasure grounds to the west and north; large lawn surrounded by flower beds and shrubs marks the central axis westwards; north of this are tennis courts, covered squash courts, garages, etc.¹⁸*

The main entrance at Chittar Palace was functionally altered for vehicular access with the addition of a pillared porte-cochere and a circular drive. But the entrance into the central palace block is impressive. Three formal openings were designed for the traditional eastern elevation of the palace, with proportions similar to Angkor Wat's. These openings were pillared and had decorated lintels as in the Wat. The pillared verandas also evoke Fatehpur Sikri, the 16th century Mughal city. The design of the building was based on climatic condition: verandas were essential to secure an equal internal and external temperature and to mitigate the strength of the sun's rays; these are partially filled in with perforated screens.

The symmetrical layout of Umaid Bhawan with residential wings fanning out from a central rotunda roofed by an imposing dome included a hall of public audience (now the museum) towards the south, and an auditorium on the north. Steps lead from the colonnaded portico from the western facade to the elegantly landscaped garden.

The palace was entirely built in pinkish golden yellow sandstone using the post-and-lintel construction technique. The floors display a lavish use of pastel, blue and pink terrazzo as well as *makrana* marble, laid out in the geometric patterns.

India's traditions were also present in its tectonic form, sculpture and decorative motifs, all chosen by Lanchester and his building supervisor, George Goldstraw, who later became the state architect of Jodhpur. HVL employed traditional symbols in the interior and exterior of the building, creating oriental art deco supports for the deep overhanging eaves that shade the facade of the palace. On the exterior halls and the capitals of columns we can see sculpted wildlife as a major motif. He also played with light and shade placing stones between the exterior pillars of the loggia to create *chhaya*¹⁹.

Art deco, being a design system that tends to emphasize planes in geometric shapes, unified the interior and external decoration. Indian artists were trained to recreate ancient Hindu motifs in the art deco style, and their drawings were later given to Indian sculptors to create originals in stone. An animal series comprising lion, horse, boar, bull, elephant, peacock and kite, can be seen sculpted on friezes, architraves, capitals and doorjambs, yet their placing served to break the monotony of large planes of stone and added visually interesting elements to the doorways.

The animals sculpture on Chittar Palace must be seen as having integrated with the forms of a Shaivite temple. 16 double columns support the rotunda of the palace. Their lion capitals in an art deco incarnation became the most appropriate decoration for a temple for the Monarch. The active or creative principle, viewed as energy, is manifest as nature. The lion then is the perfect metaphor for the concept of Maharaja. In addition, sculptures on the palace's interior and exterior have vegetal and ribbon-like motifs, as well as a number of geometric friezes, which can be found in other temples located not too far from



FIGURE 3. HV Lanchester, Umaid Bhawan Palace, Jodhpur, India. Inspired by Rajasthani *toda*, HVL created Art Deco supports for the eaves shaded by *chhayas*, keeping the scorching Jodhpur sun at bay. © Cláudia Porto, 2015.

Chittar. Airplane motif appears occasionally but the lotus, with four or eight petals, a constant motif in Hindu architecture, is seen in abundance on the interior of the palace.

The art deco furnishings for the royal and viceroy's living quarters, shipped by Maples of London in 1942, in the midst of WWII, were torpedoed off the coast of Africa. Then, similar items were crafted in India. The lavish interiors with gilt furniture and elegant artwork follow the art deco style, complemented by the exotic murals of the Polish artist Julius Stefan Norblin (1892-1952). His drawings, much purer art deco than Maples's, were used almost exclusively in the final decoration of the monarch's family quarters. Maples sketches were used to provide an art deco flavor for other suites.

After 15 years of construction, the project was finally completed in 1943. Since then it had served as the principal residence of the Jodhpur royal family. The use of cutting-edge technologies in the 1930s allowed part of the palace to be effectively converted into a hotel in the 1970s by the actual Maharaja, Gaj Singh, and then again by the Taj Group in the first decade of the 21st century.

The latest developments in electrification and plumbing, food preparation, communications and air-conditioning enabled it to become one of the most prestigious hotels in India. Without the benefits of technological advancement, Umaid Bhawan could have remained just another gigantic monument, but an impressive electric network, together with imposing air-conditioning compressor, ensures ample lighting and comfort.

The rotunda, the central point to which everything converges, is reached through an elliptical stair hall, the double flight of steps leading up to private apartments; kites are sculpted onto columns at the base of the banisters. On either side of this hall are placed the ballroom and banquet hall. Both, the barrel-vaulted Rathore Durbar hall with the adjacent Marwar hall, now make a splendid banquet area for 600 guests. There is also a small pre-function area between the two

halls. From the rotunda, a discrete staircase leads to the subterranean swimming pool to which the royal ladies had private access from the *zanana*. The walls around it are adorned with Norblin's underwater motifs in cool blue tones and the floor decorated with zodiac-tiled mosaic.

The leisure area with a bar, restaurant, billiard room, and smoking room, is situated on the north side, and a little further on, there are the 64 rooms and suites of the Taj Hotel, where there used to be the *mardana court*²⁰ before.

The colossal Umaid Bhawan on the southern fringe of Jodhpur named after



FIGURE 4. HV Lanchester, Umaid Bhawan Palace, Jodhpur, India. The richly paved floor of the Palm Court, the oval inner lobby, employs marble of various colours and leads to 16 finely worked sandstone piers overlooked by a gallery. © Cláudia Porto, 2015.

the untimely demise of its sponsor, Maharaja Umaid Singh, the grandfather of the present Maharaja, is the last of the great palaces of India and one of the largest private residences in the world – set amidst over 10.5 hectares of lush gardens. About 300 were employed in its service, and even today, the combined staff of the royal household and the palace resort adds up to a similar number.

In 1971, Indira Gandhi abolished the privileges of Maharajas, taking away their private purse. In response, Gaj Singh made Umaid Bhawan self-sufficient. Although one half of the palace is now a luxury hotel, it also houses a museum and continues to serve as the principal residence of the Jodhpur royal family.

Ingeniously conceived, retaining symbolic importance, technologically advanced, supremely well-crafted, and with 20th-century decoration, Umaid Singh's temple-mountain palace ushered in a new era for the Maharajas of Marwar – that of democracy.

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NOTES

- 1 Historically, the ruler by divine right of an Indian kingdom. Such kingdoms, together with privy purses and royal prerogatives, were officially terminated by the Indian parliament in the early 1970s. However, in most cases, in the eyes of their people, these rulers will never lose their god-given status.
- 2 The rock fort atop a ridge that dominates the city of Jodhpur, a symbol of Rathore power since its construction in 1495 by Rao Jodha.
- 3 From Lanchester & Lodge, London.
- 4 Sacred Shaivite book about Shiva's life and his relationship to other gods, detailing the Shaivite rituals and mantras used in sacrifice and devotions.
- 5 One of the 3 major Hindu gods with Brahman and Shiva, is considered as the "preserver" and often viewed as the most humanistic and devotional.
- 6 God of the Hindu trinity, seeing as the greatest of the gods within Shaivism, "the destroyer" or "the transformer" of worlds. Parvati is his consort.
- 7 Sacred mountain in the Himalaya where Shiva is said to be residing. It is also a category of Shaivite temples.
- 8 Aman Nath, Fred Holmes, Ann Newton Homes, Amit Pasricha, *Jodhpur's UMAID BHAWAN – The Maharaja of Palaces*, Mumbai, India Book House Publishing, 2008, 42.
- 9 Follower of or associated with Shiva.
- 10 In Shiva's context, 9 is the most spiritual of numbers; it connects man to the universe.
- 11 The 8 guardians of the directions of the world, always represented on the wall and ceiling of Hindu temples, the pillar of Vaastu Shastra.
- 12 Serpent.
- 13 One of the constituent parts of the *shikhara*, it is circular in shape and is symbolically placed at the apex of the shrine. *Shikhara* is a sanskrit word translating literally to "mountain peak", refers to the rising tower in the Hindu temple architecture of north India. The multiple tiers are symbolic of the sacred mountains upon which are located the palaces of the gods.
- 14 Emblematic vase that tops the roof of a temple. It may hold a treasure or, mystically, the sun's rays, wisdom, *amrita* – desired drink of the gods and necessary for the continued maintenance of godly power over the demons.
- 15 The highest physical point of a Hindu temple tower. As a devotee views a temple in veneration, the *bindu* is the point from which his mind escapes the presence of this material world into the immaterial world of Brahman.
- 16 Aman Nath, Fred Holmes, Ann Newton Homes, Amit Pasricha, *op. cit.*, 71.
- 17 *Harem*, the women's inner quarters.
- 18 HV Lanchester & Ta Lodge, 1950, *apud* Aman Nath, Fred Holmes, Ann Newton Homes; Amit Pasricha, *op. cit.*, 29.
- 19 A deep eave used as a practical shading device in Hindu religious architecture and in palace construction.
- 20 Men's quarters, apartments for guests and men.

Balancing Material Selection Process with Conservation

Kyle Normandin

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The balancing of material conservation with the process of new material selection has been a topic of interest and focus over the past 2 or more decades. As the field of conservation continues to engage in a dialogue on how to reconcile challenges in favor of preservation and protection of modern and post-war buildings, it is important to examine the evolving practice of the profession. As conservation practitioners, we often focus on authenticity and significance, as they pertain to the preservation of original building fabric. However, the property owner and users may hold differing priorities. For example, property owners are often interested in their building as an asset, while users may want to ensure that the building is a good place in which live or work, with more of a focus on its functionality and architectural layout. It is critical not only to identify and prioritize a building's various aspects of significance but to strike a balance between potential differing aims and priorities if we are to obtain a sustainable outcome for the repair, improvement, rehabilitation, or adaptive reuse of modern and post-war structures.

The **docomomo** International Specialist Committee on Technology (ISC-T), together with other International Specialist Committees (ISCs), has been focused for 2 decades on promoting the documentation and conservation of modern buildings and sites through the study and research of technology and materiality utilized before and during the post-war era. Through the organization of international seminars that are focused on the repair and conservation of building materials and systems, the committee has supported the practice of conserving modern architecture. It has also been committed to the publication and distribution of proceedings through over a dozen technical dossier publications. A valuable technical resource, the dossier publications have been a critical output of the committee as case study articles are provided by seminar participants. They have

provided a multitude of repair and conservation approaches to learn from different countries throughout the world. The ISC-T is composed and represented by members from a number of international working parties. Seminar partnerships have included and have also been supported by numerous institutions and working parties that have taken an interest in gaining a greater understanding of the role of the ISC-T through dialogue and discussion of a multitude of material conservation issues which have come up over time. Over the last decade or so, the ISC-T, like other scientific committees, has also taken an active role in introducing both local and international themes related to the history and conservation of building technology and materiality, including issues of climate studies and building physics, to the international audience.

The 14th *International docomomo Conference* in Lisbon has provided an excellent opportunity to work with the scientific committee, to forge and continue an ongoing discussion of current issues and solutions from practitioners which have come forward from the **docomomo** working parties. Practitioners involved in the process of preservation, conservation, renovation, or transformation of buildings and sites of the Modern Movement, have been brought together to investigate the theme, “Adaptive Reuse, The Modern Movement towards the Future.” In this session, we have included author contributions that represent 4 essays addressing the preservation of modern and post-war buildings from different parts of the world. Each essay represents a different approach to the sustaining building structures in each region. With each case study, general approaches to the identification of its building significance and philosophical meaning have been articulated while documenting their repair, improvement or rehabilitation. The authors – Bak-Andersen, Franco and Musso, Lima *et al.*, and Leung – describe the challenges of overcoming past rehabilitative efforts while making suggestions for improvements going forward. Numerous points of view are represented from different parts of the world, including Sweden, Italy, Brazil, and Hong Kong.

The authors establish not only the significant role that our past experience plays in the preservation and adaptive reuse of recent heritage, but also examines that recent technologies utilized to preserve these buildings may not always been sensitive in the protection of the buildings’ materiality which are critical to its sustainability in the future. At what point do we cross over from a focus on repair and improvements, to rehabilitation efforts that alter the structure and very nature of the original building itself? How can buildings be sensitively adapted to sustain the life of the building without jeopardizing its significance and materiality? Can a building be enhanced beyond its current use with an adaptation of new programming that brings about new change?

As an introduction, author Bak-Andersen provides an overview on the philosophical underpinnings of approaches to conservation and rehabilitation of modern and post-war heritage. Offering a discussion on materiality regionally, he provides a historical perspective on the use of technology as a character defining feature and explores how alterations can be made sensitively without diluting the

inherent values during the implementation of preservation program. He argues that one must always be mindful of the specific values identified for the site in question. The second case study begins with a discussion of the use of experimental materials after WWII and the use of constructive techniques including architectural and functional principles that were considered innovative in contrast with traditional techniques. As we approach new uses in existing buildings, the authors argue that interdisciplinary research is needed to promote sensitive balanced decision-making processes designed to take into account different objectives and potential which may arise when adaptively reusing the heritage of the 20th century. Next, Lima give an overview of the historical construction and technical performance of the glass walls of the 28-story towers of the Brazilian Palace of Congress, designed by Oscar Niemeyer in 1957. The author argue that the actual performance did not match the anticipated level of technological promise over time, as the curtain wall of the building showed water leaks and malfunctioning of movable aluminum components of the *brise-soleil*. This study establishes the basis for interventions of rehabilitation in order to balance conservation of the buildings' materiality with future performance standards. To complement this session, author Leung discusses the award winning project of adaptive reuse of a 1910s ensemble of Tong Lau blocks. The author describes how meticulous material enhancement and daring technological upgrades enable the progressive 100-year-old fabrics and spaces to be revealed and used for commercial uses, thereby telling the memorable story of the road to modernity for humble citizens of early colonial Hong Kong. The author argues that the focus should not be merely how to restore the visual features or revive the historic features, but to take on the historic modernistic aspiration, and reuse and upgrade the existing structures and facilities, so as to suit the current safety and sanitary standards. This paper considers whether these seemingly unsightly older urban blocks in Hong Kong are indeed modern in their vision and design, and that conservation should be focused on adapting them for modern local community use, in an effort to reveal modernistic features for contemporary society.

How Choice of Material is Balanced between Notions of Authenticity and Technical Know-how

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This paper explores the means by which authenticity of a building is connected to the physical materials of which it is built. One may argue, in the case of the modernist building, it is the idea of the building as a monument in time which is worth preserving. If this is the case, it raises the question of whether one, as a restoration architect, need be true to the original materials and construction, or is it possible to substitute materials and construction methods which lack durability over time. In the age of mechanical reproduction¹, is it arguable that a building designed for the industrialised age holds its authenticity in its idea and not its physical properties. The authenticity which was previously connected to the original craftsmanship, is in this time rather seen to be vested in the notion and the ideas of the building. The Modern Movement is a product of a specific time in history when new building materials and techniques became available and one may argue that the idea which carries the modernist building is an experiment in new materials and construction techniques.

Is it possible to use different materials and construction techniques other than those chosen for the building originally, without losing the architectural integrity and authenticity of the building, during restoration and transformation?

The paper explores how alterations can be made without diluting the inherent values during restoration by using contemporary construction techniques. This does not mean new construction techniques are never suitable, far from it, it simply means one must always be mindful of the specific values identified for the site in question.

The paper discusses the "simplicity" of Modern Movement architecture in both technical terms and using clearly defined architectural vocabulary. Some of the technical solutions presented may be unsympathetic to the retention of materiality and authenticity.

1. INTRODUCTION

This paper links a technical discussion with the theoretical foundation for conservation of modernist buildings. It discusses how the concept of authenticity relates to modernist architecture, and whether this differs from the relation to historical architecture. By which means authenticity is connected to matter, idea, function, tangible or intangible notions. It is a general discussion, though examples are drawn out.

2. OPEN QUESTIONS ON THE PERCEPTION OF TIME

Living in a time and age of contemporary reflection, when works of art may be replicated with perfection in detail, how then, is the architectural authenticity to be linked with the original materials of which they are built?

How is a building or monument, which is a creation of a specific time and not a natural continuation of architectural history brought into the present as a timeless object.

In response to these 2 questions, two opposing understandings of architecture and time comes to light which are derived from the theories of Steward Brand as presented in the *How Buildings Learn*² book series: one is, that the building is finished when the craftsmen leave the site and the architectural photographer takes the one image which will commemorate the building in perpetuity, and whatever happens thereafter is not a part of the building, but rather seen as a separate story. The other understanding is, that the life of a building is only just beginning when the craftsmen leave the site, and whatever happens as a result of the life within the building, or any changes made to it, is all part of an ongoing story including its intangible values which historical buildings possess.

3. FIRST CONSIDERATIONS

Analysing

When analysing a building prior to restoration and/or transformation, it is vital to view the building from several perspectives. The illustration is based on the working method of the Masters program “Cultural Heritage, Transformation and Restoration” at the Royal Danish Academy of Fine Arts³. One must always balance the corners of the triangle. If an analysis primarily is focused on technical issues, the architectural or historical values are lost and vice versa.

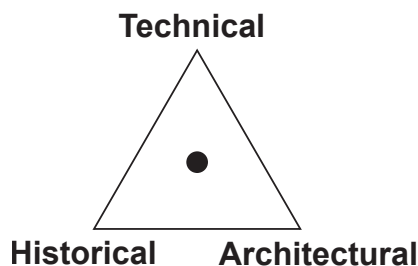


FIGURE 1. The illustration shows the interconnectedness of defining building principles. And the scope one as a restoration architect must apply when working with build heritage. © Cultural Heritage, Transformation and Restoration, Søren Bak-Andersen.

To know the fundamental ideology for the Modern Movement is a necessity before it is possible to determine which conservation issues are at hand. In every case, individual considerations must be made regarding the inherent qualities of the site or building. The significance of a site may be vested in very specific qualities which only a thorough analysis will reveal.

Style

Is modernism to be considered a style or is it a natural consequence of the development in the understanding of function and new technology? Is the style without style, the idiom, potentially combinable with our current understanding of technical issues connected to early modernism as noted:

The history of modern architecture thus describes how Cubism, new technology and attention to function combined creates a new style, which was not presented as a style, rather as a natural consequence of progress⁴.

There seem to be 2 ways in which architectural style emerges: either in the arts, believing it defines beauty. Or as a result of technical achievements⁵.

In this context, the international modernism dominated style and discourse for a relatively short period in time, as a revolt to the Nordic classicism, after which the regional identity was clearly apparent through and created the locally founded functionalism⁶. In many ways, mind and spirit connected to modernism.

Local Foundation

Like in so many other regions, modern architecture in the local context (DK) may be divided in 2 directions: international modernism and functional tradition.

After the initial experiments of the architects of the earlier generations of modernists, the second generation from the 1930s and onward, were able to benefit from the early experiences, and develop this into a regional version of modernism.

*"[...] The new architecture is as international as modern technology, as the materials we use and machines we operate. But there is still room for national identity based on climate, needs and individuality"*⁷.

4. APPROACH

Conservation Position

Considering the course of history, it would be folly to assume that our present beliefs in conservation will remain unchanged in the future.

In the *Venice Charter*, article IV: "It is essential to the conservation of monuments that they be maintained on a permanent basis"⁸.

By many arguments conservation through use works, as it eases practical maintenance and catches problems before they escalate.

But mostly, the continued use of a heritage site offers advantages in other ways: by maintaining the life around the site, it is more likely that it passes into general acceptance. The museological building is well proven as a method of conservation, but it offers a more distant experience with the building, than that of actually living with it. The social and cultural values we associate with a building of either a museological building or a living building are key factors when the general public embraces a building⁹.

Traditional conservation practices, following the *Venice Charter* seem to be falling short when applying to buildings of the Modern Movement. Other charters dealing with the intangible values may be more useful in the matter of ideas and architectural intentions, for instance *The Burra Charter*, here article 3.1: "Conservation is based on a respect for the existing fabric, use, associations and meanings. It requires a cautious approach of changing as much as necessary but as little as possible"¹⁰.

Conservation being defined as "Conservation means all the processes of looking after a place so as to retain its cultural significance".

From this it can be derived that one can only do what is best with the knowledge given to us, and act with the lightest touch.

Looking at a building made from industrially produced materials, is the authenticity to be found in the physical material, or is it vested in the geometry and the surfaces?

In the age of mechanical reproduction¹¹ is it arguable that a building designed for the industrial age holds its authenticity in its technological innovation and not necessarily in its physical properties? The authenticity which was previously connected to the original craftsmanship is in this time rather seen to be vested in the notion and idea of the building.

On Heritage

It is generally accepted that studying the Egyptian culture and to reveal the secrets it holds is a worthy exercise. This hidden knowledge has been lost for millennia, and only in fragments is it visible. Studies in the Modern Movement have not been hidden for millennia, but only half a century.

When iconoclasts remove a monument because it does not match their views of the world, it does not remove the ideas behind the monument. Thinking that way, one may argue that a building may be changed in matter, but not in idea, as it is then no longer justifiable.

On Function

Is the building connected to its function? Often the answer in conserving a building is to maintain the function. One place, where functions could be kept up, are houses. Nevertheless, the standard family for which many of the modernist villas and apartments were created, is no longer the standard way of living. More and more people live alone or in other family constellations than the homes they were intended for¹². As a result, different interiors are needed. The question remains how much authenticity is upheld when and if a plan is changed. The analysis of the building in question will yield an answer as to whether the architectural plan can retain any of the defining values of the building and site. This must be taken on a case by case basis.

5. TECHNICAL AND AUTHENTIC

*"Authenticity is in practice never absolute, always relative"*¹³.

Most buildings have undergone changes during their lifetime. Think of the Romanesque churches of the 10th century: here in the northern context it is hard to imagine them without a heating system, and they are continuously retrofitted with modern pa-systems and modern lighting, yet we all agree they represent an authenticity which we take for granted.

Where it Matters

In regard to the building envelope, we must find an instant recognition of the inherent structure. Changes may be made of which the beholder knows nothing, changes of lentils, hidden steel work etc., but unsympathetic changes to the envelope lets even the untrained eye know something is not right. So how are the criteria for which authenticity may be discussed. Regarding the envelope, technical installations, loadbearing structure, surface treatments, some changes may be difficult to see without further investigations, unlike changes to the façade, which can be recognized by all. Does that mean that the changes to rooms or structures result in less loss of authenticity, or is it simply not possible to compare the level of authenticity across different projects, as every building holds its own logic when it comes to the defining values.



FIGURE 2. Home of Arne Jacobsen, Gentofte Charlottenlund, Denmark, 1929-31. The original building (1929) is made from rendered brick and the extension (1931) from concrete. © Arkitekturbilder.

Did we Forget

All buildings require maintenance, some require more than others due to the materials used or the details such as eaves, plinth or sills. The Modern Movement rejected the knowledge of generations and invented a new style. Many of the decorative ornaments of previous architectural styles are derived from technical necessities. Think of the stucco in an apartment, it is there to facilitate the transition from wall to ceiling, but also to hide the crack, which inevitably occurs in the same place due to different thermodynamic properties of wall and ceiling. Or the constant focus on water repellent elements of the façade: pitched roofs, angled sills, broad eaves.

The materials used by the Modern Movement architects, are not like the materials of previous ages, which can be mended, and which accumulate layers of patina. This in general would be seen as a benefit to the material, however the materials in question are envisioned as they were when the building was finished and not in relation with time. And as modern materials are fabricated, the borderline between patina and decomposition has therefore shifted so that mending on site is no longer an option.

Staying the Course

"The authenticity of a building or level of original matter, will always be a significant criteria when deeming it worthy of preservation"¹⁴.

Either you follow the constructions as they are, or you risk diluting the values of the building by using contemporary construction techniques. This does not mean new construction techniques are never suitable, far from it, it simply means one must always be mindful of the specific values of the site in question and take a balanced approach which is reasonable its evolution.

For instance, one may argue that thermal insulation in the cavity of a rendered brick wall is a minor change in terms of loss of authenticity. But what happens when the temperature of the outside wall is lowered as a result of the lowered heat loss through the wall and the render suffers from frost damage.

6. CONCLUSIONS AND PERSPECTIVE

Over time, it is difficult to form a direct link between the technological advances and the architectural style. The latest ground-breaking invention in construction is still the invention of reinforced concrete (possibly with the exception on float glass). Ever since the Modern Movement experiments in the 1920s, attempts have been made to improve the ways in which materials are used and an abundance of new materials have been invented, but no radical change has taken place to the way we stack, cast and join materials. This change in building technology is, I claim, still in progress, and therefore by definition has not found its optimal way. The contemporary methods of construction are haunted by layer upon layer of filigree. When restoring buildings of the modernist era it is important to first analyse and understand the "simplicity" of the construction in both technical terms and in the clearly defined architectural vocabulary. All additions must follow the same vocabulary.

If a general conclusion from the paper can be drawn it is this: it would be folly to assume that our present beliefs in conservation will remain unchanged in the future. One can only do what is best with the knowledge given to us, move forward with a cautious approach, take a balanced approach to a building's conservation and act with the lightest touch.

NOTES

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The Glass Walls of the Brazilian Palace of Congress

Bruna Lima

CÂMARA DOS DEPUTADOS, PALÁCIO DO CONGRESSO NACIONAL, BRASÍLIA, BRAZIL

The 28-story towers of the Brazilian Palace of Congress, designed by Oscar Niemeyer in 1957, are one of the highest expressions of a paradigmatic shift in modern Brazilian architecture, now characterized by the simplicity of architectural forms, in a way that buildings “no longer be expressed through their secondary elements, but rather through the structure itself, duly integrated within the original plastic conception” – as the author said. The full transparency of their glass-walls laced by skillful steel-framing, was an important part of the establishment of that architectural language. The study of its conception and execution, committed to the tight construction schedule, shows us unique strategies and principles that are part of the successful completion of this complex. Furthermore, the centralization of responsibilities of the contractors, among other measures, has ensured the success and lasting of the façade’s elements.

The Annex Building IV of the Chamber of Deputies, also designed by Niemeyer and built 20 years later with 10 stories, has an architectural dialogue in a way with the original towers. The façades were built with bronze aluminum profiles and structural tempered glazing, with the north side protected by movable aluminum *brise-soleil*. However, their actual performance did not match the level of its technological promise, as soon after construction the curtain wall of the building showed water leaks and malfunctioning movable aluminum components of the *brise-soleil*. One of the reasons for this relative failure was that standard construction guidelines were not observed. Through a thorough examination of the historical constructions, this article aims to establish the basis for interventions of conservation and restoration of those buildings today listed as National Monuments, while facing today’s performance standards.

1. INTRODUCTION¹

The buildings of Brasília played an active role in the change of expression which occurred in the architecture of Brazilian Modern Movement. Multi-colored and complex buildings, comprised by a whole range of solar protection elements in the building envelope – *brise-soleil*, *cobogós*, etc. – have given place to compact, simple and geometric solutions, in a way that architecture works “no longer be expressed through their secondary elements, but rather through the structure itself, duly integrated within the original plastic conception”². The window frames and other closing elements received a different treatment – instead of the multiple insulating layers inserted between slabs, the window frames became a curtain wall made of a single outer layer, with millions following the internal modulation of the building, same as its structural elements. A relevant example of this shift in the architectural language is the Brazilian Palace of Congress, designed by Oscar Niemeyer (1907-2012) in 1957, with 28-story towers formed by glass walls and marble gables. The following two additions to the complex were basically low-rise buildings. The fourth Annex of the Chamber of Deputies, built 20 years later with 10 floors, established a distinct architectural dialogue with the original buildings – including the treatment of glass façades facing north and south.

2. HISTORY ON GLASS-WALLS AND BRAZILIAN ARCHITECTURE

External façades made entirely of glass are one of the touchstones in modern discourse based on the independent skeleton. Transparency and reflection of glass towers is associated with a specific language, clearly outlined in the high-buildings by Mies van der Rohe in 1922 and in *Plan Voisin* by Corbusier 3 years later. The glass-walls appeared once more in Corbusier's work in 1928 Moscow *Centrosoyus* and in the contemporary *Cité de Refuge* though those last projects are well-known failures concerning to thermal insulation³.

Just as then, the glass-walls commonly play a main role on building façades in great urban centers around the globe, despite the problems related to thermal and environmental comfort. In fact, this system consists in glass on the façades structured and articulated in rows by steel and aluminum profiles, in a modern reflection of the classic *stereotomy* together with the assembly variations required by the *opus reticulatum*.

The Brasilia palaces represent a new stage in Niemeyer's professional activities, "characterized by a constant seeking for conciseness and purity"⁴. This was only possible by his association with the structural engineer Joaquim Cardozo (1897-1978), as many architectural components of these buildings were actually developed at the sheets of structural design⁵.

Kenneth Frampton formulated the *semperian* analogy between glass façade and a vestment when referring to Mies' American production⁶. This analogy acquires special flavor in Brasilia, due to the writings of the Cardozo, who embraced Wilhelm Blaschke's textile geometry as tool in calculations of displacement. Since Niemeyer expressed his architecture primarily by its structure, the progressive abstraction of his work somehow matches the profound mathematical idealism of Cardozo⁷.

The Towers of the Brazilian Palace of Congress

The window-frames of the Brazilian Palace of Congress establish an architectural dialogue with the other buildings of the Square of the Three Powers and the Esplanade of Ministries. While the ministry buildings have glass walls with aligned and continuous opening systems, the palaces at the square have glass walls with alternating opening system. By comparison, the Presidential Palace, the Supreme Court and the horizontal block of Congress have cantilevered slabs with the lower face inclined, without any structural support, where the level differences are visually diluted by the unaligned transoms.

DESIGN

According to the original design of the twin towers of Congress in 1958, the oblique internal façades were closed with concrete *cobogós* (hollow façade components), while the outer faces north and south – respectively of the Senate and the Chamber of Deputies – received transparent glass walls with aluminum

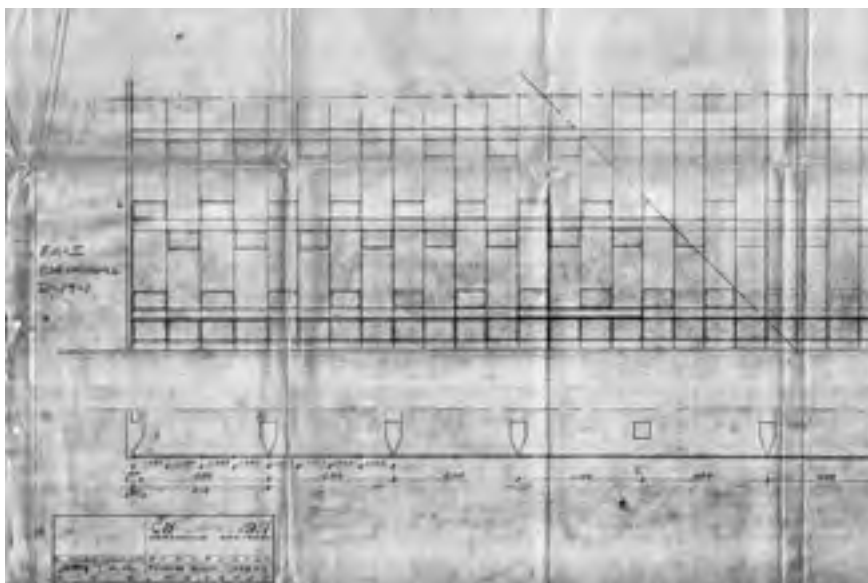


FIGURE 1. Oscar Niemeyer, Palace of Congress, Brasília, Brazil, 1958, original detailing of the frames, made of aluminium.
© Archive of Technical Department of the Chamber of Deputies, NOVACAP.

frames of alternating transoms with 147x302 ft each. Although the ministry buildings had steel frames, the material chosen for the palaces at the square was anodized aluminum, with continuous external mullions structured by steel profiles affixed to the top of the cantilevered slabs and aligned to internal rows of pillars. At the towers, a 16 feet interval of the metal structure was divided into four windows of four feet each. The width of the pillars is incorporated by a wider module of the end spans, showing only the thickness of the gable, supported by a small piece of cantilevered slab, resulting in 4.02 ft-wide windows. The top of the slabs, where the mullions were fixed, were then coated with a natural aluminum plate, keeping the horizontal marking of floors.

CONSTRUCTION

Unlike other buildings, in the case of the Brazilian Palace of Congress, the Urban Company of the New Capital of Brazil (*Companhia Urbanizadora da Nova Capital do Brasil* – NOVACAP) coordinated the construction work and its division in contracts. The bidding process of steel and concrete structures of the towers occurred separately, which led to different companies performing the services. Something similar happened with the contract for the building envelope during the construction. The Invitation Letter n. 26 for Execution of aluminum frames for the building of the Brazilian Palace of Congress in Brasília, regarding the horizontal block envelope, was published in 1958⁸, and hired the company *Aluminio Ferro Construtora SA* (Aluminum Iron Construction Company).

The structure of the towers was completed in June 1959 – less than one year of the completion of construction. Pery França, Chief Engineer of the Department Edification of NOVACAP, reports that the companies empowered to assemble aluminum frames (*Salim Badra, Alumínio Ferro Construtora, Metamex, Metalco* and *Fichet*), were already involved in implementing the frames of the Presidential Palace, the Main Building of the Palace of Congress and the Supreme Court, “leaving little or no possibility of achieving the required deadlines”⁹. The alternative found, in order to open the range of companies available to do the work, was to substitute the aluminum window-frames with steel. Moreover, the replacement of the internal *cobogós* façades with a glass wall simplified the process, which could be executed under a single service contract. Although visually similar, this system alternates fixed windowsills and steel tilting modules. The division of the structural spaces in only three parts and the rhomboid shape of the buildings resulted in larger windows, up to 5.25 ft wide.

Besides the drawings, the following guidelines were part of the bidding specifications:

The frame should be constructed based on the following:

- a) great length and height of the façades, exposed to the wind;*
- b) the way of its attachment to the building structure in order to absorb possible effects of expansion and contraction;*
- c) the minimum number of parts, though with the necessary rigidity and with minimal apparent heads of screws;*
- d) the frame should be made of profiled iron or facing sheet;*
- e) the iron must be protected by immersion painting process;*
- f) the service must be delivered in Brasilia installed, clean and absolutely free of defects such as scratches, ripples or other defects that impair their appearance;*
- g) the profiles dihedrals may be sharp or rounded but, in any case, will be strictly rectilinear.*¹⁰

With regard to item c), similar approaches were taken based on the Niemeyer's Testimony in 1958. The general guidelines for design and construction enabled the bidders “to modify the structural details, with the technical solution adapted to their preference, as long as it did not lead to a change in appearance, using dimensions specified in the projects presented; detailed drawings were requested with the proposed technical solution: joints, levers, latches and locks, indicating their surface finish”. The Architecture Department delegated project responsibility to the manufacturer of frames. However, the guarantee of material supply was given to the hired company: “NOVACAP may, if necessary, interfere with the National Steel Company to facilitate the delivery of material needed to perform this service, in order to achieve the deadlines”¹¹. In addition, in the same month, *Polizotto S.A.* company was hired to install the glass walls of the towers with steel frames.

The use of aluminum frames in Brazil in this period was relatively in its early stage of development – the first relevant applications dating from the early 1950. In 1954, while the annual proliferation of aluminum windows in the United States reached a hundred thousand tons, the Brazilian construction industry, by comparison, only used 2,000 tons in the same year¹². Therefore, while the aluminum frames which were below the protected terraces of Palaces are today relatively well preserved, maybe this would not be the case of the towers as well, if they had been built originally using the experimental aluminum details. Besides regular cleaning and painting maintenance, the south tower occupied by the Chamber of Deputies underwent a major renovation only between 1981 and 1983, with the project by the architect Haroldo Pinheiro – architect at the Chamber of Deputies. The work was limited to specific interventions, maintaining window profiles and replacing parts, fittings and damaged glass plates. The caulk was reinstalled using silicone, while parts in good condition were sand-cleaned and painted. The north tower, on the other hand, received a system of aluminum *brise-soleil* fixed to the mullions, which caused water infiltration into the profiles; this led to their consequent corrosion as well as complications in thermal capacity due to the unfavorable solar orientation.

With either aluminum or steel, Niemeyer adopted a system of external mullions in countries abroad. In fact, his proposal at the headquarters of the United Nations project (New York, 1946)¹³, presented the feature of a uniform glass curtain, detailed in the executive project by Wallace Harrison¹⁴. This design was not entirely a success, as reported in this translation of a text of the Engineering News-Record, published by Sergio Bernardes in 1960 in the Brazilian magazine *Arquitetura e Engenharia*:

A full-service of mending was needed in the United Nations Secretariat building in New York. It was built in 1949 at the beginning of the era of thin wall. Little was known then about the effects of wind and water in metal and glass façades. Because the project does not fully anticipate the effects of rain and wind (the building stands near a river), building tolerance and movement, water leaked through the windows and the horizontal and vertical joints of the wall.

Also during construction, some of the “weatherstripping” stainless steel around the windows twisted and dirty particles remained at the corners – another cause of (air and water) infiltrations. In order to correct the difficulties, the corners of the mullions were covered with aluminum angles from top to bottom of the building. Metal angles, 1 × 1, by 1/8 inch, with a layer of caulking compound were bolted into place, on the end of

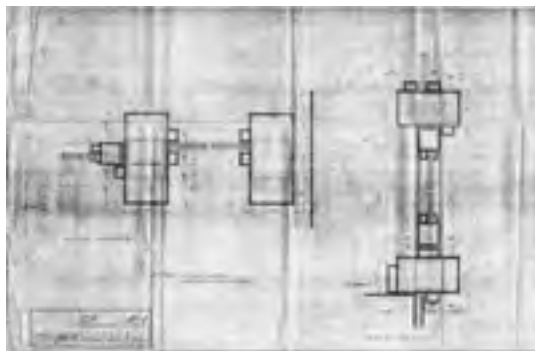


FIGURE 2. Oscar Niemeyer, Palace of Congress, Brasília, Brazil, 1958, original detailing of the frames. © Archive of Technical Department of the Chamber of Deputies, NOVACAP.

the caulked joints ("butt and calked joints"): horizontal joints were covered with plates, the windows were re-caulked with a polymer liquid and a Neoprene "weatherstripping" was executed with an aluminum angle at the bottom and inside of the window¹⁵.

The same text makes various recommendations to "ensure joints were resistant to temperature changes: minimum joints and loose parts"; use of "continuous welding" and seals on the inner joints and on adjacent materials; do not join different metals without isolation between them, so as to avoid "galvanic corrosion"; design of vertical expansion joints at "every floor"; test the tightness of the façade with prototypes; "specify in detail the installation" of components, avoiding the "division of responsibilities"¹⁶. These recommendations coincided with the content of the NOVACAP bidding specifications – including a strategy to centralize responsibility, with detailing design made by the construction companies themselves, and as a result, the façade showed a relatively good operation and durability over time.

The Annex IV Building

The durability and performance observed at the steel-framing towers example did not occur with the north and south façades of the 10-story building Annex IV, designed by Niemeyer during his exile in 1977 and later completed in 1981. The 656x111.5 ft curtain-wall made of 0.31 in bronze tempered glass showed infiltration and operation problems since its inauguration. The spacing between the aluminum mullions follows the prefabricated building structure with a 3.60 ft plan module, conforming deputies offices of 21.65 ft – the structural longitudinal span. Also, it stands up in the composition the vertical rhythm of the mullions, interlaced with the retreated transoms in the average height of the slab top to support glasses, and other at the height of the windowsill. The design of the guillotine openings, alternating with fixed glasses, resemble to some extent the alternating transoms of Palaces' windows. Although on the north façade – facing the square – it is entirely covered with aluminum louvers painted in yellow for protection against UV exposure. The solution is similar to the louvers installed later in the west façade of ministry buildings, and it establishes a dialogue with the fixed louvers of the same color at the existing neighboring Annex of Itamaraty Palace.

The building process was a global enterprise, as the construction company was able to develop new details for the system. The solution – as implemented by *Fichet*, with *Alperfil* profiles – is similar but not equivalent to the one originally designed by Oscar Niemeyer office. The mullions are composed by an internal "I" aluminum profile and external finishing parts with dry joints, leaving little room for the usual counterbalances system of guillotines – restriction that apparently led to the use of a 0.59 in diameter spring instead. On the north façade, a steel plate finishes off the top of the slab, in order to allow the fixing of the structure that supports the louvers, only 1.47 ft away from the façade. The infiltration of water through the vertical mullions and the finishing profiles detachment were

the recurring problems of the set, along with the frequent breaking of the springs, components of the window opening system.

This solution, compared to the one of the original towers previously presented, shows a significant reduction in a variety of fittings due to the use of tempered glass, which diminishes the need for framing members. The mullions, were modified to 7 articulate parts put together so tight that no room for caulking was left in the fittings, resulting in water infiltration. In addition, the sliding brushes between glasses and mullions do not seal entirely the system in case of high-pressure difference between internal and external air, or in case of wind driven rain. Also perceptible, is the existence of few expansion joints. The dimensional change of the structure due to thermal changes may cause the detachment of the mullions and finishing profiles. In regard to the window-opening, the critical points of breakage are the thin wires connecting the springs and the glass plates. Overall, there are also specific connection problems with other elements – such as the building crown structure, which lacks proper detailing to keep the water from entering the façade.

Challenges and Overall View

There are other issues besides the specific problems of the 2 buildings just presented. When it comes to glass façades, the progressive changes in the safety paradigm, in general, and in the fire prevention laws. In addition, there are also problems – which stem not only from new social values, but also from the use of new materials. The current use of tempered and laminated glass in contemporary curtain façades, for example, calls into question the viability of the original towers 0.23 in plate glass. Indeed, in June 2012, a physical demonstration in the Square of the Three Powers, shattered the Supreme Court façade, just 650 feet away of the Congress towers, with similar material characteristics¹⁷.

The new demands of energy and environmental building performance require building envelopes with improved thermal and acoustic isolation – which is a

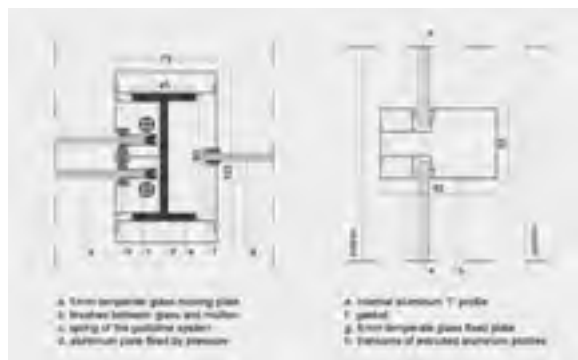


FIGURE 3. Oscar Niemeyer, Annex IV of Chamber of Deputies, Brasília, Brazil, 1978, original details of the Annex IV building frames. © Archive of Technical Department of the Chamber of Deputies.

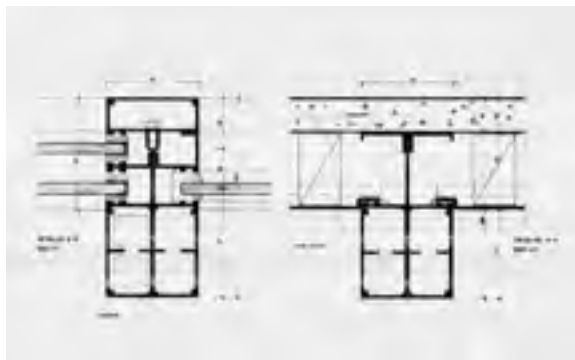


FIGURE 4. Oscar Niemeyer, Annex IV of Chamber of Deputies, Brasília, Brazil, 1978-1982, details of installed aluminum frames, horizontal and vertical sections. © Survey coordinated by Bruna Lima, in 2013.

challenge to achieve if the original material or feature is to be preserved, without duplication of glass plates, or even without the adoption of alternative ventilation systems.

Finally, there is the dilemma related to the glass walls planned obsolescence, given their intrinsic industrial nature. As with other industrialized manufactured assemblies, integrated components of edification reach obsolescence when they cease being efficient or cannot be replaced with new technology¹⁸. In fact, practically all materials currently applied at civil construction are industrial products, such as cement, glass, ceramic tile, plastic and textile coating, mechanical, electrical and hydraulic installation machines. If the accelerated obsolescence of materials and design solutions makes building history more visible¹⁹, any intervention work should question the conservation of systems with the potential loss of functionality. In the case of glass walls, specifically the ones made of extruded aluminum profiles, although they are more resistant to corrosion than steel, overtime, they are no longer available or manufactured by the industry; this complicates long-term replacement of window frame components. Supposing that original companies cease to exist, the issue becomes even more complicated, jeopardizing longevity and guarantee warranty of the system – even in the case of contemporary buildings that widely use complex extruded aluminum profiles.

3. CONCLUSION

Listed by the Brazilian Institute of Historical and Artistic Heritage (IPHAN) in 2007, the study of these and other contemporary issues, in addition to the historical analysis of the buildings, will base a maintenance and restoration program for the Palace of Congress façades and its annex buildings. This survey allows us to understand and maintain the original qualities of the buildings studied, identifying both the original vices as those resulting from natural wear of the materials.

Nowadays, the continuous enhancement and adaptation of current standards related to building performance turns the edification into a product subject to planned obsolescence. In the case of Palace of Congress' towers glass walls, there are safety problems due to the risk of breakage of the common glass plates, besides environmental issues related to the low thermal inertia of single glazed windows. On the other hand, the aluminum frames of Annex IV has more severe problems of conservation and design, facing the difficulties in adapting the original solution by the aluminum companies operating in the market.

Finally, the *Venice Charter* is particularly relevant in that “the conservation of monuments is always facilitated by making use of them for some socially useful purpose”. The conceptual and technical solutions to the problems presented will be studied thoroughly, in light of principles of conservation, considering also that it makes little sense to sacrifice the use of the building due to the conservation of its materiality. If planned obsolescence is a well-known issue involving electronic machinery and equipment, it should be minimized in public buildings.

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- ## NOTES
- 1 The research underneath this paper was conducted by architects Danilo Matoso Macedo, Elcio Gomes da Silva and Bruna Barbosa de Lima as a part of the ongoing preservation program of the Chamber of Deputies. The group authored a first version of this text in Portuguese in 2013.
 - 2 Oscar Niemeyer, "Testimony", *Módulo*, n. 9, Rio de Janeiro, 1958, 3-6.
 - 3 In a letter to Senator Warren Austin, Head of the United Nations Building Commission, Le Corbusier would recognize, not without a dose of ethnocentrism toward Niemeyer: "Je vous signalais qu'il s'agissait de mon invention de 1929, intitulé 'mur neutralisant', crée pour le Ministère de Industrie Légère que je construisais à ce moment-là à Moscou. Cette invention fut d'ailleurs rejetée par l'autorité soviétique et mon bâtiment équipé de chauffage traditionnel à radiateurs. Je vous rappelais qu'en 1936 j'avais établi les plans du Ministère de l'Education Nationale à Rio de Janeiro que fut construit, pendant la guerre, par mon disciple Oscar Niemeyer. Cet édifice était muni de brise-soleil. Le brise-soleil était une solution que j'avais inventée pour l'Afrique du Nord, vers 1929, et que j'ai appliquée dans diverses circonstances depuis. [...] j'affirme ceci, Monsieur le Sénateur, c'est qu'il me paraît insensé de construire à New York, dont le climat est terrible en été, des 'pans de verre' que ne soient pas munis de brise-soleil. Je crie casse-coul très sérieusement." Quote by Cláudio Jorge Gomes e Souza, "O Vidro na Arquitetura Contemporânea", Belo Horizonte, 1971, 90-91.
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 - 12 Guy Pirmez, "O Alumínio na Construção no Brasil", *Arquitetura e Engenharia*, n. 33, 1954.
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Conservation of Modern Architecture and the Adaptation of New Requirements

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In accordance with European levels, Italian legislative decree n. 102/2014 requires the government to bring public buildings up to energy-efficiency standards, through a policy of energy audit, cost control management and implementation of measures to improve fuel saving. A significant number of public buildings were designed by famous architects of the Modern Movement and erected before, or after WWII. Architects often experimented with materials – constructive techniques including architectural and functional principles considered innovative in contrast with tradition – even if the end products were more fragile. Such fragility refers to duration in time and thermal behaviour, often impeded because of large metal window frames, single glazing and thin facades. Alongside the historical heritage, public buildings erected as recently as 70 years ago are now listed (municipal offices, museums, schools, public buildings etc.) and, as such, they too qualify based on similar criteria, protection and compatible enhancement. This is perhaps even when building adaptation is not specifically linked to a new use but simply to an enhancement of its original intended use. It is, therefore, necessary to set up interdisciplinary research and working groups to develop and promote sensitive balanced decision-making processes designed to take into account constraints, conflicts and different objectives which arise when adaptively re-employing the heritage of the 20th century. The process of conservation, maintenance, repair, adaptation and enhancement for energy efficiency present challenges – and sometimes even contradictions – which may arise regarding the notions of “origin” and “originality”, “authentic” and “authorial”, “modern” and “contemporary”, all underlying reflection upon restoration (in the sense that Italian culture gives to the intervention on monumental historic heritage), especially when referring to modern architecture.

1. INTRODUCTION

The improvement of energy efficiency of listed heritage, historical or new is one of the key aspects in the process of reuse and adaptation to European and national legislation. The adoption of directive 2010/31/EU, upheld in Italy through the decree of June 26, 2015, provides for Nearly Zero Energy Buildings standards in all new buildings (starting from 2019 for public buildings and from 2021 in all other buildings) as well as considerable limitations in the case of significant renewal of existing building stock too. In compliance with this directive, member states are called upon to face new challenges on environmental sustainability and energy efficiency in architecture, including the implementation of strategies for the adaptation of existing buildings.

In addition, Italian legislative decree July 4, 2014 n. 102, implementing directive 2012/27/EU on energy efficiency, establishes a framework of measures for the promotion and improvement of energy efficiency for public administration buildings, be they central or local – the aim being to achieve energy enhancement equal to at



FIGURE 1. Mario Labò, Giorgio Olcese, Luciano Grossi Bianchi and Cesare Fera, The Museum of Japanese Art "Edoardo Chiossone", Genoa, Italy, 1949-1972. View of the south façade. The museum was built after WWII demolition of a small villa in the urban park. © Luca Pedrazzi, 2013.

least 3% per annum of the total heated surface. In this perspective, many public buildings dating from the 20th century, often characterized by great architectural significance, will, in the near future, be affected by efficiency-improving intervention. However, this kind of heritage, which has often witnessed the testing of new materials and technical solutions, is at present characterized by poor thermal performance, as compared to very high energy requirements related to respective uses (educational/cultural functions, office buildings, museums...). Given such features and the compulsory adaptation to regulations, it just might come to pass that these architectural masterpieces may become "destroyed" by adoption of rash measures. Fear of such an eventuality has for the moment resulted in a defensive and defeatist attitude, especially if the buildings are already subject to special protection on the part of the Ministry of Heritage and Culture.

In this scenario, one of the most recent publications issuing from that same Ministry, "Guidelines for Improving Energy Efficiency in Cultural Heritage"¹, constitutes for Italy a reference that should guide any future practical applications and dialogue involving stakeholders, scientific researchers and experts. A most fundamental concept introduced in this document is the term "enhancement", i.e. the ability to understand architecture in its complexity, values, way of functioning and being used, especially in terms of "metabolic energy-environment".

2. CONSERVATION OF THE MODERN AND ENERGY, MULTI-DISCIPLINARY PATHS

Within the University team and in the principal field of protection, it is, therefore, imperative that groups of experts should be formed, comprising members able to work in a sharing of enhancement objectives – reviewing theoretical and methodological principles, overcoming the segmentation of competencies, moving from multi- to inter-disciplinary and adopting a truly holistic and cautious attitude².

It is now possible to overcome the risk of excessive “focus on technique”. The contemporary age has mistaken technological innovation for the social utility of techniques required to solve problems, contributing, therefore, to a vision of technology presumed to have total and absolute value³. The relationship between technological innovation and architectural and environmental research is still largely a process of the simple application of products and technologies⁴ – and this does not constitute real innovation. It often leads to an unbalanced relationship and an unwarranted greater emphasis on merely technical components, which do not correspond to effective cultural advancement⁵.

This is also core to a new research field coordinated by the authors and dedicated to knowledge, selection and enhancement of the architectural heritage of the second half of 20th century in Liguria. This research follows a national programme launched a few years ago by the General Directorate for the Quality and Safeguard of Landscape, Architecture and Contemporary Art of the Italian Ministry of Culture – in accordance with the Regional Directorate and local Superintendent offices⁶.

The aim of examining Liguria is:

- To collect data and information of various kinds on a well-established heritage which, to date, has been the subject of limited studies and specialized publications;
- To implement a digital information system on the Cultural Heritage prepared and used by the Region of Liguria as part of its cultural and institutional initiatives;
- To propose, from data collected, an easy way for consultation – open to a wide audience linked, among other things, to already activated Ligurian tourist circuits, not to mention those not yet created;
- To select those buildings or complexes which qualify as “most valuable” – comprising an extensive list of architectures; to make an in-depth research-oriented analysis by way of a one-by-one procedure in public and private archives to investigate the architectural characteristics and concepts of structural and constituent materials – durability and thermal performances to the fore. Such knowledge, as indoor comfort and energy requirements/saving, will become an indispensable starting point for ensuing intervention programmed by Italian public administration.

3. MATTER AND MATERIALS, VALUES AND SIGNIFICANCE

More than any other historical period, the 20th century brings with it a complex condition which interweaves urban and suburban space modification, collective and individual actions as well as the economic, political and social context. Faced with a complex and varied heritage, it is, therefore, legitimate to pose questions on the values and meanings that are recognized within.

How do we assess these complex values? To what extent is significance embodied in the fabric?

The very intervention of energy improvement, which often implies the closure of the building, is likely to irreparably compromise architectural authenticity, altering its substance and meaning.

In reference to the so-called residual resources of the building, the study of morphological characteristics, distribution, technological and constructive aspects, along with new technical mechanisms (monitoring system, heating conditions), could contribute to increasing or rationalizing energy performance and consumption.

One small example is embodied in some reflections on one of the case studies under examination: the Japanese Art Museum in Genoa.

The design for the new Japanese Art Museum Edoardo Chiossone, by architect Mario Labò, began immediately after the war but was completed as recently as the early 1970s; the various circumstances for the delay included the untimely death of the architect. The Museum may be taken as an interesting example to develop some further reflections on energy efficiency issues and the role played by the specific constructive solutions. To improve the thermal performance of an architecture characterized by large windows facing south, modern architectural canons deemed analysis of archive documents to be essential. The resulting list



FIGURE 2. Mario Labò, Giorgio Olcese, Luciano Grossi Bianchi and Cesare Fera, The Museum of Japanese Art “Edoardo Chiossone”, Genoa, Italy, 1949-1972. The construction of the reinforced concrete structure and external brickwork. View of the south-east façade. © Archive of Public Works, Municipality of Genoa.



FIGURE 3. Mario Labò, Giorgio Olcese, Luciano Grossi Bianchi and Cesare Fera, The Museum of Japanese Art “Edoardo Chiossone”, Genoa, Italy, 1949-1972. The steel frames of the windows and the electrical mechanism for their movement (defective almost from the beginning). © Archive of Public Works, Municipality of Genoa.

comprised direct observations, reconstruction of the history of worksite events, changing of materials during construction, performances of materials and parts, deficits and rapidly occurring degradation.

The first project of the museum (1949) was based on the idea to rebuild a 19th-century house, destroyed during bombing. As a result of necessary changes due to relations with neighbouring property owners, the project was revised and heavily influenced by the director of the Office of Fine Arts. In its haste – not to waste a rare opportunity to build a new museum in order to house this art collection – this latter imposed the adoption of the most innovative museum and architectural criteria.

Such museum-oriented and architectural criteria, proposed to and accepted by the designer, did not consider the environment. Initially a heating system was not even included – entrusting such a necessity to the favourable exposure and the presence of large windows facing south. As in many contemporary and similar types of architecture, the windows are now a source of discomfort and dispersion. In only a matter of few years after construction the excessively thin panes of glass and the large surface area of the same led to a proposal to install shielding curtains (this solution was discarded in favour of large wooden grilles, which were to alter the external appearance, differing considerably from the original plan). The whole envelope of the building has suffered in time from deficient alterations. The coating of the exterior walls (Labò had recommended sandstone slabs) was completely modified by the director of Fine Arts Caterina Marcenaro after her visit to the new museum exhibition at Castello Sforzesco in Milan (BBPR). The choice of ceramic tiles (plum colour), was imposed not by the designer; even the supplier considered such a choice as inappropriate for external use, taking into account thermal expansion too.

In the space of a few years the ceramic tile developed stresses and differential expansion, causing cracking and tiles to split and become loose – resulting in moisture infiltration of the building façade. A worsening in the worsening negative transmittance was inevitably increased for the constituent materials of the external walls in hollow bricks (8x12x24) 1967, the existing coating was in part removed (where lacking and damaged) and substituted with a new one of the same material, colour and shape, but with new expansion joints among tiles thus preventing infiltration and, indirectly, improving thermal efficiency.

Other significant decay has been documented for the roof too – originally projected with materials not

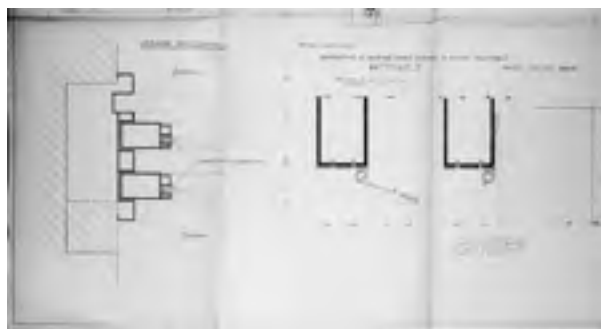


FIGURE 4. Mario Labò, Giorgio Olcese, Luciano Grossi Bianchi and Cesare Fera, The Museum of Japanese Art "Edoardo Chiossone", Genoa, Italy, 1949-1972. Detail of the windows on south façade, April 1957. © Drawing by architect Mario Labò, Archive of Public Works, Municipality of Genoa.

suitable for thermal stresses and installed using inadequate techniques. The roof was designed with an outer layer of copper shingles over an insulating layer of pumice stone and a waterproofing layer comprised of 2 layers of paper felt and a sheet of aluminium placed over 3 layers of bituminous materials. Even during original construction this solution was considered unsuitable: thermal stresses might render the bitumen layer fluid and cause moisture migration through the waterproofing layer. A special asphalt was, therefore, employed, which oxidized at a very high melting point. Even after these important changes, the roof reported new problems a few years after its construction (1969), as reported in technical documents. Many of the copper plates came off; in reality, the whole cladding system was already compromised and required complete restoration, with sealing and welding of new berths.

From in-depth archives research and reconstruction of the design and building stages, there emerge invisible actors who have left their mark on the work, giving rise to new questions.

What emerges shows that it is ingenuous to believe that the ideas and concepts they refer to are clear-cut and firmly definable. Furthermore, evidently a lot in the museum had changed over the years, the means and outcomes of any changes being only partially documented. Numerous “micro-transformations”, perhaps due to maintenance efforts, had taken place in silence – the only trace they had left behind being merely superficial reference to varied documentary sources.

These 2 issues clearly influence any attempt to clarify the limits of the “originality” of Labo’s work, questioning the intangible presence as its “author”. Often, in fact, the conservation work of architecture is determined by a reference to the basis of its value as bearing authentic witness to the original work of an architect or as the expression of a particular moment in the history of architecture. In this case, moreover, one also had to look at the necessity/legitimacy of conserving possible “errors” and “coincidental” results in the planning and building of the museum, along with features that might be the fruit of what had befallen it during the course of its existence⁷.

4. CONCLUSIONS

The Museum of Japanese art is not a unique case but reveals the same peculiarity of many other modern architectures and the problems that will arise in the near future when it will be necessary to improve their energy behaviour.

The solution of constructive defects, as referred to in the museum case study, sought to replace materials and parts even in within the short life span of this building. These operations, although not always explicit, recall the problematic issue of balancing these interventions with retention of maximum authenticity including its intrinsic relationship with materiality.

What will happen in the near future, in adaptive reuse operations, or adaptive interventions, in which energy efficiency will become the main objective to be

pursued? The low thermal behaviour of a building, even if in apparent functional efficiency, will probably be considered a new defect to be eliminated – substituting some of its parts like, for example, its original window frames – thus inevitably causing an even more dangerous loss of tangible traces of the “original” artefact.

NOTES

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Passion for *Tong Lau*, the 20th Century Urban Vernacular Block of Hong Kong: Conservation and Adaptive Reuse of *Tong Lau* Ensemble in Mallory Street, Wan Chai, Hong Kong

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A disastrous bubonic plague broke out in the densely populated Chinese district of Hong Kong in 1984. British investigators concluded that the poor conditions of Chinese dwellings were the main cause, leading to the introduction of the first modern “Buildings and Public Health Ordinance” in 1903. The ordinance, on the one hand, imposed stringent modern 20th century concepts like natural ventilations, daylights, fire escapes, proper drainage, service lanes, building depth, and structural stability borrowed from industrial Britain, but also cleverly integrated to the then Chinese traditional construction techniques and living pattern, thereby a new architectural typology known as *Tong Lau* was born.

In conserving and adaptive reusing an ensemble of *Tong Lau* in urban Hong Kong for modern community use, this paper argues that, the focus should not be merely how to restore the visual features or revive the historic look, but to take on the historic modernistic aspiration, and reuse and upgrade the existing structures and facilities, so as to suit the current safety/sanitary standards, just as the builders back then would have done. This paper attempts to justify, that these unsightly and seemingly old urban blocks in Hong Kong are indeed Modern in their vision and design, and that, the conservation, should be focused on adapting them for modern local community use, and reveal such modern features to contemporary citizens. This paper takes an award winning project of adaptive reusing a 1910s ensemble of *Tong Lau* blocks, as a case study, showing how certain meticulous material enhancement and daring technological upgrades enable the progressive 100-year old fabrics and spaces to be revealed and used for commercial uses, thereby telling the memorable story of the road to modernity for humble citizens of early colonial Hong Kong.

1. INTRODUCTION: REVITALIZING TONG LAU OF HONG KONG

Critical developments of the Modern Movement were often driven not by mere stylistic changes, but from reactionary or advocatory social aspiration addressing a changing modern environment, where traditional architectural solutions could no longer cope with. *Tong Lau* is a unique type of urban vernacular architecture in Hong Kong that resulted from the disastrous epidemic and pioneering regulations at the turn of 20th century. The *Tong Lau* of Hong Kong, integrating then Western standards and Chinese traditions, is indeed modern Architecture in the Asian context. Hence, to conserve this type of architecture, the focus should not be mere visual preservation, but to appreciate its inherent modernistic design aspiration, and to revitalize it to suit modern community use.

2. HISTORICAL OVERVIEW

Urban Problems and Modern Regulations of Victorian England

The inner cities of Victorian England since mid 18th century, hard hit by repeated epidemics¹, revealed that simple oversights in building or urban infrastructural provisions would lead to disasters. Various Public Health Acts and Building Acts introduced in mid-19th century featured many revolutionary regulatory building controls on structural safety and sanitary design features, which underpins the Modern Movement that paved the way to modernize her colonies and eventually China and Asia in subsequent decades.

Introduction of the First Buildings Ordinance of Hong Kong

Soon after the British took over Hong Kong in 1841, the rapid economic development of this new colony prompted expeditious growth in local population and immigrants from south China who settle here in the urban Chinese district of Tai Ping Shan². The often overcrowded and illegally extended brick and timber row-houses here exacerbated problems of sanitary deterioration and structural failures.

In the aftermath of a cholera outbreak in Hong Kong in 1862, London dispatched a sanitary expert, Osbert Chadwick, to investigate. The resulting famous *Chadwick Report* in 1882 cited, the lack of lighting, ventilation, drainage, and proper manure removal in these overpopulated and dilapidated Chinese houses, were key factors of epidemics, and thereby recommended building laws to improve such conditions. Nevertheless, little action was done, until in 1894, a disastrous bubonic plague broke out in the Chinese district of Tai Ping Shan in 1894 which killed over 2,000³.

The colonial government swiftly enacted the first “Buildings and Public Health Ordinance” in 1903. Such regulations, derived from the prevailing advanced buildings safety and health standards borrowed from late-industrial England, were nevertheless pragmatically adapted to suit the local building technology and local Chinese living habit. The typical urban dwelling block in Hong Kong thereafter took on a new layout and construction known commonly as *Tong Lau* (literally meaning “chinese buildings” as in the 1903 ordinance). *Tong Lau*, despite its often traditional and uninspiring appearance, embeds the aspiration of Modern Movement, and maybe argued to fit the definition of “Critical Regionalism” as cited by Frampton, in that, it adopts “[on the one hand] emancipatory and progressive aspect of the modern architectural legacy, [...] [yet it features] reinterpreted vernacular elements, [...] [and] endeavour to cultivate a contemporary place-orientated culture without being unduly hermetic”⁴.

Impacts to the Region and China in Early 20th Century

The resulting improved urban living conditions in Hong Kong in the early 20th century did not actually create any singular great piece of architecture, yet its

Building Forms Arising from the 1903 Ordinance

Below is a summary of the most salient requirements extracted from the ordinance⁸ and the resulting characters of *Tong Lau*.

HEIGHT CONTROL

Height of buildings are limited to no more than the width of the respective street (Clause 188), and no more than 4 storeys (Clause 188) or 76 feet (23m), so as to ensure natural daylight and ventilation to the street users and rooms facing streets. That explains why old streets in Hong Kong keep consistent building heights at the eaves of a pitch roof along the frontages.

REAR OPEN SPACE

To redress the back to back densely packed arrangement of houses as cited by Chadwick, all dwelling floors above ground floor shop should set-back at rear to create an open lightwell. The building should be limited to maximum 40 feet (12m) depth from street to rear lightwell (Clause 151).

BALCONIES, VERANDAHS AND WINDOWS

Front windows cannot be less than one-tenth of area of the respective floor area (Clause 150), but may open onto balconies or verandahs, thus leading to the proliferation of full height openable french-doors over balconies in typical *Tong Lau*.

KITCHENS AND LATRINES

Knowing that open fire cooking facilities to each family is important to Chinese, the rules required that kitchens must have proper fireplace and independent chimney, solid benches and proper drains, and adequate sized windows opened into rear lightwell (Clause 142-148). These dwellings should have proper latrines (Clause 164) with proper fitments (Clause 161) in order to phase out the practice of carrying manure buckets cited by Chadwick.

STAIRCASES

Each floor must have independent access to the common escape staircase leading directly to street (Clause 149). The standard *Tong Lau* staircase, although considered too steep by standards today, became a key feature.

CONSTRUCTION MATERIAL AND DETAILS

Walls of buildings should be made in "good hard well burnt brick" (Clause 96) with good bonding and mortar (Clause 100). Timber purlins should rest on brick corbels to ensure structural stability but mitigate rotting (Clause 115).

Approaches to Conserve *Tong Lau* Architectures

Tong Lau as an architectural typology was born out of functional performance and not of stylistic preference, hence had no pre-determined appear-

ance. To conserve *Tong Lau*, this paper argues that the approach should be less on visual preservation, but more on innovative integration of old architectural materials and contemporary engineering techniques, to bring the building back to contemporary community function and satisfactory modern safety and health expectations.

Limited cases of *Tong Lau* buildings were saved from urban re-development and were well adaptive reused in Hong Kong in recent years. The below section focuses on one award winning project known as *Comix Base*, highlighting the daring technological methods employed to reveal the heritage significance and satisfy the modern standards, thereby conserving and interpreting this humble but significant modern architectural typology.

4. CASE STUDY: COMIX BASE: ADAPTIVE REUSE OF TONG LAU ENSEMBLE IN MALLORY STREET, 2014

Background of the *Comix Base* Project

The subject is an ensemble of 10 units of *Tong Lau* blocks made up of 2 rows facing Burrow Street and Mallory Street, in the old district of Wan Chai. These 3-storey dwellings, dated to around 1910s, built of brick walls, timber floors, and Chinese tiled pitch roofs, represent probably the most typical form of early 20th century *Tong Lau* of Hong Kong.

The project brief asked for 3 almost impossible concurrent tasks: 1) provision of a 300 m² public open space within a tight urban site, 2) preservation of the historic buildings on site and 3) revitalizing it into an art and cultural centre. The objective set by the Urban Renewal Authority (URA) as the project client was to showcase this as a best practice conservation project that integrates historic interpretation with modern design.



FIGURE 2. Comparative view from street of Mallory Street *Tong Lau* revitalization project before and after adaptive reuse. © Edward Leung.



FIGURE 3. Comparative view of interior of typical *Tong Lau* unit in Mallory Street *Tong Lau* revitalization project before and after adaptive reuse. © Edward Leung.



FIGURE 4. Comparative view of rear space transformed into open courtyard in Mallory Street *Tong Lau* revitalization project before and after adaptive reuse. © Edward Leung.

Overall Design Disposition that Fulfils Urban Design and Respects Historic Planning

As for the already heavily dilapidated Burrows Street row, only the façade was kept, and the rear half was removed to create the required open middle public courtyard. As for the Mallory Street row, all 6 blocks would be adaptive reused for cultural/leisure venues. A new concrete framed annex block built to its rear, would house all the key modern facilities including the escape stairs, fireman lift, sprinkler tank, generator room, and all other essential building services for the whole compound, and also act as the structural stabilizer of entire conserved ensemble. 2 gigantic steel arms extended from the annex block over to the partly

retained façade block of Burrow Street also function as mid-air footbridges for visitors to appreciate the typical planning and dimension of *Tong Lau* ensemble in the old districts.

To visually illustrate the architectural significance of the 1903 Building Regulations which stipulated the building depths and rear lightwell shape, the paving pattern on the courtyard which demarcates the original footprint of the blocks, together with the LED lightstrips along the exposed vertical edges of the party walls, recreate the virtual silhouette of the original buildings.

Engineering Methods to Comply with Modern Codes

The traditional Chinese tiled roof on timber purlins had always been considered by local professionals to be almost impossible to comply with the modern fire safety and the modern stringent typhoon resistance wind code of Hong Kong. The architect and engineer devised an innovative assembly which not only conceals the structural steel members, but also sandwiched the modern thermal insulation and waterproof layers within the traditional double layer local Chinese tiled construction. This is the first time in Hong Kong that a vernacular timber framed Chinese tiled roof is strengthened to comply with the modern structural and fire safety codes.

Architectural Features to Be Restored and Reused

Since the junction of timber floor purlins resting onto brick corbels is one of the key requirements of the 1903 ordinance, the architect and the building services engineers carefully worked out a ceiling layout that integrates all the necessary modern services like sprinklers, lightings, and air-conditioning concealed by a row of perforated metal panels along a central ceiling spine, thus fully exposing all the brick corbels and the majority of the timber structure.

By understanding how a timber staircase was composed initially enabled the architect to design a method so that all the timber treads, risers, handrails, and stringers are carefully disassembled, cleaned, treated, and reassemble onto a prefabricated steel subframe matching the origin shape and position. This allows visitors nowadays to freely and safely ascend or descend the stairs in full ambience of the 1910s living environment.

Self-sufficient kitchen with adequate natural daylight and ventilation is a critical progressive health and safety requirements of the 1903 ordinance. This project fully restores one selected original kitchen for display, reinstating in particular the bench, the window, and the chimney that illustrate such historic message.

Sustainable Collaboration with Craftsmen and Users

Modern Movement should not be interpreted as ambivalent rejection of tradition, but maybe understood as a bold progressive vision that frees architecture from nostalgic stylistic bounds, yet rationalizing available construction and function. Through this project, the local skilled builders learnt new skills of relaying

Chinese tiled roofs, strengthening brickworks, and assembling windows/stairs/floors, thereby opening up the potential for sustaining the intangible cultural heritage of Asian building craftsmanship.

The architect worked very closely with the main venue operator at early stage to device a meticulous tenant fitting out handbook, which guides how the internal fitting-out may utilize existing built-in facilities to install building services and fix furniture, instead of casually damaging the preserved brickwork or timberwork. The result is both tenants and users learn to take care of the building in long term.

5. CONCLUSION: THE CASE FOR TONG LAU AS MODERN ARCHITECTURE AND ITS CONSERVATION

The Xi'an Declaration on the Conservation of Modern Heritage in Different Context, proclaimed during the Xi'an 2013 International Conference of Modern Architecture Heritage Conservation "Other MoMo, Other Heritage", in October 2013, acknowledges 20th century local architectures which "interpret universal principles, [...] [but] derive their significance and distinctive character from their representation of technical, social and aesthetical innovations that is closely related to their context"⁹, should be regarded as part of the global Modern Movement. *Tong Lau* of Hong Kong, a unique architectural typology arising from integration of the then most progressive safety and health building regulations and local technology and design, should be unmistakably modern, and thus deserve our recognition and conservation.

This paper argues that, since *Tong Lau* of Hong Kong is born out of performance standards instead of stylistic pursuit, the conservation of *Tong Lau* should be focused on sustaining and exploring the potential of its inherent flexible configuration and fabric, instead of mere restoration of its visual features. By presenting an adaptive reuse case study, this paper hopes to illustrate how sensitive designs and innovative techniques may address issues of conserving modern vernacular buildings in Asia, and that the ultimate vision of Modern Movement be sustained in Asia.

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Innovative Construction Experiments

Tapani Mustonen

DOCOMOMO INTERNATIONAL SPECIALIST COMMITTEE ON TECHNOLOGY

docomomo was born in the 1980s from the necessity to manifest on behalf of forgotten modernist architecture. We needed to find solutions for studying and restoring modern architecture. The requirement for restoration had increased around the world and year by year. Many works of the 1920s and 1930s, such as Sanatorium *Zonnestraal*, were as if hidden in the jungle and commonly forgotten.

Many designers' stories ended at the WWII. In the 2 decades after the war, it was quite natural to target all thoughts to the future; the old works were outdated and there was no use for their philosophies. Into this world, **docomomo** was born. We wished to increase the understanding of modern architecture and our object was clear: we needed examples. Sanatorium *Zonnestraal* and later the *Van Nelle* Factory were the torchbearers in restoring modern architecture.

At the beginning of the 21st century, the situation in conserving the key works of modern architecture seemed somewhat brighter. After the single battles in the first years of **docomomo**, it was possible to widen the perspectives to larger fields of study. In different countries, others than top architects also started to become the object of studies. This was the case, for example, in Finland where Alvar Aalto had dominated the field of modern architecture. Similarly, the materials and work methods of modern architecture were studied.

In addition to iconic works, the time enabled the research of everyday architecture and techniques of the modern era. Soon, a discussion started on the consideration of sustainable development in restoration. However, is it in any way possible to make thin-dimensional buildings with concrete casings and single glazing energy efficient and environmentally friendly?

It seems that we need all of the things I mentioned. We still need to rescue works of the modern architectural heritage which are important but forgotten. At the same time, we must increase our understanding of different techniques, materials or more ordinary everyday architecture. Furthermore, it is especially important to ponder and weigh up – that is, philosophise – the best possible approaches to restoration.

Today here in Lisbon, we will continue on that path. The first 2 presentations of this session are dedicated to metals. Seija Linnanmäki will describe a very common material which has even been considered a potboiler: corrugated metal plate. Giulia Marino will shed light on the history and the present day of using more exclusive and almost forgotten cast aluminium.

Marco Pretelli and Leila Signorelli will compare the philosophies, structures and histories of 2 buildings from the era of fascist architecture in the 1930s. In Wrocklav, Poland, Jadwiga Urbanik will lead us to an excursion into the stages and problems of restoring a German exhibition hall from the 1930s.

My dear friends, please enjoy the session.

Corrugated Iron – A Historical or Modern Material of the Building Envelope?

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Actually, corrugated iron is not a modern material but 200 years old. “Corrugation and Galvanization of Sheet Iron” was patented in 28.4.1829 by Henry Robinson Palmer who built bow-shape open-shelters for London Dock Company. Galvanizing method proved to be extremely important for the life-span of corrugated iron. French civil engineer Stanislaw Sorel improved hot-dip zinc-coating method and got a patent in 1837. However, significant modern architecture has been built of corrugated iron in 20th century such as Frey House 1 in Palm Springs by Albert Frey 1953. There is also a story of Christal Palace 1851: glass and steel frame construction was selected because it was cheaper than corrugated iron!

Corrugations made sheets rigid and gave additional structural strength. Early machine “corrugated iron manual roller” from 19th century is on display in Kapunda museum in south-Australia. Most famous model for corrugated iron has been sine wave. However, many other profiles (and other metals copper, alumina and COR-TEN steel) have been developed especially after 1960s: 2 examples of architect Erkki Kairamo: Marimekko textile factory, Helsinki 1974 and A. Ahlström paper factory in Varkaus 1975-77.

Corrugated iron was a cheap, self-supporting and light material. In 1855 for example Davis Rowell sold “portable buildings” for dwellings, churches, chapels, hotels, schools and hospitals. These early prefabricated facade-systems were shipped from Europe to Africa, Canada and South-America: in 1854 nearly 30000 “corrugated iron kit buildings” only to Australia. During the WWI Peter Norman Nissen patented a barrack for British army. Built in 100 000 copies Nissen Bow Hut became a global icon for corrugated iron. Nevertheless, it’s characteristics made it also neglected. Until WWII corrugated iron buildings reflected mostly destitution and indulgence. It was derelict material for agricultural and temporary buildings, cow sheds and cold storage. On the other hand, corrugated iron is vulnerable and prompt to weathering and mechanical damage, but durable and long-lasting if protected and maintained. In my article I will present most common (electrochemical) corrosion types and coating failures as well as the environmental factors causing corrosion.

To reuse corrugated iron buildings, it is important to identify their architectural, historical and cultural values. Restoration and conservation measures should follow the idea of minimum intervention. I will discuss methods for corrosion prevention and protection by literature, personal observations as well as drawings, designs and specifications for implemented renovations.

1. INTRODUCTION

The story of corrugated iron is actually nearly 200 years old, but only at the beginning of 21st century does corrugated iron seem to have become the subject for experiments. Associations have been founded and literature has been published on the subject, with Adam Mornement and Simon Holloway’s book from 2007 being a wonderful resource for studying the global development of corrugated iron over two hundred years.

My aim here is to explain the architectural history of corrugated iron constructions in Finland, as well as their advantages and disadvantages. The various

types of corrugated iron, the measurements of its sheets, its structural fixing, the treatment of black iron, corrosion types and environmental stress will be studied only briefly. My main focus here is on the methods of conservation and restoration that can be adopted for keeping these easily neglected buildings in use.

2. THE ORIGINS OF CORRUGATED IRON

Corrugated iron was already known in Britain¹ when patent number 5786 “the application of [...] indented or corrugated metallic sheets [...] to the roofs and other parts of buildings” was awarded to Henry Robinson Palmer on 28.4.1829.

Palmer, an engineer who worked for the London Dock Company, needed large-span open shelters for port terminals and harbour services due to rapidly growing international trade. A bow-shaped turpentine shed built in 1830 was the “world’s first building with a corrugated iron roof”. In his request for a patent “for indented or corrugated metallic sheets”, Palmer described corrugated iron as being suitable for the construction of self-supporting roofs and for the overlapping cladding of walls, which are still the main purposes of its use².

Despite all of its profitable characteristics, corrugated iron corroded easily, especially in a salt-laden coastal climate. Durability was improved by coating the iron with a thin layer of zinc. The first patent for hot-dip galvanising was registered in May 1837 by the French civil engineer Stanislaw Sorel in Paris. The first galvanising company in Finland was founded in 1913, Galvanoimis Oy in Tampere³.

Palmer sold his patent very soon afterwards to his carpenter Richard Walker, who then became the sole manufacturer, although he only erected a few dozen large-span sheds. However, corrugated iron was a cheap, non-flammable, lightweight material, suitable for many constructions, especially in dockyards, railways and industrial plants.

Since it is self-supporting, it only needed light steel or wooden load-bearing constructions, which are easy to handle in remote areas with poor tools and unskilled craftsmanship. Its worldwide triumphal march started in 1843 when the patent expired, and accelerated with the gold rushes towards the end of 1840s⁴.

3. CORRUGATED IRON MATERIAL AND ITS TREATMENT

Corrugated iron is made from cold-rolled mild steel, a sort of wrought iron. Its low carbon content (0.15-0.25%) makes it more tensile and bendable than cast iron, which contains more than 1.7 per cent carbon.

In 19th century, corrugated iron was imported to Finland from Britain, Sweden, Germany, Russia and the United States. Nevertheless, the use of corrugated iron seems to have become widespread in Finland only after 1873, when it began to be produced in Germany⁵. Thus, it can be said that the use of corrugated iron followed the general path of engineering innovations for construction purposes, which were usually introduced into Finland through Sweden and Germany.

During nearly 200 years of production, wave profiles and sheet sizes have varied a great deal, depending on the country, time period and manufacturer. In Britain, the pitch of the corrugations was finally standardised in the late 19th century at between 1 and 6 inches, sometimes even 9 inches (25 mm – 153 mm, or even 241 mm)⁶. However, obviously these measurements were not always completely complied with.

In 1925, the architect Väinö Keinänen (1879-1948) published a textbook on building construction engineering, in which he stated that the thickness of the most widely used gauge in Finland was 0.6 mm, with a sheet width of 600 mm and a sheet length of 2.4 m.⁷ The range of variation has been as follows: gauge 0.4–3 mm, sheet depth 18-60 mm, sheet width 530-1100 mm and sheet length 900-3000 mm. It is not known when the manufacturing of corrugated iron started in Finland⁸.

Self-supporting corrugated sheets were fixed to the relatively light steel or timber frame with nails, screws, bolts or spikes. Manufacturers produced a wide variety of galvanised nuts, bolts and washers.

Metal sheet roofs were common in Finland before corrugated iron was introduced, so that the methods for its treatment were well known. Black iron was installed in the form of flat seamed sheets and traditionally protected against rust with varnish, red lead, coal tar or linseed oil paints. However, galvanised sheets needed additional protection, and they were ordered to be coated with linseed oil lead white paint⁹, even when the iron was protected by zinc due to electrochemical reactions. The corrosion process worsens with moisture, salts (chlorides and sulphates) in marine environments, temperature, thermal expansion and contraction, rubbing and mechanical deterioration¹⁰.

4. CONSERVATION AND RESTORATION OF CORRUGATED IRON ARCHITECTURE

As far as my case studies are concerned, I follow here Bruce Walker's goals for the conservation of a ferrous metal cladding¹¹, namely "repair rather than replace", constant maintenance, consolidation, minimal intervention and reversible processes.

Strong Resistance to Preservation

In beneficial circumstances, corrugated iron is a durable and longlasting material for roofs and walls, especially if constantly and carefully maintained. On the other hand, it is vulnerable and prone to weathering and mechanical damage, which makes it short-lived and means that buildings can be easily neglected.

In the case of corrugated iron buildings, it seems to be very difficult for them to be recognised as heritage and appreciated as a valuable record of the past. Nevertheless, they stand as evidence of the innovative structural techniques and materials of their time. Only a few corrugated iron buildings are listed¹². Since it is a cheap material, corrugated iron buildings frequently end up being replaced with new materials and new constructions.

Survey of Construction and Cladding

Load-bearing structures, as well as primary and secondary components, should be identified and the decorative elements should be distinguished. The connections of the joints and the condition of the fastening parts, such as nails, screws, rivets, nuts and bolts, should be examined. Corrugated iron cladding is very vulnerable to water traps, adjacent vegetation and soil, abrasion and mechanical shocks. Innovative and significant characteristics should be preserved. Structural misbehaviours should not be repeated. In the design of new constructions, water traps should be avoided.

A building survey for management purposes should be carried out in accordance with the *European Standard EN 16096: 2012 conservation of cultural property. Condition survey and report of built cultural heritage*.

Documentation

Construction should be documented before, during and after the conservation process.

Successful Conservation: Repair rather than Replace

As mentioned earlier, the methods for successful conservation are repair rather than replacement, consolidation, and minimal (and possibly reversible) intervention¹³. The method of analysis through electrochemical phenomena has to be identified and incompatible metals such as copper and mild steel must be separated. Moisture may trigger electrolytic action, causing bi-metallic corrosion.

Preservation by Maintenance

The first corrugated iron buildings in Finland might have been two cargo terminals called “balance rooms” built in 1898 for Höyrylaiva Osakeyhtiö [the Steamboat Company] on the Aura river bank in Turku. The lower balance room avoided demolition and is now used as a passenger terminal for the steamboat Ukko-Pekka and as a ballroom dancehall in summer time¹⁴. This balance room is protected by the Land Use and Building Act, and is in a good condition because it is constantly maintained and painted. A restaurant was designed by the architects Arosuo & Vapaavuori and built inside the historic structures (a building within a building) without actually touching them – apart from all the technical installations, water, electricity etc.

Thermal Insulation Additions in a Traditionally Cold Structure?

During the WWI in June 1916, Peter Norman Nissen (1871-1930) patented a bow-shaped barracks for the British Army. Built in 100,000 copies, the Nissen Bow Hut became a global icon for corrugated iron.

Some of the Nissen hut's successors are still used by the Finnish Army. Thermal insulation (an inner layer of 100mm mineral wool) was added in 1970.

An air cavity and paper barrier between the cladding and the thermal insulation have prevented moisture condensation inside the structure. In a comparison with the “tin tabernacles” found in Wales and Scotland, we remember those very pleasant interiors with wooden panels¹⁵.

Structure Consolidated, Cladding Replaced

Military boat sheds¹⁶ were built for the Suomenlinna naval base by the Russian Army in 1916, for the minesweeping and torpedo boats of the Mine Battalion. These sheds have a timber frame construction with a corrugated iron cladding. In this case, corrosion had set in so badly that replacement was chosen as a conservation method, designed by the architect Osmo Sipari in 1977. New sheets were ordered with the same dimensions and painted with red lead paint and grey alkyd enamel paint.

Preserving the Roofing with New Covering

At the end of the 1880s, the architect and teacher Gustav Nyström¹⁷ designed many public buildings for Helsinki. Professor Nyström undertook several study tours in Europe, visiting Germany, France, Sweden, Denmark and England, etc. and he imported the idea of corrugated iron roofs for the Market Hall and National Archives. The metal sheets were manufactured at the Gesellschaft Harkort Factory, in Duisburg, Germany¹⁸.

The major renovation works undertaken in 1988 and 2013 were designed by the architect Juhani Pallasmaa Ky and HN-Suunnittelu Oy¹⁹. The roof was covered with new sheets (differing dimensions) and thermal insulation was added between the old and new sheets. The gauge of the new sheets “Iso-Aaltonen” by Verho-Metalli Oy was 0.6mm, with a pitch of 125mm and a depth of 26mm, when the original depth was 45mm. Prefabricated thermal insulation components were used, in which both sides were covered with a metal sheet and filled with polyurethane (new U-value 0.41 W/m²K). The conservation process was successful, the additions that were made are reversible and the original corrugated iron sheets were preserved relatively intact.

Holes and the fully corroded parts of the original metal sheets were patched up and/or consolidated; ventilation holes were drilled; and the fastenings were inspected. The original corrugated iron sheets were painted and they are still visible from inside the Market Hall²⁰.

Another public building designed by Gustav Nyström and covered with corrugated iron roofing was the National Archives, built in Helsinki, in 1889-1890. Most of the iron constructions for the National Archives were domestically produced; however, the roof construction and corrugated iron sheets were imported in 1889 from the Harkort Factory, in Duisburg, Germany²¹. Interestingly, in Japan, corrugated iron was used for roofing during the Meiji Era (1868-1912), due to the new legislation, which determined that non-flammable roofs were to be used along railway lines²².

Corrugated iron sheets imported from Duisburg, Germany, were fastened onto the top of the pitch. Each pitch had a profiled wooden filling to support the sheet metal.

The roof of the National Archives was repaired in 2011 with the same method as the one that had been used at the Market Hall, by adding a new layer of corrugated sheets²³. In this case, the air cavity was retained because it did not seem advisable to add a new sheet directly over the old one, due to the risk of moisture.

Modern Constructions in Use without Major Renovations

After the WWII, the characteristics of corrugated iron, namely lightweight and easy construction and cheap prices, turned against themselves. In only a few cases were modern post-war architects interested in corrugated iron or aluminium profiles, such as Viljo Revell, who performed some experimental trials at the Hanko *Kudeneule* Textile Factory in the 1950s. Corrugated iron mostly became a neglected material that was used for temporary farm buildings, such as cow sheds and cold storage plants. In the countryside it was very common to cover old single wooden roofs with corrugated iron.

Most traditional corrugated iron had a sine wave profile. However, during the 1970s, many other profiles were developed and other metals, such as copper, aluminium and rusty COR-TEN steel, became used in Finland. Erkki Kairamo was one of the first architects to use corrugated iron profiles in his industrial architecture in the 1970s. He was well-known as an architect who had been influenced by Russian constructivism in the 1920s and 1930s and who had made a great contribution to structuralism in Finnish architecture. The aluminium profile had an anodic treatment in a natural clear colour. In addition to Marimekko, the A. Ahlström Paper Mill Extension in Varkaus was designed by Erkki Kairamo in 1975-77²⁴. The Marimekko Textile Factory is still being used for the purpose for which it was originally designed, and it has not been subjected to any extensive renovation work.

At the end of 20th century, corrugated iron was given a new lease of life through its use in deconstructionist architecture. In 1978, the architect Frank O. Gehry chose it as the material for the façade of his own house in Santa Monica, California.

Gehry's radically new design was described as "ground-breaking" and "provocative"²⁵ when the American Institute of Architects (AIA) recognised Gehry's work with an award in 2012.

NOTES

1 Nick Thomson and Phil Banfill, "Corrugated-Iron Buildings: An Endangered Resource within the Built Heritage", *Journal of Architectural Conservation*, vol. 11, Issue 1, 2005, 71-87.

2 Palmer's patent has been published, for example, by Nick Thomson in "A Study of Early Corrugated Iron Buildings in Rural Scotland", accessed on 12 February, 2015, <http://www.arct.cam.ac.uk/Downloads/ichs/vol-3-3097-3116-thompson.pdf>.

3 Petri Neuvonen, Erkki Mäkiö, Maarit Malinen, *Kerrostalot 1880-1940*, Helsinki, Rakennustieto Oy, 2002, 110.

4 Adam Mornement and Simon Holloway, *Corrugated Iron: Building on the Frontier*, New York: W. W. Norton & Company, 2007.

Nick Thomson and Phil Banfill, "Corrugated-Iron Buildings: An Endangered Resource within the Built Heritage", *Journal of Architectural Conservation*, vol. 11, Issue 1, 2005, 71-87.

5 Hannu Tomminen, *Malkakatosta Peltiin, Talo Kautta Aikojen I*, Helsinki, 1987, 83-113.

6 Finland approved the SFS standard measurements in 1892. However, due to the close economic relationship between Fin-

- land, Britain and the US, inches are still in everyday use, especially in the areas of building engineering and craftsmanship.
- 7 The architect Keinänen worked as a teacher at arts and crafts schools in wyborg.
 - 8 Today the Rautaruukki Factory is producing sheet metal in gauges of 0.4-3 mm, sold in corrugated profile, for example R-S18-92W-1100.
 - 9 Petri Neuvonen, Erkki Mäkiö, Maarit Malinen, *Kerrastolat 1880-1940*, Helsinki, Rakennustieto Oy, 2002, 110.
 - 10 Thomas Rune, *Kuumasinkitys*, Kakkola, Suomen kuumasinkitsijät ry, 1989.
 - 11 Bruce Walker *Corrugated Iron and Other Ferrous Cladding*, Edinburgh, Historic Scotland, Technical Conservation, Research and Education Group, Technical Advice Note 29, 2004.
 - 12 Nick Thomson and Phil Banfill had surveyed 72 corrugated iron-clad buildings in the Scottish Highlands and Islands. Their state of conservation was poor: most were empty, deteriorating or in ruins; only five were protected by listing. Nick Thomson and Phil Banfill, "Corrugated-Iron Buildings: An Endangered Resource within the Built Heritage", *Journal of Architectural Conservation*, vol. 11, Issue 1, 2005, 71-87.
 - 13 Bruce Walker: "Complete dismantling might be one option to ensure a thorough conservation process; however, in Finland I have not been able to find any examples of dismantling and rebuilding".
 - 14 The Vaakahuone Paviljonki Restaurant is situated in the balance room. The upper terminal had been demolished because of a bridge built on its site.
 - 15 Ian Smith, *Tin tabernacles. Corrugated Iron Mission Halls, Churches & Chapels of Britain*, 2004.
 - 16 Military boat sheds are to be found at Suomenlinna C27, FI-00190 Helsinki, Finland. At that time in 1916, Finland was still a Grand Duchy of the Russian Empire. The Suomenlinna Fortress is a World Heritage Site only a 13-minute ferry trip from the Helsinki Market Square.
 - 17 At the end of 19th century, Carl Gustav Nyström (1856-1917) was one of the most prominent architects in Finland, the vice-chancellor and the first professor of architecture at the University of Technology. Lukkarinen Ville, 1989, 28-29. *Classicism and history: anachronistic architectural thinking in Finland at the turn of the century: Jac. Ahrenberg and Gustaf Nyström*. Suomen muinaismuistoyhdistyksen aikakauskirja 93, Helsinki.
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 - 19 Old Market Hall, Eteläranta Helsinki. Architectural designs and structural drawings, documents, no special (working) drawings. Helsinki City Building Control Department <https://asiointi.hel.fi/arska/#>.
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 - 22 Masahisa Kato, "The Widespread Use of Corrugated Sheets in Low-Cost Architectures in Japan. Metal in Modern Movement Architecture", *Proceedings of the 2010 docomomo ISC Technology Seminar in Japan*, 14-16 May, Tokyo, **docomomo** International and **docomomo** Japan, 2010, 138-143.
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 - 24 Esa Piironen (ed.), *Steel Images*, Helsinki, The Finnish Constructional Steelwork Association and Building Information Ltd, 2001. Erkki Mäkiö, Lauri Ja Putkonen, Timo Tuomi, *Rautaiset rakenteet – Rauta ja Teräs Suomalaisessa Arkkitehtuurissa*, Helsinki, Suomen Rakennustaiteen museo, Finnish Museum of Architecture MFA, 1998, 106-111.
 - 25 Accessed on 13 February, 2016, <http://www.aia.org/practicing/awards/2012/twenty-five-year-award>.

“AL-Cast, a Revolutionary New Type of Architectural Material”: History and Conservation Issues

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In the fertile history of 20th century construction technology, the Alcast process was a stand-out case. Patented in 1960 by the Japanese firm Kubota Iron and Machinery Works Ltd. in conjunction with Tokyo Curtain Walls Ltd., the system – consisting of cast aluminium sections – was used especially for prefabricated, large-format, three-dimensional façade units. These highly engineered components were promoted because of their particular benefits: Alcast panels not only combined very good structural resistance with lightness, but were also seen as expressive features, owing to the sculptural form of the cast material and its visual properties, which produced a whole range of colours and textures.

The trail-blazing Alcast façades in Japan captured the attention of the European industry, which bought the patent under licence and tried to perfect production – a classic story of the movement of technical know-how around the world. Architects, bowled over by this rational and beautiful system, took up the experimental challenge of Alcast to produce extremely suggestive façades that were highly rhythmic and finely modelled.

With their reduced panel weight – meaning easier installation using curtain wall techniques – and the possibility of having complex shapes, it seemed initially that Alcast might be an excellent alternative to the reinforced and precast concrete panels. But, just like many others, this material's fortunes declined sharply in the 1970s, as cheaper synthetic components and metal alloys began to shake up the construction industry.

Alcast is therefore one of a multitude of such 20th century materials, which are the products of creative industrial development and innovation. However, the issues surrounding this pioneering process today are indicative of the new problems of conservation posed by contemporary architecture. Using several key examples, this paper will retrace the material history of Alcast and address some of the recent problems of its conservation.

1. “A NEW KIND OF TECHNIQUE”

In October 1966, issue no. 124 of *The Japan Architect*, the international edition of *Shinkenchiku*, a journal highly prized by western designers, made much of the Chiyoda Life Insurance Head Office building (1962-66) by Togo Murano. There was certainly good reason to become excited about the company's flagship in *Meguro-ku* (located in Tokyo's residential periphery). Consisting of 3 volumes arranged around a square with an ornamental basin, it was indeed a remarkable building. The exhaustive coverage of the Chiyoda building was also an opportunity to present a “revolutionary new type of architectural material”¹, a “new kind of [aluminium] casting technique permitting three-dimensional thin-walled façades over large areas to be executed with extreme precision”²: the technique known as AL-Cast (or Alcast).

Togo Murano was a tireless experimenter, with a particular eye for materials and textures. He was effectively the beneficiary of a new process for manufactur-

ing cast aluminium alloy façade panels, recently brought onto the market by 2 Japanese firms working as a consortium. As industrial producers, their aim was clearly to fill a gap in the building market: the use of metal curtain walls with their gleam and geometric lines gave birth to what we might call the curtain wall style, but of late architects have begun to want to add to that fairly chilly style the warmth and the plastic interest of masonry. To meet this new demand, Tokyo Curtain Wall Ltd. and Kubota Iron Machinery Works Ltd. have formed a business cooperative which, by adding new steps to the older precision mechanical casting methods, has developed a new cast aluminium they call Alcast³.

The Japanese architect, in turn, seized the opportunity, turning the expressive potential of the process to his advantage with the obvious intention of showing what could be achieved with it. As the critics remarked: by using large amounts of Alcast on the surfaces of the new home office for Chiyoda, famous architect Togo Murano has not only elevated that material's prestige, but also brought into the open new plastic possibilities for the curtain walls themselves⁴.

“New Plastic Possibilities for the Curtain Walls”

For this first large-scale use of Alcast, Murano worked with elements with rounded corners – which he himself had designed in conjunction with the manufacturers in order to optimise factory production – deploying them as a device for controlling the volumetrics. Alternating with pleasing *brique* walls in broken white marble, the “elegantly coloured and shaped panels”⁵ in Alcast create a kind of exterior arcade that also serves as a sun shade, producing highly successful plastic contrasts. By joining the 4 base components together into an L-shape, 1.2 m wide and 1 storey high (with an average thickness of just 8 mm), the volumes are given a dentellated enrichment that changes character according to the orientation. This wonderful relief effect is enhanced by the façade depth, which helps avoid the problem of excessive monotony. In the same way, the “beaten” surface finish of the cast elements “in a dark grey that has overtones of amber [...] with a strange unmetallic quality” given by a stove-baked acrylic paint, produces a highly suggestive sculptural effect. It was a winning formula, and no words were spared in praising it: “This new building shall reflect the magnificence of AL-Cast for generations as it ages into beauty”⁶.

“Artistic Freedom and Design of Beauty”

“Unlike the monotonous materials of Conventional Curtain Walls”⁷, the enthusiastic reception that Murano's building received was due largely to the formal qualities of the “beautiful Alcast surfaces”. Word of this new material that displayed so many advantages was to spread far and wide. Used for some of the masterpieces of contemporary Japanese architecture – like Kenzo Tange's iconic Shizuoka Building (1968) with its bowed panels in coloured cast aluminium – Alcast façades now became commonplace in office buildings. Exquisitely undercut, with angled surfaces, in rounded frames, ranged between wide joints, or featuring cast-



FIGURE 1. Togo Murano, Chiyoda Life Insurance Head Office, Meguro-ku-Tokyo, Japan, 1962-66 © Giulia Marino, 2015 (left), Advertisement for Tokyo Curtain Walls Ltd, 1966 (right).

in ribs, the range was almost limitless – they could even include one-piece built-in window units. Designers liked the variety of finishes, because “you could confer on the cast surfaces almost any texture or colour you liked from a wide range of factory treatments: natural anodised, self-coloured anodised, or if you preferred a non metallic finish you could choose from several different types of synthetic resin or enamel”⁸, as in the Sapporo Government building, singled out as “particularly attractive” for the tooled form of the panels, but also for the enamelling in a striking shade of gold⁹.

Lightness and Durability: New Possibilities in Construction

Alcast façades, being flexible assemblies thick enough to absorb tension during expansion-contraction in the aluminium (generally in Thiokol rubber joints roughly 10 cm thick), were well suited to the seismic constraints of Japanese buildings and were taken up with alacrity. One major advantage was the possibility of having large pieces¹⁰ and complex shapes in dimensions minutely controlled by means of double sand casting; another was the smart choice of alloy (Silmin AC-3A, with a little Na added before pouring, due to the high temperatures)¹¹. Equally, the reduced weight seemed, at first, to suggest these hi-tech components could become an excellent alternative to reinforced concrete façade panels, which at that time, following the example of the prefabricated envelopes designed by Marcel Breuer and his many acolytes, had become a veritable architectural trend.

In other words, it guaranteed the aesthetic and plastic quality of concrete in its 'tooled' version, but with the installation and performance advantages of the lightweight façade, most notably in terms of the reduced loads and fixings to the structural frame that this offered.

2. THE MOVEMENT OF TECHNICAL KNOWLEDGE

In the fertile history of 20th-century construction technology, the Alcast process stands out as a pivotal step in the "continual evolution of the art of the façade builder"¹², where semi-finished aluminium products, such as laminated and profiled units, evolve into 3-dimensional precision components. The history of Alcast was also paradigmatic of the circulation of technical knowledge around the globe, in this case through the key role played by European industry in perfecting and distributing this patent process from the East. Alusuisse, the Swiss association of aluminium manufacturers, for instance, obtained the sole distribution licence for all the countries of Western Europe and, at the end of the 1960s, established an ad hoc Research and Development Department, which would later become a pillar of support for several major building projects.

The much-discussed "first Alcast façade in Europe"¹³, which was adapted to fit a quatrefoil floor plan, was devised by Karl Schwanze for the BMW head office in Munich (1966-73). Whilst all this was going on, the brilliant trio formed by Eugène Beaudouin, Albert Camenzind and Pier Luigi Nervi were busy cladding the splendid concave façades of the International Labour Organisation building (*Bureau International du Travail*, or ILO-BIT, 1965-72), in Geneva, with "8000 cast-aluminium units"¹⁴ imported directly from Japan¹⁵. The assembly of these panels was particularly spectacular: cross-shaped elements fixed up against the slab nosing, enlivened by a curved projecting relief feature, creating fine ovoid marks in the window axis. Exploiting the full potential of Alcast, the cast-aluminium colouring, not grit-blasted, but coarsely textured by cold-working, is most effective in its combination with the washed concrete of the solid envelopes. In the phrase

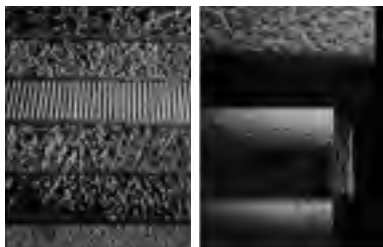


FIGURE 2. AL-Cast, variety of finishes, colours and textures © Schweizer Aluminium Rundschau, 1969.

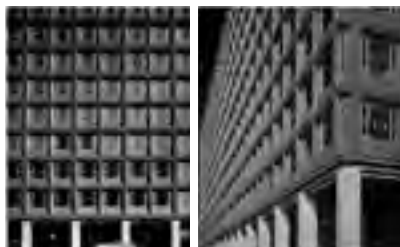


FIGURE 3. Sapporo Government building, Sapporo, Japan, 1966-68, enamelling AL-Cast panels. © Institute for the History of Aluminium, Paris, France (right), Schweizer Aluminium Rundschau, 1969 (left).



FIGURE 4. Eugène Beaudouin, Alberto Camenzind, Pier Luigi Nervi, International Labour Organisation building, Geneva, Switzerland, 1965-72. © Giulia Marino, 2014 (right), Camenzind Archives, Zurich (left).

used by European technical journals of that time, the use of Alcast in the ILO-BIT building “represented a new direction in façade construction”¹⁶.

3. THE PARABOLIC RISE OF ALCAST

But the rise and fall of Alcast mirrors that of so many of the most daring and innovative industrial products of the 20th century: the curve showed a sharp downturn at the end of the 1970s when synthetics such as fibreglass reinforced polyester and new, cheaper processes such as stamped aluminium burst onto the scene. Now reserved for especially high-quality production, Alcast panels have become more uncommon. Chiyoda, BMW and ILO-BIT, all these buildings were unquestionably original; and they stand today as an irreplaceable testimony to the unfulfilled promise of industrial progress on a grand scale.

Preservation of Cast Panels

The present fortunes of this precursor process are also illustrative of the problems that we face in conserving contemporary architecture today. The durability of Alcast panels, which have a particularly thick natural passivating oxide layer, has been amply demonstrated. But, well-preserved though they are, we need to look afresh at the weathering of the aluminium surface of the components, as well as the fatigue and loss of elasticity of the Thiokol joints. The painting of the Chiyoda building’s exterior (Alcast and marble briquettes) with a white protective coating when it was converted into a municipal building in 2001 and 2003¹⁷ is as unfathomable as it is unviable: not only is the outward appearance of the building a problem, with the subtlety of the original colour now being illegible, but there is the added danger of introducing new pathologies arising from the excessive impermeability of the envelopes.

In contrast, in Peter P. Schweger’s 2004-06 renovation of the BMW headquarters building, the cast aluminium shells were given no more than a simple in situ treatment aimed at removing dirt from the outer surface and prolonging the life cycle by improving corrosion protection¹⁸. The same sympathetic strategy was used by Jean-Philippe Pargade in the 2003-06 conservation work at the French Embassy in Warsaw (B. Zehrfuss, 1968-71), conserving the die-cast aluminium elements devised by Jean Prouvé. The panels were taken down and shop-finished at 180°C with a protective fluoropolymer, a technique usually used for offshore installations and then reaffixed with new flexible joints¹⁹. These examples, and that of the restoration of the cast aluminium banding of the *Bundesverfassungsgericht* in Karlsruhe (designed by P. Baumgarten, 1962-69) show that there are such things as effective remedial measures that can be taken to restore Alcast to its original glory.

At the iconic ILO-BIT building, the magnificent cast envelopes, which were to be replaced by a new “more contemporary” fully glazed façade, have just escaped destruction. We can only hope that, during the substantial renovations that are

just beginning at the international agency's HQ, the Alcast façades will be carefully restored. As part of the trend in Europe to shift the approach of projects undertaken within existing buildings towards more conservation-minded strategies, a philosophy of respectful enhancement of the original fabric of the envelopes would be a well-deserved way of recognising a pioneering technique that is still little understood.

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NOTES

- 1 Advertisement for Tokyo Curtain Walls Ltd, 1966.
- 2 "Alcast: des Possibilités Nouvelles dans la Construction des Façades", *Schweizer Aluminium Rundschau*, 1969, 216-226.
- 3 "Cast Aluminium in the Chiyoda Life Insurance Co. Building", *The Japan Architect*, October 1966, 38.
- 4 *Id.*
- 5 Botond Bognar, "Chiyoda Life Insurance Company Building", *Togo Murano, Master Architect of Japan*, New York, Rizzoli, 1996, 94.
- 6 Advertisement, Kubota Ltd, 1966.
- 7 Advertisement, Tokyo Curtain Walls Ltd, 1966.
- 8 "Alcast: des possibilités nouvelles dans la construction des façades", *op. cit.*, 218.
- 9 *Id.*
- 10 Up to 4 metres, or one storey, unlike the tested technique of die-casting for "small accessories", notably in the machine manufacturing.
- 11 Corresponding to ENAC-ALSi2(b), and to European Standard EN 1706, 2010.
- 12 "Alcast: des Possibilités Nouvelles dans la Construction des Façades", *op. cit.*, 217.
- 13 "La Première Façade en Alcast en Europe", *Journal de la construction de la Suisse romande*, 30 June 1972, 89-90 and cover.
- 14 BIT, brochure on the new building, undated (c. 1975), Archives of Alberto Camenzind, Zurich.
- 15 The genesis of the beautiful BIT envelopes in Geneva was a long and complex affair. After the option for Alcast panels had been accepted, no European enterprise was found that was capable of achieving a level of production on this scale. The 8000 panels, which in the tradition of international organisations were a gift from Japan, also a member State of the International Labour Organisation, were made by Kubota in collaboration with the architects (who benefited from a study visit to several sites) and were delivered ready for on-site assembly. Archives of the International Labour Organisation, BIT-DOSCOM, Geneva, GB 172-BS-101-1.
- 16 "Neue Wege im Fassadenbau mit Alcast", *Bauen und Wohnen*, 1972, II-6.
- 17 Hiroyasu Fujiyoka, "The Chiyoda Life Insurance Company headquarters in Tokyo", *docomomo Journal*, n. 29, September 2003, 36-37.
- 18 *Landeshauptstadt München, Referat für Stadtplanung und Bauordnung, Lokalbaukommission Denkmalschutz, Denkmalschutz in München. 40 Jahre Bayerisches Denkmalschutzgesetz*, September 2013, 49.
- 19 Bernard Anache, Jean-Philippe Pargade, "L'Ambassade de France à Varsovie: Genèse d'un Projet", *Réhabiliter les Edifices Métalliques Emblématiques du XX^e siècle*, *Conference Proceedings, L'œil d'or*, Paris, 2008, 22-29.

Rationalist Architecture in Romagna, Italy. Towards Better Preservation

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The *Santarelli* kindergarten, in Forlì, and the *Casa del Fascio*, in Predappio, are both significant examples of the architecture produced during the Fascist regime of the 1930s. They are comparable in terms of both the time when they were built and the year of their inauguration. Besides their similar chronologies, they are inherently linked for many other reasons, including their experimental technologies. Indeed, the two buildings can be compared because of the common tension between tradition and innovation that they shared at the design stage and because of the frailties, deficiencies and failures that they both experienced in the course of their construction.

On the one hand, the kindergarten in Forlì, a building planned for the “city of the Duce”, employed traditional technologies to resolve its construction failures; it continued to be used for its original function until 2012.

On the other hand, the *Casa del Fascio* constitutes an iconic and monumental building of the Fascist era, built for a town which sought to grow from its peripheral status and become a thriving and busy centre. The *Casa* attempted to incorporate technological innovation with greater perseverance than the Forlì kindergarten, but, in the post-war era, it fell victim to ideological rejection and was condemned to a state of physical abandonment.

By comparing these two architectures, this paper seeks to analyse their affinities and contrasts, as well as their shared construction deficiencies and failures. Since both buildings present problems caused by their constructive experimentation, the results of the interventions that attempted to address these difficulties will also be illustrated.

The paper seeks to describe a research project that is just beginning and which will be studying this undeniably important heritage, while also touching on some of its characteristic aspects (including experimental technologies and the theoretical and operational problems of preservation). The aim is, on the one hand, to disseminate a better knowledge of these buildings and, on the other hand, to provide professionals with better restoration tools, capable of guaranteeing the preservation of these frail Modern architectures.

1. THE SANTARELLI KINDERGARTEN IN FORLÌ AND THE CASA DEL FASCIO IN PREDAPPIO: 2 ARCHITECTURES IN EQUILIBRIUM BETWEEN TRADITION AND INNOVATION

Built between 1934 and 1937, the *Santarelli* kindergarten in Forlì and the *Casa del Fascio* in Predappio are 2 emblematic examples of the architecture produced by the fascist regime.

The adherence of architects to the requirements of the Modern Movement had already been proclaimed. New typologies of horizontal structures, with different combinations of concrete, iron and brick, had already been patented¹. New

forms of insulating and cladding glass, as well as translucent diffusers in glass blocks, had already been introduced². And, while Giuseppe Pagano highlighted that “something exists in the material which isn’t only an ‘external aspect’, but is a formal tendency that is potentially inherent in the selected material”³, during the period between the two world wars the regime promoted a completely new coexistence between technological innovation and building traditions⁴.

Two “Hybrid” Architectures

The *Santarelli* kindergarten in Forlì and the *Casa del Fascio* in Predappio belong to precisely this aforementioned experimental panorama: the employment of reinforced concrete structures was not yet an alternative to traditional masonry, but instead represented an evolution of it⁵. The 2 buildings are examples of “hybrid” architectures, in which horizontal structures in reinforced brick coexist with mixed vertical structures, where brick masonry is combined with reinforced concrete frames⁶.

In both cases, there are perimeter kerbs corresponding to all the horizontal structures, even though the presence of reinforced concrete pillars is rather sporadic. Indeed, they are only used to reinforce the Casa’s perimeter masonries; they appear in correspondence to the semi-circular exedra or to the considerable vertical development of the *littoria* tower.

In Predappio, Arnaldo Fuzzi also chose to use *Stimip* horizontal structures in reinforced brick, in both their unidirectional and bidirectional variations. These solutions were adopted for the horizontal structures separating the ground floor from the first floor, as well as for those of the flat roof. In this case, the support level of hollow flat tiles is composed of special L-shaped elements in hollow brick, while terracotta elements accommodate the concrete casting of the joists, reinforced with iron bars whose adherence remains unimproved. A simpler solution is adopted in Predappio for the horizontal structures that separate the basement from the ground floor. Hollow flooring blocks and reinforced concrete joists are also used in the Forlì kindergarten.



FIGURE 1. Arnaldo Fuzzi, *Casa del Fascio*, Predappio, Italy, 1934-1937. From top left: reinforced concrete kerb; association of traditional materials and industrially-produced materials in a mixed vertical structure; *Stimip* horizontal structure with unidirectional trend; *Stimip* horizontal structure with bidirectional trend. © Giulia Favaretto, 2015.

Indeed, in Guido Savini's design (just as in Behrens' building at the *Weissenhofsiedlung* in Stuttgart)⁷, repeated water leakage is prevented by a conventional pitched roof superimposed on the flat one.

The "Epidermal Trait"

Sergio Poretti pointed out that, on the one hand, "modernisms find their recurrent matrix" in the "mixed structure"; yet, on the other hand, "they find a common epidermal trait" in the "polymaterialism strategy"⁸. This was achieved in the *Casa del Fascio* by employing *litoceramica* alternating with travertine slabs; while the kindergarten adopted mainly plaster alternating with brick. In the latter case, plaster also marks the interiors⁹. In contrast, the *Casa* – accessed through a retractable gate – presents an entrance in which there is a predominance of stone¹⁰. Stone was considered suitable for a "modern use of [traditional] materials"¹¹ and was also associated with industrially-produced materials¹².

Our analysis cannot overlook the contribution of autarchic materials, a result of the industrial research made necessary by the 1935 League of Nations' sanctions imposed on Italy after the colonial war in East Africa.

An Intrinsically Frail Nature

The historic sequence of events following the construction of the 2 buildings soon revealed their intrinsically frail nature. Weaknesses included an accelerated degradation of the industrially-produced materials and construction deficiencies due to some experimental technological solutions, as well as the buildings' general state of abandonment. These shortcomings rapidly transformed these simulacrum of power into objects of "provisional immortality"¹³; in spite of their frailty, they bear witness to a bygone period's mode of construction.

2. FROM AFFINITIES TO CONTRASTS

When comparing the two case studies, the first point of any analysis should be to identify the different urban role played by each building. The *Santarelli* kindergarten is a building planned for the "city of the Duce"; it is deeply rooted



FIGURE 2. Guido Savini, *Santarelli* Kindergarten, Forlì, Italy, 1934-1937. From top left: the exterior with plaster alternating with brick and stone; the interior with painted surfaces. © Giulia Favaretto, 2016 (left); Leila Signorelli, 2013 (right). Arnaldo Fuzzi, *Casa del Fascio*, Predappio, Italy, 1934-1937. From bottom left: the exterior with *litoceramica* alternating with travertine slabs; the interior with stone claddings. © Sara Di Resta, 2015 (left); Giulia Favaretto, 2015 (right).

in the urban context where it generates a quiet relationship of coexistence. The *Casa del Fascio*, located in the centre of the new town of Predappio, is a building constructed on a monumental scale; it expresses its ambition through stylistic, material and technological choices, as well as through the imposing wings extending away from the central block. Constructed under the Fascist regime in a homogeneous geographical area, these two buildings share one significant characteristic: both display comparable problems arising from the mismanagement of new technologies. In particular, the flat roof, which was a distinctive feature of both buildings, gave rise to water infiltration damage. Different solutions were found for the problem in the case of each building, arising from different value judgments: in the case of Forlì, priority was given to the building's utility aspect while, in Predappio, priority was given to its symbolic value. Certainly both attitudes had a major impact on the preservation of the architecture.

The Santarelli Kindergarten

Based on a "C" plan, the *Santarelli Kindergarten* had a flat roof running over both of its extensions: on the west side, the raised exedra volume of the recreational space is surmounted by a terrace used for heliotherapy, while the eastern side ends in the monumental double-volume refectory (12.50m wide and 18.00m long). The choice of roof makes the whole area susceptible to water infiltration. In 1941, the decision was taken to counter leakage through the use of proven techniques; in this case, a traditional pitched roof with wooden structures was added to the top of the building. On the top of the western exedra volume, only the waterproof layer was replaced, while the terrace was maintained in its existing state: a choice that, over time, has continued to raise concerns¹⁴. However, the solution that was applied to the kindergarten's refectory on the eastern side irreversibly altered the architecture. The pitched roof reduces the emotional impact of the complex balance between form and matter, an essential connotation of the original work; however, the "metamorphosis" to a more traditional character can also be interpreted as the building's slow dissolution into the overall appearance of the historic city¹⁵.



FIGURE 3. Guido Savini, *Santarelli Kindergarten*, Forlì, Italy, 1934-1937. Left: main façade in 1936; right: main façade in 2016. © Archivio Famiglia Santarelli and Asilo Santarelli, 1936 (left); Giulia Favaretto, 2016 (right).



FIGURE 4. Arnaldo Fuzzi, *Casa del Fascio*, Predappio, Italy, 1934-1937. Left: project for the main façade; right: main façade in 2015. © Archivio Centrale dello Stato, 1933-1934 (?) (left); Gian Carlo Grillini, 2015 (right).

The *Casa del Fascio*

An iconic building of the Fascist regime, the *Casa del Fascio* pursued modernity with greater intensity: it demonstrated a strong commitment towards technological innovation and rejected any compromise with tradition. Here the flat roof caused severe damage, even before the *Casa*'s inauguration in 1937. The water infiltrations "infected" the architecture during its construction phase and continued even after the building's entry into operation. Documentary sources have outlined a "chronicle of a per-announced death": subsequent repairs opened up other flaws, resulting in a confusion of responsibilities that were passed on from one person to another without a final solution ever being achieved for the problem¹⁶.

The *Casa del Fascio* was a "type"¹⁷ whose origin and existence had its rationale in the very nature of the regime itself. As a result, it was impossible at that time to accept any compromises arising from its frailty, which is now clearly visible in the monument's decay. This was in marked contrast to the *Santarelli* kindergarten, which was successfully repaired by using a solution that detracted from its original modern ambitions and made it more akin to its context, and perhaps more acceptable as a result.

3. WHICH STRATEGIES TO CHOOSE?

The architectural heritage in question presents some peculiarities that distinguish it from the pre-modern heritage. These characteristics are closely related to the fact that these buildings belong to a transitional period in the art of construction; they belong to a time when new and experimental technologies were beginning to invade the panorama of architecture.

Technique and Vocabulary in 20th Century Architecture

During the first decades of the 20th century, the above-mentioned phenomenon presented different characteristics and progressed at different speeds. An

example of this is to be found in modern construction and decorative techniques (such as the use of artificial stone, where Portland cement substitutes lime as a binder). In the early period, the spread of new and different techniques was accompanied by the development of specific skills, resulting in an increase in the number of skilled workers¹⁸. However, in the case of techniques that made use of reinforced concrete, different phases can be identified. At first, the sporadic use of this material led to its being regarded as a pioneering technique. An example of this can be seen in the company that was formed by the engineer Giovanni Antonio Porcheddu: as the sole holder in Italy of the rights to the Hennebique patent, the company used reinforced concrete to produce more than 2500 buildings. Later, in a subsequent phase, there was a widespread dissemination of the technology without those who used it having any specific expertise¹⁹. After the end of the WWI, this phenomenon reached its peak due to the choices made by the Fascist regime in the early 1930s in terms of the architectural language that it adopted²⁰, preferring a modern vocabulary that was totally distinct from the national traditions of construction and which soon became widespread. Indeed, the regime's adoption of new formal paradigms²¹ for its extensive campaign to produce new public buildings²² provided the ideal circumstances for the use of this new technology.

Variations in the Case Studies

The *Santarelli* kindergarten in Forlì and the *Casa del Fascio* in Predappio were examples of this pioneering use of a new technology. In a reciprocal symbiosis that was rarely subjected to strict regulation, reinforced concrete was combined with traditional masonries. Moreover, it was used in a rather free association of bearing walls built of masonry, weakly reinforced kerbs and horizontal structures with considerable spans; here technologies using disposable formworks were adopted for the manufacture of brick and reinforced concrete beams with unidirectional or crossed-ply arrangements. In terms of the building work, this freedom led to the absence of any standardisation in the final product. Since identifying a rigorous homogeneity of a construction is a complex task, this result is perfectly in line with traditional building techniques.

We can see that the use of reinforced concrete without resorting to any codified modalities is probably the main feature of the architectural heritage of the 1930s. However, this is by no means the sole novelty to be noted in the panorama of building at that time. New materials started to be commonly used in those years: some of them were imposed by the international industry²³ while others depended on the Italian situation (autarchic materials)²⁴. Meanwhile, equipment design was also becoming highly important, even though it was not yet tied to the logic of industrial production; indeed, craftsmanship was still in the process of becoming industrialised.

For the purposes of restoring this specific heritage, all these aspects made it more complicated to choose the most suitable forms of intervention²⁵.

4. ATRIUM AND THE SEVEN-POINTS GUIDELINES

The research campaign, directed by the University of Bologna in collaboration with the Municipality of Forlì, is currently being undertaken on two fronts. On the one hand, an examination is being made of archival and bibliographical sources that are pertinent to the heritage of rationalist architecture in Romagna. On the other hand, research is being undertaken into already constructed buildings.

This research is designed to produce a wealth of documentary evidence that will be useful to the owners of this architectural heritage. It will allow them to plan procedures as correctly as possible from a methodological point of view; moreover, it will guarantee the effective protection and enhancement of the buildings. This dual concept must necessarily aspire to maximise conservation of the existing physical evidence. This well-documented research will also be an indispensable tool for transmitting knowledge related to this particular area of heritage. The ATRIUM (Architecture of Totalitarian Regimes of the 20th century in Urban Management) project²⁶ strives both to disseminate knowledge among the users of the cultural route and to increase the know-how of operators involved in the restoration of this built heritage²⁷.

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NOTES

- 1 Among them, the *Bidelta* structure with ribs in reinforced concrete (made by the company *Eredi Frazzi fu Andrea - S.A. per l'Industria dei Laterizi* in Cremona), the duplex horizontal structure in reinforced concrete (patented by A. Danusso), the *Stimip*, *Sap* and *Excelsior* structures in reinforced brick (developed and patented by the company *R.D.B. Fornaci F.lli Rizzi, Donelli, Breviglieri & C.* in Piacenza) and the *Berra* horizontal structure with triangular hollow bricks (made by the company *Soc. An. Italiana Berra*). See Giuseppe Pagano, Italo Bertolini, Guido Fiorin, Gino Vicenzi, *Repertorio 1934 dei Materiali per l'Edilizia e l'Arredamento*, Milan, Editoriale Domus, 1934.
- 2 Such as the *Vetroflex* insulating glass (patented by *Vettria Italiana Balzaretto-Modigliani*), the *Fontanit* glass for claddings (developed by *Società Anonima Luigi Fontana & C.* in Milan) and the translucent diffusers for structures in the

- form of a glass block (produced by Saint-Gobain). See Sergio Poretti, "Tecniche di Costruzione fra Modernismo e Autarchia", *Roma Moderna e Contemporanea*, 3, 1994, 775-796.
- 3 Giuseppe Pagano, "I 'Materiali' dell'Architettura Moderna", *La Casa bella*, 41, 1931, 11.
 - 4 Sergio Poretti, "La Scelta Autarchica del 'Moderno' Italiano", *Il Nuovo Corriere dei Costruttori*, 4, 1996, 74-75.
 - 5 *Id.*
 - 6 The authors have already addressed this issue in: Giulia Favaretto, "Strutture e Fragilità di un'Architettura del XX Secolo. L'Intervento di Consolidamento come 'Operazione Culturale' per la Conservazione e il Riuso di un Patrimonio Edificato", in Francesco Delizia, Carla Di Francesco, Sara Di Resta, Marco Pretelli (ed.), *La Casa del Fascio di Predappio nel Panorama del Restauro dell'Architettura Contemporanea. Contributi per Aiutare a Scegliere*, Bologna, Bononia University Press, 2015, 130-135.
 - 7 See Marco Dezzi Bardeschi, "Conservare, non Riprodurre il Moderno", *Domus*, 649, 1984, 10-13.
 - 8 Sergio Poretti, "I Materiali Nuovi", in *Modernismi Italiani. Architettura e Costruzione nel Novecento*, Rome, Gangemi Editore, 2008, 109.
 - 9 Decorative plasters were found underneath numerous post-war paintings in the audience rooms.
 - 10 Examples include reddish-brown veined travertine, green cipollino apuano, Carrara marble, dark-green serpentinite and yellow Siena marble.
 - 11 Giuseppe Pagano, "I 'Materiali' dell'Architettura Moderna", *op. cit.*, 13.
 - 12 Such as the porcelain stoneware of the mosaic floor tiling and the Crittal iron-window associated with the Termolux glass panes (tempered glass panes composed of two layers of transparent glass that include an insulating layer of Vetroflex spun glass).
 - 13 Sara Di Resta, "Qual è il Materiale più Durevole? L'Arte. Declino e Decadimento di un Oggetto dall'Immortalità Provvisoria", in Francesco Delizia, Carla Di Francesco, Sara Di Resta, Marco Pretelli (ed.), *La Casa del Fascio di Predappio nel Panorama del Restauro dell'Architettura Contemporanea. Contributi per Aiutare a Scegliere*, *op. cit.*, 70.
 - 14 The documents are in the Archivio di Stato in Forlì in "Lavori-Restauri-Fornitori-Tecnico dell'Asilo Geom. Rolli", in the Folder "Primo Lotto" (1941) and in the Folder "Programma Lavori Straordinari" (1966). Here the urgency of new interventions on the exedra roof terrace is emphasised.
 - 15 In 1970, according to the project developed by the surveyor P. Rolli, the decision was taken to raise the arcaded block facing the street C. Sforza, in order to obtain a dormitory for the children. The intervention transformed the building's image even more, bringing it closer to its current appearance.
 - 16 Leila Signorelli, "Dalla Realtà alla Corsa ai Ripari", in Francesco Delizia, Carla Di Francesco, Sara Di Resta, Marco Pretelli (ed.), *La Casa del Fascio di Predappio nel Panorama del Restauro dell'Architettura Contemporanea. Contributi per Aiutare a Scegliere*, *op. cit.*, 22-28.
 - 17 Elena Pozzi, "Dall'Ambizione alla Realtà: i Limiti del Costruire", in *ibid.*, 16-21.
 - 18 The workers' skill was the result of training received in such schools as the ones for applied arts, where operational practice was closely linked to theoretical and methodological teaching. The authors have undertaken studies in the Venetian area, where, in the first decades of the 20th century, technique was considered the prerogative of operators from *Casale Monferrato*, a place linked to one of the first Italian cement factories and to one of the first schools of applied arts for the cement industry. See Donata Patrussi and Giovanni Renzi, *Liberty. Natura e Materia*, Florence, Giunti, 2011, 200; Marco Pretelli, Isabella Daga, Alice Matteini, "La Pietra Artificiale. Un Patrimonio da Salvare", in Rosalba Lentile (ed.), *Architetture in Cemento Armato, Orientamenti per la Conservazione*, Milan, Franco Angeli, 2008, 461-468.
 - 19 About the dissemination of this technology in Italy, see Alessandro Marzo Magno and Tullia Iori (ed.), *150 Anni di Storia del Cemento in Italia. Le Opere, gli Uomini, le Imprese*, Rome, Gangemi, 2011.
 - 20 About this issue, see, among others, Paolo Nicoloso, *Mussolini Architetto. Propaganda e Paesaggio Urbano nell'Italia Fascista*, Turin, Einaudi, 2008.
 - 21 Such paradigms included flat roofs, horizontal structures with spans larger than the traditional ones, rectilinear and quite considerable projections.
 - 22 Such public functional spaces as schools, offices, *Casa del Fascio*, etc.
 - 23 See Thomas C. Jester (ed.), *Twentieth-Century Building Materials. History and Conservation*, Washington, National Park Service-McGraw-Hill, 1995.
 - 24 The sanctions imposed on Italy by the League of Nations after the colonial war in East Africa had a powerful influence on the availability of materials. About technological innovation and new materials, see M. Giulia Marziliano, *L'Italia che si Rinnova. Contributo al Quadro Interpretativo delle Dinamiche di Trasformazione nella Cultura Tecnologica del Progetto. 1922-1945*, Santarcangelo di Romagna, Maggioni, 2010.
 - 25 This is especially true considering the extremely narrow time schedules regulated by current EU legislation.
 - 26 The Municipality of Forlì is in the forefront of the project. See "Progetto ATRIUM", accessed on 31 January, 2016, <http://atrium.comune.forli.fc.it>.
 - 27 The project, now at an advanced stage in its definition, has already led to the formulation of a *Seven-Points Guideline for the Restoration of Rationalist Heritage*. It comprises a form which must be completed through both a specific archival and bibliographical survey and a physical examination of the buildings; a support, in the construction phase, of the initiatives oriented to favour the dissemination of this knowledge with the organisation of tour routes, as well as of the related contents; and specific courses, oriented to the various categories of operators involved – architects, engineers, restorers, skilled workers, etc. – useful for illustrating the characteristics of the architectures and the possible intervention approaches to guarantee their protection.

Renovation of a House Designed by Emil Lange – Successes and Failures

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The detached house designed by German architect Emil Lange was an experimental model proposal for the *Dwelling and Workplace* Exhibition organised by the *Werkbund* in Breslau, Germany (now Wrocław, Poland) in 1929. The detached house (149 m²) with a garage was composed of cubic shapes. One section of the building was supported on pillars (which reduced the construction cost by partially eliminating the basement), creating a canopied terrace underneath. Until 2013, only minor alterations were made, mainly relating to the window casements, the enclosed space under the projecting section supported on pillars, and the building of the garden terrace. The main goal of the exhibition proposal was to present cheap houses, which was why the architect introduced new and cheap construction methods and materials. For the external walls, a steel skeleton frame was used with 17cm *Schima* aerated concrete plates for insulation, lined (on the inside) with *Lignat* chipboard plates. The first technical defects appeared only a few years after the construction was completed. The house was registered as a historic monument in 1979 under the number 376/Wm, which means that not only is its form protected, but also the building materials and techniques that were used. This is why the correct choice of a renovation solution can help to preserve the aesthetics of pre-war *avant-garde* architecture. In 2014, the house was renovated according to a conservation design prepared by the authors of this abstract under the scope of the renovation programme introduced by the city authorities. This renovation programme includes the reimbursement of at least 70% of the money spent on repairs to the house front or garden. The owner is obliged to present a suitable outline of the repairs to be done, which are then carried out under the supervision of conservation experts. The paper presents all the problems arising from this difficult renovation process, relating to the flat roof, the windows and the outer walls of Emil Lange's model detached house.

1. INTRODUCTION

In 1929, in Breslau, Germany (now Wrocław, Poland), at the initiative of the *Werkbund*, an exhibition was organised entitled *Dwelling and Workplace* ("*Wohnung und Werkraum*" *Ausstellung* – WuWA). An experimental housing estate was built as part of the exhibition, funded by *Siedlungsgesellschaft Breslau A.G* (a housing estate joint-stock company). Its programme had been discussed with and approved by the *RFG* with respect to the sizes and layouts of the apartments, as well as the construction methods and materials to be used.

11 architects were invited to design buildings for the exhibition, and were given complete and unrestricted artistic freedom in doing so. The aim was to present new types of affordable small and medium-sized flats to alleviate the acute housing shortages that constituted a major social problem. New types of constructions and materials were to be tested under the trying conditions of the idiosyncratic Silesian climate.

The construction phase was completed within a record time of 3 months.



FIGURE 1. Emil Lange, detached house of the WuWA estate, Breslau, Germany, 1929. Garden view. © *Die Form*, 1929, 461.

The furnished homes remained open to the public for three and a half months (from June 15 to September 30) and were then rented out for 2 years by *Siedlungsgesellschaft Breslau*, so that the proposed solutions could be tested in practice¹.

The detached house designed by German architect Emil Lange was one of the experimental model proposals.

In 2013, the WuWA house renovation programme was introduced by the city authorities. This includes the reimbursement of at least 70% of the money spent on repairs to the house front or garden. The owner is obliged to present a suitable outline of the repairs to be done, which are then carried out under the supervision of conservation experts. In 2014, the house designed by Emil Lange was renovated in accordance with the conservation design presented.

2. BUILDING FORM

Emil Lange designed a detached house with a garage (149 m²) for a family of 6 or 7, with a live-in servant². The house was composed of cubic shapes. One section of the building was supported on pillars (which reduced the construction cost by partially eliminating the basement), creating a canopied terrace underneath. The 2 living rooms, dining room, kitchen and bedrooms were located on the first floor, while the guest room and children's bedroom were located on the second floor. There were bathrooms on each floor. The living room and dining room were connected by means of a concertina-type folding door that made it possible to create one large room (40 m²) that opened onto the garden through sliding French windows. The interior was furnished with standard furniture³.

3. CONSTRUCTION AND BUILDING MATERIALS

The exterior walls of Emil Lange's house were supported by a steel frame made of H-beams and standing on massive foundations. The frame was filled with the following layers: watertight outer plaster (*Wasserdichter Putz*) that was 2.5cm thick, *Schima* aerated concrete blocks (*Gasbeton*) 14cm wide, and *Lignat* insulation chipboards 0.6cm thick. This description is taken from the design documents stored in the Wrocław Construction Archive (Department of the Museum of Architecture). The static calculations mention the following items: outer plaster 2cm thick, pumice aggregate blocks (*Bimsbeton*) 16cm wide, and inner plaster 1.5cm thick. The frame was covered with cork boards on its outer side. The use of an interior plaster layer instead of chipboards indicates that the second variant was probably applied⁴. Light concrete (*Celotex*) inner walls and *Klein* roofs filled with slag and insulated with cork were used inside the building. The floors were covered with linoleum. The flat roof was covered with double layers of bituminous paper⁵.

4. THE CURRENT STATE

The building was subjected to a number of unnecessary alterations in the pre and post-war periods, using appropriate technology. Before the war, in 1930, a year after the house's construction, a terrace was added to the west side of the building, with stairs leading to the garden. A new doorway was opened to connect the terrace with the living room, leading to the filling in of one window and the opening of a new one by the door. The arcade below the pillar supporting part of the building was bricked in (on the south side). Furthermore, the large bedroom window overlooking the street and the small window overlooking the garden were filled in even before the war.

In the post-war years, some renovation work and minor alterations were carried out. During these works, among others, the outer terrace was rebuilt, increasing its size, and the stairs to the garden were removed; temporary wooden stairs were added in 2012; part of the second-floor window, overlooking the garden, was filled in to make room for a new bathroom; the door leading to the upper terrace from the room on



FIGURE 2. Emil Lange, detached house of the WuWA estate, Wrocław, Poland. Garden view.
© Jadwiga Urbanik, 2014.

the garden side was bricked in (in the south wall); 2 double square windows on the ground floor, overlooking the garden, were filled in; the wooden frames of the windows on the ground floor facing the street side and on the ground and second floors facing the garden in the north part of the building were replaced with PVC frames; vertical divisions were added to the corner dining room window on the garden side; a metal rod, connected to the guard rail of the upper terrace, which was used to support a cloth awning, was removed and metal bars were installed in the basement windows.

5. RENOVATION OF THE BUILDING

General Guidelines for the Restoration Work

The building is classified as being under conservation protection, it was added to the Register of Listed Monuments on 18 January, 1979, under number 367/Wm, and is currently No. A/2485/367/Wm in the Book of Monuments and Listed Properties of the Lower Silesian Voivodeship. Such protection extends to the function, construction, building techniques, external form and interiors of the building.

Emil Lange introduced new and cheap construction methods and materials, but unfortunately technical defects began to appear just a few years after the building was completed⁶.

The aim of the renovation work was to restore the original form of the building, insofar as possible, and to use building materials that were compatible with the original ones used in the 1929 construction. The guiding principle of the whole project was to respect the architect's concept and to restore the aesthetics and design of the late 1920s.

Flat roofs

According to the 1929 design documents, a *Klein* flat roof was used, consisting of the following layers (from the bottom up): 2cm thick plaster, 10cm high hollow bricks with cement mortar, a 1cm thick layer of light concrete, 5cm thick *Torfoleum* insulation (insulation boards made of pressed peat) and a 10cm thick concrete layer. A layer of pressed gravel was placed on the flat roof, in order to decrease the slope by about 10%, and this was then covered with bituminous paper.

The flat roof was probably subjected to numerous alterations and repair works both before and after the war. During these works, the bituminous paper covering was fixed in place.

During the renovation work, the original layers that had been placed on the flat roof and which did not properly fulfil their function were removed and replaced with new ones – a concrete decrease layer, an insulation layer (Styrofoam) and an anti-dampness layer (2 layers of a heat sealable bituminous coating). The original dimensions of the building were preserved.



FIGURE 3. Emil Lange, detached house of the WuWA estate, Wrocław, Poland, outer wall construction. © Jadwiga Urbanik, 2014.



FIGURE 4. Emil Lange, detached house of the WuWA estate, Wrocław, Poland, flat roof original insulation *Torfoleum* plates. © Jadwiga Urbanik, 2014.

Outer terraces

Although it did not form part of the original 1929 design, it was decided to maintain the lower terrace for functional purposes. The appearance of the two terraces was unified, in keeping with the original appearance of the upper one.

The upper terrace was originally covered with concrete slabs and surrounded by a steel pipe guard rail connected to bars on the door and window lintels. This was used to hang a cloth awning that offered protection against sunlight.

Degradation of the upper terrace layers and the improper construction of the lower terrace had led to dampness appearing in the base and the surrounding walls and had caused the plaster to peel off.

During the renovation of both terraces, an inverted flat roof system was used, in order to permit proper water drainage. All the degraded roof layers were removed, and a layer of concrete was added to provide good water drainage, together with an insulation layer (5cm thick hard styrofoam or polyurethane foam, for example *Bauder – Pir m*). In some places, waterproofing or composite terrace boards were used.

Elevations – Plaster and Plinths

The building was covered with 3 different layers of plaster in 1929: rough cast plaster, fine aggregate smooth plaster and rough aggregate outer plaster. The plinth was made with dark brown ceramic lining. The building was subjected to a great deal of renovation and rebuilding work. The bricked up doors and windows were covered with plaster that was almost identical to the original material.

The plaster around the ground floor and first floor windows was replaced with plaster similar to the original material, although there was a slight difference in its composition and texture. Some cracks were visible at the junctions of the plaster work. The plaster had probably been replaced during the removal of the original dark metal frames around the windows.

Numerous cracks, losses and repairs made with mortar appeared all over the original plaster. The original plaster was in a very bad condition, showing

symptoms of decay and loosening, and several losses were evident. There were some characteristic cracks in places where the steel structure was covered only by a shallow layer of plaster. The plaster was not fulfilling its principal function – namely to protect the exterior wall. It was consequently replaced, although a fragment of the original plaster was left on the garage wall where it was least damaged. Special anti-cracking membranes were used where the concrete showed signs of damage.

The design recommended the use of a mortar composition based on the original recipe (determined by research), with an identical structure and colour. Unfortunately, the repair company was unable to prepare the plaster appropriately. In the end, the building was covered with a thin layer of plaster, similar to the original one.

Elevations – Window and Door Frames

All of the original windows were preserved (the staircase window on the street side, the corner window of the living room and the garage window). The garage door with its original opening mechanism was also preserved⁷. The corner window of the living room, which consisted of just one single pane of glass was especially interesting. All of the windows in the living area originally had dark metal frames. These frames were in a bad condition and were consequently replaced.

For the sake of functionality, the restoration plan did not involve the restoration of the windows that had been removed in previous interventions. Changes that had been made to the interior layout made it impossible to return to the original design.

The PVC window frames were replaced with wooden ones that resembled the original ones as closely as possible, although plied glass was used. Dark titanium-zinc alloy profiles were installed as frames in the whole of the living area.

6. CONCLUSIONS

The restoration work undertaken at the detached house designed by Emil Lange showed that the renovation of modern architecture is not an easy task and can cause a large number of problems.

NOTES

- 1 Jadwiga Urbanik, *WUWA 1929-2009, Wrocławska wystawa Werkbundu*, Wrocław, Muzeum Architektury, 2009, 107-204, 377-386.
- 2 *Wohnung und Werkraum Werkbundaussstellung in Breslau 1929, 15 Juni bis 15 September*, Ausstellungs-Führer, Breslau, 1929, 73-121.
- 3 Guido Harbers, "Wohnung und Werkraum. Werkbund – Ausstellung Breslau 1929", *Der Baumeister*, 1929, 285–312.
- 4 Gustav Lampmann, "Ausstellungssiedlung Breslau 1929", *Zentralblatt der Bauverwaltung*, 1929, 468.
- 5 Georg Münter, "Wohnung und Werkraum. Ein Versuch die Werkbund – Ausstellung in Breslau 1929 zu Würdigen", *Wasmuths Monatshefte für Baukunst*, 1929, 441-453.
- 6 O., *Ein Spaziergang nach 3 Jahren*, *Ostdeutsche Bau-Zeitung-Breslau*, 1930, 298–300.
- 7 Jan Nesiba, *Vystava 'Byt a dílna' ve Vratislavi, Stavitel*, 1929, 97-115.

A Study of the History of the Tokyo Bunka Kaikan (Tokyo Festival Hall) through the Documentation Relating to the Renovations of its Facilities

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In recent years, various activities have been undertaken for the conservation of modern architecture by **docomomo** and other organisations while, at the same time, post-war modern buildings constructed less than 50 years ago have begun to receive greater attention as part of our cultural heritage. However, based on the concept of conserving architecture while still in use, it has become clear that some of these buildings need urgent renovation work (the repair of deteriorated elements and the replacement of equipment) due to their aging and the functional degradation that they have suffered as a result of new demands. Since there is a danger that the original architectural values of such buildings may be lost during renovation work, the Japanese ICOMOS National Committee established a set of guidelines for conservation in 2011, which are known as the “Madrid Document”. The document stated that we should assess and identify the cultural significance of the architecture itself and establish limits for acceptable changes, prior to commencing work, underlining that this value will be discovered and consequently updated as a result of contemporary assessments. In Japan, cultural activities became so important that the first predecessors of the present-day multipurpose halls began to be constructed from around 1960 onwards. However, due to the aging of this equipment and its functional degradation resulting from the new demands placed on these buildings over time, they were renovated, and may consequently have lost some of their original values. One of the most famous Japanese architects who designed theatres in the 1960s was Kunio Maekawa. The Tokyo Bunka Kaikan (Tokyo Festival Hall) was completed in 1961 and has since gained a reputation as a typical music theatre, where good conservation practices were promoted until recently¹.

Completed in 1960, the Kyoto Kaikan was similarly designed by Kunio Maekawa, and has also enjoyed considerable appreciation as a theatre. However, despite the constant maintenance and renovation work that the building has received over the past 50 years or so, contrary to the Tokyo Bunka Kaikan, the Kyoto Kaikan is considered to have been afforded insufficient treatment for conservation purposes², and is currently undergoing important maintenance work. Unfortunately, however, some people say that this simple maintenance work may cause the building to lose some of its historical architectural value.

Moreover, the National Institute for Land and Infrastructure Management and other institutions have undertaken research into the notion of architectural value, and have suggested that such a value depends upon a number of other factors, such as historical value, cultural value, functionality and availability, stating that a building’s historical value is discovered over the course of time. In this document, I seek to demonstrate that architectural value consists of a series of precise multiple values that all add to one another over time, so that we may describe architectural value as a multi-tiered system.

1. INTRODUCTION

Background and Objective

The Tokyo Bunka Kaikan (completed in 1961) was designed by the architect Kunio Maekawa (1905-1986) and celebrated its 50th anniversary in 2011. The Tokyo Bunka Kaikan has been subjected to frequent renovation and maintenance work



FIGURE 1. 1st floor plan at the time of the building's final completion, attribution of zone and room number.

designed to upgrade its functions for more than 50 years since its final completion. In 1994, it received the BELCA Award, in recognition of these continuous maintenance and conservation efforts. Since 2014, a large-scale renovation intervention has been in progress, and it is expected that the building will continue to be used as a theatre or music hall for a long time in the future. About 50 years after their final completion, a number of modern buildings, such as the National Museum of Western Art which has long enjoyed a certain level of recognition, have been specified as important cultural assets and listed as

tangible cultural heritage, leading to their conservation. On the other hand, the Kyoto Kaikan (completed in 1960), which was designed by Maekawa at the same time as the Tokyo Bunka Kaikan, is due to undergo drastic changes to its original functions as part of a maintenance plan that involves major repairs to the aging building. As is shown by this case, the period of 50 years after a building's final completion marks a turning point for modern architecture, when considering its past and future uses.

In my preparation for this document, I clarified the construction changes that have taken place so far by researching documents from the Tokyo Bunka Kaikan archives, seeking also to discover the plans in place for the future conservation policy of the building, which recently celebrated its 50th anniversary.

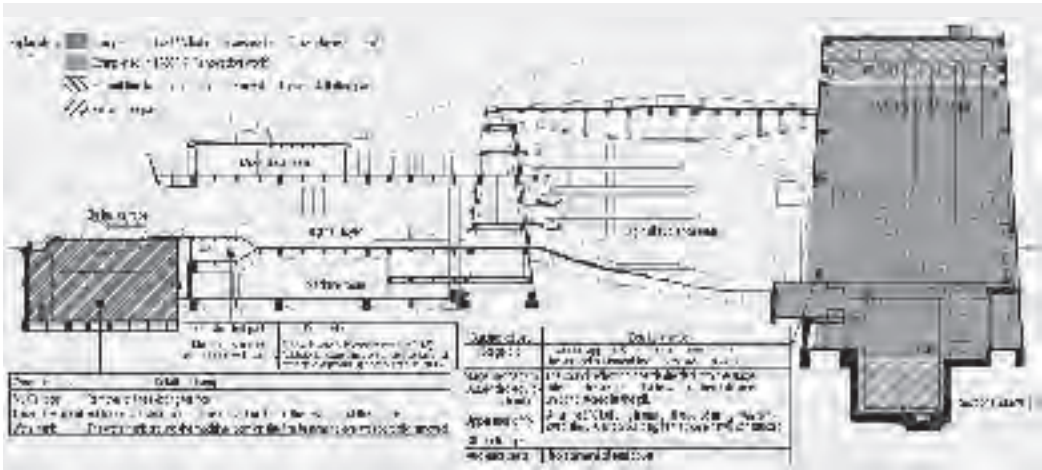


FIGURE 2. Room space change (partially extracted) after final completion.

Previous Studies

There are some previous studies available about the Tokyo Bunka Kaikan. One of these serves to illustrate the conservation planning policy of the Kyoto Kaikan through a comparison between the Tokyo Bunka Kaikan, which so far has been well maintained and conserved, and the Kyoto Kaikan, which is set to undergo major renovation work¹. Another one clarifies the development of the design of the Tokyo Bunka Kaikan, from the original plot of land to the final completion of the building, through the minutes of the meetings that were held during each construction phase². In this study, however, I focus on the changes that were made to the rooms after the building's final completion, and the construction trend, and this is a completely different point from what is contained in the previous studies.

Target Document

In this study, I mainly used the documents, drawings and photographs of the building stored in the archives of the Tokyo Bunka Kaikan, as well as articles about the Tokyo Bunka Kaikan published in magazines and newspapers.

Study Method

RESEARCH AND SORTING OF DOCUMENTS FROM THE TOKYO BUNKA KAIKAN ARCHIVES

I created a document database in order to better understand the various details of the documents stored in the Tokyo Bunka Kaikan archives.

IDENTIFICATION OF THE RENOVATION HISTORY OF THE TOKYO BUNKA KAIKAN

I created a chronological table of the building's construction work by researching the history of its renovations based on the documents that I sorted. I also classified the renovation works into different items specified under the "separate roles of the Tokyo Metropolitan Government and the designated manager" in order to better understand the specific features of each construction.

IDENTIFICATION OF THE CHANGES IN ROOM SPACE BROUGHT ABOUT BY RENOVATION WORKS

I attributed a room space number to each room described in the floor plan at the time of the building's final completion, and analysed the changes that occurred in room space as a result of the renovation works.

ANALYSIS OF THE CONSTRUCTION TREND

I created a table of the construction history according to the trends in its visual appearance arising from the changes in the internal room space and the details of this construction work, and clarified the construction trend in the repair works repeatedly conducted after final completion.

2. RESEARCH AND SORTING OF THE DOCUMENTS FROM THE TOKYO BUNKA KAIKAN ARCHIVES

Creation of Document Database

I considered a bound book, a file, and a group of papers with sequential numbers each as one item individually, and created the document database (Table 1) to work out the number of documents that I consulted. As a result, the total number of documents was 2,159 items. Among these, 1,376 items were printed documents, 667 items were drawings, and 116 items were photographs and other documents (Table 2).

DOCUMENT NUMBER	DOCUMENT NAME OR TITLE	CONSTRUCTION TITLE	CREATOR	YEAR OF CREATION
DOCUMENT TYPE	SIZE	PAGES	PREVIOUS STORAGE SITE	NEW STORAGE SITE

TABLE 1. Document database item.

YEAR	DOCUMENT	DRAWING	PHOTO	YEAR	DOCUMENT	DRAWING	PHOTO
~1961	36	57	–	1987	25	14	–
1961	10	24	–	1988	61	38	4
1962	6	7	–	1989	15	7	–
1963	9	2	–	1990	23	22	–
1964	3	–	–	1991	17	14	–
1965	4	–	–	1992	26	20	–
1966	4	2	–	1993	28	14	–
1967	11	1	–	1994	37	15	2
1968	3	3	–	1995	35	13	–
1969	10	6	–	1996	45	11	3
1970	9	14	–	1997	292	115	50
1971	4	7	–	1998	151	–	2
1972	5	1	–	1999	71	2	2
1973	12	–	–	2000	17	–	4
1974	4	13	–	2001	23	–	10
1975	6	5	–	2002	42	12	3
1976	5	3	–	2003	19	3	4
1977	7	2	–	2004	16	3	2
1978	23	18	–	2005	11	–	5
1979	6	3	–	2006	19	–	5
1980	7	1	–	2007	12	1	–
1981	11	1	–	2008	39	5	7
1982	15	6	–	2009	12	1	2
1983	23	16	–	2010	9	8	–
1984	28	23	4	Unknown	37	108	8
1985	19	9	–				
1986	14	16	–				
				TOTAL	2225	667	116

TABLE 2. The number of documents per year.

Sorting of Documents

In order to clarify the building's architectural value immediately after its final completion, I examined only the documents relating to the 5-year period after final completion, from 1960 to 1965, when most evaluations were made.

Features of Document

I checked the documents relating to the contracts for construction work, filed year by year after final completion. In the contract documents relating to construction work, the contract agreements, the drawings that showed the constructed parts and the construction specifications were all filed together.

3. REPAIR HISTORY OF THE TOKYO BUNKA KAIKAN

Changes in the Entity Commissioning the Construction Work

I found that the renovation works at the Tokyo Bunka Kaikan building were commissioned by an operations manager and by the Tokyo Metropolitan Government. So far, essentially 3 organisations have operated and managed the Tokyo Bunka Kaikan (Table 3). Currently, the Tokyo Metropolitan Foundation for History and Culture operates and manages the building as the designated manager of the Tokyo Metropolitan Government³.

YEAR	OPERATION AND MANAGEMENT ORGANIZATION	REMARK
1961	Tokyo Metropolitan Board of Education	
1986	Tokyo Metropolitan Foundation for the Advancement of Education	
1988	Tokyo Metropolitan Foundation for the Education and Culture	Integrated and renamed as Tokyo Metropolitan Archaeological Center
1999	Tokyo Metropolitan Foundation for the Lifelong Study and Culture	Integrated and renamed as Tokyo Citizen's College Foundation
2002	Tokyo Metropolitan Foundation for History and Culture	
2006	Tokyo Metropolitan Foundation for History and Culture	Designated manager system

TABLE 3. Changes in the operating organisation.

Share of Construction Work between the Tokyo Metropolitan Government and the Designated Manager

After the designated manager system was introduced in 2006, the “separate roles of the Tokyo Metropolitan Government and the designated manager” were defined. These items are classified under four segments: constructions to maintain the current condition of the building; constructions to manage the building safely, such as an overhaul of the equipment; constructions that require a layout change or the installation of new facilities resulting from a revision of the regulations or corresponding legislation; and large constructions that

affect the maintenance and management of facilities, such as a reinforcement of the building frame or a large-scale upgrade of facilities. Within these four segments, the items that were commissioned by each party were individually defined (Table 4).

ITEM		IMPLEMENTATION ORGANIZATION		SEGMENT
		TOKYO METROPOLITAN GOVERNMENT	DESIGNATED MANAGER	
Daily amendment and repair work (Conservation of current function)	2.5 million yen or lower		○	1
	2.5 million yen or higher	○		
Amendment to manage the building safely (Overhaul of equipment and replacement of consumable)	2.5 million yen or lower		○	2
	2.5 million yen or higher	○		
Renovation works that are mandatory for maintaining and improving the facility	Constructions required due to settlement or revision of the law, regulation, or standard	○		3
	Service upgrade, improvement of convenience facility management, layout change of office		○	
Large constructions that affect maintenance and management of the facility (Reinforcement work of the building frame and a large facility update)		○		4

TABLE 4. Separate Roles of the Tokyo Metropolitan Government and the Designated Manager.

Creation of a Chronological Table of the Construction Works and a Classification of These Works

According to the contract documents for the constructions commissioned by the Tokyo Metropolitan Government for each year, I created the chronological table of the construction works (Table 5). I also classified the renovation works according to the items of the construction works commissioned by the Tokyo Metropolitan Government and the designated manager in order to understand the precise nature of the renovation works undertaken. I classified daily repair and maintenance works under segment 1; repair and maintenance works for the management of the building's safety under segment 2; renovation works that were mandatory for maintaining and improving the building under segment 3; and large-scale construction works that affected the maintenance and management of the building under segment 4. The construction works classified under segment 1 and segment 2 were designed to recover a performance that had deteriorated physically and chemically. The difference between these was whether it was in the nature of a construction work or a facility work. The total number of such works was 1,009. Of these, 303 works were segment 1, 380 works were segment 2, 281 works were segment 3, and 45 works were segment 4.

YEAR OF FINAL COMPLETION	SEGMENT 4	SEGMENT 3 (the number of cases)
	CONSTRUCTION NUMBER · TITLE	
1961		3
1965		2
1966		6
1967	178 · Construction along with cooling tower installation [194]	13
	180 · Cooling tower installation [194]	
1968		7
1969		6
1970	257 · Big hall stage remodelling [263]	5
	258 · Big hall stage remodelling, electric equipment renovation [244]	
1971		2
1972		5
1973	331 · Boiler replacement [179]	14
1974		3
1975		9
1976	404 · Big hall suspended equipment hoisting device renovation [36]	2
1977		4
	470 · Various stage lights and other equipment renovation [331]	7
	471 · Internal renovation, electric equipment work [196]	
	472 · Internal upgrade, electric equipment work (Part 2) [43]	
1978	473 · Viewing room and other acoustic equipment renovation [135]	
	993 · Internal renovation [206]	
	993 · Internal renovation (Part 2) [79]	
1979		8
1980		8
1981	538/56 · Facility maintenance long-term renovation [93]	8
1982	558/57 · Facility equipment long-term renovation [127]	5
1983	579 · Big and small halls foyer ceiling and others amendment [60]	14
	584 · Rehearsal room expansion [543]	
	611 · Rehearsal room water supply and sanitary construction [501]	16
1984	612 · Rehearsal room air-conditioning and ventilation equipment construction [441]	
	613 · Rehearsal room electric equipment construction [487]	
	614 · Rehearsal room rooftop and others construction [175]	
	637/59 · Long-term renovation [405]	18
1985	639/60 · Long-term renovation [121]	
1986	639/60 · Facility maintenance long-term renovation [97]	3
	659/62 · Construction along with air-conditioning equipment renovation [70]	
	660/62 · Intermediate pressure gas equipment construction [151]	
1987	661/62 · Air-conditioning equipment renovation [73]	
	662/62 · Electric equipment construction along with air-conditioning facility renovation [154]	
	668/63 · Hoisting machine renovation [130]	3
1988	669 · Telephone facility renovation [134]	
	670/73 · Electric facility renovation [140]	
1989		8
1990		7
1991		4
1992	759 · The 3 rd year modernization maintenance implementation design [421]	8
	766 · The 4 th year modernization maintenance implementation design [215]	
1993		8
1994		6
1995	(838 · Modernization maintenance implementation design, Part 1)	6
1996	(856 · Modernization maintenance implementation design, Part 2)	4
1997		3
	878/(9) · Stage device renovation [539]	6
	879/(9) · Renovation work [539]	
	881/(9) · Electric equipment renovation [531]	
1998	882 (9) · Stage acoustic equipment renovation [524]	
	883 (9) · Stage illumination equipment renovation [524]	
	883 (9) · Water supply and drainage sanitary equipment renovation [520]	
	884 (9) · Air-conditioning equipment renovation [520]	3
2000		
2001		6
2002		3
2003		8
2004		6
2005		6
2006		5
		7
2008	995/(20) · External wall sealing and others renovation [91]	1
2009		1
	1007/(22) · Stage mechanism equipment renovation [68]	68
2010	1008/(22) · Stage acoustic equipment renovation [68]	
	1009/(22) · Stage illumination equipment renovation [68]	
2011		

TABLE 5. Chronological Table of the Construction Works (partially extracted).

4. IDENTIFICATION OF THE CHANGES IN ROOM SPACE RESULTING FROM RENOVATION WORK

Attribution of a Zone and Room Space Number at the Time of Final Completion

I attributed a room space number to each room at the time of final completion and also grouped the rooms that were frequently renovated together during the same construction work into eight zones⁴. I attributed the room space numbers using examples from the parts with readable room names under the title of renovation works, performed in “the 4th year modernisation maintenance upgrade construction” in 1992.

Changes in Room Space

From the items in Table 4, I chose the renovation works that were mandatory for maintaining and improving the building and which led to changes in the room space (segment 3) and large-scale construction work (segment 4). By doing this, I was able to work out the changes in the room space that resulted from the removal or installation of partition walls and the changes in the functions that were performed in each of the eight zones. In particular, I found a major change occurring in the room space in the case of the “Additional construction of the rehearsal room” completed in 1984 and in the “(9) renovation work” completed in 1998, since these required excavation works. In “additional construction of the rehearsal room”, a total floor space of around 1320 m² was added, including a rehearsal room for the use of orchestras and a recording room. The orchestra pit was excavated, and the divided sound reflecting boards of the stage were unified into one unit and installed in the pit. Furthermore, the floor planning of the backstage area at the first basement level was changed and the backstage area itself was totally renewed.

5. ANALYSIS OF THE CONSTRUCTION TREND

Trend of Construction that Affects Form

TREND OF CONSTRUCTION THAT AFFECTS APPEARANCE

The renovation works that most affected the appearance were the “additional construction of the rehearsal room,” completed in 1984 and the “(9) renovation work” completed in 1998. The rehearsal room was installed in the basement because an efficient land use was required due to the rules of the park and the restrictions of the site conditions. However, in order to be able to build the room inside the site, there was no option available other than to construct a separate building for the room or to install the room in the basement⁵. For the purposes of the site's conservation, the additional part was constructed in the basement and the terrace that had been temporarily removed was restored. In the “(9) renovation work”, in order to change the suspended structure, the grating, and the upper

structure of the fly, the RC building frame and the PC plates of the external walls located 6m higher than the fly were removed and constructed anew. After completion of the work, although the layout of the penthouse on the roof of the fly tower was changed, the elevation of the fly tower was not changed. As mentioned in this section, I found that the renovation works tended to minimise the impact on the building's appearance and functions.

TREND OF WORKS WITH CHANGES IN THE ROOM SPACE

In the area that could be entered by theatre audiences and those using the meeting rooms, I found that the exhibition room had changed its function to become the office of the Tokyo Metropolitan Symphony Orchestra 10 years after the building's final completion⁶, and that the partition walls of the laboratory⁷ on the fourth floor and the hall lavatories had been changed. However, many renovation works had been carried out that had changed the room space and had involved the removal or installation of partition walls in the areas used by office workers and performers. Furthermore, except for the "additional construction of the rehearsal room" and the "(9) renovation work" mentioned in the previous section, the construction work that changed the space with the building frame and the excavation work amounted to just one intervention: "(18) additional construction of lavatories and others". In this construction work, the concrete stairs leading from the main foyer to the terrace were partially removed, and were moved to form part of the stairs leading down to the lavatory, which had been built in the basement.

Trend in the History of Construction Work

HISTORY OF RENOVATION WORK AROUND THE AREA OF THE MAIN HALL

Directing my attention to the main hall that occupied most of the building and where I found many examples of parts that had been changed after the building's final completion, I created the renovation history table (Table 6). Furthermore, in order to understand where each renovation work had been performed, I grouped the rooms in the area of the main hall into 14 separate areas⁸. The wide area of the main hall was largely renovated (segment 4) during one year in 1970, during three years from 1986 to 1988, and during two years from 1997 to 1998. From Table 4, I found that the large-scale renovation works (segment 4) undertaken in the other years had had a more limited range. Furthermore, I found that the total number of contracts had begun to decrease after the "(9) renovation work" completed in 1998.

TREND IN THE CONSTRUCTION OF THE BUILDING FRAME

I found 10 small repair works (segment 1) relating to the waterproofing of the roof during the 10 years after the building's final completion. Then, about 20 years after completion, Mayekawa Associates, Architects & Engineers examined the building frame, and it was found that large-scale repair works (segment 4) relating to the waterproofing of the roof and repairs to the concrete in the inter-

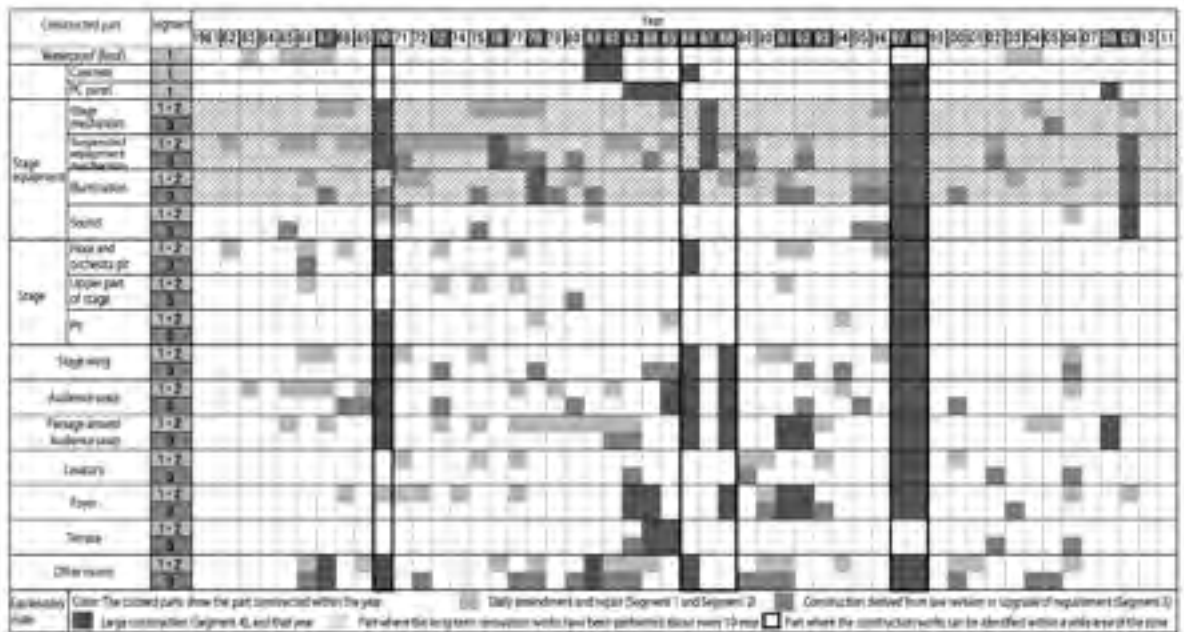


TABLE 6. History of renovation work around the area of the main hall.

nal and external walls and the foyer space, were required. These were carried out between 1981 and 1985. Since the unfaced concrete of the external walls was remedied around 15 years later, it is considered that the scheduled improvement works were successful in maintaining the architecture in a good condition.

TREND IN THE RENOVATION OF THE STAGE EQUIPMENT

As far as the stage equipment is concerned, large-scale renovation work was undertaken approximately every 10-years (segment 4). During this period, about 10 small renovation works were performed, and the number of construction works carried out in relation to the stage was higher than in the other areas.

6. SUMMARY AND FUTURE RESEARCH

Currently, there are 2,225 documentary items in the archives of the Tokyo Bunka Kaikan, and I arranged these in chronological order according to the year of their creation. I found 1,009 cases relating to construction and renovation work on the Tokyo Bunka Kaikan building after its final completion. It is clear that while large-scale renovation works were needed to improve performance such as the upgrading of the stage equipment and the addition of a new orchestra pit in the rehearsal room, these constructions were carried out in such a way as to minimise their impact on the building's appearance and on the areas used by audiences.

As mentioned above, we should consider that the maintenance of the overall physical appearance of the Tokyo Bunka Kaikan building began to have cultural significance 50 years later, leading to the need to draw up a conservation plan for the future.

My future task is to undertake historical research into the building's authenticity as an important part of the cultural heritage, based on the archived data.

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NOTES

I wish to express my gratitude to the Tokyo Bunka Kaikan and those who worked with me at Maekawa Associates, Architects & Engineers for the valuable information and documents that they provided me with.

1 See YAMADA (2007).

2 See SATO (2010).

3 The system allows for the designated manager to be corporate bodies or other organisations appointed by the local authority to manage and operate public facilities

4 The stage and guest rooms attached to the main hall were defined as the Main Hall Zone (Zone A). The stage and guest rooms attached to the small hall were defined as the Small Hall Zone (Zone B). The backstage areas were defined as the Backstage Zone (Zone C). The rehearsal room in the basement was defined as the Rehearsal Zone (Zone D). The meeting rooms and laboratories on the fourth floor were defined as the Meeting Room Zone (Zone E). The offices and caretaker's workshop were defined as the Office Room Zone (Zone F). Each machine room in the basement and the machine room on the fourth floor were defined as the

Machine Room Zone (Zone G). The lobby on the first floor and the restaurant on the second floor were defined as the Others Zone (Zone H).

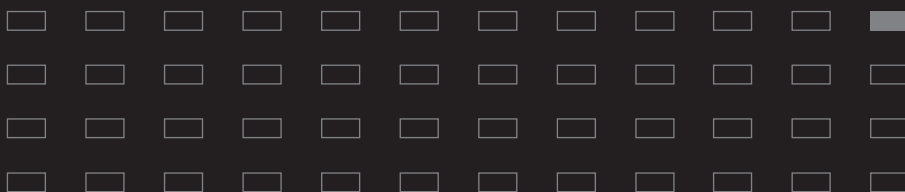
5 According to GOTO (1985) in his description of Shinichi Goto, who was in charge of the design.

6 I was able to confirm this change on the drawing, but I could not identify the year.

7 Currently the music data room

8 The term *stage equipment* refers to the stage floor, the orchestra pit, the upper part of the stage, and the stage pit. The *stage wing* means the upper and lower sections of the stage wing area. The term *audience seats* refers to the area of audience seats from the first to the fifth floor. The *passage around the audience seats* means the space of the passage in the main hall and its attached fittings, excluding the lighting and the rooms connected to the passage. The *lavatory* means the front lavatory installed in the main hall zone. *Others* include the foyer and the terrace as individual items, while the rooms not included in the items mentioned above were specified as *other rooms*.

INTERIOR DESIGN AND FURNITURE



The Modern Interior – Toward a Re-evaluation in the Context of Adaptive Reuse

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1. INTERIOR DESIGN

Among the 3 design disciplines – city planning, architecture and interior design – the products of city planning usually last the longest, while designed interiors and furniture tend to enjoy a much shorter life span. Interior design can rightfully be called the most ephemeral of spatial design disciplines. It most closely shapes everyday life and as such testifies directly and intimately to the cultural conditions of a period. Consequently, it is subject to frequent alteration or replacement, as people (re)create their own places within the existing¹. Its most defining qualities, to do with immediacy and nearness², are also its weakness. Due to constant renewal and replacement, interior design represents the more ephemeral side of architecture and design. But, at the same time, interior design is a mirror for the understanding of the cultural condition and the style of each period. Because it implies an understanding about spatial and architectural ideas, furniture and equipment, decorative arts, interior design is an inestimable archive of information about life, society, ideology and style.

Recently much has been published on interior architecture or interior design as a fledgling academic discipline in search of autonomy³. Strikingly, the exploration of this identity frequently points to the element of time⁴, often combined with the sensorial and physical perception of space⁵. The collection of events that an interior witnesses through time, i.e. its history – including the alterations to it by its inhabitants –, is constitutive to its identity as much as the original ideas

behind it⁶. Recent anthropological research confirms this insight obvious to the intuition: it does not suffice to inspect the interior exclusively on the basis of the ideas behind its original conception; one equally ought to take into account the passage of time and the relations having unfolded between the elements – the objects, the space and the denizens. It follows that also in cases of preservation and reuse, we should not only consider the designer's spark but also the slowly burnt-in marks of inhabitation.

2. HERITAGE CONSERVATION AND MODERNIST ARCHITECTURE

Recently the growing attention for sustainable development has added momentum to the cause of heritage conservation. In this context the particular capacity for reuse of modernist architecture is already well known. Indeed, ideas such as flexibility, adaptability or extendibility can be considered integral to the modernist legacy, especially in the post-WWII period. But, whereas reuse strengthens the plea for conserving (and thoughtfully adapting) the architectural heritage, it very often weakens the plea for conserving the interiors. The presence of original interior design and furniture undoubtedly makes adaptive reuse of a building more difficult. On the other hand, it is clear that if the former are removed, the latter loses something, in some cases even its very heart. The dilemma becomes even greater when the interior and the architecture have been conceived as an integral whole.

3. CASES, METHODOLOGIES, OPPORTUNITIES

Against this background the goal of this session is to search for cases and methodologies from around the world, in which, on the basis of a thorough study of the original ideas and deliberate "purposefulness and the special analyses of the whole"⁷, the modernist interior has been preserved, in its original or in a changed state, performing its original or a new function. In doing this, we aspire to develop a new discourse, open up new avenues of thought, from a plural, interdisciplinary perspective, i.e. beyond traditional boundaries, which applies the understanding and experiencing of the modernist interior as the basis for decisions on its conservation and reuse, including theoretical and critical contributions on how, why, for whom etc. these decisions can be made.

Our interest goes to the modernist interior as an opportunity and an added value, rather than an obstacle. The aim is a possible balance between history, conservation and reuse through the consideration of the total concept (and the total experience) in the general context of heritage and, ideally, of the preservation of the interior, and this as a strategy to understand and safeguard the essence of the Modern Movement through time. What was or were the theoretical framework(s) behind the modern interior's identity that resulted in a coherent style uniting architecture, furniture, design, decorative arts, utilitarian objects, equipment, tex-

tiles and lighting. But most importantly: how can this research be implemented toward a responsible, more sustainable and therefore adaptive heritage policy?

This session also wishes to stress the need for the creation of a research and work group inside **docomomo** with a special focus on interior design and product design (furniture, fashion, graphic etc.). There is an unmistakable, growing interest in interior design, both academic and interdisciplinary⁸. It is time to implement its findings in the discourse on heritage problems regarding the modern interior.

4. CONTRIBUTIONS OF THE SESSION

Contributors to this session present research results which use original source material, archival finds, original drawings and design concepts in order to lay bare the architectural, theoretical, historical, aesthetical, technical and ideological ideas of the designer and its inhabitants through time, relevant to the interior, implementing it in a site-specific conservation and/or reuse strategy.

The topic of the first contribution is adaptive reuse. Through work of interior architecture students Bie Plevoets and Saidja Heynickx examine specific skills in design practice that helps developing an empathy to the building and its interior. They reflect on different methodologies in order to incorporate the tangible and intangible qualities of the modern interior in designing the new adaptation.

In a more theoretical approach Gioconda Cafiero and Viviana Saitto launch a plie for a higher awareness of the role of the relationship between furniture and interior space as an essential aspect in devising design strategies for reuse. Through Le Corbusier's prewar concept of space defined as "fields" or "relationships by people" this research rehabilitates the interior space as the key to understand modern architecture. In doing so, they show what a shift of focus toward the interior would mean to making decisions on the adaptation of modern heritage.

Starting point of the study of Sônia Marques and Wylinna Vidal is questioning the thesis that it is the original furnishing that makes the reuse of a building difficult. The distinction between the definition of the Wagnerian *gesamtkunstwerk* (as an integration of art) and Le Corbusier's synthesis of arts (as architectural elements) seems to be crucial. Focusing on vertical surfaces Marques and Vidal investigate the relationship between mainly horizontally inserted artworks and the surrounding space. It is the degree of autonomy which decides if it is eligible to move a "nomadic wall" or not.

In the last contribution Marta Peixoto focuses on the ageing process of modern interiors and deals with them as living entities, meaning "essentially changing" in their existence. Her examples are three different works by Lina Bo Bardi in São Paulo. A private, a cultural and a leisure building, ranging from the 1950s to the 1980s, all 3 listed and having different spheres, scales and stories. They make excellent examples and raise crucial issues for a thorough discussion on the preservation and protection of the modern interior.

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- 2 See more about the concept of the interior that begins with the human body in: Lois Weintal (ed.), *Toward a New Interior. An Anthology of Interior Design Theory*, New York, Princeton Architectural Press, 2011; and Els de Vos and Inge Somers, "With the Other, Beyond Confusion. A Critical Analysis of the Anglo-Saxon Academic Discourses Concerning Identity and Position of the Interior Discipline", in Meg Jackson and Jonathon Anderson (ed.), *International Journal of Interior Architecture + Spatial Design*, Vol 1: Autonomous Identities, 2013, 22-32.
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Adapting the Modern Interior: Variations on an Emphatic Approach

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Whereas the façade and structure of buildings might stand the test of time, the interior is much more sensitive and has often been altered to changed needs and desires. The introduction of a new, minimalistic interior, marked by a simple contrast between the new and the existing, is often the easiest solution but might affect the experience of the building's "spirit of the place". Some designers prefer to deal with the remnants of the interior in a more sensitive and delicate manner. Through a process of intelligent copying and interpreting, the particular tangible and intangible qualities of the modern interior (lay-out, materials, circulation, decoration, relationships between space, lighting, incidence of natural light, etc.) are incorporated in the new interior design.

But such an approach requires specific skills from the designer. Beside basic historical and technical knowledge on the building to be altered, the designer needs a certain degree of empathy with the building: experiencing the interior, connecting with the user and the ability to put themselves in the place of the original designer – not in order to create a reconstruction, but to reveal and understand the characteristics and qualities of the original.

This essay elaborates on the problem of adapting modern buildings with interiors at risk because they are only partially preserved, forgotten, hidden under or behind later additions, not documented, or not protected. We reflect on different methodologies that can be used by designers to develop an understanding of the host building and its interior, such as: scientific documentation made by a third party, photography, sketching or models. For many buildings that lack available knowledge and material evidence, it is necessary to combine different methods.

We illustrate our argument with student work on the adaptive reuse of Modern Movement buildings. A sensitive adaptation of the original interior, requires a particular skill based on an empathic approach from the designer. The curriculum of interior architecture should offer tools to develop a deep understanding of the host space and its interior.

In most countries and regions heritage protection procedures are mainly focused on the protection and safeguarding of the building envelope and the immovable elements attached to it. However, the interior of a building is often an important aspect of its heritage value, not only in its immovable elements, but also its movable and even intangible characteristics. This is especially true for modern buildings as they often provide an open, flexible shell or a standardised construction that can be subdivided, equipped and furnished based on functional requirements and personal needs. Alternatively they may have been created as a *gesamtkunstwerk* in which the *promenade architecturale* is guided by pieces of furniture or art objects strategically placed within the room. *Musealisation* – a strictly restorative approach – is often the first reaction to preserve the interior in its full richness and authenticity¹. However, a strict restoration is not always possible or desirable. In order to restore there are four pre-conditions:

1. The original building should be of a very high architectural quality.
2. It has to be appreciated as such by its owner or a wider audience.
3. Its state of conservation, needs to be sufficient.
4. Its original condition and evolution through time needs to be well documented in order to have a reliable source as basis for intervention.

But what is to be done when one or several of these conditions are not fulfilled, and consequently a restoration is impossible or undesirable? Elsewhere, we introduced *aemulatio* as a sensitive approach towards adaptive reuse. The concept is borrowed from Renaissance art theory and stands for an adaptive reuse strategy that aims to improve the original and to add value to the host space by incorporating the existing, hidden or lost qualities, re-establishing them in a novel way².

In what follows we elaborate on three variations of *aemulatio* as a strategy for adaptive reuse of modern heritage by looking at three abandoned buildings in Belgium. For each of these buildings, an adaptive reuse proposal has been made by one of our master students in interior architecture who enrolled in our studio on adaptive reuse of heritage. For their master project, which is a combination of a written thesis and a design proposal, the students chose their own site. All three proposals are not marked by contrast between the old and the new but present a more sensitive approach, an *aemulatio* of the host space.

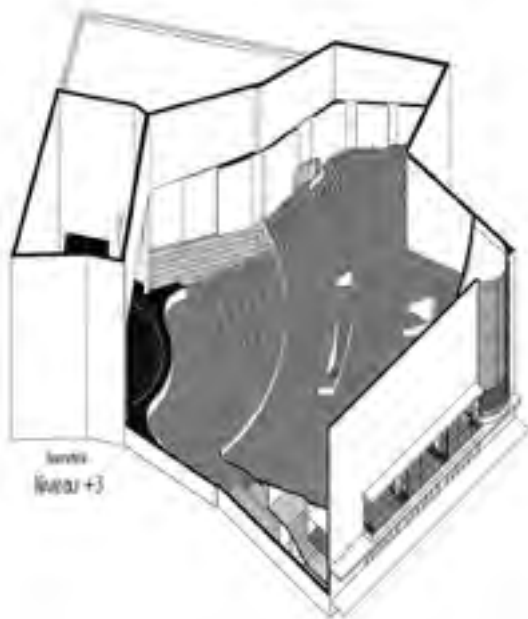


FIGURE 1. Victor Bourgeois & Maurice Gridaine, Théâtre *Variété*, Brussels, Belgium, 1937, redesign proposal by Dennis Steeno. Studio adaptive reuse, master interior architecture Hasselt University. © Dennis Steeno, 2015.

1. REWINDING THE FUNCTION THROUGH SMART REPAIR: THEATRE VARIÉTÉ, BRUSSELS

The *Variété* was originally built in 1937 as a theatre and music hall. The design was a collaboration between two architects: the Belgian Victor Bourgeois – who was an adherent of the Modern Movement and CIAM member – and the French art-deco architect Maurice Gridaine – who specialized in the design of theatres and cinemas. The exterior, and especially the front façade and lay-out of the *Variété* were clearly modernistic, while the interior finishings and furniture were Art deco. In the early 1960s the building was transformed into a cinema without much respect for the spatial and aesthetic qualities of the original design. Today, the *Variété* is abandoned, except for its foyer that is used for indoor car parking. Comparing the *Variété* with the mentioned criteria we see that 1) the architectural quality of the original building was significant, but 2) the building was, and is still not appreciated for its architectural values. Its state of conservation is poor 3) and most of the original interior has been removed or hidden behind later interior layers. Fortunately, a profound study 4) about the building's history has been carried out³.

Based on existing historical studies and a comparison of this documentation with the actual state of the building, the student was able to establish a good understanding of the building and its evolution in time. In his proposal, he decided to reinstall the original function of the building but adapting it in a way that in addition to on-stage music and theatre performance, it could also provide other cultural functions. He restored the façade and removed later additions that had no architectural quality. However, he did not reconstruct the plan, but incorporated the original spatial qualities and characteristics of the interior in his new design. His use of materials and detailing are indebted to the art deco style of the original interior, but wear a clearly contemporary stamp⁴. In this proposal, the function and spatial quality were considered the primary values of the building which should be brought back; architectural and interior elements were only repaired when supportive to the contemporary use.

2. A PURELY STYLISTIC EXERCISE: HOUSE DOUCHAR, HASSELT

House Douchar is an example of Belgian regional modernism. The house was designed by architect Léon Stynen (1899-1990) in 1936. Stynen is considered one of the most important Belgian modernists. His work is widely appreciated, well-cared for and extensively studied. Yet, somehow, this particular house remained under the radar. When we compare house Douchar with our four criteria, we see that 1) the architectural quality of the house is high but 2) it is currently not appreciated as such because its façade is hidden behind a bill-board and gives access to a parking lot located behind the building, 3) its state of conservation is very poor – part of the interior was destroyed by a fire – and 4) the available historical documentation is limited.



FIGURE 2. Leon Stynen, Huis Douchar, Hasselts, Belgium, 1936. Façade hidden behind billboard. © Sven Stas, 2015.



FIGURE 3. Leon Stynen, Huis Douchar, Hasselt, Belgium, 1936. Redesign proposal by Sven Stas, studio adaptive reuse, master interior architecture Hasselt University. © Sven Stas, 2015.

The proposed new use – bed & breakfast accommodation – is close to the original residential use of the building. As such, the original layout of the building could be taken over by the new programme. For the façades and structure of building, its state of conservation and available documentation were sufficient to do a solid restoration. For the interior, however, this was not possible. On the one hand the student made a careful, detailed and ethnographic analysis of the existing state of the building through photographic documentation. Next, he did a stylistic exercise by looking at other houses designed by Stynen with restored, preserved, or well documented interiors. He also looked at the work of architects that inspired Stynen, such as Le Corbusier⁵. The final design proposes a “stylistic restoration” in the tradition of Viollet-le-Duc⁶ but applied only on the scale of the interior – using materials, construction methods and detailing in the style of the original, but in a way that might never have existed in the past.

3. NEW FUNCTION AS A REMOVABLE INSERTION: FORMER COURTYARD, HASSELT

The former court yard of Hasselt was constructed in 1934, following a design by architect J. Vermeersch. It continued in use until 2012 when the court moved to a new building at the outskirt of the city centre. When comparing the four criteria we see that 1) the exterior of the building is of medium architectural quality – it does not represent a pure stylistic concept but a mixture of modern and classical elements. Nevertheless, its interior in art deco style is interesting and valuable. 2) The building is not protected as a monument, and is not highly appreciated. 3) It is well preserved as it kept its original function until only a few years ago, but 4) there is almost no documentation on the building.

The student project proposed a new program of cultural use because this would allow preservation of the architectural and interior qualities of the building.

In order to introduce the necessary infrastructure, the student analysed the building's spatial qualities through study models employing sections through the building, on which he tested different design solutions. He made also detailed drawings – plans and sections – of the interior in order to visualise the atmosphere of each of the rooms⁷. As the proposed function did not relate to the original one, all interventions were to be made reversible while their proportions, colours and materials were to resemble the original building.

4. CONCLUSION

In the field of architecture, but also in conservation there is a taboo on the practise of copy and improvement⁸, and a strong opposition against stylistic restoration⁹. However, we believe that different variations of *aemulatio* might be an interesting way to preserve or recreate the genius loci of modern interiors – especially if the architectural and historical significance, appreciation, state of conservation, or documentation is insufficient to perform an exact restoration or reconstruction. Therefore, it is important to acknowledge and publish good examples from practice that apply *aemulatio* as a way of recreating modern interiors.

Creating an *aemulatio* of the original requires specific skills from the designer. In addition to basic historical and technical knowledge on the building to be altered, the designer needs to exercise “sympathy”¹⁰ with the building: experiencing the interior, connecting with the original user, putting themselves in the place of the original designer. This is not in order to create a reconstruction, but to be able to reveal and understand its characteristics and qualities. Designers can use different methodologies to develop a true understanding of the building and its interior: sketching, models, (artistic) photography, exact survey, interpretation of scientific documentation made by a third part, etc. For many buildings, which are not well documented or that lack material evidence because they are partly demolished, altered or hidden under new layers, it may be necessary to apply and combine different methods.

Research methods traditionally applied in the field of conservation are often very “scientific” or “archaeological” based on objective observation. However, the subjective experience of a building’s “interiority” – its inner-self, or spirit of place – is equally important to gain a “feeling” for the building and its intrinsic qualities and characteristics. In the 3 described projects the students used different methods to get this “feeling” about the building: historical documentation and *in situ* observation for the *Variété*, photography and drawings for house Douchar,



FIGURE 4. J. Vermeersch, former courtyard, Hasselt, Belgium, 1934. Redesign proposal by Toon Martens, studio adaptive reuse, master interior architecture Hasselt University. © Toon Martens, 2015.

and models and sketches for the former courtyard. More experienced architects might benefit from working with this kind of “empathic research methods”. Extending the approved research methodologies applied in the field of conservation with more emphatic methods, such as hand drawings, atmospheric photography, or collage techniques¹¹ might contribute to an adaptive reuse practise that does not only focuses on the conservation of material heritage elements, but also on passing over the building’s “intangibility” – its style, elegance and atmosphere.

It is important that there should be an interaction between objective material (plans, opinions of other specialists, ...) and the (always subjective) approach of the (interior) architect. In the three student projects there was a constant switch in focus between objective materials and methods and subjective or emphatic methods. Although the final design results cannot objectively be quantified – the cases above were assessed by a professional jury – we noticed that the systematic use of a reflective approach during the design process enhanced the qualities of the design decisions; this lessened the prominence of current fashion as the leading element or concern – a common problem in architectural education.

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NOTES

- 1 An example of a modern building that is conserved including its complete interior is the house of Charles and Ray Eames (1949); the building is preserved as a museum – or a piece of art in its own right.
- 2 Bie Plevoets and Koenraad Van Cleempoel, “Aemulatio and the Interior Approach of Adaptive Reuse”, *Interiors: Design, Architecture, Culture*, 5 (1), 2014, 71-88.
- 3 Inge Bortels, Stéphane Duquesne, Veerle Meerbergen and Ebru Torun, *Cinema Variété*, unpublished thesis in order to obtain a master-after-master in conservation of monuments and sites, at the Raymond Lemaire International Centre for Conservation, KU Leuven, 1994.
- 4 Dennis Steeno, *Herbestemming van het Théâtre des Variétés, een Vergeten Erfgoed uit het Interbellum*, unpublished thesis in order to obtain a master in interior architecture, at the Faculty of Architecture and Arts, Hasselt University, 2015.
- 5 Sven Stas, *Huis Douchar*, unpublished thesis in order to obtain a master in interior architecture, at the Faculty of Architecture and Arts, Hasselt University, 2015.
- 6 The concept of stylistic restoration has been described in: Eugène Emanuele Viollet-le-Duc, “Restoration”, *Dictionnaire Raisonné de l'Architecture Française du XI^e au XVI^e siècle*, vol. 8, Paris, F. De Nobele, 1967 [1854], 14-33.
- 7 Toon Martens, *De Doorsnede als Tactisch Instrument van de Verbeelding. Het oud Gerechtshof te Hasselt als Ontwerpcase*, unpublished thesis in order to obtain a master in interior architecture, at the Faculty of Architecture and Arts, Hasselt University, 2015.
- 8 The taboo on copy and improvement is described also by Fred Scott, *On Altering Architecture*, London, Routledge, 2008.
- 9 See for example article 9 of the Charter of Venice (1964). Moreover, existing heritage evaluation frameworks do often not allow a stylistic restoration for protected buildings.
- 10 Fred Scott speaks about an “act of sympathy” when he speaks about adaptation of existing buildings.
- 11 The technique of collage as a method for analysis of existing buildings in the proces of adapting the interior is mentioned in Ellen Klingenberg, “Conservation of Cultural Memories in Interiors – a Challenge for New Use”, *IE International Conference: Reinventing Architecture and Interiors: the Past, the Preset and the Future*, Ravensbourne, 2012.

The Recognition of the Founding Values in the Modern Interior

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The restoration and adaptive reuse of modern interiors require awareness of the particular role of the interior space and, within that role, the relationship between space and furnishings in the idea of modern architecture.

This has meant that interior design has a role not only as a defining element of detail or furniture, but also importance as a source of primary genesis of the architecture – the design of which starts from the inside, to define volumes, prospects and relationships with neighbouring areas. Programmatically modern architecture has placed the recognition and analysis of not only primary needs but also cultural and existential needs at the foundation of a design action. Compared to the traditional idea of interior space as “areas”, understood as spatial units defined by fixed margins (albeit interconnected in different ways) the architecture of modernity is divided by “fields”, or chunks of space, which coalesce around actions or movements, or around the desire to build a relationship between people, and are therefore defined by the equipment of furniture, margins even virtual or labile, around which are gathering fixed margins of construction, acquiring and managing the way relationship between inside and outside. The void becomes the *raison d'être* of the solid.

The idea and dilemma of interior space are therefore a key to understanding the meaning of modern architecture. Le Corbusier's work around the concept of space of the house, for example, could not be unaware of the research on the role of furniture. His projects of the 1920s cannot be fully understood unless his work on furniture is considered, through the projects he presented in 1925 and in 1928. It is clearly the intent to entrust to the furnishings and their inter-relationship a generative role in the architectural space, and to make them able to live in the middle of empty space. Awareness of the role of the relationship between furniture and interior spaces in the construction of the idea of modern architecture is essential to define strategies useful for its reuse. Issues relating to style are very important, however, is especially this relationship a crucial point at which you need to compare any conservation work or adaptation to new behaviours to make legible the original sense of the project. Some examples of architectural works transformed into museums or still in use, support analysis of where and in what resides the significance of those works, and consequently the impact of their reuse.

1. SPACE AND FURNITURE IN MODERN ARCHITECTURE

The reuse, restoration and adaptation of interiors to modern needs raise issues calling for an awareness of the specific place of interior design in modern architecture, challenging the methods and criteria usually employed for the restoration and reuse of architecture dating from earlier periods.

Reuse projects should not be limited to the physical conservation of a building. They should strive to make the building usable today, while respecting its original sense¹.

The architecture of modernity conceives of interior space design not merely as a definition of finite elements, or the suitability of space to use, but as a moment

of primary genesis, where the project proceeds from the inside out to harmonize volumes, perspectives and relations with adjoining spaces. The architecture of modernity places the recognition and analysis of the needs of the built space at the core of its planning action². Although this assumption should not be understood in narrowly functionalist terms – in terms of reflections on the cultural and existential complexity of needs, and hence on the diversity of possible planning answers – it is undeniable that a significant part of the sense of modern architecture resides in the measure closest to man – in how the discipline addresses issues of habitation through the investigation of the relationship between people, objects and spaces.

Compared to the traditional idea of the articulation of interior space into “rooms”, intended as spatial units with fixed limits (although connected in different ways), modern interior design thinks in terms of “fields”, i.e., portions of spaces, which are defined by actions, motions, or the will to build a relationship between the dwellers. These spaces are defined by the furniture, by virtual or flexible limits, such as changes in floor or ceiling levels, or in materials, around which the fixed limits of architecture are arranged, acquiring meaning and manifesting themselves outwardly. In the architecture of modernity, emptiness becomes fullness’s *raison d’être*. If one thinks of it, the relationship between interior and exterior, conveyed through limits, is defined by the fields that interact with these limits.

All this raises the issue of interior design as one of the keys to our understanding of the meaning of the architecture of modernity. Le Corbusier’s investigation of the conception of space and house architecture, for example, inevitably had to take the role of furniture into account. His 1920s projects cannot be fully understood without considering his approach to furniture. In both of the *casiers* project, presented at the Pavilion of the *Esprit Nouveau* in 1925, and in the furniture system presented at the *Salon d’Automne* in 1928, one perceives an intention to entrust to carefully juxtaposed furniture a generative role vis-à-vis the architectural space, which derives part of its meaning from the interplay of fields and limits determined by the furniture. Le Corbusier begins by doing away with the inevitability of the connection of furniture to the walls it was traditionally placed against (to the point that backs were usually left unfinished). Even in his early projects, when he had not yet designed his own furniture, he selected production items that were suitable to stand in the middle of an empty space, like Thonet chairs. In the series of *équipements* he brought forth with Charlotte Perriand and Pierre Jeanneret there is an even more manifest intention to design furniture reflecting on the one hand, how it was used and how it related to gestures and postures, and on the other hand, its ability to make space.

Bringing into focus the role of furniture in the construction of the sense of space in modern architecture, is an inevitable starting point for developing strategies for the reuse or adaptation of architectural spaces and buildings to new uses without betraying their most authentic meaning. Questions of style are undoubt-

edly important for the unity of conception that has informed modern architectural works. This unity is recognizable at all levels, from spatial organization to the smallest fitting or decorative element. However, the dimension which largely determines the meaning of modern architecture is that of the role of fields as hubs in the relation between form and the use of space, between human measure and the culture of habitation. These fields are where the relation between the public and the private dimension is shaped, the relation between different degrees of interiority and between inside and outside. The notion of total work of art also evolves in this direction. From William Morris to the Secession, it was essentially concentrated in uniformity in the use of language; in modernity, it is connected especially to the spatial link between architecture and furniture.

In our opinion, the most important aspect of these architectures resides in this use of space. These aspects can be regarded as invariants, capable of standing modifications and adaptations to new uses, new technologies, or new behavior models, without the loss of the original character of the project.

2. RESTORATION, NEW USES AND INTERPRETATION OF MEANINGS

The relationship between architecture and fields determined by furniture is one of the fundamental keys to the meaning of those works. This is evident in paradigmatic architectural works that have been “museified” and which would be partially silent if their space was not articulated by furniture. For example, Le Corbusier's iconic dwelling at the Weissenhof in Stuttgart (1927) has a furniture system allowing for a dynamic use of space. The central day room, thanks to a movable panel system, is converted to a different function and structure during the night. Fixed containers subdivide the room into different spheres. The mobile beds they house in their lower part allows the interior space to be transformed as needed. Both dwellings, presently part of the *Weissenhofmuseum*, are their own museums; one, however, lacks furniture and is used as a container to tell the story of the whole project, while the other has been preserved in its every part, to shed light on the *raison d'être* of this architectural work.

Maison La Roche, which presently houses the Le Corbusier Foundation, is an instance where *museification* itself is a new use, whereby furniture is conserved and arranged not merely to shed light on how this work of architecture was created, but also to reveal certain aspects of this work, tracing the hermeneutic link between the work on exhibition and its container, the museum space. In Filippo Alison's 1979 installation³, the furniture designed by Le Corbusier, Perriand and Jeanneret between 1925 and 1928, and put back into production by Cassina, was included in the display – constituting a new layer in the interpretation of the dwelling. This furniture was not originally present in the dwelling, having been designed at a later date. Still, it is crucial for our understanding of Le Corbusier's investigation of the domestic space. By placing it inside *Maison La Roche*, Alison makes explicit its spatial articulation, where dilations and compressions define



FIGURE 1. Le Corbusier, *Weissenhof-Siedlung* Houses 14 and 15, Stuttgart, Germany, 1927. Comparison of the day/night layout. © Gioconda Cafiero, Viviana Saitto, 2016.



FIGURE 2. Le Corbusier, *Maison La Roche*, Paris, France, 1924. The space of the living room and the painting room. © Filippo Alison Archive, 1979.



FIGURE 3. Le Corbusier, *Maison La Roche*, Paris, France, 1924. The crossing space that leads to the dining room. © Filippo Alison Archive, 1979.



FIGURE 4. Le Corbusier, *Unité d'Habitation*, Marseille, France, 1952. Two different layout of the zone in front of the window. © Gioconda Cafiero, Viviana Saitto, 2016.

private places and more public ones, static places and dynamic ones. In the living room and the painting gallery, a *casier* in conjunction with a fixed table subdivides the room into two different fields, revealing not only the harmonic and dimensional features of space, but also furniture's ability to shape and characterize the function of different places. Arranging this furniture was not a matter of simply evoking the domestic use of this architecture; it was a means of building resonances between objects and the space capable of intensifying the experience of objects. The *chaise longue* in the passage leading to the dining room is a privileged viewpoint from which one can read, from the inside, the convexity of the façade.

According to Alison, "true furniture is [...] the result of the careful calculation of a series of cultural factors involving the social group: natural resources, the availability of certain materials rather than others, the level of technologies and industry's productive capacity, its furniture and the probable pleasure given in relation to use and habits. In any event, the furnishing itself must be the final check as to whether – these factors have been well calculated or not"⁴. The installation planned by Alison is a test of the ability of the furniture, which he reconstructed and produced with the collaboration of Perriand, to still match the needs of individuals, and a test of space and its potential.

In their turn, interiors that have been perfectly preserved as museum displays can become vehicles of new meanings through participative action connected to habitation. The interesting experiment conducted by Christian Chironi in the project *My House is a Le Corbusier*, financed by the Le Corbusier Foundation, shows how the long time span of habitation sparks different forms of creativity, bearing witness to the importance of the "lived" space along with the interpretation of conformational values. The artist is experimenting the effects of the synergy of interior design and creative work through an itinerant habitation project where the artist is scheduled to stay in thirty dwellings by Le Corbusier. The objective is to go out on a journey through time and space, a true pilgrimage, and at the same time pay homage to the architect and his work. For Chironi, the inner space of architecture is a "social theory" capable of reconsidering, through the narrative potential it carries, a series of contemporary relations. These dwellings thus become "privileged observation points" to shed light on how Le Corbusier's legacy is perceived today, and what conditions the "house of people" is in. Thus, architecture is rendered through narration and the showcasing of its spatio-temporal dimension. Here one can interact with the artist at work, watch events, and contemplate installations⁵. This geography informed by an analysis of our living environment as creative expression and a workshop of ideas has so far had three stages: the Pavilion of the *Esprit Nouveau* in Paris, in 1925 – reconstructed in Bologna, in the present day trade show area, in 1977 – the 7th floor apartment of the *Immeuble Molitor* in Rue Nungesser et Coli in 1934, and an apartment in the *Unité d'Habitation* in Marseille in 1952⁶.

The apartment 50 was the subject of further experiments. Bought and restored in its entirety by Jean-Marc Drut and Patrick Bluwart, every summer it hosts an exhibition of contemporary designer projects⁷ and finally accepted some

students of ECAL in Lausanne for a summer workshop dedicated to the equipment for the space design in able to meet the current needs of the space⁸.

The case of the *Unité d'Habitation* shows us that, however that interior was modified, even unconsciously, by its inhabitants, those transformations were unable to elude or negate the spatial relation between architecture and furniture that is the basis of the project. Photographer René Burri's photographic reportages on Le Corbusier's work, carried out between the 1950s and the 1960s, highlight the quality of space and its capability to host life in its most diverse forms⁹. The various realizations of the *Unité* project, in Marseille, Firminy, and Berlin, for example, had very different outcomes, displaying different levels of conservation or alteration. However, even the less conscious and sensitive adaptations respected the cogent bond between architecture and fields imposed by the furniture on the basis of planned activities. This shows that the relationship between the architectural interior and the furniture goes beyond linguistic aspects, and is closely connected to its capability to generate relations between spaces and people.

3. CONCLUSIONS

On the basis of these examples, we argue that the character and formal and logical structure of the spaces of modernity is substantiated through the interrelation between sense and signified, between the object and its user. The content and aesthetical values they bear are undoubtedly an expression of performance-related, distributive, dimensional, tectonic dynamics but, above all, they are explicative of the connection between form and the culture of habitation that produced them.

A reading of the relation between space and furniture highlights where and in what the sense of interior spaces in modern architecture resides, and consequently stands as a methodological passage that is necessary to guide any hypothesis of reuse and assess the impact of adaptation.

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NOTES

- 1 François Chatillon observes that, when we stand in front of one of important 20th century works, "we are bereft of the tools and methods to integrate it into our contemporary times, seeing we are in the grip of conservatism. [...] Conservation and restoration are faced with the difficulty of restoring a building as closely as possible to the original, while using the products available today. There is the need to adjust the monument to today's ... requirements". François Chatillon, "*Conservare è Moderno/Conservation is Modern*", *Domus*, 998, 2016, 37-38. Free translation.
- 2 According to Vittorio Gregotti "the notion of interior, as is well known, has played a very important role in the formation of the tradition of modernity in architecture. It has eventually become the starting point for planning, projecting the truth of necessity and the truth of content towards the language whereby architecture represented itself [...] The interior space, as an aesthetic notion, was later placed at the root of the very idea of architecture". Vittorio Gregotti, "*Editoriale*", *Rassegna*, 1, 1979, 5. Free translation.
- 3 At the 10th International Furniture Salon at the Parc des Expositions of Paris in 1979. Cf. Filippo Alison, "*I Mobili di Le Corbusier a Parigi*", *Domus*, 593, 1979, 30-33.
- 4 *Ibid.*, 30. Free translation.
- 5 More information about these three dwelling projects are available on the artist's website, www.cristianchironi.it.
- 6 Its first exhibition, in an isolated, free-from-distractions context, allowed the artist to carry out an introspective investigation connected to the relation between a subject and a hosting space. The other two are the fruit of a "collective" project that led to the production of installations capable of interpreting the relation between the public and the private dimension in a contemporary key.
- 7 The apartment has hosted the exhibitions of Jasper Morrison, Ronan & Erwan Bouroullec, Konstantin Grcic and Pierre Charpin.
- 8 Based on their different observations, the students have designed objects for "inhabit" this place, focusing in particular on the following aspects: the climate of the apartments; the flexibility of the interior spaces; guided tours that take place regularly; life in the public areas, especially the roof terrace that serves as a meeting place. Cf. ÉCAL, "*ECAL Appartement 50, Cité Radieuse*", accessed on March 29, 2016, <http://www.ecal.ch/en/2794/events/exhibitions/ecal-appartement-50-cite-radieuse>.
- 9 The images of René Burri's *Unité d'Habitation* in Marseille are available for consultation on the website of Magnum Photos, under the entry "Book – Le Corbusier". Cf. Magnum Photos, "Le Corbusier – René Burri", accessed on February 08, 2016, <http://www.magnumphotos.com/C.aspx?VP3=SearchResult&ALID=2TYRYD1EAHOT>.

Nomadic or Sedentary: on the Reuse of Modernist Interiors

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The proposed theme “Interior Design and Furniture” of the 14th *International docomomo Conference* implies that the presence of original interior design and furniture makes the reuse of a building more difficult. If the former were removed, the latter would lose something of its essence, especially when the building has been designed as a total artwork: a *gesamtkunstwerk*. Often used to describe any integration of different forms of artistic work, this term allows another reading which limits its application to the context of its Wagnerian origins, to the achievements of art nouveau. According to this reading, *Gesamtkunstwerk* and Le Corbusier’s synthesis of arts are quite distinct notions. Is there a real distinction between the two concepts? If so, what are the consequences for conservation? Our discussion of these issues is based on the opposition between Le Corbusier’s concept of tapestry as *muralnomad* and the sedentary walls of total art. We will compare the vertical surfaces of the interiors of modern buildings, (carpets, stained-glass windows, furniture) from a tectonic perspective, focusing on the relationship between these elements and the environmental space they inhabit. We examine some of Marianne Peretti’s artworks, such as stained glass/panelling made for the CFA (*Delepine Impasse*, Paris), *Jaburu* Chapel and Brasília Cathedral. These involve a variety of tectonic relationships, either nomadic or sedentary, that appear to be independent from both the original building design concept and the materiality of the object. Rather than operating as the essence of the building, the way these panels interact with the space they enter challenges the traditional assessment of the subordination of the work of art to architecture as the greatest art form. Migration would therefore be acceptable when nomadic walls are relatively autonomous or transcend the place in which they are situated.

1. INTRODUCTION

According to most modern art experts, retention of the original interior design, including furniture and objects, makes it difficult to reuse a building; but, without them, the building would lose something of its essence. Theorists and historians argue that this loss would be more evident in buildings designed according to the principles of *gesamtkunstwerk*. This term, often used, especially in Germany, to describe any integration of different forms of artwork, can also be interpreted as limited to the context of its Wagnerian origins of art nouveau and works of the late 19th or early 20th century. Therefore, *gesamtkunstwerk* should be distinguished from Le Corbusier’s notion of synthesis of arts. Is there, however, a real distinction between the design practices resulting from these two concepts? If so, are buildings designed according to *gesamtkunstwerk* principles less susceptible to reuse? If not, what are the real issues involved in the reuse of furniture or decoration?

We will discuss these issues in light of Le Corbusier’s concept of tapestry as *muralnomad*, as opposed to that of sedentary walls. We will then examine the vertical surfaces of modern building interiors, (carpets, panelling, stained-glass windows, furniture, etc.) from a tectonic perspective, i.e. focusing on the relation-

ship between these elements and the environmental space they inhabit. Our case study concerns the artworks of Marianne Peretti, including the CFA in Paris, the *Jaburu* Chapel and Brasília Cathedral, since these involve a variety of tectonic relationships, either nomadic or sedentary.

2. GESAMTKUNSTWERK OR SYNTHESIS OF ARTS?

Richard Wagner's (1813-1873) mid-19th century concept of *gesamtkunstwerk* advocated a total work of art achieved primarily by the integration of performing arts, music, drama and opera. Gottfried Semper (1803-1879) the architect of Wagner's theatre to some extent shared these ideas. Yet, Semper's practice and theory are both part of a renewal that occurred at the end of the 19th century and whose ambiguities appeared mainly in the Vienna Secession. Semper thus intended to unite art and industry in his architectural practice, while, in theory, he was looking for a style aligned to tectonic principles.

This holistic perspective declined as modernist culture became hegemonic: Muthesius's ideas superseded Van der Velde's, as Bauhaus did the CIAM. This congress had an enormous influence on Brazilian architectural culture, as attested in the writings of Lúcio Costa and Le Corbusier. Examining their correspondence, Rodrigues (2015) has shown how both architects approached the contribution of the major and minor arts and how they redefined Morris's Arts and Crafts debate using the crucial example of wall tiles. According to Naslavsky & Marques¹, Costa, in the Brazilian context, preferred the term integration, although what he meant by this was something akin to Semper's concepts based on a tectonic rationale. For Costa, the fact that walls were essential to renaissance architectural structure contributed to the development of mural fresco techniques and, since modern walls no longer function as a supporting structure but serve only to close off space, they can be painted in "a symphonic sense". For Costa, large panels such as those of Athos Bulcão can be compared to altarpieces and described as architectural paintings or architectural sculptures (Costa, 1952). In other words, panels and altarpieces are not decorative elements, or not *just* decorative²; they are architectural features in their own right.

Le Corbusier's term *muralnomad* derives from the same sensibility: the tapestry is not a decorative element but an architectural one; a wall of modern life, since modern man is nomadic. The tapestry was thus an appropriate way of expanding Le Corbusier's mural research. Different from immovable mural painting, the tapestry can be rolled up, transported, and hung elsewhere.

Whereas Costa pointed to the inseparability of art object and building, Le Corbusier indicated another possibility. For Costa, walls are sedentary; for Le Corbusier nomadic. Could these classifications correspond respectively to the concepts of *gesamtkunstwerk* and synthesis of the arts? In other words, could sedentary walls be more essential to the integrity of the building than the nomadic kind?

3. NOMADIC AND SEDENTARY WALLS

Before and After Completion of the Building

The tapestry designed by Le Corbusier for the Sydney Opera House can be used to illustrate the concept of *muralnomad*. Commissioned by Jorn Utzon in the late 1960s, the artwork was not installed as intended and remained at the Danish architect's home until his death. The Opera House was completed and inaugurated without Le Corbusier's tapestry but the artwork has recently been installed in the building's foyer.

Was the Opera House incomplete for lack of the tapestry commissioned by the architect himself? Would its installation, after 57 years, constitute a significant interference? In a letter sent to Corbusier, Utzon described how glad he was to have the tapestry as part of his everyday environment. His son however remarked that the tapestry, when installed in the Sydney Opera House, was finally going home. Do *muralnomads* have a home?

Marianne Peretti's stained glasses for Brasilia Cathedral, as we will be discussing below, were also installed at a later date. However, while Utzon commissioned Le Corbusier's tapestry at the very outset of the Opera design, Niemeyer called for Peretti's contribution later. Does this make a difference regarding removal in case of reuse? And what if we were dealing with "sedentary" murals conceived and installed in the building from the very outset?

Investigation of the tectonic relationship between vertical artwork surfaces (carpets, panelling, stained glass windows, furniture, etc.) may provide some answers.

Before and After the Building Design

An examination of Marianne Peretti's stained glass by Naslavsky and Marques³ suggested that this artist collaborated with architects in two different tectonic ways. The first and the most common was by way of integration: her stained glass windows were installed in accordance with the Wrightian style⁴; but, differently from the case of Wright's buildings, Peretti's work is clearly perceived as conceived by a different artist, not the building designer. The second way is to fuse stained glass and constructive consciousness in such powerful solidarity that they can be conceived as *gesamtkunstwerk*, as in the case of Van de Velde or Victor Horta.

The CFA, at *Impasse Delepine*, Paris, exemplifies the integration method. Here, Peretti designed a large panel



FIGURE 1. Marianne Peretti's Panel. CFA, at *Impasse Delepine*, Paris, France. © Caroline Bauer.



FIGURE 2. Marianne Peretti's Panel Detail. CFA, at *Impasse Delepine*, Paris, France. © Caroline Bauer.

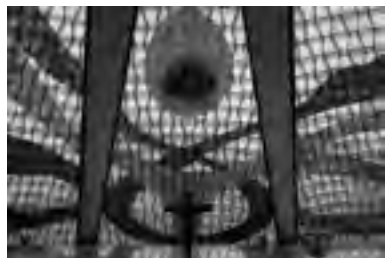


FIGURE 3. Oscar Niemeyer, Marianne Peretti's Panel. Brasília Cathedral Interior, Brasília, Brazil. © Iris Cruz.



FIGURE 4. Oscar Niemeyer, Marianne Peretti's Panel Detail. Brasília Cathedral Interior, Brasília, Brazil. © Iris Cruz.

that for many orthodox modernists would be a valueless work, for it suggests a fake opening to the exterior. Yet Peretti placed a spotlight between her panel and the wall to illuminate the glass pieces. Instead of criticizing, one could argue that in this case, as in others, the work of the artist is of higher quality than the architecture it inhabits. When the sale and possible demolition of the CFA building were announced, some people envisioned the removal of the panel. Peretti's opinion was that her panel should be sympathetic to the fate of place and should not be removed under any circumstances. Despite her view, we can imagine that the panel might provide some spatial quality or interest elsewhere, as it did for the meaningless CFA refectory; since interest and essence are two different things.

Marianne Peretti's 1976 work for *Jaburu* Palace represents a completely different situation. It involves a puzzle-like panel of transparent and uneven glass⁵, which, in Niemeyer's words, "is very intriguing, because it breaks up the space and is a dynamic piece". In fact, this artwork appears to have been created especially for the place it is installed; to use the jargon of contemporary art, it seems site specific.

However the fusion between art and architecture is even more powerful in Brasília Cathedral. Here stained glass and architecture appear to have been designed by a single mind from the outset of the project. This is surprising, since as we know that the stained glass was installed many years after completion of the building.

4. INTEGRATION AND ITS DISCONTENTS

While, in our view, Peretti's intervention in Brasília Cathedral seems to be part of a *gesamtkunstwerk*, Holanda⁶ blamed the artist for violating the brutalist purity of Niemeyer's design. Holanda's criticism, shared by many colleagues, is somewhat surprising when we consider the collaboration between Niemeyer and Portinari on Pampulha Chapel, in the 1940s, which was heavily criticized only by Nikolaus Pevsner⁷.

This is a controversial issue, which involves both criticism and reception, and, even though it is less commented on, the much-vaunted collaboration between architects and artists does not always converge on a harmonious outcome, regardless of the tectonic relationship established with architecture or the nomadic or sedentary nature of objects.

For example, some authors⁸ have recently noted that the approaches adopted by Perriand, Prouvé and Le Corbusier differ visibly in the housing unit on which they collaborated. This suggests that, in stark contrast to received opinion, the integration is not that apparent.

Golan (2009) presents a similar argument, pointing to the possibility of a contrast or incongruity between certain art objects and their architectural setting:

This book is about mural paintings that are not really convinced that they belong on walls and about photomurals, large paintings, and tapestries that are constantly trying to find their way back to the wall.... These objects were often installed in unorthodox manners that symbolized their ambivalence about their identity: mounted a few centimetres away from the wall, for example, or on projecting balconies or parapets. In one case, a mosaic was suspended in the middle of a room, on cantilevered brackets, permitting beholders to view it from behind. Such works ironically restaged the contrast, crucial within the discourse of architecture, between "good" or integrated and "bad" or merely supplementary ornament.

Does the meaning of this dialog lie exclusively within the field of architectural design? Could historical experience – including reception – determine or redefine discourse and perceptions? And what about the important role of the circulation of photos? The world-famous photo of the Eames couple sitting in their living room, for instance, certainly created an image of a lifestyle where building and interior design are inseparable. But to what extent can the Eames case be generalized?

5. CONCLUSION

The tectonic relationship between artwork and architectural space may provide guidance as to how to proceed in cases of reuse. *Muralnomads*, as advocated by Le Corbusier, and altarpieces, as evoked by Costa, can be removed, as was the case with Saint Bento church whose altarpiece went to the US to be restored and was exhibited at the Guggenheim.

Museums can provide a sort of experience of lost interiors, as attested by a number of Frank Lloyd Wright interior designs at the Metropolitan and the LACMA exhibition of Californian furniture and interior design. This is also the case with the recent *Tisser la Couleur* exhibition (June 20 – November 1, 2015), in Lodeve, France, of tapestries by Le Corbusier and other modernists.

Peretti's artworks appear to operate independently of their materiality and of the initial design of the buildings. Rather than acting as the essence or the inner soul of the building, her panels – sometimes nomadic, sometimes sedentary – as a general rule, enter into dialogue, in very different languages, with the space they occupy. However, they tend to challenge the traditional subordination of artworks to architecture, which modernists considered the greatest of the arts.

Based on the example of Peretti, albeit against her own opinion, we believe that artworks can be superior or relatively autonomous vis-à-vis their setting and that there are cases where removal would be acceptable, thereby minimizing the potentially destructive effects of factors such as neighbourhood redevelopment, voracious interests or the neglect of owners. Unlike the old adage, whereby rings come and go, but the fingers remain, the fingers of buildings die, but the rings remain.

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- 2 At this point it is worth pointing out the extent to which the aversion of many modernist architects towards interior design – furniture in the strict sense and decorative objects – goes hand in hand with gender issues. Decoration is perceived to be feminine and hence inferior, as can be seen in the case of Charlotte Perriand's collaboration with Le Corbusier.
- 3 Sônia Marques and Guilah Naslavsky, *op. cit.*
- 4 In Unity Temple, by Frank Lloyd Wright, the stained glass is present at the junction of multiple windows to give the impression of a larger span; in the skylights, it is inserted into the structural grid.
- 5 See panel image in: <http://www2.planalto.gov.br/vice-presidencia/vice-presidente/residencia-oficial/galeria-de-imagens>.
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Lina Cubed: 3 Projects, 3 Different Spheres and Scales, 3 Different Stories

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This work focuses on 3 different works of Lina Bo Bardi in the city of São Paulo: the Glass House (1951), the MASP (1968) and the SESC Pompéia (1986). A private, a cultural and a leisure building, all 3 buildings and interiors were completely designed by Bo Bardi. All 3 are now heritage listed. The paper tells about the interiors of each one of these buildings and the transformations through which they passed along their natural aging process. From these observations and conclusions, it is possible to raise some important issues for discussion. These include the differences in the preservation of interiors and buildings, public or private, smaller or bigger ones; the difficulties in protecting something alive and changeable like interiors; the differences of understanding about interiors as an effective part of the heritage to be preserved, and as an integral part of the architectural design.

1. INTRODUCTION

Just as it is fundamental to recognize interior design as part of the modern project, it is also important to consider that it is essentially an open system, more susceptible to change, and more affected by the action of time. Indeed change is one of the essential characteristics of the modern interior, which is demonstrated throughout its use, and is part of the natural process of maturing.

In this context, 3 different works of Lina Bo Bardi are quite interesting to observe and compare: the Glass House, the MASP and the SESC Pompéia. A private, a cultural and a leisure building, all three are fully designed by Lina Bo Bardi and all 3 are now listed as heritage. However the way they have aged and their interiors have changed is different in each case. Their comparison can bring important questions for reflection.

2. GLASS HOUSE: 1X

The Glass House – *Casa de Vidro* (1949-51) was built in the Morumbi district of São Paulo, standing on slender *pilotis* on a very steep slope almost devoid of vegetation at that time, leaving the site practically intact. The arrival is through the lower part of the building, where an open and very light metal stairway leads to the first floor where the house is concentrated. The building has 2 parts: the social area that is a large glassed room, and the intimate wing, composed of 2 tracks of rooms separated by a courtyard. The social area is the glass case itself.

When built, the house designed for Lina and her husband, the *marchand* Pietro Maria Bardi, reveals an eclectic sensibility, combining contemporary furniture with valuable antiques inside the glass box; it displayed a stripped-down, balanced and restrained interior, even if somewhat diverse. There was a bare ambience, with a low density of objects and furniture.



FIGURE 1. Lina Bo Bardi, Casa de Vidro, São Paulo, Brazil, 1951. © Francisco Albuquerque.

Over time, we can observe that a gradual process of accumulation has led to another arrangement. Images from the 1980s show the densification of furniture and objects without concern for the formation of specific sets, placed on floral carpets and arranged without much relation to the general layout. The baroque statues and renaissance *cassoni* began to live side by side with popular crafts, colonial artifacts, ordinary furniture and even some knick-knackery. The casing is the same, although a little worn, but the internal settings have changed. There is a density of objects and furniture which is really impressive, especially when compared to the original version.

Interior design is relatively easy to transform, whether through addition, change or removal, as many examples can attest. The interior is essentially an open and vivid system. Indeed, change is one of its essential characteristics. The shell itself is different: it remains more constant, like a stable box with a variable content. In this case where we can see two versions of interiors in the same house, maybe this mutation reflects changes in Lina Bardi herself after years steeped in Brazilian culture, especially after knowing and working in the northeast of the country¹.

In 1990 the Bardi couple founded an institution based on their house, in order to spread the knowledge of Brazilian art and culture at an international level. In 1995, after Lina's death, Pietro donated the Glass House to the institution. Although listed (in 1987 and 1991, by the state and city, respectively) much of its content is gone after Pietro Maria's death in 1999. Listed by IPHAN, the national



FIGURE 2. Lina Bo Bardi, Casa de Vidro, São Paulo, Brazil, 1951. © Nelson Kon.

heritage organisation, the version that was kept in 2009 is actually a third version, different from the previous 2, with its exhibition displays and without many of the valuable pieces, taken by the heirs as an inheritance claim.

3. MASP: 2X

In *MASP – Museu de Arte de São Paulo* (1957-68), building and exhibition achieve the same importance and are part of the same intellectual operation: the project is about the whole, the envelope and content. The building solution is a porch holding a parallelepiped glazed in its two major façades. Bellow it the generous space of the terrace is an extension of the street.

In the permanent collection room, unlike traditional exhibitions, the paintings were not placed against the wall, but occupied the whole space and were hung on a transparent easel – a large tempered glass, inserted into a roughly cast concrete cube with a notch turned upward, with both glass and cube stabilized by a wooden wedge. The final scale of the set is similar to the human dimension, placing the artwork at the same height of the observer. Each piece leaned against a white piece of plywood trimmed to the exact proportions of the frame and was bolted discreetly onto the glass. Also the frames were eliminated (when they were not authentic) and replaced by a neutral thread. Texts were placed on the backside of the easel, between the plywood and the glass. The paintings were faced to the entrance, waiting for the public to come, dispersed and not arranged in any



FIGURE 3. Lina Bo Bardi, MASP, São Paulo, Brazil, 1968. © Paolo Gasparini.

kind of classification. The absence of walls put the pictures in direct contact with the building, besides referring to the situation of their conception, they were lost in space, in the artist's easel.

The proposed design was derived from *Allestimento*, an experimental field of Italian artists and architects. The idea was that people mingle with paintings and sculptures, performing a fusion of images that symbolized the desired approximation between art and everyday life. Expanding the scope of the art gallery for the city, through the glass facades, this mixture of images breaks the closed box. Transparent facades and easels are complementary devices in the effort to popularize art and the museum².

Disagreements about the exhibition design of MASP have existed since its creation. After Bo Bardi's death and the retirement of her husband – curator and chair of the museum since its foundation – criticism about the exhibitors came to the fore led by the new curator. In 1996 the glass easels were replaced by plaster walls. The original single room was subdivided like a conventional exhibition space. The transparency of the façades was also lost: the shutters came to be permanently closed. These changes, conducted in a creeping way, provoked the indignation of most Brazilian architects. Even so the changes were maintained.

In 1999 the *Instituto Bardi* requested the registration of the MASP (architecture, interiors and exhibition design) as heritage. A month later, the Museum itself did the same (just the building). The difference between the two proposals involved precisely the easels. In 2003, finally the MASP was listed by IPHAN. As a strategic measure, they protected the furniture and the easels in order to

preserve them and, at the same time, give the museum the opportunity to decide when to use them again³.

A few months ago, in February 2016, the transparent easels were returned. In a new version that suffered slight and imperceptible changes developed by Metro Architects, an architecture office with significant museographical experience, that was chosen by Adriano Pedrosa who is the current artistic director of MASP and is carrying out an institutional recovery plan for the museum⁴. The return of some of the museum spaces according to the original design of Lina Bardi, like the removal of the partition walls from the art gallery, is also part of this same plan. The blinds, however, have been retained and will remain closed.

4. SESC POMPÉIA: 3X

The SESC – *Serviço Social do Comércio – Pompéia* (1977-86) is a non-profit entity maintained by trade leaders, built in the middle class neighborhood of same name in the west area of São Paulo city. Recently listed (March 2015), the complex is a leisure center, a collective facility of major proportions.

The total project comprises a recycling of a factory built in the early 20th century and the construction of new buildings designed by Lina Bardi and her team. The whole plan of the project looks like an L. The longest and widest side is occupied by the old factory which consists of industrial sheds clustered into



FIGURE 4. Lina Bo Bardi, SESC Pompéia, São Paulo, Brazil, 1968. © Marta Peixoto.

juxtaposed blocks of various sizes, arranged along an inner street – that the architects decided to maintain. Known as General Activities Pavilion, this is the hot spot of SESC Pompéia. The rest, a more irregular and meager area, is where the new buildings were built for the sports complex. The existing street became the pedestrian access.

The renovation project for the pavillion turned the set of sheds to the left of the inner street into a buffet restaurant and a maintenance room. The largest ones, to the right, became a huge covered plaza with a lounge and an exhibition space, a library, a large square, a theater and many workshops. The interior project was complemented with furniture design and visual communication.

The ensemble of these successive spaces create a rich and complex covered square to promote recreation. The lounge and exhibition space is a large place to stay. There are couches and tables to read at, play or just to sit. Next to them is the library. The stacks are placed on the floor, contiguous to the entrance lounge, as an invitation to enter. The theatre is an isolated shed and, finally, there is the workshops shed, internally partitioned with low divisions. The central space between the library and the theater was designed like a square, geometrically organized by the pillars of the original shed with the addition of a fireplace and a large and meandering water mirror that divides the floor in 2 parts. The changing of the original clay tiles with glass ones creates a diffuse light that is responsible for the pleasant atmosphere inside. Finally, the visual communication, that mixes colours, textures and a certain rawness of the materials, fits very well with the ambience of the neighborhood.

Listed recently (2009), the SESC is a very successful enterprise since its opening and remains almost the same after thirty years. Of course the SESC Pompéia is well managed, but what was also very important was that the architectural approach established a great connection with the community since the beginning⁵.

5. CONCLUSIONS

The observation of this 3 different cases provides some interesting reflections and questions on modern interiors, their use and preservation. Although designed by the same architect, who was deeply involved in the architecture as well as in the interior design, design and museography, and although they are all listed, these 3 examples are different in proportions, programs, relevance and maintenance. They also tell different stories regarding their aging.

In its own private world, Lina Bardi changed the Glass House over the course of time. Is this disrespect – to herself – or did she understand that architecture, interior design and art are always changing, like a work in progress? In my opinion she wanted to show her new vision about architecture, after living for many years in Brazil.

The museum was quite transformed by the curator who followed Pietro Maria Bardi. Despite his arguments – that are defensible – what this case shows

is a kind of distortion: without exhausting the discussion on the subject, in order to protect art these changes violate another work of art which is the design of Lina Bardi. Maybe this case highlights a common understanding that interiors and museography are not considered worthy of preservation. Maybe even it highlights that modern architecture also is not worthy either

On the other hand, lost in the suburb, managed by trade leaders and frequented by ordinary people, the SESC Pompéia, with its huge proportions, represents an example that has remained most intact. Its enormous architectural capacity to communicate with the local community is fundamental to its success.

Finally, perhaps it is possible to say that preservation and/or reuse of interior design and its content is complex and has, like any project, its own specificities, variables and circumstances. Therefore it is very difficult to establish generic and universal rules. However recognising interior design as an issue, and highlighting its importance in understanding modern architecture and heritage should be a shared concern.

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THEORY



Between Theories and Practices in the Conservation of Modern Heritage

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The status of modernity has always been challenging for the theories of restoration. Restoring what is modern/contemporary sounds like a contradiction in terms. The modernity of the 20th century is even more provocative, because of its uncertain historicity in the accelerated time of the last century, because of its fragility and because of its intangible connection with the aspirations and the utopias generating architecture, combined with the very tangible presence of the authors themselves.

Nowadays, after more than 30 years of studies on the legacy of modernism, and after many real restoration experiences, the conservation of modernist buildings can no longer be considered neither exceptional nor experimental.

It is time to reflect on what has been done and what we have learned. **docomomo** and its mission have come to age. Let me recall here John Allan's precise analysis of the evolution of our approaches, from the sentiment of rescuing the masterpieces of modernism, towards the science of new arguments, which can make achievable the conservation and the reuse of the legacy of modernism.

At the beginning of this journey, we were dealing mainly with few iconic buildings and our main dilemma was whether there was a fundamental distinction in the conservation realm between modern and pre-modern heritage. Now we are dealing with a completely different type of legacy, embracing both quantity and quality, and it is time to wonder if there are only new topics asking for our attention and research, or whether some already well-established subject areas still need to be developed and discussed further.

I think we are confronted with both cases.

The mechanisms of recognition, the constant evolution in understanding of what comprises heritage, the reflection on values, the authenticity and the repro-

ducibility, the power of the image of the icons and the acceptance of the ageing of modernity are topics that, I dare say, we are all familiar with. It would be naive to presume that all these issues have already been answered and would constitute an established corpus of theory, able to guide our practice. It would also be naive to think that we do not need any theory at all, but just a collection of case studies, from which we merely need to choose, time after time, the best solutions.

The preservation of 20th century architecture has been changing, evolving, and expanding both in scope and complexity. It has overcome the technical problems of new materials and is facing the challenges of the new cultural, social and economic roles played by heritage. The evolution of thinking about conservation – in the same way that the economic aspects of heritage are also constantly in flux. Of course, evolution is not revolution, and we should not forget the past. We are not establishing a new theory every 10 or 20 years, but the responses of our discipline fluctuate in response to our changing perceptions of heritage and its preservation. We should keep in mind that contemporary conservation is still in the process of evolving from essentially mid-19th-century concepts, which inspired the concepts of restoration as we know it.

The relevance of carrying on with serious reflections on the relationship between theory and practice is well represented in the present conference session.

Our current situation is that ancient and modern heritage are widely recognized as a primary asset for culture and economy, but the listing process always and still depends on current local political economic and individual circumstances, often involving very different criteria of recognition of what heritage really is – so that nothing can be taken for granted.

When the listing has been done and the first and apparently harder part of the job seems to be over, we are instead facing a harder one: the acknowledgment is not preservation and our beloved modern objects are highly vulnerable to be incorrectly modified and unconsciously altered on account of inaccurate theories. It is important therefore, to stress once again the role of a sound and self-aware cultural perspective on the legacy of the past and the unquestionable relationship of theory and practice in the field of reuse, which probably is one of the hottest keywords now in preservation, due to the strong link with sustainability, but is not always explored in all its consequences. If **docomomo** is about the future and it has to forge a connection between the past and the conditions of today, then **docomomo** is at the same time about history and about the possibility we give to our memory to be part of what the future generations can experience, because sustainability is not only about energy.

One of the most challenging issues in every intervention is still the question of authenticity. From the point of view of restoration principles, it is undeniable that the restoration process should always be focused on conserving the original material that enables maintaining authenticity. But how to maintain the integrity of the building if we are constantly confronted with new functions and re-created contexts? There is a fundamental need to debate the attention that

should be paid to the significance of the original building and on the effectiveness of our preservation practices, when we focus mainly on the intangible meanings of the architecture.

But we can even go further and examine the design itself as part of heritage that should be protected. If the design, the idea, the intangible, is the template, then the building can be regarded as its copy. Yet, it is certain that neither the design nor the building loses its intrinsic force because of this relationship. Instead, their interaction is related to a vast array of variables and constraints, such as place, time, weather, programme, user, etc. – all of which highlight the impossibility of any reproduction and the extreme value of the authentic. Of both authenticities, actually: the design and its building. On the one hand it is fascinating the idea that the lasting inheritance of the Modern Movement is to be found as much in the ideas generating form as the form itself - so that preserving means in a way preserving the aspiration to the progress and to a better future. But on the other hand, if the intangible prevail over the fabric altogether, then this vision might end up driving us very far away from the realms of preservation, conservation and history. It is exactly the same situation in which the contemporary ecstasy of newness is erasing interest in the significance of time.

Addressing these issues requires a cultural approach to preservation and such an approach requires to foster the thinking on the theories that we apply, conscious or not, in our interventions. Otherwise we will never exert any real control over the results, and we will risk repeating the same mistakes every time – a gamble we cannot afford to take with a valuable and limited resource such as heritage.

I want to thank the scholars participating with their very keen and precise arguments in the present session. Katja Hasche opens once again our discussion on recognition and listing facing the quantity of post-WWII modernism. Cristina del Bosch Martín develops the unquestionable relationship theory and practice in reuse, and the complexity of any heritage action. Miiia Perkkio offers a stimulating reflection on authenticity and Ana Carolina Pellegrini proposes a provocative idea of design itself as heritage. They guide us to consider, on the same level and at the same time, the conservationist concerns within the wider challenges of contemporary society. And they help us in keeping open and full of interest the questions about the disciplines of preservation that are on the edge of new boundaries and thresholds. Because if the modern will have to be saved it will not be by pleading special heritage privileges, but demonstrating that it is a resource for the future of our memory.

Local and Transnational: Modern European Housing Estates as Heritage

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The process of official heritage designation of buildings and housing schemes in Europe always depends on current local political, economic and individual circumstances. Based on national legislation and the structure of institutions, each country has its individual listing or designation methods with different selection criteria. While some European countries already have systematic systems of designation for buildings of the period 1950-1990, others are just beginning to concern themselves with this young cultural heritage. The main challenge in the listing of post-war housing estates as cultural heritage is the fact that potential obsolescence, changed demographics and rapidly growing demands for energy efficiency, as well as new living standards, all threaten these estates with demolition or modification before their historic or artistic values can even be recognized. In some countries this threat is increased further by the stipulation of a minimum age before buildings can be designated as monuments¹.

Once a full generation has elapsed, a wider objectivity can be obtained. Yet, on the other hand, this time span is, in many cases, too long to allow the buildings to be retained in their original state. To contextualise these often thorny issues, a trans-national comparison may be of assistance – not least because the typology of many modern housing estates originally stemmed from, or participated in, an international architectural movement. Housing estates from the 1960s and 1970s in different European countries often have similarities in their typology and design – and for this reason, in order to adequately safeguard them (as a part of international late modern architecture), the nations of Europe need to show greater solidarity in setting out to preserve these buildings as common heritage. Indeed, to rethink the national designation or listing process of late modern heritage in a wider perspective might even make a worthy “mission-statement” for the planned European Cultural Heritage Year 2018.

If you currently look at housing estates from the period 1950-1990, their condition ranges from demolition or obsolescence through preservation and renovation to reconstruction. How can late modern housing complexes be used or reused in the future? How is the condition of a housing project influenced by its listing as cultural heritage – and vice versa? The process of listing modern heritage is currently the subject of the research project WDM (*Which Monuments, Which Modernity?*) at the Bauhaus University in Weimar, Germany². This research project is a co-operative venture between the Bauhaus-University in Weimar and the Technical University in Dortmund, and includes researchers from the areas of architecture, historical preservation, art history and urban sociology.

Within the project, one key research focus concerns the listing strategies for housing estates built in the 1950s-1980s in Western Europe. Based on national legislation and the structure of institutions, each country has developed its own individual listing methods, and different selection criteria. Although the Council of Europe warned as long ago as 1991 that a lack of interest in conserving the 20th-century architectural heritage “would lead to irreparable losses and deprive future generations of this period of European consciousness”, and demanded



FIGURE 1. Jack Lynn, Ivor Smith and Frederick Nicklin, Park Hill, Sheffield, Great Britain, 1957-1962. © Katja Hasche, 2015.



FIGURE 2. Georges Addor and Dominique Juillard, Le Lignon, Vernier, Switzerland, 1963-1971. © Katja Hasche, 2015.

the preparation of systematic designation schemes³, the status of protection of examples of modern heritage today still differs from country to country. While some European countries already have systematic lists of for buildings of the period 1950-1990, others are just beginning to concern themselves with this young cultural heritage.

In Switzerland and Great Britain, the heritage agencies are very advanced in listing post-war modern architecture and benefit from the supportive work of voluntary bodies like the 20th Century Society⁴ and the Schweizer Heimatschutz⁵. In Great Britain, post-war modern buildings dating from 1945 to 1965 have been listed systematically with work ongoing. In Switzerland, several cantons have listed their late modern buildings, dating from as recently as 1980 or even 1990⁶. Conversely, in some other countries, such as Belgium, Bosnia and Herzegovina, Bulgaria, Latvia or Hungary, there have not been any systematic listings yet. In some countries, non-government institutions, research-groups and initiatives are steering listing processes, although these command have no legal authority. Such initiatives can be found in Italy, most states of the former Yugoslavia or the Baltic States⁷. Depending on the individual progress, the number of listed buildings differs from country to country. Hungary, Poland, Croatia, Bulgaria, Bosnia and Herzegovina have less than 100 listed buildings each, whereas a huge number of listed late modern buildings can be found in Germany, Switzerland and Austria⁸.

The main problem of listing post-war housing estates as cultural heritage is the fact that possible obsolescence, changed demographics and the rapidly growing demands of energy efficiency, as well as new living standards, all threaten these estates with demolition or modification before their historic or artistic values can be recognized. In some countries this threat is further increased by the existence of a minimum age for listing buildings as monuments. In Bosnia and Herzegovina, for example, listed monuments must be older than 1960, in Denmark there is a time limit of 50 years, in Italy 50 years (70 for public buildings)⁹. In Great Britain there are various, somewhat tighter listing criteria for buildings built in the last 30 years¹⁰. If not specified by law, the usual time span for eligibility for

designation is about 30 years. Following the elapsing of a generation, a broader objectivity can be attained. Yet this time span is, in many cases, too long to keep the buildings in their original state.

The criteria for designation of late modern housing projects as cultural heritage are often complex, and include immaterial values such as historic or social significance. These estates sometimes convey a sense of discomfort, owing to negative aesthetic or political connotations, especially in countries previously ruled by communist regimes. Their often stark aesthetic appearance, and their sheer size, often both accentuate the risk of public rejection. For these reasons, the heritage value of housing schemes sometimes seems far less self-evident than that of singular public monuments, such as post-war churches or museums. Nevertheless, the importance of such sites and urban ensembles has been repeatedly stressed in a range of different papers, conferences and charters over the most recent decades. Even as early as the *First Conference of European Ministers responsible for the Preservation and Rehabilitation of the Cultural Heritage of Monuments and Sites* in 1969, it was declared that some threatened sites and ensembles were chiefly of importance from cultural, human, economic and social points of view. In such cases, two actions were demanded: co-operation between the authorities responsible for heritage and town planning, and a system to exchange information on the preservation of the European cultural heritage¹¹.

In their typology and design, housing estates from the 1960s and 1970s often show trans-national similarities. The leading architects who worked before the WWII, such as Le Corbusier or Mies van der Rohe, were still alive and influencing the international architectural scene. The new generation of younger architects was interested in various international experiences. They studied in foreign countries, worked for architects abroad and brought these influences to their home countries. Architectural journals were becoming more important and facilitated a better exchange of information.

One example of a mass-housing typology found in different European countries is the megastructure of angular residential buildings. Examples include

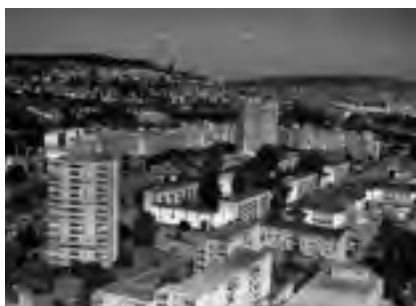


FIGURE 3. Beeler & Honegger, Casetti & Rohrer, Kunz & Götti und Robert Schmid, *Grünau*, Zurich, Switzerland, 1972-1977. © ETH-Library Zurich, Picture Library, Jules Vogt, Com_FC24-8009-0036 / CC BY-SA 4.0.



FIGURE 4. Georges Candilis, Alexis Josic and Shadrach Woods, *Le Mirail*, Toulouse, France, 1962-1977. © Service Technique de Communication, Ville de Toulouse.

Bijlmermeer in Amsterdam, Park Hill in Sheffield, Grünau in Zurich, Le Mirail in Toulouse and *Le Lignon* in Verniers. These housing estates were obviously influenced by each other. Yet despite their similar typology, the official protection status, as well as the condition, of these estates are very different. The earliest of these complexes to be designated for protection was Park Hill, which was declared a listed ensemble (Grade II*) in 1998¹². In Great Britain any alterations to a building listed at this grade must be reported to English Heritage in advance. The Swiss projects, *Le Lignon* and Grünau, have a different type of registration, due to the different cantons they are part of. The council of Geneva protected *Le Lignon* with a “*plan de site*” in the year 2009¹³. This communal urbanistic instrument is the appropriate way to preserve a housing scheme of this scale in the canton of Geneva. The aim of the *plan de site* is to ensure the protection of the urbanistic, architectural, landscaped and natural qualities of the ensemble. Grünau was listed in the supplemental inventory of buildings built between 1960 and 1980 by the heritage agency of Zurich in the year 2013, including its landscape¹⁴. In both estates, the residential buildings were part of the designation, while the public assembly buildings were excluded. In Zurich and in Geneva the heritage regulations require any changes to be reported to the cantonal heritage agency. By contrast, both Toulouse-le-Mirail in France and Bijlmer in the Netherlands are neither listed nor protected.

The condition of these estates differs also, not at least due to their designation status. At the time of protection, the Park Hill estate was in an original state, although run-down. Its current renewal programme, however, involves a radical stripping-back to the in situ framed concrete structure. When rebuilt, the ground floor will be used for business and retail, while the flats will be restored in their basic form, albeit partially with merged rooms. The facades of the buildings will acquire a new facing, with anodized aluminium sheets instead of the original infills of brick; the proportion of windows to boards has been changed. These strong interventions are not typical for a listed monument in Great Britain, but were a compromise resulting from several discussions between the City Council and the National Heritage Agency. *Le Lignon* was also in a fairly original state at the time of its listing – as, indeed, it still is. However, as Swiss regulations require reduction of energy consumption, the Laboratory for Techniques and Preservation of Modern Architecture (TSAM) at the *École Polytechnique in Lausanne* carried out a study in 2008 to establish a proper balance between heritage protection and greater energy efficiency¹⁵. After analysing the state of the building facades, 2 very sensitive conservation strategies were developed in detail. These solutions were first tried out on a prototype basis in two flats, and can be selected by the owners according to their financial budgets. The Grünau estate was also renovated between 2007 and 2010, but in this case the renovation took place before designation, so the alterations were accepted by the government heritage agency. The renovation included the merging of flats and alterations required by regulations covering fire protection, energy efficiency, accessibility and earthquake protection. At *Bijlmermeer* and *Le Mirail*, more thoroughgoing alterations are underway. Both complexes

were suffering from pervasive social problems, which became bound up, in the perception of the public, with the urban and architectural concept of megastructural housing. In response to the drive to improve these conditions, several buildings have been renovated, demolished or replaced in recent years.

As these examples show that the listing process of buildings and housing schemes in Europe is always inextricably bound up with current local political, economic and individual circumstances. As a result, a similar building could either be listed or torn down, depending on local conditions. Accordingly, in order to achieve a more consistent pattern of protection for the international patrimony of post-war modern architecture, the European nations need to show greater solidarity in the cause of preserving these buildings as a common heritage. Designation and conservation problems are not always particular to one country, and can often more profitably be dealt with in a coordinated manner. The problem seems to be the application of common principles shared between different countries. Also, the international communication and cooperation is still not sufficient. To be sure, international organizations such as **docomomo** or ICOMOS, or associations such as the Baltic Sea Region, can make some difference. But a more fundamental task is to frame new legislation (or adapt existing legislation) so as to set the preservation of individual buildings within a wider perspective. One step could be the preparation of periodic reports on the progress of architectural conservation in all European countries, as was first demanded in the Declaration of Amsterdam in 1975¹⁶. Another consequence could be “multilateral conservation projects which could be set up at the European level for particularly important aspects of the 20th century heritage”¹⁷, as was suggested by the Council of Europe in 1991. national designation processes of late modern heritage, set in a wider perspective, could be set as a key goal for the planned European Cultural Heritage Year 2018.

NOTES

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- 3 Council of Europe, Committee of Ministers, *Recommendation No. R (91) 13 of the Committee of Ministers to Member States on the Protection of the Twentieth-Century Architectural Heritage*, 1991.
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- 7 Compare: Ministero dei Beni e delle Attività Culturali e del Turismo, *Direzione Generale per l'Arte e l'Architettura Contemporanea e Periferie Urbane: Censimento Nazionale delle Architetture Italiane del Secondo Novecento*, accessed on April 08, 2016, <http://sitap.beniculturali.it/architetture>.
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- 17 Council of Europe, Committee of Ministers, *Recommendation No. R (91) 13 of the Committee of Ministers to Member States on the Protection of the Twentieth-Century Architectural Heritage*, 1991.

Good Heritage Action and the Possibilities for Reused Buildings

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The rationalist heritage is made up of an ensemble of buildings which were ahead of their time. They were a reflection of social and functional demands. Today, these objects have been acknowledged. Nevertheless, they are highly sensitive to unsuitable modifications. Occasionally, experience leads us to consider how the values of these buildings have been unconsciously altered on the basis of inaccurate theories. Paradoxically, this architecture developed its own theories (CIAM). However, these are not always kept in mind during intervention work, and such work has even destroyed the essence of rationalist space, which combined a logical process with usefulness.

Previously, when working with built heritage, we learnt from practical wisdom (Aristotle) and thought about how and why the work was created, because it had significant symbolic value, which appeared in its original form as artistic expression. A material object also has a scientific-constructive value to which is added its practical value. Consequently, if these latter 2 values are inaccurately altered, they condition the first one.

Today, some rationalist buildings are being lovingly taken care of by society, while others have been neglected. In Spain, there are areas where this type of architecture has fallen into disrepute. Although, it is worth remembering that it was not like that in the beginning. Officially, these buildings have been listed, acknowledging their cultural significance. We could say that their classification as heritage, due to their authenticity, has assured this objective. However, some actions have failed to preserve them because not enough has been done to make them usable. Regrettably, use has not always been understood in conventional conservation.

The reuse of rationalist buildings is often related to their economic viability, but this motive is untenable in historical heritage work. It contradicts all the established principles of conservation and sustainability. Therefore, we can conclude that this reveals a discrepancy between the theories and practice of reuse.

The rationalist heritage is made up of an ensemble of buildings that were ahead of their time. They are a tiny group of icons which appeared to solve a social problem at that time, even before they materialized, because these first buildings were not an academic ensemble of items, but only an experimental way to create architecture. This solution was a reflection of social and functional demands, and all rationalist buildings were created with a specific and relevant use because this was one of the main reasons to build them. In rationalism, this was an essential part of its style, describing a “relevant moment in a period of time”¹. The first rationalism reflected new knowledge and activities because it symbolized a new lifestyle where form and politics had an ethical and social point of view.

RiegI places the essence of architecture in every space concept. While the traditional space is “different, volumetric, with well-known, discontinuous, delimited, specific, Cartesian and static shapes”², the rationalist space is distinguished by interlacing its own light, free shapes and continuous spaces, creating an essence with a genuine use or activity and emergent technological solutions.

Nowadays, these heritage objects have been officially acknowledged, in spite of being abandoned and inevitably deteriorating over the years. It has been a complex and slow work of art, full of hard decisions, because some values are not recognised and their intangible qualities are easily changed. Furthermore, it should be highlighted that they are highly sensitive to incorrect modifications which can occur unintentionally during intervention work. Occasionally, experience leads us to realise that the values of these buildings have been unconsciously altered due to inaccurate knowledge of theory or have simply evolved over time.

From a scientific point of view, Arnheim³ explains that architecture, like art, establishes relations between understanding-reason, intuition-intelligence and enthusiasm-frustration. All of these are absolutely essential to appreciate the global structure of the artwork. If we apply this concept to the original rationalist buildings, we can see that there was a balance between use-reason for being and form-enthusiasm for living; and both have been created for a specific programme because, normally, they have special features with symbolic characteristics which identify this heritage without losing their functional value.

When some of these aspects are modified, the harmony of the original design disappears. Generally, a significant increase in use-activity can destroy the form-space relationship. Furthermore, when additional spaces that were requested in the original concept are eliminated, this results in an inadvertent morphological distortion of the original elements. Sometimes, this has been done in interior spaces, breaking connections or losing continuity. Normally, it is reversible, but there are other irreversible exterior actions where the loss includes habitable spaces or the distortion of form. Paradoxically, this architecture was developed and based on widely available and detailed theories which are accessible, thanks to the *International Congress of Modern Architecture* (CIAM). Within these objectives and principles, there are “reflexive and orthodox works, based on applying an exact method”⁴ but, unfortunately these principles are not always taken into consideration during the intervention process.

Occasionally, society and architects forget why these kinds of buildings were created, designed and built. Consequently, they have destroyed the essence of rationalist space: a logical process combined with usefulness. As in all art, these values were present at the project’s origin, in the initial idea. This is why, in all *heritage actions*⁵, we have to learn from “practical wisdom”⁶ and think about how and why the object was created in order to understand this “new monumentality”⁷, because symbolic value appears in a project’s underlying concept. For instance, “Rationalism is based on a logical process from abstract and functional concepts. And it becomes art space”⁸ with a specific use which is reflected in its concept of space, with a specific formal language. Its scientific-constructive value is in the material object and it is connected to its use value. Potentially, discordant changes may alter these immaterial aspects and, consequently, the form of the building.

Today, some rationalist buildings still maintain their original value and are correctly used because they are pioneering architecture, are valuable as architec-

tural works, and represent unique spaces. However, some built spaces, with a high symbolic responsibility and no ornaments, have been modified because of new uses. There may be a great number of qualities that were not preserved because *heritage action* on them has been inappropriate. Inevitably, conventional wisdom does not always appreciate their use-value and space concept, and consequently, intangible values have disappeared.

This loss in the Modern Movement is a consequence of the lack of harmony between the physical place ("human city"⁹) and built place ("material city"¹⁰). Both are "relevant elements in order to define the project city"¹¹ because they define the initial idea. Normally, the development of the material city includes the loss of the human city because this non-built part is forgotten and damaged¹² by new uses.

This is a good example of what is currently happening to rationalist works. Because a new city defines a new heritage that has been created by a new monumentality and it develops and breaks pre-established ideas in which the concept of aura is redefined in a new and wider heritage. "During long periods of time, the model of human existence and the human perception have been developing continuously"¹³ like common practice, but now there is a need to change, because a social significant rescue of rationalist buildings is needed. Choay, in her thoughts on the city's heritage, postulated that heritage knowledge is more than a market value. She defined collective features, independent of their origin and protected not only old buildings, because of their great age, but also drew attention to more recent heritage. Now, this theory should be incorporated into a global educational project in order to disseminate it and improve the relationship between society and rationalism in all parts of the population.

In Spain, there are areas where this architecture has fallen into disrepute. However, "it is worth remembering that it was not like that in the beginning. It was the target of widespread welcome"¹⁴. In some cases, its values have been lost and it has not been reused because of external conditions. This kind of architecture started as a functional object and reflected a changeable society. Its obvious contemporary value has been unprotected in current cultural work. The previous lack of thorough analysis could have caused some incorrect modifications when new functions were being integrated into them.

Officially, these buildings have been listed, acknowledging their "cultural significance" (*Madrid Document*, 2011). You could say that the classification as heritage, based on their "authenticity", ensures this goal (*Nara Document*, 1994). However, frequently "conservation" (*Venice Charter*, 1964) has not managed to reuse them because it has not done as much as necessary to "make it useable" (*Burra Charter*, 1999). The understanding of rationalism should be correctly organised, because the theory is clearly identified and preserved, in spite of the fact that the objects are being continuously altered by external agents or facts which are looking for new roles or needs. It is unavoidable that the aura of buildings changes when they are modified. Their scientific, symbolic and use value evolves with every intervention work. Regrettably, reuse has not always been understood as a conventional

part of conservation or as a possible option (ICOMOS-TICCIH¹⁵). "In the search for utility, rationalist architecture agrees with functionalism. The premise is that functional result is form"¹⁶ and we need a wide theoretical knowledge about it to have the creative knowledge to change it.

The theory/practice relationship is unquestionable and reuse should be understood as an evolution. It reflects the ability to reconvert. It should be suggested as a development and not as a replacement, because it can provide a balance between the original project and heritage work. Incorrect usage could cause partial or total destruction. Use is a heritage value that is worthy of being preserved and recovered. Good intervention work should strengthen use, and understand that adaptability is a heritage issue, and it should be carried out by a scientific and multidisciplinary team. When you participate in a heritage project, "you cannot forget that an architectural object is defined as many objectives, which are used [...] to determine a special context"¹⁷. It is an extension of the concept of art. When you modify it, you should look for a good balance between the building's rules and the environment. A "dialogue of theory-creation is needed to intervene in heritage projects"¹⁸ because if you generate a social sense of belonging to rationalism, you can help to identify it and, at the same time, improve the object-public relationship. This work should be carried out with an understanding of previous artwork which has already been materialized. Kandinsky¹⁹ defined that the transformation of elements and the assessment of different actions is weak, like words, if they are not supported by energetic and open examples.

Some of the most obvious references are the rationalist school buildings, because this kind of buildings have had to evolve in order to continue with the same use. They have had to reduce classrooms, or increase the number of departments, in order to adapt to new educational demands. Furthermore, they have been able to do so thanks to their architectural concepts: structural modulation, orientation and flexible form. Generally, their overall functional diagram is their strongest part. Nevertheless, other buildings have lost their original uses and opportunities to be reused when original spaces and their ideas have been demolished. Maybe, the most fortunate are the residential areas whose morphologies continue having the same use and the most unfortunate are the forgotten administrative buildings: these objects are inevitably deteriorating because there is no social agreement to recognise them as heritage, and their values as evidence of buildings skills.

This kind of work on new heritage, related to its economic viability is unthinkable in the case of historical heritage. A Gothic cathedral will never be questioned or remain disused. The loss or replacement of rationalist spaces or buildings contradicts conventional theoretical thinking on conservation and sustainability. We are contradicting ourselves because we have not appreciated the guidelines established in its own theory.

In conclusion, there is a need to vigorously resist, disseminate and educate to avoid this negative action. Therefore, we can conclude that it shows a discrepancy between the theories and practice of reuse. The citizen/heritage relation-

ship is important for the voluntary appreciation of the meaning of rationalist buildings. "Identity and authenticity of reuse is born in a dynamic, social and participative process. People should observe, and even mistrust, pre-established heritage objects"²⁰. Obsolescence is the main quality to be avoided by a precarious heritage. Society should understand it in order to appreciate it, and avoid obstructing its natural development. An accurate cultural use is the best instrument to protect values and help the weakest heritage.

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- 3 Rudolf Arnheim, *Ensayos para Rescatar el Arte*, Madrid, C tedra, 1992, 182-183.
- 4 Josep Maria Montaner, *La Modernidad Superada: Arquitectura, Arte y Pensamiento del Siglo XX*, Barcelona, Gustavo Gili, 1997, 12.
- 5 With the expression "heritage action" I want to extend the meaning of "preservation action". Because, humbly, I believe that "preservation action" only includes architectonic aspects whereas "heritage action" makes reference to social, political or other non-academic points, which are also relevant. Personally, I only feel that we need to focus on a wider variety of aspects, which help to define heritage.
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Integrity and Authenticity when Restoring and Reusing Modern Heritage

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Although the reuse of old buildings has been common throughout history, it is only since the emergence of modern restoration philosophies during the 19th century that the functionality of historical buildings has been considered important in their preservation. Even in restoration debates during the 20th century, the functionality and the reuse of historical buildings were considered only occasionally. Yet, within the theoretical discussions on architecture, functionality has been one of the most central themes of the century.

The restoration – reversibility, physical and chemical compatibility, durability in changes and additions, differentiation of additions, and, finally, minimum action – all aim to guarantee the preservation of the material authenticity of the building. From the point of view of restoration principles it is unquestionable that the restoration process should always be focused on conserving the original material in order to maintain its authenticity.

It seems that the restoration principles are not sufficient when restoring modern heritage. It is evident that the ideology of the restoration principles, although endorsed by countless professionals and by international conventions and agreements, is focused on conserving historical buildings built in traditional methods rather than on restoring or reusing a modernist architecture that exemplifies material and technological innovation and diversity of architectural expression.

Can a modernist building or environment preserve its authenticity even if its original function has changed? The main issue in the reuse of modern heritage is not to find technical solutions or methodologies, but to understand the fundamental values and meanings of heritage buildings, as well as responding to the needs of society.

1. THE FUTURE OF HISTORY

Historical buildings – including modernist heritage – cannot be detached from the reality and the requirements of human beings of today, added to the fact that the functional use of historical buildings is essential for their preservation. The future of modern heritage is also partly depending on their functionality.

Although the reuse of old buildings has been common throughout history, it is only since the emergence of modern restoration philosophies during the 19th century that the functionality of historical buildings has been considered important in their preservation. Today it is an unquestioned fact that, in order simply to survive, historical buildings, whatever their origin, must adapt to new circumstances, to serve and fulfil the needs of contemporary society. The central question here is how one can carry out the various rehabilitation and restoration processes without destroying the original character – the authenticity and the integrity – of a building.

The aim of this paper is, firstly, to examine the restoration principles specific to the restoration of modern heritage, and secondly, to identify the necessary premises for safeguarding the integrity and authenticity of modern heritage when changes are made to its function.

2. FUNCTIONS FOR PAST, PRESENT AND FUTURE

In the restoration debates of the 20th century, the function and the reuse of historical buildings were considered only occasionally. However, in theoretical discussions on architecture, the need for functionality and rationality in buildings was one of the most central themes crystalized in Modern Movement and its ideology. Modern architecture embraced objectivity and truthfulness as its driving ideas. Buildings were supposedly designed and detailed to serve a precise usage, rationalized according to human dimensions and to the space needed for each function.

Even if the phrase “form follows function” of Louis H. Sullivan (1856–1924) has too often been misinterpreted, his eye widening and logical thinking helps us to understand the true purpose, the *raison d'être*, of architecture even today. For Sullivan “the building, to be good architecture, must, first of all, clearly correspond with its function...”¹.

Function was a reason for the existence of the building and a motive for its appearance, for its forms. The buildings had to correspond to the needs of human beings and of society as a whole: “...the true function of the architects is to initiate such buildings as shall correspond to the real needs of the people”². The truth of architecture lay in the relationship between the form and the use of the building and its context, as well as in the relationship between form, details, and materials. “Where function does not change, form does not change”³, Sullivan wrote.

Even if the buildings representing Modern Movement are far from uniform and homogenous, most of them embody a certain amount of flexibility enhanced by structural solutions that enables converting them for functions different from the original one. Presumably the intention of the original author would have endorsed the idea of keeping their buildings alive by converting them to new uses when the original ones had become obsolete.

3. THE UN-EQUALITY OF THE RESTORATION PRINCIPLES

The restoration principles – reversibility; physical and chemical compatibility; durability of changes and additions; differentiation of additions; and, finally, minimum action – all aim to guarantee the preservation of the material authenticity of a building. Their origin lies partly in the illustrious 19th century restoration ideologies of John Ruskin (1819–1900) and Viollet-le-Duc (1815–1879) as well as in iconic restorations such as that of the Colosseum and the Arch of Titus in Rome⁴. Interestingly for Viollet-le-Duc it seemed self-evident, that the best way to conserve an edifice was to find a use for it⁵. Later on, the various principles of restoration were endorsed by professionals and by international conventions and agreements, of which the *Venice Charter* (1964) has undoubtedly been the most influential. This also recommended the reuse of monuments to ensure their conservation even if with quite hard restrictions⁶.



FIGURE 1. Martta Martikainen and Märtha Lilius-Tallrothin, Taivallahti barracks, Helsinki, Finland, 1935–1939. © Miia Perkkiö, 2016.

One of the restoration experts behind the formulation of the *Venice Charter* was Cesare Brandi (1906–1988). In his view, the value of a “work of art”, as the result of a unique and creative process, depended crucially on originality in its material substance. Therefore, restoration had to focus exclusively on the material, “*si restaura solo la materia*”⁷. Misunderstood or not, one could interpret Brandi’s theory as a contradiction to the restoration practices of modern architecture as well as to the reuse of monuments. In fact, Brandi’s thinking is justifiable from the point of view that the complexity of restoring modern heritage and, generally, the need for conserving modern heritage at all, were still far beyond the horizon when Brandi’s *Teoria del Restauro* was first published in 1963.

Anyhow, from the point of view of restoration principles it is undeniable that heritage interventions should always focus on conserving the original material that enables maintaining the authenticity. It is evident that the principles of restoration tend to be focused rather more on conserving historical buildings, built in traditional methods, than on restoring or reusing modern architecture, with its innovative materials and technologies – the conservation of which has in many cases approved to be impossible – as well as different kinds of architectural expressions.

It is obvious that the restoration principles and methods of modern architecture differ intrinsically from the principles applicable to conserving and restoring buildings of previous periods. Therefore, the conditions for authenticity of modern architecture cannot depend simply on conserving the original material.

4. AUTHENTICITY AND ADAPTATION

There is no reason to suspect the authenticity of the Colosseum, despite the fact that its original function disappeared many centuries ago, and that its original material and structure has been replaced in various places. The monuments of Antiquity have not survived because of a will to preserve them for future generations but because of their ability to adapt themselves to new situations and to new uses. De facto the question if a modernist building or built environment can remain authentic if its original function has changed, is not relevant. Why should we doubt for a moment that a factory complex from the 1940, converted into a court-house, can still be authentic? Or take the case of a Helsinki office building from the 1970s which has been converted into an apartment block: can we seriously call this untruthful or inauthentic, at a time where there is a huge need for homes in the Finnish capital, and when there is a huge glut in the market for office spaces in the city?

The traditional – or modern – restoration approach, with its prioritizing of restoration of the original material in order to guarantee authenticity, is clearly inapplicable to the restoration of modern heritage. The most crucial question when seeking new functions is not how to carry forward the restoration process and ensure material authenticity, but how to maintain the integrity of the building in a situation where the relationship between the new function and the building in its context is to be re-created.



FIGURE 2. Keijo Petäjä, Kone headquarter, Helsinki, Finland, 1973. The former office building situated in the middle of Munkkiniemi garden suburb will be turned into apartments. © Miia Perkkiö, 2013.

5. CONDITIONS OF REUSE

The tests of authenticity and integrity have taken root as qualifying prerequisites for World Heritage designation. While the concept of integrity is normally assumed to connote wholeness and “unbrokenness”, Jukka Jokilehto has described it and the significance of functional integrity as follows:

Functional integrity is particularly obvious in the case of an industrial site, such as a factory, but it is equally relevant in urban fabric. Functional integrity provides the reference for the understanding of the meaning of the different elements in built environment⁸.

Since the restoration principles that determine the conditions of restoration, the equally the principles for reuse of built heritage could work as a tool for evaluating alternative types of new functions, as well as their consequences.

Even if the conditions of restoration principles cannot be completely fulfilled when restoring modern architecture, the conditions for functional integrity are valid for buildings of different origins, including modern ones. Examining the factors that have an impact on the relationship between the original function and the new, planned one can be very instructive from the point of view of functional integrity⁹.

The Characteristics of Changed Function

Changing a function always involves alterations to room distribution and to a layout of original design. For example, in factories, the machinery and the equipment are moved away, and in consequence, the building loses at least a part of its functional integrity. In the luckiest cases the changes can be quite limited and the need for demolition and addition can be minimal. Normally, these minimum changes include, at the very least, adjustments for accessibility and safety regulations.

In many cases the original function seems to remain readable and visible in both construction and in overall layout. The same applies to the exterior of the building. When observing the relationship between the context and the building, it is essential to maintain this equilibrium. Furthermore, the traces of original function should remain visible at least to a certain extent.

An interesting example from the point of view of functional integrity is the Taivallahti vehicle company complex in Helsinki, dating from the 1930s and designed by the young architect Martta Martikainen (1904–1992) for military purposes, and especially for vehicle company’s functions, including barracks, garages, petrol station and workshops. The layout and distribution of different functions was extremely rational and efficient, and considerations of hygiene and durability dominated the selection of materials and surfaces. Now the complex will be renovated for new uses as loft apartments, senior housing, restaurant and supermarket. It is evident that, in the case of Taivallahti respecting the restoration principles in this rehabilitation project would be effectively impossible. From

the point of view of functional integrity, it is inevitable that original detailing, surfaces and room distribution will be lost, but the overall layout will remain. Furthermore, the Töölö housing district, within which the Taivallahti complex is situated, will benefit markedly from the development.

6. THE IMPRINT OF MEMORY

The main challenge in the reuse of modern heritage is not that of finding technical solutions, but of responding to the needs of society through an understanding of the conditions for the functional integrity of modern buildings. More attention should be paid to the significance and meanings of the original building: the integrity of the modern heritage it is above all the imprint of the memory of original building and its functions that must be preserved.

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NOTES

- 1 Louis H. Sullivan, *Kindergarten Chats and Other Writings*, New York, Dover Publications, 1979, 46.
- 2 *Ibid.*, 139.
- 3 *Ibid.*, 208.
- 4 See Jukka Jokilehto, *History of Architectural Conservation*, Oxford, Butterworth-Heinemann, 1999.
- 5 Eugène Viollet-le-Duc, "Restauration", in *Dictionnaire Raisonné de l'Architecture Française du XI^e au XVI^e Siècle VIII*, Paris, Imprimerie de E. Martinet, 1866, 31: "D'ailleurs le meilleur moyen pour conserver un édifice, c'est de lui trouver une destination, et de satisfaire si bien à tous les besoins que commande cette destination, qu'il n'y ait pas lieu d'y faire des changements".
- 6 ICOMOS, *The Venice Charter*, www.icomos.org/docs/venice_charter.html. The conservation of monuments is always facilitated by making use of them for some socially useful purpose. Such use is therefore desirable but it must not change the layout or decoration of the building. It is within these limits only that modifications demanded by a change of function should be envisaged and may be permitted.
- 7 Cesare Brandi, *Teoria del Restauro*, Torino, Einaudi, 1977, 7.
- 8 Jukka Jokilehto, "World Heritage: Defining the Outstanding Universal Value", *City & Time* 2, 2006, 2-3, <http://www.cec-br.org/novo/revista/docs2006/CT-2006-45.pdf>.
- 9 See Miia Perkiö, "Utilitas restauroinnissa. Historiallisen rakennuksen käyttötarkoituksen muutos ja funktionaalinen integriteetti", *Acta Universitatis Ouluensis*, Oulu, Oulu University Press, 2007.

Beyond Materiality: Design as Heritage

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According to traditional conceptions of architectural preservation, the materiality of a building has been considered the focus of operations aiming at its conservation. However, in the case of modern heritage, a building's design is arguably as important as its material substance.

Before a set of information registered on paper become a project, the history of architecture was engraved in stone. Conserving interventions in pre-modern architectures could only rely on the materiality of a building available as a guideline for the procedures to be adopted.

By contrast, modern heritage conservation has chiefly attributed primacy to a building's design, which makes possible its restoration to an original condition or even a "complete state that may have never existed". Furthermore, the proper filed design enables the reconstruction of destroyed buildings or, in rarer cases, the replication of entire ensembles.

The very concept of renovating, completing, reconstructing and replicating buildings implies that their design is a heritage able of being safeguarded, and thus the integrity of original materials becomes a secondary issue in such operations. Projects aiming at renovation of modern buildings seem, on the whole, to favour chiefly the aesthetic recovery or maintenance of plasticity and spatiality rather than the concern in adopting former techniques. Moreover, replacements and reconstructions of modern iconic structures often employ newer and more efficient technologies, even when the original forms are to be maintained. All this seems to indicate that, in these cases, architecture matters more than construction, and that the fear of false history is today giving place to an acceptance of co-existence between both historical and newness values in the same building.

This paper will argue that design is a legacy to be protected, both in relation to external interventions in historic modern architectures as well as to new theories about the preservation of modern architectural heritage.

1. THIS WILL KILL THAT?

Formerly, the meaning of heritage was associated with inheritance, in the sense of a set of possessions to be transmitted according to a succession of hierarchy. Originally, therefore, the term did not evoke *a priori* antiquity condition or exceptional quality, nor differentiate between true or false categories – all issues which become prominent when heritage becomes bound up with cultural, artistic and historical values.

Although there was heritage, assuming, of course, a greater economic relevance.

Although finding precedents in classical antiquity and the renaissance, the modern notion of cultural heritage dates back to the 18th century, from the need for technical and legal inventorisation and protection in the wake of the French Revolution¹. The term "historical monument" was first conceived in these circumstances, which also set in train a process of theoretical reflection about the intrinsic values that could elevate the status of a building to that of a heritage worthy of preservation. As such qualities are epitomised by buildings' materiality, it was that that was thought most worthy to be saved. This, therefore, was about real conservation - something very different from the iconographic con-

servation practiced through drawings until the mid-18th century. According to Françoise Choay, “from the 16th century, antiquarians and architects passionately studied Graeco-Roman remains, particularly those of Provence. However, even if at that time they bemoaned its degradation, its neglect or its demolition, only a tiny minority wished to pursue its protection in situ”.²

Choay³ observes that *Grand Tour* participants – antiquarians and other scholars – were significantly engaged in the survey of ancient Greek and Roman ruins, recording their conservation status in detailed drawings, which, by means of the newly-emergent graphic reproduction technologies, became rapidly widespread and reproducible. In that context, one can argue that the task of conserving built heritage belonged to iconography, while its materiality, relegated to the background, would inevitably perish due to the effects of time⁴.

This part of the antiquarian's work was similar to the portrait: recording the current state of a building or ruin, ensuring the permanence of its image, even if only on paper. In a way, this practice anticipated the statement of the archdeacon Frollo in *Notre Dame de Paris*: “This [the book] will kill that [the building]”⁵. The character created by Victor Hugo for his novel, set in the 15th century, predicted that the newly invented printing-press would kill stone architecture both as a communication and a means of historical record.

2. LIMESTONE HERITAGE

After the 18th century, however, the economic value of heritage became more relevant. Thus, materiality became increasingly important and conservation meant primarily the physical maintenance of stone and limestone, not just their representation.

From the early 19th century, the need to preserve the materiality of monuments became consensus, but the recommendations on the procedures for conservation of the architectural heritage. Two distinct approaches were dominant: the conservatism of John Ruskin and the interventionism of Viollet-le-Duc. Yet although antagonistic in their modes of operation, both had in common the premise of recognizing the building itself as the main starting point.

Conserving or restoring interventions in pre-modern architectures, they both argued, should therefore rely only on the materiality of a building as a guideline for the procedures to be adopted. The most renowned restoration theories of those years stemmed from this ideology, which shaped the world-outlooks of scholars such as Camillo Boito, Gustavo Giovannoni and Cesare Brandi.

The discourses and specific recommendations on how to deal with heritage vary between these authors, but all of them had a common purpose, in which the materiality of the building was recognized as the focus of restoration operations as well as the main criterion of its authenticity.

But when we pass on to modern heritage, this assumption needs to be shared with – or even replaced by – the centrality of design, which can also be highlighted



FIGURE 1. Jan Duiker, Bernard Bijvoet and Jan Gerko Wiebenga, *Zonnestraal* Sanatorium, Hilversum, The Netherlands, 1920s. Restoration by Wessel de Jonge and Hubert-Jan Henket, 2001-2009. © Ana Carolina Pellegrini, 2012.

as an element worthy of safeguarding, and which can be of significant help in the conservation of modern heritage.

In this, we are not talking about any kind of return to the relationship between iconography and built work assumed by the Enlightenment antiquarians. What is at issue in the present discussion, as argued by Robin Evans⁶, is to acknowledge within design the principle of “inverted direction”: the fact that, in modern times, architecture stems from the ‘project’, and not the opposite, as was the case, for example, with Piranesi’s engravings.

3. PAPER HERITAGE

As it becomes increasingly complete and accurate, the information-set that constitutes the design can become both a point of reference about a present-day building designed in the past, and also a timeless resource for a future materi-



FIGURE 2. Gerrit Rietveld, *Rietveld Aula*, Zwaanshoek, The Netherlands, 1959. Reconstruction by Bertus Mulder, 2000s. On the left side, Bertus Mulder can be seen explaining the new bricks used in the reconstruction. According to him “The reconstruction is better and more beautiful than the original building”. © Ana Carolina Pellegrini, 2014.

alization of a former idea, allowing the latter to reach a “complete state that may have never existed”. Furthermore, a properly-documented design can make possible the reconstruction of destroyed buildings, or, more rarely, the replication of entire architectural settings.

We can assume, therefore, that the processes of renovating, completing, reconstructing and replicating a building all imply that its original conception – and not just the fabric as it survives today – are a heritage that one can meaningfully safeguard – so long as the material authenticity becomes a secondary issue in these operations.

Acknowledging the design – and not just the building – as heritage implies assuming that both are temporally and spatially independent of one another. As Alfonso Corona Martínez argued, “The design process involves a series of operations that result in a model, from which a building will be copied”⁷. The author, however, does not indicate when, or how often, this copying process may, or will, occur – which leaves an open possibility for the coexistence of more than one copy. From there on, one could develop further the analogy between architecture and the reproducible arts – such as bronze sculpture – whose conventions allow for the extraction of several copies from a single mould. Once we accept that a building is a copy of a project, the latter then rises to the category of “original” – which always commands a higher value than its copies. Moreover, as there is no time-limit on the validity of the original design, these replications might be made at different times – even in the absence of its author.

However, even if the design could be accepted as a template and the building as its copy, we can be certain that neither of them is diminished or neutralised by this relationship in itself, but, rather, is related to a vast array of variables and constraints, such as place, time, weather, programme, or users. One could arguably speculate that, to produce more than a faithful copy of a building, one would

also need to replicate all these conditions. However, as explained earlier, the project's relationship to the reproducible arts is similar, not identical. Within the built environment, paper can effectively contribute to preserving stone.

Moreover, copies and complete reconstructions are extreme operations, normally confined to exceptional cases. They do, however, help illustrate the prominent role assumed by design within the modern heritage, even in the context of less radical renewal procedures.

4. EXTEMPORANEOUS ARCHITECTURES

Projects aiming at renovation or reuse of modern buildings often seem to favour recovery, or maintenance, of plasticity and the spatiality as against adoption of former techniques. Moreover, replacements and reconstructions of modernist icons are often made with newer and more efficient technologies, even when maintaining the original forms.

Remarkable projects such as the restorations of the *Zonnestraal* Sanatorium, the *Villa Savoye*, the Van Nelle Factory, the Schröder House, and many others seem to indicate that, regarding modern architecture, the principle of clear distinction between the new and old (or "original") parts, stated by Camillo Boito⁸ but so far prevailing in the restoration of pre-modern architectures, is now giving way to other priorities.

In reuse, restoration or reconstruction of modern heritage projects, it increasingly no longer seems to be a serious misconduct to imitate the building's initial condition, even if using new materials. This shift in values is partly explained if we take the view that the design (which defines the form and the spatiality of the building) is the real heritage, and that it is its degree of excellence (as recorded on paper) that justifies our interest in its preservation. The real heritage, then, becomes the design, not the building. Moreover, the concept of authenticity increasingly stems more from the correspondence between the image resulting



FIGURE 3. Louis Kahn, Four Freedoms Park, New York, USA, 1973-1974. Mitchell/Giurgola Architects, 2012. © Ana Carolina Pellegrini, 2015.

from intervention and the image originally conceived, than with the use of original techniques and materials.

Thanks to this relative freedom in tackling modern heritage, new modern architectural setpieces are often better than the originals. Examples are reconstructions such as the German Pavilion by Mies van der Rohe, rebuilt in Barcelona, in 1986; the Rietveld *Aula*, replicated in *Zwaanshoek*, in the 2000s; the *Sonsbeek Pavilions*, by Aldo van Eyck and Gerrit Rietveld, rebuilt in Otterlo, in 2006 and in 2010, respectively; or the pioneer reconstruction of *L'Esprit Nouveau* Pavilion of Le Corbusier, reconstructed in Bologna, and opened in 1977.

Taken to its extreme, this conception of design as heritage could further exploit the building of anachronistic new constructions as a way to bring to light projects of modern architecture previously only confined to paper. Although even more uncommon, this kind of operation depends both on the level of detail of the old design and on the new architect's ability to interpret, adapt or assume the intentions of the old master. Commissions of this nature have always been controversial, but that has not prevented their realization, as in the case of the Massaro House, originally designed by Frank Lloyd Wright in 1950 and built by Thomas Heinz, in 2004; and, more recently, the example of Louis Kahn's Four Freedoms Park, originally designed in 1974 and finally inaugurated posthumously in 2012, in New York.

5. TRULY OLD, TRULY NEW

This kind of architecture may, of course, be accused of being both falsely old and falsely new, and of being divorced from the spirit of the time. In relation to Riegl's concepts⁹, however, it is ambiguous, because it combines the historical value (of the design) with the novelty value (of the construction).

It seems, after all, that the key issue is precisely to accept that the design genuinely is a heritage to be protected. Based on this premise, the operations listed above are, to be sure, distinctly extreme ways of preserving architectural heritage. They are eminently conservative operations, yet absolutely audacious in challenging, figuratively speaking, death and malformation, the linearity of time and the fragility of the world. Our conclusion, in cases such as these, must be that architecture matters more than construction, and that the fear of false history is giving place to acceptance of a necessary coexistence between historical value and newness value within the same building.

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- 1 The historiography of the cultural monument as well as of the conservation of architectural heritage was recently traced by authors such as Jukka Jokiletho and Françoise Choay, through works like *A History of Architectural Conservation* (1999) and *L'Allegorie du Patrimoine* (1992), respectively.
- 2 Françoise Choay, *Alegoria do Patrimônio*, São Paulo, Estação Liberdade/Editora UNESP, 2001, 91. Free translation.
- 3 *Id.*
- 4 "Whether it is a matter of antique or medieval buildings, these saturated images of the ruin taste and ideology do not propose any intermediary between this ruin, which itself has an ephemeral value, and the monuments preserved by a social use (Pantheon, great basilicas and cathedrals).", *Ibid.*, 90. Free translation.
- 5 Victor Hugo, *O Corcunda de Notre-Dame*, São Paulo, Martin Claret, 2006, 167. Free translation.
- 6 Robin Evans, *Translations from Drawing to Building and Other Essays*, Singapore, MIT Press, 1997.
- 7 Alfonso Corona Martínez, *Ensayo sobre el Proyecto*, Buenos Aires, Libreria Técnica CP67, 1990, 15. Free translation.
- 8 "It is necessary that the completions, if necessary, and the additions, if they cannot be avoided, make clear that they are not ancient works, but works of today", Camillo Boito, *Os Restauradores*, Cotia, Ateliê Editorial, 2004, 61. Free translation.
- 9 In his remarkable work, *The Modern Cult of Monuments*, Riegl (1903) carried out a historical overview of restoration principles and discussed transformations in the concept of the monument, relating it to the notion of time, of future and of historical testimony. The text recognizes the "historical" and the "age" values of monuments, but also, innovatively, assigns relevance also to contemporary values.

CIAM Revisited

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Active from 1928 to 1959, CIAM associated architecture and town planning. Its foundational document defined town planning as the organization of the functions of collective life in the countryside as well as cities, through control over land subdivision, legislation and regulation of traffic. The Declaration of La Sarraz identified the key urban functions as habitation, work, and recreation, articulated by circulation. There was a progression of scale in the themes of subsequent conferences: *The Minimum Dwelling* in CIAM II, 1929; *The Rational lot Development* in CIAM III, 1930; *The Functional City* in CIAM IV, 1933. Although the idea of a town planning charter distinct from simple proceedings was not stated until CIAM V, 1937, on *Dwelling and Recreation*, the basic specifications of a functional city were delineated in *Constatations*, which was published three months after CIAM IV was held, treating circulation as another key function. “*Can our Cities Survive?*” by José Luis Sert, 1942, and “*La Charte d’Athènes*” by CIAM France – Le Corbusier, 1943, reiterated and commented on these requirements. Sert expanded them by adding the need for a civic centre besides neighbourhood units, industrial and recreational areas, business centres and connecting highways. Arguably, CIAM had not cared earlier about an urban core endowed with civic expression because it was not seen as a pressing problem before the destruction of historic centres by war in Europe, and heritage conservation was approved of in the three versions of what can be called the CIAM town planning charter.

Traditionally associated with government and assembly buildings, the idea of an urban core had dual overtones. The *Heart of the City* for CIAM VIII, 1951, implied that government, maybe politics, was the fifth key function. Its territoriality contrasted with the understanding of habitation, work, recreation and circulation as acts, showing that the territorial translation of the 4 functions was not contrary to the traditional division of the city into districts or neighbourhoods. CIAM thought that the functional city should be zoned by major land uses, and asked for the location of industries along the railroad, the canal and

the highway, separated from residential areas. Still, the *Charter* speaks of residential districts as well as business districts for public and private administration. It supports the establishment of communal facilities – school buildings, welfare centres, and playing fields – within the immediate proximity of the dwelling to form its extensions. Small industries of a handcraft character like dressmaking should occupy the most active points of the city. The *Charter* was mostly advocating a dominant land use and compatible ancillary ones rather than an exclusive land use. Insistence on the proximity of places of work and residence showed awareness of the importance of grain in city plans. It recognized both pressures for separating different land uses and pressures for drawing them near. Indeed, the *Charter* was vehement in its condemnation of both dormitory suburbs, to be renewed, and slums, to be razed. It was also vehement in its condemnation of the corridor street, to be replaced by the bi-dimensional road, specialized by capacity and type of motorized traffic. The functional city should reconcile the automobile and the pedestrian, taking advantage of level changes to avoid conflicts between them. The favoured unit of territorial subdivision was the undivided superblock, filled with tall buildings, raised on *pilotis* over a green sward and freely disposed in relation to the street network. The city was in the park instead of the park in the city. But single-family houses were not ruled out. Neither CIAM doctrine nor practice shunned typological diversity, although the functional city of the automobile was to be radically open in opposition to the crowded, claustrophobic city of the railroad.

CIAM became a dirty word around 1970. Agoraphobia set in, and it was forgotten that the city of the corridor-street and the square as public living room was as corruptible as the city in the park. Small was beautiful, bikes were cool, diversity and integration grew into catchwords, and both town planning and architecture became suspect of the worst offenses. But what if Jane Jacobs were not right after all, in both her critique and alternatives, Greenwich Village for everybody everywhere, *laissez-faire* instead of planning, and infrastructure taken for granted? So the aim of this session is to discuss the possibility of continued use and adaptive reuse, in a contemporary context, of urban and architectural design concepts put forward by CIAM members. The session welcomed papers that question the anti-CIAM wisdom still conventional today in light of a balanced assessment of past failures and success stories, as well as reasoned experiments from the 1980s onwards. Two main sub-themes were envisaged: one, reflections on the CIAM doctrine and its points, as presented in written documents and either corroborated or inflected by modern practice when the organization was operative, including CIAM 1959 at Otterlo; two, case studies dealing with projects that self-consciously or not took the CIAM doctrine as its positive reference and both altered and expanded its scope from the 1980s onwards in the Americas and Europe. The 5 selected papers will be delivered according to a chronological succession of content. The session will begin with Tilemachos Andrianopoulos on “Athens Charter II – a Dialectic Grid”, which Greek architect Ioannis Despotopoulos or

Jan Despo presented at the CIAM Sigtuna meeting in 1952, but whose story begins at CIAM IV, aiming at improvement within continuity. The 2 papers that follow deal with the 1950s, both involving the work of van den Broek and Bakema. Mara Eskinazi's paper is about "Bakema and Scharoun Revisited through post-war CIAM Urbanism", featuring Jaap Bakema's Pendrecht (1948-53) along with Hans Scharoun's Charlottenburg (1954-61), and giving the audience the opportunity of discussing differences and convergences between modern residential zones and traditional neighbourhoods. Afterwards, Lucas Van Zuijlen and Frans Hoykaas will talk about van den Broek and Bakema's "De Lijnbaan (1949-1953), Rotterdam, and its Conservation", with the discussion focusing on the impact on liveability of the geometrical relationships between shopping street and adjacent housing yesterday, today and tomorrow. Javier Monclus and Carmen Diez Medina will examine in a more panoramic way "Modernist Mass Housing Estates in Spain: Best, Good, Standard, Poor 1950-70", focusing on the "lack of urbanity" of the majority of the reviewed examples from the 1960s onwards. The session will finish with Claudia Cabral, "On Circulation: Lina Bo and CIAM's fourth Function", which features a most interesting 1982 project updating the engineering/landscape architecture tradition of mingling freeways and urban parks, providing the opportunity to discuss both car-related pollution and sustainability.

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The Athens Charter II: A Dialectic Grid

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Ioannis Despotopoulos or Jan Despo (1903-1992) – the only Greek student of the Bauhaus, a second-generation militant modernist, a socialist, and a founding member of the Greek CIAM team – criticized Le Corbusier’s metropolitan proposals in a text published during CIAM IV in the *Annals of the Technical Chamber of Greece* 3 months before “Constatations”, the first version of the *Athens Charter*. Concurrently with the congress, Despo was commissioned to plan the rebuilding of Irissos, a small town destroyed by an earthquake. Essentially hippodamian, his plan questioned the autonomy of urban functions – circulation in particular – envisioning the city as an ideologically driven community. In his writings Despo presented urban planning as inseparable from both regional planning and architecture itself – according to a strict socialist ideology. Dismissed from his professorship in the National Technical University of Athens due to his political convictions, Despo moved to Sweden. In 1947, while the ASCORAL-Corbusier grid is developed, Despo conducted a study for a city of 3,000,000 inhabitants forming the new “Gross-Karachi” in Pakistan. This plan of a federative urban organism was his first attempt to implement, in reality, his *Athens Charter II*: a second version of the programmatic urban planning *Charter* – also in the form of a grid. The *Athens Charter II* was presented, along with the Karachi plans, during the CIAM meeting of 1952. The Sigtuna meeting – mainly attended by the “younger generation” – proved to be crucial for the future – or dissolution – of CIAM. An attempt to dialectically evolve the pre-war work of CIAM, Despo’s proposal seemed opposed to that presented by the young Georges Candilis, who was polemically promoting a *Charter of Habitat* in order to replace the *Athens Charter*. The paper addresses the synthetic qualities of Despo’s relatively unknown programmatic grid, while focusing on urban planning case studies in Sweden, Pakistan and Greece.

THE CHART OF ATHENS II									
I	SUMMARY REVIEW OF THE PHYSICAL STRUCTURE OF THE COUNTRY			THE BASIC FUNCTIONS			THE TOWN		
	THE PHYSICAL STRUCTURE OF THE COUNTRY			THE BASIC FUNCTIONS			THE TOWN		
a	THE PHYSICAL STRUCTURE OF THE COUNTRY			THE BASIC FUNCTIONS			THE TOWN		
b	THE PHYSICAL AND SOCIAL STRUCTURE OF THE COUNTRY			THE BASIC FUNCTIONS			THE TOWN		
c	THE PHYSICAL AND SOCIAL STRUCTURE OF THE COUNTRY			THE BASIC FUNCTIONS			THE TOWN		
d	THE PHYSICAL AND SOCIAL STRUCTURE OF THE COUNTRY			THE BASIC FUNCTIONS			THE TOWN		
e	THE PHYSICAL AND SOCIAL STRUCTURE OF THE COUNTRY			THE BASIC FUNCTIONS			THE TOWN		
f	THE PHYSICAL AND SOCIAL STRUCTURE OF THE COUNTRY			THE BASIC FUNCTIONS			THE TOWN		
g	THE PHYSICAL AND SOCIAL STRUCTURE OF THE COUNTRY			THE BASIC FUNCTIONS			THE TOWN		
h	THE PHYSICAL AND SOCIAL STRUCTURE OF THE COUNTRY			THE BASIC FUNCTIONS			THE TOWN		
i	THE PHYSICAL AND SOCIAL STRUCTURE OF THE COUNTRY			THE BASIC FUNCTIONS			THE TOWN		
j	THE PHYSICAL AND SOCIAL STRUCTURE OF THE COUNTRY			THE BASIC FUNCTIONS			THE TOWN		
k	THE PHYSICAL AND SOCIAL STRUCTURE OF THE COUNTRY			THE BASIC FUNCTIONS			THE TOWN		
l	THE PHYSICAL AND SOCIAL STRUCTURE OF THE COUNTRY			THE BASIC FUNCTIONS			THE TOWN		

FIGURE 1. Jan Despo, *The Chart of Athens II*, 1952. © Neohellenic Architecture Archives, Benaki Museum, Athens.

1. CIAM IV (1933)

On August 1st, 1933, 2 days after Le Corbusier's speech in Athens, Despotopoulos¹ publishes, in the *Annals of the Technical Chamber of Greece*, an article entitled "Πολεοδομική"², or "Urban-Planning". Socialist Despo claims that the "transition from the city of natural growth to the planned city means transition to the geometric city"³ and requires that "the State or City authorities claim land possession and exclude any private initiative."⁴ He thus prefigures by 3 months the last sentence of "Constataions"⁵ and, by one decade, article 95 in Le Corbusier's *La Charte d'Athènes*: "Private interest should be subordinated to the collective interest"⁶. Despo praises contemporary soviet city plans by E. May, N. Ladovski or B. Lavrov, sharing their distrust of the metropolis⁷. Le Corbusier wants, instead, to fix the big city, the metropolis, the womb and offspring of capitalism and bourgeois individualism, therefore he deems circulation and traffic management to be crucial issues. Despo criticizes the *Ville Contemporaine* (1924) in Πολεοδομική: "Le Corbusier's project [...] is eminently compacted: there is going to be heavy congestion and traffic gridlock in the centre, where the skyscrapers rise, despite the proposed broad circulation areas and squares. [...] When planning new settlements, socialist principles favour the dissolution of big cities"⁸. In the *Charter of Athens II* proposed by Despo in Sigtuna almost 20 years later, the role of circulation is greatly reduced, considered mere infrastructure, while the "ideological physiognomy of the city"⁹ is proposed as the 4th main function.

2. IERISSOS (1935)

2 years after the congress, Despo's plan for Ierissos is approved¹⁰. 2 main axes divide the city into four asymmetric sectors. Approximately 700 long and narrow housing plots are planned for 4000 people. Administrative, religious, cultural and recreational equipment are disposed around the intersection of the axes. The orthogonal rigour of the essentially Hippodamian grid seems mitigated by the adjustment to the field's topography to the south, as well as by the complex interweaving of open spaces and buildings in the civic core, which includes cultural, recreational and religious facilities along with a 100 × 90m agora, defined by two diagonally opposed L-shaped galleries. The crossing axes are planned – as Despo notes – "in the midst of organic functions and not the opposite, the urban functions defined along circulation routes"¹¹ "In the midst of" instead of "along" puts an emphasis on the "hierarchy of functions"¹². The composition of the core comes first, carefully incised circulation follows. In his 1944 theoretical study entitled "Settlement" he expressed further his distrust on the modernist supremacy of circulation: "The infinite blocks and the so called 'street layouts', no matter how neatly set, are no different from the amorphous and random cities. The city plan is the compositional conformation of the conscious functions of social life, of economy and of its world-view status"¹³.

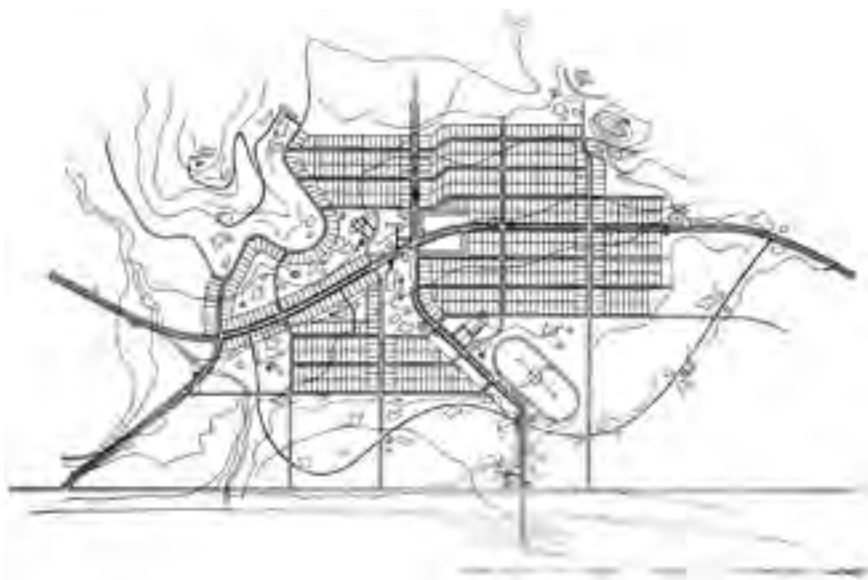


FIGURE 3. Jan Despo, plan of Lerissos, 1933. © Neohellenic Architecture Archives, Benaki Museum, Athens.

3. SKELLEFTEÅ (1946)

By the end of the war, Despo¹⁴ moved to Sweden where he worked on cultural centres in various cities¹⁵. For some of them he also prepared urban planning studies, such as for *Skellefteå* – a riverfront city. Of particular interest is the comparison of an urban block with an irregular internal structure with a perimeter block and a block featuring parallel building rows. A question mark fills the fourth square. As noted, the first case “in spite of the density and irregularity presents a higher architectural value and is more economical than the cases B and C”. Despo proposed, at the same time, a combination of building on the perimeter but also in rows, wherein each block is treated as a unique composition. The combination of uses is far from being clearly defined per building block and comprises a mix of administrative buildings, industrial and manufacturing facilities, shops, residential and collectivist blocks, and community functions. All blocks have the same, 10 metres width and are 4-5 storeys high. The whole maintains a complex unity, whose urban quality is inseparable from the purely architectural.

4. KARACHI (1947)

Despo worked on a series of drawings for the creation of a new Pakistan capital city: Karachi¹⁶. “The ‘new city’ of the new society did not succeed to materialize in Europe. It will first emerge somewhere in Asia as a historical fact and indeed *through the collective urban-generative forces* of the people that reside there and

are capable of implementing a historical necessity”¹⁷. The text’s chapter that elucidates the drawings is entitled “The new organism of Great-Karachi”. In fact, it is not about the creation of a capital – namely of one – city but of ten distinct ones: A “Hochstadt” of 1 million, an administrative city of 200,000, 4 productive cities of 200,000 and 4 of 300,000 inhabitants respectively which are articulated by means of a “cellular” planning around the curves of the Lyari River. The non-grid composition of the revolving cells entails the creation of an equally curvilinear circulation circuit that remains humbly subordinate to the city cores. The 200,000 inhabitant city is inscribed in a 2.4 × 2.4 km square while the 10 community-cities are considered distinct, socially dense, autonomous entities. “Consequently a federative city, a federative entity will be configured out of the main ‘Hoch’ city and the organically surrounding urban entities”¹⁸. The prototype for the geometric form of each city-community results by its symmetrical initial division into four quarters around a central nucleus or “hauptzentrum”: This is the principal space of collective political and cultural life of a community-city which is nevertheless structured around 20 more centres: 4 peripheral centres and 16 neighbourhood centres¹⁹. Their size, inscribed in the morphological simplicity of a rectangle, gradually decreases: from 300 to 200 to 100 metres. 16+4 “agorae” rotate around the central nucleus.



FIGURE 2. Jan Despo, Plan of the organism of Great-Karachi, c. 1947.
© Neohellenic Architecture Archives, Benaki Museum, Athens.

5. SIGTUNA (1952)

Late June – and with the resounding absence of the old guard²⁰ the preparation of the 9th CIAM congress took place, but with a strong presence of the young:²¹ “the Sigtuna meeting was the first CIAM meeting where the split between the younger and middle generation of CIAM first became evident”²². Despo²³ presented his study for Karachi, the *Charter of Athens II*. The first was essentially the design implementation of the *Charter*²⁴. Despo called a *Charter* a new grid rather than a new text: the four basic functions “habitation-work-leisure-circulation” that defined the horizontal axis of the grid, invented by the Ascoral Group in 1947, are replaced by “economic life” (instead of work), “collective life” (instead of leisure), “urban co-habitation” (instead of habitation) and “polis”, “the ideological physiognomy of the town”. The latter is necessarily expressed through the first 3, while, as a whole, they form “social co-habitation”. On the horizontal axis – apart for the basic 4 – new categories of the “the physical structure of the country”, “the physical and social conditions of the human life”, “the social welfare”, and “the technical equipment” are

introduced, incorporating traffic, which was abolished as a main category as it was considered as mere infrastructure. In the vertical columns Despo retained some of the 12 categories of the Ascoral grid²⁵ but changed the other categories – introducing at the same time crucial subcategories²⁶. Categories III to VI are all novel: Category III or “Procedure for a change in the town structure” incorporates “the influence of the past”, “the present situation” and “aspirations and tendencies” in order to conclude at “the imposed”: urban-planning as the spatial imprint of an historically driven necessity²⁷. Category IV or “The rationalization of functions” addresses the need for a dialectic correlation of the “ethic good”, the “right” and the “aesthetic” in the design process²⁸. Category V or “The Cosmotheoretical order of functions” aims at a hierarchical conformation of the functions of the collective and the private sphere²⁹. Category VI or “The Priority of functions” addresses the issue of a proper time-programming of functions, according to the current socio-economic needs. In this grid the urban phenomenon is not envisaged as just a sufficiently functional “polis-like formation”³⁰, but as an ideologically structured “polis”, while it reflects two intentions of Despo: firstly, that the clearly more complex new *Charter* acquires as he noted a “resiliently dialectic” structure, adaptive to the post-war data following its first polemic concept, and – most importantly – that the pre-war work of CIAM, whose *Athens Charter* was a point of reference, is continued. Instead, under the pressure of the newcomers³¹ the pre-conference in Sigtuna finally approved³² a simplistic, and of a completely different scale, *Charter of Habitat*, which replaced the *Athens Charter* as outdated.

6. STEILSHOOP (1960)

A year after the dissolution of CIAM, Werner Hebebrand³³, invited Despo to participate in the competition for the town of Steilshoop – 3 groups from Team 10 were also invited³⁴. A settlement of 24,000 residents, with an area of 16 hectares. Despo adopted an orthogonal north-south axis and introduced high rises – however each a tripartite tower-dot is of an unusually small surface. The once again four-sector city is structured via three residential neighbourhoods, and an area for manufacturing, around a communal nucleus-agera³⁵, with a complex but careful interweaving of density and scale³⁶. From the 2 basic boards – that of building typologies and that of traffic infrastructure it is evident that the design of circulation followed, with a purely supportive, non-decisive role. The proposal of Van den Brook and Bakema, through a rigidly repetitive scheme, and the pro-

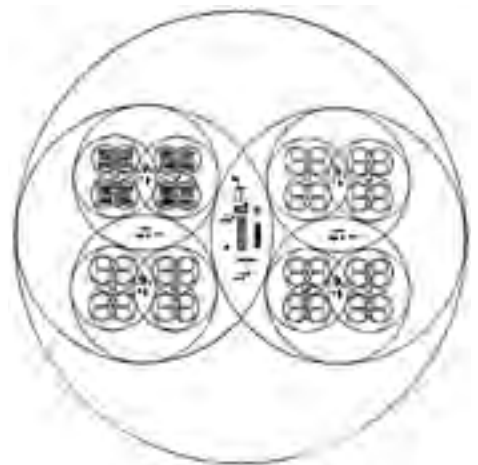


FIGURE 4. Ernst May Brigade, Urban planning diagram, c. 1930.
© Jan Despo, *Die ideologische Struktur der Städte*, Berlin, Akademie der Künste, 1966.

posal of Alison and Peter Smithson which is characterized by a mega-building of communal use and a free layout of single houses grouped in two curvilinear sections manifest that the windbag of post-war urban planning is already open. The plan of the 20 14-storey super-blocks that was effectively realized was executed with the participation of G. Candilis. The area is now a ghetto.

7. FRACTAL (1966)

In 1966 Despo gave a lecture at the Berlin Academy of the Arts which later was published as *Die ideologische Struktur der Städte*³⁷, commenting, among other things, on an interwar scheme by the May Brigade³⁸:

*The social diagram of the structure of the new democratic, socialist society of the cities, as exhibited and generally used after the First World War [...] This sociological diagram was typically understood quantitatively and pragmatically and was therefore abused. It contains nevertheless other very important issues, particularly of an ethical nature, which in no way have been the subject of attention. The abuse of such ideas and diagrams has led to the overcoming of any fundamental structural work of the early post-war years*³⁹.

This urban scheme is essentially a fractal: the gradually decreasing intersecting circles define each time a region for public, collective life that also progressively gets smaller – its scale adapted to the surface of the lessening circle-sectors. A closer attention to it reveals a necessary resemblance to the diagrammatic drawing of Karachi's community-city and its 16+4+1 communal centres; they are both equally structured following an abstract geometric rigour and a from-within organic progression of scale. Like the scheme that Despo retrieved for his lecture 35 years after its conception, the *Athens Charter II* was a creative response to the simplistic abuse of the *Athens Charter* and an effort for its intellectual continuation as a "fundamental structural work of the early post-war years" – which was nevertheless abruptly discontinued⁴⁰.

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NOTES

- 1 Jan Despo studied in the Weimar Bauhaus for one and a half years and, in order to obtain a diploma that was recognized in Greece, continued his studies in *Technische Universität Hannover* (1924-28). The other members of the first group were V. Douras, A. Dragoumis, G. Eglau, G. Kalyvas, P. Karantinos and S. Papadakis.
- 2 Ioannis Despotopoulos, "Πολεοδομική", *Τεχνικά Χρονικά*, 39, Athens, TEE, 1933, 756-772.
- 3 *Ibid.*, 764.
- 4 *Ibid.*, 769.
- 5 "Συμπεράσματα εκ του IV Συνεδρίου Ν.Αρχιτεκτονικής", *Τεχνικά Χρονικά*, 44-46, Athens, TEE, 1933, 1082-1086.

- 6 *Id.*
- 7 Ioannis Despotopoulos, *op. cit.*
- 8 *Id.*
- 9 The ideological physiognomy of the city is the central concept of the book *Die ideologische Struktur der Städte*. Berlin, Akademie der Künste, 1966.
- 10 The old settlement of Lerissos was completely destroyed in September 26, 1932. Despo's scheme was approved by the Earthquake Recovery Office in 1935, as witnessed by a site plan found in his archive. Despo's extensive archive of drawings, photographs and documents is currently part of the Neohellenic Architecture Archives of the Benaki Museum in Athens (ANA 50). A comparison with a modern satellite image shows that the plan for Lerissos was implemented with relative accuracy.
- 11 Ioannis Despotopoulos, *Ο οικισμός*, Neohellenic Architecture Archives, Benaki Museum, Athens, 1944, 70.
- 12 "Hierarchy of the functions" in Greek or "The Cosmotheoretical order of the functions" in English is the 5th category of the *Athens Charter's* II vertical columns.
- 13 Ioannis Despotopoulos, *Ο οικισμός*, 1944. Neohellenic Architecture Archives, Benaki Museum, Athens, 57.
- 14 Jan Despo – at the time professor at the Technical University – was dismissed because of political convictions and moved to Sweden.
- 15 For the cities of Luleå, Hudiksvall, Strömsnäsbruk, Sollefteå, Hällefors, Kallhäll, Viskafors and Ludvika.
- 16 In a 10/3/57 letter to C.Doxiades, Doxiades Archive, Benaki Museum, Athens, Despo notes that his study on Karachi was commissioned by a Swedish company that was responsible for large hydropower and urban projects in the country. He also mentions having undertaken the Karachi project parallel to another "particular study on Islamic architecture and urban planning." Pakistan acquired its political Independence in 1947.
- 17 Ioannis Despotopoulos, *Der Generalplan für Karachi*, 1947. Neohellenic Architecture Archives, Benaki Museum, Athens.
- 18 *Id.*
- 19 Four peripheral centres or "Kreizzentren" and sixteen neighbourhood centres or "Nachbarschaftszentren".
- 20 Le Corbusier, J.L.Sert, S.Giedion, W.Gropius did not attend the meeting.
- 21 J.Bakema, G.Candilis, A.Van Eyck among them.
- 22 Eric Mumford, *The CIAM Discourse on Urbanism*, Cambridge Massachusetts, MIT, 2000, 220.
- 23 Jan Despo belonged to a generation older than the young, and younger than the old guard.
- 24 With a meticulous loyalty - all suggested vertical categories of the new grid are also used as titles in the accompanying text for Karachi.
- 25 "milieu", "legislation", "realization" and the last two categories "réactions d'ordre rationnel et affective".
- 26 II, The milieu: A. The country B. The region C. The town. / III, Procedure for a change in the town structure: A. The influence of past history. B. The present situation. C. Aspirations and tendencies. D. The imposed. / IV, The rationalization of functions and elements of the town: A. The ethic good B. The right techniques C. The esthetic D. The time / V, The cosmotheoretical order of the functions / VI, The priority of functions / VII, The synthesis of the organization of the town A. The region town B. The town as unit C. The neighbourhood sub-units / VIII, Delimitation of Dimensions A. Distances B. Surfaces_Volume / IX, The implementation_Limits of plan and time / X, Supporting_Legislation_Financing / XI, Oppositions and Reactions / XII, Remarks.
- 27 "In this case, the purpose of the planning of the Karachi capital would be the formation of such an urban organism that implements and expresses through its functions of collective and individual life of the explosive social manifestations in Pakistan and their purposes." "[...] most often 'something is sold' and 'bought'. The European planner behaves in relation to those people of the East as if he has nothing to do with their very strong historic cultural past, now or in the future." Ioannis Despotopoulos, *Der Generalplan für Karachi*, 1947. Neohellenic Architecture Archives, Benaki Museum, Athens.
- 28 "'Beauty' has little to do with the bourgeois notion of 'aesthetics'. 'Beauty' is dialectically interwoven with the 'morally-good' and the 'right' in certain, historically defined eras. Today a 'beautiful' urban plan is nothing but a fraudulent mise-en-scène. Aesthetic sophistication is decadent. Our era's rejection of the primary, 'archaic' rigour and hardness is a setback. The essence of 'beauty' lies in a harmonious structural composition of contrasts and tensions in which the 'morally-good' and the 'right' are contained as an historical objective." Ioannis Despotopoulos, *op. cit.*
- 29 "The importance of the concept of democratic hierarchy in urban planning and architectural configuration is enormous, and a substantially crucial 'regulation' to the extent of urban and architectural emphasis, eg to design houses as 'habitation-palaces', underground metro stations as temples, buildings as cathedrals is wrong, without democratic hierarchy of functions", "Dwelling according to the democratic structure of functions is not imposed in the city. In old Mohammedan as Hellenistic cities, housing was fully subordinated – in urban-planning and architectural terms – to collective functions." Ioannis Despotopoulos, *op. cit.*
- 30 His term, "πολεοειδής σχηματισμός" in Greek.
- 31 The young also demanded the separation of generations in the working groups.
- 32 In order to be processed further in Aix-en-Provence.
- 33 Werner Hebebrand was "Oberbaudirektor" in Hamburg, and head of the German team in Sigtuna along with G. Hasenpflug, E. Eiermann and H. Hoffmann.
- 34 Van den Broek and Bakema, Candilis_Josic_Woods, P. and A. Smithson but also A. Ervi. The competition was open and the final scheme to be built was elaborated by Burmester+Ostermann, Candilis_Josic_Woods and Garten+Kahl. Ernst May and Fred Forbat were among the jury.
- 35 At the end of the 1950s, Jan Despo worked in both Sweden and Greece. A series of civic centres in the former country laid the groundwork for **his only corresponding composition** in Greece, the first version of which was conceived in 1959 as a competition entry for the Athens Cultural Centre. Despo's design was awarded first prize but ultimately never constructed, apart from its Athens Conservatory building. See also his article Jan Despo, "Die Agora, das neuzeitliche Kulturzentrum", *Bauen + Wohnen*, 17/2/1963, 49-61.
- 36 The area for industry is clearly delineated by the highway to the south.
- 37 Jan Despo, *Die ideologische Struktur der Städte*, Berlin, Akademie der Künste, 1966.
- 38 *Ibid.*, 102.
- 39 *Ibid.*, 133.
- 40 According to an autobiographical note by Jan Despo, the *Athens Charter II* was also presented at the 26th congress of the International Federation for Housing and Planning held in Paris in September 1962.

Bakema and Scharoun Revisited through Post-war CIAM

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In the period following the end of WWII, the congresses of CIAM staged important discussions that were decisive for the development of architecture and urbanism in following years. Concerns regarding modern architecture after the war were discussed with increasing intensity, reaching its peak in the mid-1950s, with CIAM 9, in which the functional city is really threatened for the first time. From the discussions and debates that took place then, an idea of the city arose that was paradoxical, at the same time assimilating and criticizing the legacy of modern vanguards.

Thus, this paper seeks to revisit, in light of the CIAM congresses held in the 1950s and what they represented in this transitional period, two dwelling proposals made in the period, Jacob Bakema, Lotte Stam-Besse and the Opbouw group's project to Pendrecht (1948-1953) in Rotterdam, and the Hans Scharoun's for Charlottenburg Nord (1954-61) in Berlin, in order to explore the possibilities of continued use and adaptive reuse of urban and architectural design concepts put forward by CIAM members in the context of the 1950s. The reflections held in CIAMs show that these projects were designed from significantly more complex relationships of spatial, compositional and programmatic perspectives in the configuration of their built environment and the articulation of the urban physical and functional components than those for which they were commonly portrayed.

So, firstly, we aim to analyze how architects with diverse works were building similar models of cities and societies, based on CIAM's rules that differ quite deeply from the most simplistic views of modern urbanism's functional city. Secondly, we aim to show that, contrary to what suggests the dominant narrative, the review of the legacy of ideas and design strategies that are dear to the historical heritage of post-war modern architecture deal with issues that remain significantly relevant and current.

1. POST-WAR CIAM REVISITED

After the end of WWII, practical experiments and theoretical discussions started to address the question of how modern architecture could handle the new social and economic challenges of the time. CIAM's congresses were the main stage for that¹ and the idea of the city that arises thereof starts a paradoxical posture: at the same time assimilating and criticizing the heritage handed down by modern vanguards².

A series of projects aiming at (re)constructing large residential areas started to be designed in Europe. They provide opportunities to discuss the possibilities of continued use and adaptive reuse of urban and architectural design concepts put forward by CIAM's members in the 1950s. Relevant examples of that are in the Netherlands by the Opbouw group, led by Jacob Bakema, and Hans Scharoun's projects to Berlin, Germany.

Their approach is far from similar. First of all, we should bear in mind that Scharoun and Bakema belong to different generations³. And concerning their participation in CIAM's congresses, Scharoun was regarded as independent and

disconnected from the theoretical debate taking place within CIAM. Bakema, on the other hand, had an active participation role in the congresses, standing as the main leader of the Dutch arm of CIAM. Nevertheless, Scharoun's sensitivity to issues that were being discussed at the time within CIAM allows us to compare how the two approached similarly the problems related to building residential areas in the 1950s.

Therefore, this paper revisits two projects: Pendrecht (1948-1953), in Rotterdam, representative of Bakema's work; and Charlottenburg Nord (1954-61) in Berlin, representative of Scharoun's work. This will enable a discussion on the nature of the differences between residential areas and traditional neighbourhoods, as well as issues related to urban block disintegration process.

2. TWO HOUSING EXPERIENCES

Bakema in Rotterdam: Pendrecht

Jacob Bakema, Lotte Stam-Besse and the Opbouw group developed the project at Pendrecht between 1948 and 1953⁴. The area is located on the south side of Rotterdam, and the main connection to the city is through an elevated railway and expressways. The project included the construction of an autonomous residential area that should contain, in addition to housing, facilities⁵.

The built version parts from an orthogonal grid based on the scheme composed of formations of housing units – setting the scale of the block – which, when grouped and combined, form the neighbourhood units – larger units, with shops, schools and leisure areas, which are separated by wooded lanes, play the role of defining the scale of the neighbourhood⁶.

The final plan is based on articulating four neighbourhood units surrounding a commercial core (140m × 340m). Each neighbourhood unit has 3,000 to 4,000 inhabitants and consists of clusters of eight to ten mirrored housing units. The module used as an ordering scheme for the housing unit was 140m × 80m, corresponding to one block. The lane widths had 6m plus a variable width of footpaths, extending up to 9m in areas where there were parking places.

Each housing unit consisted of the articulation of five buildings: two parallel linear blocks (10m × 75m and 11m × 98m, 4 floors), oriented in a north-south direction, lining the street; perpendicular to these two, there were three other short linear blocks oriented east-west, with six row houses (33m × 9m) with 1-2 floors each. That is, the combination of different types of buildings was the strategy for structuring the urban form and to obtain variety. And besides the block that gives form to standard housing units, there were also tall buildings arranged at strategic points of the plan, and sets of single-family houses; the dominance, however, is of low-rise combined with low density⁷.

Bakema and Opbouw experienced the possibilities of continued use and adaptive reuse of concepts formulated by CIAM. That happened because Pendrecht was, on the one hand, the realization of the city in the park, a repeated set of



FIGURE 1. Jacob Bakema, Lotte Stam-Beese and the Opbouw group, Pendrecht, Rotterdam, Netherlands, 1948-1953. Final plan. © Helene Damen, Annemie Devolder, Lotte Stam-Beese, 1903-1988: Dessau, Brno, Moskou, Amsterdam, Rotterdam, Rotterdamse Kunststichting Uitgeverij de Hef, 1993, 60.

buildings scattered amid courtyards and large green areas in the suburbs. On the other hand, by adopting the housing unit as the organizing structure of the area, proposing that urban functions should be incorporated into residential neighbourhoods, they make a defence of the coexistence of residential activities with non-residential facilities. With that, varied situations were incorporated in the configuration of urban block and in the arrangement of space. At the same time, they proposed a readjustment of scale and density as well as the inclusion of elements that fulfil the function of relating different scales; examples are the predominance of low-rise and low density, combined with occasional

tall buildings, as well as the determination of different degrees of spatial segregation through the specialization of different flows. That is, to give up pure use zones, allowing the juxtaposition of uses in space, and at the same time turning the focus to the scale that articulates the various urban functional components, Pendrecht innovates showing that it is possible to match the concepts of mono-functional zoning and the residential neighbourhood, even though the idea of neighbourhood becomes masked by the neighbourhood unit label.



FIGURE 2. Jacob Bakema, Lotte Stam-Beese and the Opbouw group, Pendrecht, Rotterdam, Netherlands, 1948-1953. Aerial view. © Helene Damen, Annemie Devolder, Lotte Stam-Beese, 1903-1988: Dessau, Brno, Moskou, Amsterdam, Rotterdam, Rotterdamse Kunststichting Uitgeverij de Hef, 1993, 48.



FIGURE 3. Hans Scharoun, Charlottenburg Nord, Berlin, Germany, 1954-1961. Final plan. © Hans Scharoun Archiv, Akademie der Künste, Berlin.

Scharoun in Berlin: Charlottenburg Nord

Hans Scharoun's project at Charlottenburg Nord was developed between 1954 and 1961 – after CIAM 9. Although Scharoun remained on the sidelines of CIAM, the plan shows experimentation and incorporation of ideas discussed there, especially the implementation of the ideal of housing cells, analogous to the Dutch housing units.

The neighbourhood, with approximately 1,000m × 700m, is located east of Siemensstadt⁸, in north-west Berlin. Subway and expressways provide connection to the city. The plan divides the area into 3, each holding roughly a different type of building⁹. With this, the urban structure was defined by the articulation of different dwelling types.

In the middle range, north of Heilmann Ringroad – a road 10m wide that structures the plan – the spatial configuration is shaped by the predominance of a group of housing courtyards, a structure through which it implements the concept of housing cells¹⁰. The basic composition element is the housing unit, which consists of two buildings in broken line¹¹ (one with approximately 10m × 90m and the other with 10m × 100m), whose articulation forms the courtyards¹².

Scharoun's strategy to twist the lines of the buildings responsible for shaping the courtyards in this area relates to, besides the personal search for a plastic expressiveness guided by the articulation of non-orthogonal forms, the use of a morphological feature that enables the insertion of variety in the features of the buildings and the collectivization of the courtyards.



FIGURE 4. Hans Scharoun, Charlottenburg Nord, Berlin, Germany, 1954-1961. Aerial view. © Hans Scharoun Archiv, Akademie der Künste, Berlin.

Despite the differences in language and formal composition, Scharoun also applied a reconciliation of concepts regarding simultaneous assimilation and criticism of the heritage left by the previous generation. Charlottenburg Nord contributes to the strengthening of the idea of the “city in the park”, away from downtown, but based on a wider range of building types and to a lesser use of the artifice of repetition. Similarly to Bakema, Scharoun also combines low-rise with low density, incorporates urban functions in the neighbourhood, and proposes a scale readjustment, matching a predominance of low-rise with higher volumes.

3. CONCLUSIONS

Bakema and Scharoun, albeit with very different works and of different generations, operated in the post-WWII period from similar procedural perspectives. Analogously to the new generation, who paid tribute to ideas associated with modern vanguards but questioned some of their values; both synthesized a posture of complementarity of ideas.

Among these, the projects have a special relation to Team 10's ideas of patterns of association, which propose that a community is planned hierarchising the association of elements, and seeking to express these various degrees of association between house, street, neighbourhood and city. For them, by expressing the various levels of association, the identification of people with their environment increases¹³. Thus, they were addressing urban problems in new terms, such as identity, association, cluster and mobility.

Both were conceived with the provision of extensive free construction areas, and the combination of low density with a prevalence of low-rise. Nevertheless, both could achieve urban benefits more familiar to high density housing, such as access to facilities, while also providing a sense of individual identity, mixing the benefits of urban and suburban living.

However, they do not reject concepts such as street, square, block and neighbourhood. The bi-dimensional lanes of the functional city appears, but with greater presence in the margins of each neighbourhood; inside, there is a predominance of narrow streets; the buildings are preferably turned towards internal or pedestrian pathways, or to the courtyards; the housing unit is placed halfway between the traditional block and the undivided superblock, since it gives the scale of the block, but it is not characterized as a fully collectivized green sward, because the different courtyards are configured to generate areas with variations and gradations in the public character; the neighbourhood is materialized by grouping neighbourhood units and by incorporating a significant number of public functions in its interior in the form of collective facilities, which substantially changes the character of the public space.¹⁴ Moreover, both are continuing the process of transformation, opening and disintegration of the block started by the German and Dutch *siedlungen*¹⁵ of the 1920s-1930s¹⁶.

A notion of identity is introduced when they give up a complete standardization of buildings and their components. Both seek to accommodate a varied spectrum of types of buildings and their components, spaces, as well as heterogeneous population. Although the idea of typological diversity is already a constant in previous projects, there is a deepening with the use of devices such as mixing housing types as a design tool and as a resource for structuring urban form.

Both innovate by working with scales of transitional elements and scales of association. For that, they create neighbourhoods that incorporate sets of single-family homes and high-rise buildings located in strategic points of the plan to the homogeneous pattern of residential low-rise. Those, while contributing to the increase in density, are also important elements of transition and readjustment of scale and to expand the range of types. This is one of the main features that differentiate the analyzed cases to the designs by Le Corbusier for *La Sainte Baume*, 1948, and *Roq et Rob*, 1949; both range and repeat the same type of low-rise buildings, but although without the variation of types and the combination with high-rise buildings, also propose a reduction in height and scale readjustment.

The analysis shows that many of the features of both projects are not new. However, they were developed, deepened and disseminated through similar ideas about addressing the issues of review and continuity with respect to modern heritage. Thus, despite their differences, both projects were concerned with building similar models of city and society.

Finally, the projects establish significantly more complex spatial, compositional and programmatic relationships in the configuration of their built environment and in the articulation of the urban components than they were com-

monly portrayed. Both operated based on the rules of CIAM that, however, have differences regarding the most simplistic views of modern urbanism. That is, the functional city idea is vague enough to admit varying interpretations and applications, and reductions and generalizations may have obstructed the understanding of a legacy of ideas and operational instruments that are dear to the historical heritage of modern architecture.

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NOTES

- 1 The post-war congresses were devoted mainly to matters related to the reconstruction of the cities, and discussed issues involving definitions of the concepts of "core" and "Habitat".
In the CIAM 7, held in 1949 in Bergamo, Corbusier continues, along with Giedion, advocating applications of the *Athens Charter*. Le Corbusier states, along with the ASCORAL group, the presentation of the work format. They proposed that the projects were submitted according to the CIAM grid format, in panels with 21cm x 33cm forming a grid that was a system to graphically organize information on the projects, so that comparison could also be analyzed according to the categories set out in the *Athens Charter*. Thus, the CIAM grid began to be used as a matrix, with column headings as the four functions of the *Charter* – to live, work, cultivate body and spirit, and circulate; lines, subjects were included as context, volume built, ethics, aesthetic, economic and social impact, financial, law, among others. According to Le Corbusier, the grid formed by the intersection of these two axes provides a tool to comprise, from a visual method, easily understood and highly accurate, easy comparison between different projects.
The concept of "core" was developed in CIAM 8, held in 1951 in Hoddesdon. The conference theme was *The Heart of the City*, reflecting a concern in dealing with interventions in the heart of the city. The topic was relevant to the reconstruction of bombed towns – the cases of Berlin and Rotterdam in the post-war context. This is the Congress where the first evidence begins to appear that the continued application by CIAM principles of the *Athens Charter*, a key issue in the next Congress, was not unanimous.
CIAM 9, held in 1953 in Aix-en-Provence, had as its theme the *Charter of Habitat*, and was considered the largest and most diverse Congress so far. The change of direction was
- 2 also boosted by Le Corbusier's doubts about the applicability of the initial ideas of CIAM in the new post-war situation.
- 3 The group of young architects who formed Team 10 – who took the lead of CIAMs from CIAM 9, held in Aix-en-Provence in 1953 showing that the relationship between these two generations of modern architects is not only of opposition – acted considering complementarity between the ideals of standardization and rationalization of the built form inherited from the previous generation with others linked to the consideration of individuality and to the ideals of identity and association.
- 4 While Scharoun (1893-1972) belongs to the first generation of modern architects, having produced an important body of work in the interwar period, Bakema (1914-1981) is already part of the next generation, which has its most outstanding performance concentrated precisely in the period around 1950.
- 5 In addition to the built version, experimental versions were developed by Opbouw and presented in two successive meetings of CIAM: 7 (1949) and 8 (1951). The construction works lasted from 1954 to 1965. With this, the ideas tried in the earlier drafts served as a laboratory for discussions at CIAM 9.
- 6 Facilities such as schools, churches, shops, services, and green and recreational areas.
- 7 The housing units were the organizing schema used by both Bakema and Scharoun to organize space and express the differences and individualities found in society, although in the case of Scharoun, the housing units are less obtrusive and with less repetition.
- 8 The final plan has approximately 5,750 dwellings distributed on 105ha, in area with circa 1,000m x 1,000m – resulting in an approximate density of 160 inhabitants per hectare, considerably lower than the 250 to 300 inhabitants/ha

- suggested as allowable density in the 1933 *Athens Charter* for low rise buildings of up to 6 floors.
- 8 Hans Scharoun also designed the *Siedlung Siemensstadt*.
 - 9 Scharoun combines in the northern area short blocks of 3 floors, longer blocks with 4 floors and a tower with 12 floors; in the middle section, are the broken blocks of the courtyards, with blocks alternating between 3-8 floors; and in the south area he concentrates the blocks with 4 to 6 floors. The area with service facilities and commerce is located in the northern section.
 - 10 Scharoun called this housing unit "Wohngehöfte". The name refers to the traditional urban structure of perimeter blocks with inner courtyards, responsible for shaping the urban fabric of Berlin.
 - 11 **The angulation of the buildings that conform the courtyards** results in differences in their character, more public in the areas bounded by convex facades, which were intended preferably for leisure activities, without circulation of vehicles and a greater presence of vegetation and green areas; and more private in the courts conformed by two concave facades, which form a kind of hall, from which you can reach all circulation areas and access to the buildings.
 - 12 While one of the buildings has internalized circulation and is formed by combining volumes of 4, 6 and 8 floors, another mixes external circulation coupled with internal stairs, and combines volumes of 3, 4 and 6 floors.
 - 13 These ideas were developed mainly by Alison and Peter Smithson in the Scale of Association diagram, at which they synthesize the idea that human relations should change according to the scale. The Smithsons based these studies in the diagrams "Section of a Valley" and "Region of the Valley" (1925), from Patrick Geddes, for whom the particular characteristics of residential areas are conditioned by their physical environment, which, in turn, determines the natural occupations and social conditions – which varied in different parts of the topographical section. Analogously, Peter Smithson also uses the section of a valley to illustrate areas that could have high densities and the ones that should have lower densities. For the Smithsons, the relationships change from the apartment to the street (the first point of contact out of the room), to the neighbourhood (understood as a point of contact in a greater sphere of activity), and the city (where relationships taking place in the neighbourhood happen, but on a larger scale). They defend the idea that the model of the traditional city, with streets, squares, and blocks formed by perimeter the block is no longer valid, but on the other hand believe that CIAM grids also do not reflect the reality of social organization in a city. So, as an alternative, they propose that the planning of cities should be based on the identification of their social hierarchy, which would be built from various degrees of human associations: the house, the street, the neighbourhood and the city. From this, the architect's task would be to integrate the functions, so that the functional hierarchy of the *Athens Charter* would be replaced by a new standard of human associations hierarchy instead. Similar associations were a few years after proposed by Saverio Muratori in his typological method, which he argues for a distinction between four levels of scale: the building, the neighbourhood, the city and the territory.
 - 14 The 1933 *Athens Charter* already suggests the presence of institutions such as supply centres, medical services, day care centres, kindergartens, schools and intellectual and sports organizations, that would be configured as housing extensions.
 - 15 Among the initiatives built in this period and based on this model, have special emphasis those held in Berlin by Bruno Taut (Gartenstadt Falkenberg, 1913-16; Hufeisensiedlung Britz, 1925-1930; Onkel Tom's Hutte, 1927-29; Siedlung Schillerpark, 1924-30 and 1953-57; and Wohnstadt Carl Legien, 1928-1930), and those held in Rotterdam by J. J. P. Oud (Hoek van Holland, 1926-27; and Kiefhoek, 1925-29), Johannes H. Van den Broek (Bergpolder, 1929-30; and Blijdorp, 1934), and Michiel Brinkman and Johannes H. Van den Broek (Spangen, 1919-21). Besides these two cities, those initiatives carried out by Mies van der Rohe in Stuttgart (Weissenhofsiedlung, 1927), by Ernst May in Frankfurt (Römerstadt, 1927-1928, and Praunheim, 1926-29), and by Walter Gropius in Dessau (Dessau-Torten, 1926-28), also deserve attention, among others.
 - 16 The narrow courtyards of 19th century cities are transformed, in the siedlungen, in the middle of collective blocks, and in Pendrecht and Charlottenburg Nord, in semi-public courtyards. The housing blocks, that in the *siedlungen* are characterized by large elongated lines following the streets, are shortened and thus allow the opening up of the block. The freedom of placing the building in relation to the street frontage is relative: while Pendrecht opens the block but follows more closely the dependence on the shape of the streets, Charlottenburg Nord disintegrates it with greater emphasis, but following some previously set parameters that seek to define perceptual or visual alignments, combined with misalignments or indentations. But both have differences. Pendrecht arises as an intermediate solution regarding opening and disintegration of the block and in a dependent relation with the form of the street. Charlottenburg Nord features a more advanced stage of block disintegration and of independence from the form of the building regarding the form of the street.

The Conservation of the Lijnbaan, Rotterdam

Lucas van Zuijlen

ROTTERDAM, THE NETHERLANDS

Since the 1980s a modern way of life has become the standard. But the definition of modern is still unclear because every decade has its own approach.

The role of Dutch architects in the Modern Movement was, and still is, relevant. In early the 20th century there was discussion about modern architecture between supporters and opponents. Groups of architects and artists were formed, with their own manifestos. One of these first collective experiences where they were exposed and discussed ideas and designs was the *Stijl*-group (1917). They called for “an international unity in Life, Art and Culture”, which raised in Germany the necessity for international discussion about contemporary art and architecture, which resulted in the 1st CIAM congress (1928).

From the 1920s reflecting about modernity became the issue for groups of Dutch professionals: *De Opbouw* (1920, Rotterdam) and *De 8* (1927, Amsterdam). Within these organizations there was discussion about the rigid manner of indicating architecture; which resulted in the splitting of Albert Boekens and his creation of *Groep '32*. The main disagreement was the abolition of ornamentation.

At the most important educational institution, the Technical University of Delft, Granpré Molière spread his “*Delftse School*” theory: modern ideas in 19th century forms and materials. Van den Broek became the 1st CIAM architect teaching modernity in Delft in 1947.

Within CIAM the essence of modern city planning was the separation of functions: living, working, traffic and recreation. In retrospect, CIAM became closed its ranks against the newer international avant-garde, which was a reason for a younger group of members to organize the 10th CIAM congress (Dubrovnik, 1956). They became TEAM X which also coordinated the 11th CIAM congress (Otterlo, 1959), where Le Corbusier declared CIAM dead and gave way to Team 10 members to develop their ideas. Team 10 focussed on human, cultural and political issues: “understanding the feelings for patterns, the aspirations, the artefacts, the tools, the modes of transportation and communication of present day society”.

An exemplary Dutch project that represents these ideas is De Lijnbaan (1953), by Van den Broek and Bakema. The extensive plan of 66 shops and 600 apartments in the bombed centre of Rotterdam was discussed and constructed during CIAM meetings and used often as a role-model by Team 10. After a period of decay during the 1980s and 1990s, the entire complex – shops, urban space, and apartments – has recently been updated to contemporary standards. During these processes, **docomomo** Netherlands played an important role in maintaining the original urban and architectural values.

1. INTRODUCTION

The role of the Netherlands in the Modern Movement was, and still is, relevant. In the early 20th century there was an international discussion about modern architecture between supporters of this new movement. One of the first collectives exposing and discussing modern ideas and designs was the *Stijl*-group (from 1917). They pleaded for “an international unity in Life, Art and Culture”¹, raising in Germany the necessity for international discussion about contemporary art and architecture, which resulted in the 1st CIAM congress in 1928.

At this first congress in 1928 the Dutch architect Berlage presented a paper about “the good relationship between the Dutch government and architecture”²,

in contrast to the situation in most other European countries. About 10 years later, both Siegfried Giedion (*Space, Time and Architecture*) and Joseph Sert (*Can Our Cities Survive?*), declared the *General Extension Plan of Amsterdam* (1928-1934)³ by the Dutch urban planner Cornelis van Eesteren (with the Public Works Department) “the first concretization of modern functional town planning”⁴. In 1930 Van Eesteren was, at the 3rd CIAM congress, elected chair of the CIAM organization for the fourth CIAM congress in 1933, *The Functional City*.

The two largest cities in the Netherlands both had groups of modern architects sharing and publishing modern ideas: in Rotterdam since 1920 *Opbouw* and in Amsterdam since 1927 *De 8*. From 1928 they discussed professional topics, also for preparing CIAM meetings. Although the Dutch modernists promoted and practised functional ideas, there were also counter movements within the group, arguing and protesting against the sober and rigid aspects of the functional and unromantic approach⁵.

Because of the large number of Dutch participants discussing CIAM topics there never was a constructive group supporting a rigid doctrine, if there ever was one. A provisional plan for a statement, described in 94 points, was made at the 4th CIAM Conference in 1933, known as the *Athens Charter*⁶. Reflecting and discussing the statement continued until the last CIAM congress in Otterlo.

2. “THE CIAM DOCTRINE”

The important Dutch influence on international modernity, is partly due to its geographical situation; a small country with 25% artificially reclaimed land, gained by good engineering and a collaboration between government and entrepreneurs.

A good and early example is the realization of the modern *Van Nelle* complex by Brinkman & Van der Vlugt in Rotterdam in 1928, a former coffee-tea-tobacco factory and since 2014 a UNESCO monument⁷.

The successors of the architect's office of Brinkman & Van der Vlugt were firstly Jo van den Broek from 1937 and Jaap Bakema from 1948. Architect Van den Broek was, with colleague Willem van Tijen since the beginning of the 1930s, interested in new urban planning, inspired by Ernst May's plans in Frankfurt. They proposed their first urban plans for Blijdorp in Rotterdam with open housing blocks.

Van den Broek was involved in almost every discussion on the subject of new forms of housing: economical, industrial and comfort, including the CIAM meetings. During the war he continued his office with partner M. Brinkman and worked on many studies for new housing types, published as *Woonmogelijkheden in het Nieuwe Rotterdam* (housing possibilities in New Rotterdam)⁸. When the war was over in 1945 he could, with his fully-staffed office, start immediately to reconstruct the city with housing types resulting from their studies. One of the directors of the *Van Nelle* factory, Cees van der Leeuw, already gave him, in 1943, an office on the site of the *Van Nelle* factory and wanted him to be the first archi-



FIGURE 1. Van Traa, basis plan for rebuilding the city centre of Rotterdam, 1946. © Municipal archives de Rotterdam.

tect teaching modernity in Delft in 1947. He was appointed for three days a week in Delft, so he involved the 16 years younger Bakema to be his partner in the office.

Van den Broek met the post-war city planner Bakema while reconstructing housing complexes in Rotterdam and met again in *Ons Huis*, where Bakema was undertaking a redesign for a film theatre and gallery, *'t Venster'*⁹. Bakema became a member of the CIAM group after the war and secretary from 1955 until the last congress in Otterlo. It is worth noting that, in 1947, he had already declared a distinction between "old CIAM members" and a "new generation". Important in the fruitful collaboration was that, other than Van den Broek, Bakema not was "encumbered" with the pre-war discussions of, for example, CIAM.

3. THE LIJNBAAAN NOT A RESULT, BUT A MODEL FROM CIAM AND TEAM X

The possibilities in the bombed city centre of Rotterdam and the fact that modern architects were involved in the city's planning resulted in the perfect CIAM-influenced example, the *Lijnbaan* ("rope walk"), which already had received at that time international attention as the first pedestrian shopping street in the world, and its uniqueness was, in 1957, perfectly described by Lewis Mumford in *The New Yorker*, "The Sky Line: A Walk Through Rotterdam"¹⁰.

For recognition and respectable adaptation of the *Lijnbaan* by a younger generation of architects it is necessary to realize that the urban plan is not a result of

any doctrine, but a series of coincidences, perfectly managed by CIAM-members, Van den Broek & Bakema.

In the pre-war city centre Rotterdam already had some modern urban solutions, like the courtyards beside the Meent for expedition and providing shops on the ground floor¹¹. With this successful and practical idea, the use of a pedestrian shopping street for temporary shops during the war¹² and, with their financial restrictions, the entrepreneurs could only finance separate shops with no housing above. The main idea of the Lijnbaan was born. Two lines of 66 different shops were finished in 1953 and 9 and 13 storey housing blocks were added by other architect offices under supervision of Van den Broek & Bakema¹³. The density of shops and dwellings was the same as the pre-war plans for this location. Because of economical appointments the shops were realized without apartments on top. For that reason the housing blocks were located separately from the shops and built with more levels than the pre-war solution. Each city block was bounded by three apartment buildings with different heights, that offered the possibility for open, sunny and green courtyards¹⁴.

The scale and relationship between the different volumes and functions was expressed by Bakema in a simple sketch comparing family life, with the smaller volumes alongside the walkway, and adult scale housing blocks on the outside¹⁵. In the building process these principles were worked out from smaller building details, starting from the modular size in the shopping facades, up to the tall housing blocks around green courtyards, under their supervision¹⁶.

Because Bakema was a young CIAM member, he was invited to organize the 10th CIAM congress in 1956 and later became the protagonist of the Team 10 group. Team 10 focused on human, cultural and political issues: "understanding the feelings for patterns, the aspirations, the artefacts, the tools, the modes of transportation and communication of present day society"¹⁷.

In all official and unofficial Team 10 meetings with international colleagues in Rotterdam, Bakema showed the still well-functioning Lijnbaan. The integration of human and social matters was what Team 10 differed from the older



FIGURE 2. Temporary shops in the bombed city centre during the German occupation years 1940-1945. © Municipal archives de Rotterdam.



FIGURE 3. Van den Broek & Bakema, H. Maaksant, W. van Tijen, A. Krijgsman and more, urban plan for the Lijnbaan, aerial photo Lijnbaan 1957. © KLM.

CIAM architects, who were looking for solutions in an academic and technical way. The greatest value of all the CIAM and Team 10 meetings was not the written statements but the need to raise awareness for the need to discuss new developments in society and the integration of the four distinct functions (living-working-recreation-transportation).

4. CONSERVATION OR REGENERATION?

After a period of decay during the 1980s and 1990s, the entire complex – shops, urban space, apartments – has recently been updated to contemporary standards. During this process, **docomomo** Netherlands played an important role in maintaining the original urban and architectural values. The first indications of a total demolition of large parts of the Lijnbaan were given in the 1990s. In Marieke Kuipers' paper for the 6th International **docomomo** Conference she stressed, in her introduction, that "The question is if conservation of such dynamic concepts is desirable and to what extent. The Dutch Lijnbaan ensemble [...], offers us a good test case to confront two of **docomomo**'s concerns: registration versus regeneration"¹⁸.

In her paper she quoted from the Advisory Report to ICOMOS: "[...] However, materials, construction and details remain important for the 'test of authenticity', to support and to realize the abstract 'idea' of the modern movement architect"¹⁹.

The entire complex became a national monument in 2009. This led to research of its architectural history by renowned offices, which became the basis of every change to the complex that would be judged by government experts. But raising awareness is not only a technical or academic task. Because of the property ownership, every shop owner or tenant should be aware of the monumental value of the complex as a whole. Conservation, which was meant to be one of the main tasks of the early **docomomo** movement²⁰, is not sufficient.

5. REGENERATION PROCESS IN 2016

The complex was, and the procedure to maintain the complex is, unique; maybe also in this case the Dutch can be the precursors for upcoming regeneration of architecturally iconic works and monuments. Since 2006 new plans have been made by the office of OMA for a more recent part of the Lijnbaan. A complex factor is the scale of the operation and the number of stakeholders: government, planners, (shop) owners, residents and architects.

Since the 1970s, in the city centre of Rotterdam, mainly social houses have been built. In a government statement from 2005, *De Stadsvisie*²¹, the city government aimed to add larger scale housing for middle and upper class income earners in the centre. New housing complexes like the *Markhal*, *De Rotterdam*, *Timmerhuis*²², etc. with contemporary forms and functions, were built. The history and contrast between the old saved pre-war buildings, the post-war Lijnbaan,



FIGURE 4. Current point of discussion of the part of De Lijnbaan without governmental protection, 2016. © Lucas van Zuijlen.

the large and small scale additions in the last part of the 20th century and the first part of the 21st, cannot be better and more lively represented than in the square kilometre city centre of Rotterdam.

From 2007 on the same developers are planning to make a large multifunctional block (shops-housing-parking-offices) on the part of the Lijnbaan that was finished in the 1960s. OMA, the office of Rem Koolhaas, made the first designs and later collaborated with the office of Wessel de Jonge. While the licences were granted at the beginning of 2016, there is still discussion about the wishes of the developer that are contradictory to the original design.

Points of discussion are the height of the new building block and details such as the elimination of a bridge over the Lijnbaan and the original canopies. This part of the Lijnbaan is from the 1960s and, for that reason, not designated as part of the monument. In the 1960s the office of Van den Broek & Bakema made evident and clearly visible changes to the Lijnbaan concept. The question is if this can be a good enough reason to regenerate this part of the Lijnbaan by making a modular look-alike design and remove original parts (the bridge, canopies, etc)²³.

What is missing in the debate about this adaptation to the iconic modern complex is the awareness of all stakeholders and whose responsibility to raise this awareness is – the architects, the government or the users?

NOTES

- 1 *Manifest De Stijl-group*, 1918.
- 2 Auke van der Woud, *International CIAM Housing and Town planning*, Delft, Delft University Press, 1983, 55.
- 3 *Algemeen Uitbreidingsplan, C. Van Eesteren in samenwerking met Publieke Werken* Amsterdam, 1928-1934.
- 4 Auke van der Woud, *International CIAM Housing and Town planning*, Delft, Delft University Press, 1983, 132.
- 5 "Dudok was regarded as a talented but unacceptable formalist who had no place within the avant-garde. Wils was less controversial in this respect, but after several conflicts Van Eesteren had terminated his activities in the Wils office 8 months earlier, convinced that the modern movement was better off without him. Both names were scrapped from the list", Koos Somer, *The Functional City*, Rotterdam, NAI Publishers, 2007, 62.
- 6 *Congress Internationaux d'Architecture moderne (CIAM), La Charte d'Athenes or The Athens Charter*, 1933. Trans J.Tyrwhitt. Paris, The Library of the Graduate School of Design, Harvard University, 1946.
- 7 Brinkmann & Vander Vlugt, *Van Nelle factory* Rotterdam, 1928-1932.
- 8 Van den Broek, J. and others, *Woonmogelijkheden in het Nieuwe Rotterdam*, Rotterdam, W.L. & J. Brusse, 1941.
- 9 Frans Hooykaas, Lucas van Zuijlen, "Inter[VENSTER], Re-use Early Modern Intervention", *Proceedings of the 13th docomomo International Conference Seoul*, Seoul, 2014, 121.
- 10 Lewis Mumford, *The Sky Line: A Walk Through Rotterdam*, New York, The New Yorker, 1957.
- 11 Post War plan for the Rotterdam city centre by city planner Van Traa.
- 12 Temporary shops in the bombed city centre of Rotterdam during the German occupation years.
- 13 Architects Van den Broek & Bakema, urban plan for The Lijnbaan.
- 14 Architects Van den Broek & Bakema, H. Maaksant, W. van Tijen, A. Krijgsman and more, plan for the Lijnbaan Housing blocks, air photo Lijnbaan 1957.
- 15 J. Bakema, sketch symbolizing the Lijnbaan complex as a family, cover of the publication, *Van Staal tot Stad (From Doorstep till City)*.
- 16 J. Bakema, perspective sketch of the Lijnbaan, 1951.
- 17 Alison Smithson, *Team 10 Primer*, MIT Press, Boston, 1968, 23. "In 1947 there was a new attempt by young architects in CIAM to abandon the gap between thinking and feeling. ...we have to work for the creation of a physical environment that will satisfy man's emotional and material needs and stimulate spiritual growth...".
- 18 Marieke Kuipers, "Modern Shop and Modern Shapes: Registration versus Regeneration", *Conference Proceedings, Sixth International docomomo Conference – The Modern City Facing the Future*, Brasilia, 2000, 254.
- 19 Advisory Report to ICOMOS: The Modern Movement and the World Heritage List, 1997, 10. Complete quote: "in spite of its intentional transitoriness, the architecture of the modern movement is now an essential part of our cultural heritage and therefore deserves conservation. This implies that some replacement of original materials and other alterations are acceptable, as long as the architect's concept (idea) in the present form, space and appearance of a building or site is still recognizable. However, materials, construction and details remain important for the 'test of authenticity', to support and to realize the abstract 'idea' of the modern movement architect".
- 20 *docomomo's* main goals are brought together in the *Eindhoven Statement* which was issued at the conclusion of the founding conference in 1990. It was updated in Seoul, 2014, where it was approved as the *Eindhoven-Seoul statement*.
- 21 *Stadsvisie 2030*, municipality of Rotterdam in 2005.
- 22 Rem Koolhaas, MVRDV, Iberlings Van Tilburg Architecten, 21st century addition of new large scale housing complexes in the centre of Rotterdam for middle- and upper income earners.
- 23 OMA/Wessel de Jonge architecten, FORUM Rotterdam, point of discussion of this part of *De Lijnbaan* without monumental protection.

CIAM Urbanism Revisited. Modernist Mass Housing Estates in Spain: Best, Good, Standard, Poor (BGSP)

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The evaluation of the experience and legacy of European mass housing estates built in the period of rapid urban growth during the second half of the 20th century (1950-1970) admits of different interpretations: either a successful response to the huge housing crisis and demand after WWII, or a failure regarding urban and architectural quality: obsolescence of typologies, urban spaces and building technologies, as well as loss of environmental quality. To what extent could such “weak urbanity” be attributed to the rigidity of some modernist urbanism tenets?

There are examples of “good” or “best”, high quality housing estates, but most of the large-scale estates of the period are “standard” or “poor”. When architects, sociologists and other scholars criticized the modern urbanism principles of the Athens Charter in the 1960’s they were not looking at the exceptional examples, but at the majority of the housing developments. The issue here is to identify what the proportion of “best”, “good”, “standard” or “poor” housing estates actually is (or “best”, using the terminology of UN Habitat) in order to evaluate the contribution and responsibility of modern planning and urban design culture. Our concern is to understand to what extent mass housing forms were related to the modernist international urban culture of the *Athens Charter* and what role urban design played in the significant loss of environmental quality noticeable almost everywhere in Europe in the years of rapid urban growth (1960 - 1975).

This paper will focus on Spanish mass housing estates or *polígonos de vivienda* built in that period. It will show some of the “best” examples, as well as the “good” ones, but also the “standard” ones and the less fortunate or “poor” (following the qualifications made in “best practices” databases such as the Dubai or Istanbul UN agency). Explaining how and why this story of “real urbanism” against “ideal modernist urbanism” happened will be the main goal of the paper.

1. INTRODUCTION

“Certo, la Charte [di Atene] non rappresenta tutto il pensiero dei CIAM, questo è vero. Ma è perfettamente emblematica della sua visione estremista e del suo spirito giacobino”¹.

The evaluation of the experience and legacy of European mass housing estates built in the period of rapid urban growth in the second half of the 20th century (1950s-1970s) has given rise to different interpretations. It has been recognized as a successful response to the huge housing crisis and demand after WWII. However, regarding urban and architectural quality, the review of this legacy 50 years later leads to speaking about failure to a certain extent: obsolescence of typologies, urban spaces and building technologies, as well as loss of environmental quality. Our question is: to what extent could the resulting “weak urbanity” be attributed to the rigidity of some modernist urbanism tenets?



FIGURE 1. Madrid plan with the 15 examined *polígonos* in 1965 and 2015. Graphic documentation elaborated by Sergio García within the framework of the project *UR-Hesp*. © Javier Monclús and Carmen Díez.

The debate has been intense and it isn't easy to get a balanced view between the generally positive evaluation from architects and modern historiography (especially when focusing on the best examples as is the case of **docomomo** registers) and the critical opinion coming from sociologists and some planning historians. Of course, we are facing a complex, contradictory and paradoxical process that needs to be analyzed in greater depth.

It is clear that CIAM urbanism and the functional city model was a fundamental contribution to the shaping of modern cities. However, the history of architecture and urbanism should not just deal with exceptional models, but mainly with "real architecture and urbanism"². The aim of this paper is to examine some real examples of Spanish *polígonos* or housing estates 50 years after they were built.

Despite a recognizable homogeneity, significant variations depending on different factors can be perceived in the housing estates built in those years. Focusing on urban quality and on some case studies, today it is possible to find some examples of "best" or "good", high quality housing estates. However, in hindsight it seems that most of the large-scale housing estates built in that period could be qualified as "standard" or "poor". The issue here is to identify the factors by which we can find some elements which make housing estates "good", "standard" or "poor" (or "best", using the terminology of UN Habitat). This would help to evaluate the contribution and responsibility of modern planning and urban design culture in the success or failure of those estates 50 years after they were built.

Our concern is to understand to what extent mass housing forms were related to the modernist international urban culture of the *Athens Charter* and what role urban design played in the significant loss of environmental quality noticeable almost everywhere in Europe in the years of rapid urban growth (1960-1975). In the 1960s and 1970s housing estates radicalized the functionalism and pragmatism of the Modern Movement and particularly the *Athens Charter*, ignoring different cultural traditions and socio-political situations. The paradox is that those



FIGURE 3. Zaragoza plan with the 3 examined *polígonos* in 1965 and 2015. Graphic documentation elaborated by Sergio García within the framework of the project *UR-Hesp*. © Javier Monclús and Carmen Díez.

quence of rapid urban growth, led to a considerable increase in the size of estates, that used towers and slabs as more rational and economic typologies. At the same time, urban quality decreased. Rigidity and lack of complexity became key words: zoning was the motto.

As happened in other Western cities and countries, these earlier *polígonos de viviendas* of the 1950s were “better designed”, in contrast to the “avalanche of low-quality architectural projects” that characterized a large part of 1960s’ and 1970s’ modern Spanish suburbs⁹. There are various reasons for this loss of urban quality and not just architectural but are often linked to socioeconomic issues and new building processes. The factors that explain the widespread adoption of these new housing forms (towers and slabs) and new urban typologies (isolated buildings in open spaces without a traditional urban tissue of squares and streets), beyond the enthusiasm of architects and planners, are well-known¹⁰. But the problems derived from those modernist open urban forms are also noted: dissolution of the concept of public space, with consequent confusion between public, private or community domains; difficulties of orientation in the labyrinth of capricious and incomprehensible built forms which were often the result of design experiments; lack of parking space, absence of local commerce, difficulties of conservation of large areas of open spaces; security problems, etc.¹¹.

We have analyzed 30 paradigmatic examples of the period (1960-1975)¹² in order to better understand these issues and to figure out how these modernist principles were applied in Spanish housing estates, trying to evaluate their legacy fifty years later. The lack of a broader, global, comparative view makes it difficult to understand the common processes that, despite the diversity of examples, shaped urban growth in Spanish cities, especially where there was a rapid process of urban growth in the 1960s and 1970s¹³. The table at the end of this paper shows a general summary of all the factors considered in our survey.

It helps us form a comparison of the urban qualities in the examined estates and to establish an objective basis for rating those considered “best”, “good”, “standard” or “poor”¹⁴.

3. EVALUATION: PARAMETERS, OBJECTIVE DATA, INDICATORS

How can urban quality – urbanity – be evaluated? The aim of our exploration is not only to identify the “best” examples, but also the “good”, the “standard” and the less fortunate or “poor” ones. The objective is to deal with “real urbanism” instead of taking into consideration only “ideal modernist urbanism” that is often theorized and examined. In our survey we have singled out some parameters, objective data and indicators that can help to establish a kind of “urban quality ranking”.

The first “indicator” concerns the urban location of housing estates. Until the mid-1950s the small-sized housing states were integrated into the urban fabric, filling existing urban voids or lengthening streets. Most estates built in the 1970s are located far away from city centres and are poorly communicated with it.

The next indicator is the urban layout. This is a rather complex issue, since many different solutions can be found, even if the *Athens Charter* principles were generally applied¹⁵. Facilities located in a central position often changed from being structural axes to becoming insurmountable barriers, as happened in Ebro Viejo¹⁶. Most of the estates apply the modernist functional urban tenets, but only some brilliant examples develop complex urban layouts. A large number of them – even the interesting ones –, produced residual spaces with hardly any character or functionality.

Radical zoning and a rigid urban layout is another aspect to consider, that makes it difficult to either mix housing typologies or to include hybrid blocks. Most urban layouts are monolithic and monotonous, due to the repetition of towers and slabs. However, some interesting examples can also be found¹⁷.

Size is another important factor, since most of the best or good examples are quite small (less than 1,000 d/u). When the size of estates increased in the 1960s and in the 1970s, the difficulties arose¹⁸. Moreover, in some cases, some large-scale urban projects were conceived simply as large-scale architectural projects¹⁹.

Concerning density, there is significant diversity ranging from around 75 dwellings/ha to 215 dwellings/ha. Interestingly, there is no direct relation to urban quality.

In regards to open spaces, percentages are usually very high, varying from around 65% to 85% of the total site area. This can be an advantage, but can also turn into a problem. The ideal of “cities in nature” could perhaps work in some Central and Northern European countries, but not in Latin European countries, where shade is more important.

Besides all these physical aspects, we considered another different approach, within a more social and economic context, that led to the concept of “urban

vulnerability”²⁰. The table shows interesting relationships between some urban forms and vulnerability²¹.

The processes of change experienced by these housing estates in the last 50 years make evaluation even more complex. Some transformations are due to the alteration of the original projects, other has been caused by different factors of obsolescence or, on the contrary, due to improvement processes²². Obsolescence and resilience are keywords linked to these processes of change.

4. CONCLUSIONS

The important legacy of Spanish housing estates has given way to different views, even to opposing positions. Sometimes it has been considered as an interesting urban and architectural heritage that should be preserved, protecting it from too radical interventions. On other occasions, it has been considered as a problematic urban heritage that undergoes processes of obsolescence – as happens with old historical centres or other urban peripheries – and requires urban and architectural renovation, regeneration or rehabilitation actions. With this perspective, improving urbanity and habitability of *polígonos* are challenges for any integrated urban regeneration process.

Given the diversity of architectural and urban values and forms, and also the specificity of the problems in each case, it is difficult to find indicators that could help perform an objective evaluation. However, on the basis of objective data, an extensive survey of a relatively high number of housing estates, approached in terms of urban quality and urbanity, is surely useful to more carefully assess regeneration strategies and forms of intervention for the necessary upgrade of those *polígonos*.

As André Corboz and other authors suggest, “theorized urbanism” should be distinguished from “practised or real urbanism”, and although this is a key topic for urban and architectural historiography, it is often overlooked. One of the main challenges of the international debate on how to proceed with the important legacy of European mass housing estates is, in our view, to understand how, and in what context, this history of “real urbanism” actually took place and what extent “ideal modernist urbanism” is responsible for it. This is the main goal of our research.

URBANITY INDICATORS ¹ – ROUGH EVALUATION												
CITIES	PUBLIC OR PRIVATE PROMOTION	POLÍGONOS BUILT IN THE 1960s AND 1970s	URBAN LOCATION	BUILDING TYPOLOGIES	SIZE			DENSITY		FOOTPRINT OPEN SPACES	VULNERABILITY (f)	SOURCE
					dw	HA		dw/HA	in/HA			
MADRID	Public	Fuencarral (PD)	S G	S	1.839	21	M	87,6	350,3	74%	Y	(a)
		Barrio de Entrevías	P S	P	8.395	83,3	L	100,8	403,1	73%	Y	(a)
		Gran San Blas	P S	B	10.442	95	XL	109,9	439,7	81%	N	(a)
		Caño Roto (PD)	P S	B	1.907	20	M	95,4	381,4	66%	Y	(a)
		Virgen de Begoña (PA)	S G	G	1.528	13,6	M	112,4	449,4	77%	N	(a)
		Almendrales (PD)	P G	P	1.437	11,6	M	123,9	495,5	81%	Y	(a)
		San Cristobal de los Angeles (PD)	P S	G	4.175	31,4	M	133,0	531,8	81%	Y	(a)
		Colonia San Vicente de Paul	P S	S	2.034	14,3	M	142,2	569,0	69%	N	(a)
		Grupo Virgen de Loyola	P P	P	762	4,7	S	162,1	648,5	75%	Y	(a)
		Moratalaz	P S	G	9.424	126,9	XL	74,3	297,1	83%	N	(a)
		S. Antonio / C. de la Montaña	S G	S	2.328	18,9	M	123,2	492,7	75%	N	(a)
		Private	Barrio de la Estrella	S G	G	6.094	33,5	L	181,9	727,6	81%	N
	Parque de las Avenidas		S G	S	4.536	33,3	M	136,2	544,9	74%	N	(a)
	Barrio del Pilar		S G	G	19.641	92	XL	213,5	854,0	76%	Y	(a)
	Colonia Saconia		S G	S	2.900	28	M	103,6	414,3	76%	N	(a)
	BARCELONA	Public	Trinitat Nova	P S	G	3.000	35	M	85,7	342,9	82%	Y
San Roc (Badalona)			P S	G	4.035	46	M	87,7	350,9	84%	Y	(b)
Montbau			S G	G	2.226	15,6	M	142,7	570,8	76%	N	(b) (d)
Sudoeste del Besós			P S	P	4.843	34	M	142,4	569,8	66%	Y	(b) (d)
Bellvitge (Hospitalet)			P G	P	13.055	100	XL	130,6	522,2	84%	N	
La Paz			P S	P	2.620	17	M	154,1	616,5	79%	Y	(c)
La Guineueta			P S	G	2.590	21	M	123,3	493,3	80%	N	(b)
La Mina			P S	P	2.700	26,86	M	100,5	402,1	76%	N	(d)
Ciudad Badia			P S	P	5.675	59	L	96,2	384,7	84%	N	(c)
Canyelles			P S	S	2.710	23,6	M	114,8	459,3	82%	N	(b)
Ciudad Meridiana			P P	G	4.844	35	M	138,4	553,6	83%	Y	
Private			San Ildefons Cornellà	P S	S	9.196	45,3	L	203,0	812,0	75%	Y
ZARAGOZA	Public	Alfárez Rojas	P S	P	656	5,1	S	128,6	514,5	74%	N	(e)
		Balsas de Ebro Viejo	S G	S	1.534	12,58	M	121,9	487,8	73%	N	(e)
	Private	Polígono Romareda	G B	G	2.224	29	M	76,7	306,8	80%	N	(e)

B – BEST · M – MEDIUM · S – STANDARD · P – POOR
 S – SMALL · M – MEDIUM · L – LARGE · XL – EXTRA LARGE

(a) BATALLER ENGUIX, Jose Javier, Ramón López de Lucio, Dario Rivera Blasco, and Javier Tejera Parra. 2004. *Guía Del Urbanismo de Madrid: Siglo XX*. Gerencia Municipal de Urbanismo. Área de Gobierno de Urbanismo. Vivienda e Infraestructuras. Ayuntamiento de Madrid.
 (b) FERRER AJALA, Amador. 1974. *Presentación y estadístico de los planes parciales de la provincia de Barcelona (1956-1970)*. Colegio Oficial de Arquitectos de Cataluña y Baleares.

(c) FORTUNY, Joan. La OSH y la ciudad: introducción a la política del suelo de la OSH. *Cuadernos de arquitectura y urbanismo* 105 (1974), 48-51.
 (d) MONCLÚS, Javier, Carlos Labarta, and Carmen Diez, eds. n.d. *Regeneración Urbana (II). Propuestas para el Polígono Balsas de Ebro Viejo*. Zaragoza: Sociedad Municipal Zaragoza Vivienda/Prensas de la Universidad de Zaragoza.

(e) MONCLÚS, Javier, Carlos Labarta, Carmen Diez, Luis Agustín, and Iñaki Bergera Serrano. 2012. *Paisajes urbanos residenciales: en la Zaragoza contemporánea*. Prensas de la Universidad de Zaragoza.
 (f) HERNÁNDEZ AJA, Agustín, Ángela Matesanz Parellada, Carlina García Madruga, Julio Alguacil Gómez, Javier Camacho Gutiérrez, and Cristina Fernández Ramírez. 2015. *Atlas de Barrios Vulnerables de España: 12 Ciudades 1991/2001/2006*. E.T.S. Arquitectura (UPM).

TABLE 1. Attempt to evaluate 30 Spanish *polígonos* using some parameters, objective data and indicators that can help to estimate the urban quality or “urbanity” at the time of the construction and fifty years later. © Javier Monclús and Carmen Diez.

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- MONCLÚS, Javier, DíEZ, Carmen, "El legado del Movimiento Moderno. Conjuntos de vivienda masiva en ciudades europeas del Oeste y del Este. No tan diferentes...", *RITA*, 3, 2015, 88-97.

NOTES

- 1 "Of course, the [Athens] Charter does not represent all CIAM thinking, this is true. But it is perfectly emblematic of its extremist vision and of its Jacobin spirit". See André Corboz, "L'urbanistica del XX Secolo: Un Bilancio", in *Urbanistica*, Rome, 1990, 101. Free translation. On the versions of the Charter see John. R. Gold, "Creating the Charter of Athens: CIAM and the Functional City, 1933-43", *The Town Planning Review*, Liverpool, Liverpool University Press, July 1998, vol. 69, n. 3.
- 2 Especially when dealing with the history of urbanism: "(...) da un lato l'urbanistica com'è praticata, dall'altro l'urbanistica com'è teorizzata" [on the one hand, urbanism as it is practised, on the other hand, as it is theorised], in André Corboz, *op. cit.* Opposite to "virtual" modern city: "[...] en gran medida, la ciudad moderna no se ha construido [...] tan sólo existe, como virtualidad, en la suma de aportaciones que configuran la cultura urbana del siglo XX" [The modern city hasn't largely been built [...] it exists only as virtuality, as the sum of contributions that shape 20th century urban culture], in Carlos Martí, *Las Formas de Residencia en la Ciudad Moderna. Vivienda y Ciudad en la Europa de Entreguerras*, Barcelona, UPC, 1991, 48.
- 3 Javier Monclús, Carmen Díez, "Modernist Housing Estates in European Cities of the Western and Eastern Blocs: How different?", *Planning Perspectives*, vol. 31/4, no. 3, 2016.
- 4 "Ideas, forged in the 1920s, came to be applied to the planning of working-class housing in Sheffield and St Louis, and hundreds of other cities too, in the 1950s and 1960s; the results were at best questionable, at worst catastrophic". Peter Hall, *Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century*, Hoboken, New Jersey, Blackwell, 1988.
- 5 About the concept of "urbanity" there is suggestive literature. See texts by Hartmut Häußermann and Walter Siebel, Peter Breittling, Hans Paul Bahrdt, Edgar Salin, among others. Essential is the book by Wolfgang Sonne, *Urbanität und Dichte im Städtebau des 20. Jahrhunderts*, Berlin, Dom Publishers, 2014.
- 6 Juan Antonio Cortés, "Modernidad y vivienda en España", in AA.VV., *La Vivienda Moderna, Registro docomomo Ibérico 1925-1965*, Madrid, Arquia, 2009.
- 7 *Ibid.*, 47.
- 8 In Madrid the heroic experience of the *poblados de absorción* and *poblados dirigidos* of the 1950s and 1960s should be noted, among them Almendrales, Entrevías, Caño Roto and Fuencarral, and a large-scale housing estate: Gran San Blas. In Barcelona, there's just one exceptional *polígono* included, Montbau. And in Zaragoza, *docomomo* has also recognized the value of Salduba, a small housing estate built at the end of the 1950s. We should be aware that, for example in Barcelona, about 80,000 dwelling units were built in *polígonos* between 1960 and 1970. That is about 30% of the total of 260,000 dwelling units built in Barcelona in those decades. But how many of them were "best", "good", "standard" or "poor", according to urban quality parameters?
- 9 Javier Monclús, Carmen Díez, "Modernist Housing Estates in European Cities of the Western and Eastern Blocs: How different?", *op. cit.*, 10.
- 10 They were effective for mass housing production and offered more flexibility for designing without the limits of old urban fabric. Developers (public and private) discovered the advantages of "superblocks" (2, 3 or more hectares) and the autonomy of the blocks. At the same time, "open green spaces" were part of the marketing strategies to offer an image of idyllic landscapes.
- 11 Ramón López de Lucio, "De la Manzana Cerrada al Bloque Abierto", in C. Sambricio (ed.), *Un Siglo de Vivienda Social*, Madrid, Nerea, vol. 2, 2003, 161-166.
- 12 As part of a wider research that includes up to 50 *polígonos*. It has been developed within the framework of the research project UR-Hesp (Urban Regeneration of Housing Estates in Spain), titled *New Challenges for Spanish Cities: the Legacy of Modern Modernist Housing Estates and Options for their Urban Regeneration. Specificities and Similarities with Eastern and Western European Models*, directed by the authors and with funding by the Ministry of Economy and Competitiveness (<http://pupc.unizar.es/urhesp/>).
- 13 Texts by Amador Ferrer in Barcelona and Ramón López de Lucio in Madrid are reference literature for Madrid and Barcelona. About Zaragoza, see J. Monclús, C. Labarta, C. Díez, L. Agustín, I. Bergera (ed.), *Paisajes Urbanos Residenciales en la Zaragoza Contemporánea*, Zaragoza, Prensas de la Universidad de Zaragoza, 2013; J. Monclús, C. Labarta, C. Díez, (eds.), *Proposals for Balsas de Ebro Viejo Housing Estate, Zaragoza. Urban Regeneration II*, Zaragoza, Prensas Universitarias de Zaragoza, 2015.
- 14 This research is based on the study of secondary sources combined with morphological analysis (mapping), photographs, direct examination through visits, etc. The maps of the 3 examined cities representing the situation in the mid-sixties and in 2015 help to visualize the urban location of the estates related to the urban fabric and to quantify the number of estates built in the period of rapid urban growth. This comparative approach continues the research line undertaken in Guardia, M.; Monclús, F. J., y Oyón, J. L. (dir.), *Atlas Histórico de Ciudades Europeas*, vol. 1, Península Ibérica, CCCB-Salvat, Barcelona, 1994.
- 15 In Fuencarral (Madrid), for instance, various urban layouts were combined, in one of the "best exponents of the finest examples of urban composition with slabs". On the contrary, in the large-scale housing estate of San Blas (Madrid),

- a "large-scale experiment with a failed urban model" was carried out with a paradigmatic layout, as a faithful expression of the tenets of modern urbanism. Ramón López de Lucio, *Vivienda Colectiva, Espacio Público y Ciudad. Evolución y Crisis en el Diseño de Tejidos Residenciales 1860-2010*, Buenos Aires, Nobuco, 2013, 124-126, 126-130.
- 16 J. Monclús, C. Díez, "Emergence, obsolescence and regeneration of housing estates....", in J. Monclús, C. Labarta, C. Díez, Carmen (ed.), *Proposals for Balsas de Ebro Viejo housing estate, Zaragoza*, op. cit., 28.
 - 17 "Different lengths and heights, separation and thickness, with considerably varied architectural and housing typologies, show the will to innovate which results in a quality architectural project which contrasts with others in the same city and period", in T. Salvadó, J.M. Miró, "The Appendages of the City of Kidneys", in *Contemporary Barcelona 1856-1999*. Barcelona, CCCB, 1996." 147.
 - 18 Javier Monclús, Carmen Díez, "Modernist Housing Estates in European Cities of the Western and Eastern Blocs: How different?", op. cit., 1, 4. See also Rem Koolhaas, "Whatever Happened to Urbanism?", in Rem Koolhaas (with Bruce Mau), *S, M, L, XL*, New York, The Monacelli Press, 1995.
 - 19 Franz Wassenberg, *Large Housing Estates: Ideas, Rise, Fall and Recovery: The Bijlmermeer and Beyond*, Delft, IOS Press, Delft University Press, 2013.
 - 20 Agustín Hernández Aja (dir.) et al, *Análisis Urbanístico de Barrios Vulnerables en España 2001*, Catálogo de Barrios Vulnerables Españoles, Madrid, Ministerio de Fomento, 2011.
 - 21 On the other hand, we find that vulnerability is bigger in public housing estates of the 1940s-1960s than in other urban forms.
 - 22 For instance, many of the new *polígonos* built in the 1960s ended up some years later fitting in physical continuity with the city. See Amador Ferrer, "*Polígonos de viviendas: reparación o transformación. Construcción y evolución del sector de Levante en Barcelona*", in *Ciudad y Territorio*, Madrid, 1983, 57-58. This fact has contributed to increasing the number and type of amenities, or to replace some of the building types for new ones, more in accordance with today's living requirements. But some changes often happen in the opposite sense: closure of the originally planned commercial facilities, lack of maintenance of the open spaces, invasion of cars, obsolescence of building types, etc.

On Circulation: Lina Bo and CIAM's Fourth Function

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CIAM's urbanism has been described and criticized as a car-oriented urbanism. According to the *Athens Charter* (1943), railroad lines were not a solution, but a problem. Encircling districts, they separated them from other parts of the city and became an obstacle to urban development. Road traffic was the remaining choice, if the existing street systems could be reshaped to exploit the high speeds in locomotion brought by the automobile.

In 1981, when the Competition for the Anhangabaú Valley in São Paulo was launched, many had already declared CIAM's orthodoxy a failure. Other sorts of medicine for the city became popular, among them, mother Jacob's homemade poultices - as Lewis Mumford ironically put it. Lina Bo's entry for the competition consisted of a bridge-like steel structure for carrying high-speed traffic, as an "aqueduct of cars" following the valley, raised over a park designed to be a popular "tropical garden". "Nothing will be destroyed", she said. Old buildings around the park, good or bad, should be kept, matching Jacobs' diversity ideals. Nevertheless, Lina's proposal did not deny CIAM's car-based hard-core: segregation between vehicles and pedestrians; non-stop routes for high-speed traffic; green areas isolating heavy traffic. The paper wishes to review Lina's design for the Anhangabaú Valley in light of its (not so explicit) relationship to the CIAM legacy, confronting its urban, typological and figurative dimensions. Lina's scheme, metropolitan and agrestic, mirrors CIAM's doctrines internal dualities, despite the unbroken cohesion attributed to this corpus of ideas. I will argue that converting the peculiar 4th function in an architectural episode, she embraced and enlarged CIAM's legacy, producing an unparalleled essay on mechanized movement, urban landscape and nature.

1. INTRODUCTION¹

Circulation is the most peculiar and the least architectural of CIAM's 4 functions². Circulation organizes (or disorganizes) cities, without necessarily constructing architectural spaces. Although having a major impact on cities, its handling goes beyond (and below) the scope of architecture as a disciplinary field. Since it deals with actual mechanical components - such as trains, buses, cars - machines' requirements must be considered in a tangible way, and not just metaphorically (as was the case at Le Corbusier's Citrohan House). Not surprisingly, in the English version of the 4 functions provided by Sert in *Can our Cities Survive?* (1942), it was named transportation, emphasizing its reliance on mechanized movement³.

CIAM's urbanism has been described and criticized as a car-oriented urbanism. According to the 58th point of the Le Corbusier's *Athens Charter* (1943), railroad lines were not a solution, but a problem⁴. Encircling districts, they separated them from other parts of the city and restrained urban development⁵. More flexible regarding spatial requirements, motorized traffic was the better alternative, if the existing street systems were reshaped in order to both exploit the high speeds in locomotion brought by the automobile and solve the conflicts with pedestrian movement.

In 1981, when the competition for the Anhangabaú Valley in São Paulo was launched, many had declared CIAM's orthodoxy a failure. Other sorts of medicine for the city had become popular, among them, mother Jacob's homemade poultices

– as Lewis Mumford ironically put it, in his famous critic of Jane Jacobs' book *The Death and Life of Great American Cities* (1961)⁶. Lina Bo Bardi's entry to the competition, the Anhangabaú Toboggan, was accurately defined by Comas as a dual *parti*⁷. She proposed a bridge-like steel structure for carrying high-speed traffic, as an "aqueduct of cars" following the valley, raised over a park designed to be a "tropical garden for the people"⁸. As she claimed, there would be "two Anhangabaú": one above, for the cars, and other below, for the people⁹.

"Nothing will be destroyed", she said. Old buildings around the park, good or bad, should be kept, matching Jacobs' diversity ideals¹⁰. However, Lina's proposal did not deny CIAM's car-based hard-core: segregation between vehicles and pedestrians; non-stop routes for high-speed traffic; and green areas isolating heavy traffic.

The paper will review Lina Bo's design for the Anhangabaú in light of its (not so explicit) relationship to the CIAM legacy, confronting its urban, typological and figurative dimensions. Lina's scheme, metropolitan and rustic, mirrors CIAM's doctrines' seldom acknowledged internal dualities. I will argue that converting the peculiar fourth function in an architectural episode, she embraced and enlarged CIAM's legacy, producing an unparalleled essay on mechanized movement, urban landscape and nature¹¹.

2. THE AQUEDUCT OF CARS

The Anhangabaú Valley is part of the historical centre of São Paulo. Nowadays, the Anhangabaú is one of the city's major public spaces, but its history begins with a tea plantation, at a time when the Anhangabaú River still cut the valley. The process of urbanization started by the end of the 19th century, leading to the construction of the *Viaduto do Chá* in 1892, in order to bond the two sides of the valley. The Anhangabaú River was channelled in 1906, and the valley was converted into a park. Eventually, an expressway connecting the south of the city to the north replaced the park.

Lina's team did not win the competition for the revitalization of the area¹². Jorge Wilhelm, Rosa Kliass and Jamil Kfoury were the authors



FIGURE 1. José Luis Sert, "An ABC of urban problems, their analysis, their solutions based on the proposals formulated by the CIAM", *International Congress for Modern Architecture - Can our Cities Survive?*, Cambridge, The Harvard University Press, London, Geoffrey Cumberlege, Oxford University Press, 1947.



FIGURE 2. Lina Bo Bardi, Anhangabaú Toboggan, São Paulo, Brazil, 1981. Perspective. Exhibition *Anhangabaú - Jardim Tropical* curated by Renato Anelli. © Instituto Lina Bo e P.M. Bardi, Casa de Vidro, São Paulo, November 2013.

of the winning project, the one actually executed. “The essence of the problem”, as defined by Wilhelm, was “reconquering the huge central space for pedestrians” freeing the valley of heavy traffic (12,200 vehicles per hour) that did not even need to enter the city centre¹³.

The truly distinctive character of Lina’s proposal was due, not so much to the well-emphasized idea of “returning the valley to the people” (which the winners’ design somehow corroborated), as to the way in which she understood the role of mechanized movement (which fully opposed the winners’ strategy).

She considered 4 basic alternatives for solving the central problem of the traffic. 3 of them were excluded as “negative options”¹⁴. First, the use of elevated pedestrian walkways crossing the valley above the expressway, which she found would be wearing for people, even with the aid of escalators¹⁵. Second, the lowering of the road bed, with pedestrian walkways crossing the valley over it, which she believed would deprive cars and buses of a “view from above of the urban landscape”. She thought that cars and bus passengers could get some fun out of the usually dreary journeys to work, like in London’s double decker buses¹⁶. The third discarded option was the underground highway, which she described as so depressing and miserable as a “way of earthworms”¹⁷.

The fourth option, the one she adopted, was a critique of the fully underground solution. Reversing the conventional expedient of the heavy traffic concealed beneath the ground’s surface, she decided to let “pedestrians on earth”, and “transportation facilities above”¹⁸. Instead of a tunnel, she proposed the construction of what she called the “Anhangabaú Toboggan”: an elevated highway for carrying the high-speed vehicular traffic that was not expected to enter the city’s central areas. It was an amazing bridge-like steel structure, running along the centre of the valley throughout its length, from south-west to north-east. She referred to it as “an aqueduct of cars”, since it should take the flow of traffic from a point and lead it directly to another, running all over the valley and releasing the ground level for green areas and safe pedestrian circulation.

The basic idea for this structure, according to her, was to achieve “transparency and lightness”¹⁹. The almost inevitable comparison with the seventies’ “Minhocão” (Big Worm) might have been a good reason for that. The “Minhocão” was a controversial public work, a massive concrete elevated highway built to improve traffic connections between downtown São Paulo and the city’s western region. The nickname “Minhocão” – literally “big earthworm” – “playfully alludes to the monstrous size and ugliness of the highway”, as registered by Sophia Beal, “an illustration of an urban development model that privileged car culture”²⁰.



FIGURE 3. Lina Bo Bardi, Anhangabaú Toboggan, São Paulo, Brazil, 1981. Detail of the “steel trees”, Exhibition *Anhangabaú – Jardim Tropical* curated by Renato Anelli. © Instituto Lina Bo e P.M. Bardi, *Casa de Vidro*, São Paulo, November 2013.

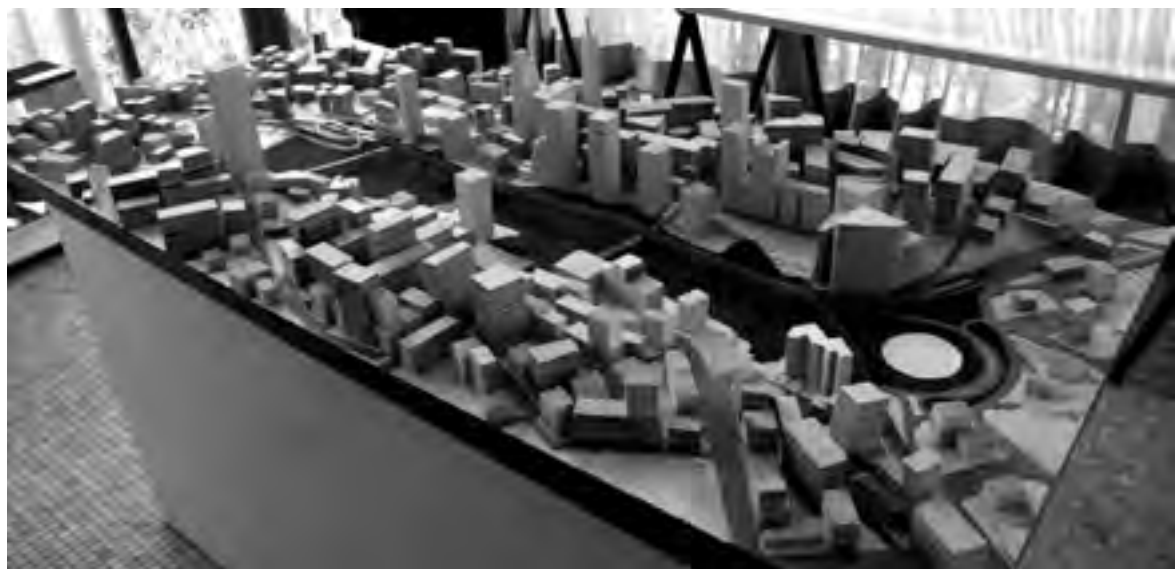


FIGURE 4. Lina Bo Bardi, Anhangabaú Toboggan, São Paulo, Brazil, 1981. Model showed at the Exhibition *Anhangabaú – Jardim Tropical* curated by Renato Anelli. © Instituto Lina Bo e P.M. Bardi, Casa de Vidro, São Paulo, November 2013.

But Lina Bo never feared ugliness or bigness. She herself declared that her *SESC Pompéia* would be as ugly as her former masterpiece *MASP*²¹. I would guess that she had further reasons, and that these reasons – her real reasons – had actually very little to do with disguising the viaduct's huge presence.

Lina's Toboggan had 4 lanes, overlaid in 2 levels. 2 pedestrian passageways for services and emergencies were placed alongside them. The total width was 9 metres. The horizontal structure consisted of innovative and daring pre-stressed steel trusses and steel cables²². As for the floors, she planned to cover the lanes with perforated sheet metal, in order to obtain half transparent, lacelike surfaces, which let light through and would have allowed people below to see the passing cars above.

The horizontal structure was supported by a sequence of giant columns, which she referred to as "steel trees." The name was due to the columns' figurative relation to "ancient trees", like the Brazilian "*gameleiras*" and other large trees of the *figus* genus, which are, in fact, among the oldest species of higher plants on earth²³. The large span between the vertical supports, as well as their outsized height, would give the impression of isolated trees in a forest.

The "steel trees" had an external diameter of 5 metres, and would be constructed with two concentric steel tubes, jointed by a process of in situ injected concrete. Their cores would be hollow. Each column had upper angular pieces supporting the carriageway, growing like the branches of a tree, and similar pieces on the bottom, sinking into the ground like roots. Like their genuine counterparts, these fake trees reached variable heights, allowing the whole aqueduct structure

to take the form of a “wavy sequence”, crossing over the *Viaduto do Chá* (1892) and the Saint Ifigenia Viaduct (1913), the 2 pre-existing structures that connect the two sides of the valley.

As Comas has noticed regarding Lina’s dual *parti*, “advanced technology was the means to the recovery of unspoilt nature”²⁴. Below and around the elevated highway, nature would prevail, with the “steel trees” set side by side with “leafy trees”, like rosewoods, rubber trees and palm trees²⁵. She wanted a park that was not “designed”, as an immense lawn crossed by natural routes, perhaps “those chosen by passers as the fastest and most organic”²⁶.

According to the 2-dimensional representation of the master plan, the red line of the highway scarred the valley, splitting it into 2 separated parts, as condemned by the *Athens Charter*. According to the 3-dimensional reality of the proposal, vehicular circulation was displaced upward, and the park healed the scar, providing the necessary buffer against the heavy traffic, as recommended by CIAM. Instead of merging into landscape, the aqueduct of cars would transform it, like a man-made feature set against the regained green valley.

3. CIRCULATION, URBAN LANDSCAPE AND NATURE

The central device of Lina’s design was the way in which she explored mechanized movement within the city space. At the executed project for the Anhangabaú, Wilhelm tapped the valley with a concrete slab, putting the expressway bellow it, and creating pedestrian spaces over it. The circulation function disappeared, hidden beneath the earth. Lina, on the contrary, overemphasized circulation. She explored the movement both physically – designing the highway as a major engineering structure – and as an experience of the metropolitan life in itself²⁷. Transportation, one of the city’s major problems, could be enjoyed as a memorable experience, and could be incorporated into the urbanized landscape as something not just useful, but also as a source of fun and pleasure. The “transparency and lightness” of the structure did not seem to be there to activate some sort of camouflage effect, aimed to integrate the giant viaduct into the landscape. Through Lina’s architectural imagination, it would achieve an opposite goal. The lacelike floors would perform like an almost cinematographic surface, through which moving cars could be seen from below, as well as the park being seen from above. “The car would no longer be the dangerous enemy of pedestrians”, she said, it would be “the spectacle”. Obsession with the machine, and longing for nature, the 2 interlinked faces of the modern spirit, were not avoided, but made explicit. After all, as Leo Marx has showed, it had been an artist’s role not ever search for a middle ground between civilization and nature, but to expose a complex and contradictory relationship²⁸.

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NOTES

- The present work was supported by CNPq, National Council of Scientific and Technological Development, Brazil.
- Despite the fact that circulation has a physical reality and can be related to 3-dimensional structures such as bridges and viaducts.
- "Town planning is the organization of the function of the collective life of cities: Dwelling, Recreation, Work, Transportation. Its province therefore includes the study of cities and of living conditions within them". José Luis Sert, "An ABC of urban problems, their analysis, their solutions based on the proposals formulated by the C.I.A.M.", *International Congress for Modern Architecture - Can our Cities Survive?*, Cambridge, The Harvard University Press, London, Geoffrey Cumberlege, Oxford University Press, 1947, 5.
- "Dans nombre de cas, le réseau des voies ferrées (chemins de fer) est devenu, alors de l'extension de la ville, un obstacle grave à l'urbanisation. Il enferme les quartiers d'habitation, les privant des contacts utiles avec les éléments vitaux de la ville", Le Corbusier, *La Charte d'Athènes*, Paris, Éditions de Minuit, 1957, 58.
- José Luis Sert, *op. cit.*, 180.
- "For Mrs Jacobs to imagine that the horrifying human by-products of the city's disordered life can be eliminated by a few tricks of planning is as foolish as for her to imagine that too generous open spaces and superblocks fostered these symptoms." Lewis Mumford, "Mother Jacobs' Home Remedies", *The Sky Line*, New York, The New Yorker, December 1962, 178.
- Carlos Eduardo Comas, "LBB: Three city pieces 1976-88", in Horacio Torrent (ed.), *El Desafío el Tiempo. Proyecto y Persistencia del Movimiento Moderno*, Santiago de Chile, 5º Seminario **docomomo** Chile, 2014, 43.
- Lina Bo Bardi, *Anhangabaú Tobogã*, 1981. Perspective with notes (100ARQd0012). Collection of the Instituto Lina Bo e P.M. Bardi, Rua General Almério de Moura, 200, São Paulo - SP, 05690-080, Brazil (<http://www.institutobardi.com.br>).
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- Lina BoBardi, *Anhangabaú Tobogã*, Concurso de Projetos, São Paulo, 1981, in Marcelo Ferraz (org.), *Lina BoBardi*, São Paulo, Instituto Lina Bo e P.M. Bardi, Empresa das Artes, 1993, 252. Also see "The 'wrong' buildings will be accepted like facts of a 'time' and recovered..." Lina Bo Bardi, *Anhangabaú Tobogã*, 1981. Perspective with notes (100ARQd0039). Collection of the Instituto Lina Bo e P.M. Bardi.
- The basic sources for this work were the material available at the archives of the Instituto Lina Bo e P.M. Bardi. I should also mention the Exhibition *Anhangabaú - Jardim Tropical*, shown at the Instituto Lina Bo e P.M. Bardi, Casa de Vidro, São Paulo, November 2013, curated by Renato Anelli, which provided an overview of all of drawings and models.
- Francisco Fanucci, André Vainer, Marcelo Ferraz, Paulo Fecarotta, Guilherme Paoliello, Bel Paoliello, Marcelo Suzuki and Ucho Carvalho collaborated in the project. Cf. Ferraz, *op. cit.*, 252.
- Jorge Wilhelm, *Projeto de Urbanismo - Vale do Anhangabaú*. Accessed on October 10, 2015, <http://www.jorgewilhelm.com.br>.
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- Id.*, Notes (negative option A).
- Ibid.*, Notes (negative option B).
- Ibid.*, Notes (negative option C).
- Marcelo Ferraz, *op. cit.*, 252.
- Id.*
- Sophia Beal, *Brazil under Construction. Fiction and Public Works*. New York, Palgrave Macmillan, 2013, 164. It is relevant to remark that São Paulo's "Minhocão" is tightly constrained between existing buildings.
- SESC Pompéia, São Paulo, 1977 (with the collaboration of André Vainer and Marcelo Ferraz); Museum of Art of São Paulo MASP, São Paulo, 1957-1958. As she ironically put it: "The 'Beautiful' is easy, difficult is the 'Ugly', the truly ugly. I hope the sports complex of the SESC Factory of Pompéia will be ugly, much uglier than the Museum of Art of São Paulo. It is a Silo, Bunker, Container." Marcelo Ferraz, *op. cit.*, 230.
- For further information see Carlos Eduardo Comas, *op. cit.*, p. 44.
- Lina Bo Bardi, *op. cit.*, Structure
- Carlos Eduardo Comas, *op. cit.*, 44.
- Marcelo Ferraz, *op. cit.*, 252.
- Id.* Lina Bo Bardi, *op. cit.*, Notes
- Not by chance, in French and Portuguese they are called "work of art".
- Leo Marx, *The Machine in the Garden. Technology and the Pastoral Ideal in America*, New York, Oxford University Press, 2000 [1964].

Modern Housing and the Aesthetics of Growth and Change

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The historiography of the Modern Movement championed the notions of authenticity and the original. By the same token, the textbooks used in architectural education failed to incorporate the performance of the buildings through time. Instead, they celebrated the pure and pristine condition of architecture before being actively inhabited. In other words, they promoted an aesthetic devoid of the habitus, the practices of everyday life, including the appropriations and the evolving transformations of the original design. A famous exception to this came about in the late 1960s, when Philippe Boudon produced a groundbreaking investigation into the vernacularisation of Le Corbusier's *Quartiers Modernes de Frugès* in Pessac. In his *Pessac de Le Corbusier*, Boudon documents the entwined relation between architecture and the sociology of the everyday. In other words, he examined the compelling transformation of machines for living into lived-in machines, the neighbourhood's second life as it were. Eventually, in 2005, the local authorities, supported by the French press, applied for the recognition of Le Corbusier's Pessac estate as a UNESCO World Heritage Site. One of the direct consequences of this monumentalisation was a relentless attempt to retrofit the complex to its original condition.

The second life of modern housing projects needs further problematization. Whether in the Pessac estate, in the conscious restoration of Michiel Brinkman's Spangen block in Rotterdam, in the contemporary refurbishment of Jack Lynn and Ivor Smith's Park Hill in Sheffield, or in Lacaton & Vassal's transformation of *Tour Bois le Prêtre* different strategies to update modern housing projects come about suggesting very different positions regarding the inclusion of the transformative practices of inhabitation and users' agency.

Curiously enough, the post-war CIAM congresses contended that architecture and planning should lose something of their finite character. It was claimed that a habitat should be planned and constructed so as not to resist the development of those they served. This principle would be marginally implemented in the next decades until it became currency in the 1970s when poverty alleviation strategies sponsored housing policies that focused on the progressive development of local communities. Balkrishna Doshi's Aranya community housing and Charles Correa's Belapur housing, both designed in the 1980s, are 2 major examples of this approach. Indeed, in these cases there was a deliberate drive to include adaptive reuse as part and parcel of the design strategy, accommodating growth and change over time while complementing the authority of the designer with the spatial agency of the inhabitant.

This session examines and discusses strategies for adaptive reuse in modern housing projects. To what extent can these strategies cater for a more inclusive habitat? What sort of architectural language comes with inclusive strategies that embrace adaptation and reuse as well as the agency of the inhabitants? What sort of rules can be defined? And what are the limits of such an approach before the original is lost under the incremental change of the life cycles of everyday inhabitation? And even then, should we ultimately accept this loss, or intervene?

Which Second Life?

Adaptive Reuse as a Contested Paradigm

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Many activists and planners proclaim “co-production” with inhabitants as a way to guarantee a more socially just adaptive reuse. Participation and self-organization seem ways to turn master planned, modernist mass housing estates into better environments adapted to the needs of their inhabitants. Still, in today's neo-liberal economy, adaptive reuse is a contested undertaking. Attributing value to housing projects may work against those for whom these developments have been planned and erected: the economically weaker inhabitants of our cities. Instead, architects, planners and architects should understand the qualities of ordinary environments and appreciate substandard modernist housing as a resource in itself. The paper will discuss 3 specific sites: 1) London's iconic modernist housing heritage, situated in a neo-liberal, market-oriented housing environment and currently mutating into up-market property assets, partly catering for a nostalgic appreciation of the social-democratic aesthetics of the past; 2) Berlin's *Gropiusstadt* and its AnG neighbourhood academy, a residual part of a formerly much larger stock of social housing in Berlin as a learning project generating knowledge with, for and about the inhabitants and the everyday life in modern mass housing settlements; and 3) Berlin's “invisible” modernism of the post-war *Aufbauprogramm* as an example of long-term affordable, albeit substandard housing that has hardly been recognised as a specific element of Berlin's housing stock. The following critical appraisal is built on experience as well as research knowledge. It will show the vulnerability of the urban poor and aims at contributing to a more socially aware discussion of design agency within neo-liberalism.

1. INTRODUCTION

Within the broader discussion on adaptive reuse of historic building stock, modernist mass housing is currently considered a valuable object of research and preservation¹. The slowly increasing popularity of late modernism underscores the cultural and societal significance of these buildings and ensembles. But modernist mass housing is also a sensitive heritage. Already, in the 1930s, William Empson and, in the 1980s, John Barrell showed how the educated classes' flaunted solidarity with the “simple but honest man” served to mask power relations while relieving any guilty feelings induced by inequality². In a similar way the long-time dismissal of modernist master planning as producing oppressive environments masks the withdrawal of resources from relatively poor citizens, without producing real housing alternatives³.

At first glance, participatory adaptive reuse is a counter-movement to modernist planning that seems to support processes of emancipation and to adjust the modernist heritage to the needs of its inhabitants. But as a new paradigm of development for modernist housing heritage, it is contested. When considering the constellations, coping strategies and power relations, agendas, and

knowledge(s) of the multiple actors involved, the shift from welfare state planning and development to new neo-liberal regimes has to be taken into account as the framework within which all projects take place. Hence, participatory adaptive reuse may, on the one hand, provide an alternative to both paternalism and neglect, while, on the other hand, it could be used to justify the withdrawal of welfare state support, thus working against the ones it is intended to help.

These constellations and power relations within current concepts and practices of reuse and adaption of modernist housing will be examined by comparing 3 cases from 2 cities, London and Berlin. Both cities' housing stocks have been fundamentally impacted by neo-liberal regimes. But while London is in an advanced state of privatization of public property, Berlin only recently has become aware of the consequences of a public "sell-out". Thus the 3 samples cover different environments of modernist housing stock at different stages of capitalization. Taking this economic and political context into account as much as the physical and aesthetic qualities of the buildings proper, we will argue that the capitalization of the buildings' aesthetic quality and heritage value runs against their original aim and diminishes their capacity to provide affordable housing that is independent of the participatory involvement of its inhabitants. In this paper, we argue that within the current political and economic condition of neo-liberalism, it is probably the ordinary, sub-standard stock, which carries the biggest potential for housing the urban poor⁴.

2. LONDON'S ICONIC MODERNIST HOUSING HERITAGE

In Western Europe, most modernist housing estates were built with government money to alleviate a long term housing shortage that was affecting many citizens, including the middle classes. In addition to this, public housing projects were seen as exemplary models, intended to raise the standards of market housing by means of direct competition⁵. Following WWII, the welfare state housing production in and around London – exclusively carried out by municipal authorities ("council housing") in a system that was almost unique in Europe – resulted in many iconic and now listed housing structures⁶, but also many more that are of lesser architectural significance. The Conservative Government under Margaret Thatcher ended funding for council housing and in 1980 initiated the so-called "right to buy", to privatize public housing for tenants who were enabled to buy their rented flat with large discounts. Since the 1990s this privatized public housing stock has become increasingly attractive for home buyers on the free market, where flats might be re-sold after the right to buy has been exercised⁷. Many of those home-buyers appreciate the quality of the architecture, especially in comparison with the supply from contemporary commercial house builders. Additionally, they benefit from the commitment of longstanding tenants, who have engaged in solving functional, social, and organizational drawbacks of the council estates and thus in the best sense co-produced their neighbourhoods.

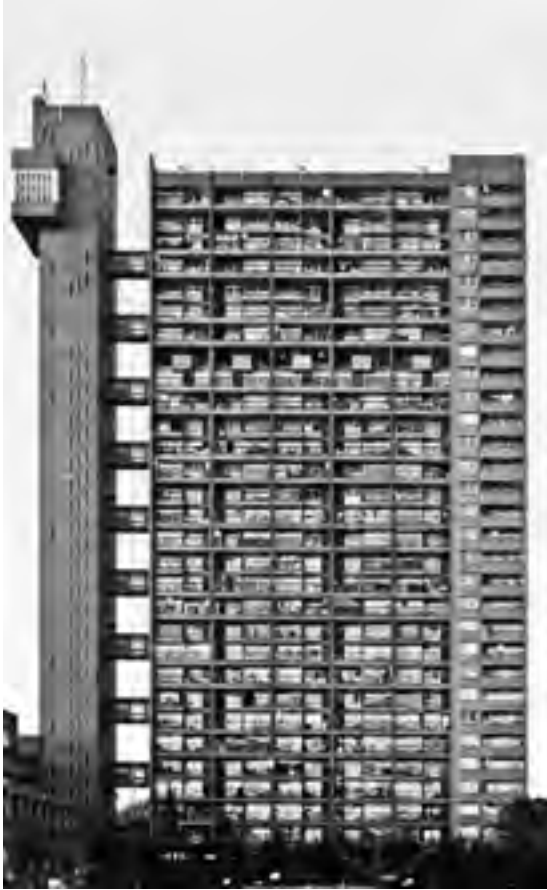


FIGURE 1. Ernő Goldfinger, Trellick Tower, London, England, 1968-72. The iconic west façade is adorned by, among other things, mugs, skirts and cushions. © Martin Kohler.

For example, in Trellick Tower (Ernő Goldfinger, 1968–72) residents successfully lobbied their local council to replace the unreliable lifts, to reorganize the blackout-prone electricity supply, and to install a concierge⁸. As much as the initial problems have led to the mostly negative reputation of buildings like Trellick Tower, improvements like these made them attractive for private home-buyers. Consequently, flats have been increasingly sold to an affluent clientele that could afford even higher market segment homes⁹.

Additionally, the conservative attack on welfare state housing resulted in the boroughs' inability to maintain their housing stocks appropriately¹⁰. In 1999 an early block of multi-storey public housing, the listed Keeling House (Denys Lasdun, 1957-59) in Bethnal Green, was sold to a developer who upgraded it for the private market. The flats were marketed as an opportunity to buy a piece of "Denys Lasdun's iconic monument"¹¹ and were relatively expensive.¹² Buyers found it initially difficult to secure mortgages, as the development was unusual at that time, but today this strategy has become common across Britain's urban centres¹³.

In London the right to buy has shrunk the pool of affordable, high quality hous-

ing significantly. At the same time, communities within attractive public housing have been experiencing new conflicts of interest with new, affluent residents treating their neighbours as social wallpaper rather than seriously engaging with them¹⁴. Nevertheless, with viable examples of commercial redevelopment, the combined powers of a series decidedly anti-social-housing governments and a sky-rocketing property market, social housing today is under a much stronger threat from wholesale "estate regeneration". Here, publicly owned housing is no longer privatised to tenants but for commercial purposes – often under the pretext to raise money to refurbish the remaining social housing or rebuild elsewhere. In these cases council tenants on secure tenancies are frequently evicted and re-housed in either remote locations or temporary accommodation, while their former everyday homes are turned into extra-ordinary market assets¹⁵.

3. BERLIN'S ACADEMY OF THE NEW GROPIUSSTADT (ANG)

Berlin's *Gropiusstadt* is one of the modernist mass housing settlements in Germany that, despite their once notorious reputation¹⁶, are currently becoming re-appreciated for their architectural and urban design qualities. The *Gropiusstadt* also underwent a process of privatization, very different from the London cases. Based on the master plan of Walter Gropius' office TAC, the *Gropiusstadt* was built by mostly public housing companies and housing associations, finally becoming home to about 36.000 inhabitants¹⁷. State subsidies secured affordable rents and the state-led Social Housing programme allowed for generously landscaped open spaces.

Since the beginning of the 1990s, the national federal state increasingly delegated the financial and planning responsibilities for social housing to the *Bundesländer*, (federal states) ending the national Social Housing programme¹⁸. Especially poorer states with budget deficits were forced to consolidate their budgets by selling large parts of their communal housing stock. In Berlin, the absorption of the former East Berlin public housing stock after reunification, this seemed justifiable. Today, in the *Gropiusstadt*, whole neighbourhoods are owned by listed real estate funds¹⁹. Due to its peripheral location, rents are still comparably low, but differences in maintenance between the now privatized and the still



FIGURE 2. View over the Gropiusstadt, Berlin, Germany, 1962-75. In the far left of the image the high rise block of the Ideal housing association, designed by Walter Gropius and Alexander Svanovic (TAC) and built 1966-1969. In lower part of the image one of the temporary interventions of the Academy of the New Gropiusstadt, a greenhouse connected to the metro ventilation shafts. © Malte Heinze.

publicly owned (though tightly budgeted) neighbourhoods are challenging the social cohesion and the development of the area²⁰.

Since 2011, a team of design researchers and students of TU Berlin and affiliated institutions has run cooperative design projects in the *Gropiusstadt*, engaging local communities to reflect and envision the future development of the area in terms of social and ecological resilience²¹. Successful collaborative projects like the development of the Campus *Efeuweg* have led the Academy of the New *Gropiusstadt* (AnG) to engage with *Gropiusstadt* as a whole. The AnG tried to address potentially all inhabitants and stakeholders by means of summer schools, debates and smaller design projects with a focus on cooperative adaptive reuse, e.g. the remodelling of apartment blocks, facilities and open spaces. The results were mixed. The residents' self-organization skills and their resources in time, strategic knowledge and budgeting were very limited. The AnG became aware that there was hardly any self-organized active community in *Gropiusstadt*, which would have been interested in common action. When the AnG confronted even the most collaborative housing companies with the need for organized community building to accompany the cooperative design projects, they showed reservations or even opposition.

One project proposed to turn the location of a former supermarket at central Lipschitzplatz into a neighbourhood centre. Although advocated by diverse groups, the inhabitants expected the housing companies or even the AnG itself to initiate and run the place. Being only one example out of many, this showed clearly that community structure, ambitions and empowerment were not comparable to stakeholder groups in the inner-city parts of Berlin, where community centres like the Acud in Veteranenstraße, the ZK/U (*Zentrum für Kunst und Urbanistik*) in Moabit, or *Kotti & Co* in Kreuzberg have been and still are being run by local initiatives²².

One major finding of the AnG academic team was that most of the inhabitants were quite satisfied and pleased with their neighbourhood and its open spaces. In contrast to the professional perception of architects and designers, for them the ordinary everyday aesthetics of their environment was not problematic. This lesser degree of self-organization, rather than being interpreted as a lack of emancipation, might instead prompt us to critically reflect whether the call for bottom-up DIY practices might in reality be a projection of the "educated classes" on to mass-housing inhabitants within neo-liberal regimes.

4. BERLIN'S "INVISIBLE MODERNISM"

Prior to the start of the German national Social Housing programme in the 1960s, most housing projects were funded by the *Aufbauprogramm*²³. Unlike the *Hansaviertel* International Building Exhibition (IBA 1957) housing project, these buildings were built cheaply and never intended as aesthetic masterpieces. Today, they constitute a nearly invisible body of modernism and comprise about 270,000

apartments throughout the former West Berlin²⁴. Their affordable apartments have exited the system of cross-financing through state benefits long ago, but rents have hardly increased as their low quality prevented the owners from extracting higher rents and thus also limited the maintenance and renovation activities.

The dispersed ownership inherent in the development conditions of the *Aufbauprogramm* housing renders an exact account nearly impossible. The programme was aimed at individual, private investors, who built on vacant plots within war-destroyed Berlin street-blocks. But a random sample reveals that this stock is a major resource of affordable housing, mainly because it is sub-standard in almost any respect: design, layout, maintenance and comfort²⁵. Until recently Berlin's housing market was buyer's market, hence modernization and upgrading were not economically viable. Today's high housing demand and rising land prices make it likely that the *Aufbauprogramm* housing will be replaced rather than renovated. All private development models though, be it *Baugruppen*, conventional developers or building associations, are facing land and construction costs that make a net rent below 8 Euros/m² unlikely to be achieved, whilst the *Aufbauprogramm* housing often is available at about 5 Euro/m² ²⁶. In this context, adaptive reuse of the existing buildings would be a tricky undertaking. Renovation would have to be reduced to minimum to ensure habitability and affordability at the same time. In the case of the *Aufbauprogramm* housing, new policies are required, e.g a tenant-based subsidy and renovation programme tightly knit to the individual occupant groups – and securing their stake in the buildings – in order to keep the ordinary in place as a resource.

5. CONCLUSION

Modernist housing heritage is necessarily embedded within economic and cultural contexts, which are under permanent transformation. In many European countries, the shift from welfare state to neo-liberal governance is the most significant change of context. The increasing privatization of public housing and other services has deprived many of the urban (working) poor from access to affordable housing and other safeguards. In places like London this state of affairs extends to anybody not earning well beyond the average. Thus, preconditions for the current call for resilient neighbourhoods through participation and DIY practices are produced by societies that have previously withdrawn resources from the



FIGURE 3. Unknown architect, Mariannenstraße 39–41, Kreuzberg, Berlin, Germany, 1964. This photograph is from a series researching extant buildings of the *Aufbauprogramm*. © Dorothee Hahn, Daniela Mehlich.

groups that are now being asked to provide these very services themselves with private means. Obviously, few of the deprived neighbourhoods addressed here are adequately equipped with time, capital and decision-making power. And even if they are, their adaptive reuse and DIY practices might transform their neighbourhood in ways that attract the urban elites and finally deprive them of the places they co-produced – and of the time, energy and money they have invested. The increasing appreciation of welfare state housing as desirable, albeit slightly edgy housing choices can be seen as a first phase of this development, not dissimilar to the re-appreciation of Victorian terraces in Britain or *Gründerzeit* flats in Germany in the 1960s and 1970s²⁷. Thus modern housing heritage has to be considered a resource that is fought over by competing parties – literally competing for space, but also for authority of interpretation. This interrelation has to be kept closely in view when different forms of reuse are being discussed.

Today, planners are facing a moral dilemma in terms of how far and to what extent they should intervene: either affordable housing offers quality and becomes attractive for the more affluent parts of society, displacing the ones that need it, or it is deliberately sub-standard – and thus remains a resource for the less affluent population. An appreciation and cultivation of the ordinary should guide heritage practice, pertaining both to existing housing stock as well as to the adaptation and reuse strategies applied to it. One could argue, that the *Aufbauprogramm* housing, in contrast to the more iconic architecture of the time, exemplifies this strategy to a certain extent. The *Gropiusstadt* works well for its inhabitants as long as the location remains unattractive to a better-off clientele. In today's Berlin the need to limit the standards of housing can be seen in the wide-spread protests of inhabitants against renovation and in the implementation of *Milieuschutzsatzungen*, by which local authorities try to limit upgrading and building renovations for specific neighbourhoods²⁸. The case of London shows that welfare state housing is not unattractive as such, and that poor tenants will be squeezed out of almost any type of housing if the market becomes sufficiently overheated. Only in the case of a buyer's market, harsh social backlashes of adaptive reuse might be prevented. However, even if this is the case, the residents' stake in the environment they successfully co-produce has to be balanced with adequate powers of disposal. In the current, neoliberal policy environment this remains a contested undertaking and demands meticulous care on the part of the planners and parties involved. Reconsidering Empson's writings on proletarian literature, architects have to ask themselves whether they are working "for" or "about" the inhabitants of modernist housing²⁹, or whether they are unwittingly reinforcing existing power relations. Eventually architects will have to decide who they chiefly commit themselves to in the first place – the built heritage, or the inhabitants these buildings are intended to serve.

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NOTES

- 1 For Germany, the *Kompetenzzentrum Großsiedlungen* e.V. (Competence Centre for Large Housing Estates) and the *Deutsches Institut für Urbanistik* (German Institute for Urban Studies) have evaluated the conditions and potentials of housing stock in large 20th century estates. The comprehensive study "Weiterentwicklung großer Wohnsiedlungen" (Further Development of Large Housing Settlements) published in the 2015 Competence Centre's yearbook estimates a required 90 billion investments in adaptation of the existing housing stock of 4 million apartments erected between 1920 and 1980. Ricarda Pätzold, Stefan Schneider, Busso Grabow: *Studie. Weiterentwicklung großer Wohnsiedlungen*, in *Kompetenzzentrum Großsiedlungen e.V. (Hrsg.): Jahrbuch 2015 – Perspektiven großer Wohnsiedlungen*, Berlin, 2015.
- 2 William Empson, *Some Versions of Pastoral*, New York, New Directions, 1974/1936; John Barrell, *The Dark Side of the Landscape*, Cambridge, Cambridge University Press, 1980.
- 3 Talking about landscape painting, Barrell argues that the "point of the enterprise was to suggest that the poor of England were, or were capable of being as happy as the swains of Arcadia, their life as delightfully simple and enviable", *ibid.*, 7.
- 4 At first glance this topic might imply a need for discussion in the context of gentrification. However, the authors of this paper regard the processes of displacement and socio-economic changes commonly referred to as gentrification as an outcome of policies, legislation and investment environment that shape the use of land. Hence we will discuss these systemic factors in relation to the question of adaptive reuse and not refer to the wider gentrification debate as such.
- 5 Mark Swenarton, Tom Avermaete and Dirk van den Heuvel that architecture and the built environment were "key areas, in which the welfare state sought to achieve its ambitions of economic redistribution and social welfare", in Mark Swenarton, Tom Avermaete, Dirk Van den Heuvel, *Architecture of the Welfare State*, Routledge, London and New York, 2015, 1. Stefan Muthesius and Miles Glendinning argued that the London County Council Architecture Department enjoyed "both professional power and political backing", in Miles Glendinning and Stefan Muthesius, *Tower Block*, New Haven and London, Yale University, Press, 1994, 3.
- 6 Among the best known examples are e.g. Trellick Tower (Ernö Goldfinger, 1968-1972), Keeling house (Denys Lasdun, 1958) or Alexandra Road Estate (Neave Brown 1972-1978). See also Elaine Harwood and James O. Davies, *England's Post-war Listed Buildings*, London, Batsford, 2015.
- 7 For a critical discussion of the "right to buy" see Ray Forrest and Alan Murie, *Selling the Welfare State*, Routledge, London and New York, 1988, specifically chapters 9 and 10. Although the book is nearly 20 years old, its analysis is still up-to-date. The right to buy has maintained its fundamental shape since its introduction, although discounts for tenants have been varied by different governments, and the system is shortly to be banned altogether in Scotland.
- 8 These improvements have partly been suggested by the study *Coming Home to Trellick*, Safe Neighbourhoods Unit 1997. Subsequent changes in the building can be traced through the Royal Borough of Kensington and Chelsea's archived building permits.
- 9 In 2014 a 3-bedroom-flat in Trellick Tower was offered for £695000. <http://www.rightmove.co.uk/property-for-sale/property-46687739.html>, accessed on April 8, 2016, and in 2013 a 2-bedroom-flat sold for £385 000, <http://www.planetpropertyblog.co.uk/2013/09/07/modernist-classic-trellick-tower-flats-for-sale>, accessed on April 8, 2016, while the median household income was roughly £39000 and the mean household income £52000 <http://data.london.gov.uk/apps/gla-household-income-estimates/>, accessed on April 8, 2016, well beyond the price that a median household income could afford.
- 10 Paul Balchin, Maureen Rhoden, *Housing Policy*, 4th edition, London and New York, Routledge, 2002, 165-166, 170.
- 11 Interview with Stephen Friel, 28.3.2008, director of Lincoln Properties, which redeveloped Keeling House.
- 12 In 2000, flats initially sold for £125000 to £375000. "Lasdun relents to Keeling House's 'yuppie future'." <http://www.architectsjournal.co.uk/home/lasdun-relents-to-keeling-houses-yuppie-future/190962.fullarticle>, accessed on April 8, 2016.
- 13 Notable examples in London include Aragon Tower on the Pepys Estate (1963-68), which was privatised in 2002 and consequently turned into luxury flats (Sarah Lonsdale: "Tears of the clown as his tower gets a fancy facelift", accessed on March 3, 2009. <http://www.telegraph.co.uk/finance/property/3336718/Tears-of-the-clown-as-his-tower-gets-a-fancy-facelift.html>, and Balfron Tower on the Brownfield Estate (Ernö Goldfinger, 1965-67) Eddy Frankel: "The changing fortunes of Balfron Tower" (accessed on January 11, 2016) <http://www.timeout.com/london/things-to-do/the-changing-fores-of-balfron-tower>. In Manchester the Chippenham, Saltford and Rodney Court towers (1963) have successfully been privatised by developer Urban Splash as the "3 Towers" (Claudia Hildner, Komm und Spiel

- mit uns. *Metamorphose* 2008, n. 6, 40–43, in Liverpool e.g. Belem Tower (1958) <http://www.belemtower.co.uk>, accessed on April 4, 2016. A larger number of examples will be discussed in Asterios Agkathidis's and Rosa Urbano's forthcoming volume on sustainable retrofits of post war residential towers in Britain (Routledge).
- 14 For a more thorough discussion of the idea see Maren Harnack, "Trellick Tower and the pastoral eye", in Matthew Gandy, *Urban Constellations*, Berlin, Jovis, 2011, 127–131.
 - 15 See e.g. the case of Balforn Tower documented in Benjamin Mortimer's account "How the Balforn Tower residents were 'decanted' and lost their homes", accessed on March 24, 2016, <http://www.eastendreview.co.uk/2015/03/24/balforn-tower-poplar-harca>; An interview with Balforn Tower resident by James Butler is documented online, accessed on April 4 2016, <http://novaramedia.com/2013/08/social-cleansing-in-tower-hamlets-interview-with-balforn-tower-ecvtee>. The work of the Focus E15 campaign started by homeless mothers evicted from their hostel is another example for the rising pressure on welfare state accommodation from property developers, <https://focus15.org>, accessed on April 8, 2016.
 - 16 The *Gropiusstadt* for example is famous for being the home of *Christiane F.*, not unlike Thamesmead, which still is known as the site of *Clockwork Orange*. Through the autobiographical book *Wir Kinder vom Bahnhof Zoo* (1978), its adaptation in the movie *Christiane F. – Wir Kinder vom Bahnhof Zoo* (BRD 1980/81), and various documentaries, Christiane Felcherinow's story as a teenage drug addict and prostitute has gained nation-wide attention. The *Gropiusstadt*, as the place of her childhood upbringing, is identified and stigmatized until today as the place that "produced" *Christiane F.*
 - 17 A detailed planning history of the *Gropiusstadt* is documented in Hans Bandel, Dittmar Machule, *Die Gropiusstadt – Der städtebauliche Planungs- und Entscheidungsvorgang*, Berlin, Kiepert, 1974.
 - 18 Under the CDU-FDP government of the 1980s, tax-cuts and reduced state spending was at the centre of government agenda. After the corruption scandal of the *Neue-Heimat-Gruppe* in the mid-1980s, a series of tax law and social housing programme reforms were introduced, chiefly in 1988. National government financing for social housing was reduced and the intended use by the federal states not controlled by the national government.
 - 19 With more than 7.000 apartments, the non-profit savings and construction corporation Gehag, founded in 1924, was the major proprietor in the *Gropiusstadt*; their director Dr. Karl-Heinz Peters initiated the development and also the commissioning of TAC. Gehag was privatized in 1998 and in 2005 sold to Oaktree Capital Management and HSH Nordbank. The *Deutsche Wohnen AG* bought the majority of shares in 2007. Today, with 146.800 apartments, the *Deutsche Wohnen AG* is the second largest housing company in Germany (Stefan Aue, Jesko Fezer, Martin Hager, Christian Hiller, Nikolaus Hirsch, Anne Kockelkorn, Reinhold: Martin, *Housing after the Neoliberal Turn. International Case Studies*. Spector Books, Leipzig, 2015, 112.
 - 20 This information is based on extensive talks to the local Quartiers management (neighbourhood management) installed in the *Gropiusstadt* in 2005. As empirical data on the *Gropiusstadt*'s inhabitants' social and cultural composition is insufficient, the experience knowledge of management's employers on current conflicts is an important source. All projects of the AnG were developed in close cooperation with and partly financed by the Quartiersmanagement, funded by the national programme *Soziale Stadt* (Social City). The programme offers financing ("Verfügungsfonds") and support for small and mid-scale projects, which are decided by a neighbourhood council. *Soziale Stadt* aims at supporting "disadvantaged" neighbourhoods. A short yet comprehensive description of the programme *Soziale Stadt* was published in ARCH+ 203: Juliane Greb and Sabine Kraft, "Das Programm "Soziale Stadt". Empowerment und Quartiersmanagement", *Planung und Realität. Strategien im Umgang mit den Großsiedlungen* (ARCH+ 203), Aachen, ARCH+ Verlag, 2011, 66–67 – followed by 2 case study reports on modernist mass housing in Bremen and Darmstadt.
 - 21 The diverse projects of the Academy of the New *Gropiusstadt* are published in German: Jörg Stollmann, Sandra Bartoli, Mathias Heyden, *Akademie einer neuen Gropiusstadt. Die Gründung – Machen*, Berlin, Universitätsverlag der TU Berlin, 2013. Jörg Stollmann, Sandra Bartoli, Mathias Heyden, Anita Kaspar, *Akademie einer neuen Gropiusstadt. Die Gründung – Denken*, Berlin, Universitätsverlag der TU Berlin, 2013. Jörg Stollmann, Sandra Bartoli, Anita Kaspar, *Campus Efeuweg – 36 Tools für ein neues Quartier*, Berlin, Universitätsverlag der TU Berlin, 2013.
 - 22 Upcoming: Jörg Stollmann, "Repositioning Neighbourhood Resilience: Resourceful, Collaborative Stakeholder Co-production", in *Building Research & Information* (BRI), Taylor & Francis Online.
 - 23 "Aufbauprogramm" translates as "reconstruction programme" and provided loans and subsidies to individual property owners. Within the *Aufbauprogramm* houses were mostly built as infill on bombed sites and constructed cheaply using war destruction rubble.
 - 24 An empirical study on the housing stock of the *Aufbauprogramm* does not exist to date, as the whole topic is a research gap in post-war housing research. The numbers are derived from discussions with Ralf Protz, the head of Kompetenzzentrum *Großsiedlungen* e.V. (Competence Centre for Large Housing Estates) in Berlin, who based this estimate on the findings of the centre's year-long research in Berlin housing.
 - 25 As part of a student research project, several sites in Berlin *Kreuzberg* were mapped and redrawn by Dorothee Hahn and Daniela Mehlich, featured in Jörg Stollmann, "Hands off: Urban Mining! A Plea for the Re-evaluation of Substandard Housing", in Dirk Hebel, Marta Wisniewska, Felix Heisel, *Building from Waste. Recovered Materials in Architecture and Construction*, Basel, Birkhäuser, 2014, 26–31.
 - 26 5 Euros/m² is a lower figure than the average neighbourhood rents and most importantly, it falls within the welfare benefit regulations for rental cost reimbursement. This is important, as Berlin still has the highest proportion of Hartz VI welfare recipients in Germany (16.5% of the population), <http://de.statista.com/statistik/daten/studie/4275/umfrage/anteil-der-hartz-iv-empfaenger-an-der-deutschen-bevoelkerung>, accessed on April 13, 2016.
 - 27 Which is exactly what Ruth Glass described as gentrification. Ruth Glass, "Aspects of Change", *London: Aspects of Change*, London, Macgibbon & Kee, 1964. Andrej Holm discusses the processes of gentrification, especially the impact of cultural elites and pioneers, arguing that they are not restricted or even supported by political decision-making. Andrej Holm, "So haben wir das nicht gemeint". *Kulturelle Aspekte der Gentrification. Kulturrisse* 2, 2011, accessed on April 13, 2016, <http://kulturrisse.at/ausgaben/urbane-raeume-zwischen-verhandlung-und-verwandlung/oppositionen/201deso-haben-wir-das-nicht-gemeint201c-kulturelle-aspekte-der-gentrification>. See also: Andrej Holm, *Wir bleiben alle! Gentrifizierung – Städtische Konflikte um Aufwertung und Verdrängung*, Münster, Unrast, 2013.
 - 28 <http://www.rechtsinstrumente.de/rechtsinstrumente/milieu.html>, accessed on April 13, 2016.
 - 29 "Proletarian literature usually has a suggestion of pastoral, a puzzling form which looks proletarian but isn't [...] The wider sense of the term includes such folk-literature as is by the people, for the people and about the people. But most fairy stories and ballads, though 'by' and 'for' are not 'about'; whereas pastoral though 'about' is not 'by' or 'for'." Empson, 1936, 6. The same applies if "literature" is substituted by "architecture".

UJ Klarenstraat, Amsterdam: The Transformation of a 1950s Modern Housing Block

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The *Staalmanplein* neighbourhood in Cornelis van Eesteren's *Westelijke Tuinsteden* (Western Garden Cities) in Amsterdam, has been undergoing a radical regeneration operation since 2008. Whereas most housing blocks in this neighbourhood from the 1950s were demolished and replaced by new buildings, the social housing block in the *UJ Klarenstraat* was selected for an experiment: in 2012 the whole block was put up for sale as "Do It Yourself" (DIY) apartments. It turned out to be a successful strategy. The concept of DIY housing is a Rotterdam invention, put into practice for the first time in 2004-2007 in the dilapidated neighbourhood of *Spangen*. But the *Klarenstraat* project was the first modernist flat complex with walk-up houses that was renovated according to this method.

In this paper I will elucidate the background of this project, but I will also look beyond the one-off success. I want to investigate whether the *Klarenstraat* strategy opens up an alternative way of dealing with the many Dutch neighbourhoods that are full of similar housing blocks. I will do this by dividing the success into 4 aspects: 1) the meeting of present-day's housing needs, 2) preserving the original architectural quality while creating a new, contemporary beauty, 3) improving the image of the neighbourhood and 4) attracting new population groups to the neighbourhood. I will conclude that each of these 4 aspects is repeatable under certain conditions. The key power of the *Klarenstraat* is its new way of envisioning the standard walk-up flats: not as 1950s tidy strait-jackets in which present-day people don't fit anymore, nor as a housing type that is best known as a décor for addressing societal present-day problems, but as a 21st century modest chic apartment building with a multi-layered past that makes it even more interesting, in a tangible and intangible sense.

1. INTRODUCTION

The recent transformation of the 1956 housing block by architect Ernest Groosman in the *UJ Klarenstraat*, Amsterdam can be considered a success. Reviews in professional journals and the local press were positive¹, the project was nominated for 3 awards of which it won one², the residents are satisfied with their self-designed apartments³, and the housing corporation perceives beneficial social effects of the project on the neighbourhood⁴. In this paper I will elucidate the background of this project, but I will also look beyond the one-off success. I want to investigate whether the *Klarenstraat* strategy opens up an alternative way of dealing with the many Dutch neighbourhoods that are full of similar housing blocks. These housing blocks all consist of so called walk-up houses that do not meet present-day standards in terms of size, comfort, sustainability and individual preferences. Demolition often is the first choice solution, especially because nobody really seems to like these 1950s standard housing blocks. On the one hand they are associated with the too tidy, tame atmosphere of the 1950s, and on the other hand their present state is often so poor, that their original architectural qualities are not visible anymore. The *Klarenstraat* transformation project not only seems to offer a practical solution to update these

blocks for the 21st century, but it also may have the power to make people see the worn out blocks with fresh eyes.

2. BACKGROUND

The neighbourhood of the *UJ Klarenstraat* is called the *Staalmanplein* district, which is located in the South-East part of Cornelis van Eesteren's *Westelijke Tuinsteden* (Western Garden Cities). The *Staalmanplein* district has been undergoing a radical regeneration operation since 2009⁵. Whereas most housing blocks in the neighbourhood were demolished and replaced by new buildings, the *Klarenstraat* was selected for an experiment: in 2012 the whole block was put up for sale as "Do It Yourself" (DIY) apartments.

The concept of DIY housing is an invention of the Rotterdam housing consultancy firm *Urbannerdam*. It was put into practice for the first time in the years 2004-2007 in the dilapidated neighbourhood of *Spangen*, Rotterdam. Apartments from the beginning of the 20th century, owned by the municipality, were sold for the symbolic price of 1 euro, under the condition that the buyer would renovate the house completely and live in it for at least 2 years. This peculiar offer attracted people with more social and cultural capital than money. Their creativity and enterprising spirit was triggered by the opportunity to buy lots of square meters which could be organised in any way they liked it. Their social skills enabled them to negotiate with other buyers and to see the positive side of the multicultural, poor neighbourhood. *Urbannerdam* coached the buyers during the renovation process. The effect of the DIY houses in *Spangen* was, apart from the fact that the houses were renovated very carefully, that the streets with the DIY houses became popular again, resulting in an increase in house prices. Also, the population of the neighbourhood became more socially and culturally varied⁶. The *Spangen* experiment was considered a success, and the strategy was repeated in other Rotterdam neighbourhoods.

When the Amsterdam housing corporation *De Alliantie* wanted to experiment with the DIY strategy in one of the 3 modernist flats by Ernest Groosman in the *Staalmanplein* district, they also engaged *Urbannerdam*. This is how the project "*Klussen op de Klarenstraat*" ("DIY in the *Klarenstraat*") was born, as it was named when the apartments were put for sale at the beginning of 2012.

3. THE FIRST DIY RENOVATION OF A MODERNIST HOUSING BLOCK

The *Klarenstraat* project was the first modernist flat with walk-up houses that was renovated according to the *Urbannerdam* DIY method. The Rotterdam architectural firm Van Schagen, specialized in the renovation of mid-century modern buildings, supplied the supervising architect, Arjan Gooijer. He took care to meet every buyer's specific wishes and to preserve the architectural qualities of the block. In buildings such as these, those qualities are not so obvious, and at



FIGURE 1. Ernest Groosman, walk-up flats at UJ Klarenstraat, Amsterdam, the Netherlands, 1956. © Stadsarchief Amsterdam, c. 1956.



FIGURE 2. Ernest Groosman, walk-up flats at UJ Klarenstraat, Amsterdam, the Netherlands, 1956. © Anonymous photo, c. 2010.

the beginning of the 21st century, after many pragmatic renovations and reparations, the exterior of *Klarenstraat* flat had lost almost all of its original subtle plasticity, especially the front façade's regular rhythm of the windows and the indoor balconies.

The housing block was redivided completely, including the former garages on the ground-floor level. Whereas the original flats were 75 m², the new apartments varied from 48 m² to 194 m², also varying in shape, depending on the specific wishes and the budget of the buyers. Nobody opted for more than 194 m², although that would have been possible⁷. Some buyers decided to make a large horizontal apartment out of two original flats, others put the former garage on the ground floor and 2 former flats on top of each other, but some apartments took on the shape of an L or of two Ls connected to each other. The buyers drew their own plans, and the architect also gave them the freedom to choose the location of kitchens and bathrooms. Each new apartment could be extended with outdoor space, in the form of a garden, a large balcony or a roof terrace.

What we witness here is a process in which typical 1950s standardised apartments, based on the view that the basic needs of every human being are the same, are transformed into present-day hyper-individualised houses, adapted to each specific household and life style.

4. ANALYSIS OF THE SUCCESS

The success of the *Klarenstraat* can be divided in 4 different aspects. Firstly, the project succeeded in creating houses that meet present-day housing needs, in terms of customisation, comfort and sustainability. Secondly, the original architectural qualities are still noticeable, while at the same time the building has a contemporary feel. Thirdly, the unorthodox, high quality renovation of the flats have a positive effect on the image of the neighbourhood. Fourthly, the wish of the

housing corporation and of the surrounding residents to create a more varied population in the neighbourhood, in terms of social and economic class and cultural background, was realised⁸. To answer the question of whether the *Klarenstraat* method would also succeed in other situations, however, it is necessary to have a closer look at the conditions underlying each of these four aspects of its success.

Present day housing needs

The transformation of 1950s standard apartments into early 21st century individualised houses is only possible if the structure of the flat is strong enough to make horizontal and vertical breakthroughs. In the *Klarenstraat* the concrete structure and the foundations were sufficiently robust to allow realisation of the extreme differentiation in plans. Sustainability goals were reached by means of isolation and solar cells on the roof, although it must be said that this aspect could be improved in future projects.

Architectural quality

Van Schagen architects showed that it is possible to preserve the typical 1950s rhythm of the façade and at the same time add new and deviating elements. Tom Avermaete writes in more general terms about this interesting paradox in the Dutch Architecture Yearbook: “The objective and ordered nature of late-modern buildings seems now more than ever a rich substrate for contemporary typological, material and technical proposals”⁹. He also notes that architects such as Van Schagen “[...] acknowledge the values of the late-modern heritage, but they are not reticent when it comes to intervening.”

It depends on the quality of the original architecture how radical the intervention may be. Even if the aesthetic quality of the original architecture is not high, DIY renovation could still be preferable to demolition, because of the other positive effects and because of the intangible heritage that is preserved in the form of a *lieu de mémoire*.

The image of the neighbourhood

Often, in the media, the transformation of the *Klarenstraat* was linked to the regeneration of the whole *Staalmanplein* neighbourhood or even of the entire Western Garden-cities¹⁰. Housing corporation *De Alliantie* mentions this as one of the positive effects of the *Klarenstraat* project¹¹. This could imply that a DIY project can be used as an instrument to improve the image of other neighbourhoods as well. But it should be noted that future transformations might not attract



FIGURE 3. Schematic overview of the apartments after the transformation, with the names of the owners. © Van Schagen Architects, Rotterdam.



FIGURE 4. Van Schagen Architects, transformation of Ernest Groosman, walk-up flats at UJ Klarenstraat, Amsterdam, the Netherlands, 1956. © Van Schagen Architects, 2014.

as much attention as the Klarenstraat, because this was the very first time that a modernist walk-up housing block was renovated in this manner. On the other hand, future projects may profit from references to the success of the *Klarenstraat*.

Population

From the 1980s onwards, the *Staalmanpleinbuurt* had attracted more and more lower income groups, often immigrants. One of the targets of housing corporation *De Alliantie* for the *Staalmanplein* neighbourhood was to attract people with more financial and cultural capital, who would be willing to live together with the original residents. Research shows that DIY projects in general have a positive effect on the variety of the population of the neighbourhood¹². It should be noted, though, that the *Staalmanplein* neighbourhood's proximity of the Amsterdam city centre added to the attractiveness of the *Klarenstraat* project. The location of the DIY project is probably an important factor when it comes to attracting residents to a neighbourhood. In fact, due to the development of the housing market in Amsterdam since 2015, the *Staalmanplein* neighbourhood, with its relative reasonable housing prices and the proximity to the city centre, has become so attractive, that the negative effects of gentrification may be a problem in the near future.

5. CONCLUSION

The Klarenstraat project fits into a trend of DIY building, that was invented in Rotterdam at the start of the 21st century. In that sense it is not unique. Its experimental character lies in fact that this is the very first modernist walk-up flat that

was transformed according to the *Urbannerdam* DIY method. Its success holds out promise for the future of many neighbourhoods with similar flats.

The question of whether the *Klarenstraat* method will also succeed if it is applied in other blocks of flats in other cities and in other neighbourhoods, can be answered by dividing the success into 4 aspects: 1) the meeting of the present-day's housing needs, 2) preserving the original architectural quality while creating a new, contemporary beauty, with ground to floor window-panes and a present day colour scheme for the window-frames 3) improving the image of the neighbourhood and 4) attracting new population groups to the neighbourhood. Each of these four aspects is repeatable under certain conditions.

Yet the key power of the *Klarenstraat* is its new way of envisioning the standard walk-up flats: not as 1950s tidy strait-jackets within which present-day people don't fit anymore, nor as a housing type that is best known as a décor for addressing societal present-day problems, but as a 21st century modestly chic apartment building with a multi-layered past that makes it even more interesting, in a tangible and intangible sense.

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Strategies for Adaptive Reuse: High-Density State Housing in Kuwait

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From the 1950s to the 1980s, Kuwait's homes-to-buy programmes had far reaching consequences for residential planning. They established the single-family house in the suburb as the standard for "modern" living. Unlicensed transformative practices enabled customization of state built homes, while housing benefits helped Kuwaitis construct their dream house. Thus, collective models for living, that do not support these standards, such as the *Al-Sawaber* project, were publicly resisted. As the only built medium density state housing in Kuwait City, this project marked a shift in state housing typology from single-family units in the suburbs to collective living in the city. Today it is under threat of demolition and has failed to establish the apartment as a suitable model for the Kuwaiti family. The paper offers another reading on the "modern" house and the processes that lead to the normalization of one form of housing consumption over another. It also proposes adaptive reuse strategies to repurpose existing building stock, such as the *Al-Sawaber* project, illustrating the ways in which these practices can be agents in reshaping the history of modern housing, while providing a more sustainable and affordable approach to the problem of habitat.

1. INTRODUCTION

In Kuwait, the single-family house gets a "second life" in the alterations performed by homeowners. These everyday practices, although unlicensed, have continued to gain ground since the inception of state housing in 1954. As the largest provider of affordable homes-to-buy, the state turns a blind eye to alleviate some of its housing pressures, including pre-built single-family housing, interest free loans from the state's Savings and Credit Bank, subsidized building material and land priced below market value. These benefits, that are restricted to citizens, have facilitated homeownership but have also discouraged alternative models and a sustainable pattern of development. From 1954 to 1981, state-housing programmes normalized a housing consumption standard by employing the single-family detached house as the prototype for modern living. Unlike in Europe and North America, where the tower block was a symbol of modernity, the single-family detached house represented Kuwaiti modernity, signalling a shift from an extended to a nuclear family structure, from urban to suburban living and from traditional methods of habitation to technologically advanced services. Living and owning a single-family house has been an important rung on the ladder of upward mobility. It also encouraged unlicensed transformative practices. This "second life" has been firmly established as a basic right tied to the concept of Kuwaiti homeownership. Therefore, collective models for living, such as Arthur Erickson's *Al-Sawaber* project, that do not support these processes, have not been successfully integrated as state housing alternatives. Proposed in 1977 and completed in 1981, the *Al-Sawaber* project marked a shift in state residential typology¹. With

great confidence Kuwait's National Housing Authority (NHA)² had hoped to demonstrate a new way of living. Yet, Kuwaitis did not identify with this new standard. It has slowly deteriorated due to administrative and maintenance problems. Its current alarming state has led to the misleading argument that apartments are not suitable for Kuwaiti families, ignoring the real reasons for its demise. Housing studies have played an important role in reinforcing this perspective³.

Up until 1983, state housing programmes that promoted ownership tenures were grouped according to socio-economic status. Those included Limited Income Group housing (LIG), Average Income Group housing (AIG) and the "plot and loan" schemes. With the exception of the latter the former models were state built housing. The single-family house set back from the shared party walls was quickly established as the architectural norm and was the common denominator in the different housing programmes. The "plot and loan" scheme transferred construction to the beneficiaries. The state provided services, plot assignment, through a lottery system and benefits, including a loan of 70,000 Kuwaiti Dinars (KD)⁴. Architectural plans are authorized by the Kuwait Municipality and are restricted to variations of the single-family house; violations resulted in denial of building permissions. Many found ways around restrictions by performing unlicensed changes right after receiving state electrical power and services.

Homeowners customized their home's outward appearance to blur the socio-economic distinction emphasized by the state. Others readapted their homes to



FIGURE 1. Arthur Erickson, *Al-Sawaber*, Kuwait. © Courtesy of the Kuwait Municipality Library, 1977.

fit a growing family and some retrofitted spaces considered socially or climatically incompatible⁵. Enlargements and annexes were also carried out, as investment opportunities. In 1973, the Planning Board in association with the Ministry of Social Affairs studied physical alterations in state built housing⁶. 71.6% of LIG and AIG housing recipients had carried out some type of alteration. Studies reported the single-family house as the preferred model of living with 91.6% of homeowners responding negatively towards apartments⁷. Yet, these studies surveyed owners of the single-family house and then drew conclusions on a different typological model. This fundamental bias has shaped housing policies and the general attitude towards the apartment.

The population increase from 250,000 in 1954 to 1.35 million in 1980 proved the single-family house impractical in meeting the burgeoning housing demand. The temporary halt of the "plot and loan" scheme in 1978 increased state responsibilities. In this context, typological experimentation began in earnest. In 1977, Arthur Erickson proposed a residential neighbourhood for 4,950 people in Kuwait City's *Al-Sawaber* area. His proposal was not the first but it was the only proposal that was built on a site a few blocks from the Jørn Utzon parliament building and Kuwait's corniche. He suggested mid-rise medium density buildings aligned on an east west axis and arranged into nine neighbourhoods on a 24.5-hectare site. Private patios provided outdoor space for the different apartment layouts that included maisonettes, penthouse apartments and garden level units. Public gardens, a convenience shop, a family centre were integrated with the existing kindergarten and mosque to create a self-sufficient neighbourhood district. These amenities were connected by a raised pedestrian walkway, thus separating pedestrian from vehicular traffic.

2. THE AL-SAWABER COMPLEX: A COLLECTIVE HOUSING PROJECT

However, the *Al-Sawaber* complex did not usher a new model for living due to administrative and maintenance problems. Changes to Arthur Erickson's original design also resulted in an austere built form. The NHA had hoped it would increase its housing stock; but Kuwaitis, having mostly grown up in single-family homes and expecting the same for their families, found it difficult to accept. The absence of a waiting list reflected Kuwaitis preference for the single-family home. The state responded by building just over half of the apartments proposed by Erickson, while the remaining phases were suspended. The apartments included four bedrooms, a living and a dining room, a kitchen and two bathrooms and were fitted with central ventilation systems. Although generous, they were smaller than state single-family housing and did not support vertical or horizontal expansion without encroaching upon communal space and the aesthetic qualities of the building façade.

Kuwaitis were unable to inhabit these apartments in the ways intended and instead imposed familiar values normalized over the years. Residents blocked off



FIGURE 2. Arthur Erickson's, A-frame microclimate proposed as a communal area for residents of *Al-Sawaber*. © Courtesy of the Kuwait Municipality Library, 1977

windows to increase privacy and reduce heat gain. Balconies were annexed to increase the footprint of the apartment. Some extended their dwellings on the ground floor, blocking entrance into the building. These acts of occupation were not part of larger goals but are “guided by passions and aspirations” and were “a form of adaptation, questioning, and transformation”⁸. Alterations extended on to communal areas, resulting in safety and public health issues and a general deterioration of public spaces. The scale of transformations increased after the 1991 Gulf War due to a demographic shift in the neighbourhood⁹. Families from different socioeconomic status squatted in flats that remained empty after Kuwait's liberation¹⁰. Investors purchased the remainder and leased them to migrant workers. Illegally

subdivided apartments exceeded maximum occupation, leading to an imbalance between the resident population, the complex amenities and public services. From the outset, the NHA did not encourage the establishment of a residents' association to monitor unlicensed activities or to cultivate communal responsibilities. Residents, instead, relied on the NHA for maintenance and upkeep.

Developers have capitalized on the psychological effects of deteriorating modern buildings, waging a “slum clearance” campaign¹¹. The unsuitability of the apartment for Kuwaiti living became a repeated slogan associated with its current failure. This narrative gained permanent status despite huge gaps in the history that has ignored transformation of single-family homes into apartments and where homeowners continue to reside as “landlords.”

3. ADAPTIVE REUSE OF EXISTING BUILDING STOCK

The state's failure to recognize the second life of single-family homes has led to erroneous assumptions about housing consumption, resulting in unsustainable growth of state residential planning. Contemporary planning practices promote demolition and this throwaway mentality jeopardizes the future of modernist buildings. The adaptive reuse of the *Al-Sawaber* project would initiate a necessary shift in state housing strategies that would increase the lifespan of existing building stock. Adaptive reuse is best described as a regenerative planning process that accommodates change; it could decrease the state's financial burden¹². Studies have proved new programmes similar to the original designs

have a greater success rate and with little intervention¹³. A growing trend worldwide has emerged to rehabilitate social housing projects. The successful rehabilitation of the Brunswick Centre in London, among others, revived a new interest in 1960s-1970s British social housing estates. Some design firms, including Urban Splash, have played an important role in redirecting architecture practice towards rehabilitation rather than new construction. Vijayawada Garden Estate by the architecture studio *Penda* in India is another more contemporary example that uses a modular façade system to incorporate customizable prefabricated apartment units. These successful projects are examples of sustainable design that generate new uses for existing buildings.

The adaptive reuse of *Al-Sawaber* buildings would rewrite the history of modern housing in Kuwait in a positive way, and fill in the gaps in today's housing debate. Despite the dearth of design standards and measures that enable adaptive reuse in Kuwait, there is evidence of its potential success. Younger architects in Kuwait have reclaimed the city by adapting older *baqalas*, in locations close to *Al-Sawaber*¹⁴. Private institutions are reusing disused buildings for their individual needs¹⁵. Currently, Kuwait City offers a range of high-rise luxury apartments for rent. However, high rents have limited the development of a diverse socioeconomic community and, as such, they are largely empty. State subsidized collective housing or public-private partnership models can bridge this divide and help create more equitable communities. These can be sustained through homeownership turnovers that produce heterogeneous communities. These are some of the ways to maintain a sustainable built environment and increase the lifespan of the existing building stock.



FIGURE 3. Arthur Erickson, Al-Sawaber, Kuwait, weathering of the *Al-Sawaber* complex showing tenant balcony expansions. © Asseel Al-Ragam, 2016.



FIGURE 4. Arthur Erickson, Al-Sawaber, Kuwait, additions constructed by *Al-Sawaber* residents. © Asseel Al-Ragam, 2016.

4. CONCLUSION

The *Al-Sawaber* project has been the Achilles heel in the state's argument for apartment living. Its failure, however, goes beyond the architecture of the building and instead is rooted in the early stages of state's housing programmes and citizens' aspirations towards an unsustainable ideal for habitat. The paper has argued that although its current state is uninviting, its adaptive reuse could inspire a new sustainable strategy in state residential planning and "help retain a sense of social identity, community and connectedness to place"¹⁶.

Today ownership rights are transferring back to the state¹⁷. Planning policies that have envisioned the *Al-Sawaber* neighbourhood as a financial district of high-rise buildings have resulted in compulsory purchase order notices. The state valued *Al-Sawaber* apartments at 250,000 KD, a fraction of their true value¹⁸. Owners are forced to accept this sum or an apartment in a neighbourhood outside the city. Some are defying forced eviction. However, their actions cannot arrest projected development. Efforts to raise awareness would enable a critical discussion over the *Al-Sawaber's* future. Only then would state design standards permit invention and adapt to changing realities.

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Living a Manifesto: The Second Life of EDF's Housing Towers in Ivry-sur-Seine (*Atelier de Montrouge*, 1963-67)

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On their completion in 1967, 2 small towers of raw concrete in Ivry-sur-Seine, towers that were full-blooded "architecture-sculptures", were hailed by critics as a manifesto of the Modern Movement. For the architects of *Atelier de Montrouge*, this project of "stacked town-houses" created in response to a commission for staff housing units, primarily represented a new model for the development of other urban housing programs. Abandoned in the late 1990s by the owner, the national electricity company (EDF: *Electricité de France*), these towers came close to being demolished. Squatted for over a year while their owner was trying to sell to the highest bidder (2001-2002), they fell into a state of serious disrepair before being saved by their inclusion on the list of Historical Monuments (2003). The subsequent renovation project slowly emerged and was steered by a private developer and a specific architect, who were well aware of the issue of preserving modern heritage: Paul Chemetov, an architect contemporary with the Montrouge team. Well-managed over the long-term, the building's rehabilitation is finally coming to completion. Almost all the apartments, which very quickly found buyers, should be occupied by the summer of 2016. This whole transformation process has been closely followed by the writer and director Anne Rizzo, with the intention of making a documentary film. Confronting different readings, past, present and close future, this will question the status of these small brutalist towers, now located at the heart of a wider sector of urban renewal. As a participant in this documentary, Catherine Blain raises here two types of issues: first on the nature of the initial project and its potential for transformation and second on the strategy and guidelines adopted for its rehabilitation.

1. INTRODUCTION

Since 2013, a discreet restoration project is being carried out at the heart of the former industrial neighbourhood of Ivry, located east of Paris: 2 small raw concrete towers of 5 and 7 storeys, which are called "*les terrasses de l'Atelier*" and presented as a "real historical treasure of the city" (according to the site advertising panel).

Designed by the *Atelier de Montrouge*¹, these little towers originally accommodated 11 staff apartments, one on each floor, intended for the managers of the power station situated on the Seine riverbank – operated by the national electricity company, EDF (*Electricité de France*). Hailed by critics after their completion in 1967, mainly because of their sculptural and brutalist aesthetic², they were quickly included among the significant achievements of modern architecture in France. Abandoned by their owner at the end of the 1990s, however, the towers were squatted in and degraded for over a year and only just escaped demolition. Saving them would take more than a decade.

The first stage began in 2003 with the inclusion of the towers in the inventory of Historical Monuments³. Nevertheless, a buyer still had to be found, and a plan

defined for their future. First supported by a private real estate developer, the architect Paul Chemetov⁴ drew up a transformation project from 2004 onwards, taking into account the urban redevelopment scheme of the area prepared by Bruno Fortier (with Dusapin-Leclerc and TER, 2004). The 2nd stage began with the acquisition of the land and its buildings by the SADEV 94, the departmental planning and development company in charge of the urban renewal of Ivry-Confluences (145 ha) which, from then on, put together the operational and financial package of the renovation project. Chemetov's project followed this evolution. Resumed in 2011, his detailed study allowed the commencement of construction in 2013. The apartments, which were sold by an estate agent based on future plans, have quickly found buyers; they should be occupied by the summer of 2016. The 3rd stage, that of the renaissance of the towers, is thus predicted.

This whole transformation process has been closely followed by the writer and director Anne Rizzo, with the intention of making a documentary film about it. Confronting different readings, past (the original project), present (the transformation) and immediate future (the new aspect and way of life), it will question the status of these iconic buildings, now located at the heart of a wider sector of urban renewal and inhabited by new owners. Using archival materials and interviews, of architects and historians and new inhabitants, Rizzo also intends to question the notion of modernity in architecture, and the possibility of updating the ideas of the 1960s in the 21st century.

In order to open this discussion, this article will highlight 2 types of issues which were raised by the film. Firstly, as regards the initial project: what were the design concepts and to what extent have these enabled adaptations, developments, transformations? Then the rehabilitation: what strategy and what guidelines have been adopted, taking into account the present realities of the buildings and current needs?

2. TWO LITTLE TOWERS OF RAW CONCRETE

This project is the built translation of a classic, yet specific concept of urban dwelling: namely that of "stacked housing". As developed by the *Atelier de Montrouge*, this concept didn't come out of the blue. Echoing Le Corbusier's "*immeubles-villas*" project (1925), in which each apartment is a small house with a garden, it responds also to a precise problem: the specifications given by the EDF company which require, for its supervisory staff members, individual dwellings that match defined requirements as regards amenities and living area (10% bigger than standard public housing), built like single houses with private gardens and garages⁵.

The architects had already drawn up a dwelling programme for EDF in 1962, as part of their first commission for the company in Issy-les-Moulineaux, an industrial suburb situated west of Paris. During the construction of the STI n. 1, a conversion project of an old industrial structure into a modern office building

(1959-65), they were asked to create four staff dwellings on a side street, lining up with the existing terraced houses of the 1930s. Giving priority to this terrace housing idea, they put forward a project of four comfortable houses with gardens (5 to 6 rooms, 120m²), which were conceptualized as a dynamic composition of small concrete blocks of 2 or 3 levels, that allowed for numerous roof decks⁶.

This typological research was continued in 1963 on the site at Ivry, next to the still functioning power station, this time for a programme of 12 dwellings. A first sketch immediately showed the absurdity of creating individual houses opposite this massive industrial installation. It is from these circumstances, with the aim of finding an alternative that would offer the same qualities as an individual house, that the concept of “stacked houses” arose. Consequently, this included the principle of vertical constructions made up of one apartment per storey, and accessible by a central passageway so that all four façades enjoyed extensive views onto the landscape.

Once this concept was accepted, it was investigated by the architects to its maximum degree of formal definition, incorporating recurrent themes of the Modern Movement such as open-plan layout, free façade and constructive honesty. Seemingly complex, the design is in fact very simple. The composition is based on 2 main principles: a basic plan of a square 5 room apartment with 2 outdoor decks (100m² / 20m²) and a structural system of in-situ raw concrete that consists of four “sails” and 4 load-bearing poles that brace the floor slabs. This makes it possible to create the non-load-bearing façades, and their free composition of the solid panels (concrete) and the windows and bay windows (in wood and aluminium). All the variations, in layout plan and elevation, are based on a second principle: the rotation of the layout by a quarter turn on each floor, which changes the exposure and characteristics of the dwellings, protected from their patios. Moreover, this generates the characteristically interlocking effect on the façade, giving a sculptural dimension to the structure.

The interaction of these principles with the housing needs gave shape to 2 little towers, of different sizes and heights, implanted in a sculptural manner on a landscaped site: the small tower, a square of 5 storeys and 13,30 metres on each side, comprises five 5 room apartments (100m²) while the large tower, 7 storeys and 14,30 metres on each side, contains four 5 room apartments (1st to 4th floor, 124m²), one 3 room (6th floor, 77m²) and two 6 room in partial semi-duplex configuration (5/6th and 6/7th floors, 135m²)⁷.



FIGURE 1. *Atelier de Montrouge*, EDF staff housing towers, Ivry-sur-Seine, 1963-67. View showing the industrial context. © SIAF/CAPA/Archives d'architecture du XX^e siècle, ATM, Pierre Joly and Véra Cardot, 1967.

3. ASSEMBLAGE OR MONOLITH?

In that era of unequalled constructive fervour, which witnessed the building of vast mass housing projects, the little Ivry towers seem totally marginal, considering the nature and the scale of their programme (11 staff dwellings), the way they were designed and in their architectural expression. Would it, consequently, be realistic to compare this project to other dwellings programmes designed by contemporary architects close to the Montrouge team, such as, for instance, the state housing complex of Bagnolet designed by Paul Chemetov and Jean Deroche (AUA, 1965-71)? At first glance, the scale and the shape of this 280 dwellings and 5 artist studios project, contained within 3 cruciform towers of 11, 13 and 15 storeys, have nothing in common with the Ivry tower. But the main difference, as pointed out by Chemetov, is their conceptual approach: whereas the architecture of Bagnolet is an “assembly of parts”, using prefabricated elements and then by nature de-constructible and re-constructible, the architecture of the Ivry towers is a “monolith” – a magnificent raw concrete monolith, impossible to take apart⁸.

It is true that, for this project as for the others (such as the small Clamart library, 1962-66, classified as a historical monument in 2009), the Montrouge architects focused on exploring the principles of composition and appearance which tacitly fall within the Corbusian quest for “the masterly, correct and magnificent interplay of masses brought together in light”. But they were also interested in issues of assemblage, as can be seen in their early housing project for the CECA competition (1959-60, unselected) and their numerous studies on the principles of open industrialization and components for the Vaudreuil new town (1967-72).



FIGURE 2. *Atelier de Montrouge*, EDF staff housing towers, Ivry-sur-Seine, 1963-67. Layout of the small tower and construction system. © SIAF/CAPA/Archives d'architecture du XX^e siècle, ATM.



FIGURE 3. Paul Chemetov, Jean Deroche *et al.*, housing complex at Bagnolet, 1965-71. © *Architecture d'Aujourd'hui*, n. 144, June-July 1969, 26.

However, they would never get the commissions allowing them to demonstrate this line of thought. Nevertheless, in Ivry they seized the opportunity to explore a new urban concept that was to become their manifesto: against the hegemony of models, for experimentation in terms of habitat, no matter what scale, the programme or the constructive system.

If the architectural press hailed the achievement, did the inhabitants perceive the message? Unfortunately, nobody raised the question then; and a more recent attempt to track down longstanding users to bear witness came to nothing. Nevertheless, in 2003, when the towers were saved by a decree establishing their historical value, traces of some 50 years of daily life could be found in those apartments that had never been revamped: in the worn aspect of the interior finishes and amenities: original sinks, baths, radiators and handrails that were still in place, wallpapers and floorings that might have changed with time. However, the concrete façades had been subjected to some damage, and the original windows had been changed for new ones, made out of smaller sections of large white PVC frames.

4. THE SPLENDOUR OF RENOVATION

"To transform is to preserve", Paul Chemetov likes to say – reversing thereby Aurélio Galfetti's famous aphorism⁹. Among others, Chemetov believes that the existing building, the "*déjà là*", acts as a witness to its own transformation, as he wrote recently: "An intervention into an existing building, if not done in opposition to, but in sympathy with, what is already there, always leads to convincing results"¹⁰.

Chemetov's rich and abundant oeuvre includes a certain number of renovation projects. One of the best-known is the Great Gallery of Evolution at the Natural History Museum in Paris, where the contemporary design has enhanced both the building and its collections (1994, with Borja Huidobro and the designer René Allio). In this kind of project, Paul Chemetov demonstrates how well he knows how to "stand on the shoulders of his predecessors", in order to make a work of art while bringing new life to past constructions. But at Ivry, he faced the work of his contemporaries, with whom he had, and has, ties of friendship – especially with Pierre Riboulet of the *Atelier de Montrouge*, who died in 2003. Thus, his interest in their small brutalist towers, that experienced so many vicissitudes and finally secured protection, cannot be neutral: he has cared for them as if they were endangered works of his own – in fact, a situation that he recently and most unfortunately encountered elsewhere¹¹.

In these circumstances, his approach became all the more respectful of what is already there – and what this could or should mean today. Indeed, from the start of the project, his aim has been to restore the towers in their iconic state, as close as possible to the initial project, while, at the same time, bringing them up-to-date with present-day norms of comfort and thermal performance. These



FIGURE 4. *Atelier de Montrouge*, EDF staff housing towers, Ivry-sur-Seine, 1963-67. Photographic report 2002; 2016. © Catherine Blain.

guidelines are in no way negated by the property-development strategy adopted by the developer, which maintains the towers as dwellings while also introducing some significant changes: company staff housing becomes private co-ownership with a different financial model. It explains why the layout of the small tower has been cut in 2, in order to create smaller apartments, that are more affordable in financial terms (two 2 room flats of 46 and 54m² each floor, except on the 4th, with a 3 room flat of 68m² and a studio of 30m²). Apart from these changes, the project has aimed to preserve the original appearance of the buildings, notably by insulating the concrete façades from the inside and by restoring the rhythm of the original woodwork of the windows – using, though, a new kind of joinery which, being made of grey anodized aluminum, introduces a new aesthetic.

5. CONCLUSION

Adaptability, as we know well, and as Paul Chemetov often says, is always constrained by the economic viability of the situation “on the ground”. Completely embedded in the vast urban renewal project of Ivry-Confluences, the *Terrasses de l’Atelier* operation probably benefited from good conditions. Only the future will show if, in that specific context, the choices endorsed by Paul Chemetov constitute an exemplary achievement. In the meantime, we should already celebrate the preservation of this significant element of the 20th century heritage, which is still among the very few examples of post-war housing projects that are protected in France. In Ivry, 2 other housing projects, also recently labelled “heritage of the twentieth century” (2008), urgently call for the same kind of attention: the Raspail towers (Renée Gailhoustet, 1963-68) and Jeanne Hachette Centre (Jean Renaudie and Renée Gailhoustet, 1969-76). Let us hope that these calls for help, too, are heard, and that these projects are not doomed to become beautiful ruins.

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NOTES

- 1 This *Atelier* was founded in November 1958 by 4 architects: Jean Renaudie (1925-1981), Pierre Riboulet (1928-2003), Gérard Thurnauer (1926-2014) and Jean-Louis Vêret (1927-2011).
- 2 See in particular *Techniques et Architectures*, n. 1, 1968, 80-83; *Cahiers du CSTB*, n. 93, 1968 (notebook “Le Détail des Architectes”, 25); François Loyer, “Exercices de Déboitement”, *L’Oeil*, n. 170, 1969, 42-43; Jacques Lucan, *France Architecture 1965-1968*, Paris, Electa Moniteur, 1989, 19-21.
- 3 Decree of 11 July 2003, protecting the towers (façades and roof), the garages and the fencing around the site.
- 4 Born in Paris in 1928, Paul Chemetov was a member of another important agency during this period: the *Atelier d’Urbanisme et d’Architecture* (AUA), founded in 1959 under the leadership of Jacques Allégret and which gathered more than 20 professionals from 1960 to 1986.
- 5 These specifications were recalled in an internal document: EDF, *Normes Générales et Equipement Intérieur des Logements Construits pour le Personnel des Centrales Thermiques d’Electricité de France, 1er juin 1964 [fonds ATM/Archives d’Architecture du XX^e Siècle]*.
- 6 This dynamic composition was restrained by financial restrictions but the idea would be revisited in Ivry-sur-Seine.
- 7 Built between June 1966 and December 1967, the 2 towers have cellars in the basement and the dwellings have also private garages, located on the northern boundary of the site.
- 8 Interview with Catherine Blain, February 3, 2016. See also Paul Chemetov, lecture of 28 October 2014 at Ensa Marne-la-Vallée, <https://www.youtube.com/watch?v=88mqRlqH0zA>; accessed on February 2016.
- 9 “*Mantener = Transformatar*” was Galfetti’s guideline for his important reorganization project of Castelgrande in Bellinzona (1981-2000).
- 10 Paul Chemetov, “Le Projet de la Samaritaine est une Aberration Urbaine”, *Le Monde*, 11, 2014.
- 11 For example, the housing project “*Les Briques Rouges*” in Vigneux (AUA, 1962-72), certified “heritage of the twentieth century” in December 2008, is threatened with destruction, following the granting of a demolition permit in June 2015, http://www.paulchemetov.com/media/news_97_file.pdf, accessed on February 2016.

The *Corviale* in Rome and the *Vele* in Naples: Can a “Monster” become an Urban Opportunity?

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In the last 20 years in Italy, any remaining social and political criticism of modern architecture and its supposed “monsters” has focused on a series of social housing complexes that were built in some suburban locations up and down the country during the 1970s. These were all designed by well-known modernist architects to house thousands of people in accordance with modernist methodologies of housing typologies and functional organization; they were all conceived as gigantic *machines à habiter*. But a few years after their construction these housing complexes shifted from being a “modern utopia” to a “contemporary ghetto”. The “*Corviale*” project in Rome and the *Vele* in Naples are 2 emblematic examples of this trend. Built in the early 1970s to the designs of Mario Fiorentino and Franz Di Salvo, respectively, both these housing complexes were the result of an important cultural debate on the role of macro-structures as a solution to the challenge of creating a community while housing huge numbers of inhabitants. Both were designed as “urban utopias” but built without all the amenities. The final result was the construction of huge, modern phalansteries, isolated from the city. Our research will focus on the history of these two projects and on their parallel but opposite destinies. The demolition of the *Vele* began in the mid-1990s and the population was moved to an alternative housing complex designed with a lower density and anonymous architecture; whereas an alternative destiny awaited *Corviale*, which became in the late 1990s a social and political workshop, and a focus of speculations by a new generation of local Italian designers as to how its use could be re-imagined. More recently, the municipality of Rome has launched an international competition to transform all the community spaces. A specific functional program has been imagined after a set of workshops with the local population. The two stories represent the “tip of the iceberg” of a more diffuse potential public discussion on modern architecture in Italy.

1. INTRODUCTION

The debate around megastructures in architecture emerged in the 1960s as one of the key themes in international architectural culture.

In Italy this typology developed in the field of social housing to face the overwhelming demographic pressure. Numerous large collective buildings of a megastructural and often linear character were built in Italy in this period, like *Forte Quezzi* in Genoa (Daneri), *Gallaratese* in Milan (Aymonino and Rossi), *Case Minime* in Florence and *ZEN* in Palermo (Gregotti), *Corviale* in Rome (Fiorentino), and *Vele* in Naples (Di Salvo).

Most of these examples are associated with disastrous social results and in many cases reflect the inability of local policies to manage complex and experimental architecture. The social and political challenge was considerable, and unfortunately it was missed¹. This article will focus on two of the most emblematic projects built in the same period: *Corviale* in Rome and the so-called *Vele*

in Naples. Both the projects became seen as archetypal “monsters” of the Italian periphery, and both recently became an unexpected laboratory of urban transformation.

2. THE GRANDE CORVIALE: A UFO LANDS IN ROME

When in 1972 the construction of the so-called “New Corviale” started, it was impossible to predict that this building would become, for the Italian media and politicians, one of the most notorious symbols of the worst modern architecture of Italian suburbia. Rarely has a complex of modern architecture excited so much violent criticism after its construction. Its size was proportional to the complexity that stemmed from its social situation. The project was commissioned by the former ALER, the Agency for Social Housing in Rome, in a dramatic period dominated by the urgent demand for new houses. The designers conceived it as a form of cultural reaction to the degradation of the Roman periphery and the “*Sacco di Roma*”, which destroyed parts of the traditional environment of the Italian capital. As the architect Mario Fiorentino stated: “I must emphasise that the Corviale is not something like the *Unité d’Habitation*. Indeed, the Corviale is actually conceived in opposition to the *Unité*, which was designed as a repetitive and functional body. The Corviale was created as a *unicum* (unique solution) for a specific site and for the specific city of Rome”².

The building, 1-kilometre long, was conceived as a “dyke” between the city and the open countryside, designed to house apartments and services for 8,500



FIGURE 1. Mario Fiorentino, *Corviale*, Rome. © Luca Molinari.



FIGURE 2. Mario Fiorentino, *Corviale*, Rome. © Luca Molinari.

inhabitants³. The team of designers was headed by Fiorentino and a large group of Roman modernist architects. Fiorentino's work was well-known for a series of social housing complexes built during the 1950s in Rome⁴, but the project of the Corviale echoed a decade of discussions that had played out in Italian architectural culture between the rise of a new radicalism and the crisis of modernism. The radicalism of the design reflected the wildly ambitious idea that the sheer size of the project could itself act as a counter to the fragmentation of the city. Fiorentino never

worked with such a design solution, but the length of the Corviale must be seen as a bold, if impracticable, response to the demographic pressure faced by most Italian towns due to a strong influx of immigration from the south of the country. To limit the expansion of the city and, at the same time, to solve the increasing demand for low cost housing was one of the conceptual generators of this project.

Fiorentino and his team designed two main parallel buildings of nine storeys, 1 km long and 200 m deep. The 2 buildings were interconnected with galleries and suspended stairs up to the 5th floor where an internal street was intended to offer commercial services for the population. Perpendicular to the main building, the designers projected a set of smaller blocks facing the open countryside. The building was partially finished in 1982 when the contractor went bankrupt, and no public funding was available to create the services and the park. Two years after its completion 700 families had occupied part of the 1200 apartments, and the public street was becoming more and more overrun by squatters. The Corviale was soon branded by the Italian media as one of the symbols of the worst kind of Italian suburb, and it became the focus of a violent polemic against the role of modern architecture in Italian cities. For two decades there was incessant pressure to demolish it, and only the high costs of this operation and the opposition of the occupants warded off this fate.

However at the end of the 1990s, a different political and cultural vision emerged for the Corviale⁵. The building became the subject of a social and architectural laboratory of critical reflection on the suburbs and started to be seen as a topic to be analysed and understood rather than condemned. In 2005 an international workshop "Corviale UNiverCITY", coordinated by Francesco Careri with the Third University of Rome and the Penn State University, brought further attention to this urban "universe", and 4 different Roman architecture studios were invited to work with the inhabitants to identify strategies for the social and physical recovery of the building. Stalker, ellelab, Mao, Nicole_fvr/ 2A + P were the

young, Roman studios involved, representing the emergence of a new generation of designers able to bring an alternative methodology of work to the existing suburb⁶. The 4 proposals identified the distribution of the apartments, the central street, the lack of services and the roof as the focal points for their interventions and proposals. The workshop opened a completely new phase in the history of the Corviale. In 2015 the Regione Lazio and the Municipality of Rome launched an international competition for the actual regeneration of the building, which was won by Laura Peretti and her team, with a design proposal for a set of new squares and gardens to create public spaces on the ground floor of the building.

3. THE VELE OF SCAMPIA. A FAILED UTOPIA

The history of the *Vele* of Scampia began in 1962 when the Cassa del Mezzogiorno commissioned the Neapolitan architect Franz di Salvo to create a social housing complex on the northern outskirts of Naples⁷. The name *Vele* comes from the sail-like sectional shape of the array of seven linear blocks that originally made up the complex, each comprising 2 separate parallel structures connected by a staircase with a gallery running the entire length of the buildings (almost 100 metres). The parallel between the *rue corridor* of the Marseilles *Unité d'Habitation* by Le Corbusier and the Di Salvo gallery is evident, except that here the concept of the “master” was interpreted in local terms, as the central gallery is clearly a transposition of the Neapolitan alley.

The project reflects, undeniably, if idiosyncratically, the modern search for “housing for all” to be achieved through a rational plan involving prefabrication and use of “industrial” techniques, and should be seen as part of the broad legacy of CIAM, as elaborated and modified by the Team 10 generation, to which Di Salvo belonged. The challenge to which the *Vele* responded, like other “megastructures”, was that of how to apply a dense community model to the suburbs to avoid sprawl and the loss of land from an individualistic use of the territory. Di Salvo’s solution took the form of a “mega-form” in the landscape, a monumental and highly aestheticized shape like an artificial hill, whose shape was attributed by the designers to a detailed study on light prefabrication.

Unfortunately, the project was substantially modified during construction by the building contractors for cost-cutting reasons; its size, prefabrication system and neighbourhood facilities were all significantly degraded, all of which seriously undermined its success⁸.



FIGURE 3. Franz Di Salvo, *Vele*, Scampia, Naples. © Chiara Ingrosso.



FIGURE 4. Franz Di Salvo, *Vele*, Scampia, Naples. © Chiara Ingresso.

To this cocktail of problems must be added a degradation stemming from social rather than architectural factors. Indeed, no sooner had they the *Vele* been completed than they were “occupied” illegally by the people left homeless after the 1980 earthquake in Campania. Neither the facilities nor the houses built immediately thereafter solved the problem of unemployment in this suburb, that had long lost its agricultural and artisan vocation⁹. Before long, drug dealing became the most remunerative activity for many of the younger inhabitants. The *Vele* became veritable citadels of drug trafficking, impenetrable from the outside and controlled, like the other buildings in the neighbourhood, by the local organized crime “mob”, the Camorra. In an attempt to put a stop to these criminal phenomena, from 1997 3 of the 7 *Vele* were demolished. But naturally the Camorra did not stop its war in the neighbourhood and a few years later there was a so-called “blood feud” (2004-05) that caused the death of hundreds of people¹⁰.

At the same time, to rehouse the inhabitants of the *Vele*, several small buildings were built in the vicinity by the municipality, including commercial premises on their ground floor and 3 or 4 storeys of flats above, as a conventional alternative to the disorientation produced by the “megastructures”; in effect these were low-quality, anonymous buildings. The inhabitants, however, were eager to move in and demanded the demolition of the *Vele*.

20 years have passed since the first “Vela” was demolished but, even today, four of them still remain standing, albeit in a state of extreme decay. To meet the

demands of the inhabitants' committees, as well as for financial reasons, recently (October 2014) the local administration, in agreement with the historical association of the district "Comitato Vele", made a study in which they planned to leave only one "Vela" standing and turn it into a museum¹¹. Despite numerous conferences, dozens of academic studies and projects for the recovery and reuse of the Vele, the policy of officialdom¹², now in the hands of the government, seems to favour their removal, mainly for symbolic reasons (equating destruction with "liberation"). A single isolated "Vela", however, cannot convey the complexity of the original spatial concept. Rather, it would become an isolated iconic set piece, devoid of any functional or social *mixité*. To make matters worse, no social strategy was prepared to parallel this architectural and urban planning study – a task which therefore now seems all the more urgent, given the extremely troubled history of this neighbourhood.

NOTES

- 1 Giovanni La Varra, "Architecture, Dynamite and the Political Establishment", in Matteo Ghidoni (ed.), *"San Rocco" n. 3: "Mistakes"*, Geneva, Motto Books, 2011, 129-136.
- 2 Video Interview with Mario Fiorentino, 1981.
- 3 Manfredo Tafuri, *"Diga Insicura, sub Tegnime Fagi"*, *Domus*, n. 617, 1981, 24.
- 4 Francesco Moschini (ed.), Mario Fiorentino. *La casa. Progetti 1946-1981*, Roma, Ed. Kappa, 1985; Luca Molinari, *Quartiere San Basilio 1951-1954. "Ein Neorealistisches Experiment"*, *Der architekt*, n. 9, September 2001, 28-32.
- 5 Cherubino Gambardella, *Centomila balconi. Per una Nuova Bellezza dei Quartieri Italiani*, Florence, Alinea ed., 2005.
- 6 Flaminia Gennari Santori, Pietromarchi, Bartolomeo (ed.), *Osservatorio Nomade. Immaginare Corviale*, Milan, Mondadori, 2006.
- 7 Gaetana Cantone, *Secondigliano*, in Cesare De Seta (ed.), *Le Città nella Storia. I Casali di Napoli*, Bari, Laterza, 1989, 143-155; Lilia Pagano, *Periferie di Napoli*, Naples, Electa, 202-206; "Ancora Secondigliano", *Casabella*, n. 337, #1969, 20-24.
- 8 A substantial change that jeopardized the project was the distance between the 2 structures within each Vela: planned at 12 metres but narrowed to 10.80 during construction. Giacomo Ricci, *Le Vele di Scampia. Dalle Matrici Culturali del Progetto alla Realizzazione*, in Gaetano Fusco (ed.), *Francesco Di Salvo. Opere e progetti*, Naples, Clean, 2003, 69-82.
- 9 Cf. *ArQ*, n. 6 and n. 7, 1991, monographic issues devoted to the post-earthquake Extraordinary Programme of Residential Building in Naples (PSER).
- 10 Publicised worldwide in Roberto Saviano, *Gomorra*, Milan, Mondadori, 2006 and Matteo Garrone, *Gomorra*, Fandango, 2008.
- 11 Comune di Napoli, Università degli Studi di Napoli, *Studio di Fattibilità Strategica, Operativa e Funzionale Finalizzato alla Valorizzazione e alla Riqualificazione dell'area delle vele di Scampia*, Naples 18 ottobre 2014.
- 12 "Difendere le Vele di Scampia", *Ananke* n. 62, 2011; Alessandro Castagnaro, Antonio Lavaggi (ed.), *Le VELE di Scampia: Che Fare?*, Naples, Giannini, 2011.

Education for Reuse

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Education for reuse aims to share and to debate the experiences developed in schools of architecture to train students in the transformation and rehabilitation of modern buildings and sites. Modern architecture, built between the 1920s and the 1970s, is now crossing a paradigmatic time because of its inevitable degradation in a complex context, of changing urban dynamics, new lifestyles, emergent technological and spatial needs. Firstly, its special constructive condition imposes the need for pertinent research on technological systems and solutions. Secondly, its specific functionality demands creative and appropriate strategies for adaptive reuse and programmatic transformation. Thirdly, its recent recognition as local or global heritage calls for innovative design methodologies and theories.

Indeed, the re-design of modern architecture and urbanism is potentially one of the main professional areas of activity for architects all over the world, especially younger generations, at a time when cities are being densified after times of continuous expansion. The debate at the last 14th *International docomomo Conference*, Seoul, 2014, was the best expression of this tension, and the fact that it is no longer a North-South topic, because key issues such as urban degradation, depopulation, or gentrification transcend the North-South polarisation. This situation provokes the rise of a critical vision and of new concepts of contemporary intervention in modern heritage. In this context, it becomes necessary to put a new focus on architectural design education, as a strategic platform within which a sustainable future for the Modern Movement legacy can be worked out.

However, questions of reuse and rehabilitation are, normally, not part of architectural education, especially in the case of the postgraduate curriculum. Schools of architecture are traditionally more focused on the artistic and technical edu-

cation of the architect and show some resistance to integration of social factors and of the real problems of the community. Recently, however, this attitude has begun to change, chiefly owing to research activity inside academia by professors and post-graduate students. Mainly after 2000, with some financial support from international agencies, research projects or academic courses have been targeted at topics more related to architecture's societal challenges¹. In this sense, architectural education has, today, an opportunity to train architects with concepts, methods and tools that are able to answer to these new challenges.

The session, "Education for Reuse", will map out some educational activities that demonstrate, on the one hand, what schools of architecture have been doing to respond to these new challenges and to integrate the reuse of modern architecture into their educational and research activities. On the other hand, the session will also demonstrate the contribution of cultural institutions to these educational activities, given that it is also necessary to train cultural actors in the qualities and potential of modern architecture and urban sites.

Firstly, at the *Politecnico di Milano*, the master course run by Andrea Canziani, Andrea Luciani, and Margherita Pedroni provides an educational space to explore methodological tools of teaching and learning in modern heritage conservation. The paper by those authors sets out an architectural design method that invites students to "think while acting" as a basis for developing complex conservation projects – an approach where norms, rules, theory and practices are put in confrontation with the values and needs of the modern building.

Secondly, a paper by Franz Graf outlines the way in which, at the *École Polytechnique Fédérale de Lausanne* (EPFL), *Laboratory of Techniques and Preservation of Modern Architecture*, directed by him, promotes pedagogic experiences at all 3 levels of education (undergraduate, masters and PhD) on conservation of modern architecture, considering that "conservation is no longer confined to specialist tracks but recognised as foundational". Step by step, Graf presents a teaching methodology that proceeds from lectures to design, from study trips to critic sessions, and from surveying to understanding the modern case studies.

Thirdly, based at the *Centre of Advanced Studies of Integrated Conservation* (CECI) in Recife, Fernando Diniz Moreira and Luis Amorim present an e-learning programme, the "1st Latin American Modern Architecture Conservation Course (MARC-AL)". This pedagogical experience combines a distance learning element, structured with online lectures, with an in-situ part, organized as a workshop of intense design studio activities in order to develop a conservation project for a modern building.

Fourthly, at the *ISCTE-University Institute of Lisbon*, OIKONET have set up an experimental workshop on "Contemporary Living Patterns in Mass Housing in Europe", directed by a sociologist, Sandra Marques Pereira and an architect, Jim Roche. Their interdisciplinary approach requires architecture students to face modern housing blocks with a broader perspective and with a diversity of methodological tools. The presence of the residents created the conditions for a par-

ticipatory process where people, namely the inhabitants, became as important as the modern building itself.

Finally, at Hsinchu City in Taiwan, the *National Hsinchu University of Education* created a programme for students to develop the public conscious of the modern heritage, based around a single site, the Shu House. Fang-jay Rong and Ming-li Lee explain this non-specialized educational programme, which promotes workshop activities focused on the physical and abstract characteristics of modern architecture.

All these 5 educational experiences integrate a pedagogy based on “learning by doing” activities, promoting reflection on the reuse of modern architecture through action, namely through design. The starting point is that modern architecture introduces new challenges for its reuse: on the one hand, because society has to deal with its recent memory; and on the other hand, because of its innovative character (functional, technical, and urban). All these papers demonstrate a strong relationship with the case studies themselves, with the buildings to be transformed, not only in order to understand its qualities but also to take account of the transformations imposed by time and by people. This last condition is the reason for the participation of users in the design processes, as is amply evinced in all these educational programmes.

To conclude, these pedagogical strategies are strongly supported by interdisciplinary research through design. In fact, the complexity of reuse the Modern Movement legacy requires the design process to enlist the aid of a range of methods and tools from different disciplines in order to allow it to elaborate a rigorous analysis, a precise strategy and an appropriate result that can integrate their values with current and future needs. Although a diverse range of master and doctoral programmes already exist, there is also an urgent need to introduce the topic of “education for reuse” into the main and basic (i.e. undergraduate) educational programmes that train architects, to furnish them with the theoretical frameworks and the design methodologies and tools to tackle a problem that has very specific conditions. The specialised programmes and workshops presented in these papers provide a good basis on which we can debate the further development of architectural education.

Teaching Preservation: The Experience of the Laboratory of Techniques and Preservation of Modern Architecture, *École Polytechnique Fédérale de Lausanne (EPFL),* 2007-2016

Franz Graf

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DE LAUSANNE, SWITZERLAND

The Laboratory of Techniques and Preservation of Modern Architecture, founded in 2007, has been teaching the techniques of design in the context of existing buildings for 10 years and this discipline – embracing maintenance, restoration, repair, reconstruction, reuse or extension – has occupied an important place in the curriculum: be it maintenance, restoration, repair, reconstruction, reuse or extension. It is taught not just to third year Bachelor students, as a basic module, but also in the Master's Programme, for diplomas and doctorates. The conservation "stream" is strong and prominent in the coursework at the EPFL, conservation practice being seen not as a specialist area but as a foundation skill able to support a revival of the discipline of architecture as a whole.

This paper presents the methodological and cognitive aspects of a teaching programme that brings together multidisciplinary knowledge and historical analysis, materials and building technology and economic and environmental research. It addresses the qualitative, economic and ecological resource that ordinary buildings in towns and cities represent. It also considers the monumental heritage of architecture – which is highly effective in terms of pedagogical outcomes. Using building analysis and project design for the Frugès district in Pessac in 2014-2015 the atelier was able to explore themes as diverse as urban design, landscape and vegetation, different typologies, planned interior refurbishment, and the polychromy of the ensemble. Immersion in the material identity of buildings has made 90 years of transformation and adaptive reuse more intelligible, and enabled critical assessment. The complex diversity of the district, designed by Le Corbusier and Pierre Jeanneret, has enriched student minds, minds that have in turn brought a new understanding of the way the area is fashioned and the changes it has undergone (retracing nearly a century's worth of alterations), as well as design input on potential conservation and reconstruction of missing elements.

1. PESSAC AS A WORKSHOP TOPIC

In Switzerland over 70% of the professional workload of architects consists of interventions in architecture from the second half of the 20th century. Yet the architecture schools – the Federal Institutes of Technology in Zurich and Lausanne and the *Università della Svizzera Italiana* – until just a few years ago provided no training for designing in an existing context within their syllabuses. Founded in 2007, the Laboratory of Techniques and Preservation of Modern Architecture was intended to put an end to this dysfunction. Since then design in existing buildings, dealing with maintenance, restoration, rehabilitation, restructuring, reuse and extension, has occupied an important place in its educational curriculum¹. The orientation towards conservation is a strong and very promi-

nent educational axis at the EPFL, with conservation no longer confined to specialist tracks but recognised as foundational, and capable of laying the basis for a renewal of the discipline of architecture as a whole.

The teaching of theory and design in the workshops for the academic year 2014-15 took as its object of study the *Cité Frugès* in Pessac, built between 1924 and 1927 by Le Corbusier and Pierre Jeanneret². The teaching method, refined in the previous years³, was applied in all its precision and complexity. First, extensive documentation was collected, comprising all the writings and drawings on the subject, essentially at the *Fondation Le Corbusier*⁴, and a select bibliography and writings about the conservation project discussed with the participants. In parallel, a historical study was conducted on the basis of the existing documents and in lectures. Gilles Ragot presented⁵ Bordeaux in the 1920s and its characteristic built morphologies, while also expounding the situation of Pessac, the circumstances of the commission and the saga of its construction, the distinctive quality of the work in the oeuvre of the architects, its life, its vicissitudes and its heritage status; Tim Benton⁶ explored the site, the leading figures connected with it, its phases, the techniques experimented with – such as the cement-gun – and aspects of the execution of the work. Brian Brace Taylor compared his pioneering study with the work of the students later in the semester.

2. OFF-CAMPUS TEACHING AND IMMERSION IN THE TERRITORY

Teaching is rapidly moving towards the object of study, the site itself, because the most original, irreplaceable documents are the actual buildings themselves – while the teaching of conservation necessarily takes place off campus. In this case it was a question of understanding the territory in which the *Cité Frugès* is embedded, the city of Bordeaux, surveyed from its historical centre and the docks to its periphery under construction, through districts built in the 1950s and 1960s such as *Mériadeck*⁷. The work also entailed examining equally distinctive redeveloped facilities, such as the *Lainé* warehouse (1824) or the bunker of the Submarine Base (1940), both refurbished as contemporary art centres. Then there are the empty buildings awaiting new programmes of use, such as the *Benauges* fire station (1950-1954) by the architects Claude Ferret, Adrien Courtois and Yves Salier, or ongoing projects, such as the social housing complex of *Grand-Parc*, now being restructured by the most serious and competent architects of reuse in France: Anne Lacaton and Jean-Philippe Vassal, working with Frédéric Druot and Christophe Hutin.

3. SURVEYING AND UNDERSTANDING

The teaching moved off-campus in order to produce a comprehensive understanding of the materiality of the *Cité Frugès*, namely a site plan and a meticulous survey of the materials of the whole complex. Working in groups and using the appropriate instruments, the students surveyed the *Quinconces*, *Zig-zag*,



FIGURE 1. Le Corbusier and Pierre Jeanneret, *Cité Frugès*, Pessac, 1924-1927. View of the *Gratte-ciel* houses. © TSAM, Stephan Rutishauser, July 2014.

Gratte-ciel, *Arcades* and *Jumelles* (with the *Maison Vrinat*), concentrating on two houses of each type in particular. It is indispensable for knowledge to be absorbed through observation, to the point of fatigue traces and strata that make a reading of the site difficult. The documentation of the life of the *Cité Frugès*, contained in the archives and the testimonies of the residents themselves and in publications, specialised articles or books⁸, all revealed the very rapid deterioration of the housing, even before the construction work was complete, and it would continue to decay down to the end of the 1960s. Remember that this was Le Corbusier's conception of minimum workers' housing, whose owners also appreciated their very modest cost, and that if Pessac is set at some distance from Bordeaux, the *Cité Frugès* also occupies a completely marginal position in relation to its municipality. The homes were therefore adapted to the requirements of their owners: they were extended and built up higher, voids were built over and the façades refashioned to suit the taste of the day, making the *Cité Frugès* unrecognizable⁹. The practice of observation was thankless because, though access to the interiors was greatly facilitated by the inhabitants¹⁰, most of the homes had been radically transformed. With the help of the plans, we had to find what was left, what had been replaced, demolished, often rebuilt several times. And the outcome of this was a twofold surprise: on the one hand the original construction is inadequately documented, not even by the working drawings or original photographs, so it was essential to dig deeper, while on the other hand everyday life over 90 years has left the interiors unrecognisable. The same



FIGURE 2. *Cité Frugès*, constructional axonometric projection on a scale of 1:5 of the Quinconce house 30. © TSAM, EPFL Students: Aloïs Rosenfeld, Anaïs Jaquier, Clément Perrier, Loïc Preitner, Pedro Reyes, 2015.



FIGURE 3. Left: *Cité Frugès*, constructional axonometric projection on a scale of 1:20 of Quinconce houses 30-32. © TSAM, EPFL Students: Aloïs Rosenfeld, Anaïs Jaquier, Clément Perrier, Loïc Preitner, Pedro Reyes, 2015. Right: *Cité Frugès*, constructional axonometric projection on a scale of 1:20 of Zig-zag house 27. © TSAM, EPFL Students: Laurie Bandiera, Aurélie Dupasquier, Sébastien Fasel, Damien Gisleret, Maurits Van Ardenne, 2015.



process happened to the exteriors: one group of students conducted a survey of the trees on the site, the gardens originally strictly designed all the way down to the rabbit hutches, fences, gates, sidewalks, etc¹¹. The polychrome colour scheme, also badly damaged, was studied in detail, on the basis of the original sketches and its current state¹². The typological features of the homes, designed as a combination of core modules – staircase, bedroom, kitchen, bathroom, wardrobe, cellar, terrace – organised as “*Quinconces*, *Zig-zag*, *Gratte-ciel*, *Arcades* and *Jumelles*”, were also analysed in detail as well as in their genealogy. A chronology of the production of working drawings and construction plans was established, so as to bring out the changes in the constructional system of the concrete vaults by “Pima” floors, patented by the building contractor Summer, who resumed construction work in June 1925, following an intervention by Le Corbusier. In the 1970s, the engineer William Heraud decided to restore the “arcade”, which he had purchased, and requested its classification as a historic monument (MH decree of December 1980). This was the starting point for reconsideration, revaluation and the application of conservation status to the *Cité*, notably leading to the creation of the ZPPAUP¹³. One of the authors of the protective measure, the architect Jean-Luc Veyret, prepared a study of the site, while the responsible *Architecte des Bâtiments de France*, Catherine Chimits, explained the updating of this measure and its application. A multi-storey block (“*Gratte-ciel*”) was acquired by the municipality in the 1990s and restored, becoming a museum which receives many visitors and interested parties daily.

4. CRITICAL RENDERING AND METHODOLOGICAL TOOLS

The survey and material analysis in the field provided an abundance of valuable information on the state of the *Cité Frugès* in autumn 2014. It also taught the students much about the vicissitudes suffered by buildings, even by the work of one of the greatest masters, exemplifying all the case histories imaginable: from housing in ruins to cases of the most sensitive restoration, passing through all the intermediate options in between. It should also be observed that the restoration projects undertaken were carried out by the residents themselves, with the extremely scrupulous assistance of professionals. The knowledge acquired then had to be reproduced, which was done initially in the form of drawings, at a scale of 1:20, of the buildings' current state and the original condition, and then through scale models and constructive axonometric projections. They recorded the load-bearing structures, built envelopes, partitions and installations down to the smallest detail, from the standard structural metalwork to the "robur" warm air heating equipment or the "Perfection" system for recovering waste water, raising the knowledge of the built substance to a level never reached previously. Parallel with these studies each group of students had to develop an outline of a

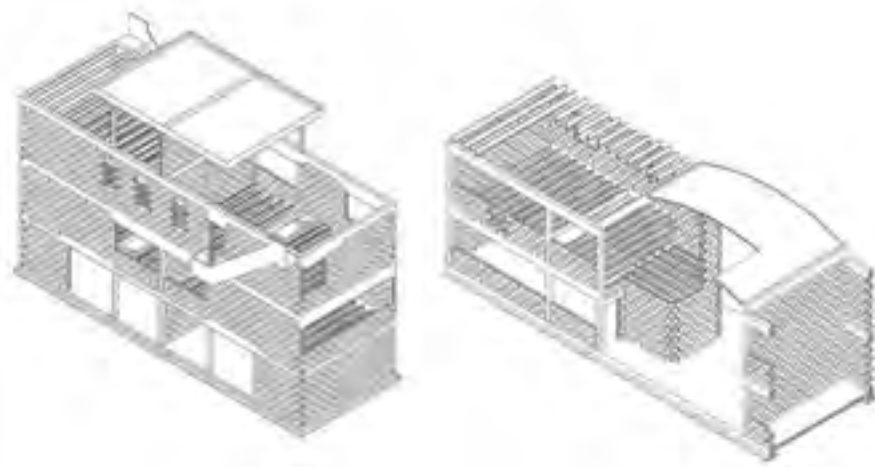


FIGURE 4. Right: *Cité Frugès*, constructional axonometric projection on a scale of 1:20 of the Gratte-ciel house. © TSAM, EPFL Students: Michaël Beaud, Nicolas Choquard, Laetitia Hackethal, Charles Legrand and Manuela Schönberger, 2015. Left: *Cité Frugès*, constructional axonometric projection on a scale of 1:20 of the Arcade house. © TSAM, EPFL Students: Baptiste Berrut-Maréchaud, Federica Grande, Mélanie Lacroix, Eliane Lehmann and Carine Morand, 2015. Bottom: Le Corbusier and Pierre Jeanneret, *Cité Frugès*, Pessac, 1924-1927, construction site of the Gratte-ciel housing. © Le Corbusier Foundation, c. 1925.

preservation project by adopting different strategies: conservation, restoration, rehabilitation, renovation and restitution, the aim being to understand their precise linguistic definition and their implications for work on the existing. Lectures delivered by Pierre-Antoine Gatier, Chief Architect of historical monuments, on monumental restoration¹⁴, and by João Pedro Falcão de Campos on his renovation projects in Lisbon¹⁵, were very useful.

In the course of the study, another field trip offered comparison with other social housing projects, for example at *Neubühl* in Zurich (1928-1932) showing that its status as a cooperative, preserved since its inception, has helped to save not only its buildings but also the outdoor green spaces which are irrelevant in Pessac; or at the *Weissenhof* in Stuttgart where House 14 (1927) by Le Corbusier and Pierre Jeanneret has been partly preserved and partly adapted into a museum of the *Siedlung*. The architects responsible for the restoration (Arne Fentzloff and Mark Arnold) exhibited their work and gave explanations on the spot, an irreplaceable teaching method for preservation. The architect Jacques Blumer of Atelier 5 in Bern presented the *Siedlungen* of Halen and Thalmatt I and II (1961-1985), which were directly inscribed in the tradition of Le Corbusierian modernity.

5. PROJECTS AND “WEITERBAUEN” (BUILDING)

The understanding conveyed by the project was firmly grounded on the *Cité Frugès*. Its conception, genesis, construction and life were also related to contemporary architectural design in two ways, either alongside or within its existing elements, in both cases without concern for the heritage. The projects explored the innovative potential that the *Cité* embodies today and the power of the architectural project in relation to the framework of the prescriptive regulations. A first project was developed on the theme of “building alongside”. This extended the historic *Cité* by studying one type of dwelling, its multiple combinations and minute variations, as well as its external extensions. This constituted a proposal for minimum housing today embodied in the logic of the series, of the plot, of the single-family dwelling in a natural setting. The second project involved the redevelopment of the site with a visitors’ centre and the requisite meeting place, entailed by the probable listing of the *Cité Frugès* as a UNESCO Heritage Site. It was developed on the 3 parcels of ground on which the architects did not build houses or where the houses were demolished by wartime bombing and the adjacent open spaces¹⁶. To round off the year – as this topic is not suitable for a shorter teaching duration – and to measure the distance, but also the analogies in the processes, the architects Frank Escher and Ravi Gune Wardena presented their works in Los Angeles: the restoration of the Eames House and the houses of Frank Lloyd Wright’s favourite disciple John Lautner¹⁷.

In this way the educational and cognitive methodology developed during this course demonstrated its effectiveness, clearly defining the preservation project and its nuances, and epitomising such fundamental issues as the history of archi-

itecture, construction, survey and theory. But it also went further and initiated students into architectural research, while eliciting a new and decisive understanding of an emblematic complex, which we had tended to take for granted as a known quantity: the *Quartiers Modernes Frugès*.

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NOTES

- 1 The teaching is not only laid on in the basic courses, in the third year of the B.Arch in lectures on theory and an annual workshop project, but also in the M.Arch in the form of a lecture course and in the work for the diplomas and PhDs.
- 2 For a presentation of the *Cité de Pessac*, see Jean-Luc Veyret et. al., *Le Corbusier: Les Quartiers Modernes Frugès*, Basel, Fondation Le Corbusier, Birkhäuser, 1998.
- 3 Franz Graf, "How Should We Teach the Conservation of Modern and Contemporary Architecture", *Proceedings of the Xth International docomomo Conference "The Challenge of Change"*, TU Delft, 2008, 287-293.
- 4 We wish to thank the Foundation, and in particular Bénédicte Gandini, architect, and Michel Richard, director, for their valuable assistance.
- 5 "The *Cité Frugès*. From Reception to Heritage Status", lecture by Gilles Ragot, EPFL, September 2014.
- 6 "Lège, Pessac and the Gunite Battle", lecture by Tim Benton, EPFL, September 2014.
- 7 Visit guided by Professor Chantal Callais and Professor Thierry Jeanmonod.
- 8 The most famous being Le Corbusier's Pessac, subject to serious misunderstanding when it was published, so that it quickly became an instrument for denigrating the city and the work of Le Corbusier in general.
- 9 "The authenticity of the architectural experience is based on the tectonic language of construction and in the integrity of the act of building for the senses", in the words of Juhani Pallasmaa, *Los Ojos de la Piel*, Barcelona, Gustavo Gili, 2006, 66.
- 10 Whom I wish to thank here.
- 11 At a seminar on gardens, the guests were Bernadette Blanchon, who spoke on landscape practices in major housing developments in France (1945-75), and Jean-Jacques Borgeaud, who spoke on the restoration of historic gardens, EPFL, November 2014.
- 12 At a seminar on polychromy, the guests were Edith Bianchi who spoke on Le Corbusier's use of colour, and Gabriele Dolff-Bonekämper who spoke on Bruno Taut's coloured Siedlungen (settlements) in Berlin, April 2014.
- 13 *Zone de Protection du Patrimoine Architectural, Urbain et Paysager*, December 1997, in which the regulations were drafted by the authors of *Le Corbusier: Les Quartiers Modernes Frugès*. The document followed the 1985 study *Pessac. Le Corbusier. Sauvegarde et Réhabilitation des Quartiers Modernes Frugès* by the same authors.
- 14 "The Restoration of the Twentieth-Century Heritage. The Example of Le Corbusier's La Roche House. Methods", lecture by Pierre-Antoine Gatiér, EPFL, March 2015.
- 15 "Restoration of the Headquarters of the Bank of Portugal in Lisbon and Other Projects", lecture by João Pedro Falcão de Campos, EPFL, March 2015.
- 16 External members for the assessment of the studio works: Jacques Blumer, Florian de Pous, Laurent Lehmann, João Pedro Falcão de Campos, Hélène and Bernard Bauchet.
- 17 "Conserving Experiments", lecture by Frank Escher and Ravi Gunewardena, EPFL, May 2015.

Training in the Conservation of Modern Architecture: A Latin American Experience

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In recent years, the field of architectural conservation has expanded to include diverse professionals and laypeople, as users and communities, in the decision processes, downsizing the role of the established experts. It has also seen a great expansion in the scope of objects to be preserved, including entire cultural and urban landscapes, modern sections of cities, with many buildings and public spaces. Modern heritage, as we know, poses many challenges for conservationists (rapid functional obsolescence, the material dimension of the building; the misinterpretation of the patina; and the general lack of recognition of modern buildings). Although not invalidating the theoretical background of conservation, these challenges raise new issues regarding the training of conservationists. To meet all these challenges there is a strong need to train qualified professionals who are able to identify the values of a rather diverse set of modern buildings and landscapes and the problems related to its conservation, in addition to being able to manage change and to intervene without compromising its integrity and authenticity. Thus, it is necessary to prepare professionals to face the new challenges posed by the conservation of modern built heritage. For this reason, the Centre for Advanced Studies on Integrated Conservation (CECI) and ICCROM ran the 1st *Latin American Modern Architecture Conservation Course* (MARC-AL), in association with **docomomo** Brazil and UFPE, in 2010. After 8 months in a distance-learning format, the students attended one full time month programme, in which they were fully involved in a conservation project in Recife, with field trips to Belo Horizonte and Brasília. This experience was adapted into a graduate seminar course, offered annually at UFPE. This paper presents the author's experience in running these courses, addressing some questions which may contribute to the organization of similar courses in future.

1. INTRODUCTION

The field of conservation has experienced many transformations in the recent years. It has expanded to include other professionals and laypeople in the decision processes, downsizing the role of the expert as the exclusive authority, and forcing him/her to develop communication skills in order to facilitate the process among the many stakeholders involved¹. Likewise, not only recognized monuments of the past are to be conserved but entire cultural and urban landscapes, even including modern sections of cities.

Modern heritage poses many challenges for conservationists (rapid functional obsolescence and its material dimension; the misinterpretation of the patina; and the general lack of recognition of modern buildings)². Although the conservation of modern architecture should not in principle be approached in a different way to the conservation of architectural works from a distant past, as both are related to the same theoretical foundations, these challenges in reality do raise new issues regarding the training of conservationists.

There is a need to train qualified professionals who are able to identify the values of modern architecture and the particular issues related to its conserva-

tion, as well as to intervene without compromising its integrity and authenticity. For this reason, the Centre for Advanced Studies on Integrated Conservation (CECI)³ and ICCROM jointly mounted the *1st Latin American Modern Architecture Conservation Course* (MARC-AL), in association with **docomomo** Brazil and the Federal University of Pernambuco (UFPE). It was held between March 2009 and March 2010 and then adapted to a graduate seminar course format at the UFPE, offered annually. This paper presents the reflections provoked by the authors' experience running the MARC-AL, which may contribute to future similar courses⁴.

2. PEDAGOGIC STRUCTURE

The MARC-AL was grounded in 4 key conservation principles: 1) building, sites and districts have cultural meaning for social groups; 2) the assessment of their values is made through a long and continuous inter-subjective process involving the community and stakeholders; 3) conservation is an inter-disciplinary process involving different professional and non-professional viewpoints; and 4) a maintenance programme and monitoring system should be adopted, aiming for long-term conservation and sustainability.

MARC-AL set out to provide professionals with the skills they need to recognize the value of modern buildings and sites, to identify their value, to understand their conservation problems and to propose the proper solutions. The course was structured into an initial 8-month distance-learning part (March-October 2009), and a final *in-situ* part (in November) in which the students were fully involved in a conservation project in Recife⁵. The distance learning part, which contained four modules, with 24 lessons at total, each lasting a week, ensured interaction between teachers and students and familiarized the latter with the concepts and central issues of the course. This part of the course ran in parallel with the drawing up of a conservation plan for the building that each student had selected in his or her city. In addition to the exercises provided each week by the professors, the students submitted one paper per module, whose theoretical content should support the conservation plan for their case studies. Each module covered a set of theoretical and practical skills needed to deal with the conservation of modern heritage:

- Module 1: introduced the major issues of the conservation of modern architecture: its values, forms of inventory and the statement of significance. As a final product, the students draw up the inventory, identify the main values and draft a statement of significance of their case study.
- Module 2: discussed the theories of restoration and conservation and its implications for conserving modern architecture, international recommendations and organisms. The students presented an analysis of their buildings, identifying the different changes it had undergone and discussed the main theoretical implications to be faced.

- Module 3: provided an understanding of the nature of building materials and techniques, their process of degradation and the conservation techniques and procedures for each material. The students drew up a map of damage to their case-study buildings.
- Module 4: was devoted to theoretical and methodological procedures of a conservation project for a modern building. The students defined guidelines for conservation and ways of monitoring and controlling after the intervention.

3. THE IN-SITU COMPONENT

The final part summarized the contents and procedures taught throughout the entire course, focusing on developing a conservation plan for a building, in Recife and a week of field visits to Belo Horizonte and Brasília⁶.

The first 3 were devoted to developing a conservation plan for the former Institute of Mycology at the UFPE campus⁷. One of the first buildings on the campus, this was designed in 1956 by Reginaldo Esteves, a young architect in the University Technical Office⁸. The building formed part of a complex designed for the School of Chemistry, which comprised the main building of the institution and the Institute of Antibiotics⁹.

The building is arranged in 3 levels: an intermediate floor provides access to the unobstructed ground floor and the upper floor occupied by laboratory units¹⁰. The roof is a sloping slab, which originally contained shed skylights illuminating and ventilating the intermediate floor.

Regrettably, there was no precise information or records regarding the building's design and its construction process, or the changes throughout its active life¹¹. The building never came to house the Institute of Mycology, which remained outside the campus for many years. The School of Chemistry occupied it for decades until being transferred to its own building in the 1980s. After lying vacant for a few years, in the mid-1990s, the building was earmarked as a home for the Hotel Trade and Tourism Unit, which required heavy alterations¹². The building was also neglected in its derelict state and was unrecognized for its quality or as an example of the pioneering buildings of the campus.

Thus, the building experienced a typical range of the problems which habitually affect modern buildings in general: poor maintenance, change of use, unavailability of original materials whose production had been discontinued, and renovations and updating operations which disregarded the values of the building.

The architectural qualities, the difficulties of accessing documentation and the degree of loss of character were important criteria in prompting the choice of this building as an object of study, because this was the most likely scenario for the students to face in their own countries. In other words, most of the students will not face established masterworks, but buildings without proper documentation, threatened or under severe risk of loss of character and undervalued

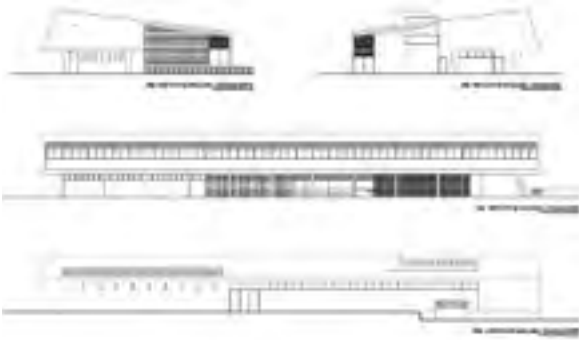


FIGURE 1. Floor plans, elevations and view of the Mycology Building in 1956. © Luiz Amorim, *O Espaço da Arquitetura como Objeto de Interesse Patrimonial*, unpublished research report, Recife, 2009.

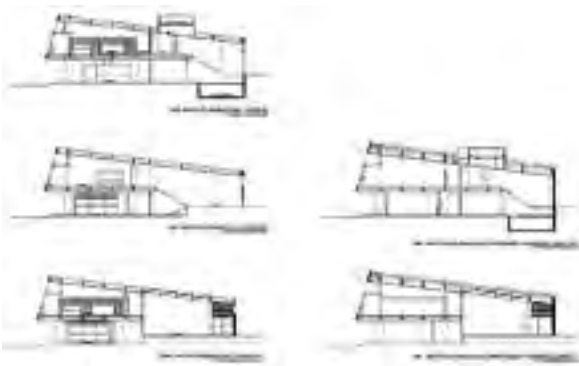


FIGURE 2. Institute of Mycology, cross-sections showing transformations between 1956 and 1964. © Luiz Amorim, *O Espaço da Arquitetura como Objeto de Interesse Patrimonial*, unpublished research report, Recife, 2009.



FIGURE 3. Conservation problems at the Institute of Mycology. East façade and the plasterboards covering the glass breeze-blocks. © Fernando Diniz Moreira.



FIGURE 4. Upper and lower floor plans, section of the new proposal, and computer models showing the building in its current state (left) and after the proposed intervention (right). © I MARC-AL students.

by local communities. This is important for the conservation of our modern heritage, because the latter comprises not only masterworks but also the everyday modern buildings that lie around every corner.

In the first week, students had the opportunity to attend lectures on various topics related to the case study¹³ and made a thorough investigation of its pathologies and a study to identify its main characteristics and values. The week's work led to the production of two documents: a brief map of damage¹⁴ and a declaration of significance¹⁵.

In the second week, the students were divided into teams and developed different proposals. These were discussed in a critical review at the end of the week, reaching a consensus about the guidelines developed by the entire team.

In the third week the students drew up the conservation plan for the building. The proposal was to house the teaching and research activities of the nearby Institute of Antibiotics, including a library, a mini-auditorium, reading and study rooms and social spaces. The intention was not to return the building to its original state but rather to intervene on the basis of its current state, by seeking

very selectively to recover crucial aspects for understanding its original values. Regarding the original structure and its spatiality, it was proposed to clear away the obstructions as a way of revealing the original structural and spatial solution, recovering the original internal circulation and removing the partition walls that changed the composition of the east façade¹⁶. There were specific proposals for the roof, façades and gardens and panels¹⁷.

4. THE ASSESSMENT PROCESS

The experience of the MARC-AL resulted in some outcomes which, we believe, it would be helpful to publicize, in case these might benefit conservation educators in implementing similar courses.

The methodology of the course was seen as very positive particularly because:

- The digital resources of the first part enabled familiarity with the course content;
- The in-situ part synthesized the previous acquired knowledge;
- The analytical methods fully took account of the impact caused by changes of use throughout the history of the buildings;
- The study of restoration works, long-term master plans and listings dossiers enriched the students' approach and highlighted the need for continuous maintenance;
- And the knowledge acquired during the course was applied to the individual cases studied by each student¹⁸.

The course addressed recent shifts in the theory of conservation:

- a) The need to promote a greater understanding of the value of modern buildings, especially those normally considered ordinary, and of their valorisation itself as a long and continuous inter-subjective process, involving not only specialists but also users and local community¹⁹.
- b) The need to involve users and communities, in order to make conservation successful. Consequently, teaching methods should address the development of the students' communication skills, as they will probably also play the role of facilitators in the process of conservation.
- c) The need for a greater dialogue between the various professionals involved with conservation (architects, architectural historians, conservationists, engineers, specialists in materials and the like). These different professional viewpoints need to coexist in order to achieve a better and more thoughtful approach to the conservation of modern buildings and sites²⁰.
- d) The need to achieve a better balance between theory and practice and attention to current demands, as suggested by John Allan²¹, so that the buildings remain in use, particularly those not yet recognized.
- e) Consequently, the interventions should respect the authenticity of the materials, but it should not overestimate their value²². Materials by themselves do not define the essence of modern architecture, but the way they are arranged and the space they create²³. The current material fetishism of scientific conservation should be balanced with the inclusion of space and design intention. Modern materials require a more comprehensive and sensible approach.

The MARC-AL experience showed us that, although there is no new theoretical approach for dealing with modern architecture, there is a need for specific training in the conservation of modern architecture and that this should address the major shifts in the recent theory of conservation. MARC-AL attempted to encourage professionals to recognize the value of modern buildings and sites, identify their values, understand problems, communicate and achieve consensus among those involved and propose solutions for their conservation. For this, there is a need not only for practical and scientific knowledge, but also for prudence and sensibility.

NOTES

- 1 Salvador Muñoz-Viñas, *Contemporary Theory of Conservation*, Oxford, Elsevier Butterworth-Heinemann, 2005.
- 2 Theodore Prudon, *Preservation of Modern Architecture*, New York, John Wiley, 2008; Susan Macdonald, "20th Century Heritage: Recognition, Protection and Practical Challenges", in *ICOMOS World Report 2002-2003 on Monuments and Sites in Danger*, Paris, ICOMOS, 2003; Fernando Moreira, "Os Desafios Postos pela Conservação da Arquitetura Moderna", *Revista CPC* 11, 2010-2011, 154-59. See also Susan Macdonald, Kyle Normandin and Bob Kindred (ed.), *Conservation of Modern Architecture*, Shaftesbury, Donhead, 2007.
- 3 CECI is an independent non-profit institution dedicated to the promotion of the scientific field of integrated conservation and has acted as a training, researching, publishing and community servicing institution, working in partnership with many Brazilian and international institutions.
- 4 For an extended version of this paper, please consult Fernando Moreira and Luiz Amorim, "Training in the Conservation of Modern Architecture: A Latin American Experience", in *Preservation Education: Sharing Best Practices and Finding Common Ground*, Lebanon, University Press of New England, 2014, 192-208.
- 5 The teaching staff included 22 teachers, from 10 different Brazilian institutions and universities and 2 from abroad (Joe King from ICCROM and Tommi Lindh from the National Board of Antiquities, Finland) and 20 students, all architects: a dozen from Brazil, and the rest from different Latin American countries (four from Guatemala, and one candidate each from Cuba, Mexico, Portugal and Chile).
- 6 These cities were chosen because of their collection of paradigmatic examples of modern architecture in Brazil and the opportunity to observe in situ works of restoration recently completed or under completion. In Brasília the buildings studied included the Alvorada Palace, Brasília Cathedral, the National Congress, the Three Powers Square. In Belo Horizonte, the visit focused on lectures and technical visits to the Pampulha complex, by Oscar Niemeyer.
- 7 For information on the history of the building see *The Space of Architecture as an Object of Heritage Interest (in Portuguese)*, research coordinated by Prof. Luiz Amorim and funded by CNPq.
- 8 The Technical Office, headed from 1949 to 1956 by the Italian architect Mário Russo, was the unit responsible for the planning, works and projects of the university campus and its first buildings. Together with 2 other architects, Acácio Gil Borsoi and Delfim Amorim, Russo laid down the bases of the modernist architecture produced in the State of Pernambuco. Esteves was one of the first architects who graduated from within this system.
- 9 Luiz Amorim, Carolina Brasileiro and Rachel Ludermitz, "Da Restauração do Espaço da Arquitetura: o Instituto de Anti-bióticos", *Anais do 8º Seminário docomomo Brasil*, Rio de Janeiro, *docomomo*-Rio, 2009; Universidade do Recife, *Instituto de Antibióticos*, Recife, Escritório Técnico da Universidade do Recife, 1955.
- 10 The intermediate level occupies the western portion of the building, while the other 2, which overlap it, occupy its eastern side. It is on the intermediate floor that the main access, via the central span, is located and consists of a hall and staircase access to the other floors. The awkward orientation is countered by the provision of circulation along the façade and by a double veneer masonry, which seeks to ensure that the environments are not permanently exposed to solar radiation.
- 11 All that has been found in the archives of the Town Hall at the *Cidade Universitária* are cross-sections and façades dating from 1956, a 1962 floor plan with a cross section, a 1964 floor plan with façades and cross-sections, and a 1965 cross-section.
- 12 It was adapted to meet the new demands (a hotel-like structure in order to train students). During this stage, the property underwent its most radical transformations: a) the open ground floor colonnade was occupied, reducing its integration with the surrounding garden and the access to the building; b) the original cladding in small squares of ceramic in soft tones was replaced with brightly coloured 10x10cm ceramic tiles; c) the laboratories on the first floor were transformed into classrooms with varying dimensions without regard for the existing modulation; d) the new partition walls were raised to the east façade, thus modifying the original rhythm and continuity of the inclined plane of this façade; and e) the frames on the east façade were removed, without a record made of how this was technically solved.
- 13 The topics of the lectures included: the history of the university campus, the architecture in Pernambuco in the period, the way the building came about and the records regarding it, the current challenges of administering the campus, etc.
- 14 The damage map revealed some mistakes in the original design affecting its conservation in the following decades. The solution of a roof with a shed skylight presented problems and was redesigned in 1964. This alteration obstructed the shed skylights, which adversely affected the ventilation and lighting of the building, thus impairing its efficiency and comfort and, as it lengthened the upper part of the façade, interfering with the total height of the building, thus changing its original composition. This also revealed that the cladding inadequately applied in the alterations made in the 1990s facilitated the infiltration of rainwater. Moreover, the transformation of the private access corridor to the laboratories into verandahs caused sealing problems and serious infiltration of water.
- 15 The statement of significance argued that the building has *cultural value* (since it represents the optimism of Latin American nations, expressed in the creation of a higher education system); *social value* (because it represents the efforts of the local intellectual elites to transform Pernambuco society through education); *aesthetic value* (because of the spatial experience produced by visual integration and because of the mix of levels of its floors; the ratio between the masses and the voids; the inclined plane of the front façade; the integration with the gardens; and its integrated elements: hollow glass elements and tiled panelling); *technical and scientific value* (since it is the result of the research and experimentation with technical, scientific and methodological criteria); and, finally, *documentary value* (as it bears witness to experimentation with new construction techniques, such as shed skylights and sloping frames).
- 16 Consequently, it was possible to restore the size of the laboratories, as originally conceived by the architect, by recovering the modulation corresponding to the structural system. The purpose of enhancing the central hall was to facilitate fluidity between the floors and to denote the main entrance and its relationship with the external space.
- 17 For the roof it was proposed to reopen the original skylights in order to recover natural lighting and ventilation, which will require technical solutions that enable it to function adequately. Consequently, it was proposed to remove the plasterboard that obstructed the view of the panel of hollow elements and the shed skylights. With regard to the façades, it was proposed to replace the current ceramic cladding by a vitreous mosaic similar to the original and placement of aluminium profiles on the balcony of the main façade, providing guidance and visual continuity with the original façade without obstructing it from view – and this will maintain the circulation, which looks out onto the gar-

den. The colours of the vitreous mosaic will be defined after a chromatic survey to be performed. On the lateral surfaces, the proposal is to replace the sandstone cladding lining of the original design, which is still produced commercially, and easily acquired. Also proposed was an investigation to identify the original colour of the pillars. As for the integrated elements, the proposal is to map and identify the specific pathologies so as to recover the tile pieces of the existing panel on the *pilotis*/colonnade and to replace the damaged ones with new ones since they are industrially produced. Also proposed was the restoration of the East garden, the strengthening of the relationship with the Institute of Antibiotics, the renovation of the electrical installation systems, and the adaptation of the building to recent accessibility, safety and fire regulation standards.

18 This was the DRAPI-Conservation methodology, drawn up by the teachers Luiz Amorim and Claudia Loureiro, *DRAPI Uma Metodologia de Intervenção em Edificações Recentes*, Unpublished Research Report, Recife, UFPE, 2011; Claudia Loureiro, Luiz Amorim, Fernando Almeida and Cristiano Nascimento, "Metodologia de Avaliação de Mudança de Uso", *Anais do II Congresso Internacional na Recuperação, Manutenção e Restauração de Edifícios*, Rio de Janeiro, UFRJ, 2006.

19 The conservator is a social agent who works in a context of inter-subjective interpretations and decisions, striving for maximum social consensus. Miriam Clavir, *Preserving What*

is Valued: Museums, Conservation and First Nations, Vancouver, University of British Columbia Press, 2002, 42-43.

20 They should overcome the strict limits of their professional outlooks: architects dedicated to the theory and history of architecture tend to favour a return to an ideal state, which sometimes never existed; experts in materials and techniques tend to emphasize the technical solution and disregard broader questions; conservationists tend to favour certain theoretical conservation positions; and finally, architects in charge for inserting new uses very often tend to disregard certain characteristics of the buildings.

21 John Allan, "Conservation of Modern Buildings: A Practitioner's View", in Susan Macdonald (ed.), *Modern Matters*, London, Donhead, 1996, 127.

22 This is a difficult topic for the discipline of conservation, because the ethics of conservation, from the outset, has been associated with the idea of truth, which was later associated with the concept of authenticity. The approach to modern building and sites should not be guided only by ideas of truth or rigid approaches to authenticity. Salvador Muñoz-Viñas, *op. cit.*, 86.

23 John Allan, *op. cit.*, 126. Also Andrew Saint, "Philosophical Principles of Modern Conservation", in Susan Macdonald (ed.), *op. cit.*, 20-22; Wessel de Jonge, "Zonnestraal Sanatorium, Hilversum", in Allen Cunningham (ed.), *Modern Movement Heritage*, London, E & F N Spon, 1998, 155.

Learning from Modern Heritage: Methodological Tools for Re-thinking Education in Conservation

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The paper is based on experience developed in several years of teaching conservation of modern heritage in schools of architecture, international Erasmus workshops and **doco-momo** workshops to students coming from all over the world, with different cultural and educational backgrounds.

Modern architectural heritage masterpieces have a high potential for pedagogic purposes, especially in helping students to develop a critical thinking on (modern) heritage preservation. During these courses students are guided through an in-depth analysis of a specific building, or buildings, in order to define intervention strategies and to develop a preservation project. The analysis of the buildings – ranging from historical understanding of the radical ideas of modern architects to field survey, archival and bibliographical research, and analysis of uses, problems, materials and decay – is the starting point of a continuous challenge to commonplace, standard solutions, to established beliefs about the modern heritage and about the contemporary role of the architect.

All this is made possible through the application of a teaching method within which the theory of conservation and practice of design proceed at the same pace, in a spiral process of mutual awareness. This method is the most appropriate to engage students with preservation and reuse of modern architecture, meant as essential tools for their future professional background, rather than as separate fields of action. The project is a mean to pinpoint the subtle contradictions of the discipline and an occasion to develop the required critical knowledge to translate theoretical positions in a sound approach to the transformation/evolution of built heritage.

1. QUESTIONING MODERN HERITAGE RESTORATION

Since ever the status of being modern has been challenging for conventional preservation practices and theories. The demand for restoration of 20th century architecture has spawned a great number of case studies and theories during the last 20 years, and within that time this issue has also itself been mutating, evolving, expanding both in scope and complexity¹.

Today, a critical rethinking of the approaches used so far in modern heritage conservation is required, especially in connection with the persistent discourses on restoration to a former/original image, or the stereotypical argument that modernity cannot age.

The education process, of course, must also change, because it has a pivotal role in training well-aware professionals and future scholars. Preservation in architectural schools is mainly taught through the design process in studios and workshops, where 20th century heritage conservation has proven to be an extremely fruitful and thought-provoking topic.

If the conditions are right, then regardless of students' different cultural and educational backgrounds, modern heritage conservation can stimulate them to address objects, spaces, ways of living, and systems of values, in novel ways – and, in the process, can encourage them to question their own culture and their pre-conceptions about heritage.

2. TEACHING MODERN HERITAGE CONSERVATION

In the context of intensive or short workshops, a trial-and-error approach is very difficult, and the linear process of an architectural project does not allow one to deal adequately with the complexity of heritage. Students tend to pay less attention to the interrelationship of transformation, permanence and memory, to the constant evolution of concepts of heritage, to the reflection on values, or to the problems of its recognition.

If the hermeneutic perspective of design remains the governing principle, its strong emphasis on creativity risks creating a dangerous disjunction between architecture and conservation. Moreover, if we avoid the difficult issues of construction and de-construction of the values of our recent past, we will surely lose all the pedagogic potential of the subject.

If, conversely, if the focus is solely on theoretical conservation issues and on the statements of international charters (Venice, Burra, Madrid...), divorced from any real possibility of testing out these theories in the “live” context of the architectural design phase, the topic is rendered equally sterile. For example, in a studio based on the case-study of the *Tomba Brion* by Carlo Scarpa, students were tasked with carrying out a careful geometrical and material survey, mapping the decay, and the conservation project consisted in choosing the most appropriate treatments. Yet despite the stunning beauty of the architecture, they did not get involved in the “live” phase of work at all. This case highlights vividly the risk of advising on or applying procedures and methods that one cannot control. The choice of treatments is a highly specialised topic, one which requires long study, active experience and a deep understanding of the aims and consequences of any intervention – all of which are impossible to achieve during normal student studio work.

In our experience, an interdisciplinary approach, merging theoretical classes, intensive on-site workshops and design classes, has proved far more effective. The teaching staff must cover different areas of expertise: conservation theory, survey, construction materials and techniques, decay analysis, architectural design. Given the complexity of the issues involved, the more time students are given to

work, the better the results. In the six-month period of a MSc course, for example, students are asked to develop a preservation project for a case-study building. During the first part of the semester, students acquire knowledge about a range of conservation issues and about building history, and they carry out an initial analysis of materials. In the second part of the semester they focus on the project itself, including strategy definition, interventions, design of solutions and – most importantly – revisions and round-table discussion with their teachers. This is the point at which they can really grasp the interconnection between theory and practice, and consolidate their own understanding.

In the limited time span available within the course, the focus of the classes is, of necessity, mainly on questions about “what” heritage is, and “why” we conserve it, rather than about “how”. The decision to downplay in-depth instruction on techniques and materials was a difficult one, but we consider far more important to train students in sound decision-making and to provide future architects with expertise on how to manage the whole conservation process in an informed manner.

Knowledge is the starting point of every discussion about heritage and a thorough comprehension of the building concerned is essential to the success of any conscious conservation project. Students are asked to perform an intensive analysis of the case study, using both direct and indirect sources². They also have to be familiar with the wider historical background of these modern architectures, so that they can accurately situate them in their specific context. Looking at them as icons, detached from their political, economic and social context, would lead to a superficial understanding. It is, instead, fundamental to foster students’ awareness of the complexity of reality, in which each building has its own history but is a tile in a wider mosaic, both determined by, and determining, other histories.

All in all, what we teach is a method of investigating architecture, and from our experience, the more and closer the students look at the architecture, the more they value it.

3. HOW TO APPLY? THINKING “OUT OF THE BOX”

Through accurate surveys, detail drawings and accurate observations, students discover the richness of meanings that reside in the heritage object, and they start appreciating their details in a different way. They discover through their own efforts the endless horizons of in-depth architectural investigation every part of the architecture and from this exercise they automatically understand that every case is unique, from the detail (or fragment) up to the scale of the architectural totality.

This is the starting point for the recognition of heritage, but the most critical step for students is when they are asked to outline a strategy of intervention, merging what they have learnt from the lectures on preservation history and theory and from the analytical phase. Even though they have all the elements to allow them to proceed, it often seems at this stage that they do not know where to go.

In the outside world, typical tools to overcome this predicament include SWOT analyses and value assessments, but these are usually not very effective, as their aim is to engage external stakeholders in discussion on a common basis, allowing shared evaluations to emerge. Unfortunately, in what one could perhaps call “the educational game”, the only real “stakeholder” accessible to the students is the building itself, which cannot engage with or question their evaluations.

Talking about values of modern heritage can also allow us to understand that the “significance” of modernity resides as much in its materiality as in its intellectual achievements. It is on both of these, together, that all conservation efforts should be based, even though this approach can sometimes lead to misunderstandings. We can conserve only the physical fabric of an architectural work, and that fabric is the vehicle of many more histories than one could imagine at a first glance³: it is a multi-leaved document, an evidence of the past. If both the elements of the problem are not considered together, the false idea of a “conceptual authenticity” or “iconic authenticity” is privileged and then, inevitably, as argued by France Vanlaethem and Céline Poisson, “it is clear that the so-called preserved idea is less the concept existing at the start of the project, and more historiography’s interpretation of it”⁴. This only further highlights not only society’s more general prejudices about modernity, but also the inevitable re-interpretation of heritage that each age applies in accordance with its own values. All this amounts to a highly challenging task, which requires “establishing and maintaining ‘the facts’ (however defined)” and “setting them carefully into their proper social and political context rather than disassembling them as timeless form-givers”⁵.

Designing their ideas and proposals, students have to face the constraints of a complex reality. They are encouraged to use lateral thinking to solve the apparently unsolvable contradictions arising from the application of the conservation principles and ideals of modernism. A good example is the conflict that confronts students when the application of legal or technical standards implies an unacceptable heritage loss (e.g. substitution of original windows or demolitions because of accessibility requirements, or application of the building standards for new structures). Lateral thinking can help students to avoid uncritical repetitions of normative solutions: they need to develop creative and out-of-the box solutions, starting from a re-definition of technical requirements and users’ expectations, while safeguarding values that cannot be disregarded in a conservation project. In practice, even technical requirements can often be waived if the preference for the historical fabric enjoys a strong theoretical support.

4. A SPIRAL OF AWARENESS

The design phase can be very effective and useful for didactic purposes, if students are given the time to move back and forth between preservation theory and practice. During this process, they have an opportunity to test and re-evaluate the solutions they designed. This is the perfect occasion for a *reflection in action*

– that is, recalling Donald Shon's words on "the reflective practitioner", inviting students to think while acting and to continuously modify their interventions by looking at the consequences of their actions. In this way, practice becomes a true research activity, in which different solutions are hypothesised, experimented and evaluated. We can summarise the resulting, cyclical process as: "study preservation theory – draw a lot – redefine the needs and requirements – and then draw again!"

Within such a methodological approach, drawing constitutes the basic and fundamental tool that encourages success, both in its heuristic and creative function. As Álvaro Siza argues, we can say that a drawing is both an expression of intelligence and a tool for learning and transforming. Drawing is crucial for students to reach a full understanding of a building, with all its elements and details, but it is also the basis of the creative phase, when the task is to imagine and develop solutions and, most of all, to apply and test them on paper.

The process is definitely non-linear, but it can be seen as a spiral, in which there is a mutual and continuing influence between the theoretical foundation and the project. Students verify theories' validity by designing within the case-study context, and, at the same time, they test the coherence of their design in relation to the strategy and the theory: they act, reflect, study, and act again with deeper consciousness.

5. CONCLUSIONS

20th-century heritage preservation has proved to be an attractive topic for students. To begin with, they are fascinated by the radical ideas of modern masterpieces, and then they come to feel that their appreciation is not widespread and that the buildings' conservation cannot be taken for granted. Modern heritage conservation still seems an open and inviting challenge, which requires intellectual creativity and design efforts, and which has many interconnections with our modern/contemporary culture, mainly for the expectations we have from heritage.

Of course, a learning process such as this consumes much energy and time but, in a complex discipline, there are no simple paths. Students need time to study, reflect, understand, and sediment all this information, and find the right and sensitive intervention. To achieve this usually requires more than one semester, because the optimum learning formula for conservation requires students to begin by "un-learning", by criticising the commonplace and freeing oneself from the constraints of misunderstood tradition. Modern heritage can be rather more effective than "traditional", "ancient" heritage in stimulating these new habits of thought if we are able to provide students with methodological tools for re-thinking it.

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NOTES

- 1 Maristella Casciato, "Confronting the 'Modern' in Architecture: The Limits, the Limit", in *Proceedings of the 5th International **docomomo** Conference Proceedings – Vision and Reality: Social Aspects of Architecture and Urban Planning in the Modern Movement*, Stockholm, 1998, 56-59; Jean-Yves Andrieux, Fabienne Chevallier (ed.), *Proceedings of the 7th International **docomomo** Conference Proceedings – La Réception de l'Architecture du Mouvement Moderne: Image, Usage, Héritage*, Saint-Étienne, Publications de l'Université de Saint-Étienne, 2005; Dirk Van Den Heuvel, et al., (ed.), *Proceedings of the 10th International **docomomo** Conference Proceedings – The challenge of change. Dealing with the Legacy of Modern Movement*, Rotterdam, Amsterdam, 2008; Andrea Canziani, *Conservazione Programmata per il Patrimonio Architettonico del XX Secolo, Planned Conservation of XX Century Architectural Heritage*, Milano, Electa, 2009; John Allan, "From Sentiment to Science. **docomomo** Comes of Age", in *Proceedings of the 12th International **docomomo** Conference Proceedings – The Survival of Modern*, Espoo, 2013, 175-185.
- 2 This usually means accurate on-site survey, from the large scale to details, documental research, material identification, decay assessment, function and use analysis. It requires an understanding of the historical, social and political context at the time of construction, and research on modern materials and constructive techniques and building sites.
- 3 All the rest can only be reconstructed, reproduced or recalled; but on the other hand, we cannot ignore this intangible side of modernism. There are plenty of documents, drawings, writings and images concerning the modern constructions, but the uncritical use of this knowledge has a habit of going badly wrong, leading towards the restoration of supposed "original states" – or, in other words, supposed ideas.
- 4 France Vanlaethem, Céline Poisson, "Questioning Material/ Conceptual Authenticity", in Dirk Van Denheuvél, et al. (ed.), *Proceedings of the 10th International **docomomo** Conference Proceedings – The Challenge of Change: Dealing with the Legacy of the Modern Movement*, Rotterdam, Amsterdam, 2008, 128.
- 5 Miles Glendinning, "The Trojan Horse: Contemporary 'Iconic' Architecture and the Falsification of Modernism", in Dirk van den Heuvel, et al. (ed.), *op. cit.*, 73-74.

Across Disciplinary and National Borders: A Pedagogical Tool for Reuse

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This paper examines the process and results of a multinational, interdisciplinary pedagogical experiment aimed at exploring design options for the reconfiguration of dwellings in Portela: a modern middle-class, high-rise estate in north-east Lisbon.

The experimental workshop entitled “Contemporary Living Patterns in Mass Housing in Europe” occurred in the ISCTE – University Institute of Lisbon in the summer of 2014 under the aegis of OIKONET, a global multidisciplinary network on housing research and learning funded by the EU Lifelong Learning Programme.

Three framing steps preceded the design work of the students. Firstly, a lecture focused in 3 issues: i) the social and demographic changes that are affecting Portugal; ii) the characterization of the Lisbon Metropolitan Area (LMA), the context of Portela and its development after the 1950s; iii) the evolution of housing in the LMA and its sociological implications. Secondly, a visit to the estate including a visit to two apartments: one of a family that lived there since 1975 and the other inhabited by a young family. Thirdly, a studio with 2 themes: i) explaining the sociological development of Portela; ii) presenting a preliminary exercise – each group had to propose a reconfiguration of an apartment premised on their interpretation of changing sociological conditions and demographic needs.

Following these introductions, the student groups then worked in a design studio atmosphere supported by architectural tutors. Students had to develop one or a series of designs for a reconfiguration of the habitat units on the estate, write a blog on the process, build a full-scale mock-up and present their proposals in the final day.

The paper will reflect on the workshop process and the student groups’ proposals which exposed crucial questions on the nature of modern living in mass housing and the systems that might be developed to cope with changing demography and new lifestyles.



FIGURE 1. Fernando Silva, Portela's Urban Plan, Lisbon, Portugal. © Arquivo Municipal de Loures, Câmara Municipal de Loures.

1. INTRODUCTION: TOWARDS A KNOWLEDGE-BASED DESIGN APPROACH

The stimulating debates on architectural education¹ have not been reflected in a real change of the curricula of the majority of the schools of architecture.

One crucial argument of those debates is the mismatch between the changes that have affected both society and the profession of architecture in the last decades, on the one hand, and, on the other, the predominance of the artistic paradigm within current architectural education²: a paradigm that emphasizes values such as authorship, subjectivity, individual creativity, disciplinary self-centeredness, etc. Besides being inadequate, that paradigm is also profoundly *cruel*, as defined by the former president of RIBA, F. Duffy³, since it creates totally unrealistic expectations.

So, the issue at stake, as theorized by Salama, is the nature of the pedagogical culture that frames the artistic paradigm: a skill-based pedagogy that leaves no room for the development of a knowledge-based design approach which enriches and strengthens the outputs of the studio's work. One basic requirement of this is interdisciplinary working, in particular with social sciences, which is undervalued by the artistic paradigm. This undervaluing attitude contrasts with the collaborative ambiance between architecture and the social sciences that prevailed in the 1960s and part of the 1970s.

By knowledge-based housing design we mean the creation of knowledge that should feed the discussion of an estate/building project towards innovative programmatic solutions that go beyond the reproduction of the mainstream, thereby meeting emerging ways of life. This conception is different from the often-used notion of "housing needs", which has been a central subject of criticism due to its quantitative and exclusively demographic approaches⁴. So it is through a more qualitative approach that we might overcome those restrictions: an approach that privileges "morphology" or spatial configuration⁵ in order to give materiality to the emerging trends of contemporary life.

2. OIKONET: CONNECTING RESEARCH AND ARCHITECTURAL EDUCATION

The experiment presented in this paper was developed within the OIKONET project (Madrazo, 2014), an Erasmus Network project co-financed by the European Union dedicated to promoting pedagogic innovation in the field of housing studies (www.oikonet.org). 34 organizations in Europe and worldwide are part of this network, including higher education institutions, research groups, local authorities, community groups and international organizations. OIKONET's aim is to foster the exchange of knowledge, methodologies and good practices among research groups and higher education institutions that are part of the network.

One of the activities carried out within OIKONET has been a workshop in Lisbon dedicated to develop a cross-disciplinary dialogue aimed at finding answers

to the meanings, ways and forms of contemporary living patterns of mass housing in Europe (<http://oikonet-lisbonworkshop.blogspot.com.es>). Within the 1-week workshop, students from the 15 participating schools developed an evolving housing design using prefabricated wood panels, to re-adapt pre-existing dwellings to contemporary living patterns and to produce new incrementally built homes as a response to today's living conditions. 2 neighbourhoods in Lisbon will be used as case studies: one which is representative of the formal mass housing – “*Portela de Sacavém*” – and, another one – “*Bairro da Liberdade*” – which is a typical neighbourhood of informal mass housing.

This paper presents a pedagogical experiment framed by the concept of knowledge-based housing design applied to the “renewal” of a modern high-rise estate in Lisbon built in the 1970s. Those estates became the symbol for a major critique of modern architecture: one of the most relevant is the well-known statement of C. Jencks about the *Death of Modern Architecture* after the demolition of the Pruitt-Igoe housing scheme.

The experiment presented in this paper was developed by the pedagogic sub-network of OIKONET within the Lisbon Workshop whose general coordinator was Alexandra Paio: following online pre-workshop activity by staff and students on specific learning tasks over a two-month period, 50 students and 20 staff from 15 different European institutions gathered at ISCTE – University Institute of Lisbon in July 2014.

OIKONET is a 3-year international, multidisciplinary, collaborative housing research programme funded by the EU Lifelong Learning Programme, with the following purpose:

*to create a platform of collaboration to study contemporary housing from a multidisciplinary and global perspective by encompassing the multiple dimensions which condition the forms of dwelling in today's societies: architectural, urban, environmental, economic, cultural and social.*⁶

3. PORTELA, LISBON: THE ESTATE, SUBJECT OF RENEWAL

The Urban Plan

Portela's estate, located in the northeast of Lisbon, is a (late) modern large high-rise estate with a shopping centre at the core (that gives it a centripetal design), with a concentration of more than 4,500 dwellings in less than 1sqkm. It was the result of a plan by the architect Fernando Silva that was approved (1969) in the last years of the Portuguese right-wing dictatorship – *Estado Novo* [New State]: a period marked by the suburbanization of Lisbon where public intervention was quite weak.

The Inhabitants

The majority of Portela's buildings were completed between 1973-79 (76%): a period of Portuguese contemporary history marked by the Revolution. This and



FIGURE 2. Fernando Silva, Portela's Urban Plan, Lisbon, Portugal. © Jim Roche.

the suburbanization process already underway are the two essential phenomena that explain the social profile of its original inhabitants, which remain, nowadays, its majority (44%): a rising middle class coming either from the ex-colonies (after decolonization) or from the city of Lisbon at the beginning of their autonomous family life.

The social profile of its inhabitants is one of the most important reasons that made Portela a fairly successful case, contrary to a great number of high-rise estates. Besides, one of the strongest indicators that illustrates that success is the high retention rate of its original population, showing the "place attachment" ability of the estate. Conversely, the major problem, with which the neighbourhood is currently confronted, results exactly from its "normal" life-course i.e. its life-course development matches that of its original inhabitants. The ageing of the inhabitants is therefore the greatest threat for Portela nowadays, which is eventually reinforced by other "external" factors such as the retreat of the suburban urban ideal (the other side of the coin of inner-city resurgence) and of high-rise housing estate models in general.

4. THE EXERCISE

The aim of the exercise was to find new solutions of reuse for the dwellings of Portela (those supplied by the contractors), by incorporating the changes that have taken place locally as well as at a more general societal level.

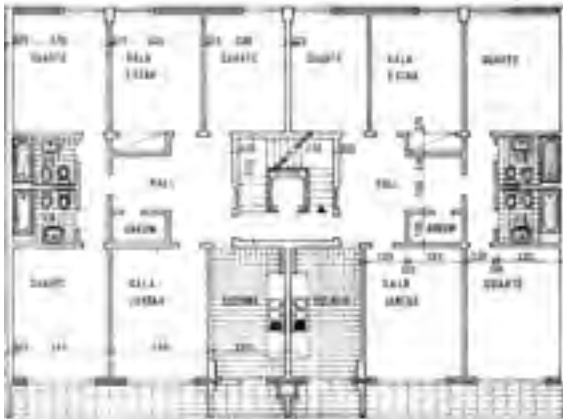


FIGURE 3. Fernando Silva, Portela's Urban Plan, Lisbon, Portugal, one of the dwelling layouts of Portela' estate used in the exercise. © Arquivo Municipal de Loures, Câmara Municipal de Loures.



FIGURE 4. One student's group proposal project. © Students: Ana Sofia Simões, Cláudia Carreras, Frederik Peter Kæmsgaard, Ilze Antonova, Nele Santy, Yasemin Kilic.

A Knowledge-Based Methodology

Two preliminary learning online tools (via youtube) preceded this workshop: 1) a conceptual framework about modern mass housing from S. M. Pereira⁷; 2) a short film on Portela⁸ coordinated by A. V. Milheiro⁹ and produced by several architecture PhD Students of ISCTE.

Then, during the workshop itself 3 framing steps, supervised by S. M. Pereira, preceded the design work of the students. Firstly, a lecture focused in two issues: 1) characterization of the (LMA) Lisbon Metropolitan Area (the context of Portela) and its development after the 1950s; 2) evolution of housing in the LMA and its sociological implications.

Secondly, a visit to the estate including a visit to 2 apartments: one of a family that lived there since 1975 (nowadays consisting of the parents and two of the six sons, both young male adults) and the other inhabited by a young family whose husband and wife lived all their life in the estate and whose house is next door to his parents.

Thirdly, a "studio" with two aims. The first was to characterize the social development of Portela based in three sources: 1) exploratory interviews with inhabitants/ local actors; 2) inter-census analysis; 3) preliminary analysis of the results of a survey conducted within a research project funded by the Portuguese Foundation for Science and Technology (FCT)¹⁰ in which one of the case studies was Portela. From this analysis, some traits were specially underlined such us:

- Shrinking population;
- Significant ageing;
- Valuing of location and dwelling dimensions as the most appealing factors;
- High levels of residential satisfaction;

- The importance of extended family networks; an essential support for daily-life still common in Portugal;
- The perception that the estate has a proper identity given primarily by its urban design.

The second aim was to present the exercise: each of the 4 mixed international student groups (5-6 students per group) had to work on a reuse and re-configuration design proposal of different dwelling layouts to address this sociological analysis.

Results: The Reconfiguration Solutions Proposed by Students

Armed with this social diagnosis and the current architectonic features of the estate as well as its specific location, students' projects proposed a complete clearance of the existing layouts of the blocks back to the structure and service routes and then re-configurations guided by 3 main concepts/ aims:

- 1) Diversity of dwelling typologies which allowed for:
 - a) Social mix – age/life course stage and household type;
 - b) Flexibility and adaptability over the lifetime of residents;
- 2) Family networks and resident's interaction facilitated by:
 - a) Communal shared space, often around the existing circulation cores;
 - b) Engagement between the private and public realms;
 - c) Vertical connectivity;
 - d) Social amenities like urban rooftop gardening and communal cooking and eating;
- 3) User-participation in dwelling design and self-building aimed at customizing/personalizing and attracting/engaging newer younger residents through:
 - a) A “do-it-yourself” modular system inspired by ISCTE's FabLab practice that also framed the Lisbon Workshop.

5. CONCLUSIONS

The pedagogical tool adopted was premised on collaboration between the disciplines of sociology, architecture and architectural technology, something that was made possible by one particular condition: a conception of interdisciplinary as meaningful collaborative work among disciplines considered to be different, but not “unequal”. Each of them was conceived as equally important and working to a common goal: to enrich the reflective skills of students in order to improve their own outputs and, ultimately, make them aware of the importance of both interdisciplinary work and users' focus within their future practice as architects.

Naturally, the challenges of work within international teams are other important skills to be highlighted, something that gains special relevance when the subject of intervention is globally widespread as is the case in modern high-rise housing. The resultant architectural ideas of the students suggest both how these

blocks could be reconfigured and new ways of living for the residents thus proferring exemplars that contradict the negative stereotype of modern high-rise projects.

The Oikonet Lisbon Workshop on Portela was an exploratory experience not devoid of some weaknesses (e.g. there was no time to include direct participation of users/inhabitants). But, certainly it is a worthwhile case study, among others, that might contribute to the urgent and quite neglected debate on the adequacy of architectural education to contemporary society within the equally urgent context of how high-rise estates could be reimagined.

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NOTES

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- 1 Dana Cuff, *Architecture: The Story of Practice*, Massachussets, MIT Press, 1992; Dana Cuff, John Wriedt (ed.), *Architecture from the Outside. Selected Essays by Robert Gutman*, New York, Princeton Architectural Press, 2010; Francis Duffy, Les Hutton, *Architectural Knowledge. The Idea of a Profession*, London and New York, Routledge, 1998; Ashraf Salama, "Skill-Based / Knowledge-Based Architectural Pedagogies: An Argument for Creating Humane Environments",

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- 2 Ashraf Salama, *op. cit.*, 4.
- 3 Francis Duffy, *op. cit.*, 103.
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- 5 Amoi Rapoport, "Spatial Organization and the Built Environment", in Tim Ingold (ed.), *Companion Encyclopedia of Anthropology. Humanity, Culture and Social Life*, London, Routledge, 1995, 460-502; Monique Eleb, Anne Debarre, *L'Invention de l'Habitation Moderne Paris, 1880-1914*, Paris, Hazam, Bruxelles, Archives d'Architecture Moderne, 1995.
- 6 Oikonet Description of Project.
- 7 https://www.youtube.com/watch?v=SRTo4_Clj4.
- 8 <http://optimisticsuburbia.wix.com/portuguese>, PhD Students.
- 9 Cf. FCT PTDC/ATP-AQI/3707/2012, *Homes for the Biggest Number: Lisbon, Luanda, Macao* whose principal researcher is the architect Ana Vaz Milheiro.
- 10 *Id.*

Crossover of Generations: A Participatory Approach to Heritage Education and Reuse of Modern Heritage

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This research is based on a collaborative educational programme between a university and a heritage site in Hsinchu City in Taiwan. The entire programme was set for 1 semester (18 weeks) and provided the students from non-heritage related backgrounds with an opportunity to search for new approaches in the reuse of modern heritage. Collaborating with a “live case” in the neighbourhood of the university, the programme required intensive interaction and discussion among the students, the lecturer, and the site manager. The students were expected to develop interdisciplinary capabilities during the course. The lecturer and the site manager worked jointly to direct the students through the 18 weeks to spot issues, discover approaches, conduct a literature review, carry out market research, combine interpretation skills, and finally present their proposals at the end of semester.

The so-called “B.S. House & Heritage” is a scheduled ancient monument in Hsinchu City; it was designated a monument in recognition of its uniquely heterogeneous aesthetics, spanning the period from the Qing Dynasty (it was first built in the 19th Century), through the colonial period of Japanese rule (1895-1945), into the modernity period after WWII. The students enrolled were divided into 5 groups. Their proposals were assessed by a 5-component model set for Heritage Education in the end of the programme. Under the instruction of the lecturer and the site manager, the students’ proposals reflected different themes, in an attempt to bring different aspects of history alive: these themes included “Heritage Space”, “Culinary Heritage”, the life of the local gentry, the lost traditions of the area, and “Family Stories”. With videos, posters, games, and handmade props, the final presentations were given in diverse forms and showed the students’ potential skill in interdisciplinary thinking. This programme not only imparted knowledge in the reuse of a modern heritage to the students, but also provided references for the actual planning of the site in the future.

1. INTRODUCTION

The reuse of historical buildings in Taiwan has tended to be restricted by a monotonous mindset and by over-commercialized uses. For instance, total conversion of historical buildings into restaurants or coffee shops is a common phenomenon. This has disconnected the sites from their contexts and created an enormous gap for the visitor to understand the significance of the heritage. This research is based on a collaborative course between a university and a local heritage site, intending to seek a participatory method balancing commercial reuse and the interpretation of cultural values through an educational programme in the full-semester (18 weeks) programme. The 21 students enrolled brainstormed their creativity in response to the task of making proposals for the reuse of a site awaiting restoration in the neighbourhood. The course was held in cooperation with the “B.S. House & Heritage”, a scheduled ancient monument in Hsinchu



FIGURE 1. Present-day façade view of the B.S. House & Heritage. © Yuta Chou, 2014.

City; the building, known as *Chou Yi Ji* in Mandarin, is hereafter referred to in the present paper as the Shu House. The students' proposals were to address the significance of the site, and the stakeholder and site manager's opinions were to be taken into consideration.

2. THE BACKGROUND OF THE SHU HOUSE

Sitting in the middle of Beimen Street, the Shu House has witnessed the rise and fall of one of the most important avenues in the history of northern Taiwan. Hsinchu, where the house is located, was once the administrative centre of northern Taiwan in the Qing Dynasty. From the late 17th to the 20th century, Beimen Street was the most important street of Hsinchu, where merchants clustered after trading in the old harbour nearby. It was also the centre of authority and religion, leading to the governor's office building (Xien Yai) and the Cheng Huang City Temple. Resulting from these commercial activities, along Beimen Street stood dozens of Qing style shop fronts, dating back to the 19th century. The Shu House is an exception, being the only residence building on the street inhabited by one family (Shu) for many decades, from 1926 to 1981.

The Shu House was a Qing style residence in structure when it was first built around the 19th century. However, its interior and decorations on the façade evolved into a succession of styles affected by the changing regimes and Modern Movement in Taiwan. The façade was renovated into its current style following damage in an earthquake in 1935. The western decoration, with

touches of Chinese symbols, was designed in the style most fashionable during the Japanese colonial period (1895-1945) in Taiwan. During the post-war period after the National Government came into power on the island, the interior of the house underwent another major renovation in 1961. Modern facilities such as a western toilet and TV were introduced. Mingling these different styles, the house now features a Chinese body in Japanese clothing, accessorized with western trimmings. It fully demonstrates the islanders' aspiration for the modernity at all of these stages.

3. THEORETICAL AND METHODOLOGICAL CONSIDERATIONS

Heritage Education is still a field under active exploration in Taiwan. Lacking full awareness, most heritage sites do not adequately “tell their stories” to visitors. Lucas (1972) suggests that Environmental Education (EE) should be defined in terms of “education in, about, and for the environment”. His definition chimes in with Tim Copeland’s view of Heritage Education (HE). Copeland (2004) argues that the latter is a matter of education through, for, and about heritage. Both writers emphasise the importance of heritage education “on site”. The educational programme for the *shu* House project was, therefore, defined so as to encourage the students to work on site and to devise methods that could stimulate visitors’ interest in learning about the significance of the site.

Extended from the norms of EE, the students’ activities are organized around a 5-component structured model integrating awareness, knowledge, interest, skills and participation.

COMPONENTS	CONTENTS
Building awareness	To build public awareness and sensibility toward the historical environment.
Sharing knowledge	To encourage the public to acquire knowledge about the heritage.
Growing interest	To reach out to different groups to grow people’s interests in heritage preservation.
Developing skills	To facilitate the public in discovering problems about the historical environment and developing problem-solving skills.
Improving participation	To provide public access for participation in the work of preservation at different stages.

TABLE 1. 5-component model of Heritage Education as implemented at the Shu House.

The students were divided into 5 groups, and tasked with imagining themselves as a managerial team, or a company committed by the stakeholders of the Shu House to propose ideas for the reuse of the site. The business model and the feasibility of the proposal were taken into account in the final evaluation. The proposals were to consider the cultural significance of the house and/or the historical context around it.

4. SUMMARIES OF THE PROPOSALS

In the initial stage, students were assigned 5 practical factors to consider before proceeding – 1) the significance of the heritage 2) the needs of the stakeholders 3) the business model 4) the target audience 5) the impact assessment and the solutions. Each project team was to consider these factors and evaluate them under the five-component model set for HE by the end of the programme.

Group 1: Heritage Space

The traditional craftsmanship in the house's decoration and its different architectural styles is the strongest asset of the site. Group 1's proposal was derived from the aesthetic features of the house. They surveyed the site and identified the aesthetic features into 4 categories – decoration, structure, space, and furniture. From these categories, they chose "decoration" as the theme of their proposal: the fragmented ceramic art (Jiannian), the tiles, the cement mouldings, the green glaze baluster vases, and so on. The students made an architectural guidebook combined with a DIY pack inspired by the decorations of the building. The visitors could learn about the site's aesthetic value through the guidebook pack.

Group 2: Culinary Heritage

Old Hsinchu was a pivotal city in the north of Taiwan. The prosperity of trade activities at the nearby harbour and the abundant agricultural resources made culinary history an important issue in the town. The Shu family was a typical local gentry dynasty, and so the culinary heritage of the family seemed to be a topic worth looking into. Accordingly, the students of Group 2 decided to research the history of local food and the food tradition of the family. They came up with a new dining idea called "food sharing" combining cooking classes with dining parties.

Group 3: The Life of the Local Gentry

Group 3 proposed an idea focused on organizing guided tours about the city's important figures and history. The students planned 3 routes featuring different epochs and themes in the city. Depending on their length, the tours could be taken on foot, bicycle, or scooter. In the walking tour, the audience would learn about the story of the Cheng family, who had greatly contributed to the infrastructure and prosperity of the city. In the cycling tour, they would learn about the heritage of WWII in the city. In the scooter tour, the audience was to travel to sites that appeared in the paintings of Lee Tze-fan, an important artist in the history of modern art in Taiwan, and would learn about the art and stories behind this.

Group 4: Lost Tradition

Group 4's proposal was based on a lost event of the city, the Lantern Competition – a tradition that is no longer celebrated today. In the 1930s, this

competition attracted the participation of many local communities in the city. It was a symbolic event within the life of the city, as recalled by older citizens, and embedded in the collective memory of the place. According to the recollections of local “elders”, the Competition started on the Lantern Festival (January 15th on the Lunar Calendar) and carried on in the old city centre for the entire season. The students intended to revive and evoke this tradition, modifying it into a series of competitions, including a calligraphy and literary contest, a lantern making contest, creative parades, and a festival bazaar. They also combined it with other seasonal events in nearby communities to encourage local participation.

Group 5: Family Stories

At the beginning of the course, Group 5 pointed out that young people in their age felt themselves to be irrelevant and alienated from heritage sites. As a result, they proposed the idea of relating stories of the Shu family, highlighting the aesthetics of the building via a detective reality game popular among young people. Participants in the game needed to resolve the riddles and to look for clues hidden in the “furniture”, in order to win. They were expected to learn stories about the cultural values of the heritage when playing the game. This proposal created an innovative way of combining a reality game with the interpretation of built heritage.

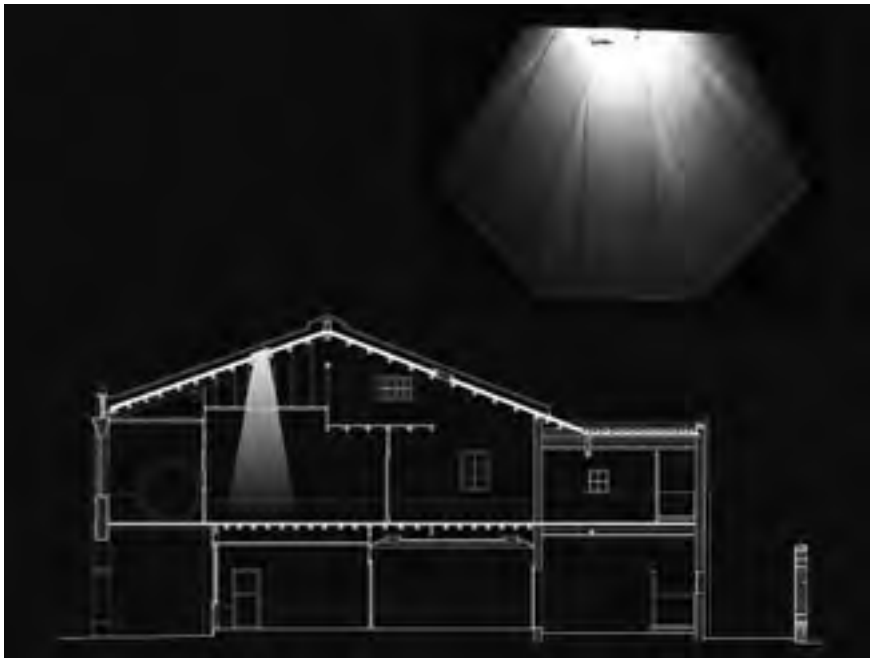


FIGURE 2. The skylight window on the 2nd floor (top) of the B.S. House & Heritage. © Yuta Chou, 2014.



FIGURE 3. Group 1 demonstrating the collage set for floor tiles. © Fang-jay Rong, 2015.



FIGURE 4. Group 3 demonstrating the art tour of Lee Tze-fan. © Fang-jay Rong, 2015.

5. FINAL PRESENTATION & ASSESSMENT

The generation gap has posed a challenge to the proponents of heritage education. This programme was intended to allow the students to engage in close-up observation of a heritage site, and to challenge their creativity on making something new out of the old. And as anticipated, the students' input has now become a valuable reference for the site manager to consider in the adaptive reuse of the site as an educational venue for the next generation.

The final assessment, made by 5 jurors, showed that the students' outcomes each fulfilled different components of the HE – as demonstrated in Table 2 below. In the process, it was conclusively proved that the educational goals can be integrated with practical needs. The project established that it may indeed be possible to reuse a historical building in a way that is enjoyable from the diverse viewpoints of different generations, whilst safeguarding its cultural values at the same time.

	AWARENESS	KNOWLEDGE	INTEREST	SKILLS	PARTICIPATION
GROUP 1		○	○	○	○
GROUP 2		○	○	○	○
GROUP 3	○	○	○		○
GROUP 4		○	○	○	○
GROUP 5	○		○		

TABLE 2. Reflection of the outcomes on the assessment model of Heritage Education.

6. CONCLUSION

The 18-week course for students from non-architectural backgrounds made a significant impact on their mind-set toward heritage. To judge from a qualitative interview with the students enrolled on it, they grasped fully that creating new links and meanings for heritage for the next generation would be the key

to achieving genuine sustainability rather than merely preserving the building's physical skeleton. This research also highlighted three specific points as especially worth focusing on.

Interpreting heritage values

The 5 groups of students started brainstorming around the history of the house or of the neighbourhood. All groups agreed that a better approach for heritage interpretation ought to rely on a different mind-set of reuse from the past. It is important for the managerial team of a heritage site to find a way to respond to the needs of different generations in order to keep the site's heritage values truly alive.

Integrity of the heritage space

The integrity of the heritage space does not only come from preservation of an individual building. Rather, it should embrace a more comprehensive historical context around it. Questions of integrity would be an important factor affecting the interpretation of any reused historical building.

Adaptive reuse for current lifestyle

The restoration of a historical building normally provides for the needs of users within the general framework of needs for today's lifestyle. Nevertheless, if the interpretation of heritage significance could be taken into consideration in the reuse planning process prior to restoration, it would be easier for the restoration work to satisfy the functional needs for modern life and to enhance interpretation in the future. Historical values can be constantly extended over time, during which process they become a wider setting for the life of successive generations.

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Reuse as Activism: Towards Hybrid Strategies of Curating and Preservation of Modern Architectural Heritage

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The current economic crisis, and the permanent decline in available public or private funds for urban areas of little attraction for those in power, have led to a change in the administration of those entities that operate within such marginalised spaces. Traditional practices relying on institutional support on the part of national or local governments have been revealed to be problematic, and not only because of insufficient public finances but no less because of the rigidity of the rules represented precisely by these institutions. As a consequence, we are now witnessing the emergence of alternative strategies, frequently generated out of an environment of activism and marked by an open hybrid method of planning, financing and realising projects.

One key example of such a still-marginalised area is the renovation of modernist architectural heritage, and in particular the built heritage of post-war modernity. Preserving a genuinely valid and historically layered material environment, though, requires integration of architectural heritage of the past century into universal as well as local strategic planning processes. And to do so demands an updating not only of the stance of the public towards this heritage, but even more crucially a change in the approach of the academic and institutional preservationist communities. What underlies this change in approach is a change in the perspective from which we regard this architectural heritage. This perspective is shifting from one of an interest reduced to the exclusive, representative samples of international elite culture towards an inclusion of marginal or even banal manifestations, found in outdated structures, deserted or undiscovered architectural works, complexes or entire urban organisms, and from a planned and complex restoration approach towards ad-hoc solutions. Somewhere here, in this deep and natural interest in “non-exclusive” themes and “non-academic” methods, is

where we need to seek the grounding of a new stance towards treatment of the Modernist Movement. The new strategies for preserving modern architectural heritage lie somewhere on the boundaries between activism, squatting and curatorial work. Common denominators include the reduced financial demands for restoration, and, equally, the high level of personal engagement of the actors in the restoration. The bearers of professional expertise, such as architects, art historians or restorers, in turn, enter not only into the process of planning the restoration, but equally into the creation of a strategy for the functioning of the architectural work, its physical realisation or even the direct financing of the restoration. Sponsors, volunteers and other visitors themselves emerge actively not only as financiers or users, but are integrated directly into the process of protection and restoration, thus influencing the physical form of the work. Subsequently, the form of the work is generated out of the “creative clash” of these actors, as one direct participant termed this process¹. Here, the architectonic design and the functional programme become reciprocally formative. Together with an intentional preference for the incomplete or the open, this quality sets the new strategies for protection and restoration aside from the old, institutionalised ones. In the following texts, we will touch upon three types of such strategies.

1. RESTORATION AS OPEN WORK

The first type of strategy regards restoration as an open project: restoration as open work, or *opera aperta*. Though a process of restoration does take place in the sense of a certain vision agreed upon at the outset by architect, heritage expert and owner, in the course of realisation the vision becomes modified in relation to changes in the functional programme, to the results of parallel procedures of architectural-historical and restoration research, as well as offerings on the part of potential financial resources, such as various funds or donors, or even manufacturers of building materials or suppliers of construction services willing to take part in the restoration. Neither the final form of the work nor the term for completion of the restoration can be set firmly. One instructive example of such an approach is the restoration of the Reform synagogue in Žilina (*Peter Behrens*, 1931) and its adaptation as the independent cultural centre *Kunsthalle*. A similar process in previous years, from 2009, occurred with the former *Banco Nacional Ultramarino* building in Lisbon (*Cristino da Silva*, 1952), rebuilt piecemeal into the *Museu do Design e da Moda*. A particular variation on this strategy is also demonstrated by the reuse of the former *Mladinska knjiga* (Youth Books) printing workshop in Ljubljana (*Savin Sever*, 1966).

2. ANARCHISTIC DEVELOPMENT

The second type of strategy relies on social activities tied to a particular urban setting, based on its anarchic architectural or planning development. The basis of

this strategy is the illegal occupation of threatened architectural heritage with the aim of its protection, new use and renewal. As such, squatting becomes a tool for the protection of the public interest over the particular interests of speculative construction. Most often, this is found in long-neglected environments of industrial architecture, though there are well-known instances of the occupation of buildings or entire complexes in city centres. One instance could be the “Cinema America” in Rome’s Trastevere neighbourhood (Angelo di Castro, 1954) or the *Gängeviertel* in the centre of Hamburg. The success of this strategy depends, to a large extent, on wider social support and the chance to transform an initially illegal activity into a legal one. The latter did in fact happen in the Hamburg case, where the district is now being revitalised through the actions of the original occupiers. Yet in a demonstration of how complex the procedure is, we can cite many dozens of instances that were not successful, or only briefly successful, such as the case of the Roman cinema, which the activists had to leave after only 2 years of successful operations in 2014². Another recent failure has been the initiative to rescue the former Massó cannery in the Spanish town of Cangas do Morrazo.

3. INTERACTIVE TRANSMISSION OF VALUES

The third type of strategy is based on the transmission of the value of architectural heritage to the building’s users by means of interactive communication devices. Such a strategy is employed particularly in the case of a heritage that is not regarded as in any way exclusive, such as mass housing projects from the second half of the 20th century, or certain works of late modernism long resented for their excessive size and insensitive situation inside historic urban fabric. In the case of large mass housing complexes, with their large resident populations and often with problematic social situations, communication is absolutely essential. Usually, such a process starts with the legitimisation of the architecture in the eyes of its actual inhabitants. In this connection, we should recall the very earliest initiatives of this type in the cities of the former East Germany, where the heritage of prefabricated apartment blocks began to be addressed as early as the 1990s. The value of the socialist housing estate has also been communicated to the broader public through the Prague project *Hérons and Aliens* or Bratislava’s *Expedition Panelstory*³. Taking up a similar theme is a recent initiative in Vilnius to link vertical and horizontal communication between experts and the general public.

All of these abovementioned strategies and projects represent alternative approaches to the protection and renewal of modernist architectural heritage, suggesting ways of action that could be of inspiration for the future.

NOTES

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- 2 “Cinema America. Storia”, accessed on April 15, 2016, <https://americaoccupato.org/storia>.
- 3 “Vetřelci a volavk”, accessed on April 15, 2016, <http://www.vetrelciavolavky.cz>

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New Practice? On the Process of Preservation of Peter Behrens's Synagogue in Žilina

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In response to economic and social challenges, the financially and technically demanding processes of modern architecture preservation have arguably become too exclusive. The number of already-protected heritage sites opens up the question of the availability and flexibility of traditional restoration practice, based as it is on grant financing and high professional and specialized work processes.

The new collaborative and bottom-up practices which are already normal in the social and environmental fields are also beginning to inspire architecture and town planning as well as heritage preservation. The paper analyses the advantages and hazards of these new practices with specific reference to the restoration of one of the most important MoMo heritage structures in Slovakia, the Neologic Synagogue in Žilina, a work of the architect Peter Behrens. The scheme for conservation and conversion of Behrens's synagogue to a contemporary art gallery, named *Nová Synagóga*, has been for several years one of the most prominent restoration projects in Slovakia. The lack of grant funds impelled the investor, a local non-governmental organization, to pursue the long-term restoration process mostly in a voluntary and collective manner, and to finance this through public funding appeals. This voluntary and collective process of restoration, and its financing by members of the public, has noticeably changed the usual schedule of conservation planning and realization. The demands of publicity require that the site be always on "show" for donors, and the restored heritage site could never be closed for long – a constraint that significantly conflicts with the gradual processes of heritage conservation.

This situation gives opportunities for experimentation and the discovery of new solutions, but the fast-changing process and the collective responsibility could potentially endanger heritage values. On the other hand, do not we risk more with monuments and our environment if we only wait for the adequate funding of expensive restorations? The crucial question is: could we consider this approach as a fundamentally new approach to monument conservation, or it is only an ephemeral fad?

1. INTRODUCTION

In existing monographs on the architect Peter Behrens, there are only sporadic mentions of the fact that he designed a synagogue: normally it only appears as a single item in his catalogue of works. Arguably, this may be because the synagogue was completed during a period of his oeuvre that scholars do not regard as central, and, moreover, was constructed in a location at the very periphery of Western European art and architecture, in the small city of Žilina in the north of Slovakia. Alternatively, it may also stem from the fact that the architect himself was forced to keep the project secret after its construction, in the wake of the Nazi rise to power, and the additional constraint that only a very restricted number of archival materials about the synagogue have managed to survive.

Over the course of time, however, and thanks to the restoration process currently underway, the marginal standing of the only synagogue in the oeuvre of this pioneer of corporate architecture has begun to change. The actual work of

restoration has, moreover, not only provided inspiration for this expansion of our knowledge of the history of modernist architecture and of Behrens's work, but to a large extent has become an impulse for reflection on the practice of restoring built heritage in general. The restoration constitutes an altruistic act on the part of a publicly engaged civil society, and as such points to an alternative to the standard, rigorously hierarchical and authoritative procedures of restoring and financing the renewal of architectural monuments.

2. "AT THE START, OUR MOTIVATION WAS THE BUILDING ITSELF"¹

The founder of modern heritage theory, Alois Riegl, was convinced that previous care for built monuments was characterised by disputes over the value that the individual landmark represented, that the monument was "the site of a conflict of interest over its use for selfish goals"² and that if this truly were the case, preservation did not in fact constitute a genuine protection of these buildings. In his view, preservation would only be authentic if it were performed altruistically, for the building itself. The historic changes in the Žilina synagogue, originally built for the town's *Neologue* (Hungarian Reformed) congregation, illustrate how many such conflicts of interest did take place, as well as the presence of an arguably "genuine" care for the building as heritage.

After WWII, during which the confiscated synagogue was deliberately violated by the collaborationist authorities through its use as a warehouse for storing furniture and fertilisers, it was made over for the next 20 years to the city council, and it was decided to have the building opened again to the public, not as a sacred space but as a cultural setting. In 1950, architect Lubomír Šlapeta put forward the first project for the adaptation and reconstruction of Behrens's synagogue, clearly drawing attention to its unique architectural value in the analysis, where he gave priority to its use as a concert hall rather than a theatre, "to avoid extensive interior adaptations". Despite this, the Slovak Architects' Association took a critical view of his project, and "since it is a work unique of its kind" recommended that the project be assigned to the Heritage Office. Here, the authorities refused Šlapeta's design because of its addition of a separate block for the cloakroom area, and the town re-assigned the project to the local archi-



FIGURE 1. Peter Behrens, the Neologic Synagogue, Žilina, Slovakia, view of the interior, 1932. © Archive of Architecture, USTARCH SAV Bratislava.

tect Václav Čáp, who took it on with enthusiasm. Čáp, in the words of the Heritage Office, “changed the axis of the stage, achieved clarity in the plan and functional accuracy in the direction of operations”, thus avoiding any need for structural additions. Yet in this effort to ensure that the building’s exterior silhouette remained unaltered, the new design simultaneously ensured a significant change in the synagogue’s interior.

An analogous approach was assumed by the heritage experts again in a later rebuilding of the interior, when the synagogue was already officially a protected landmark. During the 1970s, it was transferred to the Technical

Institute of Transportation and Communications, which adapted the interior as a lecture hall – thus requiring adaptations to the acoustics of the main space. The full height of the original interior was, as a result, hidden behind tiling, which also entirely obscured the most visually exciting element of the interior, the cupola³.

This combination of conserving the publicly visible exterior envelope of the building and pragmatic handling of the interior aptly encapsulates the late-modernist approach to heritage restoration. Priority was assigned to the retention of the aesthetic values of the building as a single object within the visual framework of the city, as opposed to any reflection of its original historical and social significance. At the same time, the approach also reflects the tenets of Communist ideology, in its deliberate manipulation of the history and memory of the urban space.

Despite this metaphorical lobotomy, which shaped the reception of the synagogue for an entire generation, the integrity of Behrens’s overall conception remained largely intact. In the structural core of the synagogue, there remained evidence of the architect’s exceptional ability to compose a rationally balanced yet monumentally expressive built form. And this quality was fully revealed again almost half a century later, in 2011, when the current restoration of the synagogue began.

3. “ONE OF THE MOST AMAZING AND IN THE SAME TIME MOST OVERLOOKED NATURE OF BEHRENS SYNAGOGUE IS ITS ADAPTABILITY”

Žilina’s remaining Jewish community, though only numbering a few dozen people, managed to regain its property after the fall of Communism in 1989; however, unable to put the building to its full use, they rented it out as a cinema. At the turn of the millennium, though, this went bankrupt, and the Jewish community was forced to offer the now-decrepit building on lease to various commercial



FIGURE 2. Peter Behrens, the Neologic Synagogue, Žilina, Slovakia, the interior of the synagogue after conversion into the lecture hall of the Technical Institute of Transportation and Communications. © *Vysoká škola doprava a spojov v Žiline, výsledky výchovno vzdelávacej a vedeckovýskumnej činnosti Osveta Bratislava, 1988, 39.*



FIGURE 3. The Neologic Synagogue, Žilina, Slovakia, development of the “new synagogue” project. © Martin Jančok 2011-2014.

organisations, since neither the city nor the national government displayed the slightest interest in the reconstruction and preservation of this unique landmark.

Apathy on the part of public institutions finally stimulated civic and voluntary activity. A team led by cultural manager Marek Adamov, architect Martin Jančok and curator Fedor Blaščák resolved to create a gallery of contemporary art inside the building. In their own words, the primary goal was to “prevent the use of the synagogue for commercial purposes” and for this reason they decided, without any personal funds and during the worst years of economic recession, to work towards the rescue of this monument.

In the end, they decided to pursue the project along several ways at once: civic participation, public appeals, and use of available funding sources. The restoration process, consequently, could not be started in line with standard sequences of activities, but had to emerge in a more ad hoc way out of the marketing needs of the campaign. The architectural project of restoration, as the first fund-raising element, was launched at a time when the spatial qualities of the interior were still obscured by the additions for the cinema hall, and even before basic preservation research had been completed⁴. These circumstances led the author of the adaptation, Martin Jančok, to attempt a more ambitious intervention in the interior, in terms of adding another floor for the gallery.

Thanks to the media campaign, increasing numbers of volunteers began to offer their help to the project, including not only amateurs, but also architectural professionals, who provided much expertise on the building’s architecture, on its material and structural fabric, or even on its historic alterations and the original plans. As the quantity of team members increased and the diversity of knowledge expanded, greater discussion also arose about the principles of the restoration. At the urging of experts from **docomomo** Slovakia, a Council for the Restoration of the Behrens Synagogue⁵ was established as an advisory body to help guide the restoration. Meanwhile, the actual work of research investigations, design preparation and even physical reconstruction took place in parallel and often overlapped, which threatened the smooth course of restoration. Passionate arguments over the restoration principles, oscillating between conservationist and reconstructionist approaches to the building, were frequently resolved by

pragmatic decisions that drew upon the immediate opportunities of sponsorship offers or volunteer groups. It was thanks to the personal engagement of the main actors, and particularly local heritage experts, that in the end no significant damage to historical authenticity was caused.

Another specific feature of fundraising by public collections is the need for continuous appeals to the public through events within the building. It would thus have been impossible to close the synagogue off for several years from potential supporters; instead, it was necessary to attract them into the gradually transforming interior spaces and spark their interest through activities held within these spaces. This system of a “semi-open” space of short-timed events, exhibitions, concerts or conferences, had its influence not only on the “unsystematic” sequencing of reconstruction work, but equally served as an opportunity for testing the functionality of the architectural plans for reconstruction.

Almost immediately after the removal of the inserted ceilings and a more thorough investigation of the interior surfaces, the team re-evaluated its initial vision. Not only did they now abandon the previously-proposed second floor of the gallery, but they also began to consider a free-standing and non-invasive ramp construction that would make the existing gallery better accessible. And, during one of the “openings”, they had the chance to test this out at a 1:1 scale. Yet the model of the self-supported ramp, intended to separate the original restored surfaces from the exhibition areas, significantly worsened the quality of the spatial dimensions, in contrast to the visualisations and sketches. From this, architect Jančok decided to search for a less invasive principle for adaptation. He found



FIGURE 4. Peter Behrens, the Neologic Synagogue, Žilina, Slovakia, test of the “Half-White” concept in the exhibition of Romanian artist Dan Perjovschi (18 September-5 December 2014). © *Nová synagóga* Žilina, 2014.

one in the simple concept of functional separation of space through colour. In this long process of testing and searching, the “new synagogue” team came to recognise the adaptability of Behrens’s original conception through its new use. The architect refused any insertion of new forms into the interior of the temple hall, and through only using the most basic forms completed the temple interior as a pure and universal space.

4. OUTLINES OF A NEW PRACTICE?

At the time of writing, restoration work on the building is just being finished, secured by Norwegian government funds. Would it have been possible, though, to have reacted with such flexibility if the project had been constrained by a more traditional, institutionalised process? Was, in fact, this very parallel process of planning, research and realisation an opportunity for more thorough testing and recognition of the values of the building? And could we not say that precisely this model of collective and parallel practice is truly the best guarantee of Riegl’s “genuine protection” of architectural heritage?

NOTES

- 1 Revitalisierung von Peter Behrens’ Neuer Synagoge, *Bauwelt* 49, 2013, n. 1-2, 32.
- 2 Riegl Alois, *Der modern Denkmalkultus. Sein Wesen und sein Entstehung*, Wien – Leipzig 1903. Quoted after the Czech translation by Ivo Hlobil, Riegl Alois, *Moderní Památková Péče. Národní Památkový Ústav*, Praha, 2003, 85.
- 3 For more detailed information about the history and research of the Neolog Synagogue in Žilina, see Ivan Pilný, Peter Szalay, “Behrens under the Surface: Restoration Survey of the Neolog Synagogue in Žilina (Neologickej synagógy v Žiline)”, in *Architektúra & Urbanizmus* 2013, 47, n. 1-2, 27-52.
- 4 The architectural-historical research was directed by Dr. Magdaléna Kvasnicová in 2011.
- 5 The council was established in 2013 and its members are: chair - Henrieta Moravčíková (Institute for Construction and Architecture, Slovak Academy of Sciences in Bratislava), Iveta Černá (Villa Tugendhat, Brno); Matúš Dulla (Faculty of Architecture, Czech Technical University, Prague); Ján Krcho (Faculty of Art, Technical University of Košice), Pavol Frank (Jewish Community of Žilina); Miloš Dudáš (Regional Heritage Office, Žilina).

Breaking Old Paradigms – the Case of Savin Sever's Printing Shop Building in Ljubljana

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The *Mladinska knjiga* printing shop in Ljubljana was designed by the architect Savin Sever (1927-2003), one of the first generation of the post war students that graduated under Professor Edvard Ravnikar (1907-1993) at the Ljubljana architecture faculty. The *Mladinska knjiga* printing shop is a fine example of structuralism from the 1960s. The elements are carefully designed, not without the influence of industrial design. The strong reinforced concrete profiles in the shape of the letter L carry the roof. The profiles enable a large span, the skylights between them provide evenly distributed light and with its numerous repetitions creates elegance and recognition.

The *Mladinska knjiga* printing shop used to be also commercially highly successful. In the turbulent post-socialist times, however, a new capitalist privatized the company, extracted its financial resources, went bankrupt and left the workers unemployed, as a burden on the the state social security system. The insolvency administrator has for years been trying to sell the building, but it is unclear who, today, wants old industrial halls protected as cultural monuments. The future of the building looked pessimistic until the non-profit foundation BIG rented the building for a token sum of money. The foundation is concerned with creativity in the field of design, industrial design and architecture. They moved into the huge spaces of the printing shop and gradually started to inhabit it. It was too expensive to pay the heating of the whole space, so they started to build small boxes, each containing an office room made of wood panels and cardboard. The space between was used as common space for exhibitions, workshops and lectures. The boxes were soon understood as houses, space between them as streets and squares. Now everybody speaks about Design City. The idea already seen at Diocletian's Palace in Split, where the emperor's villa was turned into a town, is repeated here, thus saving the old building for a better future

1. MODERNISM IN SLOVENIA

The *Mladinska knjiga* printing shop in Ljubljana was designed by architect Savin Sever (1927-2003), one of the first generation of the post war students that graduated under Professor Edvard Ravnikar (1907-1993) at Ljubljana's faculty of architecture. Slovenia was then a part of socialist Yugoslavia, still strongly attached to Soviet political doctrine. But in 1948 president Tito repudiated Stalin's dictates, which led to a radical political split under which Soviet cultural influences were abandoned. This situation enabled architects to continue with the architecture of the Modern Movement after the war.

For the post-war generation of architects strict functionalism in architecture had to be redefined. The first split happened already in CIAM in 1953, when the younger generation criticized the older as being too rigid. Younger members of CIAM gathered around Team 10, among them Van Eyck and Bakema, who had admired Diocletian's Palace in Split or the Roman Theatre in Lucca. In both cases, the Roman structure had been transformed into a village or a city. They admired the way in which an old structure could adapt to different uses. This led to an



FIGURE 1. Savin Sever, Mladinska Knjiga, Ljubljana, Slovenia, façade. © Janez Kališnik, 1966.

awareness of the importance of structure in architecture and the idea of structuralism in architecture was born.

Edvard Ravnikar was the most important professor in the Faculty of architecture in Ljubljana. He shaped the outlook of generations of post war architects. Himself a student of Jože Plečnik, he had worked in Le Corbusier's office in Paris in 1939 and was well aware of the importance of international contacts and of the theoretical basis of architecture. When Yugoslavia became member of the UIA, the Eastern countries, under Soviet pressure, left the organization and a planned scheduled congress in Moscow was cancelled. The 1951 UIA congress in Rabat, Morocco, was an opportunity for Yugoslavia to present itself in front of an international audience. And it was Ravnikar that prepared the exhibition in the name of the Slovenian association. In the same year, Ravnikar initiated the foundation of the magazine "Architect" and the editorial board sent letters to establish contacts with architects in the Western Europe – not an easy task at that time for a magazine from Eastern Europe. Not many responded, but among them were Max Bill, Alfred Roth and Sigfried Gideon. Max Bill invited Ravnikar to lecture in Ulm (1955), Alfred Roth attended a symposium on school architecture in Ljubljana (1954), and Giedion helped in establishing contacts with Alvar Aalto. In the mid-1950s Ravnikar visited and lectured in Venice, Copenhagen, Athens, Oslo, Stockholm, Ulm and attended the UIA Congress in The Hague (1955). These connections also led to the CIAM X conference in Dubrovnik in 1956. Ravnikar studied in Vienna (before his studies with Plečnik), and later he worked with Le Corbusier and spoke German and French. Therefore, he was familiar with litera-

ture in these languages. In his archive there are many articles on structuralism that he copied and distributed among his students. He had personal contacts with some architects that were close to structuralism: Hubert Hoffmann (1904-1999), Radovan Nikšič (1920-1987) and Alfred Roth (1903-1998). Hubert Hoffman, a member of CIAM, attended the last meeting in Otterlo in 1959, the starting point for structuralism in architecture. Later Hoffmann was professor in Graz and became friend of Ravnikar and invited him as guest professor to Graz in 1973. Radovan Nikšič received a stipend from the Dutch government and spent seven months in Rotterdam working for Van den Broek and Bakema. He was the only architect from Yugoslavia that attended the CIAM meeting in Otterlo.

Ravnikar's interest in structuralism is clearly echoed in his work and teaching. The design of his buildings is based on a structural grid that is always clearly shown on the façade. In most cases the structural elements protrude out of the façade, or sometimes the building seems to be cut-off, revealing its structure and layers of the façade. In his architecture school Ravnikar developed a method of modular planning based on Aldo van Eyck's Orphanage in Amsterdam (1960). The students had to analyze different functions of a building and assign them to elements from a catalogue of spaces. These elements were then grouped in final composition. This method of teaching had a profound influence on Ravnikar's students, who later proved themselves in practice.

2. THE ARCHITECT SAVIN SEVER

Savin Sever graduated in 1955 at the Faculty of Architecture in Ljubljana, under professor Ravnikar, and was his assistant for a few years. His most important works are: the training workshops for the Institute for Deaf Youth (1962-1963), atrium houses in *Bežigrad* (1963-1970), the *Mladinska knjiga* printing shop (1963-66), the Astra and Commerce skyscrapers in *Bežigrad* (1963-1970), the AMZ centre (1967-1968), the *Merkur* department store (1968-1970), and the Jože Moškrič printing shop (1974-1977) all in Ljubljana. In *Kranj* he designed the *Gorenjska* Fair (1970-1971), in *Nova Gorica* he designed the *Soča* building (1978-1981), the entrance to the *Karavanke* Tunnel in *Hrušica* (1983-1991) and many others. For his architecture Sever received several awards. His buildings were carefully designed and highly flexible, all in accordance with the doctrine of structuralism. Sever emphasized the structure of his building as the main architectural element. The highly elaborated structural elements, shaped in the tradition of indus-



FIGURE 2. Savin Sever, *Mladinska Knjiga*, Ljubljana, Slovenia, interior.
© Janez Kališnik, 1966.

trial design, took over the role ornament used to have. With Sever these elements are highly innovative and with them he tried to solve several problems at once.

With the foundation of independent Slovenia in 1991, the political system changed drastically. The new capitalism, oriented towards profit, showed no sensitivities to cultural values and several Sever's buildings were demolished in the times of new capitalism. It was an act of irrational stubbornness. It is difficult to comprehend how the hall of the *Gorenjska* Fair could have been torn down to make place for a cheap prefabricated box for the Obi department store, or how the Jože Moškrič printing shop had to give way to the Hofer department store, another prefabricated box without any architectural qualities. And what happened in the case of the training workshops of the Institute for Deaf Youth is beyond reason: a building that had received several architectural awards was torn down in 2000, following which the investor changed his mind and left its site vacant: the plot in the centre of Ljubljana, overgrown with ambrosia, has been empty for 16 years now. This examples show how, today, the setpieces of modern architecture are neither understood nor protected against ruthless new capitalists. Only a few years ago, there was an initial attempt, mounted by architectural critics, to put the first buildings under protection. One of these was also *Mladinska knjiga* printing shop by Savin Sever.

3. THE MLADINSKA KNJIGA, HISTORY AND REUSE

This building is a fine example of structuralism from the 1960s. It is one of five printing shop buildings that Savin Sever designed, and the most important of them. The building is divided into 3 parts, each with its own specific function. The northern part contains offices while on the south are halls for printing shops, and between them are communications structures. The construction is emphasized, according to the ideas of structuralism. Where historic buildings used to be decorated with the ornaments that functionalism rejected, here the main architectural motif is construction. The elements are carefully designed, not without the influence of industrial design. In the southern part, the facade of the printing shop halls is vertically divided in three parts. This division, known from classical architecture is here turned upside down, as the lightest part – the glass facade – is the lowest one. The strong reinforced concrete profiles in the shape of the letter L carry the roof. The solution is typical for Sever as, with one stroke, he solves the problem of flexibility. The profiles enable a large span, and skylights between them provide evenly distributed light. In this way the building is prepared for different future functions. Sever here not only succeeded in solving functional problems, but also designed a highly aesthetic solution that, with its numerous repetitions, creates elegance and a strongly recognizable image.

After completion in 1966, the building received several architectural awards and the *Mladinska knjiga* printing shop was highly successful commercially. In the turbulent post-socialist times, however, a neo-capitalist entrepreneur privat-



FIGURE 3. Savin Sever, Mladinska Knjiga, Ljubljana, Slovenia, Design City.
© Photo Andrej Hrausky, 2016.



FIGURE 4. Savin Sever, Mladinska Knjiga, Ljubljana, Slovenia, Design City.
© Photo Andrej Hrausky, 2016.

ized the company for a token amount of money. At that time the printing shop had an international reputation and many orders from abroad. But the new owner extracted its financial assets, went bankrupt and left the workers unemployed, as a burden on the state social security system. The insolvency administrator has for years been trying to sell the building, but it is unclear who might want to buy an old industrial complex protected as cultural monument. The building cannot be torn down, and the price is unrealistically high. The future of the building for a long time looked bleak. On rare occasions listed buildings have been turned into cultural centres, museums or galleries, but in the case of listed historic monuments, conservation experts have to be involved, which makes such projects extremely expensive. In the present economic crisis, with politicians eagerly financing bank losses, and reducing the resources allocated to culture, the state is increasingly unwilling to cover the expenses of restoration of the monuments. The time is therefore ripe for an alternative approach.

The printing shop complex had been standing empty for some years when an unexpected offer pointed to a new potential solution for its reuse. The nonprofit BIG Foundation took out a lease on the building for a symbolic sum of money. The foundation's operations are concerned with fostering creativity in design, industrial design and architecture. They moved into the huge spaces of the printing shop and gradually started to inhabit it. It was too expensive to pay for the heating of the whole space, so they started to build small cardboard boxes each containing an office room. The space between was used as common space for exhibitions, workshops and lectures. The boxes soon came to be understood as houses, and the space between them as streets and squares. And the whole structure is now expanding gradually according to needs and possibilities. The interventions are temporary, the materials comprise wooden panels and even cardboard, and most of the other elements such as lighting and furniture are sponsored. Now

everybody refers to the building as Design City – echoing Leon Battista Alberti's definition that "a city is like a large house and a house is like a small city". This idea, of course, had been already seen at Diocletian's Palace in Split, where the emperor's former villa was turned into a town, is repeated once more. And the flexibility of an architecture based on the principles of structuralism is exploited in its full potential.

The BIG foundation organizes many events that are bringing life back to the old building. Their aim is to demonstrate the value of the neglected building and its possible use in the future. Despite limited financial resources, and with its step by step approach, BIG is successfully demonstrating a new solution to an old problem. Their approach is neither an illegal occupation, nor an official policy, but a "soft" alternative way towards possible solutions in the future. As Zmagov Novak, director of the BIG Foundation, says: "To overcome old rooted paradigms, our ideas can never be bold enough. Crises provide a turning point in history when the new is able to break free from the old" (www.zavodbig.com).

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Squatting the City: An Anarchistic Urban Development in the Former Massó Canning Factory

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During my research on how squatting became an instrument for a gentle but critical urban development I encountered such a process at the former Massó canning factory in the Spanish town Cangas do Morrazo. Realizing that the huge industrial complex of several buildings is not only an industrial but historical heritage for this town, people took action and occupied one building in fear of its demolition by its new owners. Through on-site field research, I found out that there were many differing ideas on what to do with the mostly abandoned 20th century factory, but still no solution on how to put them into reality. Common to all was an emphasis on the preservation of this heritage and on its revitalisation – as Yona Friedman would say: “with the people, by the people, for the people”.

How can heritage like the Massó factory be developed by everyone for everyone? How can people’s ideas become reality without any compromises? One solution could be a social interactive development process – an anarchistic urban development.

The thesis argues that a critical anarchistic urban development created by a multitude of dilettantes (the users) can offer an alternative to democratic paternalistic planning methods implemented by experts (urban planners or architects). Following the basic principles of squatting – autogestion, direct action and critical social interaction by a multitude – space is here used as a framework being reused and restructured by differing people based on what is needed. The main goal is to conserve a building worth for preservation by simply using it. Balancing the fine line between legal and illegal, squatters manage to create common space within these vacant structures that enable a wider range of future development by different groups with the common interest in preserving a single or multiple buildings. By analysing existing successful projects like the *Gängeviertel* in Hamburg I will show how an anarchistic development process can come into being, and how it could be applied to the Massó canning factory.

1. INTRODUCTION

During my research on how squatting became an instrument for a gentle but critical form of urban development, I encountered such a process just starting at the former Massó canning factory in the Spanish town of Cangas do Morrazo. Realizing that this huge industrial complex of several buildings is not only an industrial but a historical heritage for this town, people took action and occupied one building in fear of its demolition by its new owners. Entering on-site field research, I found out that there were many differing ideas on what to do with the mostly abandoned 20th century factory, but still no solution on how to put them into reality – ranging from radical utopian ideas to simple proposals. But common to all was the desire to preserve this heritage and to revitalize it – as Yona Friedman would say: “with the people, by the people, for the people¹. But how can industrial heritage like the Massó factory really be developed by everyone for everyone? How can people’s ideas become reality without any compromises? One solution could be a social interactive development process – an anarchistic formula of urban development.



FIGURE 1. Massó Canning Factory, Cangas do Morrazo, Spain, the main factory building (left) and the former facility building (right), which became *O Salgueirón* squatted autonomous social centre from 2010 to 2012. © Eva Maria Hierzer, 2010.

2. KEYNOTES TO AN ANARCHISTIC URBAN DEVELOPMENT

The sociologist Hans Pruijt differentiates 5 different reasons why buildings have been occupied by squatters throughout history: deprivation based squatting; as an alternative housing strategy; entrepreneurial squatting; political squatting; and *conservation-orientated squatting*². Here we focus on squatting as a socially and politically motivated activism aiming conserve modern industrial heritage for the public. For a better understanding of this process in theory, I will explain the main characteristics of collective squatting due to the *Gängeviertel* squat in Hamburg. A contemporary example on how a whole complex, meriting conservation, can be reused through activist intervention.

Direct Action

Gentrification, the replacement of grown structures by anonymous new buildings and commercialization of public space provoked some people in Hamburg to rebel. It was 2009 when a group of 200 artists occupied the *Gängeviertel*³ – one of the few surviving urban structures of its kind within the city centre. Its main characteristics were those of a high density development consisting of several 4-6 storey buildings within one block, divided by small alleys and courtyards; in use terms, it incorporated a myriad of housing, business and crafts functions, which were made possible by a structure of high ceilings and neutral floor plans.

Fearing demolition by a new owner, the artists used a process of *direct action* to preserve this unique structure, for the wider public good. What months of

pressure by normal democratic channels had failed to achieve, was accomplished almost overnight by a well-planned “art performance”. The core group gathered fellow artists, entered the abandoned buildings and set up an art exhibition. The *Pop-up* gallery was followed by an opening party and, finally, by what has now become renowned as the largest squat in Hamburg since the 1980s⁴.

In context of urban practice, *direct action* means a process of appropriation and transformation by users – whether illegal or within a legally grey area. In case of the *Gängeviertel* this involved squatting in the buildings in order to prevent their demolition and to enable their spatial transformation “by everybody for everybody”.

Critical Social-interactive Space

People who squat public or private property with the intention of conservation by transformation, are actively applying to space the ideas that most architects only theorize about. They do not see space as something static with a price tag, but as something interacting with its surroundings and its users. The *Gängeviertel* squatters occupied the complex in order to critique an ongoing paternalistic transformation process within the centre of Hamburg, and they offered at the same time an alternative – a *social interactive space* within the city. The main characteristic of such a space is a clash of interests claiming predominance. Firstly, there is the owner, seeking economic benefit. Secondly, there is the municipal government, pursuing the management of space in accordance with regulative planning formulae. Thirdly, there are the squatters, pressing for the implementation of an alternative to the paternalistic planning model: in their view, a building should endure over time but should also change in use depending on what is desired and needed⁵. And fourthly, there are the users. A potentially conflicting situation could occur if and when future users’ interests do not align with each other. While paternalistic planning copes with conflict by overruling it, bottom-up-movements embrace *critique* as a matter of participation.

Autogestion

According to Henri Lefebvre, autogestion is a form of subjective liberation from any hierarchical structures by individually appropriating space in order to transform it following the subject’s own imagination⁶. It is a form of spatial criticism of the existing establishment,⁷ and of its hierarchical enforced paternalistic spatial design approach.

In the Hamburg case, the municipal government repurchased the property from its former owners and granted the *Gängeviertel* squatters a lease on condition they restored the building structure using their own resources. Prior to the negotiations, the squatters had established a cooperative and presented a concept to the public on how they planned to implement their undertaking⁸.

The whole building ensemble will be managed by the *Gängeviertel* cooperative that is in charge of renovation, building management and finances. To ensure

organizational self-management, the cooperative is open for everybody to join and become an active, passive and/or investing member. All tenants are members of the cooperative which enables the ability of decision making to be extended to all users. Everything concerning the organisation is decided by grass-roots democracy. Since there was neither a non-profit oriented investor nor enough equity, the cooperative model became essential in financing this project⁹.

The overall plan, supported by all members of the collective, is to enable this urban niche to become a free space created by multiple uses like affordable housing, studios, workshops or small business, based on what is needed and what the building structure can offer¹⁰. Although the former squatters depend financially on governmental aid, this is their only way to stay as independent as possible in organizing and transforming the *Gängeviertel*.

The squatters' self-management is based on equality. Every person involved has various tasks but not the right to overrule anyone. This is a form of libertarian organisation "which is run from below, which can't force you to do anything, and which you are free to join or free to leave alone"¹¹. It is the organisational basis of an anarchistic urban development.

Multitude

What started as a group of artists became a movement of people who could not be more different in character from each other. Artist, scientist, gardener, cook, social worker, teacher, masseuse, architect and others constitute the group of people involved in the transformation and self-management of the *Gängeviertel*¹². It is a multitude, a collective of people differing in what they are and believe in, but united by this one single quest¹³ – to conserve the building structure by simply reusing it. One of the main reasons why the city of Hamburg cooperated so readily with the squatters was because of the amount of support within the city's wider population for a different approach in developing urban space by conserving the city's heritage.

Squatting is one opportunity to reuse space, whether it is legal, illegal or playing within a legally grey area. Squatting is a form of spatial criticism. At first glance, squatters rail against the establishment and use the conservation of buildings to unsettle hierarchical spatial power structures. But more fundamentally, they also help counter paternalistic urban development structures by creating a socially interactive space within the city. Conventional (participatory) planning processes usually have a linear structure: problem > solution > construction (> evaluation). The social interactive development process, however, never pursues a final solution nor a finished construction. The resulting development is an open process "controlled by a self-regulating system based on critical action and reaction carried out by its individual members in the form of a critique"¹⁴. It is thus sustainable in spatial, financial, cultural and, most importantly, social terms, always capable of adapting itself to the latest situation.

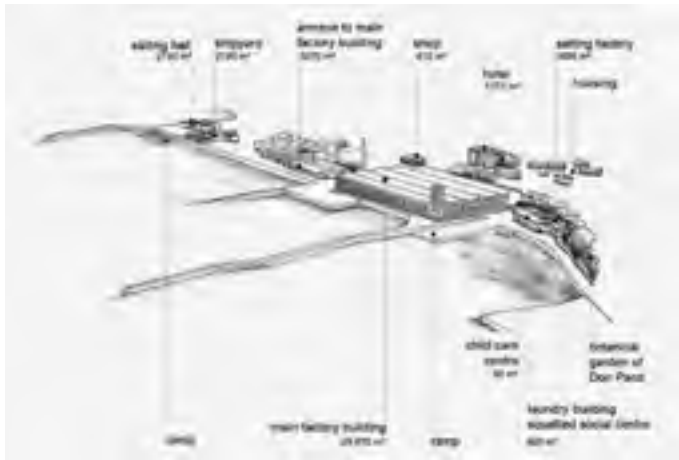


FIGURE 2. Massó Canning Factory, Cangas do Morrazo, Spain, drawing of all buildings and their uses during the years 1942-1991. © Eva Maria Hierzer, 2012.



FIGURE 3. Massó Canning Factory, Cangas do Morrazo, Spain, infrastructural and spatial interventions convey information and inspire progress. When someone starts to care about, and disseminate information on buildings and their surroundings, passers-by also pick up these ideas and start to imagine. What they then need is a central meeting area – a social-interactive development centre. © Eva Maria Hierzer, 2012.



FIGURE 4. Massó Canning Factory, Cangas do Morrazo, Spain, extension of the O Salgueirón Autonomous Social Centre into a networking centre, within the area used as workshop, information centre, meeting-point and exchange. © Eva Maria Hierzer, 2012.

3. O SALGUEIRÓN

Expanded between 1935 and 1942 by the architect Tomás Bolívar for the company Massó Hermano S.A., the Massó canning factory soon became central to the daily life of Cangas¹⁵. This was one of the first and biggest industrial complexes of modern industrial architecture in Spain. The Massó family shaped the Galician coast in the first half of the 20th century by implementing several self-sufficient industrial complexes. But none was as big, up to date and complete for its time as the factory in Cangas. Consisting of several buildings combining fishing and whaling fleet facilities, a salt-works, a main canning factory building, a child care centre, a hotel and housing, this became the life centre of the city. Most of the citizens themselves, or at least one of their relatives, depended on the factory, which finally shut down in 1991.

In 2003 an investor proposed the building of a marina, a 5-star hotel and a gated community with high-income housing on the factory's site. The citizens of Cangas feared the loss of their historical landmark, as well as of a recreational area and of the local fishermen's subsistence basis, which depends on a healthy marine life surrounding the factory's shore.

When unauthorised construction work for the marina started, fierce resistance arose. In 2010, citizens occupied parts of the abandoned factory, renamed it "*O Salgueirón*", organized local events, created a squatted social centre, outdoor cinema and teaching pathways.

Following its 2007 designation as industrial heritage,¹⁶ the complex became a social interactive space where conflicts arose, interests clashed and spatial critique was expressed by direct action through a multitude. While struggling to establish a self-managed social centre, a small group of squatters asked me in 2010 if I could draw up an alternative proposal for the site's development to boost their campaign. It was clear that what they needed was not just another conventional urban design. I suggested ideas for spatial interventions within the site that could initiate an anarchistic development process. Taking examples from current squats like the *Gängeviertel*, the revitalization of the former Berlin airport of *Tempelhof* or various Spanish self-managed cultural centres I put together several suggestions specific for that site.

However, by the time I had finished my proposal the squat had been dissolved and external political repression had been strengthened. The obstacle that neither the group of squatters nor I had taken into consideration the disparity between the size of the abandoned complex and Cangas's relatively small total population, and thus the potential number of users that could be mobilized to reuse the site.

In order to guarantee a flat non-hierarchical organisational structure similar to that of autogestion, it was essential that the people engaged in the process should work in small groups that interacted within a network organized like a syndicate. The bigger the real site, the more groups would be needed, in order

to generate enough resources (financial, human, material and expertise). Because this was not the case at *O Salgueirón*, people returned to normal democratic channels, formed a left wing coalition and took over the municipal government in 2015.

Although the industrial heritage is still falling slowly into pieces, at least the plans of the investors in this instance were frustrated by Spain's economic crisis. The new municipal government took action to landscape the surroundings into a recreational area and made it accessible to the public¹⁷. Without direct action by the concerned citizens, all this could not have been possible and another important piece of modern industrial heritage would have vanished.

NOTES

- 1 Yona Friedman, "Architecture with the people, by the people, for the people", *Architecture with the People, by the People, for the People*, Barcelona, MUSAC/Actar, 2011, 15.
- 2 Hans Pruijt, "Okupar en Europa", *¿Dónde Están las Llavetas? El Movimiento Okupa. Prácticas y Contextos Sociales*, Madrid, Los Libros de la Catarata, 2004, 35f.
- 3 Christoph Schäfer, *Die Stadt ist Unsere Fabrik*, Leipzig, Spector Books, 2010, 243.
- 4 Vacant but usable buildings within a highly pressured property market are arguably an affront to those who are forced to move out of the city centre and to watch culturally and socially valuable space being replaced by anonymous blocks and privatized surroundings. "Unser Konzept", accessed on 10 February 2016, <http://das-gaengeviertel.info/gaengeviertel/zukunftskonzept.html>.
- 5 "Unser Konzept", accessed on 10 February 2016, <http://das-gaengeviertel.info/gaengeviertel/zukunftskonzept.html>.
- 6 "Henri Lefebvre und die Frage der Autogestion" accessed December 8, 2015, http://wiki.rechtaufstadt.net/index.php/Henri_Lefebvre_und_die_Frage_der_Autogestion.
- 7 "Autogestion is a critical tool that aims to detect weaknesses in the state and the existing society, and at the same time operates to provide an (illegal) alternative to the existing power structures of the state. Henri Lefebvre explains that the stability of the state is based on what he calls 'strong points' in between which there are to be found 'zones of weakness' or even lacunae. This is where things happen. Initiatives and social forces act on and intervene in these lacunae, occupying and transforming them into strong points or, on the contrary, into 'something other than what has a stable existence'. The squatter movement employs these weak zones as their stage of action as well as for their spatialised criticism." Eva Maria Hierzer, Philipp Markus Schörkhuber, "Infrastructural Critique. The Upside Down of the Bottom-Up: A Case Study on the IBA Berlin 84/87", *Footprint*, vol. 7 n. 2: The Participatory Turn in Urbanism, Delft, Stichting Footprint/Techne Press/TU Delft, 2013, 119f.
- 8 The main restoration done by the Gängeviertel cooperative affects the building infrastructure and main building structure. Every piece of additional interior construction will be shaped by all users. All outdoor areas are being designed to become a public space accessible for everyone. They contain a small park, courtyards and connecting narrow alleys. "Das Gängeviertel Erfahren", accessed on 10 February 2016, <http://das-gaengeviertel.info/gaengeviertel.html>.
- 9 The renovation costs have been estimated at 10 million euros for 8700 m² of floor space, which will be financed mainly with long term promotional loans (paid back by rental income), funding and equity (income by shares and others). "Realisierung", accessed on 10 February 2016, <http://gaengeviertel-eg.de/nutzungskonzept/realisierung.html>.
- 10 "Organisation und Nutzung", accessed on 10 February 2016, <http://gaengeviertel-eg.de/nutzungskonzept/organisation-und-nutzung.html>.
- 11 Colin Ward, "Anarchy as a Theory of Organization (1966-1973)", *Anarchism. A Documentary History of Libertarian Ideas*, vol. 2: The Emergence of The New Anarchism (1939-1977), Montreal-New York-London, Black Rose Books, 2009, 363.
- 12 Statement by the Gängeviertel activists: "Wir sind die Initiative 'Komm in die Gänge'. Wir sind Maler, Stadtplaner, Grafiker, Illustratoren, Köche, Designer, Sozialarbeiter, Gold- und Silberschmiede, Hilfsarbeiter, Fotografen, Architekten, Webdesigner, Elfenbeinschnitzer, Polsterer, Tischler, Gärtner, Dichter, Hartz IV-Empfänger, Projektentwickler, Altenpfleger, Geiger, Lehrer, Eventmanager, Wissenschaftler, Regisseure, Restauratoren, Autoren, Psychologen, Gas-Wasser-Installateure, Kameralente, Installations-, Performance-, Konzept- und Lebenskünstler, Heilpädagoginnen, DJs, Streetartists, Bühnenbildner, Glasbläser, Musiker, Programmierer, Holz-, Stein- und Metallbildhauer, Beleuchter, Masseure, Dramaturgen, Pädagogen, Licht- und Nichtkünstler, Sattler, Schriftsteller, Medienkünstler, Studierende, Messebauer, Sinologen, Buchbinder, Stipendiaten, Einzelhandelskaufleute, Modedesigner, Sänger, Kindergärtner und Biogemüsehändler". "Motivation", accessed on 10 February 2016, <http://gaengeviertel-eg.de/nutzungskonzept/motivation.html>.
- 13 Michael Hardt, Antonio Negri, *Multitude. War and Democracy in the Age of the Empire*, London, Penguin Books, 2004, 100.
- 14 Eva Maria Hierzer, Philipp Markus Schörkhuber, *op. cit.*, 120.
- 15 "Fábrica de Conservas y Factoría Ballenera Massó", accessed on 25 March, 2016, <http://www.gentesdelmar.es/patrimonio-cultural-pesquero/industrias-conservas/galicia-masso>.
- 16 Ministerio de Educación, Cultura y Deporte – España, *Bienes Culturales*, n. 7. 2007. *Plan de Patrimonio Industrial*, Madrid, Dirección de General de Bellas Artes y Bienes Culturales, 2007, 25-29.
- 17 "El Patrimonio Industrial de Massó se cae a pedazos tras 20 años Cerrado. El Paseo Litoral de Cangas Evidencia el Ruinoso Estado de las Históricas Instalaciones", accessed on 13 April 2015, http://www.lavozdegalicia.es/noticia/vigo/cangas/2015/04/12/patrimonio-industrial-masso-cae-pedazos-tras-20-anos-cerrado/0003_201504V12C10991.htm.

Waking Up the Sleeping Districts: Excursion as a Hybrid Strategy

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Detached from the historical city core, mono-functional, semi-neglected and underappreciated, and seemingly overfilled with standardized architecture, the mass-housing residential areas developed during the Soviet regime – often colloquially labelled as “sleeping districts” – have always been at the margins of any discussions about the 20th century architectural modernist heritage in post-socialist countries. Viewed through the orthodox lens of architectural heritage, the conventional evaluation of socialist mass housing residential areas is that they contain nothing of exceptional value. Yet at the same time, ironically, they are not completely “hopeless”. It is hard to evaluate them at all within the current evaluation system for 20th-century architecture, whose criteria are dominated by the elite values of “heroic” modernist heritage designed by “master architects”. But alternative criteria are still to be discovered and conventionalised.

In this paper, I present one potential alternative framework of interactive evaluation, that of the “Excursion” – a concept that combines 2 different visions of the “sleeping districts”: the vertical vision of the architect and the horizontal vision of the resident. In this way, a collective “walk & talk” process can be employed as a way of exploring the fragile interrelationship between the conventional and hidden values of the object. In pursuing this process, I posit as one starting-point the contention that “all value is created by narrative”¹ and argue that the vertical vision and narrative powers of architects may provide a particular help in re-imagining the “sleeping districts” as a more multi-layered framework to support residents’ everyday life. I also refer to the idea that there might be “non-architectural values that reinforce the generic architecture and make it more valuable”². Developing these propositions, I argue that if we then switch from the architect’s vertical vision to the horizontal perspective of the resident, we will then arrive in a position to properly understand today’s spontaneous transformations and mutations of modernist “open form” and “open space”, stimulated as they are by the complex course of everyday life. Then, in turn, we may be able to arrive at a fresh appreciation of the “sleeping districts”, and bring new insights on future scenarios of adaptation and reuse.

1. INTRODUCTION. HERITAGE OF EVERYDAY: BETWEEN THE FAME AND BOREDOM

As the foot-soldiers of the “hundred years war”³, or the “grey face” of modernism,⁴ or the paving-stones of the long journey “From Cradle to Grave”⁵, or the incubators of “constructed collective happiness”,⁶ modernist mass-housing neighbourhoods, or “sleeping districts”, have usually been at the margins of discussions about the last century’s modernist heritage. Some of them, of course,⁷ were widely hailed as pioneering leaders of urban planning and innovative architecture, and even designated as protected monuments of architectural heritage on the largest scale. But their status then made it impossible for other, later districts to catch up, owing to shortage of finance, changed regulations or lack of political will. In this connection, Vilnius is a typical case: the avant-garde Lazdynai project was followed by a queue of “9 sleeping districts”, which were under development right up until independence in 1990.



FIGURE 1. Scheme of “Sleeping Districts”, Vilnius, Lithuania. © Indrė Ruseckaitė, 2013.



FIGURE 2. Attributes of the Identity Signs System of the “Sleeping Districts”, Vilnius, Lithuania. © Indrė Ruseckaitė, 2013.

The gap between elite and everyday modernist architectural heritages is sharply reflected in the public polarisation of attitudes within the former socialist modernist cities. There are few indications as to how we could re-consider this situation and reduce this gap by finding alternative ways of re-evaluating and re-visioning the “sleeping districts”: the majority of Vilnius citizens reside in this casual modernist legacy, and they first and foremost associate the modernist heritage with their own environment. And the more un-appreciated this is, the more this negativity contaminates public attitudes to the 20th century architectural heritage in general. The official institutions are not engaged in the curating and preserving the everyday architectural heritage, so it is only really the residents themselves who have the opportunity to re-take this initiative. But as long as they do not see the value of the “sleeping districts”, there is no incentive for them to do so. Equally, so long as the official heritage authorities fail to appreciate these alternative values, they, too, are not interested in curating the “marginal” modernist architectural heritage.

The roots of this complicated situation may lie in the fact that socialist modernist architecture heritage in post-socialist bloc countries is still widely associated with the occupation regime, and thus the objective evaluation and appreciation of it is still burdened with the complicated post-traumatic phase of healing. Nevertheless, this phase of heritage is capable of stimulating dozens of diverse attempts to discover more nuances “between criticism and nostalgia”⁸ and to arrive at a more in-depth understanding and re-discovery of both elite and everyday modernist architectural heritages. Increasingly, we are witnessing a liberation of approaches, diversification of lenses, shift of paradigms and, more simply, curiosity – as evinced in the recent boom in city excursions aiming to stimulate a new relationship of the public to the stigmatised and marginalised modernist complexes of the city.

2. VERTICAL VISION: ARCHITECTURAL NARRATIVES

Half a century ago, the new settlers started to move into the newly built satellite sleeping districts in Vilnius, into the new “flats of their dreams” where *modernity* was the main keyword and value. But this optimism was soon followed by the disillusionment and criticism of the sleeping districts as alien, anonymous non-places without any history – a situation that created a historical vacuum and opened up the possibility for establishing a new, multi-layered history. Here we can refer to the argument of Ernestas Parulskis in his text about mass housing commemorative plaques in Lazdynai: “[...] a value – any value – is created by narrative. The older and more conventional the story is, the clearer and more acceptable is its value. A new narrative initiates the incipient value of an object [...]”⁹.

If we are seeking the oldest stories about the sleeping districts, we should turn to their original architectural narratives – the explanations of the architects of their tabula rasa designs for the new districts, the ideas that were embodied in the



FIGURE 3. Mental Map of Karoliniškės/K-lab expeditions. © Indrė Ruseckaitė, 2014.

architectural forms, and finally the built forms themselves as constructed, all acting as a narrative of the vertical vision of the architect. However, the drama of our excursion strategy lies in hiding away this narrative layer. The initial attempts at constructing this utopia were the most successful: the comments of the architects explaining their ideas were broadly promoted in the media at the time, as were the facts of reputation, fame and awards, all serving to engrave the estates added value on the minds of their residents. Nevertheless, after a sufficient accumulation of practical problems and failures across the housing programme as a whole, this phase of promotion slipped out of public view as well. In this way, the process of inhabiting or moving into the new housing areas became literally (or narratively) absent within their history, though it did still survive out of sight, hidden behind the “walls” of design institutes, memoirs, interviews or short articles.

The narratives of architects have several component strands, or sub-plots. The first, probably, is the interpretation of (micro) *rayon* concept in the context of the ideas of modern town planning and the idea of the welfare state, especially stressing the avant-garde visions, architectural precedents and novelties embodied in the new urban structures. For instance, the legendary *rayon* of Lazdynai in Vilnius represents one extreme within the qualitatively distinctive climate of modernist town planning in the USSR¹⁰, where the efforts of enlightened architects should also be understood as a rebellion against architectural monotony and as “one of a few trail-blazing attempts to break with the bureaucratic rigidity of large-scale central planning, although to the casual observer nowadays, Lazdynai represents nothing more than a socialist housing scheme”¹¹.

Another architectural sub-plot is the narrative of the “system of identity signs”, as particularly developed in each singular district. At the greatest scale, urban layout patterns, grouping the standardised prefabricated blocks into alphabet-like layouts, such as U, L, V, X, or O shapes, which, when multiplied over an entire district, help make it distinct from all others even from a casual glance at the map. The gable-wall decorations of prefabricated blocks, the textures of balconies, the small architectural details of the entrances, the elements joining the blocks, the playgrounds, the landscaping elements, or the role of tower blocks as the main landmarks – all of these, in aggregate, helped create a constructed identity, or image, of each district: “architectural hills” in *Karoliniškės*, “archers” in *Viršuliškės*, “garden-city” in *Pašilaičiai*, “fortress” in *Pilaitė*. If we try to look for formal or exclusive architectural heritage values in these “sleeping districts”, there is hardly anything to be found in most cases. But if we reframe the system of evaluation and turn to a more inclusive search for “distinctiveness”, the system of identity-signs or the “syntax” of the architectural narrative here provides us with a crucial jumping-off point.

These “archi-narratives” still remain a hidden part of the immaterial modernist architectural heritage, known only to a highly restricted community of architects and researchers. However, the process of unearthing these hidden stories carries with it the potential of re-discovery of the multi-layered character of the “sleeping districts”, and introducing to the public a more complex picture of the under-discovered forms of the modernist architectural legacy. More generally, this might provide a significant stimulus for the emergence of public architectural excursions as a curatorial practice, broadcasting the architectural narrative to a wider audience, re-introducing the modernist architectural legacy and thus reducing the gap between utopia and citizen. In addition, this approach could help encourage a “topophilic” outlook within heritage¹², within which in-depth understanding and re-discovery of hidden values could excite a bottom-up process of heritage protection and reuse of the heritage at a higher level of quality. In this case, the architectural narratives could add a layer of added cultural value on top of the tabula rasa, later to be augmented by the contributions of the transformative practices and narratives of the local residents, which in turn pointed towards the “to-be-value of an object”.

3. HORIZONTAL VISION: “WALK AND TALK” WITH LOCALS

In the course of an interview, “Preserving the Generic”, in which he daringly attempted to evaluate the heritage potential of a serially-prefabricated 1970s housing complex in Moscow (Belyayev) through the criteria listed on a UNESCO World Heritage nomination form, the historian Kuba Snopek argued that “If there are intangible, immaterial, non-architectural values that actually reinforce the architecture, it can be more valuable”¹³. Thus, the everyday life history of the residents, as it had evolved and ripened in and around the supposedly generic

architecture (whether the evidence for that history was intangible, immaterial, non-architectural or embodied in a more solid form), could help create a more complex and flexible socio-spatial pattern of organisation and practices than the simple plans and programmes of the original architect had been able to do. And all this complexity might potentially reinforce the value of the everyday urban and architectural modernist legacy.

Socialist modernist “sleeping districts” were constructed in the form of mega-scale skeletons, but over the course of several decades, these skeletons were filled in, dressed up, modified, reshaped and turned into peculiar organisms – a process for which the residents themselves were almost entirely responsible. These spontaneous changes and transformations of the original architectural forms and functions could, of course, be negatively interpreted, as a “parasite practice” distorting the initial monumental identity of the modernist architecture on a large scale. Positively viewed, on the other hand, these mutations, in all their various phases, can help accentuate the added value of the heritage (including its casual non-exclusive legacy), especially if large-scale modernist housing areas are considered as a large-scale example of the Open Form theory¹⁴ in action (including its “to-be-completed” syndrome). Although the process of mutations and transformation could hardly be seen as a heritage itself, it undeniably helps highlight the natural fluctuations of solid modernist architectural form between its elite origins as a piece of art and the egalitarian patterns of its reuse. This constant



FIGURE 4. Reuse of modernism: pixel as a Souvenir. © K-lab, 2014.

dialogue between the artist/architect and spectator/user/resident, as a long-term process of creating an open work, demands specific curatorship attributes, in order to adequately communicate and clarify it. The discovery and understanding of the spontaneous transformations and mutations of the modernist Open Form, along with all the complex ways in which it is stimulated and overlaid by the history of everyday life, might help us in re-appreciating the “sleeping districts” and in grasping new insights about future scenarios of reuse – but all this could only fully emerge following a switch in focus to the horizontal vision of the resident. Appreciation of this fact has doubtless fuelled the recent boom in “horizontal walks” with local inhabitants, carried out by, for instance, the Laboratory of Critical Urbanism, LUNI, Laimikis.lt, Gatvės gyvos, Šančių kioskas, or K-lab, and used as tools in different urban-activist initiatives.

These examples of Lithuanian “walk and talk” practices can profitably be seen in the context of a range of similar international initiatives in central, northern and western Europe. These include, for example, the excursion series by Linnalabor *The Past is Present: Life in a Housing Estate* – taking in 3 modernist residential districts in Tallinn (2013-)¹⁵; the community-oriented project *Tenants’ Narrations around Urban Utopias* in the Słowackiego Estate in Lublin (2014-)¹⁶; or *B_Tour*, a curatorial platform for artistic urban tours and urban practices in Berlin (2013-)¹⁷ and the exploratory walk series, *Where to build the walls that protect us* by Writes & Sites in Exeter, England (2013-)¹⁸.

In conclusion, it is possible to visualise these (semi-) independent urban-activist initiatives as a kind of re-interpretative activism, acting as a mediating force that could both fill the gap between the official institutions of heritage protection and its everyday users in the broader sense and also reconcile the vertical and horizontal visions of the everyday modernist architectural legacy. In all this, the mediating role of the activist/curators is directed towards channeling the energy and initiative of the local inhabitants. It is only they, after all, who can become the real promoters and driving forces of their place – reusing, rediscovering and re-appreciating the “sleeping districts”.

NOTES

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- 2 Kuba Snopek, interviewed by Marija Drėmaitė, "Preserving the Generic", in *The City. Breaking Points*, Vilnius, Architecture [publication] Fund, 2013, 155-160.
- 3 Miles Glendinning, "The Hundred Years War: a 'Long Century' of Mass-Housing Campaigns Across the World", in *The City. Breaking Points*, Vilnius, Architecture [publication] Fund, 2014, 13-30.
- 4 David Crowley, "The Fate of the Last Generation of Ultra-Modernist Buildings in Eastern Europe Under Communist Rule", in *Modernism: between Criticism and Nostalgia*, Vilnius, Architecture [publication] Fund, 2013, 29-40.
- 5 Claes Caldenby, "From Cradle to Grave. Living and Dying in the Urban Modernity", in *Living and Dying in the Urban Modernity*, The Royal Danish Academy of Fine Arts, School of Architecture, 2010, 5-17.
- 6 Marija Drėmaitė, Vaidas Petrulis, Jūratė Tutlytė. *Architektūra sovietinėje Lietuvoje*, Vilniaus Dailės Akademija, 2012, 130-225.
- 7 For instance, *Väike-Õismäe* in Tallinn (Mart Port and Malle Meelak, 1973-1984), *Osiedle Słowackiego* in Lublin (Oskar and Zofia Hansen, 1960-1975), *Lazdynai* in Vilnius (Vytautas Edmundas Čekanauskas and Vytautas Brėdikis, 1967-1973).
- 8 Marija Drėmaitė, Julija Reklaitė; Viktorija Šiaulytė, "Introduction: Modernism: between Criticism and Nostalgia", in *Modernism: between Criticism and Nostalgia*, Vilnius, Architecture [publication] Fund, 2013, 7-12.
- 9 Ernestas Parulskis, "Commemorative Plaques in Lazdynai", *ibid.*, 85-94.
- 10 The district was planned so as to preserve the natural hillsides and woods, positioning the housing blocks across the hills and dispersing them so that nature could easily penetrate the urbanised area. In addition, the architects developed alternative housing models (stepped, terraced, and of broken plan), together with specially-designed secondary schools and iconic reinforced concrete "monolith" tower blocks as landmarks, thus modelling the dynamic silhouette of the site.
- 11 Marija Drėmaitė, Vaidas Petrulis, Jūratė Tutlytė. *Architektūra sovietinėje Lietuvoje*, Vilniaus Dailės akademija, 2012, 130-225.
- 12 "Heritage of Everyday: Between Topophilia and Utopia. Lecture by Vaidas Petrulis", accessed on January 10, 2016, <http://archfondas.lt/en/discussion/post/heritage-of-everyday-between-topophilia-and-utopia>.
- 13 Kuba Snopek interviewed by Marija Drėmaitė, "Preserving the Generic", in *The City. Breaking Points*, *op. cit.*, 155-160.
- 14 "Oskar Hansen", accessed on January 16, 2016, http://monoskop.org/Oskar_Hansen.
- 15 An initiative by Linnalabor inviting participants to explore post-Soviet residential districts and to raise the question of what can be recycled from the utopian past into today's life and new utopias of the future. These considerations were also prominent in the Tallinn Architecture Biennale 2013 "Recycling Socialism" Vision Competition focused on the residential district of Väike-Õismäe.
- 16 Originally designed by world-renowned utopian architects, Słowackiego Estate is now a housing complex which provokes controversies. The local team of Lokatorzy (*Tenants*) collects inhabitants' narrations and tries to create new narratives of local pride, sense of community and responsibility for the future of the estate.
- 17 *B_Tour* is a platform to examine the current needs of urban life and to explore how art can be used as a tool to find possible answers to these needs, thus encouraging people to imagine new spaces for an urban society through artistic guided tours.
- 18 *Where to build the walls that protect us* (Exeter, 2013-) was a project by Wrights & Sites comprising 4x6-hour reconnaissance excursions, in which the participants had opportunities to encounter experts (climatologists, planners, community leaders and long-term residents), to gather material, and to contribute ideas to an ongoing planning enquiry.

Docomomo International of Tomorrow

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docomomo International (DI) conference in 2014 was the first to be held in the Far East. In Seoul DI's constitution was revised introducing reuse and sustainable development as significant ground of action. This revision motivated us to outline a reflection on the future of DI. We'll address this issue introducing multiple narratives. We propose to revisit the foundational subject of DI, to contextualize the conferences' milestones, and to associate their outputs to the political and economic conjunctures, which effected DI domain and scale of operation.

1. CONFERENCES, VENUES AND THEMES

Far from being neutral the locations of DI conferences were decisive in the selection of the key theme and in assessing the participation. In 1990 the first conference was held in Eindhoven, under the initiative of architect Hubert-Jan Henket, founding chair who had been commissioned to write a report on the *Zonnestraal* sanatorium. Designed in the late 1920s by architect Johannes Duiker, this ensemble is internationally praised manifesto of the *Nieuwe Bowen*. His future, as well as that of similar constructions generally neglected and unappreciated, motivated the creation of DI under the rubric of documenting and conserving "early modern buildings"¹.

Participation in the first conference was predominantly European and the spectrum of consideration driven by case studies. The geopolitical context had changed dramatically with the fall of the Berlin Wall, which occurred less than a year prior to the Eindhoven conference. This condition enhanced new freedom for circulation and thoughts within the Soviet bloc. The participation of countries from Eastern Europe offered the possibility to resume the "broken traditions" of modern architecture, as Vladimír Šlapeta from Brno remarked².

In 1992 the Bauhaus in Dessau, which was previously located in East Germany hosted the conference. Political affirmation of national/cultural identities produced a reordering of DI's initial national structure with the admission of regional chapters³. Moreover, the participation of representatives from the Americas pushed expanding the areas of interests with the inclusion of post-WWII architecture.

Barcelona in 1994, Bratislava, capital of the new Slovak Republic, and Stockholm in 1998 hosted international conferences. A conceptual modification was introduced focusing the conferences on a theme, namely "universality and diversity" in 1996 and "social aspects of architecture and urban planning in the Modern Movement" in 1998.

The new century marked a decisive move towards the either side of the Atlantic Ocean. International conferences took place in Brasilia (2000), in New York (2004) and in Mexico City (2010). Paris (2002) coincided with the relocation of DI's secretariat at the *Cité de l'Architecture et du Patrimoine* under the initiative of the French chapter and the French Ministry of Culture. The Paris conference held at UNESCO headquarters addressed the theme of the reception of modern architecture. It has been the most theoretical conference.

In 2006 the Turkish chapter organized the conference in Ankara. The attempt to move another geography proved to be successful, opening up to other modernities. At the time Turkey was negotiating accession to the European Union.

The 10th anniversary (2008) of DI was celebrated in Rotterdam. The conference took place in the Van Nelle Factory, whose conservation process and adaptive reuse has since become a model practice.

At Helsinki (2012) the participants affirmed the need to expand the definition of architecture as introduced by the Modern Movement. Architect John Allan, who gave the keynote lecture, suggested "other motives for keeping a modern building"⁴, changing the focus from historical to environmental conservation.

Seoul conference (2014) marked a turning point with many professionals and scholars from Asian countries attending the meeting. Nevertheless, Africa remained still under-represented. Along with the change of geography, a generational renewal was also noticeable.

2. NEW GENERATIONS AND THE AWARENESS OF THE MODERN MOVEMENT

Presently several generations coexist in DI. The founding members shared a direct link with the Modern Movement. Among them Hubert-Jan Henket, first chair, was a student of Aldo van Eyck. Architect and historian Dennis Sharp, educated at the AA in London, was a strong advocate of British Modern Movement. Catherine Cooke who collaborated with Aalto was pivotal in opening the connection with Russia. Architectural historian Roberto Segre participated in the Cuban revolution before moving to Rio de Janeiro.

DI has also been a laboratory for growing expertise. To mention a few, Wessel de Jonge, first secretary of DI, has become a professional authority in the field of conservation; architect and historian Miles Glendinning has contributed to the history of conservation.

Within the geographical and generational extension and due to the diverse relations to the Modern Movement experienced among DI's members, it is timely to explore again its meanings. Susan Friedman's instructive approach in which she introduces fictional processes to capture the multiple meanings of modern/modernity/modernism could be adopted as an exemplary attitude⁵. The controversial charges related to these definitions cannot be ignored at the risk of depriving their critical power at the core of DI's discourse.

Heralded in the interwar period, at the initiative of Nikolaus Pevsner as the banner under which architects contributed through innovation to the march of progress⁶, the original statement of the Modern Movement has then been questioned by several historians. Rejecting any label, Reyner Banham regarded the machine age as the spring of progressive architecture⁷. Manfredo Tafuri was among those who destabilized the Modern Movement and recognized in its premises a mere consolation fable, a myth masking allegiance to capitalism⁸.

Nevertheless, despite discredit, in the late 1980s the Modern Movement was waved to mobilize historians and architects to ensure its prolongation. With the foundation of DI the Modern Movement was again championed, this time in connection with conservation more concerned with continuity than change. However, in the spirit of the founders, DI aimed not only to oppose the destruction and disfigurement of the icons of the Modern Movement, but also to challenge and perpetuate its values of social justice and to continue the unfinished project of modernity⁹.

Looking backward we wish to acknowledge the utopia of that project. In the 1990s the neoliberal economy was well established, with its questioning of social policies, particularly in the area of housing. The rewriting of history had become a priority and the pluralities of the Modern Movement(s) were explored in regionalist and postcolonial perspectives. This trend was evident during the closing of the conference in Ankara where Alan Cunningham, one of the founding figures, challenged the notion of modernism being common ground¹⁰ and re-affirmed the doctrinal and orthodox interpretation of the Modern Movement.

3. THE NOTION OF HERITAGE, HOW TO ASSESS IT?

In Seoul the members of the Council questioned the concept of conservation and proposed a revision of DI's mission bringing reuse and sustainable development into the play. In re-writing DI's statement it became clear that:

- Documentation having become a current practice was less compelling in conservation process;
- Interventions were heavily overcoming conservative repairs.

The shift is relevant because adaptive reuse, the new credo, can be violent. It can violate the symbolic dimension of modern architecture. How far we can accept the idea of architecture being a victim, a void container? In this sense we are facing a process of fabrication of heritage values, applying a hardware practice to very subtle software materials.

In contemporary society heritage is above all a game of political and economic powers. It occupies a significant position in the configuration of cultural legitimacy, as well as in the definition of local identities. In questioning the role history will play in the future, this expansion goes hand in hand with an anti-historical approach in favour of a sustainable survival of architecture, not matter how and when it became modern.

Docomomo and the Ongoing Machinist Tradition

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The early modern call for a machine aesthetics sprang out of the dream for efficiency, simplicity, economy, 3 characteristics of the machine that could be transferred to architecture, an architecture in search of new models, new goals, new forms.

The modern fascination with cars, planes, transatlantic ships, grain elevators, among others, was an attitude of discovery and projection. It opened a new era – “*une grande époque vient de commencer*”¹ – that would develop into the modern 20th century, and then into subsequent revisions, critiques, redirections and rejections.

This paper proposes a reading of this modernity in the projection in time of these sentiments, an idea that inherits that initial fascination with a technology that would (did) change radically the way in which architects gave form to their projects.

According to this interpretation, we are currently dealing with a tradition that is now turning 100 years of age and still remains today the mirror of that original attitude of discovery and of “newness”. Is it appropriate, then, to speak of a modern heritage? How can we deal with an evolving heritage, based on the principles of modernity, if we accept that we are still surrounded by those same ideals in a world that changes and develops new technologies? In that way, we can enter a discussion on that fundamental question of the session about **docomomo**: Is its function fulfilled? Can it be fulfilled? Or is it an ongoing and (judging by the Seoul revision of the Eindhoven Statement) evolving mission? Does it have the same signification in Europe, Asia, Africa or Latin America, regarding its past but also its future?

These questions were not posed at the beginning of **docomomo**; they were then useless questions or, at least, unforeseen worries that we can only state today, 28 years later.

This paper explores the problem stated at least in the last 4 **docomomo** conferences: The future of the organization and the fulfilment of its mission. Blurred as these definitions can be, what remains certain is that **docomomo**'s acronym deals with documentation and conservation of the Modern Movement architecture. We can skip the ideological or historiographical connotations of the “Modern Movement” phrasing, but all **docomomo** members agree that we deal with a kind of architecture that sprang out of a dream – and a very practical need – for efficiency, simplicity and economy, 3 characteristics that the modern architects found in the machine, the iconic feature of the industrial revolution. They told the world that the 20th architecture should be as efficient, simple and economic as a machine. Transferring these principles to architecture would make it better to answer for the modern man's needs. It was this intention, and not a radical rupture with history, that made them search for new models and forms for this new architecture²

Why were the architects fascinated with cars, planes, grain elevators, and transatlantic ships? Because these new machines represented a technological promise of discovery and a projection into the future. They believed in the possibility of finding in them a new path to architectural changes. This was evidently not a single-sided view, and there never was a unified vision of how things had to be done. The distance between figures as Hannes Meyer or Karel Teige and Le Corbusier³,

for example, and all the variations that can be found in between, show how difficult was to systematize something that was being created and could never reach a point of codification agreed upon by all.

Can we say that the machinist tradition of the first modern architects is no longer active for today's architecture? Interpreting that historical moment from today, we see that technological projections and the promise of putting them to use in the architectural work have not ceased to fascinate architects and designers. Yesterday's cars, airplanes, and grain elevators are today computers, internet, the communication revolution, the virtual reality, even the augmented reality (whatever that is). The process of technological development has suffered no discontinuity since the first years of the past century; we are living in the same ongoing machinist tradition.

Technological changes have been, nonetheless, enormous since the first years of the 20th century. Nobody could have foreseen then the advances that surround our 21st century lives. But, in a certain way, life is not so radically different than in that past, as is evident from the futuristic views that imagined the year 2000 in 1950, for instance: we keep driving cars with four wheels that run on the road and do not fly.

Can we say the same about buildings?

Apart from some new materials and some futuristic additions to the electric or electronic wiring of today's buildings, what we make today is strikingly similar, in technical terms, to what was built in the 1920s. Let us compare the sewage system of present houses with the system used 100 years ago or the laying of bricks in a wall: exactly the same, and in the latter case, unchanged since the Romans. As if technology had not advanced one inch.

Aware as we may be of the technological impulse as an igniting force for modern architecture in its first years, we have to realize that it was not only an initial impulse rather a condition that could serve for any period in history. That is why we call historical periods after its technological shifts: Stone Age, Iron Age, and so on. And architecture has always gone along these technological shifts. So the "machinist" age of the first decades of the 20th century led Reyner Banham to talk about a "machine age", the first "machine age" (we are supposed to be in the second one)⁴.

And then comes **docomomo**. An organization whose aim is to document and conserve the architecture produced – oughly – between 1915 and 1970 (we will never agree on the start and end of modern architecture, so those years are just a hint of a possibility, something that this paper will try to disprove).



FIGURE 1. José Covacevic, Hugo Gaggero, Juan Echenique, José Medina, Sergio González Espinoza (1972); Cristián Fernández and Lateral (2005), UNCTAD III Building, Centro Cultural GAM, Santiago, Chile. View of the original building in 1972. © Jack Ceitelis.

An organization whose origins were rooted precisely in the need for sharing knowledge on those new technologies that in 1988 were lost or about which there was not enough expertise to enhance restoration projects⁵.

Documenting buildings and conserving them is not a difficult task in itself, as long as the documents and the buildings are there. And looking at what each chapter considers worthy of documentation and conservation, and the variety of styles, aesthetic affiliations, types, or technologies selected, the ideological definitions of the Modern Movement start to blur⁶.

Among the several issues that **docomomo**'s task addresses, I would like now to concentrate on the future of the organization and the fulfilment of its mission, as expressed both in the extension of the organization to non-European countries (and architectural traditions) and the localized ideological signification of modern architecture as opposed to what is – almost – the same in every place as in every time: the building.

docomomo started its mission with a very closed view of its scope: European modern architecture. That was the widely accepted historiographical view about architecture: Europe as the centre and the world as its periphery; a view that still permeates almost every work on architectural history.

But the organization has extended to more than 60 countries today, on the 5 continents, which forces us to review some of the historical certitudes around which the general historiography has been written. Can it still be said that modern architecture “arrived” in Latin America and forced local architects to design their buildings in an absolutely foreign way that, in the end, alienated what the people wanted or needed? We need to free historical interpretation from those shortcuts that stay on the surface of reality and doesn't see the variations or the differences beyond the apparently obvious. The development of modern architecture in Brazil, for instance, does not have a full debt to European architecture, and cannot be interpreted as an imported style. The modern vision of the world was a reality that occurred in every region. It did not happen at the same time everywhere, and maybe it happened indeed before in Europe, but the centre-periphery structure does not explain the richness and imaginative designs of Niemeyer, Testa, Williams, Dieste, Candela, and so many others that, in Latin America, forged a modern architecture that does not need adjectives: it is plainly modern.

Looking at that same development in Asia or Africa could show us even more on the same line: a modern architecture that, depending on the place, takes different needs and proposes different answers, and keeps being equally modern.

There is, indeed, a debt in the historiographical study of 20th architecture that accounts for an interpretation free from the centre-periphery view, away from the view that identifies the “heroic” moment only with the first European modern architects and puts everybody else as a “second generation”.

The extension of **docomomo** beyond the boundaries of Europe is not only a geographical problem; it is an essential challenge to the general definition of modernity that has permeated the theory and critique of modern architecture.

And, regarding this geographical-ideological extension, delimiting what happened in Europe before the Great War as a “first machine age” is no longer useful, in part because the machine to which we are referring is not the same everywhere and did not impact architecture in the same way. It is in that sense that we can say that we are living now in *the machine age*, in a continuing tradition that lasts until today.

Playing along, then, with Banham and his “machine age” connotation, and looking around and seeing that the world in which we live is not so different than the world described in his pages, we arrive at the question of **docomomo**’s mission.

My interpretation is that it is not yet fulfilled as stated in its constitutional documents. And it is not fulfilled because it cannot be fulfilled, unless we arrive to a point in history that would be similar to a paradigmatic change in its technological and physical order. Today’s technology is impressive, but not absolutely alien to someone from the beginning of the 20th century. In several occasions it has been discussed in **docomomo** about the temporary scope of its mission: are we about to document and conserve buildings until what year? Are we so beyond modernity and assume that it ended around the 1970s so a building designed in the 1980s is absolutely out of **docomomo**’s reach? When in Seoul the Eindhoven Statement was amended to include the adaptive reuse as a central preoccupation of **docomomo**’s future, it meant an unexpected life extension for the organization’s mission.



FIGURE 2. José Covacevic, Hugo Gaggero, Juan Echenique, José Medina, Sergio González Espinoza (1972); Cristián Fernández and Lateral (2005), UNCTAD III Building, Centro Cultural GAM, Santiago, Chile. View of the building in its present state. © Maximiano Atria.

If a modern building is valuable and we succeed in adapting it to new uses (which means some transformation of the building or at least an updating of its technical apparatus), does it cease to be of **docomomo**'s concern? And if we value a building which answers today's needs while built 50 years ago, why not a building that does the same, but built 10 years ago? If – and this paper precisely proposes – we accept that we are in the continuation of the same “machine age” of the European heroic years, is not the production of today's architects also the subject of **docomomo** now and tomorrow? If we do not take that step, in 50 years from now **docomomo** will be worried about a modern heritage that will have been overruled by a newer heritage – maybe Postmodern?⁷ Balancing the principles of modernism with a continuing architectural production that could include the recent past would lead **docomomo** to come to terms with what normally has been described as the ending years of the Modern Movement. Wouldn't **docomomo** raise its voice against, for instance, an eventual disfiguration of Stirling and Wilford's *Neue Staatsgalerie* in Stuttgart (1977-1984), if it were endangered? Or Stubbings' Citicorp Center in New York City (1978)? Or Piano and Rogers' *Centre Pompidou* in Paris (1971-1977)?

Enlarging the scope of **docomomo** and addressing the issue of adaptive reuse will lead the organization to address the problem of the modification, not only of the building's physical appearance, but its symbolic or historic role also. In other words, a building designed for a specific use in the 1950s, adapted for today's needs in 2016 should be looked at with a different approach to what it means for society – different because the 1950s' society is no longer the same than today's society. And that approach – the symbolic one – is the problem that **docomomo** should include in the “adaptive reuse” issue, not only a problem of updating, but a problem of – in the words of the former **docomomo** International chairwoman, Maristella Casciato, – “resemantization”.

There is in Chile precisely a case in which that discussion is present (symbolism, technological design, adaptive reuse, “resemantization” and all): the UNCTAD III complex, built by Salvador Allende's socialist government for the 1972 *United Nations Conference on Trade and Development* and successively transformed since then.

The complex was built in 275 days in the rush to reach the deadline for the opening of the conference in 1972, and received delegates from all over the world during the weeks that the conference lasted. In a way, the need for inaugurating the building on time made the architects work on it inspired (maybe unconsciously) in the idea of the building as a machine. There were no concerns about composition or proportion, but only for efficiency and speed to meet the deadline. It was, therefore, treated as an integrated machine, and was built, as in an assembly line, in parallel tracks. The edifice is actually composed of 2 buildings. A huge roof structure supported by 16 independent concrete columns, and metallic “boxes” built underneath to enclose the conference halls and the rest of the program. Instead of building a single big building, they built 2 smaller ones, divid-

ing time in half and working in three shifts to speed construction. It also integrated in its design many works of art by the leading artists of the country, who designed appliances, wall furnishings, doors, ceramic tiles, lamps, etc. with the intention of getting high art to the masses. The artists were treated as a subcontractor, and their work was controlled in technical meetings together with the revision of other subcontractors. Once the Conference ended, the building was turned – without much intervention – into a popular cultural centre, named after Chile's first Nobel Prize poet Gabriela Mistral, and included exhibition halls, a public cafeteria and a library.

In September 1973, during the *coup d'état*, which upturned Allende's government, Chilean Air Force's fighters destroyed the Presidential Palace of La Moneda (with President Allende inside). The generals' Junta that took power decided to transform the former UNCTAD complex into its headquarters. In order to change its symbolism, they shut down the cultural centre, stripped it of most of its integrated works of art and closed its open facade in a literal re-connotation of the new function of the building. During Pinochet's dictatorship, Allende's architectural jewel was turned into the architectural personification of that dictatorship.

When in 1980 the Presidential Palace was restored and Pinochet installed himself there, the UNCTAD complex – renamed after a minister from the 19th century famous for his “strengthening” of republican authority, Diego Portales – was used as the seat of the 4-member Legislative Power (the Junta itself), and a symbol of undemocratic rule.

In 1990, after democracy and the elected Congress were re-established in Chile, the complex lost again its previous identification and remained as a conference centre until a fire destroyed a big part of the building in 2005. There were cries calling for taking advantage of the fire as an opportunity to demolish what rested of the complex – cries that came from architects as well as from the general public, and from both sides of the political spectrum. Discussion ended when the government (led again by socialist President Michelle Bachelet) decided to transform it again into a cultural centre. It was again transformed, opened, refurbished with works of art (some new and some of the recovered originals), renamed with Gabriela Mistral's name and re-inaugurated as today's most active cultural centre in Chile.

If we need an example to define “resemantization”, there is no better case than this building, and the fact that it is listed in the **docomomo** Chile selection is a proof that **docomomo**'s mission not only cannot be fulfilled, but that it is open to deal with the future of the buildings that it is precisely calling for reuse.

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NOTES

- 1 Le Corbusier, *Vers une Architecture*, Paris, Crès et Cie, 1923.
- 2 This quote from Le Corbusier is useful regarding this issue: "Today I'm accused of being a revolutionary. Yet I confess to having only one master – the past: and only one discipline – the study of the past." Le Corbusier, *Precisions on the Present State of Architecture and Planning*, Zurich, Park Books, 2015.
- 3 The distance between Le Corbusier and Hannes Meyer is more explicit regarding the rational approach of the latter as opposed to the former more plastic relationship towards architecture. In his text entitled "*Bauen*" (1928) Meyer expressed the rejection of architecture as "art" by even denying the idea of composition, whereas Le Corbusier located himself nearer an idea of architecture based on design, proportion, and the use of light as a defining element. To illustrate this distance it is useful to compare these two sentences: "Architecture goes beyond utilitarian needs. Architecture is a plastic thing.", in Le Corbusier, *Towards a New Architecture*, 1927 and "All things in this world are a product of the formula: (function times economy).", in Hannes Meyer, "*Bauen*", 1928.
- 4 Reyner Banham, *Theory and Design in the First Machine Age*, Cambridge MA, The MIT Press, 1980.
- 5 From a conversation between the author and Wessel de Jonge in Santiago (2005).
- 6 See Dennis Sharp and Catherine Cooke (ed.), *The Modern Movement in Architecture: Selections from the **docomomo** Registers*, Rotterdam, 010 Uitgeverij/**docomomo**, 2000.
- 7 "Postmodernism" proposes in itself an interesting issue, which would be worth a paper of its own. Regarding the historical continuity or – discontinuity – reviewed in this paper, historicist postmodern architecture could be considered a part of the same tradition and we could be discussing its value – or the lack of it – in terms of documenting and conserving it as part of **docomomo**'s mission. Discussion about conservation of some iconic postmodern buildings in the UK has already started, for example, and a group of Chilean graduate students founded around 2005 a movement called Docoposmo.

Roberto Segre (1934-2013): A Case Study on Docomomo and the Path of Modern Architectural History

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In the course of its existence, **docomomo** International gathered different generations of architects and historians coming from distinctive geographies and contrasting experiences of the Modern Movement whose individual and collective questioning contributed to a methodology for safeguarding the heritage of modern architecture as well as advancing modern architectural historiography. In this context, through its globalized network **docomomo** had a fundamental impact on the academic studies dedicated to the Modern Movement.

This presentation aims to scrutinize **docomomo's** impact on the modern architectural Brazilian historiography through the analysis of the written production of Italian born architect Roberto Segre. Former member of **docomomo** and founder of the Rio de Janeiro chapter, Segre's oeuvre is examined along the critic intellectual trajectory and the developments of the Brazilian architecture historiographical discourse since 1992 when **docomomo** Brazil was created and the discipline of architecture history was enlarging its temporal and geographical borders to face the challenge of revising its modern architecture main historiographical narrative.

1. INTRODUCTION

In 2000, Herbert Muschamp observed that in the USA, **docomomo** was facing greater ideological obstacles for “[...] in no other country has modern architecture been so thoroughly reviled as the enemy of history”¹. Instead in Brazil, during the same period, the young **docomomo** Brazilian chapter was enthusiastically embraced by both the academic milieu and the institutions involved in preservation.

This presentation proposes two main questions:

1. Which could have been the peculiarities of the Brazilian context that allowed the **docomomo's** fully reception and its further theoretical and methodological impact on the academic milieu?
2. How can one understand the affinities between **docomomo** and late historian Roberto Segre (1934-2013), who from early 1990s until his tragic death in 2013 was captivated by the organization's project, fully assuming its ideals when in 2007 led the creation of Rio de Janeiro **docomomo** chapter? He then made the promise to fight for the recognition of the Ministry of Education and Health building as “humanity cultural heritage”, the ultimate argument of his last written oeuvre.

Muschamp's article might give us some clues for both answers when it justifies **docomomo** founders' conviction in a modernism that "[...] does not represent a style, a period or a formalist proposition, but the belief that buildings have an active role to play in shaping the cultural values of their time"².

Indeed, the phenomenon of Brazilian modern architecture between the 1930s and the construction of Brasília was more than a style, part of the cultural framework that carried the promises of a new national identity. Hence **docomomo**'s fruitful reception in Brazil after the end of the military regime (1985) might be understood considering the attraction exerted by its extended cultural approach on the Brazilian best scholars who had recently began to scrutinize either the ideological conceptions that oriented Lúcio Costa's long lasting historiographical construction forged between those decades in Rio de Janeiro, or other engaged and influential actors and expressions in the Brazilian architectural scenario like the militant architect João Vilanova Artigas. The same larger approach with a particular comprehension of the social ideals of the Modern Movement – fully laid out at the 5th *International docomomo Conference* in Stockholm (1998) – met Roberto Segre's own convictions regarding the role of modern architecture. A belief forged in the end of the 1960s, within the cultural context of the détente, the decolonization processes, and the need to house the large numbers in Asia, Africa and Latin America, when the young scholar was pursuing an "architecture for Third World"³.

2. DOCOMOMO INTERNATIONAL RECEPTION IN BRAZIL

The establishment of the Brazilian chapter in 1992 was almost concomitant to the turning point of the architecture and urban historical studies at the end of the 1980s represented by a continuous raise of a historiographical production vis a vis new theoretical and methodological approaches. Those new scholarly results were due to the maturation of the post graduated programs in the country and the flowering of a number of magazines dedicated to architecture and town planning that stimulated architecture criticism and offered a platform for the academic production: *Projeto* (1979, SP), *AU* (1985), *Gávea* (1984-1997, PUC, RJ), *Óculum* (1992-1997, followed by the *Boletim Óculum* between 1997-2000, PUC, SP), *Arquitetura Revista* (1985-1990, UFRJ), *Rua* (1989-2006, UFBA), *Revista Pós* (1990, FAUUSP), among others.

Hence as part of an international organization which offered and promoted dialogues between scholars around the world **docomomo** Brazil chapter received immediate support and shelter in the academic milieu. Eventually the Brazilians fully assumed the compromise with the 3 key principles for the **docomomo** International, namely "maximum local freedom and minimum global rules", "minimum bureaucracy", and "energy and production through friendship"⁴, as

well as its itinerant character. Moreover, the biannual national meetings turned into a fundamental platform for the post-graduate research programs and the preservation institutions, stimulating the discussion between academics and professionals and the exchange of methodological and theoretical advances that had enriched and influenced the Brazilian cultural policy towards the MoMo heritage.

The awareness concerning the diversity that modernity assumed in time and geographies as advanced and fed in the contemporaneous **docomomo** forums, represented by **docomomo Journal**, the international conferences, in addition to the Brazilian continental extension, led to the creation of regional and local chapters endorsing local actions and specific discussions. Besides the wave of surveys and registrations of the MoMo architectural and urban fabric all around the country, without doubt the Brazilian architecture urban historiography benefited of what Maristella Casciato identified as “the unique asset of **docomomo**”, meaning “[...] the debate on the distinctive perspectives of ‘otherness’ encompassing historiographical theory, building techniques, cross-disciplinary approaches, cultural history [...]”⁵.

In this sense the Brazilian’s MoMo found a place at the **docomomo** International discussions that embraced equally the “north” and the “south” contrary to the discussions that took place earlier in the 1980s inside the SAL (*Seminarios de Arquitectura Latina Americanos*) meetings under the cover of an abstract Latin American cultural and architectural identity.

The first revisionist writings of Brazilian modern architecture historiography between the end of the 1980s and during the 1990s were characterized by the deconstruction of the traditional historiography and the recognition of the architecture work as part of other readings and particular wefts. Conveying connections and dialogues, **docomomo** was responsible for the introduction of new perspectives. The first one, illustrated either by the monographs on architects or/and their specific projects, would evolved in the next 2 decades from the already known heroic or almost mythical figures in São Paulo (Rino Levi, Vilanova Artigas, Paulo Mendes da Rocha, Oswaldo Arthur Bratke, Lina Bo Bardi) and Rio de Janeiro (Lúcio Costa, Oscar Niemeyer, Roberto Burle Marx, Francisco Bolonha) to the unknown others who had been left aside by the former historiography. The trajectories of these later would encourage the uncovering of the cultural transferences and reception processes, including the dynamics of the urban tissue without ideological prejudices. In the same tune the discussion of specific typologies has been contemplated as well as the analysis of “other” sources for the architecture historical research – the professional local and international written press, architecture manuals and books, and medias such as photography and films – discussed together with issues of gender, and the endless associations admitted by the concept of synthesis of the arts.

3. ROBERTO SEGRE: THE VICISSITUDES OF A LATIN AMERICAN SCHOLAR

It was in 1994, in the very first years of the establishment of the Brazilian **docomomo** chapter that the Italian born architect Roberto Segre arrived in the country from Havana invited as a professor and researcher by the Faculty of Architecture and Urbanism of the Federal University of Rio de Janeiro.

Born in Milan, in 1934, and descending from a multicultural family, a middle class Jewish father and a working class catholic mother, Segre graduated in 1960 at the FAU in Buenos Aires, where the family arrived as refugees in 1939. His formation years were enriched by a profound identification with the Italian architectural culture having visited the country twice during those years.

In 1963, he left Buenos Aires and moved to Cuba as a professor at the School of Architecture in the University of Havana, where he taught during more than 30 years and from where he began to involve himself in the theoretical debate on Latin American architecture and urbanism in 1969, assuming as the rapporteur of UNESCO's publication *América Latina en su Arquitectura* (1972).

The socialist regime attracted the Italian left and Segre found himself between a number of intellectuals, politics and professionals who visited the island or settled themselves there intending to help the erection of a "new society"⁶. In this context it is understandable that Segre's first book dedicated to the island architectural production during the 1960s, *Cuba. Diez Años de Arquitectura en Cuba Revolucionaria* (1970) was published in Italy and Spain at the same time. The book found its main sources on the French and Italian progressive critical literature of the period. Segre, like other architects and critics of his generation, was driven by the need to clarify the idea of a revolutionary architecture for the Third World in its ideological, functional, aesthetic implications as well as in its content:

*Is it valid to apply this expression to the form divorced of its ideological contents? How the ideological content of the new society expresses itself in the architecture that represents this society, the revolutionary one? Is it possible to talk about an architectural revolution in terms of form-space-technics-function that could influence society? Could it be possible to assume forms, "revolutionary" structures or spaces, outside the social revolutionary functionality that might precede and motivate them? Could one assert that the true revolutionary architecture was not realized yet due to the fact that the socio cultural premises in which it is grounded are not still in practice?*⁷

And although the text is permeated by the dualities of the critic trapped between his commitment to a modern architecture without national borders, the nationalist rhetoric and dogmatism of the Cuban state, and the architects who "spread the crisis of the [modern] movement..."⁸, yet he reaffirmed the fundamen-

tal architectural sources of a new Communist society between the experiences of the Russian vanguards, its repercussions on the European culture, and the contemporary architectural waves of the capitalist technically developed countries, believing that the heritage of the Modern Movement could be revitalized to answer the unique dynamics and questions of the Third World.

What distinguished Segre's position within the Latin American scholars of the period was his understanding of Latin America not as an isolated phenomenon but tied to the cultural waves born in the "developed" (Western) countries that pervaded the continent since the colonial domination, and whose representative elements have been assimilated through time in a persistent bidirectional communication between the "developed and the underdeveloped world". The above argument represented by the author's assertion that "all isolationisms – nationalist or folklorist have a reactionary content [...]"⁹ would eventually be freed from its Marxist critical approach and evolved to present itself throughout Segre written oeuvre dedicated to Latin America architecture and urbanism during the next decades.

During the 1980s, Segre position regarding Latin America cultural identity – then developed and defined in terms of a "dialectical relationship forged between internal and external influences"¹⁰ – clashed with what he called the "hegemonic jet-set of the Latin American criticism"¹¹ that dominated the SAL seminars. In his book *América Latina Fim de Milênio. Raízes e Perspectivas de sua Arquitetura*, published in Brazil (1991), the critic resumed his previous elaborations and criticized those who disregarded the relation between cultural values and social, economic and political reality in favour of the aesthetic problematics expressed in the type – morphological debate, as well as the one-dimensional understanding of Latin America architecture, claiming for a larger cultural approach:

*the debate concerning the meanings of modernity, identity, tradition, cosmopolitanism, and vernacular should not be defined mainly in terms of architectural expression, but by the social and economic context [...] should the critics define the validity of the diversity from its conditioning factors or impose an abstract and theoretical unity finally denied by the development of the socio-economic structures prevailing in different countries?*¹²

In tune with the viewpoints that supported the creation of **docomomo**, Segre recognized Latin America's cultural diversity and the distinctive expressions of its modernity as a consequence of the socio economical particularities across the continent, considering that his fundamental responsibility as a critic was highlight the progressive and positive values of the new forms and spaces. He challenged the hypothesis that explained the neo vernacular modern expressions as a continuity of colonial traditions invoking his hypothesis concerning a continent in a permanent dialogue with other cultures:

*Latin America is an amalgam of unique people that make up a diversity of ethnicities and cultures impossible to summarize in a single main trunk development [...] the evolvement of a self-expression is produced from the synthesis between the external and internal through the maturing process of the dominant currents [...] assimilated and realized [...] whose originality [...] turn them into the heritage of the society that generated them.*¹³

His elaboration echoed Lewis Mumford's *The South of Architecture's* discussions and contested Cristián Fernández Cox's formulations, which counteracted "a system of exogenous elements to a national system of elements within Latin American environmental reality"¹⁴. The positions defended by Segre in the SAL debates around the concept of regionalism and its translations, found affinities among **docomomo's** directives delineated particularly after Dessau (1992) and Barcelona (1994) conferences that seek to scrutinize the present validity of the Modern Movement's cultural legacy in a broader sense, and in particularly the debate on modern architecture between universality and local historical memory, tradition and modernity.

Effectively, already in the early 1990s, Segre had approached Wessel de Jonge, proposing the creation of a **docomomo** Caribbean chapter. Nevertheless, in 2006, he would lead the founding group of the Rio de Janeiro chapter, and became its first coordinator. In his inauguration speech the scholar summarized the organization main goals stressing the importance of establishing the cultural value of the city's architecture and urban structure "[...] without falling in dogmatisms and aesthetic prejudices", and recovering "the awareness of the dialectic relationship between the Modern Movement and the expressions of other periods"¹⁵.

In the same speech Segre pointed out the outstanding signification of the Ministry of Education and Health building (MES) and emphasize its inscription by UNESCO. The MES would become the subject of his last book *Ministério da Educação e Saúde. Ícone Urbano da Modernização Brasileira* (2013)¹⁶.

Issued a few weeks after his death it was the apse of a long term research started in 2000 aiming to extensively analyse history, design, structure and all the architectural complexity of the iconic object. At the UFRJ he developed and led a team of professors, researchers, PhDs, MSc, and undergraduate students, who incorporated digital representation and graphic computational facilities into the historic investigations of architecture and to his theoretical approaches, forged along more than 60 decades of architecture and urban criticism. Segre's major contribution to modern Brazilian architecture historiography was dedicated to disclose the implicit metaphorical meanings of the MES headquarters, the result of a teamwork led by Lúcio Costa. The aim of proclaiming the international crossing significances of this unique object led Segre to organize the 8th **docomomo Brazil Seminar**, housed in the auditorium of the former MES building, under the theme "Architecture+Art+City: An International Debate", that celebrated the 50th anniversary of the *International Extraordinary Congress of Art Critics* organ-

ized in 1959, between São Paulo, Rio de Janeiro and Brasília. The intense dialogue between Brazilian and foreigner scholars during that meeting answers the questions proposed by this paper and demonstrates Segre's leadership and the defining role of **docomomo** in the path of modern architectural history.

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Exploring Issues of Adaptivity – Theory and Practice

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This section aims to explore the notion of *adaptivity* and related topics in architectural design, education and conservation in theory and practice. In fact, adaptation of existing buildings to new needs has been inherent in common architectural practice for many years, but the reference to “adaptive reuse” in the Australia ICOMOS *Charter for Places of Cultural Significance* or *Burra Charter* (1979/2013) (art. 21), calls for a critical review of the underlying values of conservation and use of architectural heritage. In response to current issues of sustainability, climate change, new standards and new technologies, a reconceptualization of conservation doctrines and design attitudes is urgently needed. Whereas the Modern Movement fully embraced the “form follows function” paradigm and often proclaimed total replacement instead of adaptation, the international conservation movement has been mainly concerned with the study and safeguarding of architectural heritage as historical evidence for future generations, particularly in relation to building fabric.

With the recognition of such masterpieces of the Modern Movement as Jan Duiker's *Zonnestraal* sanatorium at Hilversum in the Netherlands (1925-31, nationally protected 1982-85) or Brazil's new capital Brasilia by Lúcio Costa and Oscar Niemeyer (1956-60, inscribed in 1987 on the World Heritage List) as architectural heritage, new challenges have arisen for their conservation and adaptive reuse. These challenges, varying from technological to philosophical and financial issues, led to the founding of **docomomo**, as we all know. They have deeply influenced the practice of conservation (often on the basis of an ideal of restoration to the “original”) but they have rarely acknowledged the difference between a materialised architectural concept and a heritage site. Actually, the frictions between idea and materialization still remain, because in many cases the modern monument can no longer be used in its original form *and* function *and* fabric. At least one of those

needs to be adapted to make the building fit for the future, due to new building codes, new technical requirements (safety and services), a changed context (physically, socially and/ or economically) and a higher required level of sustainability¹.

Although conservation is nowadays considered as a way of “managing change”, the international charters emphasize the “don’ts” more than the opportunities for change. They hardly address the architectural design challenges of reuse and *upcycling* as ways of sustaining architectural monuments as “living heritage”, or rather lived-in buildings. The *Venice Charter* of 1964 states that modifications to a monument demanded by a change of function may only be permitted if they will not change the lay-out or decoration of the building (art. 5). The *Granada Convention for the Protection of Architectural Heritage* (1985) supports “to foster the use of protected properties in the light of the needs of contemporary life” and “the adaptation when appropriate of old buildings for new uses” (art. 11); note: only “when appropriate” and “old buildings”, while reminding us that “disfigurement” of monuments should be prevented (art. 4.2). The *Burra Charter* (1979/2013) stipulates that a heritage site should have a “compatible use” (art. 7.2), which implies a need “to retain the cultural significance of the place [and] involve minimal change to significant fabric and use”.

From all these publications, and the *ICOMOS ISC20C Madrid Document* (2014), the question arises as to what parameters are available to judge the compatibility of an anticipated other use, or adaptation to current needs for a continued use. The same applies to the evaluation of new additions, services or other changes in relation to cultural significance, and implicitly, aesthetic qualities. So, how can architects and conservationists (and clients) come to a fruitful dialogue about the tolerance for change of a heritage site and its cultural carrying capacity? What are the margins for “minimal impact” and how should the concept of “reversibility” be applied²?

Over the past 3 decades, as a partly unforeseen result of these conservation doctrines, new interventions have been designed in an increasing contrast with the inherited site, in order to express its contemporariness, at least in the Netherlands. Also in other countries, too, the adaptation of built heritage to new uses has opened the door to ostentatiously contemporary interventions such as “Re-Architecture”³, often with the pretext of “reversibility”. Such contrasting new infills and extensions were initially witnessed mainly in the context of reuse of abandoned sites of industrial heritage, where the architectural tolerance for change was relatively great. The fact that industrial sites could be listed had already signalled a new stage in the evolution of the heritage concept. Gradually, however, a radical approach of reuse, and redesign, has also become fashionable for much more sensitive buildings like churches, town halls and alike, where the cultural carrying-capacity to absorb changes in fabric, colours and forms without disturbing integrity and significance is limited.

In particular, the adaptation of architectural heritage of the Modern Movement to new uses, energy saving and other needs poses a great challenge

that requires both a deep understanding of the site and the original design intentions and, above all, a humble attitude and special design skills of the “inheriting” architect in charge. In this sense, the notion of “integrity” is not only essential as a way of ensuring the appropriate preservation of a heritage site but is also important for architects and residents in general, as a moral duty to reduce waste and consumption of energy, material resources and space. Just as medical doctors keep in mind the Hippocratic oath to do no harm, also architects should deploy ethics “as another way to practice and design, in which we focus on what people, and the planet, really need and then provide that in as elegant and economically a way as possible”⁴ (in Thomas Fisher’s words) with the aim of minimising harm to our environment.

The following 5 contributions reveal how the challenges of adaptation were met in particular cases. With reference to the *Burra Charter*, Alistair Ravenscroft and Hannah Lewi discuss a succession of new additions on top of Melbourne’s office towers. The authors plead for a cautious approach to such architectural interventions.

The tangible and intangible aspects of adapting recent heritage are addressed by Ceila Rosana Carneira Cardoso and Ana Gabriella Lima Guimarães, who focus on the works and concepts of the Brazilian architect João Figueiras Lima, better known as Lelé. They signal a sense of duty to help Lelé’s schools (and other buildings) to survive by reinterpreting the original design concepts.

On the base of a hands-on example – the adaptation of André Lurçat’s school near Paris to current needs – Christiane Schmuckle-Mollard formulates four fundamental principles that should be applied in any similar project, thus contributing to theory from practical experience.

In contrast, Eduardo Fernandes critically reflects on the outcomes of 3 different cases of reuse with an emphasis on the (dis)continuity of use and design intentions, two in Portugal and one in France. Reform seems not always to follow function successfully.

Clarity and simplicity were key elements in Louis Kahn’s ideas on architecture, as seen in his construct of “servant and served” spaces, as David Fixler explains in his instructive paper on the repurposing of the Richards Laboratories in Pennsylvania (USA). Here, for the interventions and future maintenance, specific design and preservation guidelines were formulated, based on profound research.

The major lesson of all these contributions is that thoughtful adaptation is always prior to demolition, and perhaps even part of conservation.

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Reform Follows Function?

Reflections on the Reuse of Modern Buildings

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Today, we face the risk of considering that everything could be patrimony. In a world where the most constant feature is the permanent acceleration in the velocity of change, we tend to increasingly value our built heritage, as a reconciliatory mark of identity. On the other hand, our obligation to preserve the legacy we have inherited from the past must not inhibit the responsibility of building patrimony for the future: we also have to assure that the future generations will inherit the memories of the present time.

So, architects, urban planners and policy-makers must decide what is more important to protect, and how to protect it, considering different factors related to the social, cultural and economic importance of the building or site in question: age, meaning, rarity, authorship, quality, integrity, etc.

Time is a central aspect in patrimonial value, but age can be a biased factor, in the choice of what to preserve and how to preserve it. If we only focus on the age of the buildings, we will disregard recent architecture that represents an important legacy to the future.

The maintenance of the original program is also an important factor to consider in the rehabilitation of buildings; however, when facing the need to reuse, it is vital that the new program may be suitable to the pre-existing building. In an intervention on the 20th century patrimony, this question presents a delicate issue: if the original project was conceived under the notion that “form follows function”, how can it now be adapted to a new function without undermining its very reason for existence?

This paper addresses the question of reuse by presenting and analysing some examples of recent interventions on 20th-century built heritage that addressed this question in different ways: the Municipal Market Hall in Guimarães (José Marques da Silva, 1926-50), the *Cité Frugès* in Pessac (Le Corbusier, 1924-27) and the Tea House at *Leça da Palmeira* (Álvaro Siza, 1956-63).

1. INTRODUCTION

This paper aims to present *function* as an essential factor in the preservation of 20th-century architecture, considering that if a building was conceived under the notion “form follows function”¹, any inadequate reuse can undermine its very reason for existence. So, rehabilitation should consider primarily the maintenance of the original use, but when it is not possible and reuse is necessary, it is vital that the new program is suitable to the characteristics of the pre-existing building.

The analysis of the 3 examples presented in this paper is mainly concerned with the issue of function, in its many variables. It is only directed to questions of form and space in the particular aspects that are related to program, use and meaning.

2. THE MUNICIPAL MARKET HALL IN GUIMARÃES (PORTUGAL)

In 1926 José Marques da Silva was invited by the Municipality of Guimarães to design a new Market Hall on a site where a seasonal market had been held since the 19th century. His first proposal, presented one year later, was still influenced by his studies at the Paris *Beaux-Arts* School². In 1930 the construction began but, just 2 years later, Marques da Silva presented a new proposal with important differences in the language of the elevations, showing a clear influence of his visit to the *Exposition Internationale des Arts Décoratifs* at Paris in 1925³. Also, the immediate surroundings changed, when the construction was still underway⁴.

The project was completed in 1950 (after the architect's death, in 1947) under the supervision of his daughter Maria José Marques da Silva and David Moreira da Silva (her husband). The ancient uncovered market square was surrounded by the new building on 2 sides, opening commercial stores in the elevations facing the pre-existing Paio Galvão street and the new Conde de Margaride Avenue.

After decades of use and weathering, the building presented an evident state of decay⁵ in the beginning of the 21st century and would become outdated for its function. In 2007, a new municipal market hall was built in a nearby area. This political decision had provoked the protest of the market vendors, of their clients and of the city population in general⁶. Nevertheless, the old Market Hall was abandoned. Being an important component of the image of both streets and because it marks an important shift in Marques da Silva's work, the patrimonial value of this building should be treasured; but this importance (and the undeniable quality of its design) was not enough to justify a policy of protection⁷.

The only spaces that still remain in use are the commercial stores open to the outside. This operation was well intended and aimed to preserve the building while giving its internal space a nobler function: it would be a new urban square, animated



FIGURE 1. Marques da Silva, Municipal Market Hall, Guimarães, Portugal, 1926-50. © Eduardo Fernandes, 2016.



FIGURE 2. Marques da Silva, Municipal Market Hall, Guimarães, Portugal, 1926-50. © Eduardo Fernandes, 2016.

by the location of a new museum, the Platform of Arts and Creativity (finished in 2012)⁸. However, this reprogramming and urban and architectural reform may be criticized in view of adaptivity. The old building has now lost its internal purpose and most of its meaning, while the new museum lacks the potential impact that it could have if it were located facing a public space directly. The old market square, which cannot be qualified as public space, is now an undefined place, forgotten by the general population, where the memories of the old Market Hall compete with the new condition of being an antechamber for the new museum.

3. THE “CITÉ FRUGÈS” IN PESSAC (FRANCE)

The design for the “*Quartiers Modernes Frugès*” was commissioned to Le Corbusier and Pierre Jeanneret in 1924 by Henry Frugès, a Bordeaux industrialist. He presented an irresistible invitation: “I am going to enable you to put your theories fully into practice [...] to reach really conclusive results as regards the reform of low-cost housing”; Pessac should be “a laboratory”: the client authorised the architect to break “all conventions” and “abandon all traditional methods”⁹. It was an ambitious enterprise: the initial plan aimed to build 135 houses and a commercial square, on a plot of 38,882 m² purchased by Frugès in the outskirts of Bordeaux.

For Le Corbusier this was the first opportunity to apply his ideas, both on urban planning and on low-cost housing. He designed his first “*cit  jardin horizontale*”¹⁰, with the aim to provide affordable houses for the working class while experimenting with his ideas on standardized construction. The houses, destined for the workers of Frugès industries, should provide “domestic and social hygiene [...], air, light and water [...] trees and gardens [...] and hence become the catalyst for happiness and pleasure”. The layout of the buildings was studied to achieve a collective quality in the site: “External spaces are fused into one whole [...] minimising physical boundaries between the gardens”. The 4 types of dwellings (“*Isol e*”, “*Quinconce*”, “*Arcade*” and “*Gratte-Ciel*”) were conceived as different compositions of the same pre-fabricated elements, based on a five-meter grid¹¹.

The construction process implied the use of advanced technologies that presented several problems: the “concrete spray gun was hard to use” and the pre-fabricated windows “did not always fit the voids left in the structure”; besides,

“neither architects nor engineers had proper provision for drainage”¹². Due to these difficulties (and other administrative complications), the construction lasted longer and cost much more than anticipated.

Pessac was officially inaugurated in 1926, but only 55 houses were completed, the rest was never built. Frugès went bankrupt in 1929 and emigrated to Algeria and so “the plots of land were sold off slowly, one by one, without a coherent development plan”¹³. Besides, as soon as the first dwellers began to inhabit the houses, they started to transform the purist architecture “in all sorts of individual ways”, like “walling up ribbon windows, filling out terraces, and dividing up the open-plan rooms, and so on”¹⁴.

The decline of Pessac continued until 1974, when a new dweller, William Héraud, rehabilitated his Arcade house. This was listed as a historic monument with a protective zone around it of 500 meters¹⁵.

Since then, a slow process of restoration of the district began. With the participation of a local architect, Jean-Luc Veyret, a lot of effort was made in the restoration and maintenance of the houses and of the public spaces, with the intervention of the dwellers’ associations¹⁶.

Visiting Pessac today, we can see what appears to be a flawless operation: the houses and spaces are being restored according to Le Corbusier’s project, trying to concretize his vision for the *Cité Frugès*. Nevertheless, and besides the practical problems that affect the dwellers of a modern masterpiece¹⁷, other questions can be raised about this interesting experience.



FIGURE 3. Corbusier and Pierre Jeanneret, “*Quartiers Modernes Frugès*”, Pessac, France, 1924–27. Image of two “*Quinconce*” houses: the one on the left was recently recovered according to the initial project; the one on the right still presents dwellers alterations. © Eduardo Fernandes, 2009.

Le Corbusier's purist ideas caused a dramatic clash between the aesthetics produced by rationalist ideals and the taste of the dwellers, in housing programs designed in the first half of the 20th century. This aspect should be carefully considered, as it relates to an important subject of the theory of architecture of the second half of the 20th century: the question of cultural and anthropological relativism and the importance of the participation of future dwellers of the housing projects in design decisions¹⁸. In the 1960s and 1970s, authors like Aldo van Eyck, Lévi-Strauss, Bernard Rudofsky, Henri Lefebvre, Josep Coderch, John Turner, Christopher Alexander, John Habraken and Giancarlo De Carlo (among many others) addressed this issue, with theoretical and/or practical work. Even Le Corbusier admitted, later in his life, about the Pessac experience: "you know, it's life that's always right and the architect who's wrong"¹⁹.

So, Pessac can be considered a very important testimony of this clash between life and architecture²⁰; it could be more meaningful to preserve the altered image of some of the buildings, in contrast with the others that were restored according to the original project.

4. THE TEA HOUSE OF BOA NOVA AT LEÇA DA PALMEIRA (PORTUGAL)

The Tea House of *Boa Nova* (at *Leça da Palmeira*, near Oporto) is an early yet iconic work of Álvaro Siza. Initially designed in the office of Fernando Távora, as an entry to a public competition (in 1956)²¹, Siza's proposal was constructed between 1960 and 1963 and was immediately recognized as a masterpiece²².

After decades of successful use and a minor rehabilitation in 1989-92 (following a project by Siza), the building was closed to the public in the beginning of our century. When it was classified as a National Monument, in 2011, it presented several signs of decay due to the passing of time, aggravated by a few acts of vandalism and robbery.

In 2012, the Municipality commissioned Álvaro Siza to completely rehabilitate the building and its surroundings for a restaurant; the work began in May 2013 and the renewed Tea House opened to the public in July 2014²³.

Confronted with the necessity of intervention in his own work (designed 50 years ago), Siza had hesitated to accept, facing the temptation of "correcting" the initial design. However, he decided he would try to maintain the integrity of the pre-existing building, as if it were projected by another architect, arguing that "in rehabilitation there is a mandatory requirement, which is, in my opinion, the absolute integrity. You shouldn't change things"²⁴.

At first sight, this seems an exemplary process: the rehabilitation of a monument, designed by the architect who initially conceptualised it, with the concern of preserving the integrity of the original building while maintaining the original program.

But in this last aspect, it is doubtful that the rehabilitation can be considered a success: with the new concession, the restaurant became expensive and elitist²⁵.



FIGURE 4. Álvaro Siza, Tea House, Leça da Palmeira, Portugal, 1956-63. © Eduardo Fernandes, 2007.

Before, when the bar of the Tea House was open to the public, everyone could go there to drink a beer or a coffee and be dazzled by the building and the beautiful view of the sea. Now, it only functions as a restaurant, and its paying customers are the only ones who can have a meaningful experience of the space²⁶.

5. CONCLUSION

These 3 examples addressed the question of function in different ways, but had one thing in common: reform did not follow function.

In Guimarães and *Leça da Palmeira*, the economic viability of the operation (allowing the physical restoration of the pre-existing building) was perhaps the decisive argument in the municipal decision; but if the importance of preserving the original use was considered decisive to the operation, the outcome could have been different: to maintain the old Market Hall in function (restoring it) and to build the museum elsewhere, in Guimarães; to maintain the Tea House as a popular bar and restaurant, in *Leça da Palmeira*...

In Pessac, although the original program is maintained²⁷, the image that is being restored never existed, not even in the early years²⁸. So, this construction of a perfect purist *Cité Frugès* can be related to the ideas of Viollet-le-Duc, who stated that restoring a building could be “to re-establish it in a historic state that may never have existed”²⁹.

If we consider that the Pessac experience also had a pedagogical role in the theory of architecture of the 20th century, its function was, partly, modified.

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- “Le Quartier Actuel et Future”, accessed on February, 1, 2016, <http://fruges.lecorbusier.free.fr/Quartier%20actuel.html>.

NOTES

- The title of this paper, “reform follows function”, alludes to this famous 1896 statement of Louis Sullivan; Louis Sullivan, “The Tall Office Building Artistically Considered”, in José Manuel Rodrigues, et. al. (ed.), *Teoria e Crítica de Arquitectura – Século XX*, Lisboa, Caleidoscópio/OA, 2010.
- Marques da Silva began his studies in Paris in 1889 and obtained his degree of architect from the *Beaux-Arts* School in 1896. For further information on the life and work of the architect and a detailed description of the history of this market see António Cardoso, *O Arquitecto José Marques da Silva e a Arquitectura no Norte do País na Primeira Metade do Século XX*, Porto, FAUP, 1997, 505-510.
- António Cardoso, “Marques da Silva, as Primeiras e Últimas Obras”, António Amaro das Neves; Inês Sarmento, *José Marques da Silva em Guimarães*, IAJMS/SMS, Guimarães, 2006, 11-12.
- The Conde de Margaride Avenue was built between 1931 and 1940 prolonging the existing Gil Vicente street; see José Ferrão Afonso, Bernardo Ferrão, “A Evolução da Forma Urbana de Guimarães e a Criação do seu Património Edificado”, *Guimarães Património Cultural da Humanidade*, Guimarães, Câmara Municipal de Guimarães/GTL, 2012.
- The 2009 photographs that can be seen on the site of SIPA (Information System on the Portuguese Architectural Heritage) clearly show the state of decay of the building; see “Mercado Municipal de Guimarães/Plataforma das Artes e Criatividade”, accessed on February 2, 2016, http://www.monumentos.pt/Site/APP_PagesUser/SIPA.aspx?id=27393.
- “Novo Mercado tem Condições mas não Cativa Clientela”, *Jornal de Notícias*, 2008-02-11, accessed on February 2, 2016, <http://www.jn.pt/Dossies/dossie.aspx?contentid=887185&dossier=Bolh%E3o%2C%20um%20mercado%20de%20futuro>.
- Although it is included in the Special Protection Zone of the Urban Core of Guimarães, the market itself was never classified as a building of public interest.
- The Platform of Arts and Creativity is meant to be “a multifunctional space dedicated to artistic, cultural, economic and social activity”; see “Plataforma das Artes e Criatividade – Guimarães”, accessed on February 2, 2016, <http://norte-cultura.pt/plataforma-das-artes-e-criatividade>.
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- William Curtis, *Le Corbusier, Ideas and Forms*, London, Phaidon, 1986, 67-68.
- Those 55 houses were part of the sectors C and D; see the complete plan in: Ferrand 1998, 27, 77.

- 14 Charles Jencks, *Le Corbusier and the continual revolution in architecture*, Monacelli Press, New York, 2000, 144.
- 15 Marylène Ferrand, *op. cit.*, 1998, 113.
- 16 L'Association des Amis de Le Corbusier et de la cité Frugès', the «Commission des Habitants de la Cité Frugès» and "Vivre aux Q.M.F.»
- 17 "Le Quartier Actuel et Futur", accessed on February, 1, 2016, <http://fruges.lecorbusier.free.fr/Quartier%20actuel.html>.
- 18 The 2016 Pritzker Prize given to Alejandro Aravena confirms the importance and actuality of this theme.
- 19 Charles Jencks, *op. cit.*, 144.
- 20 On this subject, see Eduardo Fernandes, "Life versus Architecture. Rationalist ideals facing Popular Taste, from Pessac to Malagueira", *International Conference 20th Century New Towns. Archetypes and Uncertainties*, Porto, ESAP/DARQ/CEAA, 22-24 May, 2014.
- 21 For a detailed description and critical analyses of this work see Luiz Trigueiros (ed.), *Casa de Chá da Boa Nova*, Lisboa, Ed. BLAU, 1992.
- 22 See Nuno Portas, "Casa de Chá da Boa Nova", *Arquitectura*, n. 88, 1965, 97-98.
- 23 The new concession contract was made to Chef Rui Paula, who intends "to embody one of the best restaurants in the country"; "Salva da Ruína, Casa de Chá da Boa nova Reabre como Restaurante", accessed on February, 1, 2016, <http://p3.publico.pt/cultura/arquitectura/12974/salva-da-ruina-casa-de-cha-da-boa-nova-reabre-como-restaurante>.
- 24 Álvaro Siza, "Conferencia para el CAH20thC", J.M. Hernández León e F. Espinosa de los Monteros (ed.), *Criterios de Intervención en el Patrimonio Arquitectónico del Siglo XX*, Madrid, 2011.
- 25 The Chef proposes 3 menus: the first one costs € 120 per person, plus € 75 to the wine selection; the second costs € 85 per person plus € 40 for the wine selection; the "cheaper" menu costs € 80 (for 2); see "Boa Nova, Conceito", accessed on February, 6, 2016, <http://ruipaula.com/web/boa-nova/menu>.
- 26 It is also possible to visit the building, like a monument (paying a € 6 ticket), to see (but not use) a space that evokes the memory of what was once a popular semi-public space, a Tea House open to everyone.
- 27 Except for the "Gratte-Ciel" house acquired by the municipality, at 4 rue Le Corbusier, which was restored and became a Pessac Museum. However, when we visit this (quite empty) Museum, we can't help to feel that it was never meant to be showed as an example of the work of its author (unlike other Corbusier houses, as Savoye and La Roche); it was designed to be a workers house, which should be economic and did not need a particular concern in the quality of the internal space. It would be more appropriate if we could visit the building understanding its adequacy to the original program, furnished like a house that is inhabited (even if it was not).
- 28 On June 1931, Le Corbusier writes an alarming letter to Vrinat (an engineer from Frugès industries), expressing his indignation on the way Pessac "has been allowed to go to the dogs in such a disgracefully and insane way". Marylène Ferrand *et al.*, *op. cit.*, 112.
- 29 Viollet-le-Duc was a French architect and theoretician who was much criticized by his imaginative rehabilitation of the Notre-Dame Cathedral, in Paris, and the French town of Carcassonne (among others); see Françoise Choay, *Le Patrimoine en Questions*, Paris, Éd. Du Seuil, 2009, 175.

André Lurçat's Karl-Marx School in Paris Suburbs: Restoration and Adaptation of a Major Landmark of the Modern Movement

Christiane Schmuckle-Mollard

MONUMENTS HISTORIQUES, PARIS, FRANCE

When inaugurated in 1933, André Lurçat's Karl-Marx school in Villejuif, south of Paris, was celebrated as the "most modern school in France". In 1996, the school was listed as a historical monument. However, it had by that time become too confined as a school and needed to be brought up to 21st century standards to comply with new building regulations. The challenge was to strike a fair balance between a restoration focusing on preservation and one increasing the school capacity, without sacrificing the functionalist principles that made the building famous – chiefly the use of daylight and transparency. A redistribution of space and the construction of an extension created an additional 1200 m². The project was completed in 2013, at a restoration and extension cost of € 15 million.

The 2 main interventions consisted of turning the gymnasium into a canteen and increasing the floor space dedicated to teaching through the addition of a new wing. The original gymnasium no longer met the needs of the school or regulatory standards for sports facilities. By converting the former gymnasium into a canteen with a capacity of 120 seats it was possible to relocate the school's documentation center to the space originally occupied by the school restaurant and thereby to maintain the configuration of the classrooms in conformity with the original project. The schoolyard is now enclosed in its southern part by a new, lower wing which houses rooms for arts, science and technology classes. This quite contemporary element, designed in the spirit of the place, remains neutral alongside the original architecture. In the sense of article 21.1 of the ICOMOS *Burra Charter*, this reversible adaptation has a minimal impact on the functionality, the significance and the perception of the school as it was built in 1933.

1. PRESERVING THE USE OF THE KARL MARX SCHOOL AND SAFEGUARDING A SITE OF MAJOR CULTURAL AND SOCIAL IMPORTANCE

The Karl Marx school complex by the French architect André Lurçat in Villejuif near Paris had, originally, a nursery, classrooms for boys and girls, a gymnasium and a stadium. Upon its inauguration in 1933, which drew more than 20,000 persons, this modernist ensemble was described in the French daily *L'Humanité* as "the most beautiful school in France"¹. However, at the end of the 1990s the complex, which had only been minimally maintained, had become too small, and its social environment had changed: the school had been classified "Priority Educational Zone", and it had experienced a recrudescence of violence². In this new social context, the dilapidation of the poorly maintained buildings was taken very hard. Even though the cultural significance of the place was beyond question, this quality was only barely perceptible anymore, and was in danger of being lost. The act of listing it as a National Historical Monument in 1996 brought new constraints but also subsidies. These would enable the owner, the department

of the Val-de-Marne, to undertake an overall restoration. The primary goal was to preserve the integrity of this important work in the history of architecture and the memory of an unprecedented cultural policy. According to the art critic and philosopher Max Raphael, the Karl Marx school complex was the result of the collaboration between “a communist municipality [...] and an architect who deeply understood the problems of contemporary architecture [...], and who, despite being a product of the bourgeoisie, had sought out new solutions that clearly diverged from the academic modernism [...]”³. As a result of the numerous studies that I undertook as chief architect for historical monuments, a program was developed that would increase the floor space within the original site while adapting the buildings to the new regulations and preserving their authenticity⁴. The adaptive reuse of the 6800 m² was completed in 2013 for a total cost of € 15 million with an increase of 1200 m² of building area. This budget is comparable to a new construction, but with the added benefit of a significantly smaller ecological footprint.

2. PRESERVATION AND RESTORATION IN THE RESPECT OF AUTHENTICITY

The first studies of André Lurçat's school complex, which had operated as a school without interruption since its construction, addressed the thin cracks of the exterior walls. These had been blackened by pollution. The windows were no longer sealed, the roof terraces and the bleachers that crowned the gymnasium were covered in black tar, the steel at the pergolas suffered from corrosion.



FIGURE 1. André Lurçat, Karl-Marx school, Villejuif, France, 1933. © Fond André Lurçat (Objet LURAN-D-31-1. Dossier 200 Ifa 925/5. Doc. AC-23-06-03-02).

Preservation of Structures, Concretes, and Exterior Coatings

The concrete structure and the vertical panels, the floor slabs, and the roof terraces were not in bad condition and could be fully preserved. The vibrated-concrete infill blocks still provided sufficient insulation for contemporary norms⁵.

It was possible to preserve the exterior surfaces through micro-injections and mending at various points, using mortar of the original colour and composition, which was then coated in a colour similar to the original finish. Such protection was especially necessary against graffiti.

Return to the Original Window Frames

A key element of the modernist façades, the window frames that Lurçat had held back from the plane of the bare exterior façades in the 1950s, were “unrestored”. Doing so we enhanced the building by bringing it back to its original condition instead of retaining the subsequent changes. New highly insulating and UV blocking double-glazing made it possible to return to a frame profile almost similar to the original, with only a slight increase in thickness⁶. The vertical reinforcements in the large glazed bays that Lurçat had added in the 1950s for additional stability, were also slightly increased for better wind resistance.

Preservation of the Heating System and Natural Air Circulation

The good condition of the existing high performance cast-iron radiators made it possible to maintain the original heating system. The 4-meter ceiling height of the classrooms and the generous circulation halls provide sufficient natural ventilation. For that reason, there was no need for ventilation shafts.

Preservation and Restoration of the Original Materials

Inside the buildings, the ceramic sandstone tiles covering the floors and the glazed ceramics covering the walls were damaged in some places, but it was still possible to preserve 90% of them and to complete the rest with new replicas. The replacement of materials was limited to 10% due to considerations of authenticity and the limitations of the budget. In fact, the careful reproduction of 10% of the material cost as much as replacing 100% of the surface with a newly available material.

3. ADAPTATIONS

New Spatial Distribution and the Creation of a Modern Wing

In order to address the national program “College 400” I proposed to build a new wing and to convert the gymnasium into a canteen. This concept met the new requirements for large-scale science classrooms, as well as the school administration's wish to include a restaurant with a professional kitchen.

The original gymnasium no longer satisfied the needs and current norms. Its conversion into a school restaurant with 120 seats made it possible to preserve the



FIGURE 2. André Lurçat, Karl-Marx school, Villejuif, France, 1933. Schoolyard and former girls school, view to the Karl-Marx avenue through the building, after restoration. © Priska Schmückle von Minckwitz, 2013.



FIGURE 3. André Lurçat, Karl-Marx school, Villejuif, France, 1933. Classroom after restoration. © Priska Schmückle von Minckwitz, 2003.



FIGURE 4. André Lurçat, Karl-Marx school, Villejuif, France, 1933. Gymnasium after restoration and reuse as a school-restaurant for 120 seats. © Niels Stoltenborg, 2012.

magnificent volume with its horizontal bands of windows in their original state, serving as a powerful reminder of Lurçat's way of implementing harmonic proportions in his buildings⁷. The only necessary intervention was the installation of an acoustic layer in the spaces between the ceiling's wooden beams. It is covered by a stretched membrane in the original colour that was found on the interior walls⁸.

In the main building, the former restaurant area accommodates now the documentation centre, which is very logically placed at the centre of the ground floor. The interior work in this area exposed vestiges of the mural paintings by Jean Lurçat, known only through black and white photographs from 1933.

The new single-storied building closes off the school courtyard on the South. This element completes the process of enclosure that Lurçat had initiated with its new wing in 1947. Like a long glass box, it slips in under a protective canopy. Intentionally expressed as a "neutral" response to Lurçat's work, it is nonetheless quite sophisticated in its construction with micro-piling foundations. In the sense of article 21.1 of the ICOMOS *Burra Charter*, this reversible adaptation has a minimal impact on the cultural significance of the school complex as set forth in 1933, and does not distract from its appreciation.

Adaptation to New Regulations

The classification as a listed building requires respect for the original but offers also opportunities for adaptive measures to conform to contemporary norms and other new requirements. Finally, the local administration could be convinced to accept a number of constraints. Some examples include:

- Providing emergency access to the first floor via a high corridor-window, with a folded fireman's ladder, which is barely visible (a 15cm × 15cm black "post").
- Obtaining such exemptions that it was possible to retain the glazed walls running along the corridors because of the exceptional height of the classrooms, with the installation of automatically closing fire doors in the hallways.
- Applying an opaque film on the lower sections of glazing as an acceptable compromise in response to the demands of the teaching staff that insisted on conforming to the existing regulations against transparency between the classrooms and corridors;
- Adding a row of reproductions of the existing ceiling lights in the classrooms — expanding from 2 rows to 3, since the lighting of the classrooms and corridors had been deemed insufficient.

Concessions to the Original Materials

In limited cases, where the original fixtures such as door handles and light switches had entirely disappeared, appropriate commercial models were proposed as replacements. It might have been possible to reproduce the original door handles, but at great expenses. Further investigation learned that their very

unusual model had turned out to be impractical and had been replaced at an early stage. The decision was made in 2011 to purchase a handle that had been on the market since the 1950s.

The restoration of the changing area for the gymnasium and its reuse as a meeting room and foyer for the students raised issues concerning the restoration of the glass-paved roof-lights which had been replaced by large skylights in the 1960s. Since 2 of the original pavers were kept safe, it was possible to reproduce them and to mount them according to the original drawings. Here, 2 small concessions were made for increased security and thermal insulation: the depth of the pavers was doubled to create a cube of 9 cm on a side; and the whole needed to be set into a waterproof mortar.

The original linoleum floor covering in the gymnasium had also disappeared since the 1950s. It has been replaced with rubber flooring. This more hygienic material also provides better sound insulation and is more resistant to wear. This concession seemed logical as Lurçat had originally finished the covered play areas of the main building with 'rubber carpets' which were replaced with asphalt in 1947⁹.

The original paint colours were identified by probes and were accordingly restored. Respecting the original, a single colour has been used on all interior walls: a vanilla yellow in the same tones as the ceramic claddings. The walls of the boys' classrooms were originally painted a pale blue-grey, and the girls' a dusty rose. As classes have been co-educational since the post-war years and then painted in green by Lurçat, the actual users preferred to have one unique colour and the pale blue-grey has been chosen for all the classrooms.

4. CONCLUSION: THE 4 PILLARS OF AN ADAPTIVE REUSE

The positive experience in successfully restoring and adapting a key building of the Modern Movement leads me to insist on four fundamental elements of any similar project:

- Before considering any adaptations, it is essential to retain the original use of a Modern Movement building as much as possible, or to consider uses that are compatible with the conservation of its physical characteristics (in our case, the gymnasium transformed into a restaurant).
- Both a detailed study that leads to a thoughtful concept of the project and a written document are necessary for the architectural team, the general contractor, and the builder-owner to fully comprehend and be acquainted in depth with the building and its significance.
- Conservation is always preferred above restoration; whatever the economic, technical, or regulatory issues, one must explore all other potential pathways before proceeding with an adaptation that replaces any or all parts.
- Such a building must retain its authenticity as much as possible, but some specific adaptations to existing norms could eventually be allowed, or some compensatory measures put into effect.

The greatest danger will always come from inspection and certification institutions that tend to apply only new norms without considerations of the particular qualities of the Modern Movement. Luckily, it was possible to upgrade the Karl-Marx school ensemble to 21st century requirements after intense studies and discussions to keep it a long lasting place for learning and teaching.

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NOTES

- 1 Marcel Cachin, "Villejuif va Inaugurer la Plus Belle École de France", *L'Humanité*, 28 juin 1933.
- 2 In Wikipedia: "Groupe scolaire Karl-Marx", accessed on 9 February, 2016, https://fr.wikipedia.org/wiki/Groupe_scolaire_Karl-Marx.
- 3 André Lurçat, Max Raphaël et al, *Le Groupe Scolaire de l'Avenue Karl Marx à Villejuif*, Paris, Éditions de l'Architecture d'Aujourd'Hui, 1933, 12.
- 4 Study undertaken with the historian Jean-Louis Cohen and the le *Laboratoire de Recherches des Momuments Historiques* (Research Laboratory of the Trust for Historical Monuments).
- 5 Atherman Knapen company, see Lurçat, Raphaël, 1933.
- 6 Van Ruysdael glasses.
- 7 André Lurçat, Max Raphaël, et al, *op. cit.*, 10.
- 8 Newmatt company.
- 9 Bergougnan company, see André Lurçat, Max Raphaël, *op. cit.* The new floor covering at the gymnasium is manufactured by Nora.

Transforming an Icon on its own Terms: Repurposing Kahn's Richards Building

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One of the essential propositions of Modern architecture was the primacy of the program as a determinant of form. Louis Kahn's architectural construct of "servant and served" spaces, first articulated in the Richards Laboratories at the University of Pennsylvania (Penn), takes this notion even further, as individual function is now given structural, mechanical and spatial boundaries. Though Kahn's notion is poetic, its success is also highly dependent upon the building's ultimate ability to accommodate its program. Heralded upon its completion as defining a profound new direction for modern architecture, Richards has struggled to fulfil its promise as a place for research. Kahn scholar Vincent Scully wrote: "They are [...] a town of colleagues, but in a material sense they function not perfectly at all"¹, a poignant commentary on Richards' inability to accommodate modern science.

Recognizing both the significance and challenges of Richards, Penn both championed its designation as a National Historic Landmark and began an effort to imagine how the building could be adapted to realize both Kahn's vision and its full potential. From 2011-2015, EYP led a team through the metamorphosis of Richards from Bio-Medical Research labs into a computational, dry lab research facility. A philosophy emerged to guide the creation of plans and an evolutionary architectural language that together provided parameters for the right program fit and for the creation of design and sustainability guidelines for future work. This paper will discuss the theoretical underpinnings of this effort and its application; revealing how our approach enabled the realization of key components of Kahn's original vision for the laboratory floors as open, light-filled communities of scholars with services tightly controlled within designated zones, by developing a working methodology that informs a strategy of adaptive use sensitive to preserving and enhancing the essential qualities of the resource.

1. INTRODUCTION

In the 1950s many architects and critics perceived that the heroic course of modern architecture had been co-opted by a culture that had turned International Style modernism into something formulaic and devoid of meaning. A powerful antidote to this trend was what Reyner Banham called the New Brutalism, which placed a renewed focus on architecture with an autonomous power directly expressing the formal consequences of the rough honesty of modern construction. Though not often cited in the brutalist canon, Louis Kahn's Richards Laboratories at the University of Pennsylvania (Penn) nonetheless is a resolutely honest, profoundly "real" building widely heralded at its completion in 1962 as describing a significant new arc in the trajectory of modernism.

Conceived as a series of glazed laboratory towers pin-wheeling around a virtually windowless brick service tower, Richards is perhaps the most lucid example of Kahn's principle of servant and served spaces. In the served towers exterior pre-cast concrete columns and exposed Vierendeel trusses describe a primary nine-square structural grid and support an envelope of brick knee walls and large lights of glass set within with minimal, bespoke brake-formed stainless

steel frames. Every surface is taut and flush yielding a tightly detailed ensemble resembling a series of stacked vitrines, with each element of the laboratory towers sharply distinct and precisely co-planar, a lucid and honest expression of the building's construction.

The interiors have a similar relentless logic, where building systems are rigorously layered and zoned within the exposed overhead concrete structure and behind the knee walls to enable a "sacred" zone of unencumbered, column and service free glazed space in the laboratory towers. The effect as construction photos make evident, is Kahn's unique variety of "universal space".

2. CHALLENGES AND PRINCIPLES

Once in use, several factors conspired to inhibit the optimal functionality of the Labs – and the ultimate realization of Kahn's spatial idea. The subdivision of these floors with masonry partitions, though consistent with the overall logic of the building's construction, was never a fully integral part of the original architectural vision, and limited flexibility in layout. The over-scaled windows at times exacerbated planning issues, and presented light and glare control issues, and finally, over 50 years of successive alterations, the rigorous zoning of the building services has collapsed, resulting in a proliferation of conduit, piping and devices, further compromising functionality and creating visual clutter.

Progressive programmatic and functional deterioration led Penn to the decision to move to a dry-lab, computational based use that would remove the wet-lab bench function from Richards, in order to enable the realization of its full architectural potential while maintaining a thriving research facility. The charge therefore was to repurpose Richards to accommodate Kahn's original idea. EYP's renovation philosophy builds upon that idea both as it is realized in this building and as part of Kahn's entire oeuvre. Through archival research and visits to other Kahn buildings the team absorbed the meaning and evolution of many of the core elements of his design vocabulary, which was then used to develop sympathetic designs for an adaptive series of interventions in dialogue with the original architecture. These include:

- Stabilization and renewal of the envelope;
- Removal of unsympathetic accretions;
- Realizing an interpretive spatial and material idea for the interior fit out that reveals the latent impact of the original spatial construct, while being clearly recognizable as contemporary work;
- Creating a high performance building that is "energy frugal" to the greatest degree possible.

The nature of these interventions and the principles that inform them were memorialized in a series of *Design and Preservation Guidelines* meant to govern not only the present project but all future maintenance and renovation work within Richards.



FIGURE 1. Louis Kahn, Richards Laboratories, University of Pennsylvania, Philadelphia, PA, USA, 1957-62. © University of Pennsylvania Archives, 1961.



FIGURE 2. Louis Kahn, Richards Laboratories, University of Pennsylvania, Philadelphia, PA, USA, 1957-62. © University of Pennsylvania Archives, 1965.

3. THE RENOVATION

Envelope and Infrastructure

The raw, exposed quality of Kahn's building is both its heritage and the source of its power, and our task in working with the fundamental elements – structure and envelope – was to restore and invisibly enhance their integrity and performance to the greatest degree possible. At the same time however, it soon became apparent that the machine-like precision of the original construction had acquired a unique patina – primarily in the weathering and internal wear on the concrete through heavy usage, and in the movement of the structure and envelope which had thrown all of the towers slightly out of plumb. Philosophically, we accepted this as evidence of the passage of time, gave the concrete only a light cleaning, and otherwise accepted this condition as evidence of the desired dialogue between Kahn's work and our interventions.

For reasons of safety, energy and comfort the original polished plate glass was replaced with high performance laminated glass that maintains the critically important clarity and flatness of appearance within the original brake-formed stainless steel frames. The combined factors of the additional thickness of the glass and the distortion of the building necessitated extraordinary precision of detailing and execution, to enable a more robust but virtually identical installation.

The nature of the new program also enabled a change in the HVAC system to chilled beam cooling which eliminates large amounts of ductwork and provides

a far more energy efficient system. The chilled beams had to be carefully chosen for aesthetic compatibility and integrated with the new building light fixtures (which are an evolved version of the original lighting with better photo-metrics and energy performance) in the original lighting locations. All building services were replaced in accordance with Kahn's system into prescribed zones; either exposed above the truss or bundled into new custom metal enclosures below the sills that improve appearance, protection, and ease of use and maintenance.

Interior Kit of Parts

The design issue with greatest impact on the future of the building is the interior partitioning system, which is both a spatial and material concern. The original partitioning system was exposed CMU and the partitions in the laboratory towers were aligned with the exposed members of the Vierendeel trusses above. This yielded a condition of oversized corner office or lab spaces that receive an over-abundance of natural light, with smaller, undersized interstitial and interior offices away from the main sources of daylight. The new program areas were therefore designed to both create a more efficient and egalitarian office layout, and to admit more natural light where possible to the interior of the laboratory floors. Key criteria included floor layouts that would always allow the central area and one corner to remain open for workstation or conference areas, to enable an awareness of the continuous volume of the space, and allowing for the liberal use of interior glazing to maximize the passage of light from all sides to the interior of the floors. The success of this plan was enabled through a strategy that locates a number of partitions off of the structural grid lines creating a central space large enough to accommodate workstations, while right-sizing the offices and providing internal re-entrant corner glazing that permits the sharing of light from the large corner windows into the non-corner offices. As an adaptive strategy, the embrace of the off-grid partition system represented a change to the rules of the original building that in fact enhanced the spatial quality and architectural presence of the laboratory floors, while enabling improved lighting and acoustic control.

The transformation of any historic structure inevitably raises issues about language and detail – and the importance of striking the right balance between extension and difference relative to the original language of the building. Building upon our research, the present project looked at the reconfiguration of these spaces as an opportunity to develop evolutionary, non-mimetic interventions; reinforcing the architectural theme of the building and providing a contemporary counterpoint to the existing architecture. There is a particularly fine line in working on a project of this stature between extending design tropes developed for the original work, and blurring the distinction between old and new. Study and dialogue led to an evolutionary design based upon a deep understanding of the essential rules and themes Kahn developed not only for this building but throughout his career. Wherever possible we strove for clarity and simplicity. For

example, in the spirit of Kahn's original detailing, each of the new and different interior elements within the glazed towers; wood walls, doors and the glass and steel components are conceived as monolithic, full height slabs detailed according to Kahn's exacting desire to scribe flush to the undersides of the truss. The change to computational based, office environment—and away from the more industrial bio-medical lab—was facilitated by subtle introduction of lighting in the offset ceiling zones, the provision of a shroud to partially screen systems in the new reception areas and greater use of Kahn's ubiquitous red-oak throughout the project.

There is a precedent in Richards for an interior storefront glazing system; painted steel frame entrances, with wood and glass doors, between the main public corridor/elevator lobby and each of the laboratory towers. These were originally designed to recall the exterior bent plate glazing frame design, but were changed during construction to a much heavier and less attractive composite system of steel bars, hollow metal sections and a bent plate glazing pocket.

These elements could not be repurposed for the renovation, but in the spirit of evolutionary change we considered a custom interior glazing approach that would have honoured Kahn's original intent to utilize the brake-formed stainless steel system inside the building as well. This was eventually ruled out as being difficult and expensive relative to the need to accommodate a variety of plan configurations and the changed conditions of the building itself that demanded flexibility in scribing to lines and surfaces that had moved over time. Philosophically, this also avoided any potential future confusion about the provenance of the



FIGURE 3. Louis Kahn, original architect, EYP, renovation architect, Richards Laboratories, University of Pennsylvania, Philadelphia, PA, USA, Original construction 1957-62, renovation 2014-15. © Jeff Goldberg, ESTO, 2015.



FIGURE 4. Louis Kahn, original architect, EYP, renovation architect, Richards Laboratories, University of Pennsylvania, Philadelphia, PA, USA, Original construction 1957-62, renovation 2014-15. © Jeff Goldberg, ESTO, 2015.

system – it is clearly an early 21st century adaptation of a mid-20th century condition. Ultimately we devised a solution based upon rolled sheet steel framing components instead of the more common and widely available extruded aluminium systems. This was chosen both for its simple, minimal aesthetic but also to more closely complement the material and idea of the exterior window framing system. These assumptions were tested and verified with field mock-ups prior to construction.

4. CONCLUSION

It is never possible to fully anticipate the consequences of the transformation of any building. Though it was predictable that the opening of the floors would enable the appreciation of the full impact of the space; what has also become apparent is the degree to which the stark, weathered quality of the building structure has re-asserted its autonomous architectural power in contrast to the elegant steel precision of the new partition system. This is an appropriate outcome, as Kahn's building is in the end an expression of tectonics, systems and space as something decoupled from though not entirely independent of function, and the clarity of this distinction has never been more apparent than at present. Perhaps the most poignant outcome of the transformation – to cite Inga Saffron – is that the building has for the first time become what Kahn wanted it to be².

NOTES

- 1 Vincent Scully, *American Architecture and Urbanism*, London, Thames and Hudson, 1969, 215.
- 2 Inga Saffron, "Changing Skyline: Turning Richards Labs into the Building Louis Kahn Wanted it to Be", *Philadel-*

phia Inquirer, 9 January 2016, also on-line at http://articles.philly.com/2016-01-09/entertainment/69618013_1_louis-kahn-towers-my-architect.

An Evolving Approach to Adaptation + Additions atop Melbourne's Skyline

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Melbourne is a city that experienced intense phases of development during the latter half of the 19th century and subsequently post-WWII. During the post-WWII decades, it was a centre of architectural innovation, where local architects adopted ideas of international modernism from their American and European contemporaries and inflected them with antipodean concerns. Many key buildings in Melbourne were designed within this international idiom yet also specifically for their local context.

In recent years, the city has again experienced substantial development pressures, with demands for intensification within its historic grid-plan centre. Despite established conservation practice and regulation for low-rise Victorian-era places of heritage significance, substantial change or demolition has occurred to unprotected mid-20th century medium and high-rise buildings. As such, Melbourne provides an informative framework to explore the design and regulatory challenges of adaptation and additions upon the modern commercial architectural legacy.

1. MODERN COMMERCIAL ARCHITECTURE IN MELBOURNE

Australian cities were largely remade in the decades following WWII. Fuelled by considerable post-war migration and a resource-led development boom, the existing 19th century fabric of state capital cities was radically reshaped by the modern building. As Jennifer Taylor suggests: “with its potential to delight and destroy”, the modern commercial tall building remains “the most significant urban object-type of the 20th century¹”. However, the skyscraper offices that were built from the mid-1950s onwards in Melbourne also signified a turning point in Australia's urban, cultural and economic prosperity.

Australia pushed forward with curtain wall and/or expressed structure construction, hot on the heels of American innovation. The association of Skidmore Owings & Merrill with Buchan, Laird & Buchan for Shell House in Melbourne in 1960, for example, created the first truly American-style tower. Yet, surprisingly, given multinational clients and American origins, most substantial office buildings of the 1950s and 1960s were designed by Australian architects.

In Melbourne, tower construction was facilitated in the 1950s through changes to building restrictions and new planning controls at a time when the city was preparing to host the Olympic Games (1956). New commercial aspirations eroded older streetscapes through buildings with glazed façade treatments within the dominant and somewhat constricted grid-plan of Melbourne's historic centre. Early significant Melbourne examples include Sleigh Building (1954), Gilbert Court (1955), Hume House (1957), ICI House (1958) and Electrolytic Zinc (1959).

By the 1970s, in a climate of economic downturn, the irrevocable effect of high-density tower development on pre-WWII Australian city centres was tempered. Academic consideration of better planning models emerged and the conservation movement grew in a small but vocal groundswell of protest. Given that today many of these modern buildings are nudging 50 years old, and there is some greater acceptance of the heritage value of 20th-century architecture in Australia generally², it is time to consider how we approach their heritage protection and adaptive reuse. Several examples including Atlas Assurance (1958 & 1961), National Mutual (1965, now demolished) and Royal Insurance Group (1965) have been recently proposed for local heritage listing in the *Melbourne Planning Scheme*³.

Over the last decade, Melbourne has been experiencing another long development boom. This has brought about renewed demands for intensification and retrofitting, resulting in substantial redevelopment atop and adjacent to already heritage-recognised sites and many other more ordinary examples. The most extreme cases to date have been witnessed in the treatment of 19th century low-rise buildings. In light of the city's current review of its heritage policies, updates to the Australia ICOMOS *Burra Charter* and current international discourse, it is therefore timely to consider whether a case-by-case interpretive approach to conservation and adaptation is adequate in advising upon post-WWII modern commercial architecture, and if current guidelines are sufficient.

2. CURRENT DISCOURSE, GUIDELINES AND EXAMPLES

Current discourse has evolved the theory and practice of conservation towards a better understanding of the challenges presented by modern architecture exemplars and their settings. There are divergent opinions on whether adaptive treatment of modern places requires different and specific reinterpretations of the broad principles as agreed by various UNESCO bodies (including ICOMOS). The *Burra Charter* has become the accepted best practice non-statutory resource for the conservation and management of places of cultural significance (heritage places) in Australia. It was last amended in 2013, which included a revision to Article 22: "new work should be readily identifiable as such, but must respect and have minimal impact on the cultural significance of the place"⁴.

Indeed, there are many recent local cases of additions – in particular of pre-WWII examples – that have given pause for thought in terms of identifiable contrast between existing and new works, and what constitutes a "respectful" relationship with host buildings. In Melbourne further examples include the ES+A Bank (fmr), Telephone Exchange & Post Office (fmr), Electrical Trades and the Radio School (fmr).

For modern heritage internationally, the *Burra Charter* is supplemented by the *Madrid Document* (2014), which describes how the fundamentals of established conservation practice can apply to modern heritage and encourages a cautious approach to intervention (including an interpretive derivation of character/context

for additions)⁵. However, the policies of the *Melbourne Planning Scheme* toward local heritage are at present only cognisant of *Burra Charter* principles, with the objective to “conserve and enhance” places and precincts; many within the historic centre⁶. It is policy of the planning scheme to enable the identified distinctive historical character of the city to remain as part a continuum of development through the retention of local heritage places, preferably in their 3-dimensional form⁷.

Within past iterations of the planning scheme, works to commercial modern buildings were undertaken prior to consideration of heritage protection. Gilbert Court (designed by J. A. La Gerche, 1955), said to have been the first true multi-storey commercial “glass box” built in Australia and protected as part of a heritage precinct⁸, is largely intact save interior re-modelling/sub-division and alterations to shop-fronts. Royal Insurance (designed by Yuncken Freeman, 1966) adopts a consistent façade expression using glazed pre-cast concrete elements and appears free-standing through the use of front and side setbacks. It was identified early as being of heritage value, albeit not protected, and has been similarly treated to Gilbert Court⁹.

The National Trust of Victoria identifies other commercial modern buildings – now altered – as part of *Melbourne’s Marvellous Modernism*. Gypsum House (designed by Bogle & Banfield & Associates, 1968) continued the trend for expressed load-bearing glazed pre-cast concrete construction. Here visual interest was provided through the use of curved corners to fenestrations. It was adapted in 1994 to apartments, which has re-styled the principal façade and removed portions of the expressed façade to form recessed balconies.

Finally, AMP Society (designed by Bates Smart McCutcheon, 1964-66), constructed of brown brick and pierced by repetitive rows of recessed windows and spandrel panel detail pattern, was adapted in 2000. The works included rooftop additions with minimal or no setback and subsequent over-cladding, resulting in a shift in elevation composition from more horizontal to a vertical emphasis.

3. FUTURE SOUND PRACTICE: AN EVOLVING APPROACH

In light of current development patterns, the City of Melbourne’s review of local heritage policies (2014) noted the following trends emerging from decisions challenged at the Victorian Civil and Administrative Tribunal (VCAT) for local heritage places in the historic centre:

- 1) Properties adjacent to heritage places purchasing air-rights from the heritage property;
- 2) Emerging acceptance of new additions being highly visible... in particular rooftop additions which are dominant and highly visible;
- 3) The increasing approval of “façadism” to heritage places in the central city¹⁰.

Further, the city acknowledges the reliance upon the *Burra Charter* principles when assessing proposed alterations/additions to places of individual significance, but has requested further policy guidance, especially in relation to what preferred approaches alterations and additions should take¹¹.



FIGURE 1. J A La Gerche, Gilbert Court, Melbourne.
© Alistair Ravenscroft and Hannah Lewi.



FIGURE 2. Yuncken Freeman, Royal Insurance (fmr), Melbourne. © Alistair Ravenscroft and Hannah Lewi.

docomomo International and associated key practitioners and academics, have encouraged the pragmatic refinement of established conservation practice on reuse, towards more guidance on informed design intent and interpretation, and the physical particularities that modern sites often demand so as to “repair”, “improve” and “re-form” them¹².

For example, if we look to the UK for comparison, and in line with the principles of England’s National Planning Policy Framework, balance between holistic planning outcomes and heritage significance is specifically sought¹³. **docomomo** founding members have advocated the role of the conservation architect as “enabling” the capacity of significant modern buildings to adapt through understanding and interpreting significance in an historically informed way; making buildings perform better with new tools and techniques; and designing interventions that accommodate new uses and clients thus allowing for constant change and adaptation. If we concur with this view that good conservation practice may indeed keep alive the “essence” and “intellectual achievement” of modern architecture, not necessarily its holistic material form, then how do we guide this practice for commercial architecture of local not international significance?



FIGURE 3. Bogle & Banfield & Associates, Gypsum house (fmr), Melbourne. © Alistair Ravenscroft and Hannah Lewi.



FIGURE 4. Bates Smart McCutcheon, AMP Society (fmr), Melbourne. © Alistair Ravenscroft and Hannah Lewi.

Amassing good examples seems the best approach, a task that **docomomo** can assist in. However, we also put forward some further questions and points to consider as to the adequacy of current guidelines in general:

- 1) Glazed façades, expressed structure and transparency: The modern façade with its inherent transparency and reflectivity, and modularity of fenestration and structure, is particularly important in understanding the “essence” of commercial skyscrapers of this type in Melbourne as elsewhere. Any new work should consider this modularity of skin that, on first reading, may look uniform but on closer inspection articulates subtle and integral differences in grammar and syntax (e.g. Gypsum House), often in response to street and grid-plan locations¹⁴.
- 2) Spatial context: many modern blocks are composed not just of infill façades, but are fundamentally 3D objects (e.g. Royal Insurance Building); yet without the cues of depth that pre-WWII architecture provided. Therefore, careful consideration is needed of relationships to adjacent buildings, the skyline, streets and plazas at entry level, akin to the management of heritage precincts/streetscapes.

- 3) Material sustainability: although some examples in Australia were forerunners in using façade overhangs, fins and hoods for passive climatic control (e.g. Mobile Building), the typically taut skin of 1950s-1970s towers and their heavy reliance on mechanical climatic control, inevitably make upgrade necessary to ensure a sustainable future¹⁵.
- 4) New work: despite subtle variations the broad aims of the modern commercial tower, under the banner of the International Style, were arguably different to many other “styles” of historical architecture that sought uniqueness, contextual and local resonance and so on. There is no doubt that the impersonal abstraction of the Skidmore Owings & Merrill language aspired to “abstract, laconic and highly refined glass and steel facades that seemingly harboured no explicit critical messages (e.g. Gilbert Court)”¹⁶. If their essence and intellectual achievement lies in their commercial ubiquity and normative associations with capital and bureaucracy, not landmark difference or eccentricity, then the established requirement for new work to be readily identifiable and distinguishable may need a more flexible and informed approach¹⁷.

Partly in response to such challenges, the City of Melbourne has indeed recently commenced a process of review through their proposed update of heritage policies, which provides written guidance and identifies performance standards for redevelopment typologies, including for additions¹⁸. In light of current circumstance and the proposed heritage protection of modern buildings (e.g. Royal Insurance), it is now time to consider this approach.

In conclusion, we suggest that a case-by-case approach can be strengthened. Firstly, by astute documentary analysis and disciplined conservation processes that guide debate and advocate design. Secondly, the evolving approach of national guidelines can be further scrutinised towards an interpretive approach in lieu of enforced adherence to a sharp distinction between old and new. And thirdly, by advising on pragmatic regulatory approaches that could open up adaptive reuse (and/or additions) possibilities, regulatory incentives/concessions as an alternative to demolition which consider the optimum viable use of a place. In light of its recent protection, it will be interesting to see how the proposed planning scheme amendments can respond any proposed works to the Royal Insurance (fmr) building.

Current redevelopment and intensification within Melbourne's historic centre provides an opportune time for advocacy, performance standards and prescriptive guidelines to be invigorated. For commercial towers, these outcomes will likely continue to engage in the tussle between modern global ubiquity and local particularities, as was played out in their creation. Perhaps it is this apparent refusal of the commercial type to be assigned any strongly personalised, eccentric or expressive design authorship that contributes to our management dilemma for their sensitive conservation into the future?

NOTES

- 1 Jennifer Taylor, *Tall Buildings: Australian Business Going Up: 1945-1970*, Sydney, NSW, Craftsman House, 2001, 13.
- 2 Philip Goad, "Unloved, Over-loved or just Mis-understood? Modern Architecture: the Problem Child of Heritage", *Historic Environment*, n. 25-1, 2013, 13.
- 3 Incorporating revisions to 28 May 2015.
- 4 Australia ICOMOS - *Burra Charter*, 2013, Article 22 - New Work, item 22.2.
- 5 ICOMOS 20C, *Madrid Document*, Article 5, Item 5.1.
- 6 *Melbourne Planning Scheme* (2015) cl21.06-2 Heritage, Objective 1 sets out this objective through a series of strategies which include: conservation, protection and enhancement to fabric of heritage places and precincts; maintaining the visual prominence of heritage buildings; protection of heritage buildings from the intrusion of new built form; and, maintain cultural heritage character as a key distinctive feature of the City.
- 7 *Melbourne Planning Scheme* (2015) cl22.04 Policy Basis.
- 8 HO: 504 [Collins East Precinct]
- 9 Recently, recommended for individual local heritage protection (*Melbourne Planning Scheme* - Amendment C186 [HO1010]).
- 10 *City of Melbourne, Review of Local Heritage Policies in the Melbourne Planning Scheme*, s4.0, ss4.1, 13.
- 11 *City of Melbourne, Review of Local Heritage Policies in the Melbourne Planning Scheme*, s4.0, ss4.1, 13 and ss4.6, 14.
- 12 See for example John Allan, "Points of Balance", *Journal of Architectural Conservation* n. 13-2, 2007, 13-46.
- 13 Department for Communities and Local Government (UK), *National Planning Policy Framework*, 12: *Conserving and Enhancing the Historic Environment*, London, Department for Communities and Local Government, 2012, 30.
- 14 Marika Neustupny, *Curtain Call*, Melbourne, RMIT University Press, 2006.
- 15 Susan Stewart and Jennifer Taylor, "The Building and the Sun", in Taylor, *op. cit.*, 112-125.
- 16 Joan Ockman, "Towards a Theory of Normative Architecture", in Steven Harris and Deborah Berke (ed.), *Architecture of the Everyday*, Princeton Architectural Press, New York, 1997, 131.
- 17 Megan McDougall, "Adding to The Recent Past: Challenges in Distinguishing New Work from The Not So Old", *Australia ICOMOS 2009 (Un) Loved Conference Paper*, Sydney, NSW, Australia ICOMOS, 2009, 9.
- 18 Proposed Melbourne Planning Scheme cl22.04-8 Additions (proposed Amendment 258) in Lovell Chen, *City of Melbourne Heritage Review: Local Heritage Policies and Precinct Statements of Significance; Methodology Report*, prepared for the City of Melbourne, Melbourne, unpublished, 2015, 35. Available at: <http://participate.melbourne.vic.gov.au/local-heritage>. These standards provide that: "Additions to buildings in a heritage precinct should be respectful of and compatible and in keeping with: Identified 'key attributes' of the heritage precinct. Additions should not build over or extend into the air space above the front or principal part of a significant or contributory building. Where abutting a lane, additions should be respectful of the scale and form of historic development to the lane. Additions should: Be of high quality and respectful contextual design; Avoid reproduction of historic elements; Adopt an interpretive design approach; For significant or contributory buildings, additions should; Respect of the building's architectural expression; Not dominate/visually disrupt its streetscape appreciation; Retain significant roof form within the façade setback; Be distinguishable from the original fabric of the building. With application to the front or principal part of the building ... additions should:
 - Maintain the perception of the three-dimensional form and depth;
 - Not obscure views of façades or elevations associated;
 - Not employ penetrating external column/structural supports".

In (+) Tangible Heritage: The Schools of João Filgueiras Lima, Lelé

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Just 2 years ago, we lost João Filgueiras Lima, known as Lelé, one of the most important Brazilian architects of his generation. Beginning with the construction of Brasília, as a young architect, he worked together with Oscar Niemeyer and developed a brilliant career dedicated to public facilities, especially schools and hospitals. This paper aims to discuss his tangible and intangible heritage by presenting Lelé's architecture, with special attention to his prefabricated schools built in the 1980s, in Salvador, Bahia.

Lele developed a special system of prefabricated buildings that arose from his analysis of the Brazilian reality: the shortage of public resources, its cultural and social particularities, tropical climate and the challenge of constructing as a technical and industrial issue.

Lele built many schools using prefabricated mortar, lighter and more flexible than prefabricated concrete elements. Despite their importance and efficiency, some of these schools are in serious risk of disappearing: they are often disfigured and some were recently demolished by the public administration, under the assumption that they could not be recovered anymore. However, we have reason to believe they could be adapted for new programmatic needs using the same system and elements that Lelé first conceived, since he included in his designs the possibility of spatial arrangements suited to different programs and deployments. As the deeds of a man transcend his very existence, it is necessary to think about realistic efforts to ensure the preservation of Lelé's architectural ideas, maybe as something even more important than the physical integrity of his buildings.

In conclusion, this study aims to affirm the value, adaptability and efficiency of Lelé's architectural concepts, presenting his own system as a valid option to the refurbishment of his buildings, even if by changing their initial configurations, and also to affirm the importance of preserving his heritage.

1. INTRODUCTION

"The path of beauty does not always demand to be imbued by the fact to make something beautiful; sometimes you make something beautiful through a rational way"¹.

Just 2 years ago we lost João Filgueiras Lima, known as Lelé, one of the most important Brazilian architects of his generation. Lelé was born in 1932 and graduated in 1955 from the National School of Architecture of Rio de Janeiro. As a young architect, he worked together with Oscar Niemeyer in the construction of Brasília, the Brazilian dream of modernity.

In Brasília, Lelé developed his first studies on streamlined construction processes, starting a brilliant career dedicated to public facilities, especially urban infrastructure, schools and hospitals.

The quest for constructional efficiency and logical architecture were some of his most important commitments. Starting with practices of construction ration-

alisation, the industrialisation of architecture marked his quest for technological solutions, especially designed to fulfil the human needs in terms of functional spaces and beauty.

This paper aims to discuss Lelé's tangible and intangible heritage by presenting his architecture with regard to his pre-fabricated schools built in the 1980s, at Salvador, Bahia.

2. THE PLANNING CENTRE OF BRASÍLIA, 1957

Lelé went to Brasilia to help construct the new capital buildings that were to be erected in a very short time. Just because of this need, he started his experiments on prefabrication at the construction site.

A few years later he became the coordinating teacher responsible for the Building Techniques subject at the School of Architecture of the University of Brasilia (FAU-UNB) and executive secretary of the Planning Centre (CEPLAN), an organisation aimed at developing and establishing a standard for Brasília's buildings.

As leader of CEPLAN, Lelé travelled to Eastern Europe to investigate technical aspects of large-scale industrial production that were brought into practice and to develop construction systems compatible with the Brazilian reality: the shortage of public resources, its cultural and social particularities, the tropical climate and the challenge of constructing as a technical and industrial issue.

3. THE URBAN RENOVATION COMPANY, SALVADOR, 1978

Lelé left Brasilia to take the post of technical coordinator of RENURB (Company of Urban Renovation of Salvador). This company was created with the purpose of establishing a broad process of public urban improvements, starting with Salvador's public transport project (TRANSCOL), financed by the International Bank for Reconstruction and Development (IBRD).

Between 1978 and 1982 the architect coordinated the office of public projects supported by a plant of prefabricated components of concrete and reinforced mortar, a technology introduced in Brazil by the engineers Frederico Schiel and Dante Martinelli in 1960 at the University of São Paulo.

From his knowledge about the potential of this construction system, Lelé developed a pilot experience in Camurugipe Valley, carrying out sanitation works with minimum interference in existing sites². The areas were characterised by disordered occupation, irregular topography and low mechanical resistance soil. It is important to mention that part of this work devised by Lelé included the empowerment and participation of the local community, working with the support of this innovative technology.

Through this process, parts were moulded for the construction of retaining walls, rainwater and wastewater drainage channels and stairways leading to bus



FIGURE 1. João Filgueiras Lima, Modular School in Pituáçu, Salvador, Brazil, 1988. Architect's file, 1988. © João Filgueiras Lima's Archive.



FIGURE 2. João Filgueiras Lima, Escola Modular in Nova Brasília, Salvador, Brazil, 1988. Architect's file, 1988. © João Filgueiras Lima's Archive.

stops and terminals distributed through the city along the watersheds. Street furniture, such as police booths, benches, bus shelters, newsstands and rubbish bins, built using the technology of reinforced mortar, were also part of the renovation program established for the city of Salvador. Also, at this time the Lapa Transshipment Station and some public schools were built using mixed semi-industrial technology.

The RENURB experience left a big legacy to Salvador, making the city something better. All equipment deployed in various urban sectors contributed much to improve the quality of life of the population and to establish new typological standards, of which the formal language stands out in the city's landscape, becoming a landmark and the hallmark of the architect's role in Salvador.

4. THE TRANSITORY SCHOOLS, ABADIÂNIA, 1982

Considering the successful experience at Salvador, the mayor of the city of Abadiânia invited Lelé to build bridges on local roads and rural temporary schools. It was at this small rural village, in the central part of Brazil, where his works with prefabricated lightweight elements were first employed in a school architecture program. By using this technology, he implemented a civil construction components industry in this countryside.

Lele used to say it was his most important work experience. It started with an unpaid collaboration to support a community pastoral project developed by Brother Matheus Rocha. Together they faced the need to build bridges and schools, in the middle of nothing, with the help of a few townsmen, many of them having never worked as builders before.

From this very first experience, encouraged by the local community and the Ministry of Education and Culture, Lelé developed a research project to build while saving resources and reducing completion time. He conceived a simple

solution by creating a modular dimension system using a selection of small pre-fabricated elements made of reinforced mortar.

The Transitory Schools were to respond to local realities, to meet its particular needs. The rural models consisted of a simple manufacturing system based on fully collapsible and extensible building units for communities in need for more flexible spaces that could be enlarged or shrunk by moving partitions. This solution allowed the eventual achievement of wider spaces for multiple activities and the possibility of a total relocation of the building.

There were three standard school templates in this program: sized to fit 50, 70 and 120 students with an integrated health centre. The extensible and flexible building units featured the adopted system. The blueprints were very didactic, in such a way that communities could build without skilled labour or using machinery during the assembly process.

This extremely important research experience proved that it was possible to adopt advanced technology and obtain high quality products with the help of unskilled labour. It was successful in the search for building solutions aimed at optimising available resources, whether human, technical or material³.

5. THE FACTORY SCHOOLS, RIO DE JANEIRO, 1984

Invited by the Governor Leonel Brizola, Lelé founded the Factory of Schools in Rio de Janeiro. In two years, they produced more than two hundred schools, kindergartens and community centres to meet the demand of the population of Rio's slums and suburbs.

It was a significant building experience and an important improvement in comparison to the Transitory Schools Project. The modular partitioning was the same, but there were a larger number of elements and more complex arrangements. The incorporated solutions related to ventilation issues, lighting, climatic



FIGURE 3. João Filgueiras Lima, Modular school at School of Fine Arts – UFBA, Salvador, Brazil, 1988. © Ceila Cardoso, 2015.



FIGURE 4. João Filgueiras Lima, Modular school at Faculty of Architecture – UFBA, Salvador, Brazil, 1988. © Ceila Cardoso, 2015.

comfort and storm water runoff in the overall design of the building system are also remarkable in these projects.

The programs were quite flexible, presenting an architectural design that attended to the variety of needs, situations of physical implementation, and construction standards. Furthermore, a formal identity and the technical qualities and appropriate functional aspects for the proposed environment were established. The spatial conformation of the plans was adapted to the morphological conditions and terrain limitations, depending on the community needs and the disorderly physical-spatial structure of the slum areas.

At this time, Lelé incorporated the works of the artist Athos Bulcão into the industrial pre-fabricated school architecture, bringing with him his happy colours. Professor Athos was Lelé's partner since the time of his early works, and his participation not just complemented, but also engaged with Lelé's architecture.

6. THE FACTORY OF CITIES, SALVADOR, 1985

Lelé's experience in coordinating the Community Equipment Factory – FAEC, also called Factory of Cities – working for the municipal administration of Salvador, produced school buildings to the city's poor neighbourhoods and built them all, as well as kindergartens and community centres in Salvador's peripheral areas, especially slums. More than 40 schools were constructed in Salvador.

Difficulties with access, high population density, topography and small parcel sizes were adversities that he used as motivations to continue improving the precast mortar schools, reinforcing his idea of making architecture as a process, becoming better with each experience.

The FAEC two-storey schools left the factory completely ready to be mounted at the chosen site. Its assembly was completely dry, with no need to use any workable mortar in the process.

Lelé dreamed, made and showed us, from the first schools at Abadiânia to the schools at Salvador, the way of making an ever more efficient architecture, reaching for an evolutionary state akin to “a human hand carrying a cup, something that cannot be further improved”⁴, as he used to say.

7. ADAPT TO PRESERVE

Despite their importance and efficiency, some of these schools at Salvador are today in serious risk of disappearing. Many are disfigured and some were recently demolished by the public administration, under the assumption that they could not be recovered anymore.

However, we truly have grounds to believe they could be adapted to new programmatic needs using the same system and elements that Lelé first conceived, since he included in his designs the possibility of spatial arrangements suited to different programs and deployments.

The systematisation of knowledge incorporated in Lelé's work leads to a professional practice with big, actual and current questions: how to produce a technologically feasible, environmentally efficient and socially fair architecture.

By recognizing its importance, in us was born and raised the interest and sense of duty, as architects, teachers, and citizens to help make his work survive as it deserves, much more than physically, but as a way to understand and make architecture.

As the deeds of a man transcend his very existence, it is necessary to think about realistic efforts to ensure the preservation of Lelé's architectural ideas, maybe as something even more important than the physical integrity of his buildings.

In conclusion, this study aims to affirm the value, adaptability and efficiency of Lelé's architectural concepts to date, presenting his own system as a valid option for the refurbishment of his buildings, even if by changing their initial configurations, and also to affirm the importance of preserving this immaterial heritage.

Architecture, thought by Lelé as something much bigger than form, "an instrument of integration, as a way of being culturally present"⁵, is also much bigger than materiality, it is a construction of knowledge, a legacy to the future.

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¹ João Filgueiras Lima (Lelé), in Giancarlo Latorraca (ed.). *João Filgueiras Lima Lelé*, Lisboa/São Paulo, Blau/Instituto Bardi, 2000, 31.

² As Lelé explains, the works with lightweight prefabricated mortar were motivated by "the precariousness and singularity in the organisation of parcels and the geographic and topographic peculiarities of each location, rendering the application of traditional methods of drainage and basic sanitation unfeasible due to the social problems generated by the flow of heavy machinery which could cause the removal of a large number of homes". *Ibid.*, 105.

³ See "The path of João Filgueiras Lima, Brazilian architect", accessed on March 11, 2016, <http://www.vitruvius.com.br/revistas/read/arquitextos/16.181/5592/en>.

⁴ The idea of recurrence in architecture, as well as in nature, improving its quality, was present at Lelé's everyday speech, and is known to every person who has worked with him. The HABITAT Institute also recorded his words in video. Source: *Instituto Brasileiro de Tecnologia do Habitat (IBTH)*, 2010.

⁵ *Ibid.*, 26.

Disruption and Continuity: The Challenge of Conversive Modernism

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Modernity emerged a century ago as a total rupture against the architecture of continuity and tradition, that had its foundation in history. Modernity has claimed its own coherence that appeared as a new tradition and has built its own history. Although it was questioned in the postmodern era, it is widely accepted now as a cultural heritage. The crucial question is whether ordinary modernism, which is vast in scale, must be conserved in a state of protected inertia or whether it should be chiefly seen as a part of dynamic change, i.e. the constant change in social, technological and aesthetic conditions. This question is not simple to answer, because it in turn requires answers to many other specific questions: what is *modern*? what is *history*? what is *protection of the past*? and what is *conservation-and-change*? – all to be answered at one and the same time.

It is true that there is a contradiction between the concepts and practices of modernity and heritage. If the system of ideas that brought significant changes in the social, technical and aesthetic perception of the world, which we call *modern*, retains its original spirit, and continues constantly changing in response to the dynamics of time, then this is hardly consistent with the protected inertia and the embalmed conservation of its works, apart from a few representative cases, as stipulated for each period of time, even in the *Charter of Athens*.

If we want to “save” the modernity of the modern, we must raise the question and consider the risk of modern academicism or academic modernism. In other words, we have to call into question the “modern” of the Modern Movement, at the time when it was seen as the only “true” architecture, but also the preservation of the modern when generalized; we have to equate modernity on equal terms with any other architectural expression of the past.

In fact, the problem which arises is a problem of history: I am referring to the invention of the lineage of generations, and the descending perception of the world, as well as its narrative, in terms of a rigorous documentation that relies

on science, at least during the last 200 years. The retrospective construction of history in the form of a historically correct restoration and protection of distinct periods has built an environment that is more responsive to the narration of the book than to the social, technical and aesthetic continuity of the world. Most of the moderns challenged this retrospective situation, but it still prevails even today, and defines the framework for the protection of the past. But the moderns didn't deny the past. It is therefore urgent to rethink history, not at a descriptive or cognitive level, but within the structural, methodological and ultimately philosophical field of its existence.

The problem of continuity, i.e. the necessary meeting of architecture with the development and change of concepts and ideas, and of social and material conditions, is the main problem that we are discussing today, and eventually becomes a predominant problem of modernity. To be and to remain *modern* today, without quotation marks, one should have the awareness and knowledge of *the modern*, and of the extent to which the social, technical and aesthetic conditions that spawned modernity still prevail *today*, in connection with both new architecture and the protection, preservation and change of the historically modern past. This knowledge-and-awareness is ultimately a critical consciousness that redefines the meaning of modernity, making history a necessary element in the architectural design of the modern world.

Let's transcend the modern ideology of rupture with the past and of denial of history, placing architecture beyond empirical intuition and experiential passion, to the peak of modern creative rationalism. And to the controversial doubt that "we have never been Modern"¹, which is expressed in recent years in the wider world of sciences, let's juxtapose the request "to become finally Modern", starting from the way in which we see, confront and keep alive the modern works of our ancestors.

In the last 10 years, architecture has seen innovative interventions in many modern concrete buildings – interventions that did not seek to reconstruct the initial coherence, or to create a new morphological cohesion, but instead strove to highlight the rupture in continuity, i.e. to memorialise the very obsolescence of the architecture, and to renew its functions and forms within the modernity of contemporary materials and aesthetics. This is a radically modern approach, because it follows the modern spirit and refuses academic protection: it has already led to outstanding results in many buildings, from Oslo to Paris, from Athens to Lisbon, and is also a core educational objective at many schools of architecture.

I first encountered this kind of groundbreaking reuse of modern architectural heritage 10 years ago in Oslo, when visiting the School of Architecture (AHO, Jarmund/Vigsnaes, 1998-2000) and the Norwegian Design and Architecture Centre (DogA, Jensen & Skodvin, 2002-2004), both of which projects reveal the naked residue of the original building structure, in perfect coexistence or confrontation with a completely contemporary architectural intervention. In a corresponding manner, Lacaton & Vassal, in their *Palais de Tokyo* in Paris (2002) decided against

restoring the already lost and perhaps outdated version of the original building of 1937. Instead, they elevated the latter's mutated remnants into a museum of the 21st century, that respects and continues the values of the 20th century. Quite different was the transformation of *Doxiadis* Office in Athens (Divercity, 2010) into a residential building, since adaptive reuse was part of the process of declaring the building as listed by the appropriate department.

Actually, those breaking the ground for a new understanding of preservation have tended to protect principles and structural systems rather more than aesthetic forms. Outstanding in this regard is the transformation of the *Banco Nacional Ultramarino* in Lisbon into the MUDE (*Museu do Design e da Moda*).

The objective of this session was to bring together presentations of architects who have been active in this view of reuse, along with theoretical contributions that will re-introduce critical questions of history and modernity, on the protection of the past and its continual change. The invitation to a “conversive modernism” session was an invitation to an exchange of critical views on architecture as both conservation and creation of buildings at one the same time, in the spirit of an indivisible synthesis of design, theory, education and practice.

Contributions to the session include papers concerned with the reuse of industrial heritage in Turkey, city market halls and a marine station in Poland, a cultural theatre in São Paulo, post-war built heritage in Helsinki and a memorial hall in Japan. The session is most closely related to the general theme of “theory”, in the framework of the 14th International **docomomo** Conference, although it might equally count as a joint session for the themes of buildings, technology, and design, because theory is the common denominator and the criterion of the way architecture is conceived, and definitely implemented. The challenge here is the confrontation of ideas on the future of history and modernity.

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Continuity by Change – 3 Ways of Conversion in Modern Architecture. The Case of Gdynia

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Continuity is today seen as one of the important values of architecture and urban planning. Keeping and preserving the legacy of the past is a strong tendency today and it includes also the legacy of Modernism. Yet, as time goes on, changes appear inevitable. The case is, how to make them a good continuation in terms of architecture and culture.

Conversion in the heritage of Modern Movement often concerns both the structure of the buildings and their function. It mainly focuses on extension, renovation or rebuilding the old structure. Those actions usually achieve their functional and economic goals, but the architectural results are often more debatable.

The article presents three examples of “continuity by change” in modern architecture of Gdynia: the extension of the City Market Halls carried out in the 1991; the renovation of the Marine Station conducted in 2013-14; and the partial demolition and rebuilding of the Oil Plant executed in 2011-2014. All those buildings are valuable examples of Modern Movement heritage, and two are listed. During the conversion they changed both, their function and architectural form, but the visual effects in every case differed from good to not satisfactory. That was because the final results of such actions depended not only on the talent and knowledge of the architect, but also on the level of sensitivity and collaboration between the other 4 actors which took part in those changes: the owners; the local authorities; the conservationists; and the local society.

In conclusion, “continuity by change” in Modern Movement heritage may give a wonderful opportunity for architecture and for cultural heritage. However, it demands much effort from all people in charge, including the developer and the local society. Yet, it is the only proper way to avoid the still frequent fate of many valuable buildings of modern legacy – negligence and disruption.

1. INTRODUCTION

Today there is a strong tendency to see a city as a trace of history. Continuity is one of the main values of architecture and urban planning, therefore the basic condition of spatial development nowadays is keeping and preserving the legacy of the past. It includes also the legacy of modernism. But this raises the question – to what extent we ought to do it. Of course, the most valuable monuments are listed. Still, as time goes on and the new circumstances arise, even those most valuable works of architecture are undoubtedly heading for change. Conversion appears inevitable, but the point is how to make it a good continuation in terms of both architecture and culture.

Although the Modern Movement heritage is relatively young, expected changes may concern not only the structure of the buildings but their function as well. Changes for continuity mainly focus on 3 different actions: extension, restoration and rebuilding. Although those actions usually achieve their functional and economic goals, the architectural results, however, are often more debatable.

I would like to illustrate this by presenting three examples of “continuity by change” in modern architecture of Gdynia: the first is the extension of the City Market Halls; the second is the restoration of the Marine Station; and the third is the demolition and rebuilding of the Oil Plant. All those buildings are valuable examples of Modern Movement heritage, and two of them are listed.

2. EXTENSION OF THE CITY MARKET HALLS

The City Market Halls were built in 1937, according to the design by Jerzy Müller and Stefan Reychman. It was a modern architectural complex that consisted of 3 buildings: the “arched” hall; the “flat” vegetable hall; and the “flat” fish hall. Between the buildings the architects designed an open place, dedicated to the free open market. The main part of the complex was the “arched” hall, with a construction of 9 great steel arches, each 16 m high and 33 m wide, with a heavily glazed roof and elevations¹. The “flat” halls were of a suspended steel construction, visible in their shell. The complex presented the avant-garde constructivist stylistics, and belonged to the most interesting examples of modernist architecture in Gdynia. Its great architectural value resulted in listing the buildings in 1983.

During the 40 years after the WWII the Market Halls were operated by a state owned, socialistic cooperative “Społem”. It intensively used the buildings, neglecting at the same time both their condition and close surroundings. Especially, the arrangement of the open market place was chaotic, where many unaesthetic commercial boxes were built, spoiling the whole complex. The urgent need for conversion was clear.

After the Solidarity Revolution in 1989 when Poland regained its independence, the Market Halls returned to the City of Gdynia. Yet in 1990, the operator of the complex changed, and the new one – the private company called Gdynia’s Society of Merchants – declared to undertake the awaited changes. They decided to extend the halls by building-up the open market place. According to conservation guidelines, the new construction ought to be light, easy to change and dismantle. The development project was prepared in 1991 by Jacek Droszcz from the architectural studio “Kwadrat”. To fulfill the requirements, he proposed a specially designed type of commercial boxes, situated under the transparent roof, supported by light steel pillars². From the architectural point of view, the new design looked very attractive. The architect took inspiration from a very fashionable at that time motif of a semicircular glazed roof, popularized by Richard Rogers in Lloyd’s Building in London. In some way the form referred also to the shape of the “arched” hall. But the size of the extension, in which the architect repeated the arched vault 19 times, appeared rather aggressive. Moreover, it blocked out the big part of the view at the historic buildings and, as a result, the old Market Halls were treated as a background for the new architecture. Actually, it was not the right solution. Unfortunately, neither the conservation officers nor the architects

realized that the form used for the extension of the historic building should be more neutral and modest. Thus, in spite of the impressive idea, the final architectural result was only partially satisfying.

3. RESTORATION OF THE MARINE STATION

A much better effect was achieved when all the partners involved in the development were well aware of its goals and expected results. As a good example I would like to present the restoration of the Marine Station in Gdynia and its adaptation for the Emigration Museum. The Marine Station was built in 1933, as a response to the growing economic migration from Poland to America. The designers of the building – engineers from the “Dyckerhoff & Widmann” studio in Katowice – created the structure that consisted of two joined parts: the Passenger Hall and the Distribution Warehouse. The Passenger Hall was built on a square plan and roofed with a thin-walled, reinforced concrete vaulting, with a large square skylight at the top³. Similarly, advanced and original was the reinforced concrete vaulting of the Distribution Warehouse, consisting of ten elliptic barrel vaults, heavily glazed and topped with skylights. The main façade of the complex had a semi-modernistic vertical composition, stressed on both sides by the towering protrusions and the flag-masts. From the very beginning, the Marine Station was one of the most characteristic buildings in the Gdynia’s harbor.

Unfortunately, during the WWII the building did not avoid damage: firstly, the Germans broke down the sculptured frontal emblems and changed the glazing of all the elevations; then the heavy bombardment in 1943 destroyed the whole north corner of the building. From that time on the Passenger Hall and its façade lost its symmetrical composition and remained with that vivid visual deformation. After the war the building still functioned as a harbor station. At the end of the 1980s, the maritime passenger traffic completely



FIGURE 1. City Market Halls, Gdynia, Poland, 1937 and 1991, the old arched hall (right) and the modern extension (left). © H. S. Soltysik, 2015.



FIGURE 2. Marine Station, Gdynia, Poland, 1933, partly demolished during the WWII. © H. S. Soltysik, 2011.



FIGURE 3. Marine Station, Gdynia, Poland, 1933, after the renovation and adaptation for the Emigration Museum. © H. S. Soltysik, 2016.



FIGURE 4. Vistal Offshore Manufactory, Gdynia, Poland, with the preserved part of the old Oil Plant in the center. © H. S. Soltysik, 2015.

lost its position in favor of the air transport. The last Polish transatlantic liner “Stefan Batory” set off on its last voyage in 1988 and then the Marine Station was closed; later it was almost completely abandoned. But the strong determination to rescue the historic building resulted in its listing in 1990.

In June 2010 the Municipality of Gdynia took the decision to restore the monument and adapt it for the Museum of Emigration. At first, they wanted only to renovate the façade of the building and its interiors. But in the end of 2010 some of Gdynia’s architectural historians and architects presented the idea of an overall reconstruction of the monument and appealed to the local authorities to restore the whole destroyed corner of the old Marine Station⁴. A few months later, after positive technical opinions, the City Council decided to fully reconstruct the building and bring back its original composition. The conceptual architecture design was prepared in 2011 by the architect Andrzej Bomerski from Gdańsk. The architect restored the original view of the missing corner of the façade, the traditional material, all the

historical details, including sculptural emblems, flag masts and others. However, in rebuilding the side elevation, he did not bring back its original structure. The architects only followed the general historic composition of the north elevation, but modernized the materials⁵. Instead of the reinforced concrete and brick they used steel and glass, achieving quite an interesting architectural result. That decision proved to be right both from the aesthetic and historical points of view; it restored the previous harmony but at the same time reminded of the long lasting war and after-war history of the building. The interiors of the old Marine Station also underwent a nice reconstruction, restoring the building’s original symmetry.

Today the building functions as the Museum and features many artistic events. The restoration of the Marine Station and its adaptation appeared a great success, mainly due to the good collaboration between the owners of the buildings – that means the Municipality – and the historians, conservationists, architects and the local society.

4. DEMOLITION OF THE OIL PLANT AND A ROLE OF "A BIG ORNAMENT"

The last example I want to talk about is however less satisfactory. It concerns the partial demolition of the historic Oil Plant in the harbor of Gdynia and building on its place a new steel construction manufactory "Vistal Offshore". The Oil Plant was one of the oldest plants in Gdynia's harbor, constructed in 1930-32, according to the project of "Wayss & Freytag" studio⁶. It consisted of 2, asymmetrically composed parts: the high structure of a silo and a row of one-storey warehouses. All the buildings were built from brick and reinforced concrete and presented the modest stylistics of functionalism. The Oil Plant was in use until the end of 1990s, then it was sold. The new investor, the "Vistal Offshore" manufactory, decided to demolish the old structure and to build a new, much bigger building in its place. The Oil Plant was not listed in the nation-wide evidence of monuments, but in 2011 it was included in the Municipal Register of Protection⁷. Unfortunately, from the legal point of view it is not a well defined form of protection, as it is not clearly stated in the documents concerning the building. So, the investor did not know that the Oil Plant should be preserved. In April 2011 he started the demolition of the building, getting the provincial government approval for it. In the beginning of May all the 1-storey warehouses of the old structure were gone. And if it was not for the intervention of Gdynia's inhabitants, who alarmed the press and the conservationists, the fate of the building seemed to be doomed. The reaction was immediate. The Voivodship Office stopped the demolition and the Conservation Officer ordered that the elevation of the high silo must be preserved. Then in 2013 the architect Piotr Kurpyta prepared a new project of the manufactory, where the historic part of the Oil Plant was protruded and exposed in the façade⁸. But he did not integrate it with the interiors of the new structure and created a kind of "big ornament" – artificial and separated from the rest of the building. That was all the investor wanted to do as far as the preservation of the monument was concerned – and unfortunately, he refused both to restore the old structure and take care of it. As the result, the whole building presents something like a "rotten" compromise or "the lesser evil". From the architectural point of view, the executed conversion was better than the complete demolition proposed at the beginning, but worse than the would-be restoration and adaptation of the old building. Clearly, the final result could have been better, if all the partners had collaborated.

5. CONCLUSIONS

What conclusions can be made from these examples? The first one is, that when we choose the continuity in favour of disruption in reference to the historically valuable buildings, we must not only avoid the new aggressive architectural forms, but also fully adapt the old structure to the new function. The second conclusion is, that the good final result of this conversion depended on the good

collaboration between 5 main actors who took part in those changes: the architects, the owners, the local authorities, the conservationists, and the local society. The third conclusion is, that the “continuity by change” in modern heritage may give a wonderful opportunity for the contemporary architecture and that it is the only proper way to avoid the still frequent fate of modern legacy – negligence and disruption.

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Adaptive Reuse of Industrial Heritage: Resilience or Irreparable Loss?

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The restoration and adaptive reuse of industrial heritage buildings and complexes, which present structurally and functionally resilient shells, provide us with an interesting dilemma in theory and practice: made of hard wearing materials to house straining functions and to last as long as possible, they are also flexible enough to adapt to almost any new purpose as a container. However, the presence of original machinery and equipment as well as designs based on machine-buildings may reduce the possibilities of adaptive reuse to a museum, where the buildings exhibit themselves, retaining the social, economic, historic and public aspects of cultural heritage as documents. Although originally built on the outskirts of urban settlements, today most industrial heritage complexes occupy central locations in the metropolitan sprawl of major cities. If disused, they are considered obsolete brownfields by local authorities and citizens despite personal and collective memories that may be attached to them. Their conversion into new uses presents major technical difficulties that require expertise in design and implementation. This paper discusses the theoretical and practical aspects of the adaptive reuse of industrial heritage and inherent problems, focusing on the case of the *Sümerbank Kayseri* Textile Factory (I. Nikolaev, Turkstroj, 1932-1935), which is being transformed into the campus of Abdullah Gül University. The restoration, renovation and adaptive reuse projects for different components of the complex follow similar principles of preservation and sustainability while they are modified to fit the architectural and technological characteristics of each building. Thus, although conversive and easily adaptable, the preservation of industrial architectural heritage becomes a dilemma between disruption and continuity, which the architects have to solve going beyond the possibilities of mere building stock on the one hand and that of the museum on the other.

1. INTRODUCTION

The restoration and adaptive reuse of industrial heritage provides us with an interesting dilemma in theory and practice. Such buildings and complexes present structurally and functionally resilient shells: they are made of hard wearing materials, built to house straining functions and to last as long as possible. They are also spatially and structurally flexible enough to adapt to almost any new purpose as a container. However, the presence of original machinery and equipment, which define the *raison d'être* of these complexes, as well as technologies based on the design and construction of “machine-buildings” may reduce the possibilities of adaptive reuse to that of a museum, where the buildings exhibit themselves, retaining the social, economic, historic and public aspects of cultural heritage as documents without significant changes to their architectural characteristics and inherent building materials and technologies. According to the Dublin Principles, indus-

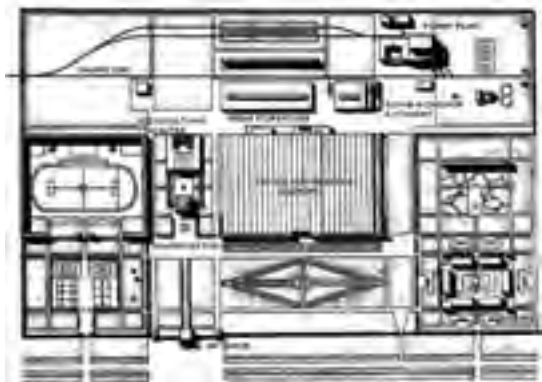


FIGURE 1. Ivan Nikolaev for Turkstroj, *Kayseri Sümerbank Textile Factory*, Kayseri, Turkey, 1932-1935. Site plan. © Burak Asiliskender Archive.

trial heritage “includes both material assets – immovable and movable –, and intangible dimensions such as technical know-how, the organisation of work and workers, and the complex social and cultural legacy that shaped the life of communities”.

Although originally built on the outskirts of urban settlements, today most industrial heritage sites occupy central spaces in the metropolitan sprawl of major cities. If disused, they are considered obsolete brownfields by the local authorities and the citizens despite the personal and collective memories that may be attached to them, making them an endangered species of her-

itage easily destroyed in terms of urban renewal projects. According to Valletta Principles, “it is fundamental to consider heritage as an essential resource” and to ensure that the “new functions [...] satisfy the need for sustainable development, in line with the concept of the historic town as a unique and irreplaceable ecosystem”. Inherently combined with these principles is the concept of the spirit of place, “the tangible and intangible, the physical and the spiritual elements that give the area its specific identity, meaning, emotion and mystery”.

The conversion of industrial heritage into new uses, on the other hand, presents major technical difficulties that require expertise in design and implementation. Dublin Principles state that appropriate adaptive use could be the most sustainable way of ensuring the conservation of industrial heritage. Such new uses must respect “significant material, components and patterns of circulation and activity”. In this process specialist skills are necessary, and “building codes, risk mitigation requirements, environmental or industrial regulations, and other standards” must be adapted. The Eindhoven-Seoul Statement emphasizes the importance of reuse and a “sustainable built environment” in addition to conservation and safeguarding.

Although durable, converseive and easily adaptable in many aspects, the preservation of industrial architectural heritage presents a dilemma between disruption and continuity, which the architects have to solve going beyond the possibilities of renovating building stock on the one hand and that of conserving as a museum on the other.

2. CASE STUDY

Kayseri Sümerbank Textile Factory (1932-1935) was one of the largest industrial complexes founded by the young Turkish Republic. State policies of the period focused on the modernization and secularization of the society through public education, socio-cultural development, democratization, industrializa-

was under Stalin's control in 1932². This marked the abrupt end of constructivism and its social and cultural ideology while the now state-employed architects sought a new and politically correct rationality and standardization in their work, leading to a new style of modern monumental historicist classicism. Industrial architecture acquired similar characteristics where symmetry and monumentality overrode pure functionalism. The complex in Kayseri belongs to this period of transition, reflecting both the formal monumental classicism and the relatively informal constructivism in its different parts³. However, the forms as well as the life style presented with these buildings was revolutionary for a traditional society like Kayseri. The geometric plans, non-stationary furniture, central heating, water, sewage and electricity systems constituted novelties for the occupants of the new apartments in the complex (Asiliskender, 2008, 47-48).

Kayseri Sümerbank Textile Factory was shut down in 1999 with other state factories. However, the complex was kept from privatization due to the recognition of its national significance. It was designated as a national monument in 2003 with the effort of **docomomo** Turkey but was degraded due to neglect and vandalism. It was allotted to *Abdullah Gül* University in 2012 to be used as the city campus of this recently founded institution.

A master plan was prepared by the authors in 2014 to direct this transformation. A new administrative and education building, designed by EAA Architects, Istanbul, was opened in 2014. The service-housing ensembles within the complex were renovated to house faculty and students in 2013 and 2014. Adaptive reuse projects transforming the power and steam plant into *Abdullah Gül* Presidential Museum and Library, designed by EAA, and the great storehouse to house classrooms, studios and offices, designed by the authors, are almost complete while another project for the main entrance facilities, making these three blocks the interface between the university and the city, designed by the authors, is continuing. Auxiliary buildings such as the fire house and the service-housing storages are being renovated as social spaces. Other adaptive reuse projects are underway for the main production plant, the maintenance workshop and foundry, the social centre and the administrative building, which will house a series of functions related with administration and education as well as social and cultural activities. Recreational areas are being integrated into the existing landscape.

AGU sees Sümer as an open city campus that will become the interface where the university's research, education and societal impact missions meet the citizens of Kayseri. Once an important site in the city, the campus will be regenerated as an urban hub, preserving it as a memory place with a new meaning. The master plan aims at the definition of dominant function zones although administrative, educational and socio-cultural functions are integrated into all zones. The restoration and adaptive reuse projects focus on the preservation of the original characteristics of architectural design, spatial composition and building materials and technologies as well as the economic, social and cultural history of industrial production. Although degraded, the buildings in the complex are documents



FIGURE 4. Burak Asiliskender and Nilüfer Baturayoglu Yöney, *Abdullah Gül University Sümer Campus, Restoration and Adaptive Reuse Project for the Great Storehouse*, interior views, 2015 (left) and 2016 (right). © Burak Asiliskender.

to the development of building technology and materials⁴. Preserving characteristic period interventions is also considered important as these bear witness to the history of the complex. As most of the machinery has been destroyed following the termination of production, the adaptive reuse projects focus on what has been preserved, or in other words, the buildings themselves. The contemporary interventions dynamically display the original architectural and technological characteristics while distinguishing the new from the original at all scales. The transformation and spatial changes through contemporary additions due to adaptive reuse focus on reversibility while minimizing the negative impact of building regulations.

3. CONCLUSION

The resolution of the dilemma between disruption and continuity underlying the preservation of industrial heritage must lie in the concept of sustainability⁵. The termination of production at an industrial heritage site presents a disruption whereas the notion of continuity could be sought in a “socially useful purpose” (*Venice Charter*), regenerating an obsolete site as a functioning component of the contemporary urban ecosystem. This redefinition of the spirit of place may bring new meaning and vitality to an abandoned historic site. If sustainability is continuity in effect, then it goes beyond the mere reuse of physical building stock,

including the preservation of architectural, technological and material characteristics as well as the creation of new economic, social, cultural and historic life. The theoretical and practical aspects of the adaptive reuse of industrial heritage and inherent difficulties present the architects with a problem beyond the scope of simply renovating building stock on the one hand and stabilizing everything as in a museum on the other. Each component of a complex becomes a problem in its own right and to be solved by itself but keeping the general principles for the definition of the spirit of place and the regeneration of the site in mind. Thus, sustainable adaptive reuse transcends the boundaries of disruption and becomes continuity, resolving the dilemma.

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- 3 Similarities may be drawn with Vesnin Brothers' rectilinear, rationalist monumentality in classical proportions in their "housing planning model for Soviet industrial settlements".
- 4 Bozdoğan and Akcan (2012: 43-47) argue that "the poor state of available building technology as well as the tight budgets" in this period in Turkey hindered the implementation of *avant-garde* designs. But material evidence on the build-ings indicates otherwise: The building materials, innovative design strategies and building technologies integrating them are exceptional. The problem was not low budgets but constraints in acquiring building materials. Monumental, visionary and ambitious architectural and structural designs were actualized as far as the surviving drawings are concerned, and despite 15 years of neglect, the buildings have survived in acceptable condition (Baturayoglu Yöney and Asiliskender, 2015).
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The Inohana Memorial Hall: Change and Continuity

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The *Inohana* Memorial Hall at Chiba University, Japan, was completed in 1964 and is one of the earliest pieces of architecture by Fumihiko Maki, who was commissioned in association with *Takenaka* Corporation's design branch. The hall is situated on a hill called *Inohana*, or the "elephant's nose", and its surrounding environment is calm and quiet. Maki decided to design this hall with an inclined wall, imbuing it with the sense that the building is a continuation of the hill. The construction of the inclined wall from reinforced concrete required considerable technical and management skill: 5 experiments were conducted before the actual construction and as a result of the careful construction plan, the inclined wall was completed with no visible rock pockets or sand traces. The auditorium, meanwhile, was rather unique in being designed with a sense of "openness". No wall was constructed between the auditorium and the foyer on the second floor level, and the partition between the auditorium and meeting rooms was transparent. Moreover, a remarkable collaboration was undertaken with the sculptor Masayuki Nagare, who was commissioned to create not only a mural on the stage and a gong above the entrance, but also the retaining walls on the front square, which give the hall its sense of elegance and dignity and a feeling of continuity with *Inohana* hill. In 1993 and 2014, renovations were undertaken at *Inohana* Memorial Hall, which primarily aimed to improve its function as an auditorium and to improve its earthquake resistance. To this end, a partition wall was installed on the second floor level in 1993, while in 2014, a noise-cancelling wall was inserted inside the meeting rooms and the projection booth was removed from the point of earthquake resistance. These changes collectively deprived the hall of its "openness". However, it could be argued that these changes to the "infill" were necessary to improve the auditorium for use on more formal occasions. The main structure, together with Nagare's sculpture, stands intact, and could be defined as the building's "skeleton". At the time of its renovation in 2014, this building was listed as a historic building in the Campus plan, but it has not been registered as a **docomomo** Japan building, in contrast to the Toyota Auditorium of Nagoya University, which was registered as such in 2003, prior to its 2006 renovation. It is now desirable to produce a description that clarifies the value of this building and draw up a management plan to maintain the *Inohana* Memorial Hall as a piece of living heritage.

1. INTRODUCTION

The *Inohana* Memorial Hall, Faculty of Medicine, Chiba University, was completed in 1964 and is one of the earliest pieces of architecture designed by Fumihiko Maki. At that time, he had not yet opened his architecture firm, Maki and Associates Architecture and Planning, which was established in 1965. Therefore, Maki designed this building together with members of *Takenaka* Corporation's design branch, the company that also undertook its construction.

Construction of the *Inohana* Memorial Hall commenced in 1960 to celebrate the 85th anniversary of Kyoritsu Hospital, the predecessor of Chiba University's Faculty of Medicine. This hospital was largely supported by the local authority of Chiba prefecture, the Chiba municipal office, local business expertise, and agricultural associations, as was the construction of the *Inohana* Memorial Hall.

Following its dedication on September 27, 1964, the hall was used as a venue for various ceremonies, such as welcoming and graduation ceremonies, anatomy memorial ceremonies and conferences. Its first minor renovation was undertaken in 1993, and a second major renovation project occurred in 2014.

2. CONSTRUCTION OF THE INOHANA MEMORIAL HALL

The *Inohana* Memorial Hall is situated on the edge of a hill called *Inohana*. Maki said that he “decided to lay out the hall on the very edge of this site, and it seemed natural to incline the wall at a similar angle to the hill, because it gives the feeling that the building is continuous with the hill”. This ladder-shaped design was also economical and practical, as it shortened the span of the top beams and provided good acoustics.

However, creating an inclined wall without blooms or rock pockets required considerable construction and management skill. Maki visited Nichinan Cultural Hall in *Miyazaki* Prefecture, designed by Kenzo Tange, which was at that time one of the few pieces of architecture with an inclined concrete exterior wall in Japan. Maki and his team also conducted five experiments before developing the specifications for the concrete.

The falsework comprised three storeys, supported by steel struts, and had a pier on which the pumping machine could move horizontally. The result was remarkable; there were no noticeable rock pockets, blooms, or sand traces. Double-T-shaped prestressed (PS) beams were also used for the roof structure, at a time when PS was still a new technology for the Japanese.



FIGURE 1. Fumihiko Maki, the *Inohana* Memorial Hall, Chiba, Japan, view from the front square. © Sumiko Ebara, 2014.



FIGURE 2. Fumihiko Maki, the *Inohana Memorial Hall*, Chiba, Japan, the inclined wall. © Sumiko Ebara, 2014.



FIGURE 3. Fumihiko Maki, the *Inohana Memorial Hall*, Chiba, Japan, original interior of the auditorium. © *Shinkenchiiku*, n. 12, 1994, 131.

Fortunately, the *Inohana Memorial Hall* was situated in the depths of the campus, free from traffic noise. Therefore, Maki tried to give this hall a sense of openness, natural light, and visual transparency. For example, the partition between the hall and foyer on the second floor level was omitted, while the wall between the hall and small meeting rooms was made of clear glass. Both provisions allowed natural light to enter the hall. When darkness was required, the red foyer curtains could be drawn, thus informing onlookers in dramatic fashion that the building was occupied.

The projection room, together with its veneer acoustic reflectors, also gave the building a rather futuristic atmosphere. Furthermore, a remarkable collaboration was made with sculptor Masayuki Nagare, who was commissioned not only to make the mural sculpture of the stage front and a gong above the entrance door, but also the retaining walls of the south and east sides of the front square. Nagare's sculpture made visible the continuity between the environment and the hall, and enhanced the building's artistry as a whole.

3. RENOVATION PROJECTS

The originality and uniqueness of the *Inohana Memorial Hall* resided in its openness. However, to improve its acoustics and air conditioning efficiency, it was desirable to make it a closed space. Therefore, two renovation projects were carried out to improve its function as a general auditorium.

First, in 1993, a partition wall was installed between the hall and foyer on the second floor level. New ceiling panels and a piped air conditioning system were also installed, and due to this change, the veneer acoustic reflectors were removed. These renovation projects achieved some success in improving the acoustics and air control, but the renovation was clearly still inadequate. For example, asbestos was sealed up within the structure but not completely removed from the hall.

A campus management plan was drawn up in 2012. In this plan, attention was drawn to some of the campus's historical assets. It was in this context that the *Inohana Memorial Hall* was, remarkably, designated a "historic building" on

campus, less than 50 years after its completion. In Japan, under the Law for the Protection of Cultural Properties, the Agency of Cultural Affairs can register Tangible Cultural Properties, but these are usually more than 50 years old.

However, the *Inohana* Memorial Hall was not a **docomomo** Japan registered building in contrast to the Toyota Auditorium of Nagoya University, which was also designed by Maki and listed as a **docomomo** Japan Registered building in 2003. It is said that when the renovation project took place at Toyota Auditorium, the fact that it was registered as a **docomomo** Japan building helped to ensure that its integrity was respected. Thus, the renovation project was undertaken very carefully so as to maintain as much of the building's original fabric as possible and not to harm its authenticity. In the case of Chiba, a less protective attitude was taken with the *Inohana* Memorial Hall, although it is said that Professor Akira Kuryu of the Department of Architecture, Chiba University, who had been a staff member of Maki and Associates, made a great effort to preserve the *Inohana* Memorial Hall as a historic building.

In 2014, a second instance of major renovation work was undertaken. On this occasion, the principal aim was to improve the building's earthquake resistance. The top of the ladder-shaped structure was reinforced with an additional 15cm of concrete. In addition, the slits in the staircases were sealed and the projection room was removed. The inclined concrete wall required only the partial removal of its deteriorated surface and repairs with resin mortar. Finally, an organic-inorganic hybrid resin coating was applied as a finish. To improve acoustic efficiency, a noise-cancelling wall was installed inside the meeting rooms and the stools on the first floor were replaced with larger ones to accommodate modern proportions. The piped air conditioning system that was installed in 1993 had proven ineffective; the volume of the space was too large to fill with conditioned air. Therefore, the original blow-ports below the balcony were reused to lay downward-directed nozzles. A new independent air conditioning system was installed in the foyer. Furthermore, a public toilet was built in the corner of the foyer. The asbestos that was simply sealed up during the first renovation project was completely removed.

The 2012 campus plan also proposes further renovation work in the near future, including refurbishment of the toilets on the basement floor, the addition of underfloor heating, and replacement of the stools on the second floor.

4. EVALUATION

The *Inohana* Memorial Hall has undergone two periods of renovation work. Some parts of the building have been changed, while others have been preserved. The author is a Chiba University staff member and greatly appreciates the University's decision to keep the *Inohana* Memorial Hall. However, there are some points that may be improved. This section aims to evaluate these renovation projects in terms of the conservation of modern architecture as a form of living heritage.

Changes

THE OPENNESS OF THE HALL

The most drastic change has occurred to the openness of the hall. The partition added between the hall and foyer, together with the installation of an insulation wall between the hall and meeting rooms, has deprived the hall of its openness, which was originally its most unique quality. As a result, the hall now resembles a “general” hall, equipped with the latest audio-visual equipment.

While some regret this change, the initial plan to establish an open hall presented some inherent challenges. If the hall had only been used for daily ceremonies and local conferences, like an extended classroom, the renovation change might have been avoided. However, the hall has been used for various purposes, including international conferences. Furthermore, the University desired to use the hall more frequently for local events. To meet these requirements and expectations, these changes were, to some extent, necessary and appropriate.

VENEER REFLECTORS AND PROJECTION ROOM

The building’s veneer reflectors and projection room were removed because their functions were replaced with other devices. In 1964, the reflectors and projection room were designed not only to serve the necessary AV function, but also to serve as a sort of ornamental sculpture for the hall. However, as technology advanced, equipment became smaller and the original devices became obsolete. These ornaments, which had become a burden for the hall, had to be removed to upgrade the building’s earthquake resistance. After these alterations, the building’s artistic element was mainly entrusted to the mural sculpture by Masayuki Nagare.

Continuity

SCULPTURES BY MASAYUKI NAGARE

Nagare’s sculptures have been preserved intact. The gong and mural sculpture of the front stage give this hall an artistic atmosphere and dignity. The retaining walls of the outside front square had deteriorated slightly and gaps could be seen in some places due to their aging process and the results of an earthquake in 2011. However, these defects were repaired in 2015. It is a shame that the front square usually serves as a car park, as it has the potential for other uses, such as concerts and workshops. As previously mentioned, the construction of the hall was widely supported by local expertise. Thus, it is desirable to use both the hall and this front square more effectively, opening it to the local community.



FIGURE 4. Fumihiro Maki, the *Inohana* Memorial Hall, Chiba, Japan , Masayuki Nagare's mural of the stage front. © Sumiko Ebara, 2014.

THE LADDER SHAPE OF THE HALL

The exterior wall tilts at a 70-degree angle to correspond with the hill upon which it is situated. Preserving this form was one of the principal aims of the renovation work in 2014. The additional concrete used to reinforce the top beams scarcely affected the exterior shape or inner space.

Skelton and Infill

This ladder-shaped structure and the staircases could be considered the permanent “skeleton” of this building, allowing those parts that were removed, such as the veneer reflectors and the projection room, to be interpreted simply as replaceable “infill”. The insulation wall between the hall and meeting rooms could, therefore, be defined as additional infill. My opinion is that as long as the ladder-shaped structure and staircases are preserved, together with the building’s relationship to its environment, this hall will retain its identity, because the changes for the “infill” are reversible and may be possible to be retrieved or removed again if it is required.

5. CONCLUSION

In 2016, the *Inohana* Memorial Hall was awarded the *Long-Life Prize* by BELCA. This marks a significant first step toward recognizing the *Inohana* Memorial Hall as a living heritage building by users, caretakers, and others.

When renovating a historic building, the Madrid Document (2011) states that we must “Maintain integrity by understanding significance before any intervention”.

Now we must establish clear policies and guidelines before starting any further architectural intervention, so as to define the acceptable limits of change, prepare for future renovation work, and maintain it as a piece of living heritage.

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The *Cultura Artística* Theatre: A Controversial Reconstruction

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Set up in 1919 the *Cultura Artística* is a private society devoted to stimulate music, dance and drama in São Paulo. In 1942 the society hired architects Rino Levi and Roberto Cerqueira Cesar to design a new modern theatre with a 1500 capacity. With excellent acoustics and visibility, it quickly became a landmark not only for its cultural agenda but for the building itself, which had an 8x48 m front mural entirely covering the upper part of the façade. The theatre was a listed historical monument.

On August, 2008 a fire almost completely destroyed the theatre except for the frontal volume with the foyers and the mural.

A controversy began about how it should be rebuilt. Some articles were published stating that the theatre should be rebuilt exactly as it was, since it was a listed building. Others thought appropriate to keep the remains, but the stage and auditorium should be as contemporary as possible.

2 different projects came out of this discussion. One is a fully contemporary theatre with complete adaptability to provide drama, dance, opera music for 750 people in the main tier and 2 balconies with 600 places. 2 floors were added for rehearsals, masterclasses, etc., and the roof was used as a garden with a smaller flexible room for parties, jazz, etc. The site is only 1976 m² and the total built area is 12800 m². The final design is a rather high volume, which is nevertheless acceptable in São Paulo, a city of skyscrapers.

The other is a much lower recital hall, suited for chamber music, piano and singer's recitals. There are 2 main advantages to this solution: better adjusted acoustics and to create greater unity since stalls and stage merge into each other. The total built area is 5030m². Of course this approach is more in accordance with the present economic situation in Brazil.

The question remains: which is the best alternative for São Paulo in the long run?

Set up in 1919 the *Cultura Artística* Society is a private organization devoted to stimulate the arts, music, dance, and drama in the rather provincial city of São Paulo of that time. In 1942 the society hired architects Rino Levi (1901-1965) and Roberto Cerqueira Cesar (1917-2003) to design a new modern theatre with a 1500 seat capacity in a wide fan format of 135° encirclement¹. Due to construction difficulties during the war years the building completion was delayed and opened only in march 1950 with a concert by composer Heitor Villa-Lobos. The theatre remained a powerful hub for the arts, music and drama for generations. With excellent acoustics and visibility, the building quickly became a landmark not only for its intangible qualities as a provider of culture but also because of the building itself. The entire upper part of the façade was covered by a huge (8.00x48.00m) glass mosaic designed by painter Emiliano Di Cavalcanti (1897-1976) depicting the nine muses "who performed inside the theatre", as he described it in his competition winning proposal.

On a 2008 August sunday night, a fire almost completely destroyed the building. The fire-doors which separated the auditorium from the foyers prevented the destruction of the frontal volume containing both foyers and the mural.



FIGURE 1. Rino Levi, Roberto Cerqueira Cesar, the *Cultura Artística* Theatre, 1959, note the front 8x48m glass mosaic.
© Faculdade de Arquitetura e Urbanismo da Universidade de São Paulo.

Our office which is considered the heir of the original architect's studio, was hired to design a new theatre in the same location as the old one for several reasons: we had all of the original drawings; the extraordinary mosaic was in good condition; the existing site was a convenient location, with public transportation and good parking nearby; and for São Paulo it retained the status of a landmark of cultural importance, since the theatre was listed as a historical monument by all the public agencies concerned with the preservation of buildings, at city and State as well as at the federal level.

A controversy began concerning how it should be rebuilt. Some articles were published stating that the theatre should be rebuilt exactly as it originally was, since it was a listed building. Others thought it appropriate to keep the remains, while the stage and auditorium should be as contemporary as possible. 2 different projects came out of this discussions and considerations of cost.

The first was a fully contemporary theatre with complete adaptability to provide for dance, musicals, opera, music and drama. In order to achieve such flexibility some decisions were taken such as: 1) to turn 90° the central axis of the theatre, in relation of the original building, in order to make more room for a full 25m deep stage, an orchestra pit, an auditorium and upper foyers; 2) to lift up by the height of one floor the stage and auditorium in order to make more room for manoeuvring delivery trucks under the stage and a more convenient lower foyer to accommodate the majority of the public. Architect Herman Hertzberger once remarked that "Seeing and being seen not only obtains in the auditoria but more especially in the foyers. People visit the theatre for each other and not just for the

play”². For these reasons most of the ground level was left for the public, the bar, small music shop, and an open foyer; 3) A third important decision was to retain a certain intimacy of the auditorium maintaining the stalls³ with only 750 places and accommodating the remaining 600 places in 2 balconies. Architect Roderick Ham recommended that “some performances are suitable for, or will only attract, smaller audiences than the full capacity of the house, and it is useful to be able to reduce the size of the auditorium in a convincing manner. This is very difficult to achieve in a single tier auditorium. With a multi tier auditorium, on the other hand, it is relatively easy to shut off the top tier”⁴. This is simply done by shutting off lights or in a more sophisticated project such as in the Plymouth Theatre Royal⁵ where the capacity can be reduced from 1296 to 764 places by lowering the ceiling; 4) 2 floors were added in order to provide space for the administration, and masterclasses as well as exhibition space; 5) And finally the roof was to be used as an open garden with a small very flexible room that could be used for parties, rehearsals, jazz or contemporary music.

The site is quite small with only 1976 m² and with a total built area of 12800 m². For all of these reasons the final theatre is a rather high volume, which is nevertheless acceptable from an urban perspective in a city of skyscrapers such as São Paulo. The 2 small frontal foyers were retained and the mural was fully refurbished by Architect Isabel Ruas Pereira Coelho, to great acclaim⁶. All 3 public agencies concerned with the preservation of listed buildings finally approved the project in 2015.

A second project is currently being designed, for a smaller recital hall. The main issues of this design are: 1) Returning the main central axis to the previous position, with a smaller 7.0m deep stage, better, suited for chamber music, piano recitals, trios, quartets or other solo instruments, singers and small group of musicians, normally limited to 10 or 20. There are essentially 2 main advantages to this solution: better adjusted acoustics and an increased unity of stage and auditorium. Without the adaptability to produce on the same stage dance, drama or music the basic proscenium form⁷ is no longer necessary and so, auditorium and stage merge into one other. Good examples are The Maltings Concert Hall⁸ or The Mechanics Hall, Worcester County opened in 1857 and renovated in 1970 and 1990, or the *Stadt-Casino* in Basel built in 1776; 2) Stage and auditorium are lifted 1 floor for the same reasons as the previous project with the advantage that, with a smaller technical under-stage, more room could be provided for refreshments and eventually a restaurant with a bar of its own, that could be



FIGURE 2. The theatre after the fire that destroyed it. The steel structure was built to prevent the collapse of the front mural.
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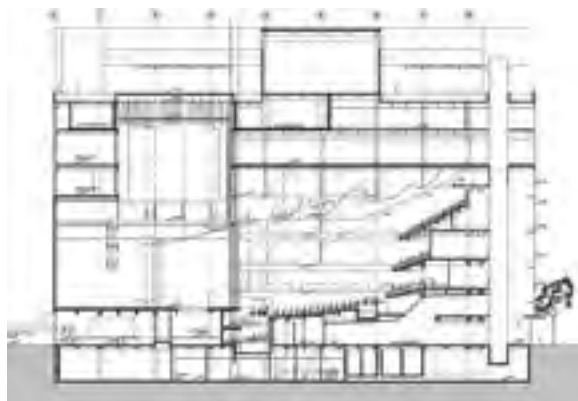


FIGURE 3. Paulo Bruna Arquitetos Associados, the *Cultura Artística* Theatre, section of the new theatre with 1350 places. © Paulo Bruna Arquitetos Associados Ltda.



FIGURE 4. Paulo Bruna Arquitetos Associados, the *Cultura Artística* Theatre, model of the new theatre. © Nelson Kon.

closed for parties; 3) In order to provide a more interesting auditorium, 2 lateral balconies were added to the main tier which help to better merge both stage and auditorium. The very back of the stage could eventually be occupied by an organ that is redundant at the school of music of the University of São Paulo; 4) And finally all necessary space needed for musicians, dressing rooms, green room, rehearsal rooms, master-class room, administration, vertical circulation, etc., could be accommodated on the lateral space of the new auditorium, in order to keep the volume as low as possible. The rehearsal and or masterclass room are located on the upper foyer with the same height as the front mosaic of 8.00m. The purpose is to have a continuity of volumes in the façade one with a magnificent mural and in the same horizontal level a glass room of the same quality.

The total built area is naturally much smaller than the previous one, with only 5030m² of built area. Both foyers are much more in evidence and the mural retains its qualities and focus of attention. Of course this approach is

more in accordance with the present economic situation prevailing in Brazil.

The question remains: which is the best alternative for São Paulo in the long run?

The “*Cultura Artística* Society” is a private organization which depends on the sale of tickets and a few private sponsors for its economic stability. A larger theatre may be more flexible accommodating not only classical music but also popular musicals which may run for long periods of time or drama which was for decades its major support. But with 12800m² of built area it is a rather expensive construction in a critical moment of reduced economic activity, increased unemployment, inflation and political turmoil. In my opinion this alternative should be retained and the construction postponed for the time being, until the present crisis passes.

A smaller theatre, such as the second alternative has a few advantages, but a lot of drawbacks. The advantages are essentially 2: it retains the original con-

cept of 1942 with the stalls at the back of the mural, and an easier approval from the Public Agencies concerned with the conservation of historical monuments; and is much cheaper to build, being more or less one-fourth of the previous size. The disadvantages are long term. In my opinion there is not enough audience in São Paulo for chamber music, recitals and small ensembles. São Paulo has at the moment 164 theatres, most of them private, but none, except for “Sala São Paulo” with its 1500 places, dedicated exclusively to music. This alternative in my opinion is not sustainable from an exclusively financing point of view, and should not be built.

NOTES

- 1 “This wide fan form derives from the ‘point of command’ theory of Sir Peter Hall and John Bury. There is a point on the stage, about 2.5 m (8 ft.) back from its edge, from which an actor can command the attention of the whole audience within an arc of vision of 135° without having to turn his head.” in Roderick Ham, *Theatres – Planning Guidance for Design and Adaptation*, London, The Architectural Press, 1987, 15.
- 2 Arthur Wortmann, *The Theaters of Herman Hertzberger*, Rotterdam, 010 Publishers, 2005, 50.
- 3 “The various levels of the auditorium have been given many different names, e.g. stalls, orchestra stalls, amphitheatre, balcony, pit, circle, dress circle, upper circle, gallery, tier, slips, grand tier, terms which by combinations and qualifications have conveyed many subtle distinctions of luxury and prestige.” in Roderick Ham, *op. cit.*, 22.
- 4 Roderick Ham, *op. cit.*, 19.
- 5 The Theatre Royal, Plymouth, 1982, Architects Peter Moro and Partners.
- 6 Isabel Ruas Pereira Coelho, “*Painéis em Mosaico na Arquitetura Moderna Paulista, 1945 – 1964*”, São Paulo, 2000.
- 7 “What we in Britain call the proscenium theatre is in Europe usually called the Italian type of theatre because of its origin in the baroque theatres of that country, where splendid buildings dating from the seventeenth, eighteenth and nineteenth centuries still stand.” in Roderick Ham, *op. cit.*, 18.
- 8 The Maltings Concert Hall, Snape, Suffolk; Converted in 1967 by Arup Associates, in ARUP ASSOCIATES, *Selected and Current Works*, Mulgrave Victoria, 1994, 26. Mechanics Hall, Worcester County, 1857, 1970 renovation Anderson Notter Finegold; 1990 renovation Lamoureux & Pagano; *Stadt-Casino*, Basel, built 1776, in Leo Beranek, “Concert Halls and Opera Houses, Music, Acoustics and Architecture”, New York, Springer, 1996, 157 and 461.

Post-war Modernism in Helsinki City Centre: Heritage or Material for Reuse?

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The modernistic heritage of the post-war era is a major concern for the discipline of preservation in Finland as over 80% of the Finnish building stock was constructed only after 1945. While preservationists have only begun to weigh the preservation of this building stock, the tendency to intervene and alter modernistic buildings is growing stronger amongst architects and property developers.

In my paper I discuss the heritage of post-war modernism and take up 3 main themes:

- 1) Identifying the post-war built heritage;
- 2) Recent cases in preservation vs. reuse;
- 3) Valuing the modernistic heritage.

1. Last year Helsinki City Museum conducted a substantial research project on post-war architecture in the commercial centre of Helsinki. This study resulted in an inventory of commercial and office buildings constructed between 1945 and 1990. In my paper I introduce some of these buildings and present the architectural features common to them.

2. Preservation of buildings dating from the 1960s onward has not yet been commonly discussed in the context of post-war built heritage. However, reuse of old buildings and their conversion to serve new functions entail big alterations. It has been acknowledged that the discipline of preservation needs new ways of argumentation when dealing with post-war modernism. In my paper I present some examples of recent cases of reuse and conversion projects in Helsinki and discuss the preservation issues around them.

3. How to value the built heritage of post-war modernism and to evaluate it? Masterpieces of modernism, such as the architecture of Alvar Aalto, are relatively easy to recognize but what kind of values do the more anonymous buildings have? Do these values differ from those of the older built heritage? In our study we conclude that post-war modern architecture needs to be evaluated in relation to the ideology of modernization and its manifestation in the construction of the Finnish welfare state.

1. IDENTIFYING THE POST-WAR BUILT HERITAGE

As a city, Helsinki can be described as very modern, since most of its building stock dates from the 20th century. Although the city was founded on its present site during the 17th century, the buildings are mostly modern. 80% of the total built stock in Finland has been constructed after WWII¹. This modern heritage seems somewhat taken for granted in Finland and is probably, therefore, underrated.

After the war, modernization was seen as a necessary task for Finland. Rebuilding was a big project for the country. Helsinki had, however, started to change already in the 1930s, but the modernization was delayed because of the war. It was seen as crucial to show the will for renewal and the modern cityscape after the war. Sweden, which was not badly affected by the war due to its neutrality, played a big role for Finland as an example of modern development. The "Swedish model"², with its social democratic welfare system, was adopted in Finland. Similarly, examples were taken from the city planning of Stockholm,



FIGURE 1. *Mannerheimintie*. The cityscape on this main road was heavily modernized during the 1960s. © Helsinki City Museum, Sakari Kiuru, 2013.

where the city centre, called *Norrmalm*, was modernized. By the 1960s great parts of it were demolished and reconstructed.

Post-war demolition and reconstruction in Helsinki was on a fairly large scale. It began in the 1950s and the city was heavily renewed in the 1960s when more was built than ever before. Especially modern commercial and office buildings bloomed in Helsinki city centre. The 1970s brought property investors and especially banks to the city. The large-scale renewal continued in the 1970s and 1980s. The latter was a decade of economic boom when several new shopping malls were also built in the city centre as a dense urban structure became the ideal in city planning³.

Thematic Studies of Modern Buildings

In 2014, Helsinki City Museum published a study about commercial and office buildings in the city centre. It was a study of post-war (in our study 1945–1990) buildings in Helsinki⁴. The aim of the study was to recognize and document one specific sector of buildings that brought a drastic change in the cityscape from the 1950s onwards. The purpose was also to collect data, since the primary reason for this study was the need of better knowledge about this sector. Quite a few of the commercial and office buildings have been criticized over the years, mostly because of their architecture and size. Some were even called environmental crimes. So, the aim of the study was also to pay attention to this kind of heritage and make the post-war offices more accepted in the mind of developers, architects and planners, but also the wider public.

Since most of the post-war office buildings are in need of some major renovation, the lack of knowledge and understanding of the specific architectural features, cultural history and even values result in the wrong kind of repairs when only technical repairs are conducted. Helsinki City Museum is an authority in preserving issues and cultural heritage values in Helsinki. It is necessary to value the post-war legacy, but is not always easy to recognize the values of modern architecture.

Studies Elsewhere

Thematic studies of the post-war commercial heritage have been conducted elsewhere, too. For example, English Heritage has recently listed post-war offices from 1964-1984 and 14 of those were given Grade II-listed status⁵. In Sweden, the City Museum of Stockholm conducted an inventory of the modern city already at the beginning of 2000⁶.

2. PRESERVATION – REUSE – CONVERSION?

The post-war built heritage is still not under *sensus communis*, and that makes the preservation still a matter of pioneering and promotion of the younger built heritage.

The Case of City Centre and a Paradigm Shift

One early example of a modernistic reuse case, where preservation was considered, is City Centre, situated in the heart of Helsinki just across from the main railway station. The building is nicknamed “Sausage building” because the very visual railing of the parking floor on its exterior is made of concrete. To many, the building is an icon of the modernization of the 1960s and its failure. It was already criticized in the 1970s and has several times been voted as the ugliest building in Helsinki.

The building itself was completed in 1968, although the planning had started ten years earlier. The architect was Viljo Revell, who was simultaneously working



FIGURE 2. Alvar Aalto, Academic Bookstore, 1969 (on the right) and Iron House, 1954 (on the far left). © Helsinki City Museum, Jaana Maijala, 2014.



FIGURE 3. Viljo Revell, City Center, Helsinki, Finland. © Helsinki City Museum, Kari Hakli, 1975.

on the City Hall in Toronto. Revell's architecture has been described as rational constructivism, where the structure plays the main part. His architecture was also seen as more American than anybody else's in Finland at that time. Revell died in 1964 and the work was continued and finished by the architect Heikki Castrén. For the architectural features in City Centre, it was typical for Revell to emphasize the horizontality and equal parting on the façade. Quite an essential part of the building was the concrete ramps leading up to the parking level on the second floor.

At the beginning of 2000, City Centre faced major renovation and renewal. The discussion shifted towards whether the building should be protected. Cultural heritage professionals had polarised opinions on the case: some lifted the building up as an object for preservation while others could not yet see it as heritage at all. In the end, the building was legally protected, but only its exterior and the characteristic ramps were removed. Inside, the building was completely renewed and converted from being an office and commercial building into a shopping mall.



FIGURE 4. Eliel Muoniovaara, Movie Theatre Maxim in Helsinki, Finland. © Helsinki City Museum, Jaana Maijala, 2014.

A New Building on the Top of Old One

Another example of a recent discussion on reuse and/or preservation in the city is the case of the Maxim movie theatre. The movie theatre was founded in 1909, but the building was demolished in 1972 and a new movie theatre with two screens was built on the same very narrow site between two buildings. Already then a progressive city plan was made, which said that the old theatre interior can be demolished if a certain amount of the interior can be removed to a new theatre placed on the same spot. The original interior of the old Maxim was reconstructed in the other hall situated in the basement and a new theatre was built above it. The cinema has been running since then and the locations have not been altered much over the years until 2 years ago, when the owner wanted to demolish the newer theatre (since the older one is protected) and build a new hotel on the site. This caused a huge public response: movie fans in Helsinki quickly founded a Facebook group and the chairperson started to negotiate with the opposite sides. Also the preservationists were included as we stated that the movie theatre from the 1970s has values both architecturally as well as historically. At the moment, the situation has become clearer so that all parties can be satisfied: the two movie theatres will be saved and a third, very small one will be built, but above them extra floors for a new hotel will be added.

Conversions as a New Way to Use Offices

Helsinki as the capital city of Finland is growing rapidly at the moment and the need for new residential buildings is massive. On the other hand, there is a large supply of older office buildings that no longer seem to be desirable for today's needs and this means there is a lot of free office space available. At the moment, there is a strong tendency in Helsinki to convert office and commercial buildings located in the city centre into apartment buildings. Conversion projects are rapidly growing in number and in every case there is a need to evaluate whether possible preservation is required.

3. VALUING THE MODERNISTIC HERITAGE

The post-war built heritage has come to a position where the need for repairs and restoration is actual. It was the same progress that the modern architecture (dated before the WWII) met. Also then it became essential to consider how to conserve the heritage and what to preserve.

Modernistic Architecture as Heritage

As Theodore Prudon has stated, the initial interest in modernistic buildings as heritage symbols began in Europe as early as the 1950s and 1960s. The Bauhaus school in Dessau (1925-1926 by Walter Gropius) represents early, internationally-known restoration in the early 1970s as the value and meaning was recognized as one of the masterpieces of the Modern Movement⁷. These icons of modernism, such as the architectural works of Alvar Aalto, have been easy to recognize and value. Already quite early on they were lifted up as masterpieces worth preserving and conserving. For instance, Finland Hall in Helsinki by Aalto was completed in 1971 and was already preserved and restored with a new marble coating at the end of the 1990s.

When one looks back, it seems obvious that it was an international, even goal-minded and political project to include international modernism as cultural heritage worth preserving. In this project the final years of the 1990s were meaningful. One of the most influential organizations in this has been **docomomo**. The other one is naturally ICOMOS, with the committee of 20th century Heritage. However, it was only a minor part of the modern architectural heritage that was recognized and legally protected. To give an example: there are still only 20 buildings representing modern architecture that are legally protected in Finland, and for the most part, they are works of Alvar Aalto. However, the situation is far better in Helsinki where it is a custom to protect buildings in the city plans as well, not only by the Act on the Protection of Buildings.

Still questions remain: what kind of values do the more anonymous buildings have? Do these values differ from the older built heritage? Is it the quality of architecture that we value or are we analysing the phenomena connected to a certain period?

How to Value Post-war Architecture?

In our study of post-war offices in Helsinki, we concluded that post-war architecture needs to be evaluated somewhat differently from the older heritage, since the age-value or typicality are no longer the major points for valuing the architecture. Instead, we identified that post-war architecture should be evaluated in relation to the ideology of modernization and its manifestation in the construction of the Finnish welfare state⁸. It was clear to us that the values include more than the material existence of the buildings. Immaterial values, such as the phenomenon behind the actual building processes or how the building was related to the larger historical chain of events of that specific era, should be taken into account.

All the buildings in our study were valued according to a model and by the categories given in the Finnish Act on the Protection of Buildings. In this model, the starting point is to recognize the so-called documental values: culturally historical, social and society historical values, but also the experience values such as architectural value, authenticity, representativeness, symbolism and continuity. The context is essential when valuing.

As all the buildings in our study represent one special sector, they have common features in them. One can follow the development of offices with the plans, building techniques and materials. It is also clear that commercial buildings, while being built for the market, are thus a subject for regular cycles of renewal and change. It is the commercial pressures that form the driving force behind the new and progressive architecture. That makes the commercial offices also vulnerable building types as the changes occur more frequently than in other building types. The interiors of offices are no longer usable since the ways to work have changed. It is also notable that, while the exterior often still looks modern, it is the interiors that have not tolerated ageing. It is then often only the exterior that preservation deals with, but it should also be asked what is the integrity of the original building.

NOTES

- 1 "Table of Finnish Building Stock by Age", accessed on May 8, 2015, http://www.rakennusperinto.fi/kulttuuriymparisto/rakennuksia_ja_ymparistoja/fi_FI/rakennuksia_ja_ymparistoja/_files/13401933870047696/default_FS/Rakennuskannan_ikajakauma_Koko_maa1.gif.
- 2 Helena Mattsson and Sven-Olov Wallenstein (ed.), *Swedish Modernism. Architecture, Consumption and the Welfare State*, London, Black Dog, 2010.
- 3 Anja Kervanto-Nevalinna, *Voimat jotka Rakensivat Helsingiä 1945-2010. Helsingin Historia Vuodesta 1945*, Helsinki, Otava, 2012.
- 4 Aura Kivilaakso, *Kun Helsingin rakennettiin City. Keskustan Vuosina 1945-1990 Valmistuneet Liikerakennukset*, Helsinki, Helsingin kaupungin museo, 2014. The book is also in free pdf form: http://www.hel.fi/static/hkm/pdf/helsinki_city.pdf.
- 5 "Later 20th Century Commercial Offices", accessed on January 22, 2016, <http://historicengland.org.uk/listing/showcas-ing/late-20th-century-commercial-offices/>.
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- 7 Theodore Prudon, *Preservation of Modern Architecture*, Hoboken (N. J.), John Wiley & Sons, 2008, 6-7.
- 8 "National Board of Antiquities Started a Built Welfare Project in 2010", accessed on April 8, 2016, http://www.nba.fi/en/cultural_environment/built_heritage/built_welfare_project.

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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 14th International **docomomo** Conference is “Adaptive Reuse. The Modern Movement Towards the Future”.

The Conference takes place in Lisbon, where the **docomomo** International Headquarters are based (Técnico-University of Lisbon), from 6 to 9 September 2016 at the Calouste Gulbenkian Foundation, the first Modern Movement site recognized as National Monument.

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