The 16th International Docomomo Conference Tokyo Japan 2020+1 Proceedings

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Inheritable Resilience:
Sharing Values of Global Modernities VOLUME 1

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01. **Space of Sports**
02. **Urban Landscape**
03. **Modern Housing**

Inheritable Resilience

Sharing Values of Global Modernities

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The 16th International Docomomo Conference
Tokyo Japan 2020+1 Proceedings

29 August – 2 September 2021
TOKYO BUNKA KAIKAN
KAWANA HOTEL
ROPPONGI ACADEMYHILLS
TOKYO, ITO • JAPAN

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international

CREDITS

TITLE
The 16th International Docomomo Conference Tokyo Japan 2020+1 Proceedings
Inheritable Resilience: Sharing Values of Global Modernities

PUBLISHER
docomomo International
docomomo Japan

DISTRIBUTER
Echelle-1

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DESIGN
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Asako Yamahara
Kyoko Kobayashi
Mio Silvey

PRINTING
MAPS

ISBN
978-4-904700-75-4

TOKYO, 29 August, 2021

Indexed by SCOPUS.

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1

SPACE OF SPORTS

Session 1-a

CONSERVATION OF OLYMPIC AND OTHER STADIA

France Vanlaethem

Chair of Docomomo Quebec, Professor Emeritus at the School of Design at the University of Quebec in Montréal

Until recently, cities would compete bitterly to host the Olympic Games. But the constant increase in costs combined with the uncertain future of these oversized, specialized installations, led to greater caution that is apparent in the diminishing number of bids. Organizing the Olympic Games is no longer seen as an opportunity but more as a risk. Several former olympic sites have been abandoned and, in many cases, the continuing use of such facilities has not been easily provided for. Also, the heritage value of these constructions was not immediately apparent. Very few of them have been officially protected. It is only recently, with the adoption of its Agenda 2020 in 2014, that the International Olympic Committee (IOC) has started viewing the Games as a heritage. It is counting on the World Union of Olympic Cities, among others, to monitor this legacy. This question was at the heart of the Union's annual meeting that was held, for the first time, in Montréal, the host of the 1976 Games, rather than in Lausanne that is home to both the Union and the IOC.

Inheritable resilience is the theme of Docomomo 2020. The call for papers describes how the MoMo is subject to the threat of conscious or unconscious destructions. In Montréal, the Olympic Park is plagued with a lasting unlove disenchantment arising from the problems that surrounded its construction. The choice of French architect Roger Taillibert, for one, was criticized by local professionals despite his unequaled qualifications with regards to sports installations. Also, it took several months to consolidate the required funding. Work began late and was hampered by strikes that were frequent in Québec at the beginning of the 1970s. With less than a year left before the opening ceremony, the Games were in jeopardy; the stadium and pools complex, a gigantic concrete lego, were barely emerging from the ground. Confronted with the emergency, the Québec government stepped in to replace the city in managing the project, giving the newly formed Régie des installations olympiques (RIO) the task of completing the construction.

The installations designed by Taillibert were audacious both formally and technologically. Grouped in a single location, the stadium, the pools, and the velodrome exemplify 'above the street' urban planning and complete the large park located in the eastern, French-speaking part of the city: Maisonneuve park. For a long time, the scandalous explosion of construction costs overshadowed the qualities of the site. This negative appreciation seems to be waning, thanks to numerous efforts by the RIO to make the site better known, following the 2012 report on the future of the Olympic Park. Among these initiatives, we find two contributions by Docomomo Québec, a heritage study as well as an exhibition held for the 40th anniversary of the Games: *The Olympic Park. Architecture to Celebrate*.

The Games were held without the Olympic Park having been completed. Construction had only begun on the inclined tower that was to reach 175 meters and support the stadium's retractable roof. Ten more years would be needed to complete it and deploy the Kevlar covering. Soon torn, this cover was replaced in 1999 by another textile covering, immovable. One has to admit that, through the succession of interventions that were made following 1976, the integrity and authenticity of the installations have been fairly well preserved. Despite contrary opinions, it can be said that, in the end, Taillibert's work was respected, at least as far as the Stadium and Tower are concerned. The Park, on the other hand, has been eroded by the addition of new equipment that was needed to complete the Biodome that was installed in the former velodrome in 1992. This addition was meant to increase the park's value as a cultural attraction pole. Taillibert never ceased to denounce the conversion of his great work, whose vast prestressed concrete dome stands as an architectural as well as a technological prowess, to a "penguin cage".

The resistance of heritage to perils depends on many factors. Some have a protective scope, others bring vulnerability, to use the distinction introduced by neuropsychiatrist Boris Cyrulnik, who popularized the notion of resilience. The application of this notion to urban phenomena shows us that it is related to both the physical arrangements and the strategies adopted by communities for their disposal following a catastrophe, in this case the sudden rupture brought on by the closing of an ephemeral world-class event.

Is the planned versatility of installations always an advantage? In the case of the Seattle Coliseum, it seems that it was. The situation in Montréal is more ambiguous. As an argument in favor of bidding for the Games, mayor Jean Drapeau invoked the necessity of building a stadium to keep the professional baseball team, the Expos. The twofold utility of the Stadium called for a retractable roof since the athletics competitions require an open air location. Although the arena had been designed to offer spectators a good viewpoint both during the Games and afterwards, the place was not well suited to baseball. After having hoped to build a new stadium downtown in the 1990s, the owners of the club let the team go in 2004. Besides the physical configuration and the location, gigantism can also be a handicap: sports events and cultural gatherings that attract hundreds of thousands of people are rare. Winter games are attended by far fewer people.

The deployment within natural surroundings is specific to Winter Games. In this regard, the Games that were held in Cortina d'Ampezzo in 1956 can be considered a model, with a modern architecture respectful of tradition and many temporary sport installations. Still, some were left derelict for reasons of certification, after many years of use. Compliance standards are subject to the pressures brought on by progress. Could it be that their regular modification constitutes an obstacle to the durability of the installations, in particular to the possibility of reusing them for other competitions? Sustainability is a major challenge for conservation. To what degree is a temporary use, as was suggested for the stadiums designed by Nervi, a worthwhile solution

Another question: is a heritage status a benefit or a disadvantage? Helsinki's Olympic Stadium was protected when its rehabilitation began in the early 2000s. Québec followed another course. Although the classification is recommended in the 2012 report, the Minister of Culture and Communications did not follow up on this recommendation. Rather, the Québec government introduced a new bill on the RIO, creating a new organization dedicated not only to the development of the Olympic Park but also to his promotion as a heritage. It was close to being voted when the province was placed on hold due to the COVID-19. This pandemic will also have important consequences on the future of the Olympic Games and on heritage. Ultimate questions remain concerning the methodological impact of the introduction of the notion of resilience and whether it would replace the notions of integrity and authenticity.

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PROJECTS FOR THE OLYMPICS AND THEIR COMPATIBLE RE-USE IN ITALY

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ABSTRACT.

The 1960 Olympics held in Rome consecrated a nation that had come out of the war under precarious conditions and was then at the peak of its rebirth.

The new Olympic structures in the capital city designed and built by Pier Luigi Nervi, marked a real architectural and urban renewal. Under contradictory conditions, often relating to abandonment or under-use, 60 years later, the buildings are the subject of a debate on the issues of protection and of intervention. The *Flaminio Stadium* complex, the *Corso Francia viaduct* and the *Palazzetto dello Sport* will be taken as examples. At the same time, Milan and Cortina were awarded the 2026 Winter Olympic Games basing the sustainability of their candidacy on the low costs also achieved thanks to the re-use of existing structures, thus fully integrating the abovementioned themes.

The aim of the research, studies and ongoing projects is to outline a new methodology of protection and intervention on *Modern structures*. The sustainability of the process is at the top of the priority list as follows: the recognition of the work as an asset to be protected, preserved and restored; the identification of a compatible function; the analysis of the state of conservation of the building also; the planning of necessary interventions to achieve the full functionality with a view to obtaining a wider range of compatible functions — also thanks to the widespread use of light and reversible fitting-out — to ensure the best possible future life.

1. INTRODUCTION

The 1960 Olympics held in Rome consecrated a nation that had come out of the WWII under precarious conditions and was then at the peak of its rebirth. Economic development coincided with an extraordinary period of modern architecture that saw Pier Luigi Nervi as one of its protagonists. The new Olympic structures designed and built by him in the capital city, marked an architectural and urban renewal of the city. Under contradictory conditions, often relating to abandonment or under-use, 60 years later, the buildings are the subject of a debate on the issues of protection and, therefore, of intervention. Functional sustainability and restoration methods are of paramount importance in the recovery of these works. The *Flaminio Stadium* complex, the *Corso Francia Viaduct* (**Fig. 1**) and the *Palazzetto dello Sport* (**Fig. 2**) will be taken as examples.

At the same time, Milan and Cortina were awarded the 2026 Winter Olympic Games basing the sustainability of their candidacy on the low costs achieved thanks to the re-use of existing structures, thus fully integrating the abovementioned themes. A case study is the Olympic stadium in Cortina, yet also the many infrastructures present in the Lombardy and Veneto regions of Italy. The study of the Mincio pool by Pier Luigi Nervi, built in Milan in the early 1960s, will be examined as a case for the definition of a sustainable restoration project. The building is the subject of a project developed during the Summer School entitled *The Shape of Water* organised by the Lecco Campus of Polytechnic of Milan in collaboration with Pier Luigi Nervi Project, Turin Polytechnic, Sapienza University in Rome, Federico II University in Naples and **docomomo** Italy.

The results of the research, studies and ongoing projects relating to the buildings in Rome and Milan, have been analysed and interpreted with the aim of outlining a new methodology of protection and intervention on *Modern structures*, valid not only for sports facilities. The sustainability of the process is at the top of the priority list, the progressive order of which is as follows: the recognition of the work as an asset to be protected and restored; the identification of a compatible function; the analysis of the state of conservation of the building also in light of regulations; the planning of interventions in order to achieve the full functionality of indoor and outdoor areas with a view to obtaining a wider range of compatible functions — also thanks to the use of light and reversible installations — in order to ensure the best possible future life. Below it is examined the problem of protection and that of the restoration's sustainability thanks to the use of the lightweight and reversible installations.

2. THE CONSERVATION

The architectural heritage dating back to the 20th century seems to have been increasingly neglected by Italian protection-related legislation, bucking the trend of sector-related historiography.

The *Mass-produced assets* Conservation

The possibility of identifying common factors among several works, that differ in terms of the circumstances under which they were built as well as their expressive results, can be a useful protection tool. It can be attributed to the *Series* concept, a mathematical figure consisting of a finite set of elements that can no longer be reproduced: for example, the 19th century galleries. The *Serial Assets* can be united

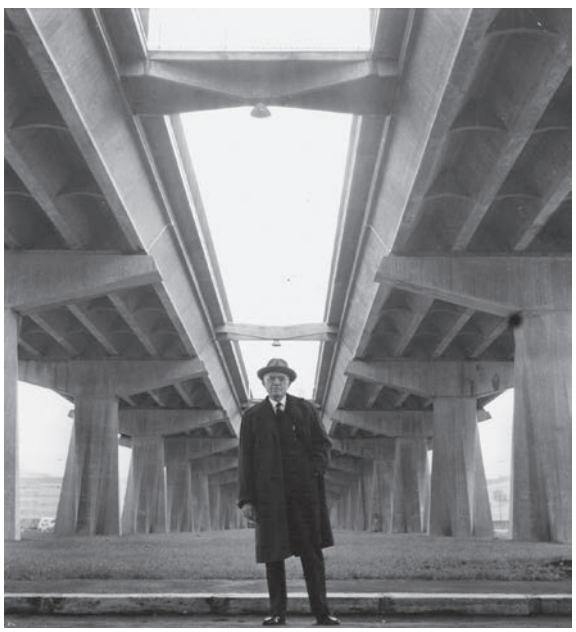


Fig. 1. **NERVI, Pier Luigi, Corso Francia Viaduct, Rome, Italy, 1960, Pier Luigi Nervi Portrait with Corso Francia Viaduct. © PLNP.**

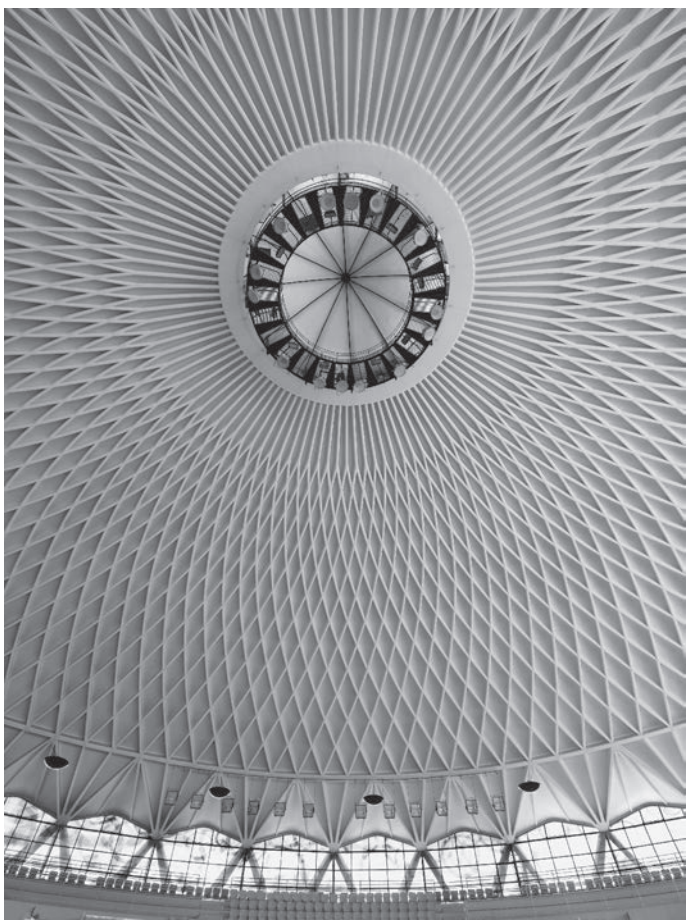


Fig. 2. **NERVI, Pier Luigi, Palazzetto dello Sport, Rome, Italy, 1960, Detail of the Dome. © PLNP.**

by recurring factors of a constructive, stylistic, expressive character, but also by common historical circumstances; or, again, by the same author. The term is used in the definition given to it by G. Kubler (1972), who distinguishes it from the *Sequence*, a set of elements always open to include new ones.

In a *Series* the qualification of excellence, instead of a single architecture, is extended to all the architectures that make it up; the attributes that characterise a cultural asset can also be attributed to a set of them: materiality; historical testimony; non-reproducibility.

By giving each work a place in the series, it is easier to define its historical location and evaluate its artistic relevance. The historicization process will thus be able to simultaneously concern more works, even recent ones, compared to a study carried out work by work.

The elements that share different works must be found in the critical literature of the sector. Selective work, which extrapolates recurrent or unpublished arguments regarding the architectures, is essential. We could mention Morandi's homogenised and cable-stayed viaducts still present in Italy after the destruction of the one on Polcevera, as well as in other parts of the world; or a series of structures by Nervi; or the architectures promoted in Ivrea and Pozzuoli by Olivetti, etc.

The concept of *Mass-Produced Assets*, which has been contemplated internationally for several decades (UNESCO), is not mandatory in national regulations. It has found a formulation in the guidelines of the *Intergovernmental Committee for the protection of the world cultural and natural heritage* (1980 / E. d'Orgeix, 2012). It can modify the ordinary practice of protection because it allows to considerably shorten the time that in many countries is placed between the date of construction of an architecture and that of the protection decree (in Italy: 70 years / U. Carughi, 2012 & 2017). The architectural heritage, considered through sets of works rather than through individual architectures, is perceived by the community in a much more effective way. The management and restoration of a work in the series can refer to criteria used for another work in the same series, ensuring a consistent attitude in operations often conditioned by discretionary circumstances.

3. AN EXAMPLE OF *MASS-PRODUCED ASSETS* CONSERVATION: THE WORKS BY P. L. NERVI FOR THE XVII OLYMPIAD IN ROME

3.1. Historical Aspects

The link between the *Palazzetto dello Sport*, the *Corso Francia Viaduct*, the *Flaminio Stadium*, the Palazzo dello

Sport built in the Eur area and the 1960 Olympic Games has been deemed as a historical fact by sector-related literature. These architectural works, in conjunction with TV broadcasting, spread the image of Rome as well as Italian culture and talent worldwide; Nervi's fame reached an intercontinental level. The four Rome-based construction bear witness to the success of the Italian structural architecture between the 1950s and 1960s.

3.2. Executive Aspects

The four works in Rome have the application of the so-called *Nervi System* in common. This system is based on two aspects. These aspects are so innovative that it is very difficult to distinguish the ideational moment from the implementation stage. 1)The organisation of the work was foreseen to be carried out simultaneously on two building sites: the first was to create the in-situ cast structures, while the second was intended for the in situ construction of pre-fabricated buildings using only a few formwork structures reused several times. 2) The use of the so-called *Ferro-Cement*, patented by Nervi in 1944, consisting of a layer of steel mesh, onto which the concrete conglomerate with very fine aggregates was spread, creating a total thickness of 2.5cm. The elements produced in situ could be both installed by a couple of workers. In the *Flaminio Stadium* the steps were produced in situ, or the fore-ends of the projecting roof beams made from *Ferro-Cement*. Similar procedures were used in the 13 types of roofing blocks on the domed roof of the *Palazzetto dello Sport*; or those on the lowered vault that covers the perimeter gallery, and the wave-shaped beams of the roof of the *Palazzo dello Sport*. In the *Corso Francia viaduct* the prefabrication was used for the corbels situated on top of the pillars, as well as the main beams of the superstructure.

3.3. Structural Aspects

Nervi used the roofing membrane regime in the *Palazzo dello Sport* and in the *Palazzetto dello Sport*. Under the action of uniformly distributed and off-centre loads (for example the action of the wind), the stress of normal exertion is contained within the thickness of the domed roof. By introducing ribbings (by averaging between the thickness of the thin surface of the cap — 2.5cm — and the height of the ribs — 27cm — we obtain the equivalent of a membrane with a constant thickness of 14cm) Nervi tackled the problem of stability, typical of thin shells, while guaranteeing the roofing membrane regime.

3.4. Expressive Aspects

The separation of the two carriageways on the *Corso Francia* viaduct makes it lighter through sunlight that penetrates along the centre line of the infrastructure, ensuring its fits into the surrounding landscape. A similar result has been achieved in the *Flaminio Stadium*, where the different sizes of the load-bearing walls are determined by the variability of the stadium profile, beautifully inserted in the surrounding context.

In the *Palazzetto dello Sport* and in the *Palazzo dello Sport* the idea of absolute space may be perceived, densified within the fabric of the roof coverings, whose spring line defines a horizon of a spatial and structural nature: a boundary between gravity and lightness, contingency and transcendence, functionality, and art. This horizon rests on slanting supports allowing the utmost compositional freedom in the spaces below, having distributional and functional character.

4. THE CONSERVATION PLAN

Another innovative instrument of active protection could be the conservation plan if adopted by the Italian legislation, just as in other countries. In Italy this would constitute an intermediate step between the *Declaration of Cultural Interest* and the project of recovery: the former is limited to specifying the historical and critical motivations for which the asset must be preserved, whereas operational instructions are not provided. These latter are deferred to the project that, in the absence of preliminary guidelines, is affected by institutional discretion.

The conservation plan of a 20th century Architecture is a methodological survey tool conducted through specific and integrated competencies. A specific study of the building, acquired through an analytical investigation of its architecture, structures, materials, and construction techniques, supported by historic and archival documents and direct observation, provides indications regarding the conservation and restoration of the buildings.

The three structures built by Nervi for the Roman Olympics are considered in the conservation plan of the *Flaminio Stadium* — that was not protected until this document was drafted. The common historical and constructive meaning that characterizes the *Palazzetto* and the *Palazzo dello Sport* and the viaduct of *Corso Francia* implies that their conservation plans should follow the same criteria.

5. SUSTAINABILITY IN RESTORATION

If protection is a necessary condition for a correct activation of the restoration process, sustainability is the fundamental starting point from which all other activities derive. We want to examine it here above all in the very frequent condition in which the architectures have lost their original, usually specialized, function and are found to be *Casings* devoid of activity and which risk being restored as *Empty Boxes* that do not have a concrete possibility of future life.

Buildings are *Complex Living Organisms* that evolve over the years and require constant attention and care, especially if their primary function is lost. *Modern Renovations* require an economic, but also cultural and intellectual sustainability, which suggest that the lightweight, installations



Fig. 3. **NERVI, Pier Luigi, *Mincio Swimming Pool*, Milan, Italy, 1963, Detail of the Interior. © PLNP.**

might become a way to fill and revitalize the spaces of modern architecture. For modern structures that can no longer fulfill their original purpose — due to the limits of its specialization — these installations (interesting, highly compatible, lightweight and sustainable) are a way to remain vital, waiting for a permanent solution. These spaces can be places where we can cultivate the creative side of our society, cancelling the differences and overlapping the fields of architecture, engineering, design, and art, creating a synergy where the designer uses the architectural space as his raw material, combining formal, spatial, and compositive elements.

6. THE LIGHTWEIGHT AND REVERSIBLE EXHIBITION DESIGN: AN ITALIAN AND MILANESE HISTORY WITHIN THE HISTORY OF MODERN ARCHITECTURE

We insist here on the identification of the compatible function as a necessary condition for restoration. The light fitting practices, fully integrated into the Italian culture of the project, thanks to the reversibility and suitability to adapt the work in terms of performance with respect to the constantly updated compliance requirements, constitute the sustainable solution also for the future life of the building.

The roots of *Exhibition Design* hatch from the great World's Fairs of the Nineteenth Century. It was a new, positivistic world that looked at new economic, technological, and social developments with great hope and discovered the importance of large public events. Italy and Milan came into the spotlight with the 1906 World's Fair, dedicated to new means of transportation, showing the Simplon Tunnel.

After WWI, Italy provided a great contribution to the *Avant-garde* movement with Futurism and Rationalism. Depero's *Reklame Architektur* and the rationalist projects are the noble parents of *Exhibition Design* and, thanks to the cultural hub of the Politechnic of Milan, the architect became a professional capable of meeting the needs of society and cities operating in many fields, from *Urban Development* to *Interior Design*, from *Product Design* to *Communication* and *Exhibition Planning*. Depero, Pagano, Baldessari, Ponti and Albini designed interiors, exhibitions, fairs, but also significant interventions upon the urban landscape, es-

tablishing the foundations for a cultural expression that is exquisitely Italian.

After WWII, the terrible needs of a wounded nation and the drive to rebuild placed a great deal of strain on the professionals that were educated before the war.

Every theme is explored, from self-production to the relationship with industry: because of a lack of furniture, new components had to be designed from scratch. This was the beginning of the extraordinary ventures of Caccia Dominioni and Azucena, Zanuso and Arflex, Castiglioni and Cassina, Flos and many others. With the revival of industry, fairs, museums, and great exhibitions experienced a renaissance. In Milan, the *Triennale* became an international landmark and in 1961 there was the first *Salone del Mobile*. This was the time of old and new masters: Ponti, Albini, Helg, Castiglioni, Zanuso, Magistretti, Mangiarotti and Morassutti merged *Architecture, Design, and Exhibition*, while working side by side with Max Huber, Albe and Lica Steiner, Boggeri Studio, who handled graphic design. The quality was so high that it is impossible to tell apart the merits of Graphics, *Architecture, Exhibition and Product Design*. But this is the time when many of these disciplines were codified: it is now possible to speak of *Architecture, Graphic Design, Product Design, Interior Design, Exhibition Design*; it is now possible to track the course of each discipline separately and consider their systematization of individual courses of studies.

Our design culture is in this riverbed and we want to bring it to also embrace the restoration, with particular attention to the restoration of 'the Modern'.

7. A CASE STUDY: THE *MINCIO SWIMMING POOL* BY PIERLUIGI NERVI IN MILAN

Pier Luigi Nervi's *Mincio Swimming Pool* (Fig. 3), built in Milan in the early 1960s, was the subject of a project developed during *The Shape of Water* Summer School organized in 2019 by the Lecco Campus of the Polytechnic of Milan, with the collaboration mentioned above, which saw the collaboration of professors from various fields who engaged the students in a multidisciplinary approach. The swimming pool, born as an infrastructure of a workers' suburb, is characterized by a large half-timbered reinforced concrete roof and is now at the centre of an area of recent development and conversion to a cultural vocation which is candidate to host the next Olympic village Winter Olympics of 2026. In this perspective all the themes were addressed, with proposals and ideas, starting from the conservation, to the structural, material, mechanical aspect, and that of the compati-

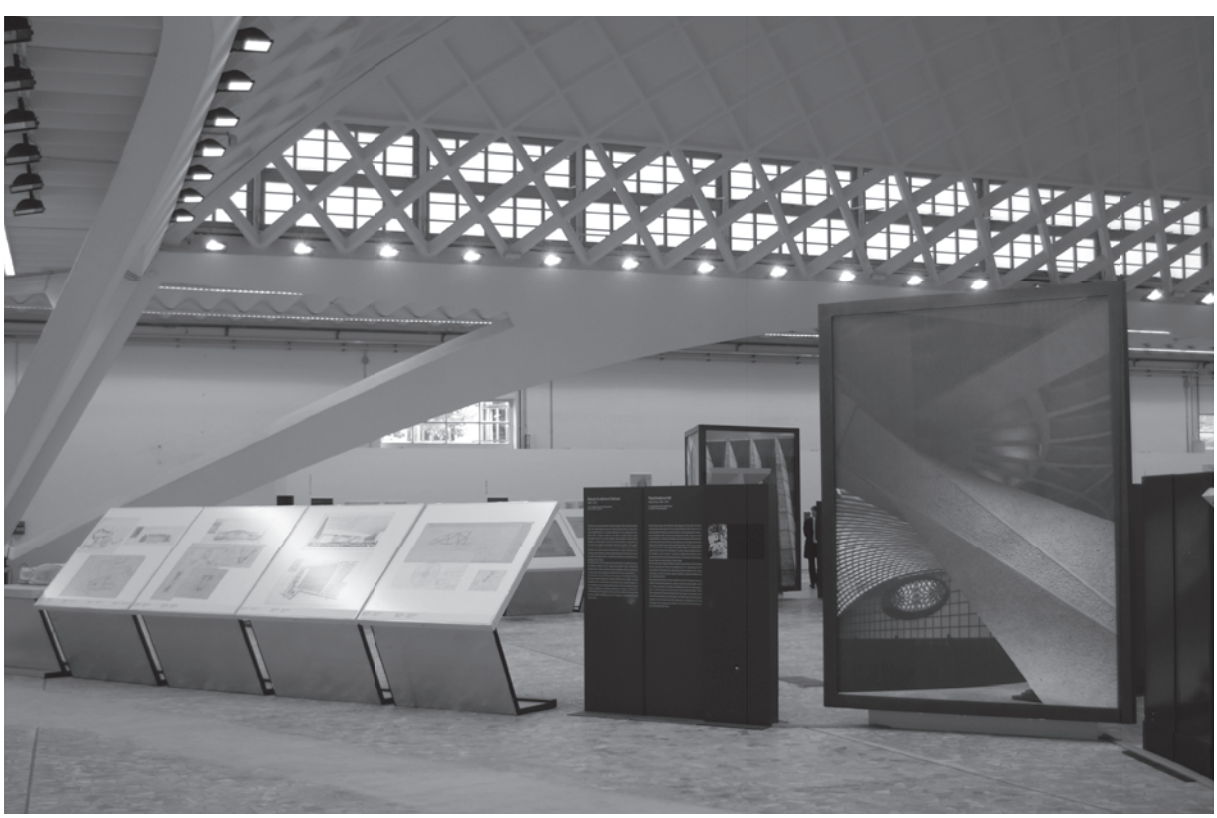


Fig. 4. **COLOMBO, Alessandro, & GARBUGLIO, Paola, Architecture as Challenge, Turin, Italy, 1960, Pier Luigi Nervi Exhibition in C Pavilion, Turin Exhibition Centre. © AC&PG.**

ble function of use which, starting from the destination of sports facility, can broaden its horizon to become a structure open to the city and a *Lounge* for the Olympic village of the next Olympics.

Together with the resolution of technical problems, the transformation of the compatible function takes place thanks to the use of the light and reversible installations as described above.

8. CONCLUSIONS

The path outlined is a still developing approach that demonstrates a way to create in Architecture a new constructive dialogue between all the disciplines involved in the complex restoration activity to a higher primary purpose: providing a new function, compatible and reversible, to *Modern Architectural Spaces* that are protected thanks to the recognition as *Mass Produced Assets*. They are spaces often orphans of their original function, being unable to find a new function: they are in danger of not being subjected to a compatible restoration process that would allow them to operate in a future, inevitably altered context. These changes would continue at an increasing speed, incompatible with the long times of architecture and restoration. Therefore, lightweight installations — using cheap, eco-friendly and reversible technologies — are the new frontier of a know how that would provide our society and profession with the instruments that are not afraid of their *Temporary Nature* (Fig. 4). This element allows for a highly compatible use of our historical and architectural heritage and urban spaces, even when city planning, restoration, and the construction industry can't provide the fast and easy answers that our world requires. It would be highly illogical to ignore such a resource, while waiting for a situation that might not happen at all.

We believe that this approach can become an effective working method also for the preparation and management of large events such as the Olympics.

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ANY LEGACY FOR WINTER OLYMPICS? THE INHERITABLE RESILIENCE OF CORTINA D'AMPEZZO 1956

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ABSTRACT.

Cortina d'Ampezzo, that hosted the VII Winter Olympics in 1956 and will host the XXV in 2026, is an exceptional case-study because it changed without contradicting its local identity and skipping the typical setback of the abandonment left behind after the Games, when many of these signs of modernity are, paradoxically, immediately out-dated or lacking function.

Starting from the analysis of the urban and environmental condition of the region, the paper considers the experience of the VII Olympic Games by investigating the main characters of its genesis. At the center of the investigation is the role played by the landscape in the Modern architectural response, which contributed to outline a strategy based on the binomials tradition/experimentation and permanence/temporariness.

The path that transformed Cortina into a modern international ski resort was accomplished with a unitary strategic project carried out through three main steps: the reuse of existing buildings; the insertion of context-sensitive architectures; the temporariness for functions with limited time demand.

The paper investigates the lesson of 1956 about the effectiveness of reusing existing architectures and the foresight of designing temporary structures: it was a transformation of the places that did not erase their features and safeguarded the landscape, without leaving the principles of Modern architecture and experimentation.

A Modernity ready to disappear and to choose the reversibility as a strategy to build a new landscape, Cortina 1956 leaves us an intangible heritage: an idea of fully Modern transformation that respects the fragilities of the landscape.

1. INTRODUCTION

The modern Olympic Games have represented ever since an opportunity of development and exposure for the hosting cities: audacious constructions and urban improvements are evidence of modernity and progress.

The Olympic Cortina, site of the VII Winter Games in 1956, is generated by a context of great economic growth and of widespread national enthusiasm, factors that find synthesis in a program of rapid transformation and development. Cortina was a little town in the heart of the Southern Dolomitic Alps in northern Italy, characterized by a close connection with the natural environment of Ampezzo Valley: a large elliptic area, oriented north-south, characterized by lawns and large woods up to the mountaintops over 3,000 meters high. Cortina rises in the center of the valley, at 1,224 meters a.s.l., inserted in wide green area surrounded by some hamlets, preserved in their typical alpine features with old local constructions and farms.[1]

Cortina was already a famous ski resort since the end of World War I. The Winter Olympics triggered changes in the places and in the social context, transformations gradually fuelled by an increasing tourist economy[2], but these changes represent a different approach to an Olympic transformation of a site.

Starting from the analysis of the urban and environmental condition of the region, the paper considers the Olympic Cortina by investigating the main characters of its genesis. At the center of the investigation is the role played by the 'fragments' of Modern architecture which contribute to outline a strategy based on the binomials tradition/experimentation and permanence/temporariness.

Finally, the study focuses on the meaning of the term resilience, which identifies both the conditions of permanence of the built heritage, and the landscape that receives them. The resilience of the landscape is twofold: it is possible because of the temporary nature of some buildings that allows to reclaim the landscape in its previous state, and because the design definition of the architectures is coherent with the natural environment. Therefore, resilience can be proposed as the 'ability to disappear', to be temporary — for the preservation of space and landscape — which is a real feature of Modernity.

2. THE MODERN IDEA OF LANDSCAPE DIMENSION

The principal element that has influenced the genesis of these places is the close bond between the town and the landscape, as well as the relationship that the architectural culture of the mid-20th century has established through tradition.

During his long career, Gellner had repeatedly criticized the damage and injuries to the landscape due to an implosion of a tourism insensitive to any quality, that was diffused all over Italy at that time: for example, the intense construction of holiday villas between 1925 and 1940 and the construction of

large hotels dating back to the early 20th century had contributed to modify the rural image of Cortina.

The preliminary drafting of the P.R.G. for Cortina (1950–51) tries, for the first time, to reconcile the instances connected with the Olympic Games with those of protection of the environmental context (**Fig. 1**). According to an approach common to the Italian modernism of those years[3], the landscape is not considered intangible; the goal is instead to allow its evolution through the governance of transformations, respecting qualities and fragilities of the places.

This was essential, considering that with Ministerial Decree of June 10th 1952, in full operation for the construction of the facilities for the Olympics, the municipal area was protected as required by the preservation law of June 29th 1939 no. 1497. As a result of this restriction, no work or transformation could have been carried out without the prior authorization of the competent Superintendence of Monuments.[4]

In the summer of 1952, the latest draft of the new P.R.G. would have affirmed specific decisions in the field of landscape protection, determining the extension of protected green areas and a severe building typification.[5] Edoardo Gellner and Mario Ghedina[6] are the actors of a Plan intended as a tool for controlling and managing the landscape and the presence of the architecture within the valley. The Plan outlines a strong desire to build a new landscape: being at the forefront in the infrastructural equipment but consistent with the consolidated image of the local natural context, which is in itself an element of resilience of the site's local cultural identity. The values of local traditional architecture are connected to a deep-rooted material culture and a real knowledge of the mountains, that Modernity assumes as "masterpieces of rational construction technique and centuries-old artisan tradition, harmoniously linked in the landscape".[7]

The invariants that contribute in defining the characters of the alpine architecture are identified in the report of the Town-Planning Scheme (P.R.G.). The modernity of the architecture considered by the plan is expected to interpret some intrinsic features of tradition, like the uniformity of materials and construction systems; the masonry blocks plastered with the lime always arranged towards the valley and the sun; the opaque walls of the barns towards the mountain; the constant slope of the gable roofs; the recurrent orientation of the ridges in the direction of the slope of the ground.

Gellner's idea of modern landscape is a harmonic merging of newness and tradition, without any "tabula rasa", where the resilience of the alpine site is fostered by the architectural strategy of the plan. [AC]

3. LOCAL STRATEGIES FOR GLOBAL AIMS: MODERN ARCHITECTURE FOR OLYMPIC CORTINA

The path that transformed Cortina into a modern international ski resort was accomplished with a unitary strategic project carried out through three steps: the reuse of existing buildings; the insertion of context-sensitive architectures; the temporariness for functions with limited time demand.

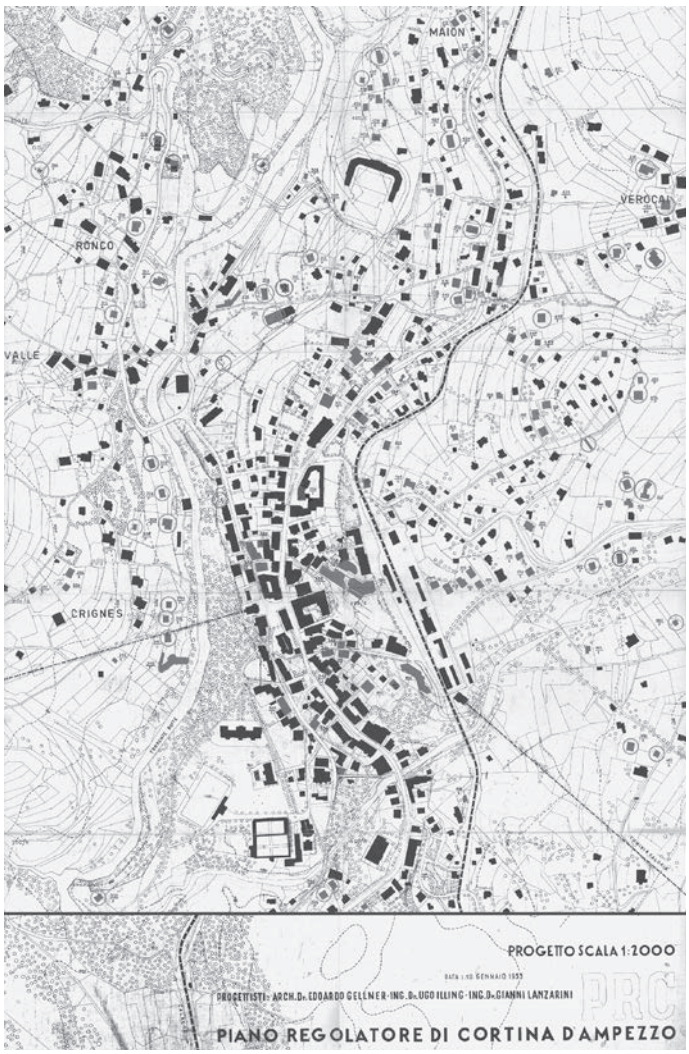


Fig. 1. **E. Gellner, U. Illing, G. Lanzarini, Cortina d'Ampezzo Town-Planning Scheme (P.R.G.). New insertions in red. © Iuav Archivio Progetti, 1953.**

3.1. Reuse Strategies

The choice not to build a new Olympic village for the Cortina Winter Games is in continuity with the St. Moritz Olympics (1948) but in contrast with the Oslo Olympics (1952) and with all the following ones until the turn of the Olympics in Turin (2006).

The negative impact of a new residential district on the quality of places and on land consumption, makes it preferable to identify the accommodation functions mostly in existing hotels: 28 hotels are made available to the 32 participating countries, for a total of about 1,415 people.[8] The refusal of building a new urban sector avoids the danger of having in-

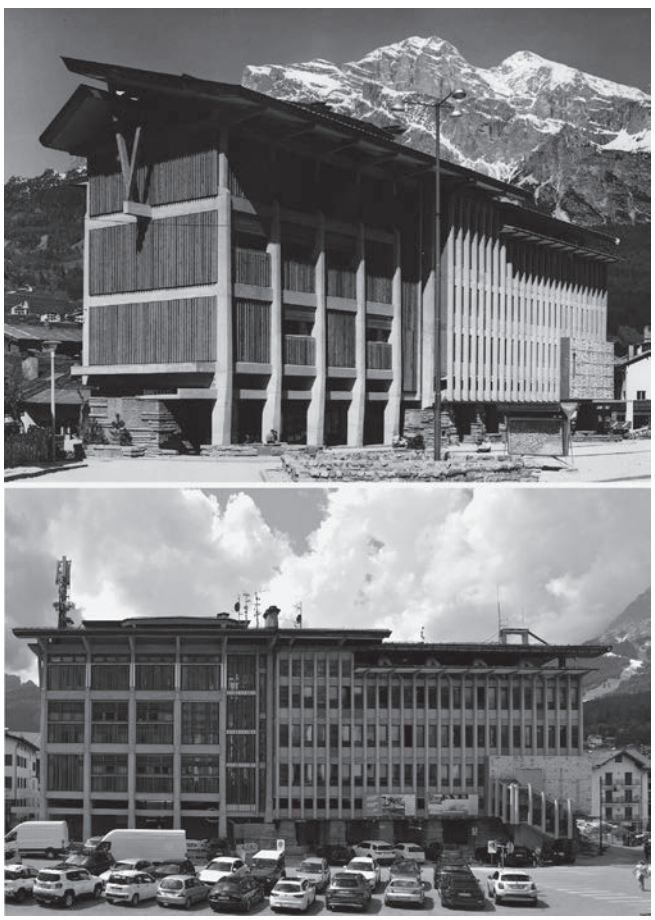


Fig. 2. **E. Gellner, TELVE and Poste building around 1956 and after its reuse as housing (2019). © Iuav Archivio Progetti; Di Resta 2019.**

vasive and expensive buildings, quickly abandoned in the absence of a demand that can overcome the end of competitions[9], or transformed in dwelling neighbourhoods out of scale.

Cortina offers the rational response of Modern architecture to that very function of hosting, intended as a temporary need, in opposition to the muscular display of progress showed in other Olympics.

3.2. Permanent Sensitive Insertions

The idea of modernity expressed in Cortina doesn't work by contrast but remains entirely in history, following the principle of continuity, a typical expression of Italian culture of the 20th century. The choice of grafting punctual elements within the stratified urban fabric is combined with the recovery of traditional language, which nevertheless leaves room for technological and compositional experimentation: individual buildings that are visibly modern but capable of being in continuity with local characteristics.

The architectures built between 1951 and 1956 are the result of an urban planning able of generating interventions that today are part of a legacy to be protected. Among these, TELVE-Poste Building (Gellner 1952–54), Giavi House (Gellner 1954–55), Residence Palace (Gellner 1954–56), Agip Hotel (Gellner 1954–56), Ice Stadium (Ghedina, Nalli, Uras 1952–55) and Ski Jump Trampoline (Pezzati, Holzner, Montovani, Berti, Straumann 1955–56).

In the double TELVE and Poste building[10], the theme of the variation in the definition of the roofing structures emerges: the unequal pitched protrusion of the Poste building recalls the rural system called 'upright and planks' (ritti e panconi), while the TELVE's roof is characterized by a triangular fork recalling similar wooden structures, but realized in reinforced concrete to support the cantilever. The two wings of the building express their technical nature, based on the use of exposed reinforced concrete mitigated by larch slats as in barns[11] (**Fig. 2**).

In Giavi House, Gellner expands a 19th century villa and superimposes a reinforced concrete frame on the existing building that surrounds and envelopes the villa and the addition. The terraces leant forward the frame are a reference to the dryers of the rural houses and the façade is a composition of concrete, wood and plaster, as well as in the Residence Palace. Gellner applies the concepts of rationalism in the use of new materials (concrete and metals) to the alpine forms like the small plan or the accentuated inclination of the pitched roofs.

The process that led to the construction of these buildings is of great interest and emerges from the study of archival documents. The first design definition takes place with the simulation of the insertion within the natural and/or anthropized context, showing a kind of sensitivity towards places. The insertions are conceived as objects to be shaped in relation to their impact on the landscape. The vertical multi-storey development of these buildings should have been controlled by the technique of the photomontage, but actually it didn't avoid the impact of new huge volumes in the historical centre.

The Ice Stadium built by Mario Ghedina also documents a desire for experimentation that doesn't contradict the principles of mitigation of new structure in the landscape. The building endows the town with a "suitable place for the inaugural event of the Olympic Games"[12] hosting "a figure ranging between 12 to 15 thousand people".[13] The stadium is a large 'C' open towards the valley and framed by the Dolomites where the audience simultaneously attends sports and panoramic scene. The careful search for mitigation in the insertion of the building into the context can be found in various features of the work: from the choice of the site at the bottom of the valley to limit the impact of its vertical development, to the attenuation of the effect of exposed reinforced concrete with the overlapping of Swiss pine cladding, to the rough profile of the roof, covered in dark copper, which binds to the profile of the mountains (**Fig. 3**).

The Ski Jump Trampoline and the other connected

structures also document the figurative suggestions associated to the combined use of wood and reinforced concrete. Made in Zuel by Piero Pezzati and Guglielmo Holzner, the trampoline was recognized in the mid-20th century as a bold and original structure for its slenderness. Although disused since 1990, it is today a landmark in the area and a symbol of the 1956 Olympics.

3.3. Temporary Insertions

The need to equip Cortina with all the structures necessary for the Olympic competitions led, in some cases, to conceive new facilities according to a principle of temporariness: they are made using provisional structures, ephemeral objects in the landscape for which there was no continuity of use beyond the conclusion of the Games.

The most significant example is the Snow Stadium, built in Campo di Sotto for cross-country skiing competitions. 250m long and 44m wide, with east-west longitudinal orientation, it consisted of two grandstands placed on the longer sides and made of metal tubular structure, for a total of 6,000 seats. The orientation of the building meant that departures and arrivals always took place with the sun alongside, for the benefit of cine-photo-operators (**Fig. 4**). After the Olympics, the structure, which had a strong impact in the valley, was dismantled and removed, returning to the existing meadows [SDR].

4. LEARNING FROM CORTINA 1956: OPEN ISSUES FOR TOMORROW'S RESILIENCE

The message of the VII Olympic Games confronts today the expectations of the next XXV edition of the Games, Milano-Cortina 2026.

The lesson of 1956 bears witness to the effectiveness of the prevalence of reusing existing architectures and to the foresight of designing temporary structures: it was a transformation of the places that did not erase identity and safeguarded the landscape, without giving up the principles of Modern architecture and experimentation. That legacy has faced two different fates: some architectures have been successfully reused, others have been abandoned or distorted, mainly due to regulatory requirements.

Among the success stories, the Residence Palace and the Giavi House, are still used and conserved in their integrity. More critical outcome is the recent intervention on TELVE building, converted into luxury apartments with an extensive replacement of the original materials of the façades, and with a radical change of the interiors distribution.

Among the unsolved cases of abandonment are the Ski Jump Trampoline unused since 1990 and the "Eugenio Monti" bobsleigh track, abandoned in 2008, both due to homologation problems for competitive sports.

Among the critical cases is the Ice Stadium which was covered in 2004 by a roof and a glass curtain wall which interrupted all relations with the landscape and damaged the



Fig. 3. **M. Ghedina, R. Nalli, F. Uras, Ice Stadium (1956) covered by inappropriate roof and glass curtainwall (2004). © L'Architettura, cronache e storia, 1956; Di Resta 2019.**

structure with inappropriate technical and formal choices. The mistake is not in covering the stadium, but in designing without considering the qualities of the building: the steel beams in fact engage violently on the reinforced concrete ribs, while the glass closure excludes part of the rinks and the entrance, where the Olympic brazier was.

The future of this heritage will depend a lot on the next Olympics: the bobsleigh track is waiting for interventions for its reopening; the trampoline instead is being preserved and musealized because the competitions will take place on the existing trampolines in Predazzo.

Will it be possible to insert memory and values of the 1956 project into the new Olympics? Will it be possible to proudly show continuity with Cortina's past? Will it be possible to restore these architectures not proposing a return to the origins, but letting them evolve?

The signs we see so far are uncertain.

The envisioned temporary Olympic village in Fiames and the conservation of the Ski Jump Trampoline are aspects of continuity and factors of resilience for landscape

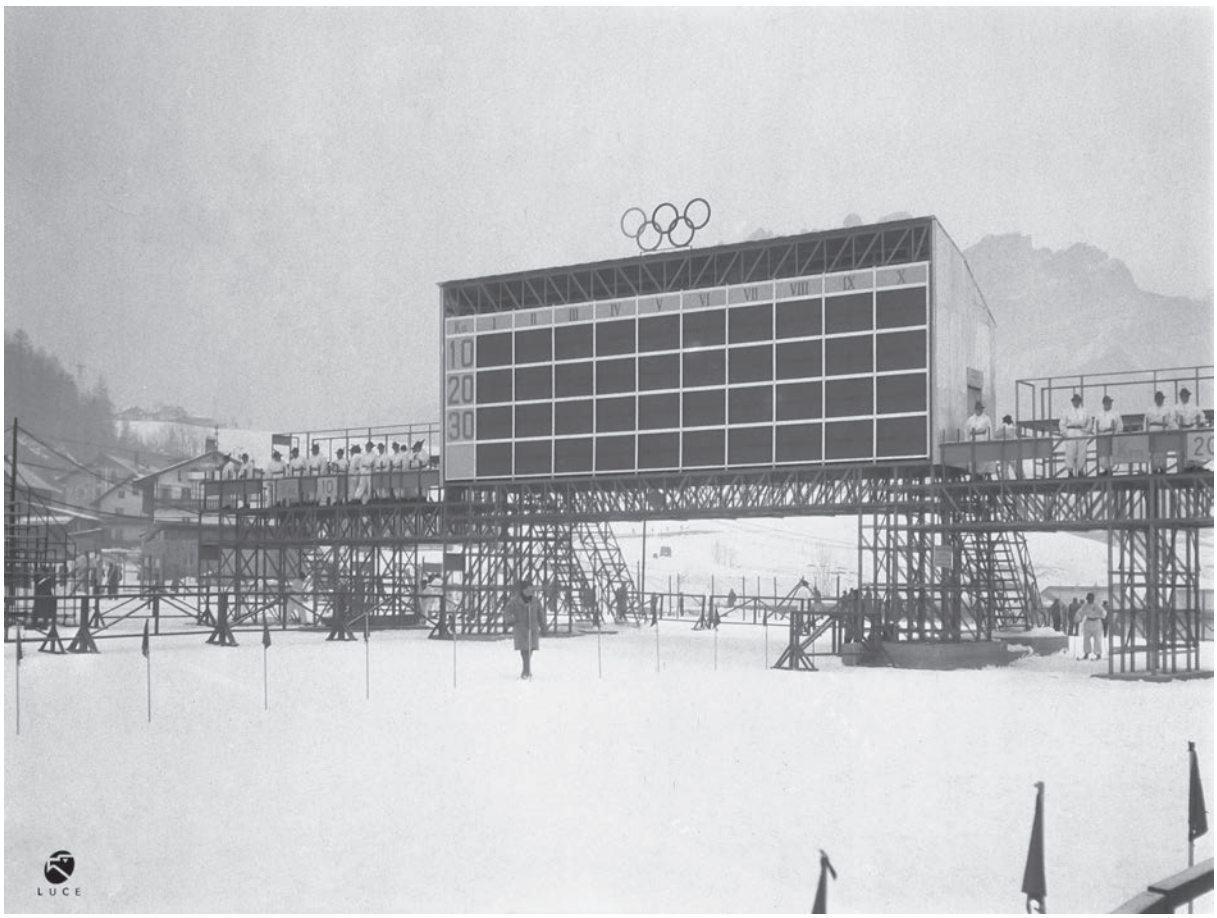


Fig. 4. **Temporary Snow Stadium. © Archivio Fotografico Istituto Luce, 1956.**

and architecture. Otherwise, the proposals for urban and territorial transformation (e.g. the ring roads along the valley) deny the orientations followed in the previous Games and put at risk a site now part of the UNESCO WHS.

The 1956's strategy considers the landscape to be central, both in the way of designing the new structures/facilities and in choosing the temporariness for some of them. The impermanence of constructions characterized by huge environmental impact becomes a distinctive feature of Cortina's Olympics Modernity that doesn't give up being Modern because it is able to express the values and the architectural language of 20th century. A Modernity ready to disappear and to choose the reversibility as a strategy to build a new landscape.

Which resilience, therefore, can we learn from this lesson? The resilience lies in the places, because all the outlined issues contribute to the conservation of local/alpine spaces.

Cortina 1956 leaves us an intangible heritage: an idea of transformation that respects the fragilities of the landscape. The more it will be reclaimed in the next interventions, the more we can learn from such an idea of Modernity.

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PRESERVING THE WORLD OF TOMORROW: SEATTLE'S CENTURY 21 COLISEUM

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ABSTRACT.

Designed by local architect Paul Thiry to serve as an important anchor and visual focal point for Seattle's expansive 1962 Century 21 Exposition, the Century 21 Coliseum (along with the nearby Space Needle) became an iconic reflection of the fair's central themes and goals — "Man in the Space Age." One of the largest clear-span structures ever built at the time of construction, the Coliseum represented a unique engineering and architectural solution to the fair's programmatic and visual requirements. After the fair, the City of Seattle purchased the Coliseum and, as planned, converted it into an all-purpose convention and sports facility, according to plans by Thiry. The Coliseum represents the intersection of architecture and civic identity — during the fair, it was intended to help position Seattle internationally as a significant force on the Pacific Rim; following the fair, it was the anchor of a new civic center with other cities on the west coast. As the long-term home of beloved local sports teams, along with countless entertainment and cultural events, its ongoing legacy is as part of the city's communal cultural experience.

1. INTRODUCTION

The Seattle Center opened with an extravaganza — a world's fair. It continues as a cultural and fun nucleus for a boisterous and optimistic city. The 1962 World's Fair was the irrepressible product of two bubbling community elixirs — a proud desire to shout about the city, the state and the region, and a longing for a spectacular apple box to shout it from.[1]

The Century 21 Coliseum in Seattle, Washington was built in 1962 for the Century 21 Exposition/Seattle World's Fair and converted to a sports arena after the fair as part of a grand new civic center for Seattle. A major goal of the fair was to position Seattle as a leader on the Pacific Rim and elevate it as a major city alongside San Francisco and Los Angeles. The architecture was intended to make a statement that matched the city's ambitions. The Coliseum represented the future of Seattle when it was constructed, and it became an important part of the city's civic and cultural identity.

The Century 21 Exposition was held between April 21 and October 21, 1962 and drew almost 10 million visitors (**Fig. 1**) for an aerial view of the exposition grounds). It was the first world's fair since 1939 to be held in the United States and America's first "space-age" world's fair. Its planning and implementation reflected post-World War II optimism and opportunity, technological advancements in the Cold War era, and Seattle's ambition. The fair took place at the heart of the Cold War — bookended by the launch of Sputnik in 1957, during early planning efforts, and the Cuban Missile Crisis, which took place toward the conclusion of the fair in October 1962.

During this same period, Seattle was in need of a civic center that was appropriate, both in site and buildings, for the growing metropolis. Seattle leaders felt that they had fallen behind other western cities like San Francisco and Los Angeles in terms of civic monuments. Once fair boosters and city planners realized they had overlapping aims, the ultimate potential for a fair became clear: a world's fair could be the catalyst to plan, finance, and design a new civic center for downtown Seattle.[2]

2. POSTWAR OPTIMISM & CENTURY 21 EXPOSITION

Organizers of the 1962 World's Fair were committed to putting on an event of international importance. With the theme "Man in the Space Age," they claimed a national mission to demonstrate and promote America's dominance. Thus, what might have been a forgotten regional festival took on the mantle of the nation's response to communism in the 1960s.[3] While the Soviet Union did not participate in the Century 21 Exposition, the event's emphasis on science and space exploration had clear overtones of Cold War competition. It was expected that the fair would "open the gates of the Pacific Northwest to the world...[and] herald a new era of prestige."[4] Many people "came away with the sense that the future was dynamic and Seattle was not on the provincial periphery, but right at the center of it."[5] In 1962, Seattle invented a future that included a tech-savvy portal to the Pacific Rim.[6]

World Fairs have traditionally been laboratories and landmarks of architectural progress,[7] and organizers in Seattle were determined to have a comprehensive architectural showcase worthy of the technological advancements housed within. Exposition planners and City officials appointed a Design Standards Advisory Board composed of local architects and planners and out-of-town consultants architect Minoru Yamasaki and landscape architect Lawrence Halprin. The Board recommended the appointment of a chief architect for the fair, and unanimously selected Paul Thiry, who was well-known in Seattle for the high quality of his work.[8]



Fig. 1. **Aerial view of Century 21 Exposition/Seattle World's Fair, Paul Thiry, Chief Architect, Seattle, Washington, USA. © Municipal Reference Library, Branch of Seattle Public Library, c. 1962.**

The Coliseum was financed by the State of Washington and designed to house the fair's theme exhibit. In early planning meetings for the fair, it was stressed that the Coliseum, as the main Exposition building, would be a major contributor to the future Civic Center, providing public use for decades to come.[9] It cost just over $4 million to construct,[10] and covered almost four acres with 129,000 square feet of unobstructed exhibit space.

The modern design and daring structural engineering of the fair buildings reflected the country's postwar prosperity and new superpower status. "I felt that as long as this was a world science fair," Thiry said, "we should exploit new techniques in construction."[11] No fair building better exemplified Thiry's maxim than his own design for the Coliseum. After studying and discarding several possible structural systems, Thiry and his structural consultant, Peter H. Hostmark & Associates, developed one that met all the design requirements and fell within the budget limits: two steel roof trusses crossing at right angles, with the spaces between the trusses and perimeter concrete edge beams forming four hyperbolic paraboloids spanned by a cable network supporting prefabricated, insulated aluminum roof panels (**Fig. 2**). The trusses were supported on massive, tripodal concrete buttresses, and the edge beams on V-shaped concrete piers around the building's perimeter.[12] The ground breaking design — one of the largest clear-span structures in the world at the time of its construction — reflected the emphasis on modernity and technology appropriate for the first space-age World's Fair.[13]

The Coliseum housed the theme exhibit, "The World of Tomorrow," which promised "a preview of man's life in the 21st century."[14] The exhibit consisted of approximately 3,500 four-foot-square, prefabricated aluminum cubes, fastened together to form five clusters elevated on steel framing above a reflecting pool.[15] The honeycomb-shaped clusters formed a "floating city," 200-feet across and 60-feet high, which was accessed via the "Bubbleator," a circular elevator covered by a Plexiglas dome (**Fig. 3**). Glimpses of the city, home and factory of tomorrow, of how mankind would learn, travel and relax in the future, were interspersed with images of a family huddled in a fallout shelter — a grim reminder, at the peak of the Cold War, of the ever-present threat of nuclear annihilation that could preclude the dawn of the next century.[16] Time magazine lauded the experience as "A sort of Jean Cocteau fun house" and the fair's "most sophisticated exhibit."[17]

The Coliseum's iconic roof, huge size, and innovative construction placed it among the fair's most noted structures, along with the Space Needle. The project was used by building suppliers and others in advertisements and promotional materials,[18] and it was featured in a variety of period product and trade publications, including the Journal of the American Concrete Institute, which produced a series of pa-

pers about the use of concrete at the 1962 World's Fair.[19] For their work on the Coliseum, Thiry and Hostmark were awarded the American Institute of Steel Construction's Architectural Award of Excellence for the "imaginative and attractive use of steel" in the construction of the building.[20] The Century 21 Exposition was a defining moment in the history of Seattle, and the Coliseum was one of its most significant and prominent buildings.

4. POST-FAIR SEATTLE

Unlike many fairs, the Seattle World's Fair proved to be transformative for its host city. The exposition left behind many permanent civic improvements, from a revitalized waterfront to the monorail. Most notably, it created Seattle Center — a permanent complex of theaters, pavilions, sports venues, and museums — marked by the expressive Coliseum and the iconic Space Needle. As reported in The Seattle Times at the conclusion of the fair:

> *Most cities which have staged world fairs have found their close leaving big blank spots in their landscapes and economies. Most have had difficulty in pinpointing specific gains, in succeeding years, directly traceable to their expositions. Seattle's postfair period will have a different beginning. Permanent improvements on and about the exposition grounds, costing $33,000,000, will be left as a legacy to the community... The community is organizing to see that this permanent investment yields yearly dividends in culture, entertainment — and dollars — in Seattle Center activities.*[21]

The Century 21 Coliseum was designed for the dual purpose of conveying the "The World of Tomorrow" theme and for post-fair conversion into a sports arena. This duality of purpose was inherent in the earliest planning stages of the entire World's Fair site, which was designed to house "an exciting and forward-looking exposition whose buildings and spaces could have all the drama and spectacle usually connoted by fairs, and at the fair's end, a city center for cultural, sport and other community events for which the fair's principal buildings would be the nucleus."[22]

An integrated plan for developing the World's Fair and the Seattle Center had been in place since 1956, and in 1962, the Seattle Center Commission was formed specifically to



Fig. 2. **Century 21 Coliseum during construction. © Museum of History and Industry, 1961.**

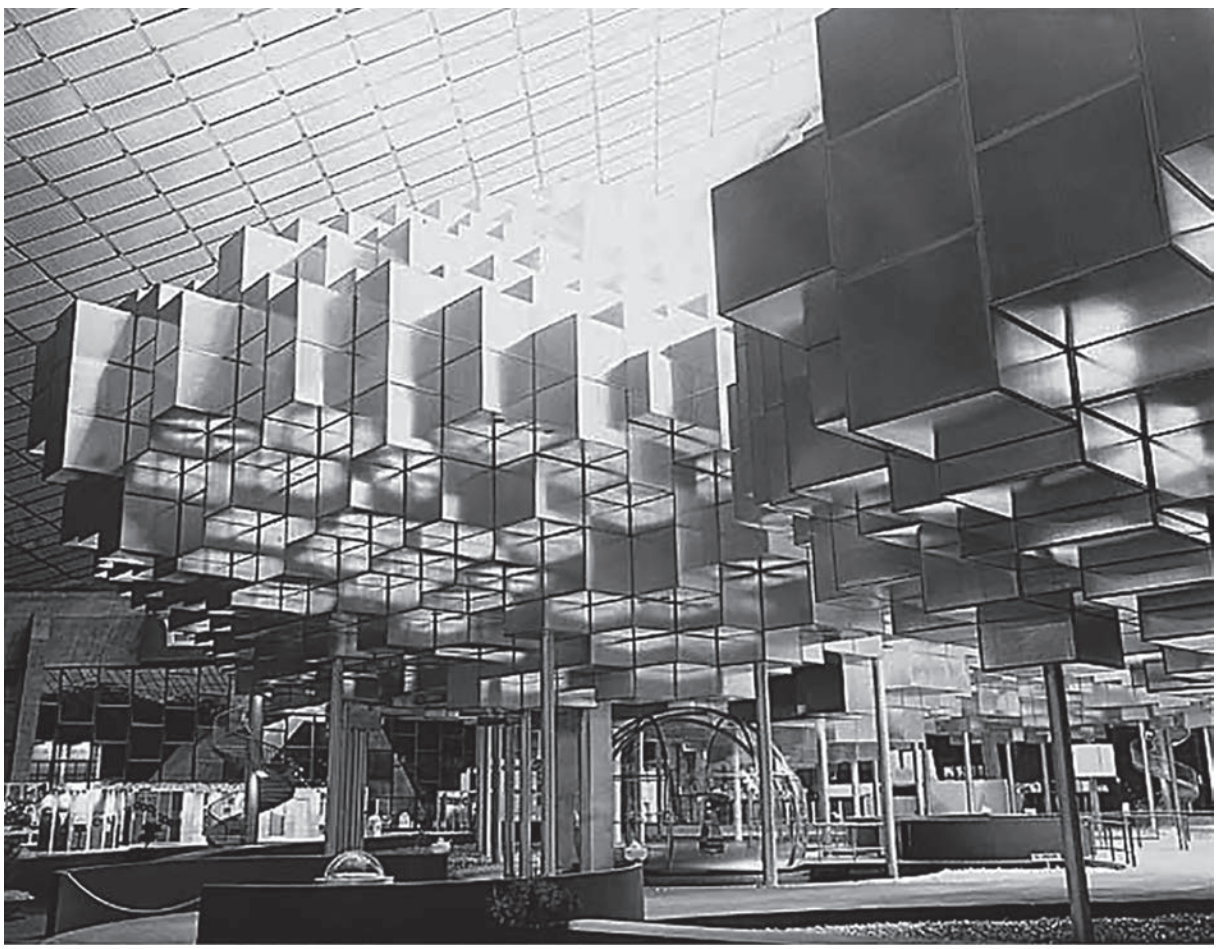


Fig. 3. **Coliseum interior showing Bubbleator. © Museum of History and Industry, Seattle, Photographer unknown, 1962.**

make recommendations for reuse of the site moving forward.[23] As planned, the Coliseum was converted it into an all-purpose convention and sports facility that could seat up to 18,000, based on designs by Thiry. This included a reconfiguration of interior spaces and the addition of fixed and moveable seating, ramps, and partitions. Thiry referred to the Coliseum as the "work horse," as it had to be designed to perform in a multitude of ways after the fair.[24] A contemporary architecture critique of the building noted, "For a work horse, the coliseum is exquisitely planned in every detail, and its drama is of a more expressive kind for the city than the theme structure for the fair, the Space Needle."[25] The Coliseum formally reopened to the public on June 5, 1964 and became home to the NBA SuperSonics after the franchise's formation in 1967.

5. PRESERVING THE COLISEUM

In 2000, the SuperSonics left Seattle, putting the future of the Coliseum in jeopardy. The preservation of sports arenas presents specific challenges and limited opportunities for reuse, particularly once marquee tenants relocate to new facilities. As a result, these venues are increasingly rare resources, as many postwar arenas in the United States have been lost. The key to the preservation of modern sports arenas is finding a balance between making changes to adapt to market and visitor demands while maintaining historic character. Due to the efforts of the City, as the owner, and developer OVG, the Coliseum is undergoing a multi-year rehabilitation project that will do both.

The project retains and rehabilitates key historic features while updating the site for future use (**Fig. 4** for an image of the arena prior to rehabilitation). The iconic hyperbolic paraboloid roof, V-shaped piers, tripodal concrete buttresses, and aluminum monitor; interstitial trusses, framing, and standing seam roof panels; and the historic curtain wall will remain and convey the arena's historic appearance. The project will add a new subterranean parking

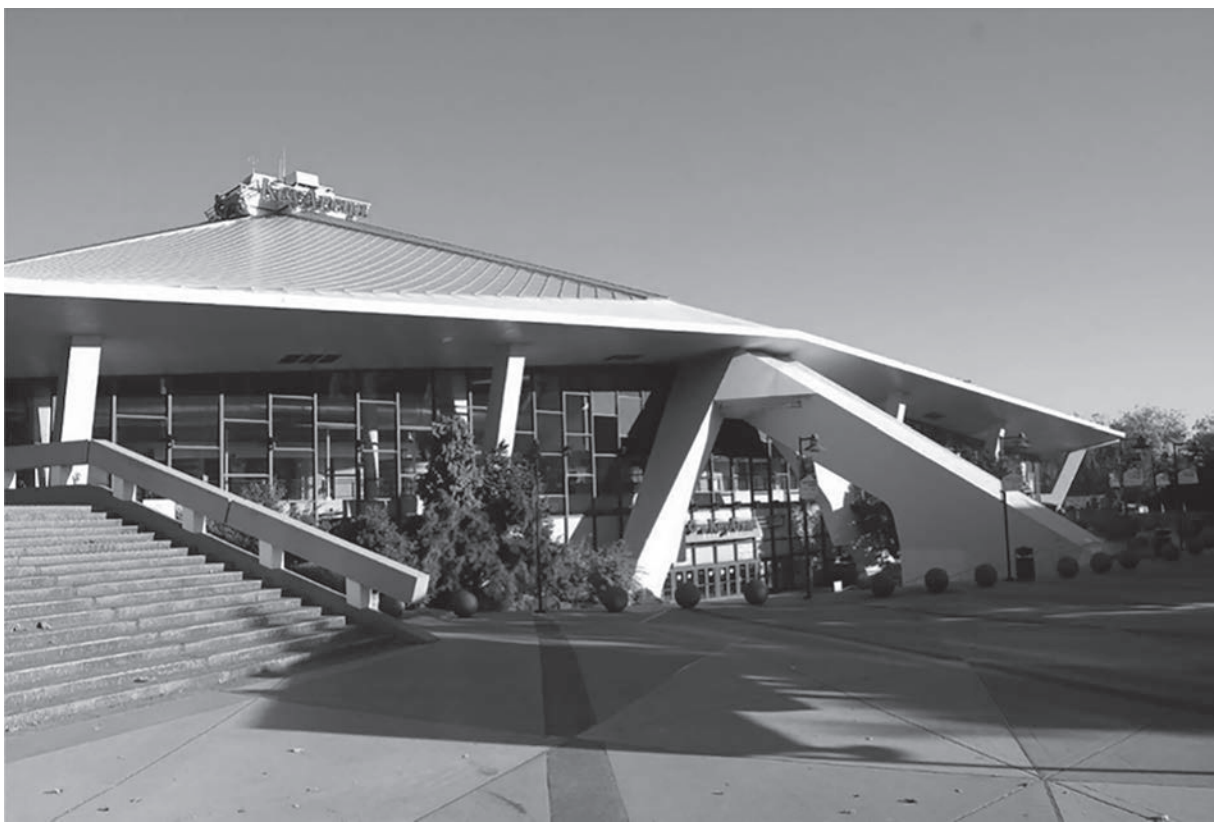


Fig. 4. **Former Century 21 Coliseum, view of west façade. © Historic Resources Group, 2017.**

garage and atrium/entry lobby at the south façade. The atrium addition has been designed to be subordinate to the historic arena, maintaining the original volume and roof form.

The building's interior was completely reconstructed in 1964, when it was converted to an all-purpose convention and sports facility; and again in 1995, when the floor was lowered 35 feet and an arena, seating bowl, locker rooms, and concourses were constructed. To make the necessary 21st century upgrades, the existing interior bowl and arena will be demolished, and the interior event floor level excavated and lowered to approximately 15 feet below existing and beyond the perimeter of the building's historic footprint to accommodate construction of a new arena, seating bowl, and subterranean addition. The interior work will include a new regulation-size arena for ice hockey and basketball; new seating risers and suites for a capacity of approximately 19,000; and new locker rooms and amenities.

In its original design, the Coliseum was intended as a visually dynamic "containment vessel," serving as a protective shell for flexible interior exhibits and exhibit spaces that were considered temporary to the life of the fair. In 2018, the Coliseum was listed in the National Register of Historic Places. The proposed upgrades will breathe new life into the historic arena, allowing it to continue to adapt to changing needs while maintaining an important cultural and visual icon in the City of Seattle.

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HELSINKI OLYMPIC STADIUM REVITALIZED

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ABSTRACT.

Helsinki Olympic Stadium is a national monument, a crown jewel of functionalistic reinforced concrete architecture in Finland. Since its inauguration it has undergone several changes and extensions creating valuable history of the relation between use and architecture in built form. The key issue was to understand how to turn this historical stadium into a future arena maintaining the heritage. A tool set of methodological analyses was applied to understand the potentials of functional needs in the context of historical elements.

This case study is a good example of a lasting legacy in reality. It is a presentation of research by design where decisions were made by analysing utilitarian needs exposed to cultural values. It also reveals the technical challenges that modern movement architecture brought to future horizons. The heritage value of the stadium is not only defined by physical elements but as well by its capability of being used as an arena for top sports and events. It needs to evolve to stay alive.

1. INTRODUCTION

Helsinki Olympic Stadium is a national monument, a crown jewel of functionalistic reinforced concrete architecture in Finland. Since its inauguration the stadium by architects Yrjö Lindegren and Toivo Jäntti has undergone several changes and extensions creating valuable history of the relation between use and architecture in built form. It also has a significant symbolic value in the Finnish society; a tool to gain a nation international fame by combining forefront sports and architecture. The case study presented will refer to reasons that got it started and to ways heritage was met during design process.

2. HERITAGE AND LASTING LEGACY

Helsinki Olympic Stadium in its '30s functionalistic appearance was an utilitarian composition of vertical tower and horizontal stands. It had a canopy on its western main stand and a building beneath connected with a west wing museum. The stands and the facades behind have been constantly evolving with capacity and appearance when preparing to large scale events; first the '30s (20 000) then the streamlined temporary wooden stands for the Summer Olympics 1940, **Fig. 1** (50 000), then the horizontally meandering mix of temporary timber and permanent concrete construction with vertical wooden claddings to finally host the Summer Olympic Games in 1952 (70 000).

After the Olympics, new premises were built under the southern and northern stands and a series of changes in interiors followed (Jäntti). The renovation in the 1990s (Markku Aalto) replaced the cast-in-situ concrete structures with prefabricated concrete in the stands of the south, east, and north. The eastern stand got a a permanent cover in 2003 (Kimmo Lintula, Niko Sirola, Mikko Summanen). The entity was listed in 2006. Despite the remained symbolic value, the deteriorated physical condition with a blurred combination of scattered functions and built add-ons had prevailed the original simplicity and pureness of the Helsinki Olympic Stadium.

3. REVITALIZING

The key issue was to understand how to turn this historical stadium into a future arena maintaining the heritage. The core functions themselves, sports and events, had changed along with their requirements. We organized workshops to find out the core needs of the stadium in the future context. Stakeholders as national and international sport organizations, event organizers, tourism and travel agencies, athletes, artists, security and authorities. This exercise of defining "the evolving functionality" was executed in six stages evolving each round more than 80 key groups. The project partners agreed on theoretical framework; the best way to ensure heritage is to keep the building in use. Functional needs were regarded as key components of the listing features. A diagram of needs and connections was created. That then was projected onto heritage illustrated resulting in a form of a report pointing out the interventions to be further motivated and analysed by architectural design.

4. METHOD

We formed an interdisciplinary project group: K2S and NRT Architects supported by Wessel de Jonge and White architects. A tool set of methodological analyses was applied (with great influence by Wessel de Jonge) to understand the potentials of functional needs in the context of historical elements.

Transformation guidelines were formulated based on the Historic Building Surveys (Mona Schalin). Urbanistic-historical value set the building part in the context of the whole ensemble in the urban and natural setting. The role of the building as a historical venue for sports and culture was

considered as culture-historical value while building typology meant representation of a functional structure related to events of its era. Exterior, interior, and service systems were evaluated by their architecture-historical and material qualities. Three categories were defined: limited, mixed, and high transformation potency.

These were then used as a frame of reference for proposed interventions. First, we studied if future needs could be met by reprogramming exiting spaces or directing people flows. The next thing was to come up with architectural gestures solving multiple problems. This was repeated till the set functional goals met the evaluated preservation criteria. This enabled us to discuss the interpretations with heritage authorities and other stakeholders to anticipate the needed transformations or re-designs. We came up with four architectural approaches shown in the following examples.

4.1. Preservation with Conservation

The grand stand with canopy is a central part of the ensemble. It is marked in the urban environment by a tower and a western façade with an almost "classical" programmatic division of base for services and a public gallery opening up to the landscape. The second floor premises have large openings with steel windows facing west. The structural system is a rigid 100 meters long row of concrete frames. This building and the canopy stand almost intact in the '30s architectural and material expression. From the field, the white and board textured concrete canopy hovers on top of the continuous ranks. It had been only affected by suspended commentator booths in the '90s and thus was considered to have a limited transformation potential. The roofing out of bitumen had been redone several times and was valued to have high transformation potency.

4.1.1. DEFINING THE APPROACH

The technical surveys had shown that the concrete of the canopy was almost fully carbonized and that it was structurally at the far end of its capacity. Engineers gave us unsatisfactory choices; reinforcing the existing concrete with 50 mm layer of sprayed concrete, demolish and rebuild the canopy out of concrete, or demolish and rebuild it out of steel structure with rendering on top. We reacted by organizing a series of round table discussions including leading experts and academics. Our conclusion was that the restorative option would be the most suitable approach with a minimum amount of interference with the remaining material. Following this, an excursion with stakeholders to stadiums in Europe was made. The sanitarium in Zonnenstraale was also visited. There had been similar issues to be dealt with. There, the concrete beams were reinforced with carbon fibre. It also convinced the project of how to deal with technical installations and details of the modern movement era. This field trip turned out to be the savior for the grand stand canopy in Helsinki Olympic Stadium.



Fig. 1. **Yrjö Lindegren, Toivo Jäntti, Olympic Stadium, Helsinki, Finland. © Sports Museum of Finland, photo Roos, 1940.**

4.1.2. CONSERVATION METHODS

The roofing was taken off and reconstructed after the concrete beams had been reinforced. Detailed reconstruction on the sheet metal work was crucial since the conditions inside the canopy were to be kept in the previous state considering concrete and chemical remission. The concrete was very lightly vapour blasted, the rusted steel parts were cleaned and treated with rust-inhibiting coating. This way, the texture of the original sheathing remained visible regardless two layers of new paint. A rail for the needed fixtures was designed based on original intention. This separated the fittings visually and kept the physical interventions in minimum.

4.2. Preserved Areas with New Interventions and Additions

The main challenge for the bowl was to find an architec-



Fig. 2. **K2S Architects, Joint venture K2S and NRT Architects, Olympic Stadium new canopy, Helsinki, Finland. © Credits K2S Architects, 2019.**

tural solution for placing an IAAF standard track as a field. Also, southern and northern stands were set to be covered, new seats to be designed, and new vomitories to be placed. The capacity was set to be around 36 000 seats.

4.2.1. THE BOWL

The bowl had a mixed transformation potency since the materialization of the stands and the wooden benches had been changed in the 1990s. There had also been changes on the northern and southern corners of the main stand. Needed modifications went further but were justified by reasonable needs to do with the original quality of the stadium; to enable its core functions was to secure its future vitality. The steel railings and original metal sheet works were more or less intact. These were to be conserved and reconstructed when needed. The timber cladding of the presidential balcony was to be conserved.

4.2.2. TRACK AND FIELD

To fit the IAAF standard track inside the field perimeter decided in the early 1930s meant collision with concrete structures. The western side with the main stand being conceptually and architecturally regarded more important than the eastern stand it was proposed that intervention would take place in the east. This gave an opportunity to solve the disadvantages of the original eastern stand; a new stand with proper sight lines could be built providing accommodation with high quality seating for disabled spectators and ground boxes. Below a series of service spaces could be built for the spectators.

4.2.3. VOMITORIES

Vomitories were placed at the back of the bowl in between the structures. Also, the 1950s staircases were extended to land on the back rows of the stands. The new concrete stairs were painted white to blend in. They have a distinctive folding expression on the underside to mark them as new elements. The intermediate landings are fitted as balconies following the rhythm and scale of the façade.

At the Grand Stand, three new vomitories were proposed in order to accommodate seating for disabled and to provide direct access to the second floor premises used as a "back boxes" during the event. This was found to be in conflict with the transformation guidelines but was seen as a benefit for proper usage of the stadium in the future. Thus, the conflicting intervention was acceptable while making sure that the effect on material qualities was kept minimal.

4.2.4. THE COVERING OF THE STANDS

Since 2005 the new eastern stand canopy had been part of the listed building entity. To cover the southern and northern stand was set as a key target. Aware of the effect on the image of the entire stadium architectural approaches were studied carefully in advance. It was clear that any kind of "third" canopy would be in great conflict. The idea then was to continue the existing canopy and change its upper form in order to enable higher steel structures resulting in longer spans and fewer columns Fig. 2. This was considered a major benefit for the spectator accommodation and sight lines. Structural analyses showed that the steel construction should be free floating connected to the existing concrete

structure by using sliding bearings. The concrete structures needed to be reinforced, meaning that the fittings of the 1950s façade needed to be modified. The canopy itself was designed as timber cladded double curved form, integrating all technical installations with visual edges as thin as possible. This was to mark a clear presence of the new element fitting the scale of the canopy at grand stand.

4.2.5. THE SEATS

The most problematic issue were the seats to be replaced. Visually, the stadium bowl is constructed from continuous ring of stepped stands with horizontal timber tiers of seats. Although the wooden benches had been replaced in material and the back rests had been added later, the strong visual image followed the original idea of play of the horizontal utilitarian stands and vertical tower seen from the bowl. This resulted with mixed transformation potency with original features to be retained.

The temporary allowance of football being played in this venue with no individual seats had come to its end. There was also demand from the stakeholder to reduce the maintenance costs and to have better comfort value for spectators. Safety was an issue as well, since the fixed benches meant that the circulation and the egress were not sufficient.

We designed a seat consisting of 2x2" strips placed horizontally. Since the seat needed to be foldable, the back rest forms continuous lines reconstructed the image of horizontal tires with materialized texture. Comfort was created by "carving out" the desired form. This combined historical values with future usage. In order to allow flexible usage, a rail was introduced attached to the seats. It allows changing the layout of the seats and media tables depending on the events.

A durable way of using wood in individual seat exposed to weather with a lot of movement and stressing by lateral forces was the question to be answered. Could there be another way of looking into it? Would wooden composite do? An outdoor laboratory was established on top of the grand stand canopy. Three years of testing and developing materialized in a seat of wooden composite. It solved multiple challenges: visual role of the seats as part of the monument, materialization, spectator safety,comfort, maintenance, and future usage.

4.3. Modifying Reinstatement

The clarity of functionally organized ground floor premises at grand stand had been blurred since 1970s. We wanted to regain the presence of the structure in the building.

4.3.1. GROUND FLOOR PREMISES AT GRAND STAND

The clear rhythm of a rigid structure directing horizontal longitudinal movement in the building was set to be rediscovered Fig. 3. By organizing the service spaces as monoliths in between the multipurpose rooms with large openings to the central corridor we were able to have filtered daylight through the horizontal window strips from 1930s present in the interior. These modifications were justified by taking into account that the original design principles like layouts, partition walls, and materials had been



Fig. 3. **K2S Architects, Joint venture K2S and NRT Architects, Olympic Stadium Grand stand premises, Helsinki, Finland. © Tuomas Uusheimo, 2020.**



Fig. 4. **K2S Architects, Joint venture K2S and NRT Architects, Olympic Stadium new premises, Helsinki, Finland. © Tuomas Uusheimo, 2020.**

largely changed. The proposed design also reintroduced some the original features that had stood time intact.

These new multipurpose rooms are used for sports, meetings, and as a hospitality area during the events. Since there was no way of having additional space built connected to grand stand gallery, the only way to deal with the number of people to be served and avoid congestion on the gallery was to divide them into different floors. This was seen possible with efficiently controlled flows but, at the same time, it was recognized that interventions in form of vertical shortcuts were unavoidable.

4.3.2. GRAND STAND GALLERY

The gallery as it was had limited transformation potency. As the functional need for solving the shortcuts was to benefit in several ways our design team researched further the different phases of the gallery. The old photographs revealed that the original concrete service counters had been demolished. Since there needed to be service (kiosks from the 1990s were turned this time into toilets) organized in the gallery we came up with the idea of rebuilding the counters. Two of these were designed into a rail of staircase connecting the gallery with the ground floor premises. They could be fitted in so that they retained the essential qualities of the ground floor corridor and became part of the strategy to restore the original layout of hospitality counters on the gallery level. Although being a strong intervention, this did not only solve functional questions but avoided more complicated and visible parts needed to be built. Part of the gesture was a new northern entrance to have as an equivalent entrance to the grand stand as the southern one. This reintroduced the original urban idea of south-north axis by Lindegren and Jäntti.

4.4. New Premises

The stadium sits in between the urban built landscape and the evergreen pine forest on a hill with only a limited amount of urban interventions since the 1950s. We decided that all the functions not easily fitting in the existing building frame were to be placed underground. This kept the surroundings merely intact. Necessary vertical connections were placed inside the existing building frame. The new spaces could be designed in utilitarian concerning functions, forms, and layouts.

A northern square framed by a curvy service canopy following the lines and themes drawn on the original 1930s site plan was created on top of the new underground logistics area. Original ticket booths were restored and next to them a new northern gate was opened to the stadium bowl in order to ensure unobstructed flow of logistics while preparing the events. This also retained the original marathon gate as the ceremonial element. There is a service tunnel following the curves of the running tracks above. This "mirror stadium" allows the outdoor galleries to be served during the events without obstructing free people flows. It can be used as full-length indoor track.

Utilitarian expression was set as an architectural approach for the new premises in order to relate to material and structural expression of the stadium complex. Rough exposed cast in situ concrete, thick rubber mat, steel and

timber. The new multipurpose halls were cladded in tinted white timber as a "mirror image" of the white painted board marked concrete textures in the existing stadium premises Fig. 4. The longitudinal corridor connecting them has a repetitive character formed by continuous rhythm of concrete columns framing rectangular timber niches referring to classical western gallery façade. Three of these open up towards the grand stand as light wells to give also a sense of orientation. The color palette was kept in monochrome tones with only wood as a distinctive color in underground premises.

5. RESULTS AND CONCLUSION

Helsinki is a good example of a lasting legacy in reality. The unique and authentic Olympic architecture of the modern movement still in use proves it to be resilient. It is also part of our cultural heritage. I have shown you a case of the heritage in the context of future demands and needs. It is a presentation of research by design where decisions were made by analyzing utilitarian needs exposed to cultural values. It also reveals the technical challenges that modern movement architecture brought to future horizons has to meet. The architectural appearance and material qualities of Helsinki Olympic Stadium are presentations of its functional qualities. Thus, the heritage value is not only defined by physical elements but as well by its capability of being used as the arena for top sports and events. It needs to evolve to stay alive.

Simple forms and simple expression have represented the ideas behind the architecture seen in Helsinki Olympic Stadium. We believed these principles were strong enough to phase the challenges of the evolving functionalism. The stadium sits there on a hill still — ready to conquer future horizons with the heritage of the past. It is used to be used.

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Session 1-b

IN SEARCH OF LOST TIME OF SPORTS FACILITIES

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I am preparing this introduction at a time when Tokyo is about to host its third Olympic Games in just a few days. The first, the 12th, was scheduled for 1940, but the Sino-Japanese War forced its resign the second, the 18th, was successfully held in 1964, with Kenzo Tange's Yoyogi Gymnasium as its symbol. Last year, the 32nd Olympic Games, which was to be held in 2020, was postponed for a year due to the COVID-19 pandemic, which is still spreading in Japan and the Olympic Games were held under a declared state of emergency this year of 2021. The opening ceremony at the Kengo Kuma-designed Olympic Games was also unattended, and the passion and enthusiasm for progress shown at the 1964 Games was nowhere to be seen.

In the midst of this turmoil, the authors of the four papers in this session have observed and analyzed how sports facilities, which have become symbols of modernity, have become somewhat detached from modernity since their birth and have undergone many functional transformations. The title of this session is *In Search of Lost Time of Sports Facilities*, a reference to French author Marcel Proust's long novel *In Search of Lost Time*. How can we unearth the lost time of sports facilities and revive them for the future?

The first paper was *Body, Building, Nation: Rizal Stadium, Colonial Modernity, and National Spectacle*, presented by Dr. Gerard Lico of the Philippines. It describes the bizarre process of how Rizal Stadium, built in 1934 in Manila, Philippines, a colony of the United States, was transformed over 85 years until it was saved from demolition by the preservation effort led by Dr. Lico in 2019. The designer, Juan M. Arellano (1888-1960), was a Manila-born local architect who studied in the United States. This stadium, in the Art Deco style popular in the United States at that time, was a symbol of the colonial modernity, where people were "civilized" from "savages" to "athletes" by training their bodies. After independence, in 1954, the stadium became the venue for the second Asian Games and entered the history books as a symbol of the new Philippines. In the following half-century, this sports facility became dilapidated and buried in history, but it was rebuilt to revive the memory of colonial modernity and independence. This process gives us a great insight into how to deal with the architecture of colonial modernity.

The second paper is by Dr. Marcos Amado Petroli, an architectural historian from the United States, titled *Modern Venatio and the case of J. S. Dorton Arena in Raleigh, NC (1949–52)*. The Dorton Arena was built in 1952 initially as a state fair facility in Raleigh, North Carolina, U.S.A. The complex, perhaps better known among architects as the strikingly large structure for its Hyper Parabolic Shell that applied to the building for the first time in the world. Designed by Polish immigrant architect Maciej Nowicki (1910–50), the building is light, thin, and looks like a symbol of the future. However, it is also known locally as the Cow Palace. This is because many cowboys show their cattle here at agricultural fairs held in North Carolina, a state known for its agriculture. Maciej Nowicki, who was trained in Le Corbusier's office, got the idea for this facility from the ancient Greek and Roman amphitheaters or Venatio. It is surprising that this building, with its progressive spirit of modernity and technological advancement, is a product of the influences of the distant past and the cowboy culture of the agricultural region.

The third paper, entitled *Usage transition of Yoyogi National Stadium after 1964*, empirically clarifies how this gymnasium, built by Kenzo Tange (1913–2005) for the 1964 Olympic Games in Tokyo, has changed its function since the Olympics. Dr. Saikaku Toyokawa, one of the authors of the paper, is a world authority on Kenzo Tange research and has already written many biographies and other works on Tange. The main point of the paper, co-authored by Dr. Toyoka-

wa and Dr. Katsura Sato, is that the facility has survived not by being used as a sports facility for many years after the Olympics, but by being used for various other events. The memory of the 1964 Olympics, which gave courage to Japan after its defeat in the war, will continue to remain even if the function of the building changes.

The fourth and final paper is by Dr. Francesco Romeo, a structural researcher living in Rome, entitled *the structural significance in the conservation plan of the Stadio Flaminio by Pier Luigi and Antonio Nervi in Rome*. This building was one of the facilities for the 1960 Rome Olympics, before the Tokyo Olympics, and is the work of Pier Nervi (1891–1979), an authority on Italian architecture in the first half of the 20th century, and his son Antonio Nervi. The facility was built as a soccer stadium for the Olympics, and has been used for various sports and events since then, but has been closed since 2011. This paper presents the history of the analysis of the structure for conservation, which is being carried out with Docomomo Italia and the City of Rome. We revisit, through the paper, this beautiful facility, one of Pier Nervi's masterpieces in both structure and design, was created and how it will be preserved in the future.



BODY, BUILDING, NATION: RIZAL STADIUM, COLONIAL MODERNITY, AND NATIONAL SPECTACLE

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ABSTRACT.

The streamlined edifices of the Rizal Memorial Sports Complex (RMSC) in Manila are more than just landmarks of sporting history and art deco in the Philippines. It is a contested site — where colonial tutelage, native biopolitical control, and nationalism converge. It is the country's oldest and de facto national sporting facility.

Turning away from American neoclassicism, Juan Arellano designed RMSC in streamlined art deco. Arellano and his works embodied the achievement of American colonialism in transforming what it perceived as an uncivilized, inferior race. The architecture of the stadium resonated the now ideal Deco bodies of the natives whose physique metamorphosed through rigorous athletic training.

The complex's completion for the 1934 Far Eastern Championship Games is a culmination of the American civilizing mission geared towards transforming the unfit colonial subjects for self-governance and the creation of a sportive Pan-Asianism through the Young Men's Christian Association (YMCA), employing public education and biopolitical strategies that regulated public health and created subservient, healthy colonial subjects, countering the perceived backwardness of the Filipinos, Chinese and Japanese.

The complex was a battlefront during the Liberation of Manila in 1945, with American troops weeding out Japanese soldiers holding garrison in the sports complex. RMSC survived largely intact and was rehabilitated for the 1954 Asian Games, which aimed to convey peaceful internationalism among non-communist countries amidst the Cold War. This time, the stadium became a backdrop for the nationalist spectacle displaying to the world that the Philippines had recuperated from war and had become a new nation of the free world. But age was not kind to the stadium complex and issues of maintenance over decades had made the buildings decrepit, but it gloriously rose again in 2019 against threat of demolition, under the guidance of the author of this paper.

1. INTRODUCTION

Physical education, competitive athletics, and modern sports were introduced in the early twentieth century with the advent of American colonialism in the Philippines. Sports bridged the physical and cultural gap between the colonizer and the colonized. Physical education and Western sports were instruments to prepare the colonial subject for a greater participation in democratic, civic life. The new athletic discipline was an exercise of biopower and pedagogical apparatus to disseminate modern values among the Filipinos who were perceived as "savage natives" needing moral tutelage and physical exercise to make them fit for self-government. In this account, the Rizal Memorial Sports Complex (RMSC) completed for Manila's hosting of the 10th Far Eastern Championship Games in 1934 is a culmination of American social engineering agenda through sporting tutelage, and its spaces a symbolic arena where colonial modernity, the biopolitics of streamlined deco body, and nation-building ideology all come to play.

2. BODY: FROM SAVAGES TO ATHLETES

Colonial incursion to the Philippines was legitimized through the depiction of Filipinos as an uncivilized inferior race — "savages" and "wildmen" — supported by anthropological photographs which physically surveyed the Filipino body with anthropometric data and medico-scientific precision (**Fig. 1**). One of the most remarkable chronicles of Filipino "savagery" linked to sports and human kinetics was the colonial Interior Secretary Dean C. Worcester's "Field Sports among Wild Men of Northern Luzon," published in the March 1911 edition of the National Geographic. Worcester, more than any other colonial official, promoted "benevolent assimilation" through the invention and mass dissemination of what he determined were "non-Christian tribes" in need of American tutelage and protection.

In his 1914 book, The Philippines: Past and Present, he claimed that "before the American occupation of the Philippines, the Filipinos had not learned to play. There were no athletics worthy of the name." He endorsed the game of baseball to "strengthen muscles and wits"[1] in the same manner in which General Franklin Bell, commander of U.S. forces in Manila, had declared a decade earlier that "baseball had done more to 'civilize' Filipinos than anything else."[2]

The transformation of the urban landscape of Manila with emphasis on parks and playfields as prescribed by the City Beautiful master plan of American architect Daniel H. Burnham demonstrates the role of sports in creating civic life and inculcating modern behaviour among the subjects. The alliance of sanitary science, modern athletics, and urban design ensured the biopolitical regimentation of the Filipi-

no body, reinvent the norms of human behaviour, physical well-being and regulate the quotidian aspects of human existence.

Bio-power

Michel Foucault relates that the development of modernity coincided with ever-tightening definitions of normality, greater state control over human minds and bodies through what he referred to as "biopower." Biopower becomes an effective mode of command over the entire life of the population by regulating life itself from its interior. Technologies of domination act essentially on the body, classifying and objectifying individuals through the medico-scientific logic of health and athletics.

The logic of the new American colonial order, in pursuit of a "civilizing mission" demanded vast urban cleansing, and the creation of new modern space: a sterile, rational space, over and against the bleak and filthy spaces once inhabited by the natives in the past. Imposing civic life, sports activities and physical education necessitated a new space, in the form of playfields, where biopolitical control and benevolent tutelage become indistinguishable. According to the Burnham plan, nine active playfields and parks were to be distributed around the city of Manila.

The colonizers equated the improvement of the population's physical body through athletics as fundamental to cultural transformation. In the belief that such bodily transformation would foster the Filipinos' sense of civic responsibility and national identity, the creation of a new body politic for the survival of the colony would eventually lead to the development of a new nation state.

The Bureau of Education (BOE) collaborating with the Young Men's Christian Association (YMCA), deployed an army of physical educators to spread the modern gospel of sports and athletics. The BOE maintained that exercise was necessary to make Filipinos taller and bigger, and "that the stock of the race can be improved considerably."[3] Sports also diverted the attention of the natives from gambling and other vices.

The BOE began to organize interprovincial competitions between schools on the main island of Luzon in 1904. The BOE placed emphasis on competitive athletics so much that by 1916 formal policy awarded bonus points based on grade point averages or to make up deficiencies for those students who participated in provincial meets (Fig. 2). Competitors who participated in the Manila Carnival's national athletic contest received even more incentives.[4]

Launched in 1908, the Manila Carnival was both a commercial fair and a national athletic championship event. The athletic spectacle spurred town and tribal rivalries while fulfilling the Filipino love of festival, pageantry, and beauty queens. For the athletic events in 1908, a temporary Hippodrome with bleachers was constructed. By 1912 the carnival hosted national championships in men's and boys' baseball, basketball, volleyball, and track and field, as well as girls' basketball and open competition in swimming, tennis, running, golf, polo, soccer, football, and bowling.[5] Interestingly, the RMSC was built on the very site of the former Manila Carnival Grounds.

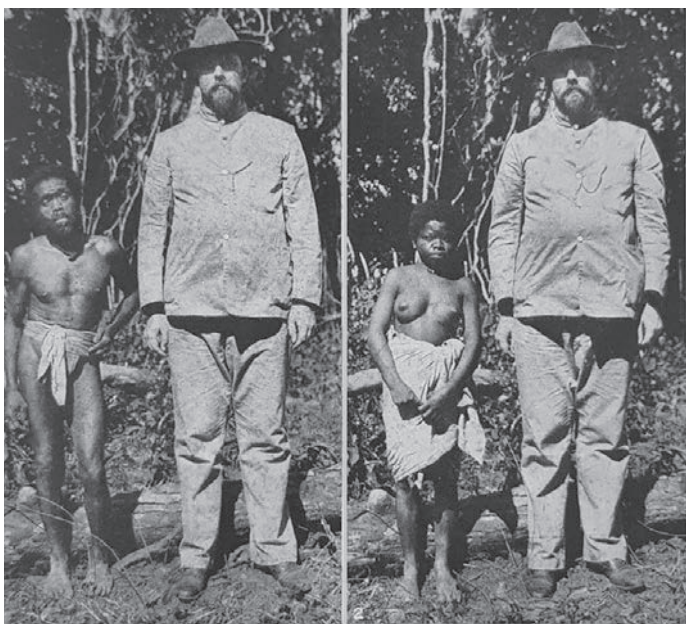


Fig. 1. **Mariveles, Bataan, Philippines. Negritos (natives) are photographed side-by-side with Worcester, underscoring glaring anthropometric differences which is a visible testament to Worcester's "evolutionary supremacy" and justifies the colonial ambitions of America in the Philippines with the divine duty to resolve the "white man's burden." © Dean Worchester, 1913.**

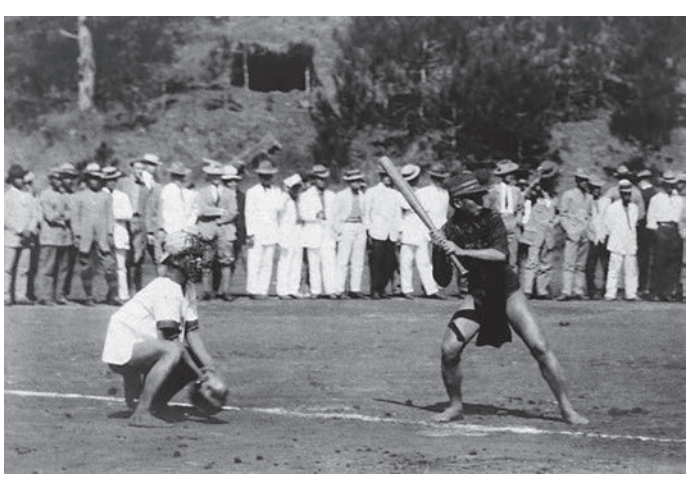


Fig. 2. **The colonizers equated the improvement of the population's physical body through athletics as fundamental to cultural transformation, instilling values of citizenship relating to teamwork and individual contribution to the team that are necessary for nation-building. © Dean Worchester, 1914.**

Sporting Diplomacy, Self-rule, and the Far Eastern Championship Games

The value of competition prompted the YMCA to organ-

ize the Far Eastern Athletic Association in 1912, which culminated in the formation of the biennial Far Eastern Championship Games (FECG), hosted alternately by the Philippines, China, and Japan from 1913 to 1934. The last staging of the games was held in Manila with the inauguration of the RMSC. Dubbed as the "Olympics of the Orient," the event was a pioneering regional multi-sport competition which was opened by Governor General Forbes at the Manila Carnival in 1913. Around 130 athletes from China, Japan and the Philippines participated in ten days of sporting tournaments that were seen by more than 150,000 spectators.[6]

These regional games provided not only an opportunity to showcase American physical education in the Philippines, but an Olympic training ground for the "whole Asiatic-Pacific territory except Russia"[7] For Brown and Governor-General Forbes, the integration of the games into the Manila Carnival served not only as an international showcase for American colonial benevolence, but consolidated Filipino nationalism among the diverse ethnicities of the colony, and diverted it from the American colonizers toward the Asian rivals.

The FECG provided an opportunity for the U.S. to engage Japan in cultural diplomacy in an atmosphere of escalating imperial ambitions. The FECG provided an alternate conveyance of military power through masculine sporting bodies. For Brown and Governor-General Forbes, the inaugural games represented a triumph of American sporting diplomacy and an achievement in sporting tutelage expanding beyond the Filipino race to include other Asian subjects, who embraced modernity via American sporting values and the English language. By 1921 Filipinos have distinguished themselves as having twice defeated China and Japan in the FECG.

3. BUILDING: VISIONS OF A NATIONAL STADIUM

Acting Governor General Charles E. Yeater issued an executive order in 1923 organizing a Playground and Recreation Commission with the goal of "furthering the cause of athletics in the Philippines." First among the recommendations of the Commission was "to provide an athletic stadium for Manila to be used as public playground and athletic field capable of seating 30,000 people."[8] This launched the construction of a "great national playground to be named Rizal Stadium."[9]

The commission elevated the stadium as a national project. Designed by Juan Arellano, a fund-raising campaign was soon launched to complete the sports infrastructure in time for Manila's hosting of the 7th FECG in May 1925.

Completed for the hosting of the 10th FECG, the newly constructed Rizal Memorial Sports Complex (**Fig. 3**) was jam-packed from 16 to 20 May 1934, attended by 200,000 spectators.[10] The 1934 Games was also the last of the FECG, as the rising tensions between the Republic of China and the Em-



Fig. 3. **Juan Arellano, Rizal Memorial Baseball Stadium, Manila, Philippines, 1934. Crowds gather for the 10th Far Eastern Championship Games. © Vargas Collection, 1934.**

pire of Japan led to the Sino-Japanese War, effectively dissolving relations between the two nations, and subsequently of the Far Eastern Athletic Association which organizes the event.

In Huebner's analysis, the stadium was part of the visual politics of modernity under a colonial power structure, a demonstration of progress through the "blessing of Protestant American modernity." He asserts that: "...the stadium visually underlined the transformation of the Philippines from a 'backward' country into a modern one. Filipino politicians rejecting colonialism but not Western civilization itself."[11]

The stadium is an embryonic space for the modernization and emancipation of colonial bodies. The completion of the modern stadium was emblematic of the notion that the continuation of American colonialism is no longer justifiable since the imperial rhetoric of native savagery and uncivilized nature of the Filipino in need of guidance had been transcended.

Juan Arellano: 'Wild Man' turned Celebrated Architect

The participation of Juan Arellano as the architectural auteur of the complex strengthened the claim of the Filipino for self-rule. The creative genius of Arellano made him a symbolic figure of the civilizing achievement of American colonialism and his radical transformation from "wild man" to a celebrated architect "who has set out to place his mark on a modern world"[12] made him a posterboy of the independence movement.

When Arellano was 18, he travelled to the United States with a goal of studying architecture. His ticket to America required him to "go native" in the colonial metropole as one of 147 Filipinos destined to be part of a "human zoo" for the 1907 Jamestown Exposition in Virginia.[13] This episode of barbarism in a staged colonial tableau vivant was narrated 20 years later in the article Noted Architect Once Posed as "Wild Man" at Jamestown in the January 1927 issue of New York Times.

After graduating from the Drexel Institute and coming under the influence of the Ecole de Beaux Arts style in New York and Europe, Arellano would return to the Philippines as an architect and modernist painter.

He worked for the government at the Bureau of Public Works, rising from the ranks, finally becoming consulting architect. Arellano steered the development of Philippine architecture, from its neoclassical phase to its art deco, streamline modern, and nativist phases.

For the buildings of the RMSC, Arellano turned his back from his Neoclassical lineage to embrace the progressive language of deco streamlining and its modernist impulse to eliminate ornamental excess to highlight the mechanistically smooth building skin and reverence to the machine. Neoclassicism in the Philippines had been associated with the American colonial practice. Stylistically and ideologically, streamlining was an opportunity to distance himself from the classical tradition with the erasure of classical ornaments and simplification of form. In this way, the stylistic departure manifested his rejection of American colonialism with his bold move towards the streamlined aesthetics and renouncement of the American imperialist imaginary.

Arellano's streamlined building would house and nurture the period's deco body — a kind of physique generated along with the modernist thrust, obsession for the machine, and assembly line regimentation — the long, streamlined well-toned bodies. Lean, sleek, and elongated lines of Deco architecture and the deco body both embodied the logic of the machine age. Bodies and stadium architecture thus became the visual marker of modernism and modernity, logically united in the space of the stadium.

The civilizing transformation from savage to athlete ascribed to the sporting pedagogies devised by the American colonial authorities would reach its pinnacle with design and construction of the Art Deco RMSC for the staging of 10th FECG in Manila. The construction of the sporting edifices and the conduct of the international competition under the management and supervision of the Filipinos in 1934 were demonstrative of the Filipinos' organizational skills in managing their own affairs. The Filipino citizen-athlete took precedence in the shift toward eventual Philippine Independence through the creation of the Philippine Commonwealth in 1935.

The 1945 Battle for Liberation witnessed the massive decimation of Manila's urban built-heritage and the irreplaceable treasures of colonial architecture. It was a site of a decisive battle between the American 12th and 5th cavalry divisions weeding out the Japanese 2nd naval battalion holding garrison in the concrete structures of the sports complex. As the war came to a bloody end in Intramuros, the sports complex's concrete shell, sustaining heavy damage, barely survived. Despite the seemingly impossible task to resuscitate war-ravaged Manila, the city rose again.

4. NATION: POST-WAR RECOVERY AND COLD WAR TENSIONS

The Philippines became independent in 1946. Amidst the reconstruction and return to normality, the reconstruction of the RMSC was in full swing. This re-genesis would give the site a different symbolic mantle. It was to be the bearer of Filipino resilience and post-war recovery.

The display of post-war national self-actualization culminated in the country's hosting of the Second Asian Games in 1954. The event served as the successor to the FECG in advocating the Pan-Asian sportive mission of the YMCA, this time becoming a venue for the fraternal cooperation between democratic nations.

While brewing tensions between the democratic and communist nations overshadowed the event, the 2nd Asian Games served as an opportunity for the Philippines to project itself as a new nation of the free world. The Philippines'



Fig. 4. **Juan Arellano, Rizal Memorial Coliseum, Manila, Philippines, 1934. Rehabilitated by Gerard Lico in 2019 for the 30th Southeast Asian Games. © Timothy Augustus Ong, 2019.**

hosting of the 1954 Asian Games was the first big international sporting event that the new Republic would undertake in its post-colonial existence. The Games were a platform for promoting Asian unity and peace and dissemination of democratic brotherhood amidst the Cold War.

Like the Asian Games' call for strengthening regionalist ties and nationalist fervor through sports, and its creation of an imagined world through this performative spectacle14 the creation of the Southeast Asian Peninsular Games, and later, the Southeast Asian Games, were efforts in sporting diplomacy and were showcases of modernity.

Decline and Revival

Overtaken by the construction of newer, larger sporting venues, the Southeast Asian Games (SEA Games) paved the way for the Rizal Memorial Sports Complex to again return to the fore with the Philippines' hosting of the 11th SEA Games in 1981, and the subsequent hosting of the 16th and 23rd SEA Games in 1991 and 2005 respectively. The prominent games of its original collegiate and professional league residents have since transferred to the newer, better maintained, and far more adequate venues.

The sports complex was partially renovated in 2011 but faced the threat of destruction when the City of Manila, partnering with a private company, expressed interest in converting the property into a mixed-use development in 2016 as a revenue-generating scheme. The continued existence of the complex was assured in April 2017, when the National Museum of the Philippines and the National Historical Commission of the Philippines jointly declared the RMSC as a National Historical Landmark and Important Cultural Property, recognizing the sports complex's significance in the history and heritage of the country. This declaration was secured by multisectoral advocacy groups, who lobbied against the property's sale and conducted the necessary research and documentation that supported their cause.

Recognizing the declarations, in April 2019, the Philippine Amusement and Gaming Corporation earmarked Php 250 million for the rehabilitation of the Rizal Memorial Coliseum for the 30th SEA Games. The author was commissioned as consulting architect for the Coliseum rehabilitation in early 2019.

With its historico-social context in mind, the rehabilitation objectives were: to upgrade the existing facilities to suit the needs of contemporary sporting events; and to restore the heritage value of the building by returning to its streamlined deco roots. This entailed comprehensive research on the history and significance of the complex, color studies, defects analysis, and interventions studies.

The Coliseum re-opened on December 1, 2019, hosting the Gymnastics events (**Fig. 4**). On social media, posts about the Rizal Memorial Coliseum went viral as well as the victory of the Filipino athletes performing in its arena. The restoration was hailed as a triumphant return of the Rizal Memorial Coliseum. More than just a sporting facility, the restored edifice gained new relevance in 2020 at the height of the COVID-19 pandemic when its arena metamorphosed into a 120-bed quarantine facility for positive asymptomatic patients, adding a new chapter to its legend and facilitating the triumph of Filipinos against the corona virus.

5. CONCLUSION

The transformation of colonial space necessitated a radical overhaul which instigated colonial modernity, biopolitics and social progress. The RMSC is a concrete culmination of colonial tutelage, where bodies were disciplined and reformed in accordance with the pedagogy to impart modern values to the "savage natives" who require physical and moral exercises preparatory to independence. The stadium is a symbolic arena where fitness for self-governance is displayed and the spectacle of national imagination is performed en masse by the Filipinos.

As the building which has represented both a culmination of, and subversion of the colonial imaginary, the Rizal Memorial Sports Complex is demonstrative of the Philippines' aspiration and actualization of nationhood through the performative spectacle of sports. With its rehabilitation, its continued role in international soft diplomacy and sportive camaraderie are ensured. The edifice is an expression of the colonial body's transformation, and progression into a realization of nationhood. Coming full circle, the Stadium's own cathartic rehabilitation signals its rebirth as an enduring symbol of the nation.

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MODERN VENATIO AND THE CASE OF J.S. DORTON ARENA IN RALEIGH, NC (1949–52)

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ABSTRACT.

This paper investigates the case of J. S. Dorton Arena (1949–52) in Raleigh, North Carolina, by the Polish architect Maciej (Matthew) Nowicki in partnership with the Norwegian born, American structural engineer Fridtjov (Fred) Severud. The Arena contextualizes the post-war use of arcuated structures, which served, among other ways, as emblems to convey new types of civic monumentality. Originally proposed as a livestock judging pavilion for the North Carolina State Fair, "the Fair of the Future," this building was widely advertised as a "modern coliseum" and one of the precursors of the "modern tent." Despite its structural ingenuity, the Arena contrasts archetypal recall with the energy of a spectacular "cowboy" exhibition: attributes of a monumentality that echoes the ancient Roman entertainment venatio. Thin, light, and geometrically elementary, the Arena symbolizes a grand finale in the mechanization of American stockyards and agricultural facilities, in which advanced technology and formal refinement represented a growing wealthy class of country people.

1. INTRODUCTION

J. S. Dorton Arena (1949–52) is an amphitheatre in Raleigh, North Carolina, and the main exhibition hall of the annual North Carolina State Fair (NCSF). The building displays numerous attractions, from conventions, concerts, and auto shows, to all types of large events. The Arena can be described as a pair of monumental and intersecting parabolic arches supported by slender, yet colossal columns around its perimeter. The building was covered by a thin, light, and arcuated cable-supported roof, a smart way of keeping with the character of traditional tent-like ephemeral buildings of state fairs, as well as creating an innovative constructive system. The Arena's roof was the first stadium-like structure designed to enclose a large, column-free space, and is considered to be one of the precursors of the "modern tent" (Fig. 1).[1]

The Arena was designed by the Polish architect Maciej (Matthew) Nowicki (1910–50), when he was working with the American architect William H. Deitrick (1895–1974) and serving as an instructor at the North Carolina State College School of Design.[2] The curriculum of the institution was open to avant-garde structures and formal analyses, and included faculty such as the Argentine architect Eduardo Catalano (1917–2010), famous for his 1954 hyperbolic paraboloid

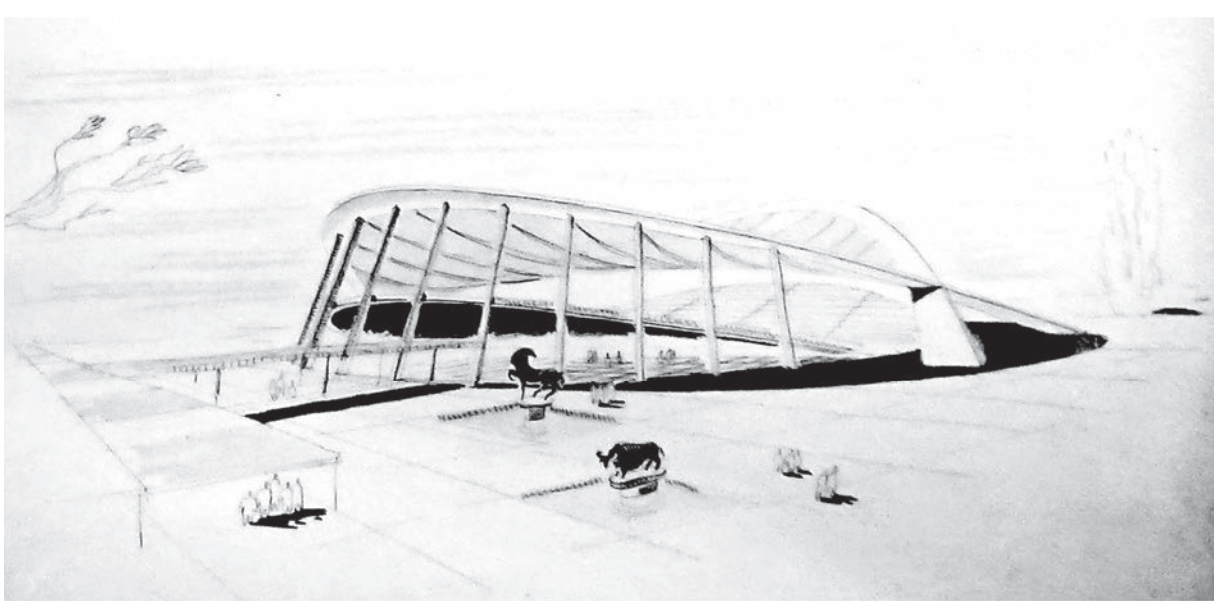


Fig. 1. **Matthew Nowicki, Dorton Arena, Raleigh, NC, 1949–52. © The Nowicki Family. Courtesy: Special Collections Research Center, NC State University Libraries, Raleigh, NC, Collection "Matthew Nowicki Drawings and Other Material," MC 00190.**

house in Raleigh (currently, demolished), and the American inventor Richard Buckminster Fuller (1895–1983), known for his research with geodesic domes.[3] During that period, Nowicki also collaborated with the Finnish-American architect Eero Saarinen (1910–61) in designing the Brandeis University Master Plan (1950–52), a project that included a wide, domed roof covering the auditorium, itself a mention to Saarinen's dome at the General Motors Technical Center in Warren, Michigan (1946–55). Saarinen, who was about the same age as Nowicki, was an architect famous by his arcuated, expressionist structures, including his design for the David S. Ingalls Hockey Rink at Yale (1953–58), seen by many as a direct reference to Dorton Arena.

Structural challenges were solved in partnership with the engineering firm Severud-Perrone-Sturm-Bandel (currently known as Severud Associates), led at that time by the Norwegian-born, American structural engineer Fridtjov (Fred) Severud (1889–1990), a talented engineer that worked in many modern monuments and large public buildings throughout the country. The structure of the Arena, strongly characterized by the two monumental arches and the external silhouette of the grandstand, was itself the generator of the architectural form, often called by some scholars as "architecture-as-structure-and-conversely."[4]

In some respects, the way that the arches cover a longitudinal span can be compared and contrasted with the massive pre-stressed concrete architrave-like superstructure of the São Paulo Museum of Art (1957–68), by the Italian-born, Brazilian architect Lina Bo Bardi (1914–92). The structural technology of the Arena's roof preceded covered stadiums such as the Houston Astrodome, completed in 1965, and technologies like "superdomes" that currently dominate sports-stadium design. The arena won several awards in both architectural and engineering fields, including the First Honor Award of the American Institute of Architects, and the Gold Medal in Engineering of the Architectural League of New York. The building soon received international recognition, including a feature and the display of the model in 1957 at the Triennale in Milan, and was listed in the U.S. National Register of Historic Places in 1973.

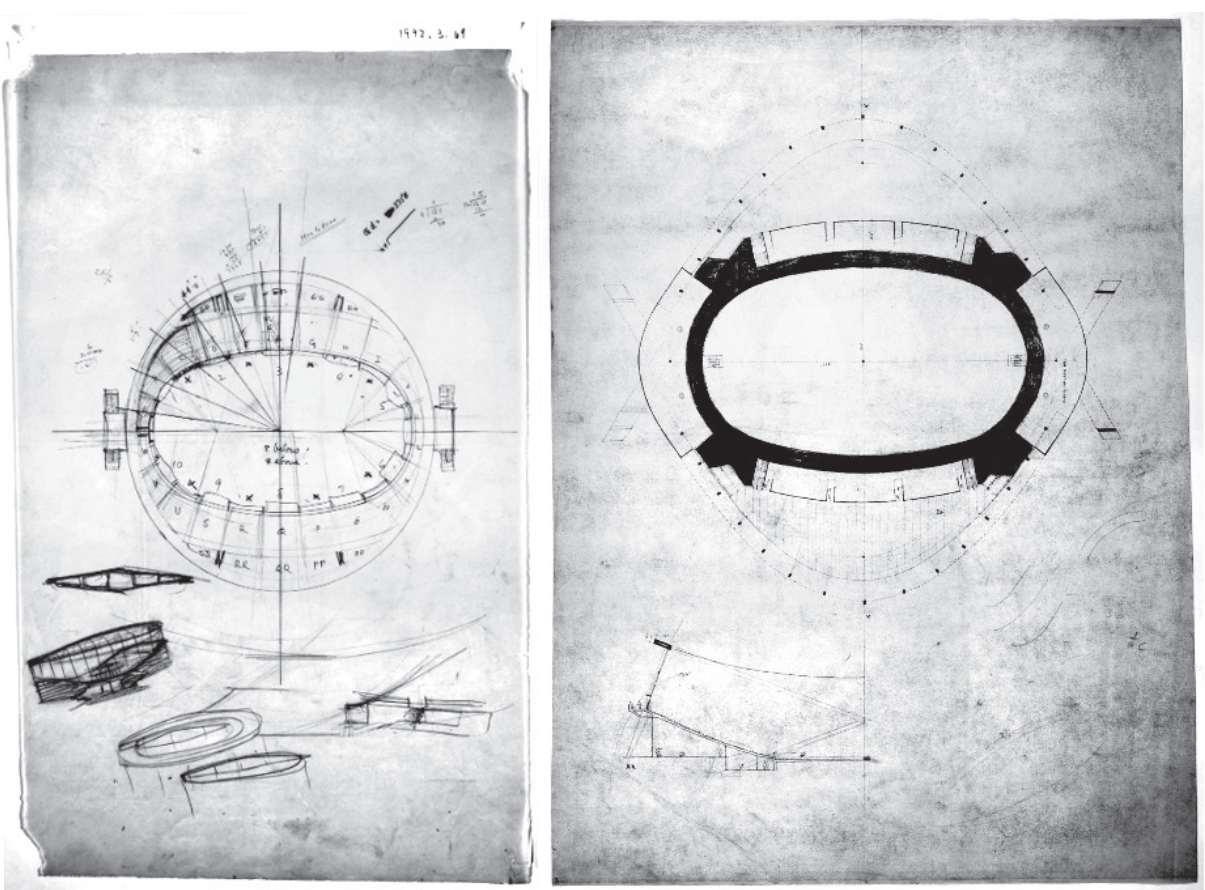


Fig. 2. **Matthew Nowicki, Dorton Arena, Raleigh, NC, United States, c. 1949–50. First proposal (left), "Round Pavilion;" and second proposal (right), "Paraboleum." © The Nowicki Family. Courtesy: Special Collections Research Center, NC State University Libraries, Raleigh, NC, Collection "Matthew Nowicki Drawings and Other Material," MC 00190.**

There are many possible building references for the Arena (never explicitly admitted by Nowicki), including the work of the Russian engineer Vladimir Grigoryevich Shukhov (1853–1935), and two previous unbuilt projects by Nowicki, a sports centre and a Parliament building in Warsaw, Poland. The latter, developed in 1946, had a roof composed of linear cables in a "bicycle wheel" configuration, and is commonly accepted among scholars as the main referential scheme for the Dorton Arena.[5] Nonetheless, Nowicki also worked for a brief period at Le Corbusier's firm in the 1930s, a time to possibly be aware about the tensile structure projects for the National Stadium in Paris (1936, unbuilt), and the Pavillon des Temps Nouveaux at the Paris Exhibition of 1937.[6] The actual structure itself in these cases can be seen as a derivation from the Hebraic temple in the wilderness, a form which Le Corbusier had first advanced as exemplary in the pages of Vers une Architecture (1923). But the advanced structural technologies and the machine character of the buildings also lead to certain metaphors with aeronautical features, in particular, the "inversion of the dirigible."[7]

After the Second World War (WWII), when a certain apprehension overshadowed the manifest destiny of the machine age, a new rhetoric started to make sense in ways of combining together, both traditional and modern methods (1946 is the year of Le Corbusier's Unité d'Habitation in Marseille). Despite its structural ingenuity, the Dorton Arena follows a traditional Greek-Roman bisymmetrical type of amphitheatre. Indeed, classical amphitheatres such as the iconic Roman Colosseum, which included a lightweight velarium and held the entertainment venatio (i.e., the hunting, taming, and killing of wild and exotic animals), could serve as an ideal archetype for the job. Originally proposed as a livestock judging pavilion, this building indeed was widely advertised as a "modern coliseum" by J. Sibley Dorton, manager of NCSF at that time and the leading force behind the construction of the Arena and a permanent state fair (**Fig. 2**).[8]

New post-war entertainment venues, such as amphitheatres, arenas, expo pavilions, and stadia, embodied much of the search for a modern identity, which was often related to nationally or regionally identifiable modern manners. Advanced technology undoubtedly played a fundamental role in the characterization of architecture as a vehicle of social progress. However, the many facets of the social, industrial, and political context of the Arena led to coexistent structural metaphors, including a type of country saddle roof.

2. "THE FAIR OF THE FUTURE"

The modernization of state fairs was fostered by a new corporate body of packers and farmers (the late nineteenth century "cattle kingdom"), which invested on scientific means to educate agriculturalists regarding new technologies and efficient farming practices. Throughout the years, exhibitors developed their own etiquette of behaviour and habiliment, often assuming and displaying a romanticized life of "cowboys," when the Manifest Destiny was still at the forefront of American ideology.[9] In some respects, the human control over nature, extremely celebrated in state fairs, can also be seen as a reflection of the historical triumph of the "white man" upon the wilderness that filled the vast primitive landscape of North America; or, as the German-American philosopher Hannah Arendt (1906–75) argued once, because one of the aspects of modernity was the victory of the animal laborans over the homo faber.[10]

During the post-war years, the original purpose of the fair was transposed to a more consumable, festive, and performative plane. A large part of the attendance in modern state fairs was based on touring carnivals and grandstand acts, organized by midway companies that included a variety of freak shows, spectacles with animals, fun houses, dance games, and food concessions. The main attraction of the midway was a popular burlesque act, commonly called "girl show," and the location of this attraction articulated the whole "horseshoe-shape" layout of the carnival.[11]

Nowicki, who was hired by J. Sibley Dorton to design the NCSF Master Plan, "The Fair of the Future,"[12] planned each building based on a particular character, form, and technology. Early schemes for the fairgrounds emphasized balance rather than symmetry. The main buildings in the masterplan — the carnival (midway), the amphitheatre (Dorton Arena), and the racetrack, were monumentalized. Similar to world's fairs and other types of public expositions, monumentality was one suggestive condition of program at the NCSF, which also included a need to counteract the civic embellishment proposed by the classical tradition. Nowicki acknowledged such requirements, claiming that:

> *(...) a unit planned for crowds should have a different scale from one planned for an individual, so that the scale of modern architecture must allow for a certain flexibility. (...) Monumentality does not depend on any form but is a problem of scale. (...) monumentality, in the sense of a contrast between architecture of exceptional importance and the size of an individual, has its true and eternal qualities of which man should not be deprived. Within the realm of its favourite scale, modern architecture should no doubt distinguish a variety of treatments that will be appropriate to the expression of its diversified contents.*[13]

The carnival (originally the main attraction of the fair) was organized into an equilateral triangle, and was elevated on a massive platform (the access to the carnival reminds the organization of Villa Stein at Garches, 1927). The amphitheatre (Dorton Arena) followed a circular shape, and was planned to be covered by a large dome. The racetrack, like an ancient Roman circus, followed an oval shape (**Fig. 3**).

The structure of the grandstand at the racetrack fostered a set of experimental forms, including tensile roofs, wooden barrel vaults (a form that reminds the La Zarzuela

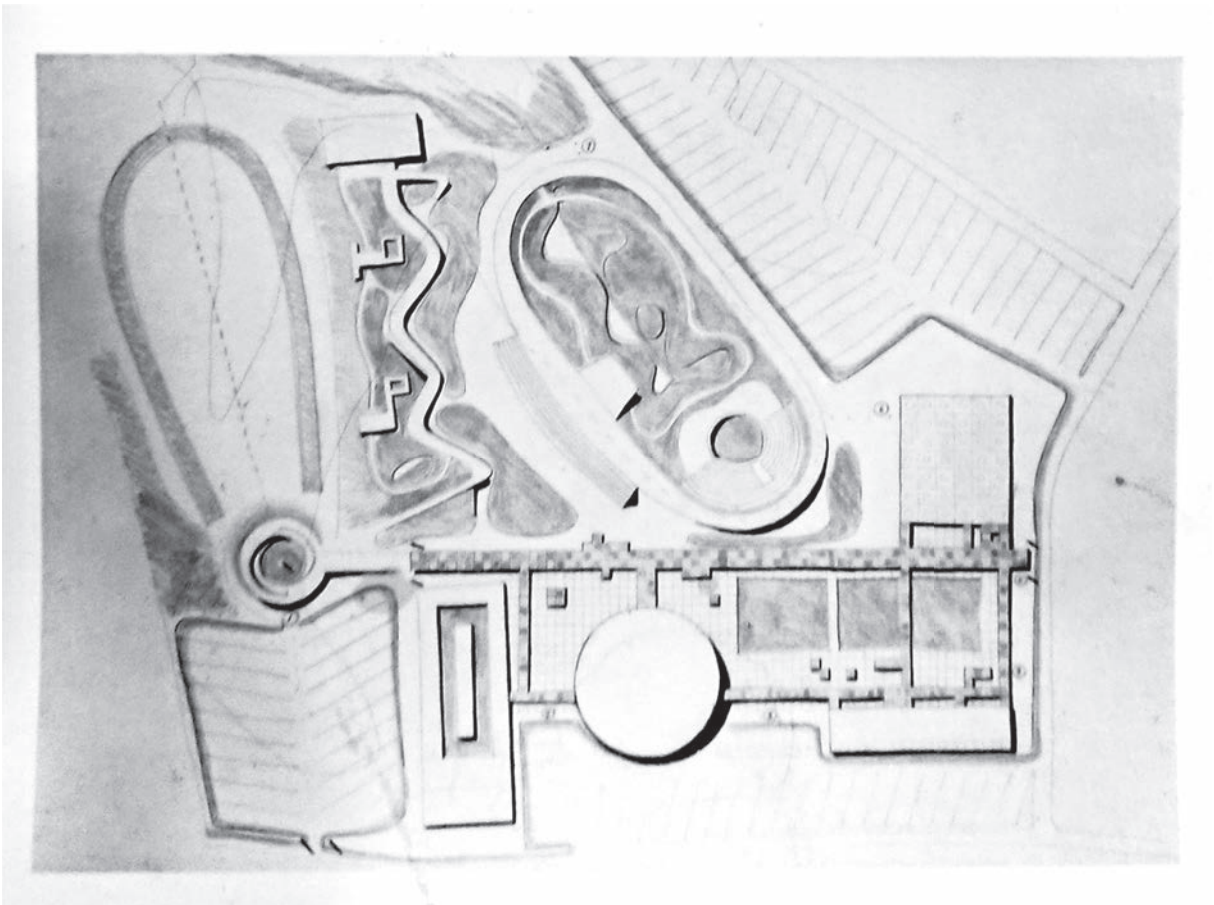


Fig. 3. **Matthew Nowicki, North Carolina State Fairgrounds, Raleigh, NC, United States, c. 1949. Studies for the Master Site Plan, in collaboration with Walter Weissman. © The Nowicki Family. Courtesy: Special Collections Research Center, NC State University Libraries, Raleigh, NC, Collection "Matthew Nowicki Drawings and Other Material," MC 00190.**

Racetrack in Madrid, Spain, 1935), and large reinforced concrete cantilevered systems. Other buildings in the masterplan included butterfly steel roofs and vaulted canopies. According to Nowicki, "ceilings by Freyssinet in France and Wright's mushroom columns of the Jonson Wax factory in this country may well be considered the precursors of a future wave that will bring unpredicted solutions in form."[14]

Unfortunately, almost none of these constructions were built. About a year after Nowicki started to developed the drawings, he was victim of a flight accident in Egypt. His partner, William H. Hendrick, and his wife, Stanislawa (Siasia) Nowicki-Sandecka, finalized the design of the Arena. In 1951, the American historian Lewis Mumford (1895–1990), a close friend of Nowicki, wrote:

> *His architecture recognized no provinciality of time or place or method: it took the measure of man and sought to bring together the regional and the universal, the mechanical and the personal. (...) That which he left undone through his death must now call forth the creative efforts of a whole generation.*[15]

3. THE ARENA

A typical livestock judging pavilion usually was planned to be octagonal, round, or oval. These shapes followed the central exhibition space in the building, commonly known as "the show ring." The size of these spaces, however, was limited by the structure and technology of the roof, which dictated the free span into certain dimensions of width, height, and length. These pavilions were often constructed with large windows and skylights to provide ample natural lighting for appraising animals or crop products. However, since many of these buildings were still been constructed with bearing walls, the ratio between the area of windows and walls needed to be carefully calculated. These conditions for plentiful light and wide-span roofs encouraged a structural transition, which required a certain level of engi-



Fig. 4. **Matthew Nowicki, Dorton Arena, Raleigh, NC, United States, 1952. Photograph: Marcos Amado Petroli (April 14, 2019).**

neering inventiveness.

From ephemeral wooden light structures, to more permanent fireproof structures, livestock judging pavilions started to represent a growing wealthy class of country people. During post-war years, the idea that ephemeral exhibitions could become permanent spaces for consumption pushed such typologies to evolve to a new scheme: an "all-weather, all-purpose" space that could be used for different programs throughout the year (Fig. 4).[16]

For Nowicki, "the concept of a short-lived structure to be removed with the rapid change of technology has been replaced by a notion of architecture that will be our contribution to the life of future generations."[17] Nowicki argued that the answer to every architectural problem would be a flexible space. After stating that "form follows form and not function," he claimed that constructive diversity was also responsible for providing strength to an expanding and "virile" civilization, leading to formal experimentation.[18] According to Nowicki:

> *Maturity brings a 'sense of medium' (...) As a result, we now rely in our expression on the potentialities of materials and structures. (...). This interest in structure and material may find within the buildings medium decorative qualities of ornament that are much too involved for the purist of yesterday. The symbolic meaning of a support has also been rediscovered. (...) The period of functional exactitude expressed its mysterious longings for ornament through the decoration of function; our period of functional flexibility expresses them in the decoration of structure.*[19]

Early drawings of the Arena show that Nowicki was referring to the building as an "amphitheatre;" and later to a "paraboleum." Initially, Nowicki proposed a dome to roof the Arena, working in compression, but eventually he changed to the current floating, hung structure. The use of colossal parabolic arches to support the roof evoke Le Corbusier's proposal for the Palace of the Soviets (1930, unbuilt). Years later, Severud applied similar concepts in cases such as the Yale Ice Hockey Rink in New Haven, the Reception Building at Washington Dulles Airport (1962). Other cases based on tensile principles and reinforced concrete arches include the São Cristóvão Pavilion in Rio (1962), Brazil, by the architect Sérgio Bernardes (1919–2002).

4. A GRAND FINALE

Like any conclusion of a performance, entertainment, or rodeo, the Arena symbolizes an arrival point to the mechanization of American stockyards and agricultural facilities since the replacement of the old single-family abattoirs for more hygienic, centralized public slaughterhouses during the mid-nineteenth century. Indeed, the Arena was a forerunner in terms of structural and formal solutions at the eve of the second machine age. However, the Arena (and the NCSF) revealed itself as a more complex object, much accredited to Nowicki's ability to uncloak programmatic requirements related to issues of civic representation. Light, thin, and geometrically elementary, are particular modern attributes of cable-supported systems and glass envelopes; however, within the context of a cowboy's universe, a livestock judging pavilion's roof can very well allude to a saddle as well a latter-day velarium. If the Arena is a Janus, an ancient Roman god that looks to both the future and the past,

a modern entertainment venatio is a double-edged Rudis, a sword that ambiguously celebrates the triumph and the brutality of humanity over nature. As Sigfried Giedion stated once, "a new outlook must prevail if nature is to be mastered rather than degraded. The utmost caution is imperative. This calls for an attitude turning radically away from the idolatry of the machine."[20]

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3 Dean Kamphoefner hired figures such as George Matsumoto, Harwell Hamilton Harris, Terry Waugh, Duncan Stuart, Lewis Mumford, James Fitzgibbon. He also invited Frank Lloyd Wright, Mies van der Rohe, and Richard Neutra as part of a distinguished visitors program.

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USAGE TRANSITION OF YOYOGI NATIONAL STADIUM AFTER 1964: CHANGES IN SPORTS SPACES WITH ECONOMIC FLUCTUATION

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ABSTRACT.

Yoyogi National Stadium was founded as the venue for swimming and badminton competitions during the 1964 Tokyo Olympics. The transition in usage and preservation of the Stadium after the Olympics can be summarized by the following five periods, I: 1964–1973, II: 1973–1982, III: 1982–1992, IV: 1992–2001, and V: 2001–2019.

I: The Stadium was used for international sports competitions and open to the public. In addition, various kinds of sports classes began to be held at the Stadium.

II: After the rise in fuel prices caused by the oil crisis in 1973, the administrators discussed how to run the Stadium, focusing on the national subsidy, advertisements, non-sports usage, and utilization of the parks on the premises.

III: In accordance with the Japanese government policy of "financial reconstruction without tax increase," the use of the Stadium for other purposes, like as concert hall, was permitted.

IV: Mini-concerts of boy's idol groups were introduced as opening performances for amateur sports events, and young women began to visit the Stadium consequently.

V: The swimming pool inside the First Gymnasium was modified to an arena with a permanent floor, with the expectation to increase profitability.

Under Japan's dynamic change after 1964, the Stadium has, by flexibly responding to the economic and social requirements, continued to contribute to promote the sports spirit among the masses and locals. It can be regarded as an outstanding model case of large Olympic facilities becoming a living legacy in modern times.

It is worth noting that there are two important studies about the use of the stadium after the Olympics: "Gorin Stadium" by Okada Isamu (Shueisha shinsho 2020, in Japanese), which analyzes the operational situation and the maintenance cost of all of the stadiums after the 1972 Summer Munich Olympic; and "Olympic Stadiums and Cultural Heritage: On the Nature and Status of Heritage Values in Large Sport Facilities" by Miranda Kiuri & Jacques Teller in the International Journal of the History of Sport (May, 2015), which classifies the cultural values of the several main stadiums built for the Olympic Games from 1912 to 2000.

1. INTRODUCTION

City and architecture are closely related to sports events, such as the Olympics. It means that sports events can produce architecture, transform the city, change the social landscape, and occasionally change even our sense of economy. They have a great influence on our daily life.

In this paper, we examine the history of Yoyogi National Stadium after the 1964 Tokyo Olympics, as an example of a big and outstanding sports facility in the center of Tokyo. Even after the Olympics, the Stadium has been regularly used for huge events and festivals, according to the requirements of the times, and brought significant changes to the city and society simultaneously. In the following sections, the transition in usage and preservation of the Stadium has been summarized chronologically.

2. THE PERIOD OF JAPAN'S HIGH ECONOMIC GROWTH: 1964–1973

Yoyogi National Stadium (Fig. 1) was founded as the venue for swimming and badminton competitions during the 1964 Tokyo Olympics. After the Olympics, the Stadium's mission was stated in Article 1 of the Act on National Stadium, mentioning that it should appropriately and efficiently operate its Gymnasiums, promote physical education, and contribute to the healthy growth of mind and body. The Stadium's management policy was divided for the following three purposes — group use, like international and national sports tournaments, personal use by opening the facilities to the public, and independent projects to widely promote and encourage national and community sport.[1]

Regarding group use, various competitions, both international and national, have been held at the Stadium every year, such as the Japan Swimming Championship at the First Gymnasium since 1966 and the All Japan Intercollegiate Basketball Championship at the Second Gymnasium since 1964. Such regular use can keep the level of Stadium management high and acceptable for international competition.[2]

As for personal use, the Stadium's ice skating rink, outdoor kid's pool, and two indoor pools were put into use immediately after the 1964 Olympics under the slogan "For providing facilities that anyone can easily use at any time."[3] The

number of users of the skating rink did not fluctuate till the early 1970s, recording 4,420 visitors on Sundays in January 1971. In addition, about 1,000 children were invited to the kid's pool on the west side of the First Gymnasium on the opening day on August 5, 1965.[4]

For promotional projects, various kinds of sports classes have been held at the Stadium since 1967.[5] Particularly popular among them have been women's sports and swimming classes, applicants for which have far exceeded the capacity. This is a rare case because, generally, Olympic-related facilities are not utilized much after the event and are also subject to huge taxes on the construction. In this case, however, varied sports classes have been held keeping in mind the needs of local residents.

3. THE OIL CRISIS AND ITS AFTEREFFECTS: 1973–1981

In October 1973, oil prices rose significantly in Japan following the Fourth Middle East War. Accordingly, the Stadium obliged by stopping heating and reducing lighting on its premises.[6] In addition, its administrators raised the usage fee by 30% on average in October 1974, appealing to users to understand the increase and insisting that their sharing of measurable expenses would contribute to sports promotion. However, the number of visitors to the ice rink decreased.

Meanwhile, conversion of the pool and ice rink to floors was attempted in the First Gymnasium. In June 1976, a temporary floorboard was laid over the pool during the International Gymnastics Competition. The two-week covering work incurred a lot of expenses.

In 1978, the administrators discussed how to run the Stadium in those circumstances, focusing on the national subsidy, advertisements, non-sports usage, and utilization of the parks on the premises.[7]

They decided to charge a fee for the parking lot in 1978 so as to reduce their dependence on the national subsidy. However, under national control, they could not use the money they earned by themselves.

As for advertisements, it was not easy because the national sports facilities were considered as a "sanctuary" of amateur sports. The first advertisements were posted during the World Figure Skating Championships held at the First Gymnasium in 1977, according to the regulations of the International Skating Union. After that, the Standard of National Stadium Advertisement was established and enforced in 1978.[8]

Concerning non-sports usage, they discussed the possibility of lending the Stadium for non-sporting purposes, subject to availability. In May 1978, the First Gymnasium was rented out as a venue for the International Rotary Tokyo Convention, following which the Rotary International bore the floor renewing expenses, giving the Stadium a much-needed boost.

For utilization of the parks, azaleas were originally planted there and properly maintained. However, the planting was stopped later due to lack of funds. Usage of the kid's pool in the park was also discussed, as it was used only for two months in the summer, but ultimately no action was taken.

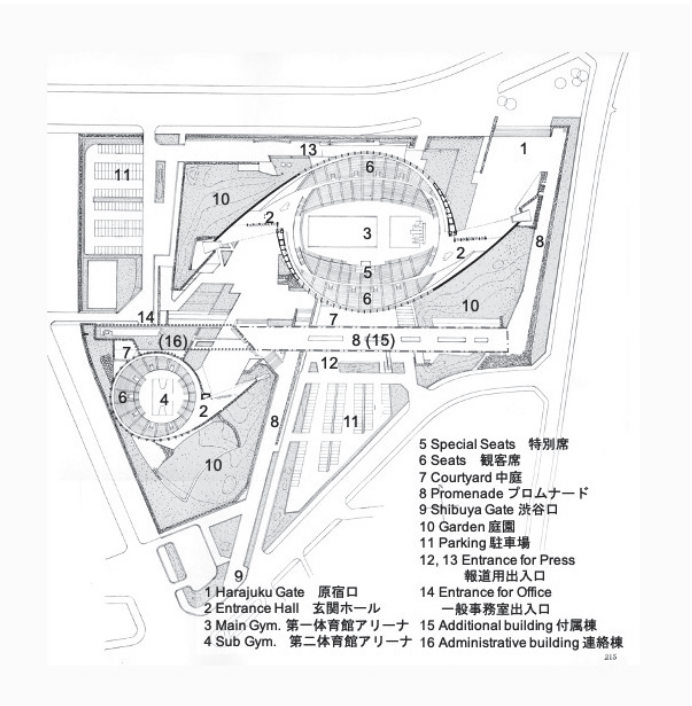


Fig. 1. **Plan of the Yoyogi National Stadium in 1964, Kenzo Tange: Gijutsu to Ningen 1955–1964 (Technology and humans), Bijutsushippansha, 1968, 215. © Japan Sport Council.**

4. COLLABORATION WITH MEDIA COMPANIES: 1981–1992

In 1981, the Japanese government established the Second Extraordinary Administrative Study Group to deal with the issues of decrease in tax revenues after the oil crisis and huge budget deficit. It discussed the privatization of Japan National Railways, Nippon Telegraph and Telephone Company, and Japan Monopoly Corporation to facilitate a financial recovery without tax increase. In addition, the first concert of Chage & Aska, then Japan's leading pop stars, was also held at the First Gymnasium on September 30, 1983.

From 1983 to 1992, the International Sports Fair was held at the Stadium. It was organized by media companies such as Fuji Television and Sankei Shimbun Newspaper in collaboration with the Japan Sports Association. Why did these newspaper and TV companies commit themselves to sports events? They gave the following four reasons: First, as leisure time increased, many people, right from children to the elderly, had started enjoying sports; second, there was a

trend to link sports with fashion and recreation; third, TV sports programs were increasing; and fourth, health-related industries were developing rapidly.

In addition to the First and Second Gymnasiums, makeshift outdoor stages were set up for this fair. Sports, music, and entertainment events were organized and broadcasted nationwide through television and radio. The total number of visitors at the fair in 1983 was 540,000 in six days.[9] In this manner, through newspapers, television, and radio, the Stadium became the venue of an urban event.

In addition, the National High School Volleyball Tournament has been held at the First Gymnasium since the spring of 1985 and broadcasted every year. During this, a new style of event was introduced, namely a mini-concert of boys' idol groups, before the game attracted many young women. The Stadium had, at the time, become a venue that merged amateur sports with show business, establishing a new source of income.

5. RENOVATION AIMED AT INCREASING OPERATION RATE: 1993–2001

In 1993, the kid's pool in the northeastern part of the premise was demolished and this area was rebuilt into a plaza where other events, such as a circus, could be organized. In April 1995, the following four points regarding the park were examined — giving new names to each of its parts, setting an additional fee to access it, setting a standard for posting advertisements there, and setting an additional fee for parking there (Fig. 2).

Concerning the first point, new names were decided as follows. The area around the former kid's pool was named "Olympic Plaza." The plaza of Harajuku entrance was named "Harajuku Plaza" in keeping with the location name.[10] The area of the former "Bus Terminal" in the southwest, where buses to the Stadium parked, including those of Hato Bus Tokyo tours, changed the name as "Shibuya Plaza," as the Stadium was taken off the Hato Bus sightseeing route in 1995 and its function as a bus station was lost.

Apart from this, in 1993, the world-famous circus group Cirque du Soleil performed at the Olympic Plaza. A large tent with a capacity for 2,500 people was set up for the performance of Saltinbanco, but it ended up receiving 557,000 people after all. In 1996, a large tent dubbed "White Theater" was set up at the Olympic Plaza for one of the most popular touring shows, Alegria, receiving 563,000 people. This also fulfilled the purpose of international cultural exchange, supported by the Japanese Ministry of Foreign Affairs and the Canadian Embassy.

In White Theater, many concerts of Japanese popular music groups were held frequently, besides those of Cirque du Soleil. These events were actually quite different from the above-mentioned International Sports Fair as they were in pursuit of amusement, to spread it far and wide. The White Theater was demolished in October 1997.[11]

Various events were held at the Olympic Plaza while the renovation of the First Gymnasium was ongoing in 1992 so as to receive larger audiences there. It was specifically for securing a carry-in and out entrance, slopes, and performer's waiting rooms by compassing the space for the pool filtra-

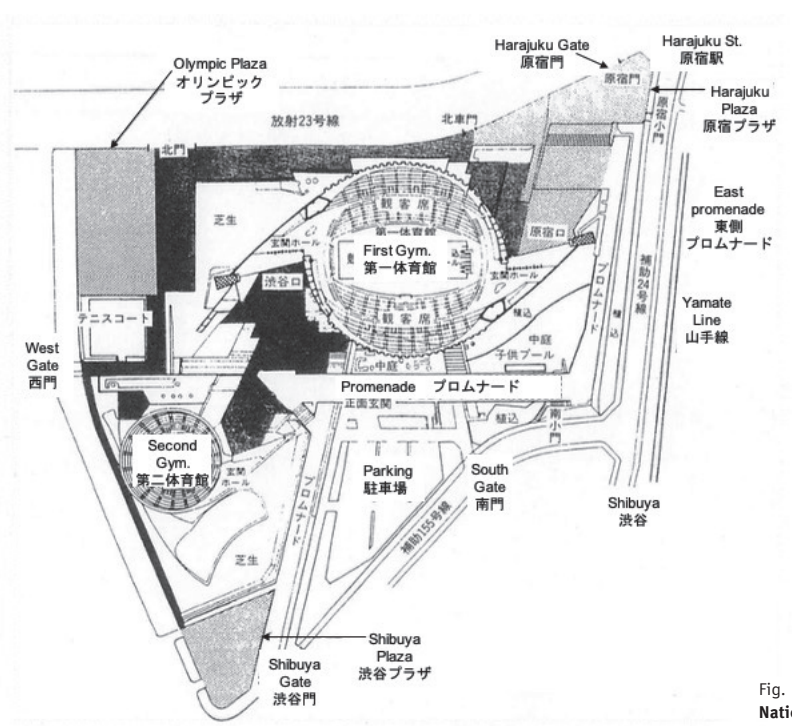


Fig. 2. **Plan of the Yoyogi National Stadium in 1995, Monthly National Stadium, July 1995, 11. © Japan Sport Council.**

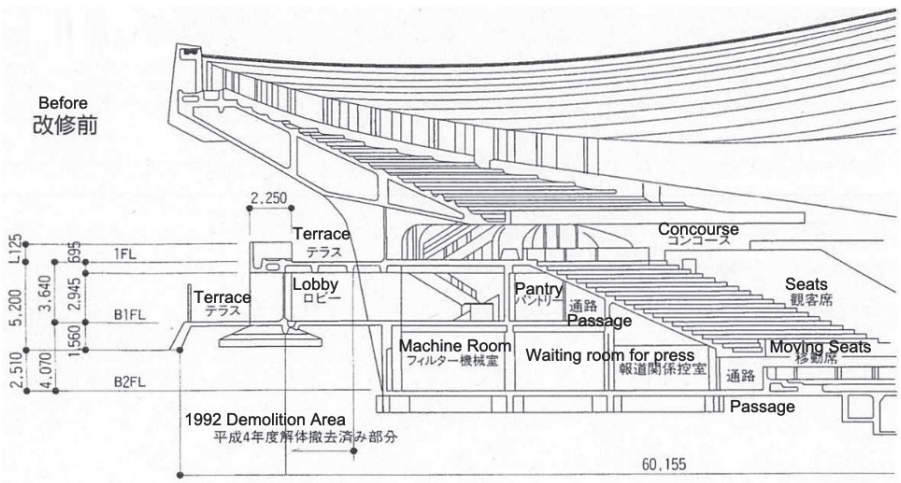


Fig. 3. **Detailed Section of the Yoyogi National Stadium, before the modification in 1992–1994, Monthly National Stadium, July 1994, 8. © Japan Sport Council.**

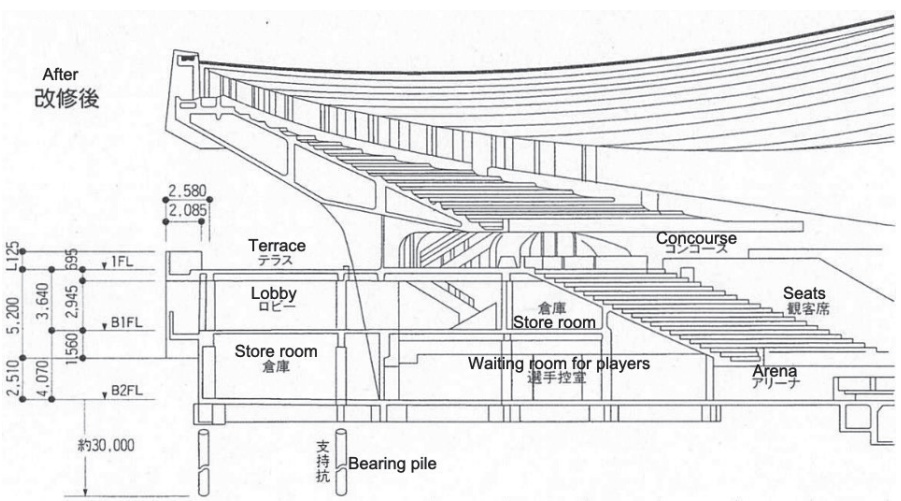


Fig. 4. **Detailed Section of the Yoyogi National Stadium, after the modification in 1992–1994, Monthly National Stadium, July 1994, 8. © Japan Sport Council.**

tion device. In addition, the cooling system was commissioned in 2000, a long concern since its completion. On the other hand, the public use of the pool in the First Gymnasium was stopped in 1997 — the diving board was removed in April 2002, making the space available throughout the year.[12]

6. GRANTING OF THE STATUS OF INDEPENDENT ADMINISTRATIVE INSTITUTION, LAYING TARGETS OF OPERATION RATE, PERSONNEL REDUCTION, AND OUTSOURCING: 2001 ONWARD

In 2001, the Japanese government planned to re-organize and streamline semigovernmental corporations. On October 1, 2003, within that framework, the Japan Physical Education and School Health Center became the Japan Sports Promotion Center (JSC). Along with this, the target of working days of the Stadium was fixed under the jurisdiction of JSC, with a mission of using it for international and national sports competitions as well as cultural events, such as concerts, more actively than before. Various statistical data had been analyzed in detail on the usage of the Stadium before 2003, concerning group use, general use, and dissemination projects. After 2003, however, only bare minimum information was released, such as the target of working days, actual number of working days, and number of total and paying visitors.

On September 7, 2013, Tokyo was decided as the venue of the 2020 Olympic and Paralympic Games at the 125th IOC General Assembly held in Buenos Aires. In response, the First Gymnasium of the Stadium was designated as the venue for handball games and the Second Gymnasium for wheelchair rugby. Since then, large-scale earthquake-resistance repair work has been ongoing at the Stadium (Figs. 3 & 4).

7. CONCLUSION

After the 1964 Tokyo Olympics, it was decided that the Stadium's mission would be to ensure appropriate and effective use of the facilities in order to promote physical education and contribute to people's sound and healthy development. To achieve this mission, the Stadium focused on the following three areas: (1) international and national sports competitions, (2) projects to open the facilities to the public, and (3) voluntary projects to promote and encourage community sports.

However, after the oil crisis in the fall of 1973, there was a sudden rise in fuel costs, deterioration of the facilities, increase in competing facilities, and decrease in the national subsidy. In such a situation, the administrators seriously discussed how to survive and decided on (1) raising the price of facility use, (2) getting advertising revenue, (3) introducing natural energy, and (4) renting out the park.

In the 1980s, the government came up with the slogan "fiscal reconstruction without tax increase," and the Stadium began to be used by TV companies as a venue for sports events, starting a new trend of media mix. Subsequently, Japan enjoyed a booming economy (a bubble economy), and amateur sports competitions such as the National High School Volleyball Tournament merged with mini-concerts, creating a new genre of sports entertainment.

In the 2000s, the Stadium's managing organization decided on a target number of working days and tried to attract more cultural events, such as concerts, in addition to sports competitions.

On the other hand, various sports classes were started at the Stadium and are held to this day, regardless of the economic fluctuations. It is worth mentioning that there are many takers particularly for the women's sports classes in the neighborhood. It means that no matter how the Stadium has been commercialized, it continues to be loved by the local residents, who have adapted to its changes.

Under Japan's dynamic change after the 1964 Olympics, Yoyogi Stadium has continued to contribute to promote the sports spirit among the masses and locals by flexibly responding to the economic and social requirements. It can be regarded as an outstanding model case of large Olympic facilities becoming a living legacy in modern times.

NOTES

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3 Mikisuke Masuda, "Sakunendo (Showa 45 nendo) Kokuritsu Kyougijou (the National Stadium in 1970 FY)," *Monthly National Stadium*, April 1971, 2.
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5 Ibid., 44.
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12 "Kohi bureiku: Kyodai na kousakubutuu ga shikai kara kieru (Coffee break: Disappearing a huge structure from the sight)," *Monthly National Stadium*, June 2002, 11.

THE STRUCTURAL SIGNIFICANCE IN THE CONSERVATION PLAN OF THE STADIO FLAMINIO BY PIER LUIGI AND ANTONIO NERVI IN ROME

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ABSTRACT.

In this paper the conservation issues related to the reinforced concrete structure of the Stadio Flaminio in Rome, by Pier Luigi and Antonio Nervi, are addressed. Towards this goal, the original structural design and the current state are critically compared. The actual conservation state of the overall structure is evaluated on the basis of the safety assessment of the building, mainly focused on its seismic vulnerability. The assessment is carried out by considering at first the structural survey (archive data, 3D point clouds acquisition, destructive and non-destructive tests), aimed at defining the "level of knowledge" of the structure. After preliminary analyses aimed at studying the stadium response under non-seismic actions, a 3D finite element model of the entire structure, as originally conceived by Nervi, was developed for static and dynamic analyses. Finally, a different 3D model was defined, representing the actual configuration of the stadium. A comparison of the structural response for the two configurations (design and actual) is carried and main structural criticalities discussed. Safety assessment issues stemming from the application of current reinforced concrete technical codes for modern architecture heritage buildings are highlighted. The critical areas and elements with respect to seismic loads are identified; guidelines for interventions enabling to preserve the original construction significance are considered for future structural improvement of the stadium.

1. INTRODUCTION

In agreement with the City of Rome, the Department of Structural and Geotechnical Engineering of the Sapienza University of Rome, the Pier Luigi Nervi Project Association and Docomomo Italia are developing the Conservation Plan for the Stadio Flaminio in Rome by Pier Luigi and Antonio Nervi. The research team has received in 2017 a grant for the development of the conservation plan from the Getty Foundation, through its program Keeping it Modern.[1]

Inaugurated in 1959, the Stadio Flaminio is one of the Sport facilities designed and built by Pier Luigi Nervi for the 1960 Olympic Games in Rome. Conceived for hosting soccer games, it has been widely used over the years for other sport, musical, and cultural events. It is decommissioned since 2012 and it languishes today in a notable state of decay. According to Nervi's credo, the stadium structural morphology plays a key role in defining its unique architecture. The main reinforced concrete elements were conceived relying on diverse construction ways and original forms: the in situ casting of the large structural frames, the prefabricated elements of the grandstands, the undulating precast ferroce-



Fig1. **P. L. and A. Nervi, Stadio Flaminio, Rome, view from the Parioli hill. © ICCD Archive.**

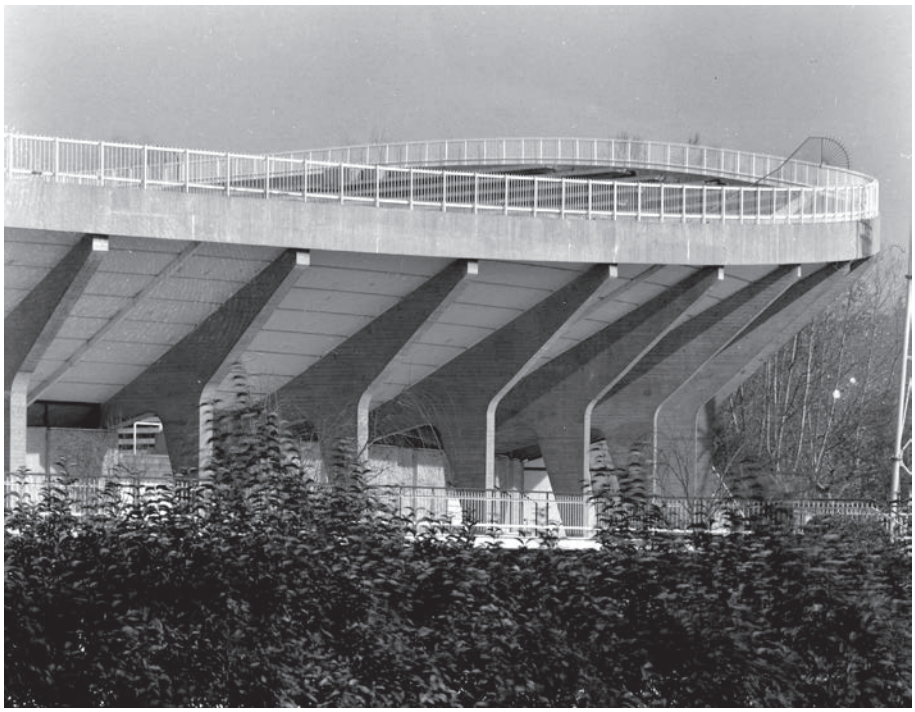


Fig 2. **P. L. and A. Nervi, Stadio Flaminio, Rome, external view of the east grandstand. © ICCD Archive.**

ment elements with a varying cross-section of the canopy.

The Stadium was originally designed to host football matches, with an original seating capacity of about 50,000 spectators, reduced over time to 24,000 by substituting the curves standing places with seating ones and by complying to new safety regulations. The Flaminio fits into the footprint of the former Stadio Nazionale, built in 1911 and refurbished in 1927 according to Piacentini's designs. The overall length is 181 meters, the width is 131 meters, for a total area of about 21,600 square meters (**Fig. 1**). Below the bleachers were obtaine — as prescribed by the CONI (Italian National Olympic Committee) tender — some additional spaces: a swimming pool and five gyms, fencing, boxing, weightlifting and wrestling facilities that could operate in a completely independent way.

2. THE STADIO FLAMINIO STRUCTURAL FEATURES

The Flaminio key elements, namely the grandstands, composed by the main frames and the balconies, and the canopy, stem from a unique combination of factors, such as the P. L. Nervi's solid technical background and the ability to take advantage of the specific design constraints by introducing innovative construction solutions. In 1933, in a paper published in Casabella,[2] Nervi states the principles guiding the design of stadiums' key structural elements. The grandstands design starts by assigning to the bleachers rise the "natural" function of secondary beams spanning the distance between the main structural frames. Thus, such secondary beams, supporting the 65–70cm wide flat elements forming the seats, have to comply with the bleachers rise height, usually ranging between 40 and 45cm, depending on the bleachers slope. This requirement implies, in turn, that the most convenient span between the main structural frames turns out to be around 6 meters. The latter, in absence of specific constraints, shall be designed merely guided by convenience. As far as the reinforced concrete solutions for the main grandstand roof, the main issue raised by Nervi refers to the thermal stresses induced by the temperature variations between the top and bottom side of the canopy. Therefore, the canopy load bearing elements shall be designed entirely on one side of the roof. Throughout his numerous professional involvements in sport facilities projects, Flaminio included, Nervi never deviated from these basic principles, he rather devised uncountable consistent variations giving evidence of his restless search for new formal and constructive solutions.[3]

2.1. Reinforced Concrete Grandstands

The Flaminio grandstands main structural system is composed by cast in place reinforced concrete frames that characterise the external and internal spaces. The 92 main frames share some common features, such as the thickness of 0.4m, the average spacing of about 5.70m and the top beam with different inclination upper side, varying according to the visibility curve (28°, 30° and 32° for the grandstands and 28°, 30° for the curves). The same two-hinged frame scheme for both east and west grandstands was assumed in the technical report for static calculations. a 30x30cm reinforced concrete tie beam connecting the vertical columns at the base was introduced in order to counteract the horizontal thrust and avoid its transmission to the top of the foundation piles.

Depending on their position and role, three typical frames have been used by Nervi in the design of the stadium, as shown in **Fig. 2**. The ones located on the east grand-



Fig 3. **P. L. and A. Nervi, Stadio Flaminio, Rome, west grandstand roof; view from the south curve. © MAXXI's architecture collection.**

stand reach the height of about 20.5 meters with the main span of about 13.5 meters; the frames located on the opposite side, on the west grandstand, reach the height of about 19 meters with main span similar to the east grandstand one. The smaller frames located on the north and south curves show varying geometries with a minimum height of about 9.5 meters and main span ranging from about 8.6 to 6.9 meters. The main frames are connected with each other by secondary transversal beams, located at the top and at the bottom of the inclined members, and by the precast structures forming the balconies. They consist of precast concrete steps 5.70 meters long made of two sections, one below, slanted and load-bearing (U-shaped), one flat forming the seat and the passageway. These precast concrete steps patented by Nervi for the Flaminio (Patent No. 564484, 1957) synthesize the recalled design criteria set up since the early thirties.

2.2. Main Grandstand Cantilevered Roof

The Flaminio grandstand roof is designed as a bidimensional structure based on the elementary static scheme of a cantilever with backspan. In particular, the cast in place backspan is made of a series extrados beams cooperating with a continuous lower slab, whereas the lighter cantilever is a corrugated roof resulting from a series of adjacent ferrocement V-beams (Fig. 3). The two subsystems are connected by a transversal (i.e. parallel to the long side of the stadium) cast in place beam. A further transversal connecting beam is located close to the roof external edge.

The covered grandstand involves 22 main frames (n°82–n°92 and n°01–n°11) and each of them supports a roof portion made of four V-beams and the corresponding four rear extrados beams. These roof portions are simply supported over the grandstand at two points: at the exterior it rests on top of the reinforced concrete frames, whereas roughly halfway along the overall span, in correspondence of the transversal trapezoidal beam, it is supported by inclined steel tubes, filled with concrete and reinforced with steel rebars.

3. STRUCTURAL ANALYSIS

By recognizing the fundamental role played by the stadium structural integrity, the essential prerequisite for any future action, two aspects were considered: the structural deterioration, with the associated repair interventions priorities, and the structural analysis, with the performance improvement required by the current technical codes; only the latter analysis is here reported.

The structural analysis of the Flaminio has been carried out bearing in mind that the twentieth-century cultural heritage requires a flexible approach, aimed to pursue a balanced trade-off between conservation and safety requirements. This is accomplished by referring to suitable technical codes and regulatory requirements and assessing the reinforced concrete structure conservation policy resulting from a structural analysis developed in several stages. A preliminary analysis for static loads was conducted to study the response of the stadium under non-seismic actions. Simplified 2D models were considered at this stage in order to calibrate the foundations parameters and deepen the frame restraints and modelling assumptions. Afterwards, a 3D finite element model of the entire structure, as originally conceived by Nervi, was developed for the Flaminio seismic vulnerability assessment. Finally, by relying on the massive survey point-cloud and retracing the numerous transformations occurred over time, a different 3D model was defined, representing the current configuration of the stadium. A comparison between the structural response of the two configurations (original and current) was carried out and the main structural criticalities were derived by introducing the materials degradation effects.

3.1. Reference Technical Codes

The main reference technical code adopted for the structural analyses is the Italian code for constructions, "Norme Tecniche per le Costruzioni" (NTC 2018) and the related explanatory circular document. NTC 2018 provides the mandatory instructions for vulnerability analysis and structural

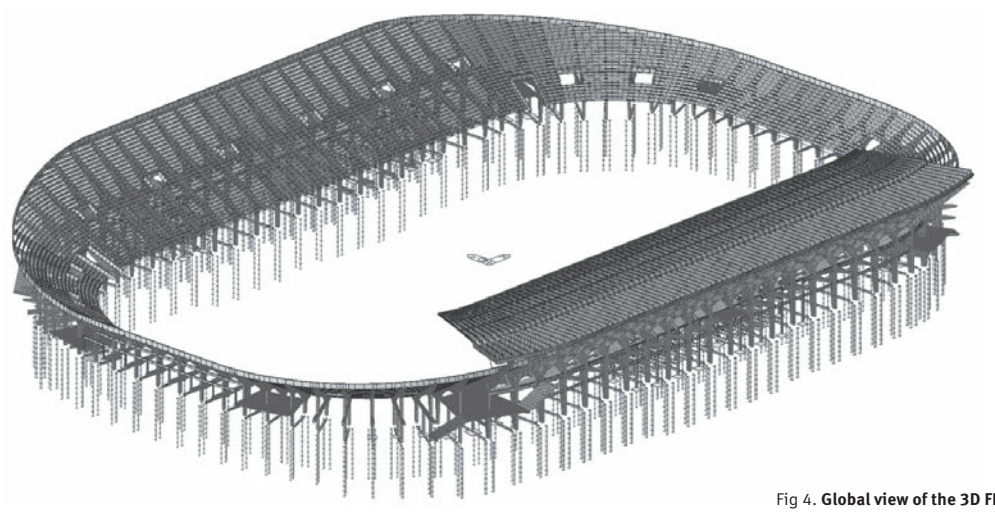


Fig 4. **Global view of the 3D FEM model. © Stadio Flaminio.**

interventions on existing constructions, recognizing and incorporating those of Eurocode 8.[4] Accordingly, four fundamental aspects need to be taken into consideration: historical-critical analysis, geometric-structural survey, mechanical characterization of materials and level of knowledge and confidence factor definition. The safety checks were carried out in terms of resistance with respect to ultimate limit state (ULS).

Taking into account the historical-artistic value of the stadium, D.P.C.M. 2011[5] is used in this study to evaluate the so-called confidence factor, F_c. Indeed, a special evaluation criterion is there proposed for computing it meeting the need of protecting the functionality and aesthetics of the work by reducing the number of destructive tests to be performed for the material characterization.

The definition of loads and their combinations proposed by NTC 2018 and Eurocode may result often conservative and lead to expensive upgrades, because the design life may have been reached or maybe be reached in the near future. The method described in fib Bulletin 80[6] proposes a more realistic verification of the actual performance of existing structures achieved by probabilistic methods describing the uncertainties of load. Hence, this is adopted in this study for defining static load combinations. Evaluation of shear strength of RC elements is a complex, yet important task in today practice. Indeed, as opposed to axial-bending collapse, shear crushing of RC beams is usually characterized by abrupt fragile mechanisms. Many technical codes, as NTC 2018, adopt empirical procedures for determining shear strengths of the members that aim at capturing the main involved phenomena (e.g. strut and tie, arch mechanisms or aggregate interlocking). These, however, often result too conservative and a detailed modelling of the member response under shear action is preferred to determine more precise value of shear strength. In this study, the technical provisions suggested in fib Model code 2010[7] and based on SMCFT[8] are used.

3.2. Main Results Discussion

The structural analyses conducted on the Stadio Flaminio have highlighted some mechanical performance criticalities. These can be separately discussed by referring to static loading and seismic loading conditions. For the former, the preliminary analyses conducted on the simplified 2D model and those on the full 3D models (**Fig. 4**) have shown that two categories of elements, both located in the covered tribune zone, may likely reach critical conditions in the presence of gravitational loads related to the use of the stadium. These are: the foundation tie beams, which are subjected to high level of tensile stresses due to horizontal actions induced by vertical loads; the top-most cross-sections of the external columns (near the panels connecting the columns with the oblique beams), which are subjected to high level of in-plane shear stresses due to the inclination of the beam supporting the grandstands. However, it is important to note that these critical conditions are unlikely to occur in the presence of ordinary frequent loads due to the daily use of the structure. On the contrary, these may only occur for rare combination of non-seismic loads, such as those dictated by the technical code for new constructions. Moreover, even in these cases, the computed demand in term of soliciting stress very slightly exceeds the capacity of the elements.

The linear dynamic analysis (modal analysis) with response spectrum was used to perform the seismic assessment of both the original and current configuration of the stadium. The analyses conducted on the 3D models have shown that, as expected, the capacity of the structure is lower than that required for a similar but new construction. The ratio ζ_E between the maximum bearable seismic action of the structure and the maximum seismic action that would

be used in the design of a new building resulted equal to 0.29. In other words, the seismic capacity of the structure is almost 30% of the demand, which is a usual value for existing structures of this kind. Under seismic loads, most critical conditions are likely to occur for the elements located in the external-most part of the canopy, that is: the outer-most cross-section of the beams composing the backspan part of the canopy; the connecting longitudinal beam located at the top of the grandstands and running along the entire perimeter of the stadium.

Indeed, it was observed that the support system of the canopy and the main frames offer a very low stiffness against the horizontal translation of the canopy. Interventions aimed at reducing and/ or eliminating these criticalities are proposed.

An essential aspect must be taken into consideration when interpreting the results of the conducted analyses; it concerns with the service life of the stadium that directly defines the return period of the seismic actions and, thus, the seismic demand. Following the recommendations provided by the NTC 2018, the highest value V_N =100 years is assumed in the computation, which refers to construction with high performance levels. However, given the architectural and historical relevance of the stadium, the D.P.C.M. 2011 guidelines suggest that a different approach could be used and a lower value of V_N could be assumed. In particular, for cultural heritage structures, the nominal working life should be very long, as assumed in the addressed calculations, aiming at guaranteeing its conservation over time, even with regard to seismic actions characterized by a high return period. However, this could lead to severe seismic safety checks and, thus, to interventions that are too invasive. Therefore, consistently with the desire of limiting such interventions, the project may refer to a shorter working life. This will allow to certify the safety of the structure but, in probabilistic terms, with respect to shorter a working period. Hence, at the end of this period, a new assessment should be repeated and, consequently, new intervention may result necessary. In other words, the D.P.C.M. 2011 allows to define the safety assessment of the structure with reference to a shorter service life and, thus, to establish less invasive, but more frequent, interventions to guarantee the capacity of the structure over time.

4. CONCLUSIONS

For existing structures current technical codes, either Italian or international, devote specific sections to the safety assessment criteria to be adopted with respect to static loading and seismic actions. In particular, different performance requirements are defined for special structures, such as the historical ones, in which preservation of structural and architectural features may restrict the type of intervention. The conservation activities for the Stadio Flaminio shall concern with extending the planned service life enabling it to meet revised performance requirements. Towards this goal, condition control activities shall be planned at the re-designing stage according to the chosen strategy and tactics for through-life conservation management. Being a modern monumental architecture, the Stadio Flaminio is to be managed in the future by a strategy based on planned proactive condition control and conservation. A proactive conservation strategy is based on preventative (or protective) measures and interventions aiming to identify early possible structural risks, avoid and minimize future deterioration and minimize the overall cost of ownership. Such conservation process involves different activities: condition survey, assessment, evaluation & decision-making, execution and monitoring.

NOTES

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2

URBAN LANDSCAPE

Session 2-a

CRITICAL STUDIES ON URBAN LANDSCAPE: WHY, HOW AND FOR WHOM THE BUILDINGS OF THE MODERN MOVEMENT SHOULD BE PRESERVED

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For the conservation and restoration of paintings, not only the paintings themselves, but also the frames that define the paintings, the walls where the paintings and frames are installed, and the context of the space are all very important.

In the same way, architecture, of course, does not exist in isolation. It stands on a site, has a neighborhood, and is placed in an urban or natural environment. It is the mission of Docomomo to deal with this totality.

This session will present four critical studies of Urban Landscape. They are all related to the essential question of why and how the buildings of the Modern Movement should be preserved.

Marina Oba and Emerson Vidigel, of The Federal University of Paraná, will present "Outlining Brasilia: In-between the Pilot Plan and Paranoá's Lakeshore". This is a critical study on Brasilia, focusing not on its monumental masterplan and built environment, but on Paranoá, an artificial lake that surrounds the city. In their presentation, Oba and Vidigel will reveal that the notion of legacy and heritage preservation is misused to protect the privatization of the spaces around Paranoá. This study raises an essential question: for whom should preservation be done?

"The Significance of the Historic Fabric - Why the Fine Grain Needs Conservation Policies", by Docomomo Macau Chair Rui Leão, examines the relationship between urban development and heritage conservation in the old town of Macau. As in the discussion on Brasilia by Oba and Vidigel, the central issue here is the conflict between "public" and "private". The small private buildings that Leão calls "small grain heritage" have, as a group form, an important role to recognize the continuity of public space in the city. Based on bottom-up observation of the old town, Leão's perspective on "small grain heritage" teaches us the basic attitude for understanding the modern urban landscape.

"Urban Landscape History of Tokyo Olympics Heritage Zone — From Imperial Parade Grounds to National Stadiums —", by Kaori Hasegawa of Tokyo University of Science is a study of the urban history of Aoyama and Yoyogi areas in Tokyo, which will play a central role in this year's Olympic games. Very recently, Yoyogi National Gymnasium designed by Kenzo Tange, in this Aoyama/Yoyogi area, was designated as a cultural asset of national importance.

By emphasizing the importance of urban history before the Olympic games in 1964 rather than focusing excessively on the 1964 Olympics, Hasegawa casts doubt on the easy brandishing of the term "Olympic legacy".

The study "Reevaluating values: Post-War architecture in historic urban landscape" by Sandra Treija, Uģis Bratuškins and Līva GarKāje of Riga Technical University analyzes the value of the post-war architecture in the Riga Historical Centre from the residents' perspective. To understand how residents and neighbors perceive the buildings of the Modern Movement, and what kind of collective memory they have on the buildings, is a key to inherit the modern legacy. The online survey conducted on the architecture in Riga Historical Centre is an important attempt to bridge the gap between experts and neighbors.



OUTLINING BRASÍLIA: IN-BETWEEN THE PILOT PLAN AND PARANOÁ' LAKESHORE — FROM 1957 TO 2020

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ABSTRACT.

Despite modern cities' concerns about landscape, open public spaces and its natural resources were commonly disregarded in terms of design and regulation. Brasília is emblematic in this matter: not only as a modernist city case study, but also as an example of the gradual privatization of the public space. Conceived by Lúcio Costa, the 1957 winning Masterplan defined that the area between the Lake and the urban settlement should be addressed to public use. "The plan avoids residential settlements in the lakeshore, in order to keep it intact, filled with woods, naturalistic and rustic fields for walks, and bucolic amenities for all urban population." This statement shows the paradox of keeping the lakefront area both intact and to open to public use. Over the years, the absence of design for these areas allowed their gradual and predatory occupation by the private sector, preventing the democratic access to the Lake and the fulfillment of its social and landscape potential.

How to revert the current predatory praxis in terms of landscape, environmental, political, and social development? What are the opportunities to the process of reconciliation between the lakefront initial premise and the contemporary urban demands?

This article shares two contemporary initiatives: the Free Lakeshore Movement and the Paranoá Lakefront Masterplan Project. It aims not only to describe how modern urban landscape of the Paranoá' lakefront area was planned, but also to explore it as heritage, as a fundamental part of Brasilia, from its conception to its sustainable development towards the future.

1. THE CAPITAL AND THE LAKE (UNTIL 1957)

In the middle of the 20th century, Brasília highlights as the urban ultimate concrete achievement of the MoMo. However, the idea of bringing the Brazilian Capital to the interior of the country precedes any envisions of Brasília. It dates from the 18th century[1], persisted in the 19th, but would only gain force after the establishment of the Republic (1889) and the empowerment of political elites outside south-eastern region of Brazil. It was argued that the New Republic's Capital should follow the Washington idealistic model, as a small and efficient town, far from agitation, exclusively dedicated to solving national demands.

In 1891, the Carta Magna document determined the Capital's displacement. Between 1892 and 1894 the Exploratory Commission of the Central Plateau of Brazil organized the multidisciplinary Cruls Mission that outlined an area in the central plateau for its construction. During the expedition, the botanist A.Glaziou first envisioned an artificial lake on the lowlands of the Paranoá River: "In addition to navigation and fishing, these flowing waters would offer beauty to the new capital, and surely arouse admiration by all the nations."[2] Despite the symbolic placement of a fundamental stone (1922) within the Cruls Quadrilateral, the Mission ended up with no further immediate developments.

In the 1950's, along with the constitutional doubts on the Capital's displacement itself[3], its location was not as certain as it was half a century before. Several studies, expeditions, and debates questioned the Cruls quadrilateral for political, demographic and geographic reasons. Nevertheless, in 1955, with the endorsement of the Belcher Report[4], a federal commission approved the final location of the New Capital—matching Cruls suggestion—advocating technical advantages like water supply, accessibility, and facility to disappropriation; but also qualitative advantages, such as attractive landscape and recreation areas: "the recreational resources of the neighbourhood are as diverse as excellent, varying from Paranoá River's densely vegetated slopes, to locations that allow the construction of artificial lakes."[5] Along with the decision of the location, it was stated that a dam would be constructed in order to provide a source of electricity and form a lake.

> *The dam downstream would turn the river into an ornamental lake, destined to house water sports, and limited by the banks of the rivers Bananal and Gama, that would become artificial beaches, (...) therefore granting this landscape piece of enchanting appreciation to be a pleasant attraction to the city along with the protected natural parks.*[6]

Some actual urban studies were developed in this same year, within governmental committees, showing a more discreet version of the Paranoá Lake[7] The soon Kubitschek (JK) was elected in 1956, he sanctionated the Capital's displacement and created NOVACAP, the agency responsible for the "urbanization" of the Brasília. One of its first tasks included the soundings for the Paranoá Dam — which construction started in the same year and lasted until 1958 — and the release of the Pilot Plan competition notice.

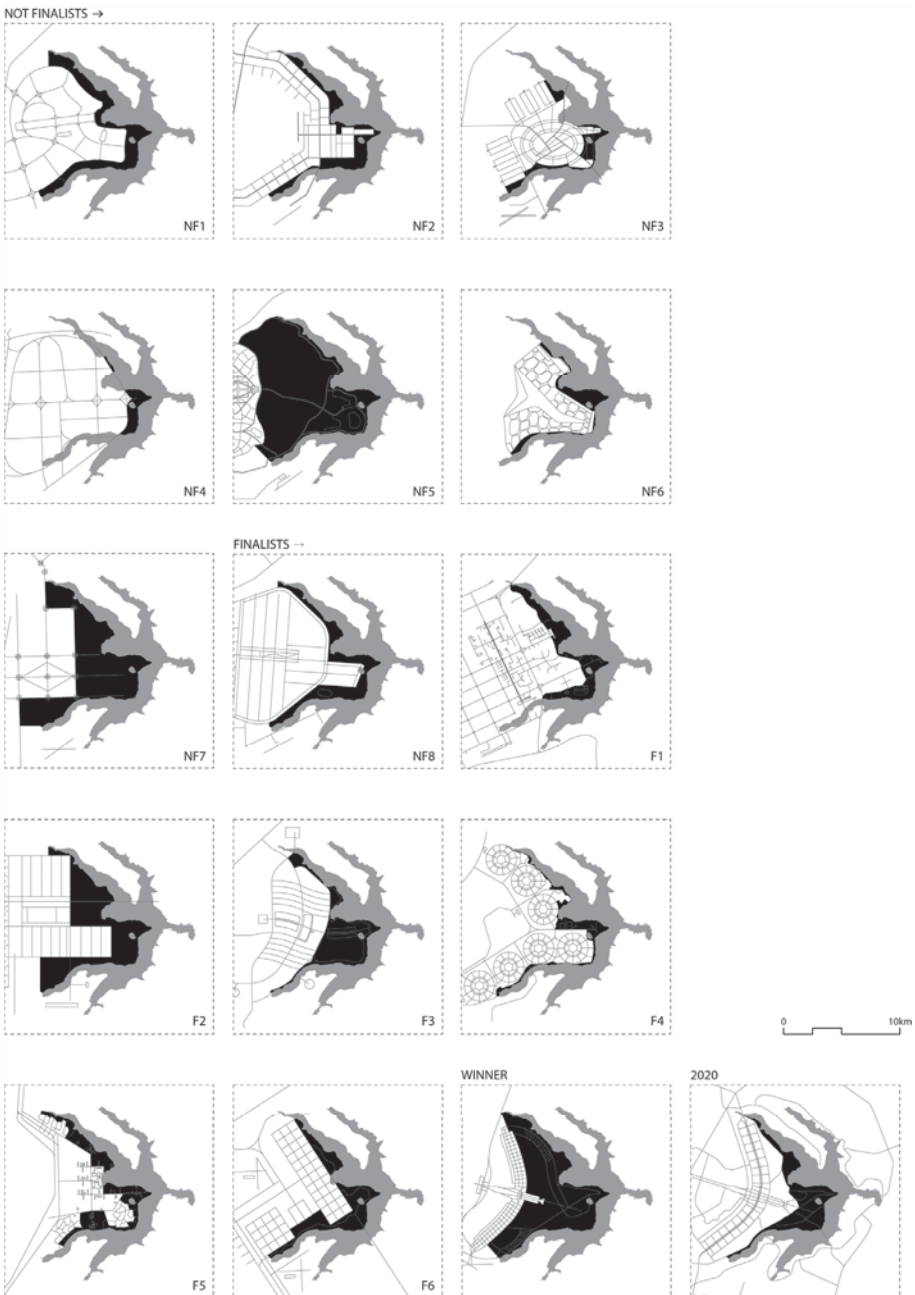


Fig. 1. **Interface between the Paranoá lakeshore and the projects submitted to Brasília's Pilot Plan Competition. Not Finalists: NF1_ Camargo; NF2_ Guedes; NF3_Rocha Souza; NF4_Eurípedes Souza; NF5_Saboya Ribeiro; NF6_ Saraiva, Neves; NF7_Schroeder; NF8_Wilheim. Finalists: F1_Cascaldi, Artigas, Camargo e Almeida (5th); F2_ Ghiraldini (5th); F3_Mindlin, Palanti (5th); F4_M.M.M. Roberto (3rd); F5_ Levi, Cerqueira Cesar, Carvalho Franco (3rd); F6_Milman, Rocha, Gonçalves (2nd). Winner: Lucio Costa. 2020: current organization. Diagram by the authors, 2020. © Marina Oba & Emerson Vidigal.**

2. LAKE OUTLINES THE PLAN (FROM 1957 TO 1960)

The 1957 Pilot Plan Competition presented few conditions for its participants: the Lake, the city's location (within a triangular area between its two peninsulas), the Presidential Palace, a luxury hotel — both in a lakeside location, independent of the Pilot Plan — and the airport. The competition scope didn't comprise buildings, only the urban organization which should house 500000 citizens in an area of 5000km2. The participants were asked to submit two documents: a basic layout of the city in the scale of 1:25000 and a supporting report. This briefness allowed a great discrepancy among the designs — in terms of development and detailing — and motivated disagreements among the international jury.

A total of 26 competing plans was submitted from the 62 previously registered. The proposals offered a diverse sample of the urban discussions in Brazil in the 20th century,

varying in terms of organization, hierarchy, geometry, connectivity, scale, but also in the proposed relation between Paranoá Lake and the urban settlement. Some of them had Pilot Plan intentionally shifted away from the Lake in order to achieve greater geometric freedom (**Fig. 1**: NF5, NF7), or forced its own geometry to the Lake, altering the natural perimeter (**Fig. 1**: NF4). However, the selected finalists established considerable proximity between the urban fabric, showing more (**Fig. 1**: F2, F4, F6, W) or less (**Fig. 1**: F1, F3, F5) independency between the plan's geometry and the Lake's perimeter.

The proposed uses for the lakeshore areas also varied from residences to public services like universities, hospitals or parks. In general, the waterfront areas were punctuated with few buildings and textually described as areas of public fruition, without any more specific design, especially due to the scale of presentation. Most of the proposals included a lakefront avenue (**Fig. 1**: NF1, NF4, NF5, F1, F2, F3, F4, F6, W) to grant public access to the Lake, varying its offset distance up to almost 2km. Figure 1 shows different geometric solutions[8] presented in the Competition, and highlights public open spaces with undefined use between the Pilot Plan and the Paranoá Lake.

Although not unanimously, Costa's synthetic and emblematic plan was selected by the jury as the proposal that gathered best the urban, symbolic, and civic values for the new Capital of Brazil. It wasn't exempted of criticism: the first of the four reviewed items stated by the jury was about the "excessive amount of indiscriminate land between the governmental center and the Lake."[9] Complying with the recommendation, the whole set was displaced towards Paranoá, eliminating the previously existing lakefront venue and leaving an even more "indiscriminate" public area between the private lots and the waterline (**Fig. 1: 2020**) . This maneuver mischaracterized the relation between the Pilot Plan and the Lake and contradicted Costa's own competition report that advocated the importance of avoiding "to

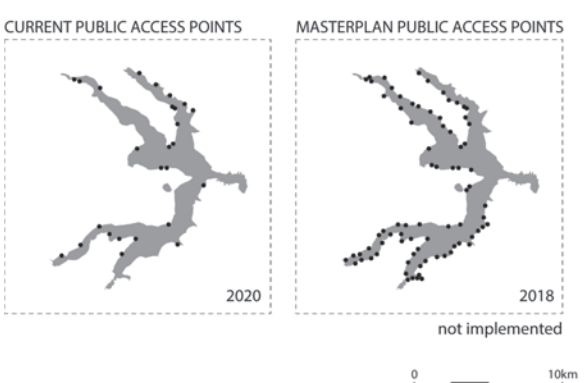


Fig. 2. **Comparison of the unobstructed public access points to the shore: 2020 current state vs. 2018 Paranoá Lake Masterplan (not implemented). Diagram by the authors, 2020. © Marina Oba & Emerson Vidigal.**

place the residential neighborhoods in lakefront areas in order to preserve the lakeshore intact, treated with groves and fields with naturalistic and rustic feature, with paths and bucolic amenities available to all urban population."[10] Over the years, the results were unfortunate. Although the main use of the lakefront area within the Pilot Plan is not residential, 84% of the shore's length ended up constrained to private access (**Fig. 2**). Official and non-official lots reach Paranoá's waters with private swimming pools, tennis courts, wharfs, beaches, and other amenities that limit the direct public access to 16% of the shore's perimeter, with compromised fruition due to its fragmentation.

In the following years, the Pilot Plan's so-called popsicle allotment logic was replicated to the residential expansions in the peninsulas (**Fig. 3**). Although it legally preserved access venues and a 30m offset from the lake as as non-aedificandi areas, the lack of infrastructure, density, and especially a proper design led to a similar gradual misappropriation by high-income low-density shore's neighborhoods.

3. PLAN OUTLINES THE LAKE (FROM 1957 TO 1990)

The city was inaugurated in 1960, fulfilling a 1957 federal determination. In its early years, the occupation was quite uneven and included spontaneous informal settlements and satellite cities—envisioned to be required only by 1980's. The city growth in the following decades fostered a real state pressure for increasing density and height in the Pilot Plan, but also the effort for the city's preservation. In 1987, Brasilia was declared to be the first urban ensemble recognized as a World Heritage Site by United Nations. The candidacy was supported by a local governor decree that regulated the preservation of the Pilot Plan's in its four scales: monumental, residential, gregarious, and bucolic — the last one created by Costa in 1961 to describe the green areas within the city and bordering the Lake.

Three years later, to guarantee that the city would still be constructed according to Costa's original proposal, the Pilot Plan was declared to be under National Heritage protection. By then, the national agency for cultural heritage protection (IPHAN) recurrently determined protection of recently constructed or even in construction oeuvres, shifting away its protection from the actual historical built unit to the abstract criteria that informed its construction. If on the one hand the measure allowed the protection of a greater range of recent entities; on the other hand, it also tried to perpetuate its validation, ignoring the intrinsic and procedural contradictions, exceptions, shifts, and specificities of a living organism such as a city.

The preservation perimeter is endorsed by federal legislation, which means that 30% of Paranoá' lakeshore is attached to the conceptual paradox of being an environmentally protected area, open to the free flow of "all urban population", and still having the very most of its length privatized into elite clubs or wealthy properties. The contradic-



Fig. 3. **Detail of the South Paranoá Shore. Contradictions between official land division (popsicle plots) and private misappropriation of public space by the residents of the area. © Diagram by the authors based on Google Earth and Segeth's data, 2020.**

tions of this relation are still an unsolved issue that keeps conditioning further projects and interventions.

4. INTERFACES BETWEEN THE LAKE AND THE CITY (FROM 1992 TO 2020)

The Lakeshore Project was one of the first initiatives of planning Brasília's open public spaces in the 1990's, proposing 11 hubs, connected by walking paths and bicycle lanes, to foster leisure, urbanity, and livelihood along the shore.

Hub1, in the south portion of the North Peninsula became what is know as the Herons Park (2013), a public park with an urban scale very well utilized by the population. Hub11, known as South Lake Pontão has also consolidated the public access and usufruct of the shore, with open-mall characteristics. This hub takes place in the South Peninsula characterized by privileged official residential land plots that shelter members of the political, judiciary, military and federal government elite members.

Not coincidently, both hubs, located outside the Pilot Plan, were the only to achieve and consolidate public usufruct (**Fig. 4: 4**). The project's main embryo, the Leisure Centre by the Lake (Hub6) within the Pilot Plan, didn't work out (Fig4: 4). The other eight hubs and their connections were never even implemented.

More recently, small scale interventions shown to be more effective in democratizing the shore, such as the South Deck (2017) and the North Lake Prainha (2019)—the first within and the later outside the Pilot Plan perimeter (**Fig. 4: 4**). Nevertheless, these initiatives are of little magnitude considering the will for long term extensive public usufruct and the scale of the Lake's total perimeter.

PDOT is the legislation that has been regulating Brasilia since 2009. The preservation site perimeter concurs with a PDOT's single zone that englobes the whole Pilot Plan, including the empty areas between the monumental/residential axis and the Paranoá Lake (**Fig. 4: 1**). One of PDOT's guidelines to the Lakefront areas is to "consolidate the vocation of culture, leisure, sport, and tourism on Paranoá Lake."[11] However, once again, the written intentions remain abstract. There are no definitions on how to deal with the lakeshore's vulnerable permeability or plans of large-scale urban operations in open public spaces.

Complimentary to PDOT, the 2016 IPHAN ordinance is more specific in scale and defines intervention parameters for seven zones within the Pilot Plan perimeter. The Preservation Zone 2 comprises Paranoá' protected lakeshore—which is a relevant advance in assuming distinctions within the preserved Pilot Plan. But, once again, it gathered parameters to keep the shore "intact", free from construction, but did not bring specific, critical and practical strategies.

Between 2015 and 2019, supported by a judicial, the local government triggered a series of planning actions called the Free Lakeshore Project. Among these actions were the development of the Lakeshore Use and Occupation Plan and the Paranoá's Environmental Protected Area (APA) Management Plan (**Fig. 4: 2**), and the opening of a public design competition for the Paranoá Lakeshore Masterplan.[12] After six decades of the construction of Brasília, this was the first structuring and systemic plan for the use and occupation of

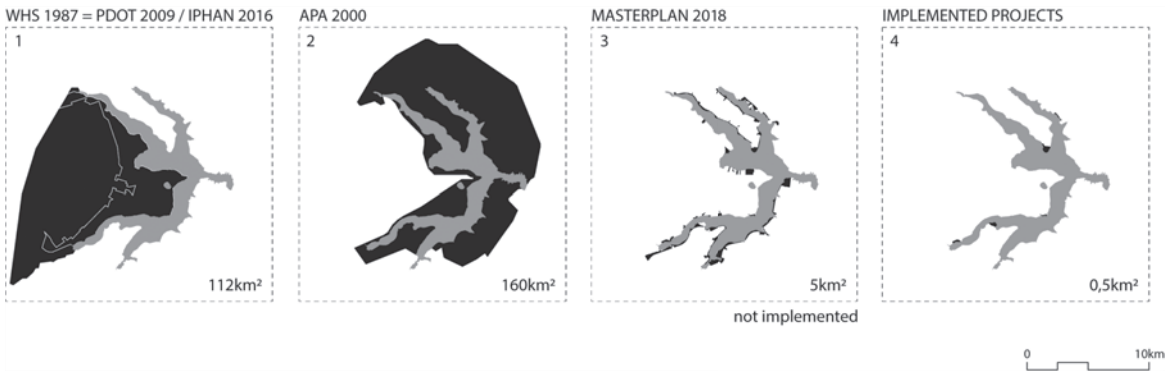


Fig. 4. **Comparison scale. 1_World Heritage Site (1987), concurring to PDOT's single zone (2009), and specified by IPHAN (2016). 2_Environmental Protection Area (2000). 3_Lakeshore Masterplan intervention area (2018). 4_Implemented projects (1990–2020). Diagram by the authors based on Segeth's data, 2020. © Marina Oba & Emerson Vidigal**

the Lake's waters and shore. The competition instructions were released in 2018, presenting as central objectives the rescue and recovery of the spaces located along the shore of Paranoá Lake for a balanced public appropriation, and aiming a sustainable rehabilitation of territorial use (Fig. 2: 2).

However, the most relevant intervention areas, in scale and length were kept outside the preserved Pilot Plan (Fig. 4: 3). It means that a short power was handed to Paranoá's Masterplan within the protected Pilot Plan, hindering the establishment of a macro-scale global strategy for the shore. The main political motivation for carrying out the Masterplan was to retake public spaces that had been privatized by residents specifically in the North and South Lake Peninsulas. In these two areas, during 2017, the local government triggered a removal process of fences and constructions that were within the obligatory offset of 30m from the Lake, clearing space for interventions that would favor the public use. The idea was to create linear urban parks that connected diverse segments of the shore characterized by territorial discontinuities. All initiatives were interrupted after the 2018 elections.

The current plans for the shore are limited to superficial restrictions of land use and activities; there are no landholding, urban design or capillarity actions that effectively foster connections between Brasília and the Lake. It remains as discontinued portions of open spaces emptied of significance and urbanity.

5. FINAL REMARKS

Paranoá Lake envisions as a leisure democratic place precede Costa and extrapolate what 1960's Pilot Plan delivered. It evolved during centuries and was mischaracterized by the urgency of making the city politically, technically, and financially possible in such a short notice.

Within the Pilot Plan protected area, the interface between the Lake and the city happens through gradually privatized land, which converted the shore into an exclusive amenity for privileged elite citizens. Most of the areas described by Costa as "available to all urban population" were never designed or constructed, fulfilling the "bucolic scale" despite its privatization.

Nowadays, Brasília's residents understand and embrace Pilot Plan's and lakeshore's preservation as a relevant public cause. In the opposite way, political forces incorporate the architectonic and environmental preservation arguments as a maneuver of protecting the exclusive and elitist status-quo. The lack of effective legal instruments and public policies to transform and adapt the territory to contemporary demands of Brasília and its citizens, and the different approaches between planning and implementing inhibit further developments: while Pilot Plan and environmental preservation perimeters deal with macro zoning issues, the actual intervention projects are obstructed by landholding and parceling quarrels.

None of the plans since 1990's were implemented: neither Lakeshore Project, nor Free Lakeshore, nor even the recently delivered Masterplan of the Paranoá Lake. The imminent risk against Pilot Plan's preservation does not come from transformative intentions, but from the misguided and recurrent belief that leaving it "intact" is the best way of protection.

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NOTES

1 M. de Pombal (1761) and J. Bonifácio (1823) first advocated the interiorization of the Brazilian Capital.
2 L. Cruls, *Relatório da Comissão Exploradora do Planato Central do Brazil*, Rio, 1894.
3 The 1934 Constitution included provisions for moving the capital, revoked in the 1937 and granted again in 1946.
4 D. J. Belcher and Associates (NY) hired by the federal government to analyze a 1954 aerial photogrammetric survey.
5 The Belcher Report, *Relatório Técnico sobre a nova Capital da República*, Brasília, 1958.
6 The 1955 Preliminary Memorial by the Urban Planning Subcomission, F. Fonseca, Olhares Sobre o Lago Paranoá. Brasília, SEMARH, 2001.
7 The 'Vera Cruz' 1955 Masterplan by the Urban Planning Subcomission, J. Albuquerque, *Nova Metrópole do Brasil*, Rio, 1958.
8 Only 14 of the 26 delivered plans still have enough documentation to be redrawn and compared.
9 Pilot Plan Competition Jury's Report, M. Braga, *O Concurso de Brasília*, São Paulo, CosacNaify, 2010.
10 Costa's Pilot Plan Competition supporting report, Braga, op. cit., 2010.
11 PDOT's Complimentary Law, No. 803 / April 25th, 2009.
12 Estúdio 41 Arquitetura (Curitiba/PR) won the Competition and fully developed the Masterplan during the year of 2018.

THE SIGNIFICANCE OF THE HISTORIC FABRIC
WHY THE FINE GRAIN NEEDS CONSERVATION POLICIES

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ABSTRACT.

This paper looks at current policy on conservation and safeguard on the historical centre of Macau, observing actual situations that denote the prevalent economic and urban conflicts related to property value and heritage consciousness, affecting the historic fabric of the old town. The paper will look at case-studies that reflect Macau's East-West background that fuel contradictory perceptions of authenticity and approaches to heritage conservation, and reflect on why conservation is meaningful from a cultural and morphological point of view in the context of Macau in its post-handover period.

1. INTRODUCTION

The Cultural Affairs Bureau recently gave me an interesting challenge, consisting on looking at the old city to understand how heritage policy is, or is not producing an effect on the real city, which I have accepted. After having walked through town to track the types of phenomenon that are under way and impact the historical centre.



Fig. 1. **Rua da Felicidade. The authenticity of the built heritage is the sum of all the characteristics that allows that particular built fabric to materialize and represent its context and period (space and time). The materiality of the actual heritage is only valuable because it transports authenticity. It doesn't need to have value beyond its authenticity. © Rui Leão**

The IC[1] has led an incredible process of implementing a heritage law and reviewing the practice and policy for the redevelopment in the old city which in Macau is very difficult and challenging, I am confident that Macau Society will have gained confidence and insight on the complexity of debating authenticity. In the past years, we have seen a number of young stake holders coming of age in the field of heritage consciousness. The lighthouse grassroots movement[2] was very important for Macau to realize that there are many people committed to heritage and just how important that is in the search for our collective identity as a world heritage city.

Let's start by reflecting on the notion of authenticity. Authenticity of the built heritage is the sum of all the characteristics that allows for particular built fabric to present and represent its context and period (space and time). The materiality of the actual heritage is only valuable because it transports authenticity. It does not need to have value beyond its authenticity.

2. THE NARA CHARTER ON AUTHENTICITY

The Nara charter on Authenticity considers authenticity as the essential qualifying factor concerning values. The understanding of authenticity plays a fundamental role in all scientific studies of the cultural heritage, in conservation and restoration planning, as well as within the inscription procedures used for the World Heritage Convention and other cultural heritage inventories

This notion becomes obvious if we look at Rua da Felicidade[3] (Fig. 1). Done in 1999, this operation which saw the restoration of all the Rua da Felicidade, was very vigorous in keeping the fenestration in all the typology of these houses in the old red light district. Even though we do not use these windows and these doors any more for that purpose, I thought that made the street very meaningful because it



Fig. 2. **This shift of scale is unsustainable as a systemic conversion of the historical centre. On the left, an example of how styled good intentions is worse than no intention. Authenticity is loosing ground in Macau. © Rui Leão.**

allowed us to have an authentic experience through the minimal interpretation of this well-conserved environment. This operation was important in Macau because it represented a change of use, and yet preserved the original fabric to a very high degree even though the function was not there anymore.

We are currently dealing with this issue from different perspectives, namely in the case of the Hotel Estoril in Tap Seac, where there is a proposed change of use and a lot of issues came up not only in terms of value, but mainly in terms of authenticity. It is a very positive sign to see this issue getting a real public debate. It demonstrates social emancipation from all stakeholders by the end of the public debate.

There is a growing trend in the process of re-building the historic urban fabric that is allowing a high level of compromise, both in terms of volumetric allowance as on how the architectural style has to be followed (Fig. 2). The fact is that the old low rise buildings of the inner harbor which only had two or three levels are being substituted by six or seven floor buildings which mimic the architectural rendering of the old buildings is something that de-qualifies the entire street and kills the whole logic of these old streets in the historical centre.

The main threat to the integrity of the historical centre is the change of scale that is being continuously operated stretching the section of the streetscape from three to seven levels and the permissive allowance to the systematic demolition of the old façades of scale which stretches the street section from 3 floors to 7 floors. It is not necessarily acceptable to allow this doubling or tripling of gross floor area in all areas because I don't think that the Macau SAR Government should be constrained to prioritize the enrichment of all property owners, namely in the historic centre, so government departments should not feel pressured to fulfill this systemic mantra that property exists to enrich its owners. This is not sustainable, and it is very incompatible with the assumed compromise with UNESCO to become a world heritage site. This is the biggest challenge and difficulty that we are facing in Macau, and if we don't create a systematic methodology of avoiding this kind of continuous pressure on the entire historical centre, I think we are going to keep on seeing a lot of things go. I think that we have to establish rules at a different scale, more at a neighborhood scale probably, that allow for everybody in that area to have a same rule, so that we find some level of reasonability to permit



Fig. 3. **The traditional types of construction made an almost constant offset of the ground surface. This fact makes the city built over the hills reproduce the shape of the actual hill with a constant tile and roof materiality the historic neighbourhoods built over the hills should have specific guidelines to preserve these distinctive qualitative urban landscapes. © Rui Leão.**

that this old neighborhoods renovate themselves without having to systematically be involved in a process of speculation, a process of densification and de-characterization.

Another reason why we urgently need planning instruments in dealing with the historical centre at a different scale is the setback. The setback that was established in the San Ma Lou[4] plan, which was done by Architects Fernando Távora and António Madureira, is very wise, because they allow a setback of two floors, going back the depth of the porticos of the ground floor, and because of the cross section of the avenue, that setback becomes unnoticeable. So it really works. Now, when we see that this 3-metre setback is applied systematically in different areas it does not necessarily work. It proves that we cannot have a positivist attitude towards urban strategy on heritage sites. The scale of construction of the fine grain is critical in Macau because our morphology is of a city built on hills and surrounded by water. The city is an enchanted artifact because the same type of 3-storey buildings covered both the flat areas and the hill sides creating a very sensible off-set of the hills and also revealing the natural morphology. This topography allows us to gaze at the built hills from another hill and perceive the sensuous result of the urbanized geography (Fig. 3). The city is creating opportunities for you to gaze at it from within itself, and in the traditional city all of this was much respected. This should be central in the planning focus when trying to regulate or define how to redevelop, and probably, that is a sufficient rule to say 'here it is not sensible to grow vertically, so here you cannot increase the volume,' and so on.

Another black hole on policy effect that I find traumatic at the moment is the architectural clusters and their unrecognized value. The city was developed trough small scale development initiatives that created lane or patio communities. The architecture of these lanes was defined not by the single building, but by a repetition of the unit. Now, because some of them get destroyed during time, we see that there are these leftovers, which look very lost, and maybe even not

very interesting to some eyes. And even in areas that were not necessarily rich like the inner harbor, this way to design the unit, not for the sake of itself, but for the sake of the repetition, to make a block that would build up the streetscape and have this presence of a palace, giving the city this richness, until the middle of the 20th century, Macau was a city that reflected a very rich public scenario. This reflects a very big collective vision and capacity of producing beauty with the Urban Development Process. It also means that all stakeholders involved with Urban Development shred an agreed system that was structurally aesthetic, and naturally ethic, which is something that unfortunately cannot be said about the current universe of stakeholders (Contractors, engineers, architects, Government and investors).

Making all these remarks, looks like I am pointing the finger at IC, but in reality I am doing the opposite. I think that IC really needs to have more partners who allow for better policy to be implemented, because it is something that takes time, and really the issue is that it has become a very urgent operation. Many clusters are still in a good state of conservation but are rendered unrecognizable due to the unregulated use of publicity and abusive overlays on the façade. And this is what the success of the Senado Square, and also of the Rua da Felicidade, is about.

When they were implemented, I suppose, 15 years ago, also St. Joseph Church, nobody could guess that this clean up, this upgrade of the public space, and the buildings could be so successful in the way of re-visualizing the historical centre. Sometimes in the past, though, because there were things that were allowed by-passing any technical consideration, like the disgraceful Tai Fung Bank tower in Avenida Almeida Ribeiro, (**Fig. 4**) opposite the extraordinary and unique Central Hotel. The sensible thing to do now that we have more legal and administrative ground in the field of heritage conservation would be to demolish the Tai Fung Bank Tower and classify the Central Hotel. Why? Because the former is the result of pure speculative opportunism, whereas the latter is a significant and seminal example of



Fig. 4. **We need to distinguish the exceptional significant (both architectural and historical) from the disastrous absence of historical understanding of the city, sometimes side by side. © Rui Leão.**

how Macau's entrepreneurial and experimental culture has dealt with innovative programs, and the tower reveals the beginning of the process of evolution that the gaming industry saw in Macau. Through a spirit of entrepreneurship and pragmatism of our business community, improvising solutions and coming up with ways to make things happen in a very nice and happy way.

The place where the Tai Fung tower now stands used to be a small cinema, the Cinematographia Vitória, which was a preciously designed little building, cutting the corner to create a public space bordering the Avenue. That space was where the San Ma Lou met the Rua dos Mercadores, which are two historic main roads, so this small public space extending across San Ma Lou had a critical location. The fact that sometimes we lose these critical spaces in the city terribly compromises the urban text of the city, and the city ceases to be understandable from then on.

Bad intentions may prove to be worse than no intention.

Many examples of tentative historical integration reflect incapacity towards interpretation and the understanding of context. The preservation of the historical façades, in many cases would allow for an equivalent site development as in these cases.

The façades of the old city are the framework of our collective identification of the city and its public spaces: they belong to the collectivity as much as to the property owner.

The historical centre is really about residents and citizens rediscovering or reconstructing our quality of life and finding ways to revive and re-occupy it collectively. That is why I started with the Nara Declaration, because probably, in a place like Macau the Nara Declaration should be something that we teach in our high schools so that it gets critically discussed and digested, socially, because it is a central notion for all to know and share so that this World Heritage somehow is apprehensible by the public at large.

We have seen how the architecture of the traditional city made use of very wise and efficient strategies to create collective large scale compositions that produced beauty of measureless dimension. It is unquestionable that the planning and architecture of our days has to operate using the layers of the historical city, relate to it and continue to produce value with equivalent collective human proportion and significance, this means, in most cases that when we do not evaluate the conservation of the historic fabric or demand of ourselves as designers the inclusion and understanding of the historical context, we risk to substitute a highly qualified architectural code, loaded with authenticity and a social dimension, with un-signified generic plot ratio increase.

The preservation of the common small grain heritage, like the Chinese patios and the shop-houses are fundamental to maintain the historic dimensions of the public spaces. The monuments and exceptional buildings don not have the ability to secure the historical spaces of the city as they are only one piece of the space where they are inserted onto. This simple notion has to be passed to and understood by all of our community, while there are still shop-houses and patios to protect.

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NOTES

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2 In 2007, amidst the crackdown of a huge real estate corruption scheme that compromised the protection areas of the Guia Lighthouse, Macau citizens started a movement of cultural awareness, which stopped the high-rises around the lighthouse.

3 The old Red Light District in the Chinese bazaar.

4 Cantonese name of Avenida de Almeida Ribeiro.

URBAN LANDSCAPE HISTORY OF TOKYO OLYMPICS HERITAGE ZONE — FROM IMPERIAL PARADE GROUNDS TO NATIONAL STADIUMS —

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ABSTRACT.

This paper examines the urban history of Aoyama and Yoyogi, where two national stadiums are located and the main area of the "Heritage Zone" of the 2020 Tokyo Olympic and Paralympic Games is set up. At the beginning of the Meiji period, the capital of Japan was relocated from Kyoto to Tokyo and the urban structure of Tokyo — then called Edo — began to change into a modern capital city. Under these circumstances, the parade grounds for the Imperial Japanese army were designated mainly on lands formerly allotted for samurai residences, which had occupied a large area of Edo. The first parade ground was situated in Hibiya; it was relocated to Aoyama in 1887, and then to Yoyogi in 1907. After World War II (WW II), the National Stadium and the Yoyogi National Gymnasium were constructed on the former parade grounds of Aoyama and Yoyogi, which became the "Olympic Legacy" of 1964. Then, the "Heritage Zone" was set up around these areas for the 2020 Tokyo Olympic and Paralympic Games. Moreover, the National Stadium was demolished and the New National Stadium, which will become the new "Olympic Legacy" of 2020, has been built in Aoyama. While referring to Aoyama and Yoyogi, the glorious history of the Olympic Games tends to be emphasized. However, its urban landscape history, especially during the pre-war period under the modern emperor system Tennosei, is not fully recognized. This paper discusses the process by which two imperial parade grounds became the sites for two national stadiums by unveiling the layers of urban memories, focusing on imperial funerals, military ceremonies, GHQ requisition, and two Olympics. The aim is to propose the "Legacy" of those areas, with regard to the urban landscape, which should be inherited in the future. To do that, we should consider not only the buildings but also the environments, including public, greenery or religious spaces around them. This discussion should provide many suggestions to other cities around the world that have facilities regarded as "Olympic Legacy."

1. INTRODUCTION

On examining the aerial photograph of Tokyo, we can find green spaces from the central to the western part, which include the Imperial Palace, Imperial Palace Square, Hibiya Park, Akasaka Imperial Palace, Shinjuku-Gyoen, Meiji Jingu consisting of Naien and Gaien, and Yoyogi Park (Fig. 1). These areas, which offer valuable greenery and public

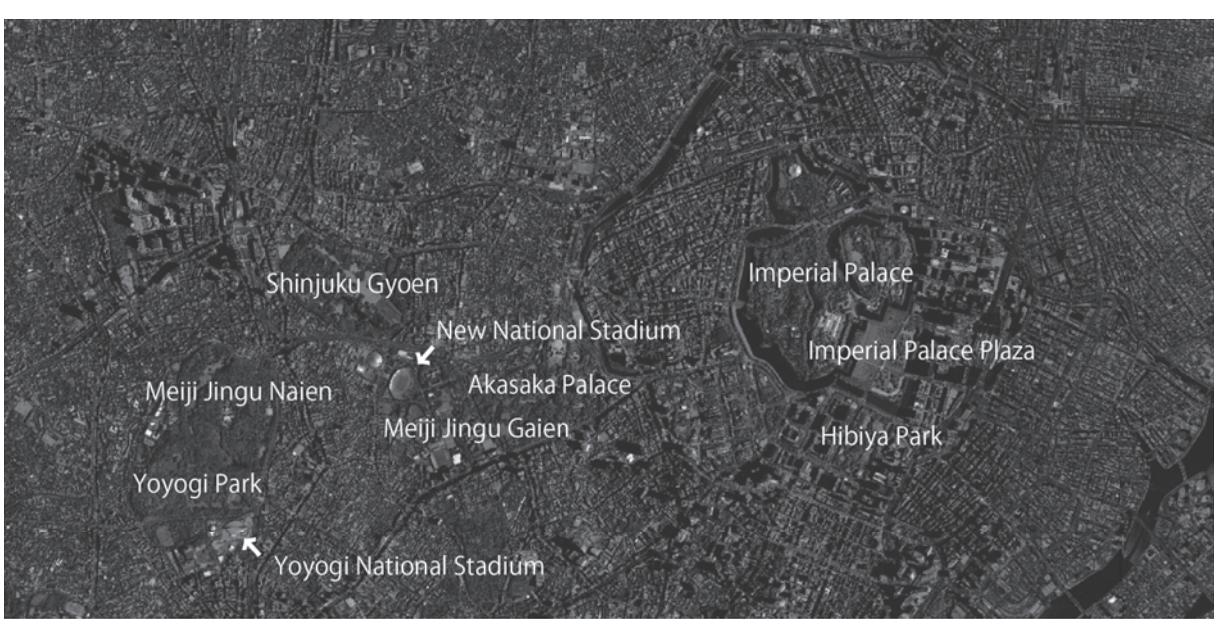


Fig. 1 **Aerial photo of Tokyo in 2007. © Geospatial Information Authority of Japan.**

spaces in the city, almost overlap with the "Heritage Zone" of the 2020 Tokyo Olympic and Paralympic Games.

"Olympic Legacy" is a concept which came into focus during the 21st century. As the current Olympic Charter mentions, "to promote a positive legacy from the Olympic Games to the host cities, regions and countries,"[1] it has become one of the important factors in selecting a host city since the London Olympic and Paralympic Games in 2012.

Under these circumstances, the Tokyo 2020 Bid Committee insisted that "the Heritage Zone, where the 2020 Olympic Stadium will be located, is an area full of enduring legacies of the 1964 Games. By using major venues constructed for the Tokyo 1964 Games, we embrace the spirit of inheritance by creating new Olympic legacies for tomorrow's generations." That is, Tokyo was successful in winning the bid to host the Olympic and Paralympic games by showing the vision of creating new Tokyo 2020 Olympic legacies combined with those of 1964 and inheriting it, by making use of their experience as a host city.

Owing to such tactics of the Olympic bid campaign, Aoyama and Yoyogi are projected to the international community as areas that inherit the Olympic legacies centering on Yoyogi National Stadium and New National Stadium. On the other hand, its history of urban landscape, especially before World War II (WW II), is not fully understood. It is true that major international events, such as the Olympic and Paralympic games, have an enormous impact on its host city, however, the uniqueness of each city could be lost if we attach too much importance on the games themselves without considering its urban landscape.

In this paper, chapter 2 gives an overview of the urban history of Aoyama and Yoyogi from the Meiji Period to the pre-war Showa Period (late 19th century–1945), including the establishment of parade grounds and Meiji Jingu. Then, chapter 3 describes the history after WW II, such as requisition by the GHQ, hosting the 1964 Olympics, and establishment of Yoyogi Park. Based on the above, chapter 4 examines how the two stadiums, which are regarded (or would be regarded) as Olympic Legacy, had been built in the context of the urban landscape and suggests what should be inherited in order to enhance the cultural and historical value of those areas instead of preserving the buildings alone.

2. IMPERIAL PARADE GROUNDS AND MEIJI JINGU BEFORE WW II

In the early modern period, Aoyama and Yoyogi were situated on the plateau to the west of the Edo-jo castle, where samurai residences were built to defend it. In Aoyama, the land was divided into many small plots and there were shogunate powder magazines, firing ranges, temples and merchants' houses, as well as samurai residences. On the other hand, Yoyogi district was a border area of Edo City, where the residence of a feudal lord, "Ii," stood, and agricultural fields extended around it.

After entering the Meiji period, the capital was shifted from Kyoto to Edo, which was renamed Tokyo. Accordingly, the Edo-jo castle was changed to the Imperial Palace, and the Meiji government began developing the city as an imperial city. Since then, Aoyama and Yoyogi became politically and militarily important areas, as explained below.

2.1. Establishment of Military Reservations and Imperial Estates

The samurai residences, which accounted for almost 70% of the area of Edo city, were confiscated and allotted as sites for governmental use. Among them, military reservations and imperial estates occupied large areas.

As for military reservation, the sites were concentrated around the Palace at the beginning of the Meiji period. Since the 1880s, these sites gradually began to shift westward owing to the development of the central area of the city. Under such circumstances, the main parade ground of Tokyo was initially established in Hibiya (present-day Hibiya Park) in 1871 and eventually shifted to Aoyama (present-day Meiji Jingu Gaien) in 1886. Subsequently, the Aoyama parade ground became overcrowded and was decided to be used as a site for Dai-nihon-hakurankai, an international exposition planned to be held to mark the 50th anniversary of the Meiji period. This led to the establishment of a new parade ground in Yoyogi (present-day Yoyogi Park and the Yoyogi National Stadium), which was almost twice the size of Aoyama.

On the other hand, imperial estates came into existence around 1885, when some parts of government land were transferred to imperial property. In Tokyo, most of them had been established by the 1890s. As a result, imperial estates spread from the center to the western part of Tokyo, which included the Imperial Palace, Akasaka Palace, Shinjuku Gyoen, and Minami-toyoshima Imperial Estate (former site of the residence "Ii", present-day Meiji Jingu Naien).[2] Therefore, large military reservations and imperial estates had concentrated in Aoyama and Yoyogi until the end of the 20th century.

2.2. Imperial Ceremonies in Parade Grounds

On the parade grounds, which were normally used for military exercise, military reviews were occasionally held in the presence of the Emperor or the Prince. During a military review, the Emperor marched in procession from the Palace to the parade ground while citizens filled the street to catch a glimpse of the ruler. Consequently, the Aoyama Parade Ground and Yoyogi Parade Ground became associated with the Emperor as commander-in-chief, while Oyama Road (present-day Aoyama St.), which connects the Palace and these two parade grounds, was recognized as an imperial procession street as well as a military road.

Furthermore, these parade grounds were used as sites for a much more important imperial ceremony, the funerals of Emperor Meiji and Empress Shoken. From the medieval

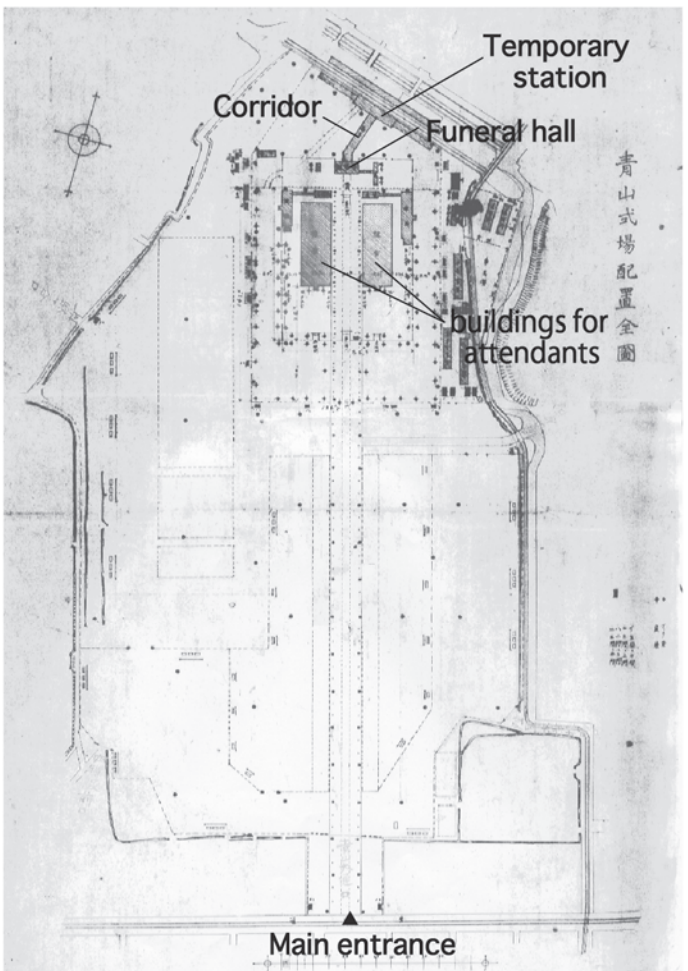


Fig. 2 **Funeral layout plan of Emperor Meiji in Aoyama Parade Ground in 1912.**
© National Archives of Japan.

period to the early modern period, imperial funerals were held at Sennyu-ji temple in Kyoto with Buddhistic rites, but after entering the Meiji period, Shinto-style funerals were revived and held in large temporary facilities built on parade grounds instead of temples.

Fig. 2 is a layout plan of the funeral venue of Emperor Meiji in Aoyama Parade Ground in 1912. It shows that a funeral hall to enshrine the coffin was located at the northern end of the site, which faced two large buildings for tens of thousands of attendees. The most important point to note is that the funeral hall was connected to the railway by the corridor. This is because there was a railway siding for military purposes in the parade ground and the coffin was transferred to the mausoleum in Kyoto after funeral by rail. Such a layout plan was also seen at the funeral of Empress Shoken at Yoyogi Parade Ground. That is, these parade grounds, in addition to being associated with the Emperor, and large enough for temporary facilities to be constructed, were also conveniently located for using the railway. It can be pointed out that the layout of the funeral hall, the most important and the core element of the large venue, was determined by the position of the railway.

2.3. Establishment of Meiji Jingu

After the deaths of Emperor Meiji and Empress Shoken as mentioned above, a plan to establish the Meiji Jingu to enshrine them in Tokyo emerged. For context, the mausoleums had been built in Kyoto and Tokyo city. Citizens of Tokyo desired some memorial buildings in the city as well. As a result, it was decided that Meiji Jingu would be built in Yoyogi and Aoyama, consisting of two parts—Naien and Gaien. Naien, which holds shrine buildings in an artificial forest, was created in 1920 at the site of the Minami-toyoshima Imperial Estate, which the Empress liked to visit for its beautiful scenery. On the other hand, Gaien, which has a memorial museum and sports facilities, was established in 1926 at the former site of the Aoyama Parade Ground, which had become closely related to the Emperor through imperial ceremonies, military reviews, and the funeral.

As for the landscape planning of Gaien, it was a formal, western-style garden, with its main axis pointing toward the north-south direction (Fig. 3). The main building, a memorial museum, was erected on this axis, which was determined by the trace of the funeral hall of Emperor Meiji; that is, the layout plan of the funeral venue had great influence on the layout plan of Gaien. Additionally, at the western part of Gaien, the Meiji Jingu Gaien Stadium was built, which was the first modern large-scale stadium in Japan with the most advanced facilities at that time. In this stadium, athletic meetings dedicated to the Emperor and the Empress began to be held, which made Gaien a holy ground for sports.

After the completion of Naien and Gaien, the connecting passages between them, Omote-sando and Ura-sando, were designated as Scenic Zones to preserve the landscape around Meiji Jingu, which received the first Scenic Zone designation in Japan. Thus, the areas around Yoyogi and Aoyama had become sacred places that were deeply connected to the Emperor, in addition to the Imperial Palace.

3. GHQ REQUISITION AND OLYMPIC GAMES AFTER WW II

Meiji Jingu Gaien, which had been used as a military base of the Japanese army during the war, was confiscated by GHQ as a playground for the U.S. army and renamed "Meiji Park." After Gaien was returned to Japan, the Japanese government and Meiji Jingu as a religious corporation discussed which of them should own the site. As a result, the stadium became a national property and other facilities were sold to Meiji Jingu[3]. The stadium was rebuilt to become the National Stadium, which was used as a main stadium for the Asian Games in 1958 and the Tokyo Olympics in 1964. Since then, other sports facilities were built, including ten-



Fig. 3 **Layout plan of Meiji Jingu Gaien. © Meiji Jingu Hosan Kai.**

nis courts, skating rinks, and futsal courts. Furthermore, the National Stadium was rebuilt again as the New National Stadium for Tokyo Olympics in 2020.

As for the land of Yoyogi Parade Ground, it was also confiscated by GHQ and used as a housing complex called Washington Heights. For the Tokyo Olympics in 1964, the site was returned to the Japanese government to build facilities connected with the event. Accordingly, the Yoyogi National Stadium was built in the southwestern portion of the site, and the remainder was used as an athletes' village, reusing the U.S. Army's housing. Three years after the Olympics, in 1967, Yoyogi Park was opened at the former site of the athletes' village. Presently, this park serves as a place for recreation and relaxation integrally with Meiji Jingu Naien (**Fig. 4**).

4. CONCLUSION: WHAT SHOULD BE INHERITED IN AOYAMA AND YOYOGI?

In the background of the existence of two national stadiums regarded (or to be regarded) as Olympic Legacies in Aoyama and Yoyogi, there is a history of urban landscape, including the deployment of samurai residences in the early modern period, the establishment of military reservations and Imperial Estates and the foundation of Meiji Jingu in the modern period before WW II, and GHQ requisition and Olympic Games after WW II, as explained above.

The glorious memory of the Olympic Games, which symbolizes Japanese post-war recovery, has been handed down from generation to generation since people like to talk about it and urban development projects tend to mention it. On the other hand, the memory that is connected to the modern Emperor system or the war are not talked about positively and has become ignored in the history of the urban landscape. However, these two national stadiums could not have existed without the historical background around the site. This seems to be evidenced by the anecdote of Tange in designing the Yoyogi National Stadium: Tange paid much attention to Meiji Jingu Naien and determined the position of the first gymnasium, so that its axis was at right angles to the front approach in the north-south direction of Naien.[4] It shows the deep relationship between the stadium and urban landscape around it and also seems to describe the de-



Fig. 4 **Yoyogi National Stadium (Kenzo Tange, Tokyo, 1964) against Yoyogi Park and Meiji Jingu Naien. © Kaori Hasegawa.**

sign philosophy of Tange, who was an urban planner as well as an architect and always considered the relationship between architecture and the city.

Over half a century has passed since the post-war recovery in Japan, and the urban landscape around Aoyama and Yoyogi has begun to change due to redevelopment projects of Shibuya Station Area, Meiji Jingu Gaien, and so on. In order to enhance the cultural and historical value of those areas in such large-scale developments, we should assess the cultural and historical value of not only these two stadiums of Olympic Legacy, but also its urban landscape as a whole, including Meiji Jingu Naien and Gaien, Yoyogi Park, Oyama-road, Omote-sando, and Ura-sando. It is suggested by the fact that the depreciation of the historical context of Meiji Jingu Gaien was pointed out as one of the most important problems in the international design competition of the new national stadium.[5]

It is true that delimiting urban landscape of architecture is complicated, but it is important for cultural heritage to designate a certain area to maintain its setting, as shown in the concept of a buffer zone in the Operating Guidelines of World Heritage.[6] As for Yoyogi National Stadium, which has been highly recognized in the world as a cultural heritage, its conservation and management plan as written in 2019 proposed to set up a preferable buffer zone which include Meiji Jingu Naien and Yoyogi Park.[7] Such a buffer zone is important not only to protect the view of the stadium from the Shibuya Gate, but also in terms of inheriting the historical context, which would pay homage to Tange's design philosophy.

Considering that the importance of the Olympic Legacy has been increasing in recent years, this issue concerns not only Tokyo but also other cities around the world that have facilities regarded as Olympic Legacies. To inherit each Olympic Legacy while enhancing the uniqueness of each city, it should be necessary not only to emphasize the glorious history of the Olympic Games but also to understand the historical context of each city and assess the cultural and historical value of its urban landscape.

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REEVALUATING VALUES: POST-WAR ARCHITECTURE IN HISTORIC URBAN LANDSCAPE

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ABSTRACT.

Modernist architects often practiced in historical urban environment, where the need for new construction had risen after the devastation of World War II. Within the wave of urban modernization, major transformations in the historic centers of many European cities took place in the 1960s and 1970s. They resulted in the rise of the heritage preservation activities, reaching their peak in the 1990s. More than 120 European urban areas including the historic centers of many state capitals were recognized as UNESCO World Heritage sites in the early 21st century. MOMO architecture often is an important component of urban landscape and functionality there. Typologically diverse objects of high importance to the city inhabitants and guests were erected during the post-war period and the following years, however, their value is not always properly assessed, and maintenance of their original quality is threatened during the urban regeneration process — even at risk of conversion or demolition. Over the last decades, the UNESCO Historic Urban Landscape approach has been developed displaying significant evolution of ideas and practices for the conservation of urban heritage. Along with other tools for its management, public participation is highly recommended. It involves a wide range of stakeholders, enabling to better identify contemporary urban values, and allows city planners to respect urban landscape by setting goals for its preservation within the terms of sustainable development. Ambiguous viewpoints exist in the heritage preservation institutions and in society about the values of MOMO legacy to be preserved as the cultural heritage.

1. INTRODUCTION

The post-war architectural heritage is often not well examined, appreciated, and preserved. This refers, in particular, to the post-war architecture, which is part of the urban environment created in earlier periods. The cores of many European historic cities experienced significant losses in built-up environment due to devastation of World War II, consequently, many today important objects were built in the second half of the 20th century. However, Modern Movement architecture does not occupy a significant place in the evaluation list, or its quality is not appreciated at all.[1] These buildings often are not eligible for heritage preservation and therefore remain at risk of rebuilding or even demolition.

The management of cultural heritage has for long been based on the preservation and restoration of monuments as separate objects, even in cases where cultural and historical significance is broader in the urban context. Such an approach follows from historical, artistic, and scientific qualities of values, and the overall task of protecting and preserving their authentic substance.[2] This approach is difficult to extend to the protection of larger-scale cultural monuments or processes.[3] The transition to value-based heritage protection puts the importance of the object ahead of the object itself.[4] This turnaround has also contributed to the democratization of the importance of values, allowing boundaries of heritage sites to be blended with the surrounding urban environment. The ideas of Historic Urban Landscape contained in the international documents reflect development of public opinion and the growing awareness of cultural heritage. Also, this approach certainly reflects the general development of democracy, the latest ideas in urban planning and development, looking at these processes in an increasingly social context.[5]

Along with changes in the global understanding of heritage, democratization of heritage management is evolving.[6] New stakeholders join experts to identify the heritage and participate in decision-making regarding the future.[7] In this changing environment, value of inheritance becomes unstable, and the argument for inheritance management decisions becomes debatable and questionable. The diverse nature of inheritance values — whether they be aesthetic, cultural, historical, economic, or social — creates additional difficulties in managing the heritage.[8]

This study seeks to answer the following questions — "What should be the values of preservation of the MOMO heritage in historic environment? How to detect valuable MOMO architecture elements in context of preservation?" The goal of this study is to gather data in order to determine the popular opinion about MOMO architecture heritage, and to assess its motives. The paper analyses views of residents about MOMO objects in a cityscape in Riga Historical Centre, where vivid examples of architecture from the 1960s and 1980s often contrast with the urban values defined by the UNESCO World Heritage site.

2. CASE STUDY AREA

Research was conducted in Riga Historical Centre, the most active and valuable part of Riga city, including the me-



Fig. 1. **Post-war MOMO buildings in Riga Historical Centre. Of 85 buildings the most significant number is of office buildings (32) and apartment buildings (24). In addition, 7 transport and 7 education buildings, as well as 6 public and venue, 6 retail and 3 hotel buildings in the territory. © Līva Garkāje, 2020.**

dieval Old Town or "inner city", first mentioned in 1201, and the regular grid blocks or "outer city". It is most recognizable for the vast development in the late 19th and early 20th century representing stylistic collection of Eclecticism and Art Nouveau buildings. The significant number of buildings of that period and harmonious urban landscape have been major reasons for including Riga Historical Centre in the list of UNESCO World Heritage sites (1997). A wide variety of MOMO buildings was developed in the area in the post-war period (Fig. 1).

Since such venue places as theatres or concert or multifunctional halls would be among the best known to users due to their historical role, accessibility, and central locations, theatre Daile (architects M. Staņa, I. Jākobsons & H. Kanders, built 1977) and multifunctional venue Riga Congress Centre (architects J. Gertmanis & V. Kadirkovs, built 1982) were chosen to be the main objects of survey to detect the public opinion on values of MoMo architecture in historic environment.

The new building of theatre Daile was designed from 1959 to 1966 and built from 1966 to 1977 to provide a bigger scale venue for Daile (Art) theatre troupe founded and led by the legendary chief director Eduards Smiļģis. The leading architect of the building was Marta Staņa — an eminent designer who had already gained recognition in the USSR and beyond for her sophisticated modernist designs. Riga Congress Centre has been built to accommodate Communistic Party's congress and conferences. Despite that, just a few years after its erection in 1988 the building housed foundation of The Popular Front of Latvia, which became the main driving force for Latvia's independence regaining. At present the building is a popular venue for various guest performances. (Figs. 2 & 3)

Theatre Daile is among the few post-war MOMO buildings listed as cultural heritage in Riga, whereas the other one up to this day isn't. Nevertheless, both buildings have recently been subjects to functional and visual modification propositions displaying their rather unclear value status.

3. RESEARCH APPROACH

In most countries, cultural heritage value is determined



Fig. 2. **M. Staņa, I. Jākobsons & H. Kanders, Theatre Daile, Riga, Latvia, 1977. © Uģis Bratuškins, 2020.**

basing on expert evaluations as professionally articulated assessments of aesthetical and historical values in that way supposedly representing social values.[9] Such an approach is understandable when regarding an established heritage category or elements from a collectively appreciated period. Meanwhile, it excludes analysis of such social values as its place in collective memory, spiritual meaning, etc. In addition, post-war MOMO buildings come from a more recent and therefore less appreciated era. Another aspect is that parts of the general public tend to dislike MOMO architecture aesthetics.[10]

According to the literature, one of the approaches to determine inhabitant opinions on particular object values can be using rapid ethnographic assessment procedures[11], since they help both to inform and represent the particular object to community. Another approach is using participatory online platforms where people can suggest and provide their evaluations. A subcategory of the latter would be online surveying including open-ended questions. Considering that this method gives opportunity to access a wider group of people which is especially important when researching public buildings used by inhabitants from a wider territory than a local neighborhood we chose online surveying method. Survey design was based on provisional typology of heritage values dividing values in sociocultural and economic values with respective subcategories for sociocultural values: historical, cultural/symbolic, social, spiritual/religious and aesthetic, and for economic: use (market) and nonuse (nonmarket) values.[12]

The survey structure was made recognizing the need to look at and evaluate potential heritage objects from various points of view, including acknowledging each building as part of the urban landscape. The giving statements dealt with building discernibility and image uniqueness in surrounding landscape; visual compliance with the surrounding historic landscape; importance in Riga's culture-scape; impact of landscape elements and their usage surrounding the building in question.

Further on, a question on potential risk of functional and significant visual modifications of the buildings was posed to transit to open-ended question section on respondent views towards the most valuable things or concepts in each building which presumably targeted sociocultural and economic value typologies. Most of the value types overlap due to intrinsic relation and co-dependence between all these concepts. Nevertheless, these distinctions help to address on normative, as well as public level widely accepted and used value concepts.

The survey was held online using Facebook and Twitter as the main sharing platforms. Most of researchers' social platform connections were in the same age group as the researchers themselves resulting in dominating respondent group being in 25–49 age group (69%). The rest were either in 14–24 (14%), 50–64 (14%), or 65–79 (3%) age groups. Almost half



Fig. 3. **J. Gertmanis & V. Kadirkovs, Riga Congress Centre, Riga, Latvia, 1982. © Uģis Bratuškins, 2020.**

(49%) of the respondents held a Masters' degree or higher.

4. FINDINGS

The survey yielded 420 responses of which 99% recognized the buildings discussed in the survey confirming researchers' assumptions. The provided choice section of given answers provided an overall overview of respondents' views on heritage elements that in the researchers' point of view was important in terms of the placement of the buildings in urban heritage landscapes. On the other hand, the open-ended questions added an information layer of additional values important to users of the researched buildings.

4.1. Urban Landscape Context: Location

In the affirmative statement part of the survey, most respondents distinguished the importance of the definite building in the city landscape in urban, cultural and central location context (80% for Theatre Daile and 61% for Congress Centre). It was generally agreed that an important role in urban landscape characteristic to representational free-standing MOMO architecture play the open spaces surrounding the buildings. When prompted to mention the most valuable elements considering each building, 3,6% of responses concerning Theatre Daile named factors directly related to the location of the building in urban landscape, whereas concerning Congress Centre, this number was substantially higher — 14% of responses accentuated the high quality of the site — location of the building in the green space of the city centre near the scenic city channel and presence of the nearby fountain.

4.2. Cultural Context: Roots

Evaluating the place of the theatre and the building in the cultural history of Riga and Latvia, 24% of all open-ended question answers regarding theatre Daile recognized the epochal role, historical significance and prominence of the architect, as well as the high architectural quality, authenticity, and uniqueness. Apparently, the ambiguous history of the Congress Centre has influenced public opinion — only 11.5% of responses to various aspects of Cultural roots were noted as a significant value.

4.3. Symbolic, Spiritual and Social Context: Significance

Symbolic, spiritual, and social context: significance appeared to be among the least named values (depending on the building the mentioning ratio oscillates between 0.2% for spiritual values and 4% for cultural and symbolic value types). In these categories, such aspects as landmark status, uniqueness, as well as intangible values like aura, nostalgia (i.e. childhood memories) and a special atmosphere were named. Regarding social significance, cultural function accessible for general public proved to be another important value component for both buildings (11–12%). In case of The-

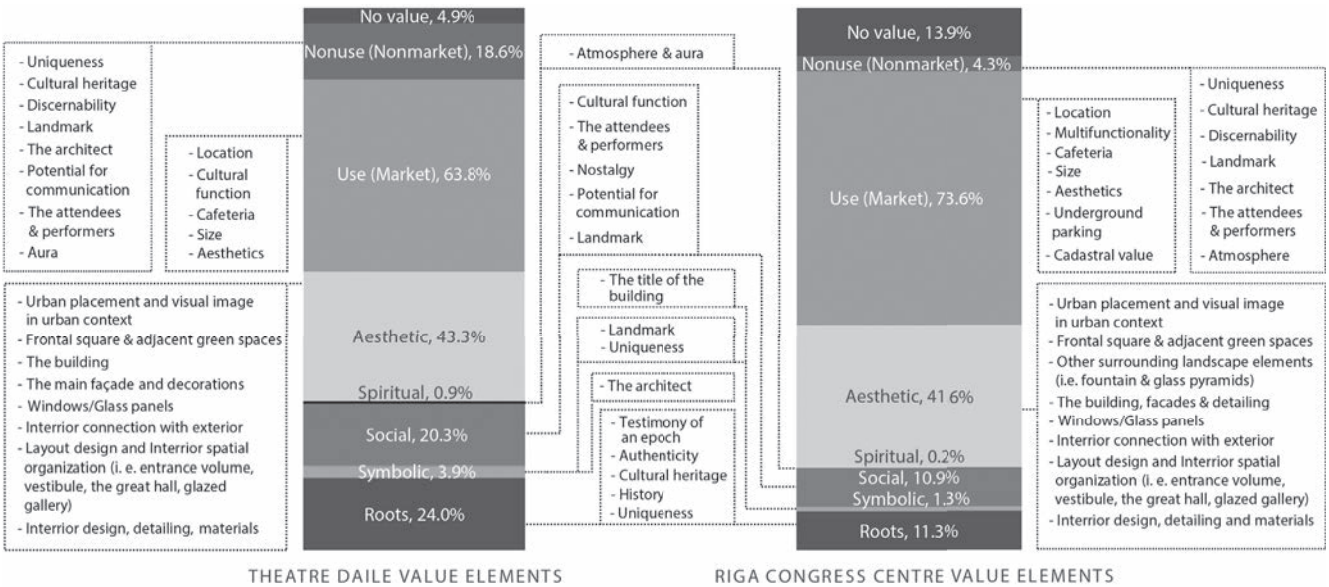


Fig. 4. **Value elements of Post-war MOMO buildings in Riga (results of survey). © Sandra Treija, Uģis Bratuškins, Līva Garkāje, 2020.**

atre Daile this value was complemented with appreciation (8% of total answers) of society members both attending and performing in it.

4.4. Aesthetic Context: Architecture

Although among experts theatre Daile design tends to be higher evaluated than the one of Congress Centre, respondents named various aesthetical factors as the most valuable with almost similar ratio for both (44% for theatre Daile; 42% for Congress Centre). For theatre Daile the most appreciated proved to be the building shapes together with facades and their detailing (29%) followed by interior design, its spatial layout and detailing (10%). Several people noted the abstract large-scale relief topping the main facade (2%). For Congress Centre the aesthetical appreciation was mainly divided between the frontal square & adjacent park (9%), the building shape together with facades and their material (15%) and interior design including its spatial layout, detailing and materials (12%).

4.5. Economic Context: Use (Market) Values

Economic context: use (market) values are those that are easily monetizable. Due to the very central locations and active public use even before the survey it was clear that both buildings must have high economical value. The research proved that an important role in real estate value is played as well by aesthetic qualities which for both buildings were the most noted value type. As a result, if counting aesthetical factors as contributors for theatre Daile use or market value type was acknowledged in 64% of responses, whereas for Congress Centre it was noted in 74% of responses (Fig. 4).

5. CONCLUSIONS

Public buildings of the Modern Movement are easily recognizable and remain being an active part of the city's cultural space, despite many years of operation. The main values of the Modern Movement heritage — a free-standing building in an actively used public outdoor space of the city — are still distinct qualities of the urban landscape of that time. Although the consistency of the public buildings of the Modern Movement has been a spacious forecourt corresponding with the significance and function of the building, nowadays little attention is paid to the functional and spatial quality of it.

There is a lack of consensus among the public on the value of Modern Movement buildings, either in their entirety or on separate parts, architectural elements or details. This poses an increased risk of authentic preservation of these buildings, that may be evidenced in the proposals for rebuilding these buildings where not always definite values to be preserved are identified.

Historical Urban Landscape mechanisms like educating the public on the concepts of modernist design of the environment, their implementation in a specific urban environment, and the values of the heritage apply to preserve and consolidate the values of Modern Movement.

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Session 2-b

THE EMERGENCE OF ENVIRONMENTAL AND CULTURAL CONSCIOUSNESS IN URBAN LANDSCAPES

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In the 1950s and 1960s, critical urban issues were focused on rapid population growth and the expansion of urban areas. These problems led to urban theories such as Metabolism. Since the 1970s, however, global environmental problems, contextualism, and anti-modernist movements have brought about new issues for architects and urban planners, such as conservation of the natural environment or preservation of cultural and historical heritage. Therefore, these issues require new urban theories to make an appropriate urban landscape by managing urban developments and preserving the natural environment and local culture.

This session consists of four papers: two explore urban form and system proposed by architects in the 1970s, and the others study the relationship between transformation of cities and urban heritage in the late 20th century. These papers will provide historical insights into realizing the urban landscape having a good relationship with the global environment, culture, and history.

Tiziano Aglieri Rinella's article, *The Pietiläs' project for the Deira Corniche in Dubai,* focuses on a masterplan of Dubai proposed by Finnish architects Reima and Raili Pietilä in a 1974 competition. The Finnish proposal was different from the others because they incorporate local culture and climate into urban development. Although their proposal was not selected in the competition, this paper argued that we should learn from their approach how to improve the current fragmented urban space in Dubai.

Maria Manuel Oliveira's article, *Beira Railway Station: Modern Architecture as an urban catalyst,* points out that the central station inaugurated in Beira, Mozambique, in 1966, designed by Portuguese architects, could be a valuable resource of what instigated the urban revitalization in Beira. Consisting of a lower part with an impressive arched entrance with a plain high-rise office, the station reflects the Modern Movement in Africa. However, contrary to the recognition of modern architectural heritage, this paper argues that urban planners have not utilized its strategic position in the city and attractiveness as a landmark to revitalize the urban landscape. Thus, this paper reminds us of the significance of preserving and utilizing unique modern heritage to improve the urban landscape.

Agnieszka Tomaszewicz and Joanna Majczyk's article, *"Terra-1". Urbanistic Utopias and the Modernism*, analyzes exhibited works of architects from various countries invited to the exhibition curated by the Polish architect Stefan Müller in 1975. Considering the destruction of the environment by industrialization and modern lifestyle, Müller asked them to propose their future visions showing a new relationship between the city and the earth. As a result, to criticize the current urban development or solve the urban issues they were facing, some architects proposed radical urban designs, and the others proposed remodeling the earth itself. Thus, this exhibition is one of the early cases showing a cross point between modern urban planning and global environmental issues.

Stephan Hauser's article, *Oil Is Dead, Its Heritage with It?*, describes a process of the disappearance of oil refinery facilities developed at Dunkirk, France, in the 19th century. Due to post-war urban development and increased public awareness of environmental issues, the paper clarifies that the facilities have been destroyed while invisible heritage such as toxic materials and institutions on the industrial legacy remains. We learn from this paper how the growing environmentalism since the 1970s complicates the preservation of industrial heritage and becomes a driving force to change urban landscapes.

In recent years, it is almost by default that we consider and incorporate global environmental issues and adaptation of social change closely when we think of the sustainability and morphology of our urban landscape. However,

some architects and urban planners have already paid attention to these issues since the late 20th century. They have proposed new urban forms and systems to solve the issues, and their ideal proposals could give us some implications to find innovative ideas for improving urban landscapes. Nevertheless, real cities have not changed according to the expectations of these architects. In other words, other factors have been significant for the transformation of urban landscapes. Therefore, the discussion on urban design in the late 20th century let us understand what were the driving forces to change urban landscapes in the period before sustainability becomes a global agenda. In this session, we will recognize the importance of studies on urban landscapes and urban designs from the 1960s to the 1980s.



THE PIETILÄS' AND BBPR'S PROJECTS FOR THE DEIRA CORNICHE IN DUBAI, 1974

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ABSTRACT.

In July 1974, the Dubai Municipality invited a selected group of international architects to the competition for a new master plan for the sea waterfront in the Deira neighborhood. Among them, the Finnish architects Reima and Raili Pietilä, the Italian group BBPR, and former Le Corbusier's collaborator George Candilis. In those years, following the discovery of oil in 1966, Dubai was undergoing a very fast urban development, quickly transforming the small village of traders and pearl divers in a new capital of the Arab world. The program outlined by the Municipality followed the guidelines settled by Dubai's second masterplan of 1971, designed by British architect John Harris, which proposed an expansion of the two old city's cores of Bur Dubai and Deira alongside the Creek. According to the municipality, the primary goals were the enhancement of the quality of urban life, creating visual and mental recreation for the inhabitants and an "environment of functional beauty". The Pietiläs' proposal stood out above all the other entries. The project considered the whole urban agglomeration of Dubai and proposed a balanced rational expansion, envisaging for the first time the creation of artificial islands and canals. A futuristic innovative vision was combined with a contextualist approach respectful of the local culture and climate conditions. Despite this, Pietiläs' proposal was not awarded, and after a first phase in which the municipality seemed to appreciate BBPR's entry, George Candilis' project was finally chosen. This paper presents, through unpublished documentation coming from the archives of the Museum of Finnish Architecture in Helsinki and from the BBPR archives in Milan, the visionary project by Reima and Raili Pietilä and the more pragmatic proposals of the other participants, in the complex framework of the urban landscape and the built heritage of Dubai. The Pietiläs proposed an innovative "culturalist" strategy for a controlled development respectful of the human values, in order to allow a more balanced urban growth. This approach should nowadays be remembered as a main requirement for a re-planning of the fragmented urban agglomeration of the contemporary Dubai.

1. INTRODUCTION

Nowadays Dubai is a composite agglomerate of urban clusters, which complexity is the results of urban dynamics mainly generated by economic interests that in last decades transformed the city with an unbearable rapidity. A crucial period, in which the future of the city was envisaged, were the years immediately following the discovery of oil in 1966 and the foundation of UAE in 1971.

When Sheikh Rashid II bin Saeed Al Maktoum became Ruler of Dubai in 1958, he started a wide program of interventions aimed at modernizing the city. In that time, Dubai was still a small agglomeration of buildings and non-permanent huts clustered around the two banks of the natural harbor of the Creek.

After commissioning the first master plan to British architect John Harris (1959–60), which provided a basic set of modern infrastructures, one of the first works accomplished by the Ruler was the dredging and widening of the Creek, in order to enable larger boats and coastal steamers to dock on it (1961). In addition to this, two new modern ports were built, Port Rashid (1972) adjacent to the Creek and the Jebel Ali Port (completed in 1979) near to the border with Abu Dhabi. These large infrastructures started the expansion of the city and settled a durable relation with its coastline, defining a guideline for its future expansion.[1]

It was soon evident that oil resources were limited and not lasting, hence the Emirate started to diversify its economy to attract foreign investments encouraging new economy sectors such as tourism, real estate, finance, and transport industry. These directions were reflected in a new 1971 master plan, which was however quickly overwhelmed by the Sheikh's ambitions. The Ruler fostered a rapid expansion of the city beyond his built-up borders, providing new neighbors connected by a growing road system. Western dwelling models where imported, and quickly the traditional urban fabric of the city was scattered by hi-rise buildings wrapped by curtain-wall facades, loosing its homogenous density and unity.

In July 1974, the Dubai Municipality launched an international design competition. A selected group of renowned architects were invited to submit proposals for a Master Plan Development of the Deira Sea Corniche (waterfront). Reima and Raili Pietilä, the Italian group BBPR and George Candilis were among them.

The program outlined by the Municipality did not concern only the design of the seafront, but considered a complete re-assessment of the whole urban agglomeration,[2] following the guidelines settled by the 1971 city's masterplan. The Creek was considered as the main axis for future development, as well as the coastline, extended reclaiming land from the sea.

According to the municipality, the primary goal was the enhancement of the quality of urban life, creating "visual" and "mental" recreation for the inhabitants and an "environment of functional beauty" along with an attractive coastal drive.[3]

The spirit of the competition reflected the state of eu-

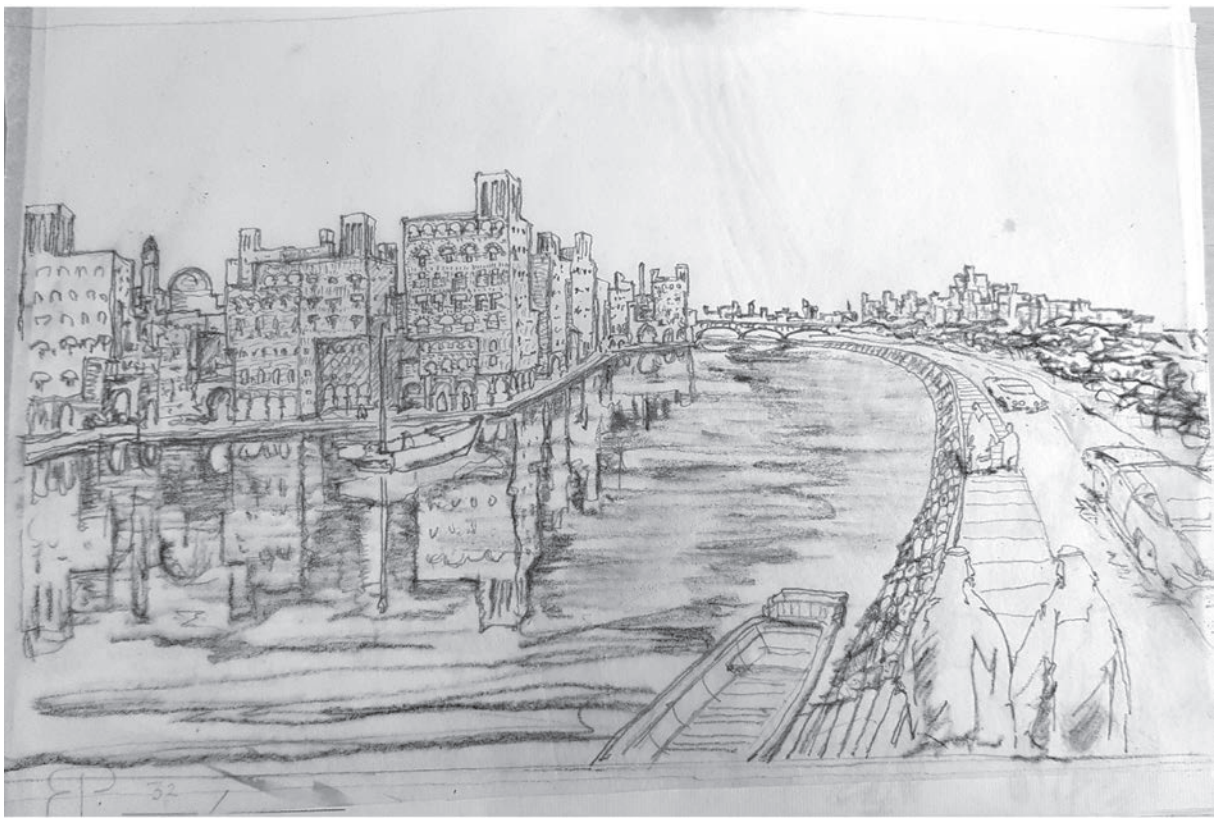


Fig. 1. **Reima and Raili Pietilä, Canal of the Deira Sea Corniche, perspective view, 1974. © Museum of Finnish Architecture.**

phoria of the young Arab country, which was experiencing a sudden unexpected wealth, bringing the Emirati to the international fore. In fact, the competition documents clearly expressed the desire to "give the city the image of a capital."[4]

Among all competition entries, Reima and Raili Pietilä's visionary proposal must be highlighted. The Finnish architects did not consider only the coastline but the whole urban agglomeration of Dubai and proposed a balanced rational expansion, with a surprising futuristic vision predicting the first artificial islands almost 40 years before their actual implementation and, at the same time, proposing solutions with a contextualist approach respectful of the local culture and climate conditions (Fig. 1).

2. REIMA AND RAILI PIETILÄ'S PROPOSAL

The main idea of the Pietiläs' proposal was to protect the city waterfront with a chain of connected artificial islands, which included housing, commercial, educational, cultural and sportive areas, separated from the original coastline by a longitudinal lagoon. This new offshore-city would also have interpreted the traditional Arab city in density, orientation, scale, etc., with a sustainable approach able to deal with the local climate issues. The Pietiläs claimed that all coastal cities in the region had a common model, thus they pursued a research on the most representative examples. Dubai had a poor architectural tradition, as a lot of its Bedouins population in the 70s was still living in tents and provisional shelters made of palm fronds (areesh). In the old core of the city, the few significant architectural models had been introduced from neighbor countries, mainly from Persia. As a consequence, in their attempt to define a semantic expression for the architecture of Dubai's future growth, they looked at the city of Mukalla in Yemen, on the other side of the Arabian peninsula.[5] The Pietiläs looked at the Yemenite city because of its straight relation with the water and the back landscape and for the attractive variety of its architecture, which they considered as a meaningful expression of the complex cultural influences of the Arabian region.

Since the beginning of the design process, they started to think about a reassessment of Dubai's urban structure around three main cores: the three "sister cities" of Bur Dubai, Deira and the new development of Khan Creek (at the end of the Creek). This solution pursued a decentralization of the congested center, allowing at the same time a centralization in the three different communities, conceived as "walled cities," organized around architectural landmarks with high-rise building standing along the borders, as to



Fig. 2. **Reima and Raili Pietilä, Deira Sea Corniche, Master Development Plan, 1974. © Museum of Finnish Architecture.**

"wrap" the lower buildings in the middle. This arrangement created two opposite space conditions: the feeling to be "inside" the community (inside the core space wrapped by high-rise buildings) or "outside", with wide-open views towards the desert or the sea (Fig. 2).

The evolution of the corniche's design is particularly interesting. After his in-depth investigation of the city's cultural values, he started with a general zoning of the coastline, defining functions and densities along the road following the tunnel under the creek. Since the beginning, the waterfront was intended to host public and recreational activities.

In a following phase, the Pietiläs considered the possibility to create artificial bays along the coastline (sketches dated on "19.8.1974" and "22.8.1974"[6]). The creation of this sequence of harbours, was a first attempt to extend the coast overall length, characterizing the areas and allocating different functions.

A sketch dated on "30.9.1974"[7] shows a sudden idea that will significantly affect the design, introducing a new main concept: in the corner between the outlet of the Creek and Deira, an architectural landmark marked as "St. Marco" is placed. It is a clear reference to San Marco Square in Venice with its bell tower. Starting from this moment, the Italian town becomes a fundamental reference. Dubai was already called "the Venice of the Gulf"[8] because of the Creek, which with its curve course, made the two towns looking vaguely similar from a top view. The Pietiläs' proposal will enhance this analogy with the creation of a Cornice canal, inspired by Canal Grande in Venice and connected as an extension to the Creek. The canal was formed creating a sequence of artificial islands in front of the new coastline, connected to the mainland by means of bridges (Fig. 3).

The reshaped coastline and the islands created an artificial lagoon, where the canal would have hosted several recreational and leisure activities connected by water taxis and waterbuses, as water was intended to become a central mode of transport. Each island had a mixed-use program, with taller residential buildings placed towards the canal side and the mainland, while open outdoor spaces and public facilities were facing the sea. Thus, each group of buildings formed a C-shaped body with an inner public space open to the sea.

The square of "St. Marco," in a strategic position between the Creek and the Corniche Canal, included a leisure complex with a Sea Museum, Climatic Gardens and the Al

Rashid Tower, the main architectural landmark of this core. Acting as the San Marco's Tower in Venice, and clearly visible from both sides of the Canal and the Creek, this building was intended to be an observatory tower with a revolving panoramic restaurant on top.

This new arrangement of the Corniche Canal was developed and presented as final proposal, and its founding spirit is visible in a remarkable free hand perspective sketch.

In their research for the semantic identity of the city, small-scale architectural elements such as arcades and gates became landmarks of a living urban unity.

Great attention was paid to the micro-climate of the city, looking at sustainable solutions of the traditional Islamic city: nearness and sun orientation of buildings, built density creating shadow to protect public walks and pedestrian areas, small alleys oriented towards the sea to grasp the sea breeze, and buildings with passive cooling and natural ventilation as in the local tradition of wind towers.

The Pietiläs referred to the Arab urban culture as a basis for an urban design able to answer to the harsh climate conditions. In terms of architectural elements, this was expressed by the use of arcades surrounding the plazas, covered passages under elevated connecting bridges, sun breakers as ceilings on top of market lanes, use of mashrabiya, Arab decorative pattern providing ventilation and shading but also enclosure to the street, and so forth. A proper hierarchy of spaces was set up, with gradual openings and levels of privacy, responding both to cultural and climatic needs. Even date palm trees, natural elements belonging to the local cultural landscape, were widely used to create semi-shaded realms, as in the traditional Arab city. Referring to the tradition, the Pietiläs intended to establish continuity, in setting the roots for Dubai's future growth.

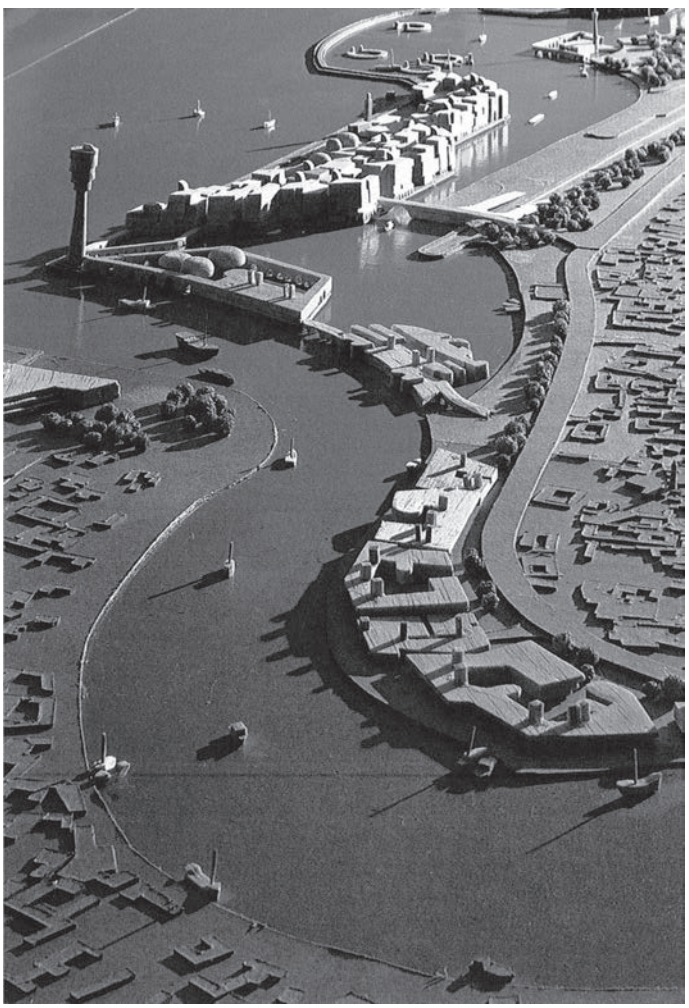


Fig. 3. **Reima and Raili Pietilä, Deira Sea Corniche, model of the canal, 1974. © Museum of Finnish Architecture.**

3. BBPR'S PROPOSAL

The Pietiläs proposal was the most detailed and in-depth researched of all competition entries, attempting to define even the city's architectural language and outlining details of many public buildings. Nevertheless, it established too many constraints for the developers, and its implementation would have been rather expensive.

As a consequence, the proposal initially shortlisted by the municipality was instead BBPR's one, which was much more flexible, simpler but also with a noteworthy different approach than the Pietiläs' one. BBPR's master plan was actually a simple functional zoning, following the tradition of Italian urban planning. It was organized alike a Piano Regolatore Generale with some areas further developed in more detailed Piani Particolareggiati. This simple zoning actually gave more freedom to developers, which were here just obliged to respect a general volumetry and to provide a basic vehicle circulation network, following a few essential guidelines (Fig. 4).[9]

BBPR's project shared a few common points with the Pietiläs' one, but presenting significant differences. Alike the Finnish architects, the Italian group paid great importance to the entrance of the Creek, considering this fundamental hinge as a landmark and providing a mixed-use development including hotels, shops and residences. A significant characteristic of BBPR's proposal was the attempt to re-intertwine the two portions of city of Deira and Bur Dubai, by means of a bridge conceived as a complex infrastructure including commercial activities and facilities on the two sides of the Creek.

However, the BBPR's master plan was focusing its attention only on the Deira coastline, not considering the whole city's extensive agglomeration as in the inclusive Pietiläs' vision. This choice significantly simplified the project that looks much simpler and less deepened than the Pietiläs' one. In addition to this, no research for a semantic expression of architecture was present, neither peculiar aspects regarding

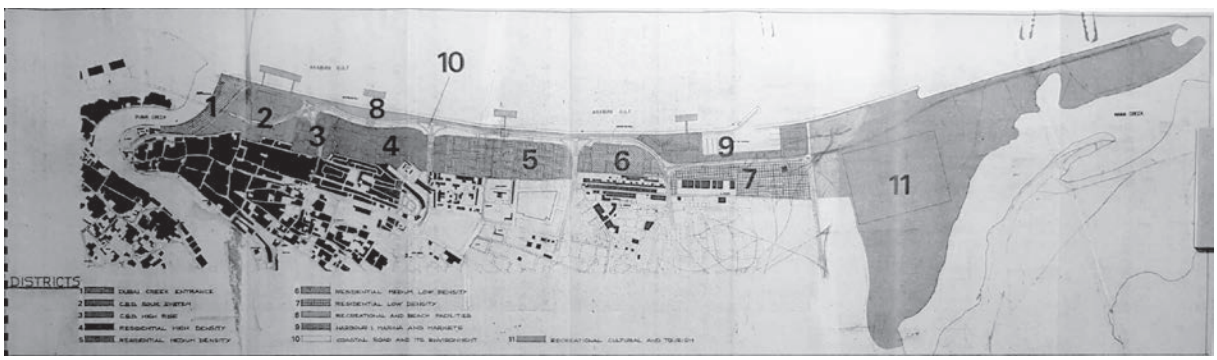


Fig. 4. **BBPR, Deira Sea Corniche, Master Development Plan, 1974. © Archivio BBPR.**

local weather conditions or research on the environmental context were particularly deepened. Whereas the Pietiläs developed a specific architectural lexicon rooted in the local cultural context, BBPR's project instead featured just a simple zoning and a volumetric planning not deepened in the architectural detail, maintaining a certain level of abstraction. Despite of their usual design approach, they didn't attempt here any reinterpretation of the local culture like the Pietiläs, but limited the design at a higher urban scale. The overall result seems to follow the guidelines of the late international modernism in urban planning, leaving to the single developer wide decisional power in architectural choices.

4. EPILOGUE

However, this initially shortlisted plan was not followed up anymore. During the summer, the French government entered into some commercial agreements with the Government of Dubai, and the French diplomacy pushed the Ruler of Dubai to abandon the BBPR's plan in favor of George Candilis' project, which was neither the most elaborated or the most flexible but was, at last, the awarded one.[10] Nevertheless, this last proposal was actually neither followed up, because of the unexpected sudden bursting urban growth of Dubai during the following decades, shifting the interests of Real Estate developers to other areas of Dubai, far away from the city center, where the cost of land was cheaper.

In 1981, to celebrate the 10th anniversary of the foundation of the UAE, Sheikh Rashid succeed in organizing the Formula 1 Gran Prix in Dubai. At this time, the city didn't have a sufficient network of roads large enough to accommodate a proper racetrack, so it was decided to create a new track on the reclaimed land of the Deira Sea Corniche competition site. In the middle of the track, the new Hyatt Regency Hotel was built, with a revolving restaurant at its rooftop that served as observation deck for the visitors. The Hyatt Regency Dubai, designed by Neuhaus + Taylor Architects, became for long time an important landmark and destination resort in the Deira corniche and it is still active even if the touristic interests shifted soon to the opposite side of the Creek, along Jumeirah beach. In the following years, Deira gradually lost its role as the economic center of Dubai, with a displacement of commercial activities on a much wider spread territory.

5. CONCLUSIONS

It has been widely observed that the Pietiläs' projects are no stranger to their place, not "out of place" but oriented "towards" it, "place-creating."[11] Being the first to imagine the creation in 1974 Dubai of artificial islands and peninsulas on reclaimed land, Reima Pietilä demonstrates his visionary capability to envisage the unpredictable future of the young city. Both Norberg-Schulz and Malcom Quantrill mention the "dream" in relation to his architecture[12] and this can explain his creative skills in creating a new place able at the same time to respect the existing context, enhancing its original identity as creating a new one with added urban value.

Pietilä's work has been also compared to the thoughts of Gaston Bachelard.[13] According to the French Philosopher, material imagination is in relation, as a direct consequence, with formal imagination. The oneiric imaginative experience comes first, the design and the construction follow. Bachelard clearly recognizes the importance of the Freudian unconscious. Pietilä dreams for Dubai a semantic architectural language rooted in the local context, and his imagination is influenced both by his past experiences and by his engagement, participation, and interest in the local environment and architecture.

The fast expansion of the next decades, alongside with a policy of urban development mainly focused on the financial interests of real estate developers, led to wide phenomena of urban sprawl that generated the nowadays lack of urban form of the city, scattered of desert urban voids side by side with high-raise and high-density compounds. The relation with the human scale and the balance of the traditional Arab urban fabric is nowadays lost in most of the recent de-

velopments, with a loss of identity and quality of life for large groups of the population.

Pietiläs' proposal tried to re-establish the old values of the urban space through "the cultivation of space" and "humanization of form."[14] The development of the technological revolution (importing western models) did not consider the primary human values and was destroying the cultural identity of the urban space in many Arab cities. Therefore, the Pietiläs proposed a "culturalist approach"[15] to attempt a respectful development of the tradition of the human and cultural values of the city to acquire a more balanced urban growth strategy, and this approach should perhaps be remembered as a main requirement for a re-planning of the fragmented urban agglomeration of nowadays Dubai.

NOTES

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BEIRA RAILWAY STATION: MODERN ARCHITECTURE AS AN URBAN CATALYST

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ABSTRACT.

Situated on the Indian Ocean coast, the city of Beira was, throughout the last century, a vital outlet for the inland African British-controlled territories. Inaugurated in 1966, the Beira Central Station was intended as a mark of Portuguese Colonial Africa modernity. After independence in 1975, the building's significance and importance for the city has persisted until today. In recent decades, however, due to economic decline and natural disasters, both the station and the city have suffered severe deterioration. But the cultural and symbolic significance of the building is also undeniably on the urban scale, and the railway station may become a critical factor in Beira's urban centre regeneration, furthermore performing an important social role. This paper aims to argue the importance of exploring the functional program as well as a participatory process in the rehabilitation methodology, thus reinforcing the potential of an iconic building of the Modern Movement as a catalyst for urban renewal and social cohesion of the city of Beira.

1. SITUATE, CONTEXTUALIZE

Inaugurated in 1966, and designed by Paulo de Melo Sampaio, Francisco José de Castro and João Garizo do Carmo, the Beira Central Station is a grand building that was conceived as a symbol of modernity developed in Portuguese Colonial Africa (Fig. 1). The recognition of the building's economic and social importance for the city persisted after independence in 1975. Nevertheless, over the past few decades, both the station and the city have suffered severe damage due to serious problems associated with the civil war that has devastated the country, the economic debility, and the lack of maintenance which the recent cyclone Idai has tragically accentuated.

Nowadays, as a result of declining railway freight traffic, the central station is clearly underused, and its physical condition has noticeably deteriorated, despite the evident care CFM has placed in safeguarding the building. Its exceptional architectural quality and the urgency to interrupt this cycle of progressive decay were recognised in 2019 by the Getty Foundation. The Keeping it Modern programme awarded a grant for the preparation of a Conservation Management Plan for the Beira Central Station (BCS).

2. RESEARCH: SEE AND HEAR, QUESTION, RELATE, CONFRONT, IMAGINE, ELABORATE A *COMPLEX THOUGHT*

We believe that rehabilitating a building only attains its full meaning if it reverberates beyond its strict physical circumstance and contributes to the urban quality and socio-economic cohesion of its environment. The premise of this view is to overcome a technocratic and reductionist understanding of rehabilitation, and to defend its complete significance. This is to say, it implies a critical interpretation of the context of the object under study through the research of its material and immaterial history, and to envision a desired (although plausible) future for it, construing the complex thought that will conduct the rehabilitation project. The *Burra Charter* (2013) and the concept of Baukultur (2018) are essential references in steering this process.

Since we acknowledge that the solutions are encrypted in the interrogations that arise with progressive rigor throughout the research process, questioning it is basilar in this type of approach. Thus, accompanying the architectural survey, some topics emerged as essential to be debated: What does Beira Central Station physically, culturally, and symbolically represent? How to transcend its immediate functional dimension? What socio-economic role, what urban representations does it want to fulfil? At which multiple scales can it perform? What uses can it have? And — underlying — what level of compatibility with these hypothetical uses will its architectural integrity support?

3. CRITICAL READING: TO INTERPRET, TO QUESTION, TO DEBATE, TO DESIGN THE FUTURE

3.1. The City and the Infrastructure: the Colonial Condition

At the time when the Beira Central Station was projected and built (1958–1966), the Portuguese colonial state was still experiencing a moment of confidence in the future of the Portuguese Overseas. Confirming it, there was a strong commitment by the regime to demonstrate its vitality, which resulted namely in the accelerated construction of large-scale infrastructure.

Although the Mozambican War of Independence broke out in 1964, the policies implemented by the Portuguese government aimed at developing the economy of the overseas provinces enabled economic growth that resulted in an expressive building movement both private and public. In this period, architectural production grew significantly and



Fig. 1. **Paulo de Melo Sampaio, Francisco José de Castro, João Garizo do Carmo, Beira Central Station (1958–1966), Beira, Mozambique.**
© MMO2019 (Beira city flag logo).

stamped the urban fabric through remarkable buildings, projecting an image of strength that the colonial regime wanted to promote in the face of international crescent criticism. Communication infrastructures — sea ports, railways, airways — were one of the main sectors covered by this developmental policy.

This conjuncture proved to be quite conducive to the assertion of the architectural modernity of these territories. Over there, there was greater freedom of expression in official architecture than in the 'metropolis', where it was more strictly controlled by the fascist regime. Thus, the affirmation of the Modern Movement achieved, on par with the declaration of contemporaneity to which it is intrinsic, contours of an opposite sign of political expression.

The history of Beira — the second largest town in Mozambique until recently — has since its early days been deeply connected to the concerted history of railway and sea port development in Mozambique.

Its establishment along the Indian Ocean in 1887 was dictated by geostrategic considerations aimed at dominating commercial access to the African hinterland. Representing the most interesting gateway to the sea from that territorial strip, in particular, from Zimbabwe and Malawi (formerly Rhodesia and Nyasaland), Beira transformed into the outlet for the inland African British-controlled territories. The railway line was inaugurated in 1894 and traffic on the Sena line (an essential line for the flow of coal) that links Malawi and Moatize to Beira opened in 1922. The first mooring berth to complement this railway line was built at the end of the decade.

The growth of the city was evident. An urban plan was designed to control it (José Porto e Ribeiro Alegre, 1943) and



Fig. 2. **View of the city from Beira Central Station. © MMO2019.**

from then on, the expansion of Beira was based on a modernist matrix. From the mid-1950s, a new wave of development began, on par with a calling as a summer resort that colonial settlers from neighbouring British territories imprinted with a definite cosmopolitan flavour.

It is in this context of social and economic dynamism that a young generation of talented architects and engineers recently arrived from Portugal found an opportunity to realise projects that reflected their link to the principles of the Modern Movement. That is how in the mid-20th Century an exceptional number of buildings affiliated with the Modern Movement were built, covering very different uses, scales, and typologies and giving Beira a distinct modern atmosphere. Amongst a multiplicity of remarkable buildings, the railway station, inaugurated in 1966, stands out.

3.2. New readings for (Fading) Central Station

The Beira Central Station is a structure of great relevance in the Modern Movement panorama, and it is possible to find several publications that refer to the building. However, those studies focus mainly on its architectural attributes, where themes related to its current and future urban role in the city of Beira has yet to be explored.

The station consists of three main pieces, designed simultaneously by different architects: the pier area, attributed to Garizo do Carmo, includes an extensive logistical structure with 1400m² where the warehouses, employee offices, and waiting rooms are located; a parallelepiped volume, by Melo Sampaio (with a 81.4x14.5m rectangular base and 7 floors above ground level, a total of 8260m²), where the offices of CFM, State bodies, and private offices are located; and, by Francisco José de Castro, the parabolic nave of the entrance that, along with the ground floor of offices' volume is about 1900m², and houses the grand public atrium, access and vertical connections to the upper floors, as well as several station and public services (ticket offices, restaurants, toilets, etc).

It should be noted that about 1/3 of the offices are not assigned to the railway. According to a recent local survey, a spatial reorganisation could free up more space, attracting other uses and different public and activities.

Despite all this spatial display, the urban movement the station generates is limited to its workers and to very little railway traffic, which is mostly dedicated to the transport of goods. Although undeniable as an icon, the presence of Beira Central Station in the city remains well behind what it could represent in both urban daily life and cultural activity. This circumstance is explicitly reflected in its frontal square (**Fig. 2**), which has never attained the intense public life that such infrastructure usually implies.

In fact, the building appears as a body inserted in an unresolved urban fragment, away from city life. But in favour of the reversal of this situation, the station is located very close to the old and traditional centre of the city, the *Baixa*, also marked by multiple buildings of Modern character. Within a 1000m radius commercial and service areas (shops and banks, hotels, etc.) are well established, as are the main administrative facilities (Municipal Council and Court House) and some of the most significant urban plazas (**Fig. 3**). In addition, important cultural facilities like the *Casa do Artista* are also situated nearby.

On the other hand, the proximity of the station to the Chiveve River — considered as the heart and lungs of the city —, where the construction of an extensive urban park that will cross the city is currently underway, must be taken into account. Framed by the Cities and Climate Changes Project and linked to environmental issues (such as the conservation of the ecosystem and flood control), in addition to educational and recreational purposes, this park will receive a set of collective equipment to complement the existing ones, namely, the public pools and the *Casa dos Bicos*, two noteworthy modern buildings. And it will certainly also be interesting to relate these facilities to the nearby sports complex owned by CFM (another Modern and remarkable



Fig. 3. **Location of major urban landmarks nearby Central Station. © MMO2019, over a Google Earth aerial view, 2019.**

piece, recently restored), thus contributing to the expansion of the urban equipment net of the neighbourhood.

The station's proximity to the Pungué River must not be ignored either. Whereas the cargo port will always have conditioned access, the area where the fishing dock is currently located, at the top of Chiveve Park, 200m from the station, can be envisioned as an instance of urban contact with the river itself. In the medium term, perhaps the city can find an interesting opening point on the water here, favouring the urban enjoyment of the riverfront.

Additionally, it would be necessary that the urban approach to this area contemplate the renovation of the shantytown that has since settled in the contiguous former block of CFM workers, a very interesting example of wood and metal housing design. An inclusive approach, not gentrifying, that could provide residents with decent living conditions, and function as a cutting-edge laboratory for the social integration of the vast sections of poor people in the city (Fig. 4).

3.3. In Favour of a Comprehensive Understanding of the Building

All of the hypotheses that could be related and rooted in the rehabilitation of the BCS will, however, have to be considered in the urban planning of Beira. As it turns out, the plan of 1943 integrated the station in the urban composition that coherently extended to it and framed it into a formal urban square. Despite the great strength of the '50s and '60s, the city's development never managed to accomplish the urban fabric defined in the plan. And the area of the station remained incomplete, an unfulfilled design to this day.

This failure could, however, open previously unsuspected possibilities to the contemporary urban planning. But, actually, most recent plans (1999 and 2013) neither include the railway nor the station in the broader project of the city beyond the condition of a cargo terminal connected to the sea port. According to those plans, the BCS will remain enclosed in its space-functional stronghold, without an urban



Fig. 4. **Children who live in the vicinity of the station. © MMO2019.**

reflection.

From the perspective of rehabilitation advocated here, it will then be necessary for CFM to take on the role of an actor involved in the socio-economic development of the city. This is why it is essential to value the rethinking of the functional programme at par with research surrounding the material condition of the building and the technical solutions for its rehabilitation. Especially, in circumstances of this nature, where an enlarged complicity is required, the involvement of the political administration, as well as other urban agents and local communities will also be essential.

In the case of BCS, there are some pressing questions: will it be interesting to install general public services open to the public? Renting office space to private individuals? Are building architectural features favourable to the provision of services to the community?

One wonders, especially, if the railway will expand its scope, including in its objectives the transportation of passengers, nowadays largely reduced. In fact, this possibility — which none of the existing urban plans bring forth — is structuring and would not only renew the building's use but would also contribute to reorganising the deficient local public transport system. In this vision of the future, the station along with its surrounding land could possibly be home to Beira's intermodal centre for rail, land, and river transportation. If adopted, such a solution would obviously have a high impact on the functional and civic rehabilitation of the BCS and its surrounding area.

The building's rehabilitation itself could be a motto for local education and economic development: giving special attention to the training of labour workers in the various arts in the construction and restoration sector; reactivating the manufacturing of construction elements, such as *brise-soleil* and aluminium frames, whose factories are still in operation; and, namely, promoting studies on the ceramic tiles used, tending to their restoration. As a landmark of the city, the Station could furthermore be opened for public visits, strengthening itself as an element of the city's identity and thus contributing to the public recognition of Beira's wide architectural heritage.

4. TECHNIQUE AND ETHICS: MAKING ARCHITECTURE, QUALITY, SUSTAINABILITY, HISTORY, AND CHANGE COMPATIBLE

Programmes for collective use are believed to be essential components to the conservation of cultural assets. It is through this use that the value and appropriation of heritage by the community is socially asserted and, consequently, its social and political interest, which is indispensible for obtaining the resources necessary for its maintenance.

Thus, the Programming Phase will be a central moment to the rehabilitation strategy because it will reconcile uses and functions with the physical and patrimonial support that the station offers, valuing it. This methodology means taking on a participatory and co-responsible process that should consider the CFM, as the owner, the community and political and economic stakeholders; it also means that architectural hierarchies will need to be defined, establishing principles that safeguard the tectonic integrity of the building. The search for solutions that are attentive to the environmental and financial sustainability of the building must also be considered otherwise, the intervention may not contribute to the effective and sustainable revitalisation of the building.

Facing current needs as potentialities for a future that will unfold at different times and understanding the building as a complex urban infrastructure, even as an instrument of socio-cultural and urban development, the adoption of a comprehensive strategy that induces scaling effects and amplifies results is proposed in this prime phase of rehabilitation. This process includes several simultaneous approaches:

- the rigorous study of the building in its historical, architectonic, artistic and functional components, contributing to the debate of cultural assimilation of buildings over time, acutely sensitive in the post-colonial context;
- the integration of the station in the city's urban strategy;
- the involvement of the local political administration and of the community in the process, aimed at a broad social consensus;
- the elaboration of a functional programme that incorporates valences that are revitalising for the building

and urbanistically significant;

- the design of an architectural programme that ensures compatibility between the envisaged uses and the architectural value of the building;
- the consideration of the building as a potential research laboratory for the knowledge of modern architecture and the training of labour in rehabilitation and restoration.

Being a strong commitment to the community, the functional reprogramming that will accompany the building's rehabilitation design can add decisively to the improvement of the urban and environmental conditions of the whole area, furthermore performing an important social role. Assuming its complexity and contradictions, the project should consider the multi-layered scales and contexts that can favour and polarize an urban centrality, too fragile today.

It is believed that by adopting this methodology in its rehabilitation, the Beira Railway Station can be achieved as an urban catalyst in Beira's urban development, contributing to the ethic planning of our future cityscape, while preserving the legacy of the MoMo.

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"TERRA-1". INTENTIONAL ARCHITECTURE EXHIBITION: URBANISTIC UTOPIAS AND THE MODERNISM

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ABSTRACT.

In the mid-1970s, the world was roughly divided into two blocs — the "western" bloc, made up of capitalist states led by the United States of America (North America), and the "eastern" socialist states (at least in theory), founded by the Union of the Soviet Socialist Republic and its satellite states. In Europe, the two blocks were divided by the Berlin Wall, which was the symbol of the Cold War and the border that hindered the free movement of people, thoughts, and ideas. Paradoxically, it was in Poland, one of the countries in the Soviet Union's sphere of influence, that the architectural exhibition "Terra-1" was held in 1975, which today is considered "an unprecedented event on a global scale". The objective of the event was to "present and confront progressive architectural thought", and the exhibitors included, among others, Constantinos Doxiadis (1913–1975), Rem Koolhaas and Elia Zenghelis, Aldo Rossi (1931–1997) and Donatella Mazzoleni, Yona Friedman, as well as Minoru Takeyama and Yōichirō Hosaka. Many participants of the exhibition presented their visions of the future development of the Earth, which, to a large extent, illustrated the fears of citizens of industrialised countries. Numerous attempts to redefine the relationship between natural and urban areas were presented, guided by a fairly common belief in the need to protect the natural environment that was being destroyed by rapid industrialisation, toxic chemical compounds used in agriculture, as well as nuclear tests intensively carried out, especially in the 1960s. The exhibition projects forgotten today, were often provocative, showing solutions at the borderline of ideas and matter, but most of them fostered a dialogue with the assumptions of modernist urban planning.

1. "TERRA-1"_INTRODUCTION

The "Terra-1" International Exhibition of Intentional Architecture was organized upon the initiative of Stefan Müller (1934–2018), one of the most influential Polish architects of the second half of the 20th century, a fierce enemy of treating architectural design as art. Nevertheless, in his own work, he kept eagerly combining functionalism with "fine art play", predictable geometry with conceptualism, clearly exposing the ideas behind his designs. With the Intentional Architecture Exhibition, similarly to the architects associated in the pre-war CIAM (Congrès internationaux d'architecture moderne), Müller wished to create a forum for the exchange of thoughts and reflections on the condition of contemporary architecture and to provide an opportunity to move away from its paradigms. To find starting points for discussion, Müller asked selected artists to attempt to answer the following questions: "Which are the elements of the contemporary architecture concept with respect to material goods or ideas? Can architecture and urban planning be separated, and if so, where is the division line? What is the relationship between the natural and the biological environment and total urbanization processes?".[1] The exhibition accompanied the congress of the International Association of Art Critics (AICA), held in Warsaw, the capital of Poland under the banner of "Relationship between art, science and technology as a factor of social development in our era". The adopted motto established a quite obvious link between this project and the last pre-WW2 CIAM congress, which took place in Paris in the glare of the international "Art and Technology" exhibition.

The participants of the "Terra-1" exhibition were given full freedom in choosing the forms of recording their concept, and, what is more, it was planned to show all submitted works to the public. Architects and artists from Western and Southern Europe, Japan, and the United States responded to Müller's invitation and submitted 57 designs, drafts and statements. The works presented during this exhibition were widely discussed and described in the press, they arouse admiration with the variety of solutions adopted, whose aim was, as one of the commentators wrote, "to find the lost balance in the future urbanised world".[2] Until today, most of these projects have fallen into oblivion, so they did not get any critical attention today. The text presented below, which was written after a thorough analysis of unpublished materials collected in local archives, is intended to reduce the gap in research on modern architecture.

2. "TERRA-1"_MODERNISM IN THE MID-1970S

In the mid-1970s it seemed that the assumptions of modernist urban planning were not only stale but also discredited. In 1961, Jane Jacobs' book "The Death and Life of Great American Cities" was published, today deemed iconic, in which the author assumed "an attack, as she wrote herself, on the current [i.e. modernist] city planning and re-

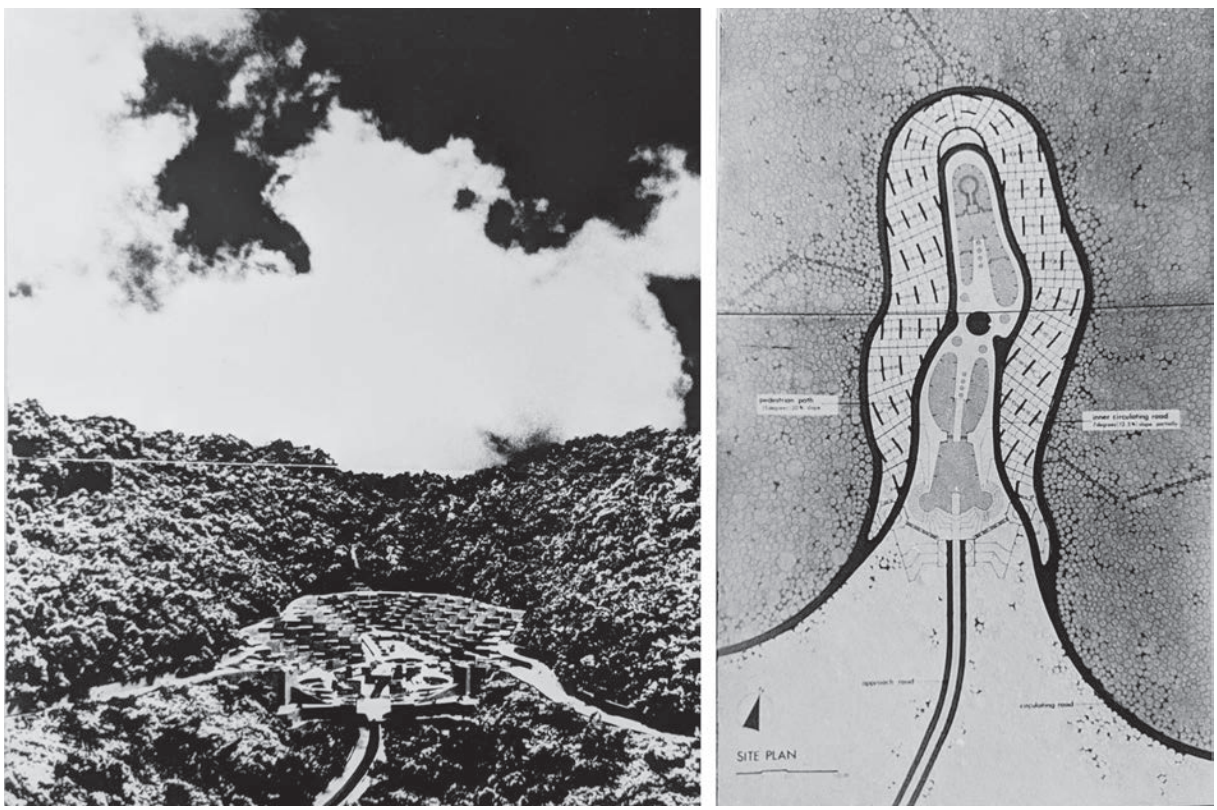


Fig. 1. **"Terra-1" Intentional Architecture Exhibition 1975, chart with design of Yōichirō Hosaki. © Museum of Architecture, Wroclaw, Poland.**

building".[3] Jacobs defended the traditional structure of the city, streets, alleys, squares, in brief, the diversity, which she treated as an element of "social capital" and urban identity. In 1972, in Saint Louis, USA, Pruitt-Igoe, the first "modernist" housing estate consisting of thirty-three repetitive blocks of flats, was spectacularly demolished. Like the Corbusier's "skyscrapers in the park", they were placed in parallel rows in an empty area cleared of other buildings. The reason for the collapse of the estate primarily included the policy of municipal authorities, which, after having financed the construction of these blocks, were unwilling to pay for their upkeep, the economic situation of Saint Louis and racial segregation. Nevertheless, even in contemporary literature, it is relatively easy to find opinions that Pruitt-Igoe became a black ghetto exactly because of the modernist urban planning and aesthetics of the estate. "It is the architecture and urban planning blindly following the dogmas proclaimed by the prophets of a future utopia, such as Le Corbusier, that bears a large part of the blame for this state of affairs[4]," Wade Graham still wrote in 2016 in his popular "Dream Cities". Not surprisingly, the participants of the "Terra-1" exhibition divided into two groups — some of them negated the modernism legacy in their concepts, whereas others used it to create new values, and some even tried to "revive" the ideas presented during pre-WW2 CIAM congresses.

3. "TERRA-1"_IDEAS

The twilight of modern architecture and urban planning was noticed among others by Yōichirō Hosaka, a Japanese architect, who at the "Terra-1" exhibition presented the concept of new settlement as an alternative to rapidly developing cities. The proposed residential complex, a fragment of a larger whole, consisted of small and repetitive "neighbourhood units", joint by a single communication axis (**Fig. 1**). The phytomorphic elements of the development were placed in the valley and filled with low, compact buildings organized in a terraced layout, which, in terms of relief type, as Hosaka phrased it, created "an artificial landscape". This approach to urban composition brought this architect closer to the authors of Bauhaus, but in contrast to them, Hosaka planned a closed structure of individual developments. Each settlement unit was shielded from the outside by a forest which acted as a barrier against noise and fumes, whereas its complex internal organization with maze of streets "known — a as the architect states — to its day-to-day users" and "protected" from intruders, but not from residents. Hosaka believed that „the concept of unrestricted plan which has been

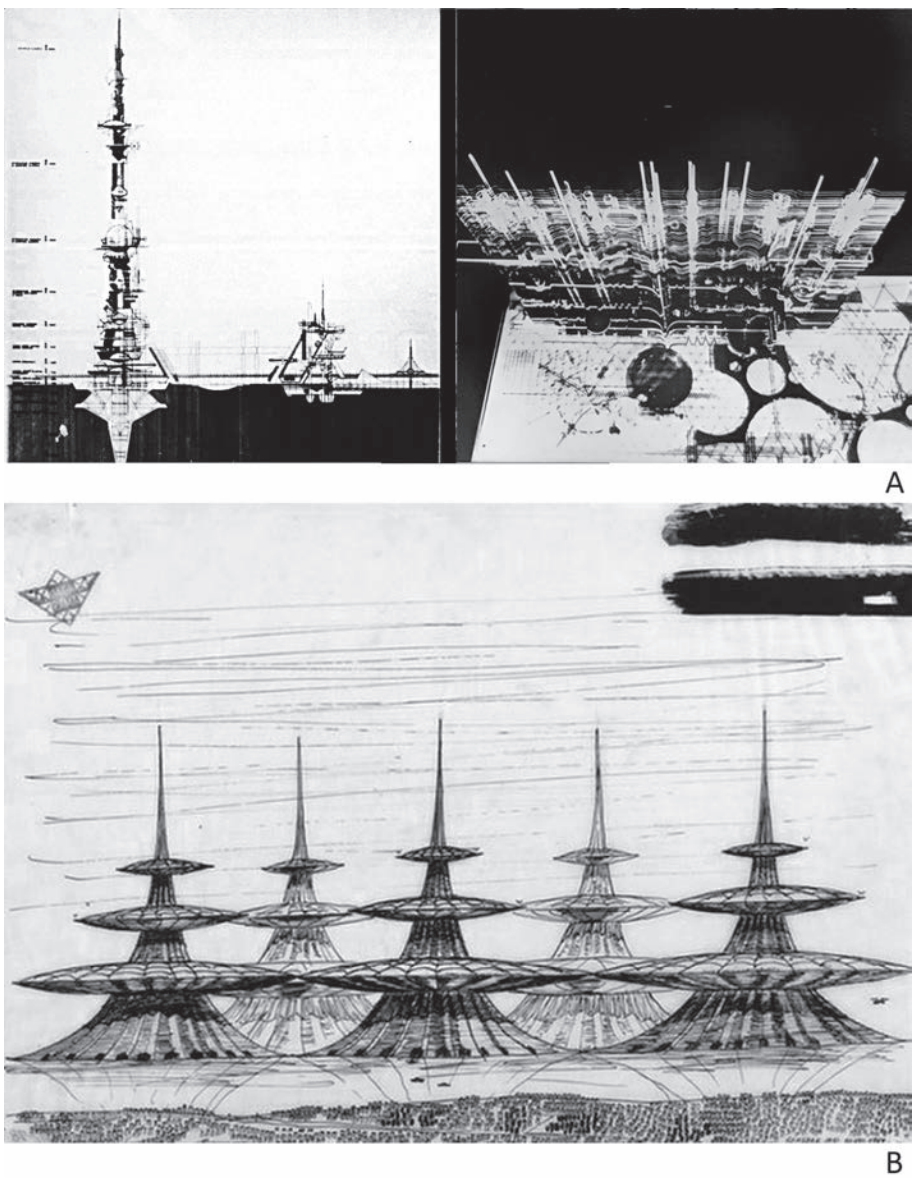


Fig. 2. **"Terra-1" Intentional Architecture Exhibition 1975, fragments of charts with designs of a) Aldo Rossi and Donatello Mazzoleni, b) Jan Głuszak. © Museum of Architecture, Wroclaw, Poland.**

pursued by modern architecture has succeeded in giving a variation in development of individual buildings, however, failed in fostering a faculty to form a unified group"[5] and therefore he proposed a change in design methods and departure from functionalism towards structuralism.

Another, much larger group of participants of the "Terra-1" exhibition presented works that referred directly to the assumptions of the "Athens Charter" or Le Corbusier's theoretical urban concepts. The Italian architects, Aldo Rossi and Donatella Mazzoleni, presented a "vertical city" being a megastructure characterized by full integration of functions and concentration of technical devices (**Fig. 2a**). Although in its form this structure made a reference to organic architecture, in the ideological layer it was an expansion of Corbusier's concept of "a cycle of everyday functions", regulated by "time-saving urban planning".[6] Inspired by the Japanese metabolists, Rossi and Mazzoleni predicted that the "city" they created would undergo cyclical, spontaneous transformations in response to the changing needs of its inhabitants. The concept of the Italian architects was a part of a rather broad trend for designing "cities heading towards heaven" initiated by Eugène Hénard ("City of the Future", 1910) and Ludwig Hilberseimer ("Vertical City", 1924), and then, after WW2, developed among others by Archigram architects and Paul Maymont ("Ville Verticale", 1960). Many of the participants of the "Terra-1" exhibition presented de-

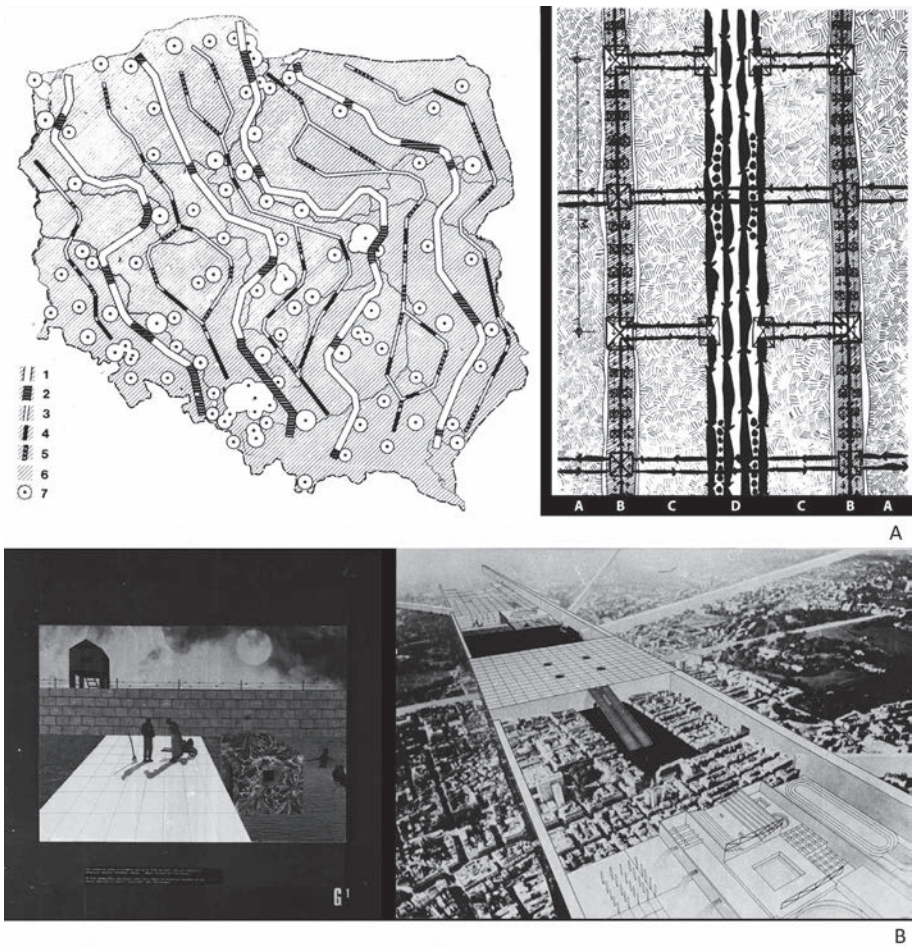


Fig. 3. **"Terra-1" Intentional Architecture Exhibition 1975, fragments of charts with designs of a) Oskar Hansen, Zofia Hansen and Svein Hatløy, b) Rem Koolhaas and Elia Zenghelis. © Museum of Architecture, Wroclaw, Poland.**

signs of buildings being variations of the Corbusier's "skyscrapers in the park", but this time not given boxed forms but organic shapes inspired by the animate matter. Jan Głuszak (1937–2000), a Polish artist, presented several concepts of autonomous residential units, designed in the 1960s. He claimed that "new materials and structures, new scales, and new needs will liberate architecture from its heaviness. The new architecture will become a structure and a symbol. Buildings will become large sculptures, glowing with multi-coloured lights and movement".[7] Głuszak's mega-structures, with their heights ranging from half a thousand to eight thousand meters, were intended for several hundred thousand or even a million of residents, their structure and furnishings were diversified and adapted to different climatic zones, not only of the Earth but also of Mars (Fig. 2b).

Some artists used their exhibition works to refer to the concept of a linear city in the form of a "production line". The idea was promoted by Soviet constructivists and was based on CIAM architects' ideas adapted to their own needs. In the post-WW2 period, in Poland, some attempts were observed to implement linear urban layouts for regional planning. A work by Oskar Hansen, Zofia Hansen and Svein Hatløy entitled: "Linearny System Ciągły" [Linear Continuous System] was presented at the "Terra-1" exhibition. It provided for inscribing residential lines running from the North to the Sound into the existing network of spot-wise cities and settlements (Fig. 3a). It was assumed that the system would consist of four main residential strips with services and the necessary communication and of industrial strips situated between them. It was planned to devote unexploited space for farming and recreational purposes. Rem Koolhaas and Elia Zenghelis presented a concept of a linear "city" placed within the structure of contemporary London. In addition to the obvious reference to Corbusier's Plan Voisin, the design entitled "Exodus or voluntary prisoners of architecture" was inspired by the Berlin Wall and the special status of West Berlin, which during the Cold War period was seen as an oasis of prosperity and freedom in the now non-existent German Democratic Republic. In the London concept, the architects limited the existing city centre tissue with two walls (Fig. 3b), in between which they placed eleven square modules of varied intended purpose, partially defined by the

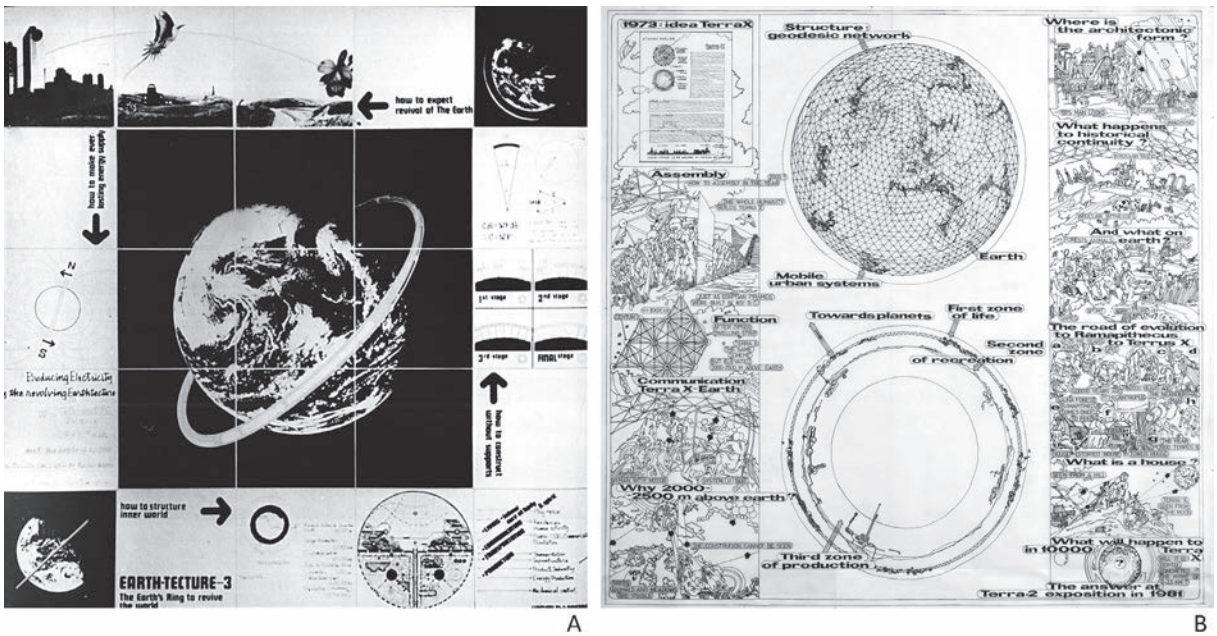


Fig. 4. **"Terra-1" Intentional Architecture Exhibition 1975, charts with designs of a) Minoru Takeyama, b) Stefan Müller. © Museum of Architecture, Wroclaw, Poland.**

users themselves. As in the mythological Elysium, the inhabitants of the new city experienced only happiness and joy and had their most sophisticated spiritual and aesthetic needs satisfied. Koolhaas and Zenghelis understood the enslavement of the "voluntary prisoners" as liberation from the toxic, in their opinion, architecture of the "old" London. The form of the new residential strip, resembling a concentration camp with barracks made of "marble, chrome and steel", obviously ridiculing the absurdities of 1970s consumptionism.

A parody of the vision of total urbanization, so close to the modernists and this time extending on an extra-terrestrial scale, was presented independently by Minoru Takeyama, a Japanese architect, and Stefan Müller, the already mentioned Polish artist. Takeyama developed the concept of "Earth-Tecture", which was basically a geodesic grid covering the whole globe. The architect treated the artificial Earth's shell as a model of a "conceptual tool to search for relations of art, science, and technology as a factor in the social development of our epoch"[8], as he ironically worded it himself. Using in the presented concept the geodesic dome house of Richard Buckminster Fuller, the "global architect", and endorsing by a quote of the motto of an art-critics' congress accompanying the "Terra-1" exhibition, Takeyama sneered the belief that it is possible to find a universal recipe for the world's urban development. He himself proposed to "liberate" the Blue Planet from humans and move them to a residential ring located 2000km away from the Earth's surface (Fig. 4a). Interestingly, the internal structure of this ring mirrored the assumptions of the "functional city" quite well and provided for the separation of "living, working, healing the body and spirit, communication and production". Stefan Müller presented a similar concept of a self-supporting geodesic grid stretched over the Earth at an altitude of about 2000–2500 meters (Fig. 4b). The grid provided structural support for assembling mobile "urbanization systems consisting of: terrestrial and interplanetary communication systems, residential and service units and workplaces. A "folk zone" intended for broadly understood recreation was designed on the surface of the Earth and "freed" from unnecessary structures only leaving the most valuable buildings which acted as "witnesses" of the past. Another zone was located underground and was intended for production and waste management. Many years later, Müller explained the convergence of his work to Takeyama's concept with the "spirit of the times". As he stressed, "such were the times and such were ideas floating in the air".[9]

4. "TERRA-1"_EPILOGUE

In spite of the great hopes staked on the "Terra-1" exhibition, it basically failed to set the directions of the development of residential architecture all over the world. No summary was formulated, and the manifestos of individual artists did not provide a basis for creating a coherent urban planning program such as the "Athens Charter". Few architects tried to find an answer to the question on the future of existing cities asked to the participants of the 4th CIAM Congress. Twenty years after WW2, the choice between rebuilding the city or decentralizing it, i.e. building relatively

independent, spatially limited settlement units, was still subject to discussion. Most "Terra-1" exhibitors leaned towards the latter solution and looked for new city models for the future. The notion of a "functional city" was widely accepted, but rather as Le Corbusier interpreted it (he believed that "a city as a functional unit should develop in harmony each in of its parts"[10]), but as Joseph Lluís Sert did, another participant in the 4th CIAM Congress who recorded and published its findings under the enigmatic title of "Can Our Cities Survive?" (1942). Sert emphasized the cultural and spiritual dimension of the balance between the specific city functions, stressing that "the city will not be functional until it satisfies and stimulates also the noblest aspirations of its inhabitants for a better life, which have always encouraged people to live in a community. The pursuit of welfare and spiritual perfection stimulates and enhances the exchange of ideas typical of civilization".[11] According to Le Corbusier, the city was to develop "harmoniously", for Sert, however, "organically". A short overview of the works presented at the "Terra-1" exhibition has shown that the architects perceived "organic" through the prism of the achievements of Japanese metabolists, whereas Sert called for comprehensive urban planning and treating them as elements of a hierarchical structure "subordinate to the needs of the region". The rationale behind dividing the city into parts representing four basic functions: living, working, leisure, and communication were generally denied, but alternatives were rarely presented and "difficult" subjects, such as industry and communication, were avoided and mostly "hidden" underground.

However, a significant part of the concepts presented at the Polish exhibition was based on the assumptions of modernist urban planning and pushed them to the point of absurdity. The importance of "open space — air, light, and greenery" was emphasized even if light and air were supplied artificially to the designed residential megastructures. Height was exploited no longer to make the city areas free of buildings available to the inhabitants but in order to free the Earth's surface from the inhabitants. Subordination of the design to human needs was declared, even if the entire population was accommodated in outer space barracks. The attitude of architects towards historical buildings, protected only if they "were part of the heritage of mankind" did not change. In other cases, they were "devoured" by new settlements, as in the concept of Koolhaas and Zenghelis.

The "Athens Charter", basically forgotten today, constituted documentation of modern humanities, as the modernists were right to assume that "the first task of urban planning is to satisfy basic human needs".[12] However, the history of "real modernism" has shown that the designs of large housing units mainly focused on the engineering dimension of the structure, which was no longer just an ordinary building, but rather a residential machine. It seems that what was the strongest link between the participants of the "Terra-1" exhibition and the pre-WW2 avant-garde architects was the fascination with technology as well as the conviction about the unique role of architecture and its creators in shaping the residential environment ("Architecture is the key to every single thing"[13]). In the 1970s, architects continued to play the role of demiurges developing the whole world. Not only did they want to design houses, they also attempted to influence the behaviour of the population. Few of them made tentative attempts to involve users in shaping spaces dedicated to them, and still fewer, like Yona Friedman, called the architects to "empower the public and make them believe in their own urban planning skills".[14]

NOTES

1 Stefan Müller, *Międzynarodowa Wystawa Architektury Intencjonalnej "Terra-1", ["Terra-1" International Exhibition of Intentional Architecture],* conceptual underpinnings (typescript, Museum of Architecture, Wrocław, Poland).
2 A. Gabryszewski, "Odra. Miesięcznik Kulturalny", *Terra 1,* 1976, No. 1, 82.
3 Jane Jacobs, *The Death and Life of Great American Cities*, New York, Random House, 1961, 3.
4 Wade Graham, *Dream Cities. Seven Urban Ideas That Shape the World,* New York, Harper Perennial, 2016, 135.
5 Yōichirō Hosaka, *Nega-Space in Valley,* description of the design submitted for "Terra-1" Intentional Architecture Exhibition, 1975 (typescript, Museum of Architecture, Wroclaw, Poland).
6 Le Corbusier, *Athens Charter*, conclusions, No. 79.
7 Jan Głuszak, "O architekturze" [On architecture], *Dagarama. Powrót do przyszłości [Dagarama. Return to the future],* Wroclaw, Museum of Architecture 2011, 31.
8 Minoru Takeyama, description of the design submitted for "Terra-1" Intentional Architecture Exhibition, 1975 (typescript, Museum of Architecture, Wroclaw, Poland).
9 *Terra, ze Stefanem Müllerem rozmawiają Michał Duda i Roman Rutkowski [Terra, an interview of Michał Duda and Roman Rutkowski with Stefan Müller],* "Autoportret" 2011, Vol. 2 (34), 47.
10 Le Corbusier, *Athens Charter,* conclusions, No. 84.
11 Joseph Lluís Sert, *Can Our Cities Survive? An ABC of Urban Problems, Their Analysis, Their Solutions, Based on the Proposals Formulated by the CIAM (International Congresses for Modern Architecture/Congres Internationaux d'Architecture Moderne),* Cambridge, Harvard University Press, 1942, 228.
12 Le Corbusier, *Athens Charter*, conclusions, No. 71.
13 Ibidem, conclusions, No. 92.
14 Yona Friedman, description of the design submitted for "Terra-1" Intentional Architecture Exhibition, 1975 (typescript, Museum of Architecture, Wroclaw, Poland).

OIL IS DEAD, ITS HERITAGE WITH IT?

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ABSTRACT.

Oil, as a resource, was a great contributor to the development of the Modern Movement. Its planning techniques came with the creation of intimate relationships between living and working areas. The "Cité des Ingénieurs" of the former refinery of Dunkirk, in France, was an excellent illustration of this process.

When environmental and health concerns together with economic and climatic challenges emerged, western refineries and the urban tissue around them were reconsidered. The *Cité* of Dunkirk had to face the growing pollution and noise issues that were going hand in hand with a need for better living conditions of the employees. Deserted and demolished, its neighbouring refinery is now experiencing the same fate. The emergence of stricter regulations, the acknowledgment of a transitional need and economic reasons linked to a lack of profitability induced the loss of this industrial heritage.

This paper examines how oil industry influenced the urban planning of Dunkirk and how the evolution of the environmental concern led to this result. The analysis of old and current environmental rules will highlight the evolution of the legal framework, while the observation of aerial pictures will illustrate the change generated by new rules on the planning of cities in general, and port cities in particular. The work of Master students of the Faculty of Architecture of TU Delft will also exemplify how new perspectives can provide a future to this industrial heritage.

1. INTRODUCTION

The development of many port cities in the world was closely linked to the growth of the petroleum industry. The structures that oil activities created for its expansion shaped entire areas in strategic ports for nations and the global economy. The first establishment of oil facilities in western European ports occurred in the mid of the 19th century, with imports from the United States and Russia. The growing need of society for oil products went hand in hand with a great consumption of space in port cities, with storage sites, refineries, and, in some cases, housings for employees. To exemplify this close relationship between the oil industry and the urban planning of port cities, the metropolitan area of Dunkirk seems like a perfect illustration.[1]

Dunkirk is located on the north coast of France, near the Belgian border. The French nation-state considered this port city as a strategically important place for infrastructure and trade. Oil businessmen and companies were no different as the first refinery of the port city was established in 1861, in the early stage of oil developments. This old and close relationship between petroleum and Dunkirk influenced the shape, evolution and, after the WWII, renewal of the port city.

The change of perspective towards security, health and environmental rules progressively affected this relationship, especially since the 1970s. The population grew concerns on the quality of its environment and health. It led to the creation of new regulations in European countries on industrial hazards. Many of these measures, however, emerged in reaction to incidents and implemented new urban practices.

Motivated by the challenge of the energy transition, citizens and some politicians are pushing forward to abandon this cheap and polluting oil. If the image of the almighty oil is outwardly dead, its heritage remains, but the lack of anticipation in its transformation or preservation could mean the loss of its built legacy.

This paper thus details how the oil industry and the rise of environmentalism influenced the development of the port city after the WWII, and how, following this movement, the oil heritage became more and more invisible in Dunkirk. The analysis of archives, aerial pictures, regulations, and disasters demonstrates this change in the way of planning and living around oil facilities in the port city.

2. THE INFLUENCE OF OIL IN THE DEVELOPMENT OF DUNKIRK

Right from the beginning of the oil activity, people have been investing in this resource on Dunkirk's territory. Local businessmen such as J-B. Trystram started, with the first refinery in 1861,[2] to develop this intimate relationship between the port city and the oil resource. Following this first initiative, more than fifteen industrial sites related to petroleum were created around but also within the port city.[3] Archives revealed a lack of security measures at the time, allowing citizens to settle close to industrial sites.

In some cases, though, the company managing the refinery was building houses for its employees. British Petroleum (BP) did this on multiple occasions, like in Abaddan in Iran with an entire city, and, on a smaller scale, in Dunkirk. In the case of the French port city, the construction and influence of BP were both direct and indirect. The company built two *Cités* or neighbourhoods for its employees. One that the oil company directly built right next to its refinery

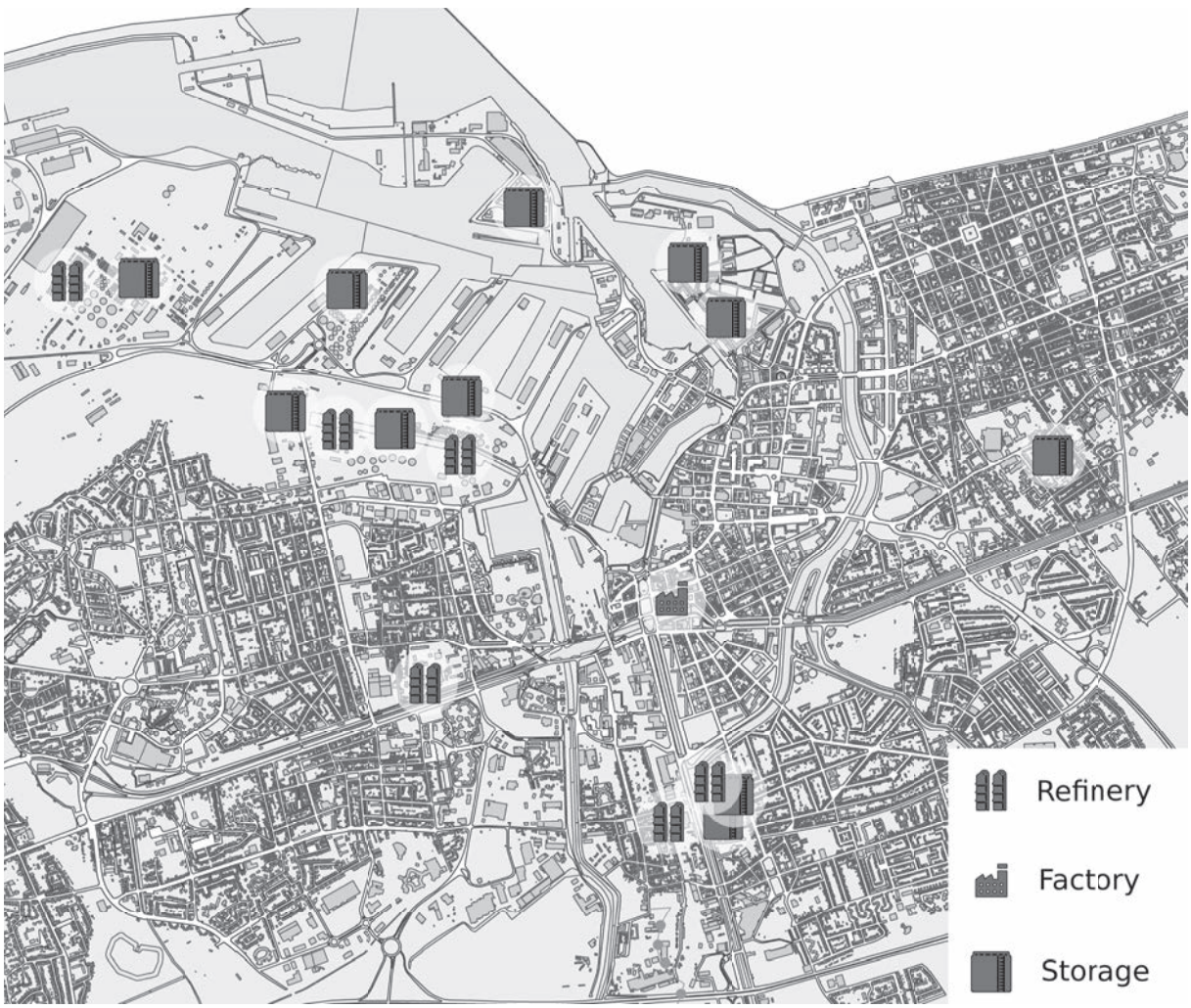


Fig. 1. **Dunkirk, France. Mapping of the oil-related sites (refineries, factories, storages and gas and oil pipelines) created since 1860 in the port city of Dunkirk. The *Cité des Ingénieurs* is in the area of the BP Refinery. © Stephan Hauser (the map based on the actual map and GIS files of the city provided by the Learning Center of Dunkirk)**

— the city of engineers or *Cité des Ingénieurs* — while the employees built the other one, in the metropolitan area of Dunkirk, with the financial help of their company — the *Cité Bayard* (Fig. 1).

The Dutch Maxime Winders designed the city of engineers for Pure Fina, the previous owner of the refinery, in 1931. The *Cité*, rebuilt after the WWII, was composed of twenty-three spacious and luxurious houses, with all the modern comfort possible. The *Cité* was also located next to the refinery to allow executives to intervene quickly in case of incidents. As the facility was away from the urban tissue, the *Cité* was also disconnected from Dunkirk itself. The rail network visible in Fig. 2 divided the metropolitan area in housing and industrial parts, enhancing the feeling of division between the city and its port.

The other cité, *Cité Bayard*, was located on the city side of Dunkirk. While BP rebuilt housings for its executives, the lack of means and available houses pushed other employees and citizens to build their homes by themselves. This movement of collaborative auto-construction, called Castors, was progressively supported by funds from the refinery in the city of Dunkirk. Two hundred houses were progressively created in this new *Cité* (Fig. 3).

In addition to creating housing and new neighbourhoods, these constructions also upgraded the living conditions in Dunkirk. Due to bombing raids during the Second WWII, 70% of the city of Dunkirk was destroyed, and only a third of the population came back in 1946.[4] The reconstruction of Dunkirk represented a great opportunity for renewal with new urban strategies for the most important French port of the north coast. The port expanded dramatically during this period due to the arrival and development of steel



Fig. 2. **Dunkirk, France, 1957, aerial picture of the west side of the metropolitan area of Dunkirk. © IGN, Remonter le Temps https://remonterletemps.ign.fr/.**

and petroleum industries, which subsequently reshaped the coastal image as well as the city's environment. The consumption of natural spaces around the city was the first consequence of this horizontal development.

3. PLANNING WITH OIL: A REACTIVE PROCESS

Industrial activities were great economic opportunities for cities, and as such, were barely constrained by legal measures in their early developments. This process led to a terrible practice of reaction to industrial catastrophes in the adoption of binding rules. There was a need for incidents to demonstrate the weaknesses of planning practices.

The citizens of Dunkirk, with its oil history, experienced multiple incidents related to the use, storage, or transformation of this resource. Although in 1810, before the rise of oil industry, a French imperial decree required a distance between housings and industries, disasters were still necessary to improve planning policies. The fire of the Billow, a boat transporting oil from Boston to Dunkirk, in 1868, surely influenced the creation of a dedicated dock for oil when the port was later modified.[6] The explosion of the refinery Clère-Boilet in 1891, located in the middle of the city of Coudekerque-Branche, burned houses and caused the death of multiple people.[7] This tragedy triggered an administrative reaction. The conditions in authorisations to establish such industries were extended. New adaptations were enforced, with the appearance of walls around facilities and basins to limit the expansion of leaks and fires.

All these incidents and their consequences are early examples of the way local and national administrations were dealing with industry in general, and oil in particular. Letters and comments found in archived official records regularly warned public authorities. Yet, only incidents led to an evolution of the legal framework surrounding oil industry. This reactive mechanism is still in use in modern planning.[8]

The Council directive "on the major-accident hazards of certain industrial activities" of 1982, also known as the Direc-



Fig. 3. **Dunkirk, France. An abandoned house from the *Cité des Ingénieurs*. © La Voix du Nord[5].**

tive Seveso, was a reaction of the European level to improve health, safety, spatial and environmental regulations.[9] This rule appeared after an industrial incident in the area of Seveso in Italy in 1976. The release of a dangerous product from a chemical plant led the residential population to evacuate. This event created a European classification on industrial sites that posed sever industrial risks for the population. It also produced adaptations and distance requirements between these dangerous sites and housings, nearly two hundred years after the similar provisions of the French imperial decree.

Later industrial disasters influenced the content of the rule in France and developed new prevention tools, such as risk management plans.[10] The objective behind this document was to arrange restricted areas around sensitive industrial facilities where the construction of housings was forbidden or subject to additional conditions. This process of spatial division with spaces dedicated to specific activities enhanced the remoteness feeling of citizens of port cities with their ports. In the case of Dunkirk, the port expanded on the west side, away from living zones. These security, spatial, and health measures impacted the very existence of the city of engineers, which was not complying anymore with the rules.

4. ENVIRONMENTALISM AND THE UNDEAD HERITAGE OF OIL

The new policy on security and spatial planning around industrial sites was not the only factor impacting the planning of the port city of Dunkirk and the *Cité* of BP's refinery. At the beginning of the 1970s, out of conferences and reports loomed an interest in the notion of environment for politics.[11] The beginning of this environmentalism movement echoed the growing need of the population for better living conditions.

The galloping industrialisation of the Thirty Glorious — thirty years of full employment and economic growth in western countries after the WWII — had detrimental effects on the quality of life of port cities' citizens, which aspired for cleaner water and air. The inhabitants of the city of engineers were no different.

Although benefiting of all the modern comfort, the location of the houses was not only right next to the refinery but also within the industrial territory of the port of Dunkirk. The *Cité* began to empty in the 1970s, especially after the activation of the steel site Usinor less than a kilometre away. Noise, odour, and pollution became the daily life of the inhabitants of the city of engineers.[12] By 1995, BP's city was deserted. Still maintained, the city was partially destroyed in 2002, before disappearing in 2018, when began the transformation of the site.[13] The dismantling phase of the industrial facility should finish in 2020, erasing all visible traces of nearly a century of oil activities.

This lost heritage could have been an illustration of past practices of oil companies and their influence on the planning of port cities in western Europe. Even though the in-

dustrial transition of the port of Dunkirk produced new techniques of depollution and demolition to be used on other sites, this built heritage is disappearing. These buildings were out of the reach of municipal authorities of Dunkirk because located within the territory and the competence of its port authority. As such, the area became an opportunity to reclaim the space and develop other economic activities.

The transformation of oil sites in Dunkirk did not affect the *Cité Bayard*. The *Cité* is still a living neighbourhood, and stands as a remnant of the oil influence on the development of the metropolitan area. The hand of oil on this neighbourhood is however fading with the disappearance of its benefactor. Located at the border between port and city, but in the limit of the latter, the environmental and security regulations applied to industrial sites did not threaten the area.

There is more to the notion of oil heritage than its visible part. For most of the refineries that settled in the port city of Dunkirk there was a common remaining and invisible heritage: pollution. Oil sites disappeared through history in Dunkirk at a time where environmental and health concerns were irrelevant. As such these spaces have, for the vast majority, never been cleaned, and the pollution remained. This invisible heritage of oil has been forgotten by public authorities, leading to a change of destination incompatible with the situation of the soil.[14]

The influence of oil companies on the creation or application of regulations in the fields of environment, space and health is also another heritage of their activities. Although this impact is more on the national and European scale, it is indirectly affecting port cities. By slowing down the energy transition and diminishing the cleaning constraints in laws, oil companies, through their lobbying, are hampering the transformation of port cities like Dunkirk.

NOTES

1 The metropolitan area of Dunkirk is composed of 21 cities. The paper focuses mostly on the cities of Dunkirk and Saint-Pol-sur-Mer.
2 Jean Denise, *La Belle Époque À Dunkerque* [in French], Vol. 3, 1988.
3 The 15 sites were the one found on the official website (http://www.georisques.gouv.fr/) listing past industrial sites. However, more were created, closed and lost.
4 Anne Lebel, "La Reconstruction," accessed on December 20, 2019, https://www.ville-dunkerque.fr/decouvrir-sortir-bouger/histoire-patrimoine/lhistoire-de-dunkerque/la-reconstruction/.
5 In an article of La Voix Du Nord by Estelle Jolivet, the 5th of January, "Dunkerque: Le logement, l'autre empreinte de la BP dans le Dunkerquois."
6 Although after many incidents the transhipment of oil had already been relocated to the east of the port. With the modification of the port produced by the Freycinet Plan of 1878, the last basin became dedicated to oil, with storages, pipelines to refineries of the port city, and a floating dam to avoid burning oil to spread on the surface.
7 Jean Denise, *La Belle Époque À Dunkerque* [in French], Vol. 3, 1988.
8 The Seveso incident in Italy in 1976 or the AZF disaster in Toulouse, France, in 2001, illustrate this reactive process in modern practices.
9 Council Directive 82/501/EEC of 24 June 1982, accessed on December 20, 2019, https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:31982L0501&-from=FR.
10 After the explosion of the facility AZF in Toulouse, France, on the 21st September 2011, a Risk Act (''Loi Risques'') was enacted, creating new risk management plans for high risk industrial plants (PPRT, stands for ''Plan de Prévention des Risques Technologiques'').
11 In 1972 the first Earth Summit was held in Stockholm, with the most famous one being the Rio Summit in 1992. The report of the Club of Rome on the unsustainable consumption of resources, also published in 1972, was of great importance even if dismissed by elites and politicians. It allowed the introduction of more environmental talks in political discussions.
12 According to interviews of former inhabitants of the ''Cité des Ingénieurs'' in the journal ''La Voix du Nord'', the 16th of May 2002, by Julien Lecuyer.
13 The refinery closed in 2016.
14 The research topic of the author's PhD and the writing of other articles show the existence of housings, schools and kinder gardens on some former oil sites.

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Session 2-c

ANALYSING MODERNIST INFLUENCES ON HISTORIC URBAN PLANNING AND LANDSCAPES

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This session has a continuous thread which focuses on the examination of buildings and plans that have had historic modernist influences in their evolution, whose authors are reappraising within our contemporary engagement with modernist history. Stepa's exploration and analysis of Gdinya discusses the development of the town and its links to international architects from Russia and Germany at a unique period of post war history. Dunnet's analysis of the King's Cross redevelopment in comparison of le corb's modernist plans and ideas for Paris provides a deep critique of contemporary planning practices from a modern perspective. Kesim and Yoney's provocatively titled Urban Pornography chapter discusses how places can be anti-places or no places and challenge the authentic through false notions of identity and significance. With references and examples to this phenomenon elsewhere in the "West" the paper dwells on Turkish examples of non-architecture and maintains that this phenomenon remains a feature of today's architectural landscape. The presentations end with Goad's impressionistic and detailed description of `Melbourne's Olympic park and how modernism in design and function led to less well documented ways in which it made and continues to make its mark on Melbourne today. The varied nature of material and contributions to this panel make it one that it is well worth listening to and considering the issues relevant to contemporary times that this range of papers bring up.



URBAN PORNOGRAPHY: ANTI-PLACES OF MODERN ARCHITECTURAL HERITAGE IN TURKEY

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ABSTRACT.

Places are distinctive yet sometimes architecture may degrade them by design: Rebuilding the same architectural entity may not always reproduce the authentic place and its attributes but instead create anti-places in the urban environment, which may absorb and deprive the surrounding settings by creating sameness. The term pornography here has no erotic connotations but describes an image-oriented anti-design attitude, the way architects may create anti-places by copying, pasting, overemphasizing, and thus, objectifying certain place attributes. The urban-scape exposed by architectural design and deprived of its dignity is urban pornography.

The paper focuses on two examples from Turkey: The Turkish Monopoly Liquor and Cognac Factory (Mecidiyeköy, Istanbul; Rob Mallet-Stevens, 1930), now rebuilt as Mecidiyeköy Towers (EAA, Istanbul, 2010–2017) and the Sait Bey and Semih Rüstem villas (Atatürk Street, Adana; Semih Rüstem Temel, 1932), now rebuilt as Semih Rüstem Commercial Center (MArS Architects, Istanbul, 2006–2012), both with a more than 10-fold increase in built area. The reconstruction in both cases was based on a declaration of being unfit in terms of function and technology beyond the obvious urban pressure of increasing the built-up area. Although both listed, the reconstructions did not preserve any characteristics or original architectural elements except for the general form and parts of the authentic names. Ultimately, the paper identifies this eradication of character and the creation of anti-places upon the case studies, perhaps the greatest threat against modern architectural heritage in urban areas.

1. INTRODUCTION: URBAN PORNOGRAPHY & PORNOGRAPHIC ATTITUDE IN ARCHITECTURE

Architecture may have a particularistic/selective approach in urban place design. Some architects suppose that rebuilding the perfect replica(s) of architectural heritage/work(s) would also reproduce the authentic place attribute(s). However, this approach creates anti-places in the urban environment, and these anti-places absorb and deprive their context by creating sameness. Anti-design produces urban landscapes by copying, pasting and overemphasizing and thus, objectifying certain attributes of places, or in other words, creates urban pornography.

Pornography originated in English in the mid-19th century from the Ancient Greek word *pornographos*, meaning "writing about prostitutes". It was coined from the words *pórnē* (prostitute) and *gráphein* (write, record or depict). Today pornography is defined as "printed or visual material containing the explicit description or display of sexual organs or activity, intended to stimulate sexual excitement".[1] In other words, it is an exposition of particular sexual symbols instead of experiencing sexuality. The human body is the source object, and pornography degenerates actual sexual experience by virtually overemphasizing significant corporeal attributes.

A similar situation may occur in the urban environment. Design behaviour degenerates particular architectural settings, in which the authentic architectural place is the source object. In the way that pornography uses significant attributes of the human body, urban pornography uses the attributes of distinctive places. Copying and pasting authentic and inauthentic place-based attributes and creating collage like environments decreases their significance.

Relph defined Placelessness as the casual eradication of places. Urban pornography is a degeneration of architectural places but not a casual eradication. It is indeed a conscious degradation for non-architectural/non-place-making attitudes.[2] This anti-design was called "playboy-architecture" by Siegfried Giedion:

> *A kind of playboy-architecture became* en vogue*: an architecture treated as playboys treat life, jumping from one sensation to another and quickly bored from everything.*[3]

Urban pornography is a limited and short-termed pleasure taken from the urban landscape by playboy-architects. Giedion also intended the term as a critique of the international style: Playboy-architecture is described as an attitude that degenerates the built environment by creating architectural duplicates. Duplication, copying, and cloning creates a boring sameness in the built environment that destroys *Genius Loci*:[4]

> *The approach to the past only becomes creative when the architect is able to enter into its inner meaning and content. It degenerates into a dangerous pastime when one is merely hunting for forms: playboy architecture.*[5]

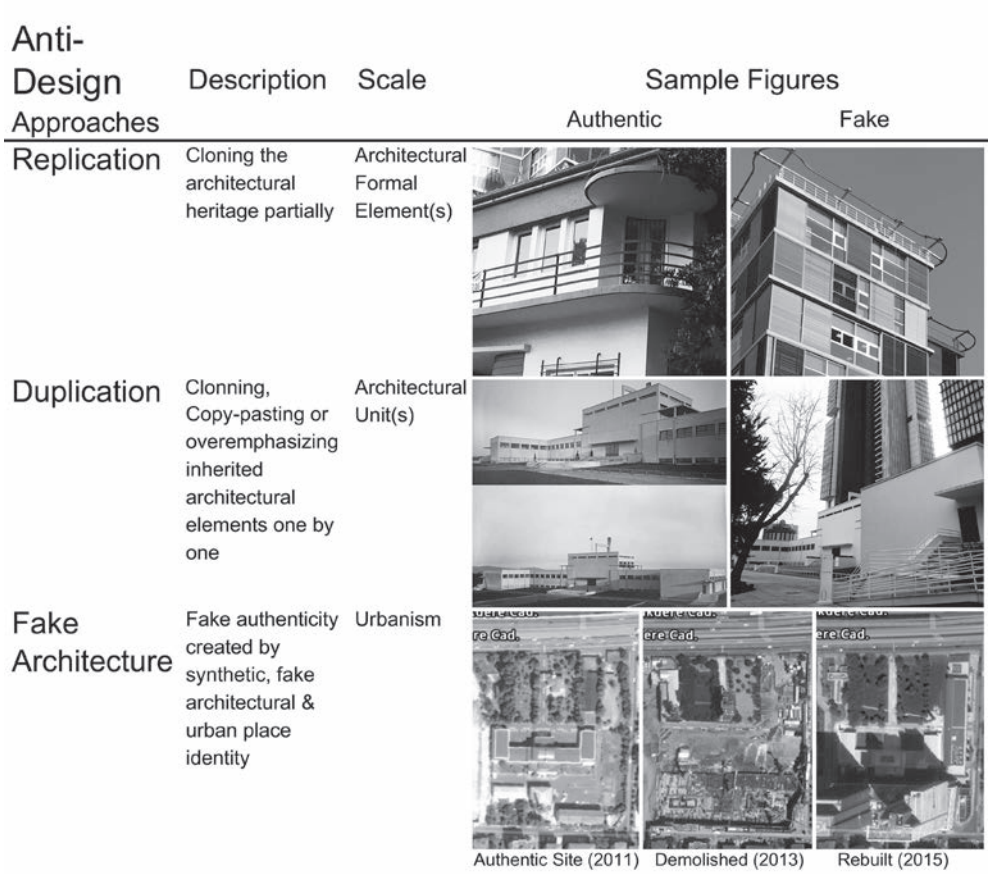


Fig. 1. **Creating Anti-Places by Pornographic Attitude in Rebuilding of Modern Architectural Heritage.**

There is a clear difference between inspiration and duplication. Inspiration is a creative process. Architects may be inspired by authentic architecture and characteristics, and produce new architectural forms.[6] On the other hand, duplication of a unique work in content or meaning degenerates its significance. Random reproduction of particular forms in architectural design becomes a pornographic attitude just like pornography exposing parts of the human body for the illusion of sexuality. Urban Pornography is the cityscape exposed by architecture.

2. ANTI-PLACE

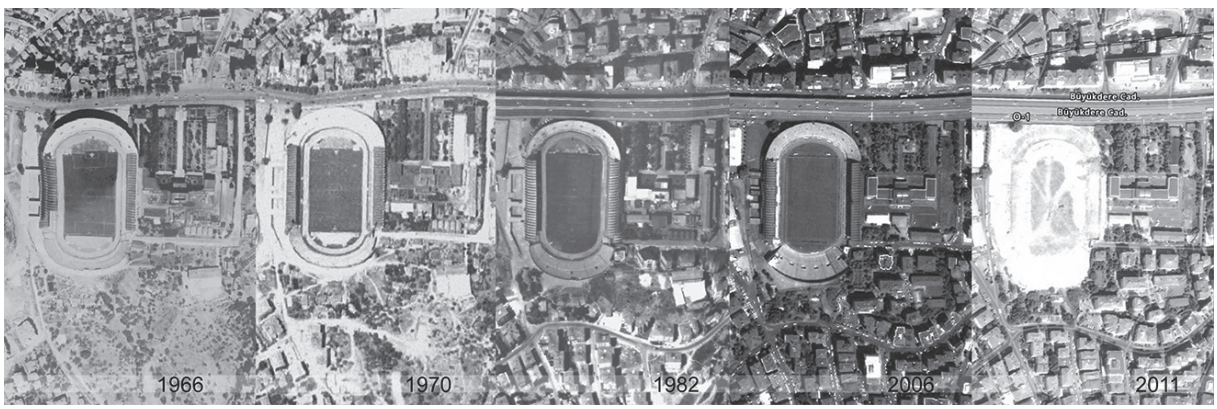
Place and Anti-place are two sides of the placemaking phenomenon, the conscious production of Anti-places would deprive urbanscape of meaning and content.[7] Geographers lament the deliberate design of Anti-places: Place deprivation was described through the concepts of Non-place, Loss of Place, and Placelessness by different researchers.[8]

Non-place mostly represents a spatial excess, overabundance or crowding in the urban environment that causes place deprivation. Augé uses the term for explaining the spaces of supermodernity, such as airport lounges, motorways, shopping malls, and hotels.[9] He states that "Super-modernity (which stems simultaneously from the three figures of excess: overabundance of events, spatial overabundance, and the individualization of references) naturally finds its full expression in non-places".

Loss of Place denotes the monotonous urban environment especially built after the destruction of WWII. Norberg-Schulz blames the modernism-motivated need for rapid transformation following the war. This concept focuses on the time component and the procedure of urbanisation rather than its relatives:

> *After the second world war most places have been subjected to profound changes. The qualities which traditionally distinguished human settlements have been corrupted or have got irreparably lost. Reconstructed or new towns also look very different from the places of the past ...*
> *... The character of the present-day environment is usually distinguished by monotony.*[10]

Placelessness provides a more sophisticated framework for identifying deprivation: "Placelessness is an attitude and an expression of that attitude which is becoming increasing-



ly dominant, and that it is less and less possible to have a deeply felt sense of place or to create places authentically".[11] Relph identified this inauthentic attitude in architecture and urbanism in terms of "cutting roots, eroding symbols, replacing diversity with uniformity and experiential order with conceptual order".[12] He emphasized "places treated as things" caused such depravation and identified its types by giving specific names for the design attitude observed: *Museumization*, *Disneyfication, Futurization, Touristication, Pornscape, Synthetic-Pseudo Places*, *Other Directed Places*, *Sub-utopias, Gigantism, Miniaturisation, Thematization* or *Place-theming, Replication, Cloning, Place-marketing*.[13]

Relph modified his view that "place and placelessness are increasingly hybridized rather than dichotomized" by recognizing the persistence of placelessness.[14] Binary oppositions like authentic and inauthentic, place and placelessness are no longer necessary. Through time, the previously inauthentic becomes authentic, and some features of places are always atrophied.

Anti-design in this case is created with fake authenticity, which is produced when the relationship between the past and the present cannot be established accurately. Thus, the future environment is built upon false identities through duplication (copy-pasting or overemphasizing inherited architectural elements one by one), replication (cloning the architectural heritage partially) and fake architecture or false identity (the inconsistent relationship between past and present architectural heritage and its environment / Fig. 1).

The atrophy of place is inevitable, yet neither the city nor its architecture should deliberately be designed as a collage of the past and the present. The preservation of the *Genius Loci* requires the rejection of anti-places and urban pornography.

3. ANTI-PLACES OF MODERN ARCHITECTURAL HERITAGE IN TURKEY

Modern architectural heritage is more vulnerable to the effects of urban development and transformation due to several reasons, including but not limited to their usually prominent present locations in the city and undecorated and often degraded appearances. Considerably more recent in date compared to other kinds of architectural heritage, they are not usually excluded from contemporary building, earthquake, fire safety and climatic control regulations. These excuses result in the eradication of many unlisted buildings while few listed examples may only be preserved through rebuilding/reconstruction.

However, the duplicate of heritage is not anymore heritage: The documentary value of modern buildings is as much related to architectural technology and materials and original locations as original design concepts. Although material integrity is not always sustainable in terms of assessing authenticity, intentional destruction rather than preservation of the original building remains a debatable act.

The Turkish Monopoly Liquor and Cognac Factory in Mecidiyeköy, Istanbul, designed by the French architect Rob Mallet-Stevens (1886–1945) in the late 1920s and opened on 26 April 1930 was famous for being the only work of the architect outside France. The 1,800m^2 building inside a 48,000m^2 garden located among orchards had become part of a dense urban settlement by the time it was abandoned in 2000.[15] Despite many requests to the authorities, this iconic example of Modern Architecture was not listed until 2006. The presence of old trees in the garden as well as various decisions concerning changing the location, demolishing and rebuilding the main factory and reconstructing the lost entrance building complicated the situation, and all these permissions were apparently based on increasing the built-up area on the building lot. The original building was torn down in 2012–2013.[16] The complex was rebuilt as Mecidiyeköy Towers according to a design by EAA (Emre Arolat Architecture), Istanbul in 2010–2017 with a total built area of 258,000m^2 in four *c.* 150m tall skyscrapers on the former sites of the Liquor and Cognac Factory and the Ali Sami Yen Stadium (Fig. 2).[17]

Sait Bey and Semih Rüstem villas on Atatürk Street, Adana were designed by the Turkish architect Semih

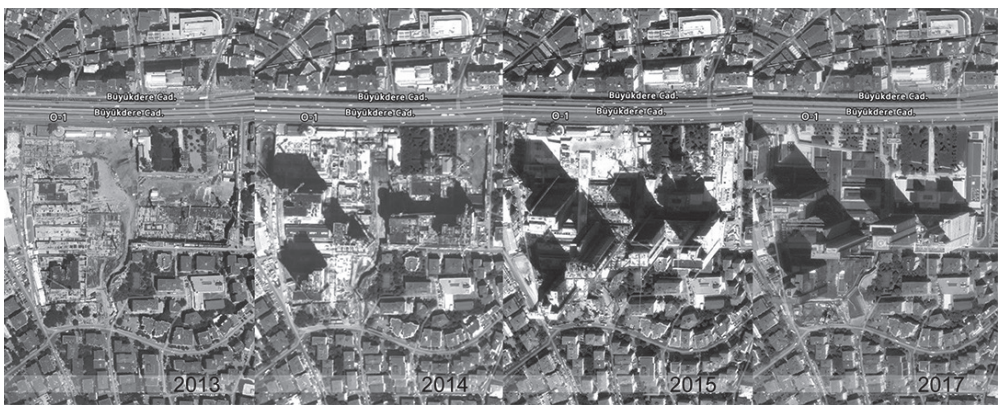


Fig. 2. **Rob Mallet-Stevens, Turkish Monopoly Liquor and Cognac Factory, Istanbul, Turkey, 1930 rebuilt as EAA, Mecidiyeköy Towers, Istanbul, Turkey, 2010–2017: Development of the site through air photos. © Istanbul Metropolitan Municipality Archive.**[20]

Rüstem Temel (1898–1946) in 1932.[18] The urban development along this main axis and the increase in density led to an urban investment and transformation project. Although it is not completely clear in the sources, Villa Sait Bey, suffering heavy damage in the 1998 earthquake, was torn down and rebuilt while Villa Semih Rüstem was restored. Semih Rüstem Commercial Center was designed by MArS Architects (Atilla Yücel, Cem Yücel, Mehmet Toprak), Istanbul in 2006–2012 with a total built area of 14,600m².[19]

Both projects are similar in their design attitude based on a great increase in built-up area resulting from urban growth and rent pressure, which is concentrated in the commercial towers acting as a backdrop to iconic 1930s Modern / Art Déco architecture. This background, argued to have been designed to accentuate the importance and visibility of the authentic buildings, actually diminish and subdue them almost to the point of invisibility (Figs. 3 & 4).

In both cases the buildings have been torn down on declarations of being unfit in terms of function and technology in terms of contemporary standards and regulations; the earthquake zoning in Istanbul and Adana providing the main excuse. Economy prevailed, and rebuilding was preferred to structural strengthening. The reconstructions are accurate in form but their locations, and thus, the original layout of the building lot has been altered. The gate building in Mecidiyeköy, which was demolished during the enlarge-



Fig. 3. **Semih Rüstem Temel, Sait Bey and Semih Rüstem Villas, Adana, Turkey, 1932. © M. Dila Gümüş, 2015, Temel Family Archive; rebuilt as MArS Architects, Semih Rüstem Commercial Center, Adana, Turkey, 2006–2012. © Berk Kesim, 2020.**

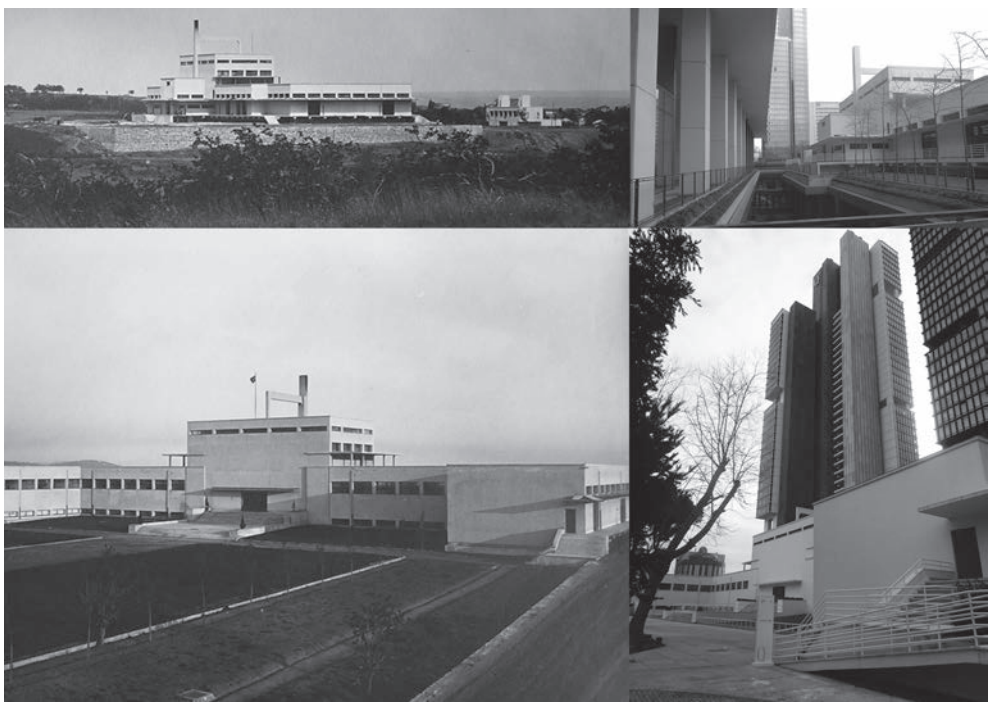


Fig. 4. **Rob Mallet-Stevens, Turkish Monopoly Liquor and Cognac Factory, Istanbul, Turkey, 1930. © Erkan Kambek, 2005, Turkish Monopoly Archive; rebuilt as EAA, Mecidiyeköy Towers, Istanbul, Turkey, 2010–2017. © Nilüfer Baturayoğlu Yöney, 2020.**

ment of the road in the 1980s, has been rebuilt as a resurrected entity.

Rebuilding, of course, destroys the documentary value of the originals in terms of materials and technology, and diminishes their authenticity in terms of integrity. Although both project briefs argue that the characteristics of the architectural details and elements have been preserved, this is not the same as preserving the original materials and technologies themselves. Building and safety regulations also dictate changes in the sizes of structural elements, types of doors and windows etc.

The authentic morphology is reflected as random architectural characteristics and elements incorporated into the design of the new buildings forming the background. The light colours and the voids created by the large eaves are duplicated in the towers in Mecidiyeköy whereas the eaves/sun-shades and circular corners are repeated in Adana (Figs. 3 & 4). However, these duplications are random, out of context, and devoid of meaning: They become exaggerations exposing the authentic architecture in an anti-design attitude, creating urban pornography.

The replications have not preserved any place attributes except for the general morphology and some architectural forms and parts of the authentic names. Thus, when you pass-by, you can experience a fleeting image of the original building and place, which disintegrates when you enter the site.

4. CONCLUDING REMARKS

The interesting thing is that both cases in this paper have been presented as adaptive re-use examples in Turkey. However, they are reconstructions based on authentic morphology, eradicated of meaning and content and original materials/elements, becoming replications with enormously increased built-up areas as urban development investments. Similar projects and proposals, including other iconic examples such as the demolished Karaköy Passanger Terminal (Istanbul, Rebii Gorbon and Georges Débes, 1935), Bank of Municipalities (Ankara, Seyfi Arkan, 1937) and Atatürk Cultural Center (Istanbul, Hayati Tabanlıoğlu, 1956–1969) promote the necessity for an extensive discussion on the future of Modern Architectural and industrial heritage in Turkey.

If pornography is the exposition of particular sexual symbols in place of experiencing the actual sexual act and degenerating it through virtually overemphasizing significant corporeal attributes, then urban pornography — hunting forms devoid of meaning and content from the built environment through duplication and replication — is the exaggeration and devaluation of the authentic work of architecture and its significance. It utilizes the relevant attributes of distinctive places and diminishes them. The false identities created by these projects cannot be the future of modern architectural heritage. This eradication of meaning and urban memory and the creation of anti-places out of distinctive ones is perhaps the greatest threat against modern architectural heritage in urban areas.

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GDYNIA — TRANSFORMATIONS OF THE URBAN LANDSCAPE

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ABSTRACT.

Until the beginning of the 20th century, the landscape of the area where today there is the city of Gdynia was constituted only by single-storey buildings with sloping roofs as well as three unpaved roads for pedestrians and horse riders.

Polish government's decision taken in 1922 to build a large commercial port resulted in a big number of newcomers searching for a job. Soon, it became clear that the emerging port required facilities in the form of a city with residential buildings for those constructing the port and those working there as well as others. At that time a plan for this area was developed at the Ministry of Public Works. It included both the influences of the postulates of German and French functionalists and the concepts of Ebenezer Howard.

As a result of its implementation, the landscape was rapidly transformed. After a few years, the plan needed a serious update. The city's development interests couldn't hinder the port's growth. The requirements for the implementation of large-scale port solutions influenced the city plan taking up areas originally intended for the city.

The majority of necessary public buildings were built before WWII and are still in use today. Most survived without changing their original function.

The plans after WWII shaped the grid of streets and the permissible dimensions. It wasn't until the 1970s that higher buildings were allowed — up to 11 floors. After removal of communists from power, the return to dimension limiting of buildings took place.

1. INTRODUCTION

Established under the Versailles Treaty which ended WWI, many new states saw their cities transformed from a regional role to that of capitals. This entailed the need to build a number of buildings for governments, alongside a significant number of public buildings which capitals should have. These structures usually took on a modernist form (Kaunas, Riga, Tallinn, Prague). But each of these cities already had a historically shaped character, so the modernist buildings should fit into the existing context. By granting Poland 140km of coastline without any sea port, the Versailles Treaty forced the decision to build a new port and, therefore, the city of Gdynia

2. DEVELOPMENT

Until the beginning of the 20th century, the area where Gdynia is today, had only farmland with crops, while the shore of the Baltic Sea featured a fishing village, near which a modest summer resort developed in the beginning of the 20th century. Apart from agriculture, fishing, and accommodation to let, there were no other sources of income for the small local population. The buildings there were single-storey with pitched roofs and pedestrian and horse traffic used three unpaved roads.

The decision to build here the main commercial port for Poland was made in 1922, after a temporary naval port and a shelter for fishermen had been built. The decision taken by the government of the Republic of Poland brought about a revolution in local ownership relations, in the way the local people lived and in the way space was shaped. Even the first works on the construction of the port resulted in an influx of jobseekers from the country's other regions with significant unemployment. Only some of those newcomers found a place to live in local accommodation (**Fig. 1**). Others set up temporary residence from random materials on scraps of land leased from local landowners.

In 1926 it became clear that the emerging port required a base in the form of a city where the people building the port would find a place to live, alongside those who would use this port and those who would provide others with an urban standard of living.

It was in 1926 that the first masterplan was developed for this area at the Ministry of Public Works. The designers were Roman Feliński and Adam Kuncewicz. Feliński was an experienced architect and one of the forerunners of a systematic approach to how new cities should be built and head of the Unit VIII in the Construction Department. Kuncewicz was employed there. Their plan titled *Outline of the Expansion of the City of Gdynia* was developed under a clear influence of postulates promoted since the beginning of the 20th century by German and French functionalists: functional zoning of settlement. It is also clear that they took seriously the idea of deglomeration put forward in the concept of garden cities by Ebenezer Howard. According to the authors, the port was to become the centre of the city surrounded by industrial and warehouse districts, with residential districts including Downtown scattered among green areas only in the outer circle.[1] In fact, the port with its main channel that cut almost perpendicularly into the shoreline, providing access to inner basins, separated rather than integrated the districts of the city developing to the south and to the north. The authors paid a lot of attention to the viewing axis, designed by them as a 30m-wide artery laid out diagonally in relation to the other streets in the grid; it

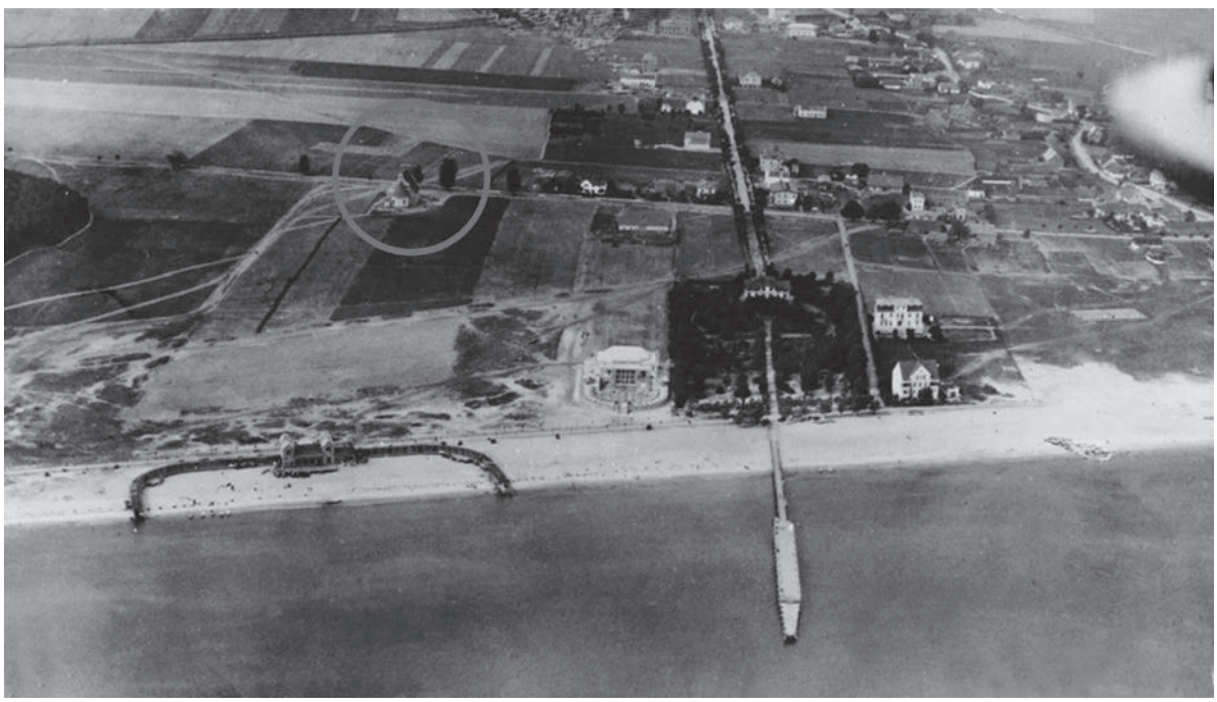


Fig. 1. **Gdynia Downtown 1925, author unknown, from S. Kitowski, *Gdynia — miasto z morza i marzeń*, Gdynia 1997, 66–67 (The circle marks St. Mary's Church). © Sławomir Kitowski.**

was meant to connect the railway station square with the square in the immediate vicinity of the port, also known as the sea forum. A year later, Adam Kuncewicz began preparing detailed plans for Gdynia's Downtown, separately for the southern and northern parts. It was in the northern part that there were particularly significant changes in relation to the initial outline: the northern border between the port and Downtown was moved in 1927 by 160m southward and in 1928 by another 100m. The formerly mentioned artery changed its location to the outskirts of the layout and lost its original meaning, which is why, in the 1928 version of the plan, the role of the main compositional axis was assigned to 10 Lutego St., widened to 28m.[2]

Gdynia was granted city rights in 1926. This encouraged many private investors to buy plots of land here and to build townhouses as laid out in the plan (**Fig. 2**). Some of them did it solely for the benefit of renting their property out while continuing to live where they had so far but many also made the bold decision to move their centre of life to Gdynia. They lived in townhouses that they had built and started their businesses there.[3] Owing to such decisions the street grid was filled with buildings, giving the centre of Gdynia a fully urban scale. In light of the Local Police and Construction Regulations for the City of Gdynia applicable since 1931, issued by the Minister of Public Works in consultation with the Minister of the Interior at the request of the Pomeranian Governor, based on the resolution of the Gdynia City Council of 12th March 1930, construction was only permitted in streets that were fully equipped with water supply, sanitary sewage system and electrical network, with road surface and pavements laid, observing the building alignments indicated in the plan or in the field, with building heights as specified for a said zone.[4] In light of these Local...Regulations, for the Downtown area the height limit was 18 metres.

In a few short years, the applicable plans required a major update due to the dynamic development of port functions and the high demand for extra areas. After all, the city was established to serve the port. In the mid 1930s it was decided to transform the port from one focused on handling bulk goods and general cargo into a universal port also intended for passenger traffic, deep-sea fishing, coastal shipping, and yachting. A decision was made to expand the outer port southward with two additional basins, which was associated with the next stage of the territorial conflict between the port and the city. On the other hand, the construction of the Southern Pier at the extension of Downtown's main compositional axis was an extremely successful move: the axis that was being shaped at the time clearly emphasised the connection between the sea and the land, and between the city and the port. Such changes in the structure of the port's operation, which could not be resolved without taking up an extra area originally intended for the construction of the city, made changes to the Downtown plan necessary.



Fig. 2. **Gdynia Downtown 1933, author unknown, from S. Kitowski, *Gdynia — miasto z morza i marzeń*, Gdynia 1997, 206–207 (The circle marks St. Mary's Church). © Sławomir Kitowski.**

Stanisław Filipkowski, the author of the next version of Gdynia's plan (1936), had to consider in his work all those circumstances. In the area where Downtown touched the sea, the author of the plan included east-west streets that were wide open to the sea and port basins.[5]

Architects in Gdynia were mainly young people, often straight after earning their degree at one of Poland's two faculties of architecture. There was also a group of only somewhat older ones, who completed their studies just before WWI in Germany, Austria, and Russia.[6] They treated designing in Gdynia as an opportunity to test in practice the ideas of modern movement, which reached them through architectural magazines or which they had learnt while travelling around Europe. A number of buildings, located in the area intended by the authors of the zoning plans as the city centre, were built in accordance with the parameters specified in the plan, e.g. height of 5 storeys plus the sixth one set back from the building alignment by a minimum height of a single storey, with the dominant feature in the form of a sixth storey that was not set back at street corners (Fig. 3).

The losses sustained during the war were not nearly as serious as could be expected, especially considering the heavy fighting for the city that took place in the first days of the war in September 1939, and the fact that after the Nazi German forces took the city, they turned the port in Gdynia into one of their most important naval bases. Fortunately, the sparse allied bombing raids focused on military targets in the port.

Although the "Gottenhafen Stadtmitte Bebaungsplan" drawn in 1941 at a scale 1:1000 by an anonymous German author envisaged consistent development of the street frontages and blocks[7], the Germans built rather little, only a few buildings in the protected area.

After WWII, not earlier than in 1956 and 1957 two plans for two parts of the Downtown were adopted. The plan for the non-urbanised before WWII area along the railway track is in clear reference to Filipkowski's design, both in terms of the layout and the permissible size of the buildings. The detailed plan of 1962 covered the entire City Centre, together with a number of adjacent areas, preserving the essential premises of earlier plans. The implementation of these plans in the area discussed here resulted in the completion of the city blocks that were started before the war. While maintaining the maximum size of development (height, depth of the thoroughfare) and the character of the development (housing with business premises at the ground floor), the plan differed in that the frontage was no longer formed by a line of individually designed private tenement houses, but one multi-entry cooperative building.[8]

It was only in the 1970s that taller buildings were allowed in practice, even up to 11 storeys. Luckily, few such buildings were erected in Gdynia Downtown, in the 88-hectare area which is protected now. Unfortunately, the three



Fig. 3. **St. Mary's Church in Gdynia Downtown 1938, author unknown, from S. Kitowski, *Gdynia — miasto z morza i marzeń*, Gdynia 1997, 318. © Sławomir Kitowski.**

buildings described below clearly distort the consistently developed, uniform cityscape of the Centre.

1) The building at 110-112 Świętojańska St. built in the first half of the 1970s; The area's information (i.e. the permissible parameters of development and essential spatial consideration defined by the local architectural supervisory authority) specified six storeys above ground and was issued on the basis of the preliminary documentation for the unadopted spatial development plan for the City Centre.

But eventually, eight storeys were built, based on the design made by Design Office for Organization and Mechanization of Power Plant Works in Katowice.[9] The building is two storeys taller than the remaining buildings in both frontages of the street, and its main part is not aligned with the overall development line.

2) Almost at the same time the building at 32-36 Władysława IV St. was erected: the investor was Marine Housing Co-operative[10] and the building is 11 storeys tall, five storeys more than the nearest neighbouring buildings at 10 Lutego St. There is no information about the authors of this project which, despite being rather controversial, also has some advocates.[11]

3) Typical prefabricated concrete slat building (Szczecin prefab system) at 4-6 Mściwoja St., also 11 storeys, surrounded by five storey buildings, similarly disrespecting the adjacent development lines. There is no information about the authors of the adaptation of this standard project to this particular location.[12]

At that time the authorities urgently wanted to build more flats and build them faster, hence the prefabrication and mechanization of construction, but this new technology was better served by spacious building sites in the outlying districts, rather than the densely built-up City Centre, with a checkerboard of developed and undeveloped plots with an average area of 600–700m^2. In this case, it was decided that a building with 70 flats for almost 300 people would be located at 4-6 Mściwoja St., the type of which were usually placed in spacious new districts, where building cranes moved along a single track from one plot to another and there were no problems with site organization or storage space for building materials. Doing this on two connected plots with a total area of c.a. 1200m^2 cost a lot of effort and basically cancelled any benefits typical for industrialised construction, such as faster construction and lower cost of transport and plant assembly. Someone (it is now difficult to determine who) clearly was very keen on this type of con-



Fig. 4. **Gdynia Downtown 2019 (The circle marks St. Mary's Church). © Michał Czacharowski.**

struction to invade the City Centre.

The provision of the general plan for Gdynia of 1986 formally put an end to these types of practices. The new plan established a zone of full protection of the historic spatial structure in the Downtown and any construction projects had now to be consulted with the Regional Conservation Officer. The area of this zone (–70ha) was only slightly smaller than the area registered in 2007 (88ha).[13] Following the system transformation (after 1989 when communists were removed from power and local authorities were reinstated) further plans went back to restricting the size of the buildings in the similar way as in Filipkowski's design of 1936. These restrictions were also adopted in the plan of the City Centre adopted by resolution of the City Hall in 1994 and prepared by a team led by architects Barbara Bańkowska and Jacek Bocheński, where the conservator's protection zone was established "in which the main goal was to preserve and highlight the aesthetic qualities of modernist architecture."[14] The same premises can be found in the binding local detailed plans for this area, which were developed after the expiry of the 1994 plan and adopted in the years 2010–2018.

The largest construction project which significantly affects the cityscape was the construction of a high-rise building known as the Sea Towers in 2009. It is located in the old port area recovered by the city in the early 21st century and originally lost in the 1930s. The construction of the building raised controversy; it was mainly criticised for its size, many times larger than the neighbouring buildings from the 1920s and 1930s which shaped the City Centre (the taller of the two towers is 128 metres high).

The city, which grew together with the port, urgently needed not only a lot of new tenement houses and social multi-flat houses but also all the necessary public utility buildings of which in 1926 there were none, except the railway station which was appropriate for a village with about a thousand inhabitants and a resort hotel for a handful of holiday-makers. In the 1920s and 1930s, the vast majority of public buildings were erected, which enabled the quarter-million city to function effectively until the present day. As history was merciful for Gdynia, most of these buildings survived to our times without changing their original function. These include the City Hall, the Main Post Office, the Market Hall, some banks and office buildings: the Cotton House, the Chamber of Commerce and Industry, the District Court, and the Meteorology Institute. Some of the buildings serve the inhabitants of the city following redevelopments that did not damage their architectural identity. These in-

clude the Department of Navigation of the Civil Maritime Academy (formerly the Sailor's House), the Cultural Centre (formerly Swedish Sailor's House) and the second City Hall building (other office building / Fig. 4).

3. CONCLUSION

A significant number of Gdynia inhabitants live, work or go about their daily needs in direct contact with the buildings which are the heritage left by the builders of the City dating to the interwar period, or with later buildings which often, more or less successfully, draw from the achievements of the interwar modernist architecture of Gdynia. The skyline of downtown Gdynia still remains a cityscape of an essentially modernist town, shaped by concepts created in the 1920s and 1930s and consistently followed through over many decades until today. Obviously, in some specific cases the use of some areas was changed. However, these changes are strictly local and they do not affect the perception of the City Centre as a whole.

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THE CITY WITHOUT STREETS

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ABSTRACT.

The preservation of green spaces within cities has many supporters, but such spaces are generally seen as distinct from the city itself, as parks or 'green lungs' to which the citizens resort at some distance from their homes. The concept of a wholly green environment throughout the city, such as was promoted by Le Corbusier as the 'Ville Verte' [Green City] and widely by the Modern Movement is, however, one that has few promoters today. It is not understood, mainly because it is associated with social housing projects of the 1950s and 1960s which are seen to have failed, leaving characterless open ground between taller blocks. The age-old concept of 'corridor streets' lined by continuous frontages, has re-asserted itself as the ideal. The reasons it was rejected are discounted or forgotten. Ninety years since the publication of Le Corbusier's seminal article 'The Street' in which he excoriated the historic street and sketched his alternative vision, we have in Britain a well-funded and active pressure group called 'Create Streets', and major new developments in London such as at Kings Cross, where Google is currently building its European HQ, feature tightly-packed blocks reproducing the traditional format of 'streets'.

But the potential to realise a new 'green' concept of the city was fundamental to Le Corbusier's embrace of the Machine Age. The potential to build taller which the Machine Age afforded could, by spacing buildings further apart, allow 'Sun, Space, Greenery' to be introduced into every home and office — rather than to use that same technology to project upwards the format of the traditional city, resulting in 'those nightmares, the downtown streets of New York', which were 'the exact opposite of what the "Voisin" scheme proposes for Paris'. Le Corbusier's 'Voisin Plan' for Paris of 1925 was developed with support from the motorcar manufacturers Voisin, and a principal impulse to reconsider the traditional street with its mixed use by vehicles and pedestrians was a desire to accommodate motor cars safely. So, in a world where we want to restrict their use for environmental and sustainable reasons, is Le Corbusier's vision outdated? Examination of his plans shows that in numerical terms only very limited car use was provided for. His vision was 'green' in all senses and intended to provide an optimal habitat for humans. As such it should continue to inspire us.

THE CITY WITHOUT STREETS

Green space in cities has many supporters, but it is generally seen as distinct from the city proper, as 'parks' or 'green lungs' to which the citizens resort at some distance from their homes. A wholly green environment throughout the city, such as was promoted by Le Corbusier as the 'Ville Verte' [Green City] (Fig. 1 / from *Précisions*[1]) and widely by the Modern Movement, has very few or no supporters. Indeed, if there is one attitude of mind on which supporters and detractors of the Modern Movement in architecture generally agree it is that Modern Movement urbanism was a mistake. The ideals of 'Light, Space, Greenery' which Le Corbusier said were the first three elements of town planning (followed by Steel and Concrete[2]), and the abolition of the 'corridor street' which was to be the principal means to attaining them, are everywhere rejected. For example, the major 27ha development at Kings Cross in central London now nearing completion, which includes buildings by internationally-known architects such as David Chipperfield, Eric Parry, Fumihiko Maki, and the European headquarters building of Google. These are all 'Modern' in architectural terms, but the layout as a whole[3] rejects the Modern Movement ideals in spatial or urban terms. It seeks instead to re-create a tight ground-hugging urban texture reminiscent of the nineteenth century — a model also promoted by a lobby group called 'Create Streets' currently influential in the UK. But its urban proposals were fundamental to the Modern Movement, and a recognition of the benefits they were expected to bring is essential to its understanding. The greenness of the city that Le Corbusier envisaged was his justification for the embrace of the technology of the industrial age which made it possible, and was fundamental to Modern Architecture.

Probably the most vilified exemplar of Modern Movement urbanism is Le Corbusier's Voisin plan for Paris of 1925, an application to that city of his model 'A Contemporary City for Three Million Inhabitants' first exhibited in 1922. In it he proposed the demolition of a strip of central Paris 1.2 km wide from the Seine northwards along the Boulevard de Sébastopol as far as the Gare de L'Est and the implantation of an array of identical 60-storey cruciform fully-glazed free-standing office towers, each with extensive car parking, crossed by an elevated motorway running through the city from east to west parallel to the Champs Elysées 900m to its south. The plan was named after its sponsors, the motorcar manufacturer Voisin whose cars were driven by Le Corbusier. This plan, and the thinking behind it, was published in 1925 in his book *Urbanisme*[4], based on earlier articles in *L'Esprit Nouveau*, a review in whose Pavilion at the 1925 Paris International Fair it was fully displayed. Today it would be difficult to think of a more damaging scenario, outraging every shade of opinion, but so it was then too — and he was never forgiven for it, an open target for an army of detractors. So how could a sensitive artistic soul like Le Corbusier propose it?



Fig. 1. **The Green City by Le Corbusier 1929. © Le Corbusier Foundation.**

It is this urban model of Le Corbusier's that I would like to consider, though it was succeeded by his Radiant City and Linear Industrial City models and by his more focused Plan 37 for Paris of 1936, because, as he wrote in 1959, 'The "Plan Voisin" was the expression of a principle. This plan continued to evolve during the following thirty years.'[5] What was that principle? In Volume 1 of his *Oeuvre Complète*[6], the Plan Voisin is published alongside his little-quoted but visionary text 'The Street', first published in 1929, where his aesthetic is explicitly set out. The context for the evolution of Le Corbusier's urban project should be borne in mind: in 1922 the last of Hausmann's boulevards — an urban revolution in themselves — was still being built in Paris, the Russian Revolution was a recent event, Tony Garnier's drawings for *The Industrial City* had been published in 1919 and assumed, as did the influential Garden City movement in Britain, that urban land would be in common ownership, and the Futurists had inflamed the urban debate with their excoriation of the old.

In 'The Street' Le Corbusier starts by denigrating the traditional metropolitan street:

> *plunged in eternal twilight. The sky is a remote hope far, far above it. The street is no more than a trench, a deep cleft, a narrow passage. And although we have been accustomed to it for more than a thousand years, our hearts are always oppressed by [it]. The street is full of people: one must be careful where one goes. For several years now it has been full of rapidly moving vehicles as well: death threatens us at every step... The street consists of a thousand different buildings, but we have got used to the beauty of ugliness for that has meant making the best of our misfortune... On Sundays when they are empty the streets reveal their full horror. But except during those dismal hours men and women are elbowing their way along them, the shops are ablaze, and every aspect of human life pullulates throughout their length. Those who have eyes in their heads can find plenty to amuse them.... Nothing of all this exalts us with the joy that architecture provokes. There is neither the pride which results from order nor the spirit of initiative which is engendered by wide spaces....*

Then he reveals the occasion for his writing:

> *At the present moment a congress on "The New Paris" is about to assemble.... What sort of street will it decide to give us? Heaven preserve us from the Balzacian mentality of some of its members who would be content to leave our streets as they are because these murky canyons offer them the fascinating spectacle of human physiognomy!*

Finally, he moves on to describe his new vision:

> *I should like to draw a picture of "the street" as it would appear in a truly up-to-date city. So I shall ask my reader to imagine they are walking in this new city... You are under the shade of trees, vast lawns spread all round you. The air is clear and pure; there is hardly any noise. What, you cannot see where the buildings are? Look through the charmingly diapered arabesques of branches out into the sky towards those widely-spaced crystal towers... — flashing in summer sun-*

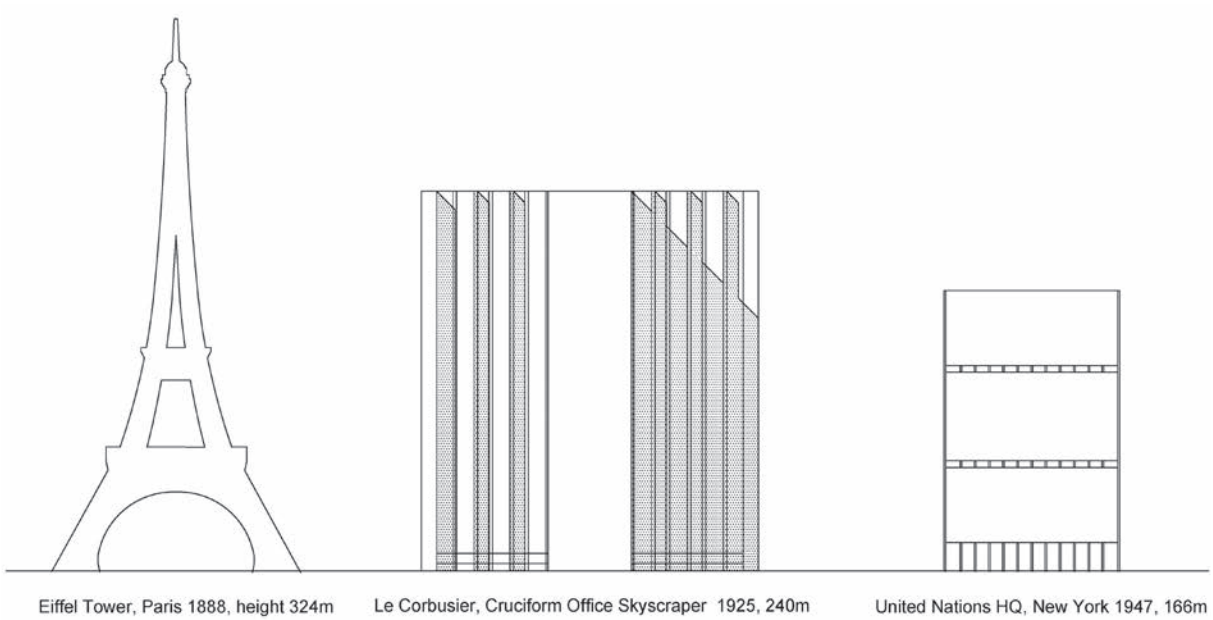


Fig. 2. **The Eiffel Tower, The Plan Voisin Cruciform Skyscraper and the UN Secretariat to the same scale. © James Dunnett, 2020.**

> *shine, softly gleaming under grey winter skies, magically glittering at nightfall —…. Beneath each is an underground station… only 5-10% of the surface area of the business centre is built over. That is why you find yourselves walking among spacious parks remote from the busy hum of the autostrada…. Look over there! That stupendous colonnade which disappears into the horizon as a vanishing thread is an elevated one-way autostrada on which cars cross Paris at lightning speed… In the new business centre office work will be performed, not in the persistent dimness of joyless streets, but in the fullness of daylight and an abundance of fresh air…. Its 400,000 clerks will be able to scan a landscape such as that one looks down on from the lofty crests above the Seine near Rouen and behold a serried mass of trees swaying beneath them… When night intervenes the passage of cars along the autostrada traces luminous tracks that are like the tails of meteors flashing across summer heavens…The street as we know it will cease to exist…*

The only reason Paris could not be rebuilt in this way at that moment was the regulations:

> *In the reign of Louis XIV useful legislation was enacted to limit the height of buildings in relation to the effective strength of masonry construction. Today engineers can… build as high as they wish. But the building regulation of Louis XIV which fixed the height of the cornice at twenty metres above the ground still remains in force… Thus almost the whole superficial area of the city — not merely 5–10% but 50–60% of it — has to be built over. As an inevitable result — and this notwithstanding 25% less cubic density — we have those gloomy clefts of streets which disgrace our towns."*

So, the essential principle is spelt out, that if you increase the height of the buildings from 20 metres to well over 200 metres on the same site and with the same cube (or even 25% greater cube), you can also increase the amount of unbuilt-on land around them by ten-fold. This ten-fold increase in space allows you to lay out lawns and plant trees, and run vehicles on dedicated and elevated roadways remote from the buildings, so that office workers and households can look out in peace over a 'serried mass of trees swaying beneath them' and walk among them. The sixty-storey towers, be it noted, were to be reserved for offices since 'family life would hardly be at home in them'[7]: housing would be in widely-spaced twelve-storey linear blocks allowing everyone an outlook over generous green space — the constant theme. It is one Le Corbusier seemingly brought over from his earlier commitment to the Garden City and it distinguishes his urban vision from that of the Futurists, of Fritz Lang's film *Metropolis* of 1927, of Ludwig Hilbersheimer's Vertical City of 1924, of every futuristic multi-level dystopian or even utopian fantasy of the Modern City, where nature is notable by its absence (in *Metropolis*, only scenes showing the ruling elite at home have greenery, the rest are in deep and treeless chasms or laboratories or underground).

Le Corbusier shows himself alive to the 'Balzacian' attractions of the street 'where those who have eyes in the heads can find plenty to amuse them', but rejects it because 'There is neither the pride which results from order nor the

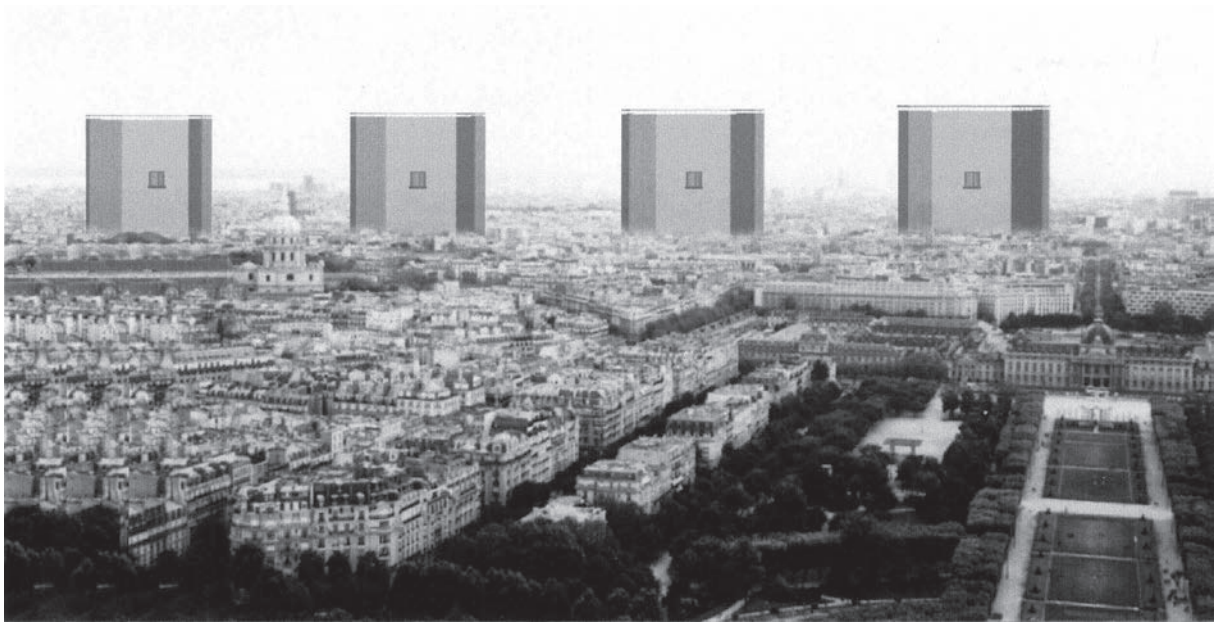


Fig. 3. **The four 'Cartesian Skyscrapers' of the 1936 Paris Plan 37 transposed to Montparnasse. © James Dunnett, c. 1995.**

spirit of initiative which is engendered by wide spaces.....' — and because of its inability to cope with a 'narrow, leisurely stream of horse-drawn vehicles swollen into a broad estuary of rushing motorcars.'[8] So his motivation in proposing the drastic reform of the city, and Paris in particular, was both spatial and technical.

The solution proposed to the technical traffic problem failed fully to appreciate the scale of the roads required even to deal adequately with the relatively few cars that it attempted to accommodate. Though we are told that for each apartment there will be a parking space, the number of parking spaces provided for each office tower does not appear to be more than 600 — though each may have 30,000 or more employees. So the vast majority of workers will arrive by public transport, presumably to the rail station immediately beneath each tower. Even so, as I have shown elsewhere[9], the amount of road space provided, impressive though it looks on the drawings, is scarcely adequate for the amount of parking provided, especially since the design of the cloverleaf junctions is far too tight by current standards and would seriously impede traffic flow. Nevertheless, the principle of grade separation, pedestrian segregation, and removal of through traffic from the immediate vicinity of occupied buildings was sound and prescient for its time, as were his ideas on public transport.

But it is his subjective spatial conception expressed in the slogan 'light, space, greenery', on which I want to focus, and with it on his sense of scale. The vast scale of his proposals at their most idealistic is not always appreciated when presented on the printed page. In *Urbanisme* he writes eloquently of the sense of euphoria he experiences from climbing the Eiffel Tower, which was then still the tallest building in the world — but only 30% taller than the cruciform skyscrapers that he was proposing:

> *If I climb up to the platforms of the Eiffel Tower, the very act of mounting gives me a feeling of gladness; the moment is a joyful one, and also a solemn one. And in proportion as the horizon widens more and more, one's thought seems to take on a larger and more comprehensive cast: similarly if everything in the physical sphere widens out, if the lungs expand more fully and the eye takes in vast distances, so too the spirit is roused to a vital activity. Optimism fills the mind... Remember that up till now... Alpine climbers alone have enjoyed the intoxication of great heights.*[10]

Le Corbusier himself in his youth was one of those Alpine climbers, with his enthusiastic father. He goes on to point out that:

> *offices [at such heights] will give us the feeling of "look-outs" dominating an ordered world. And actually these skyscrapers will contain the city's brains, the brains of the whole nation.*

So the psychological impact of his spatial conception was very important to Le Corbusier — the idea that light and air could lead to clarity of mind for the 'brains of the whole nation', in the rational planned world that he hoped — the Modern Movement as a whole hoped — to promote. Large scale was important for that 'expansion of the mind'

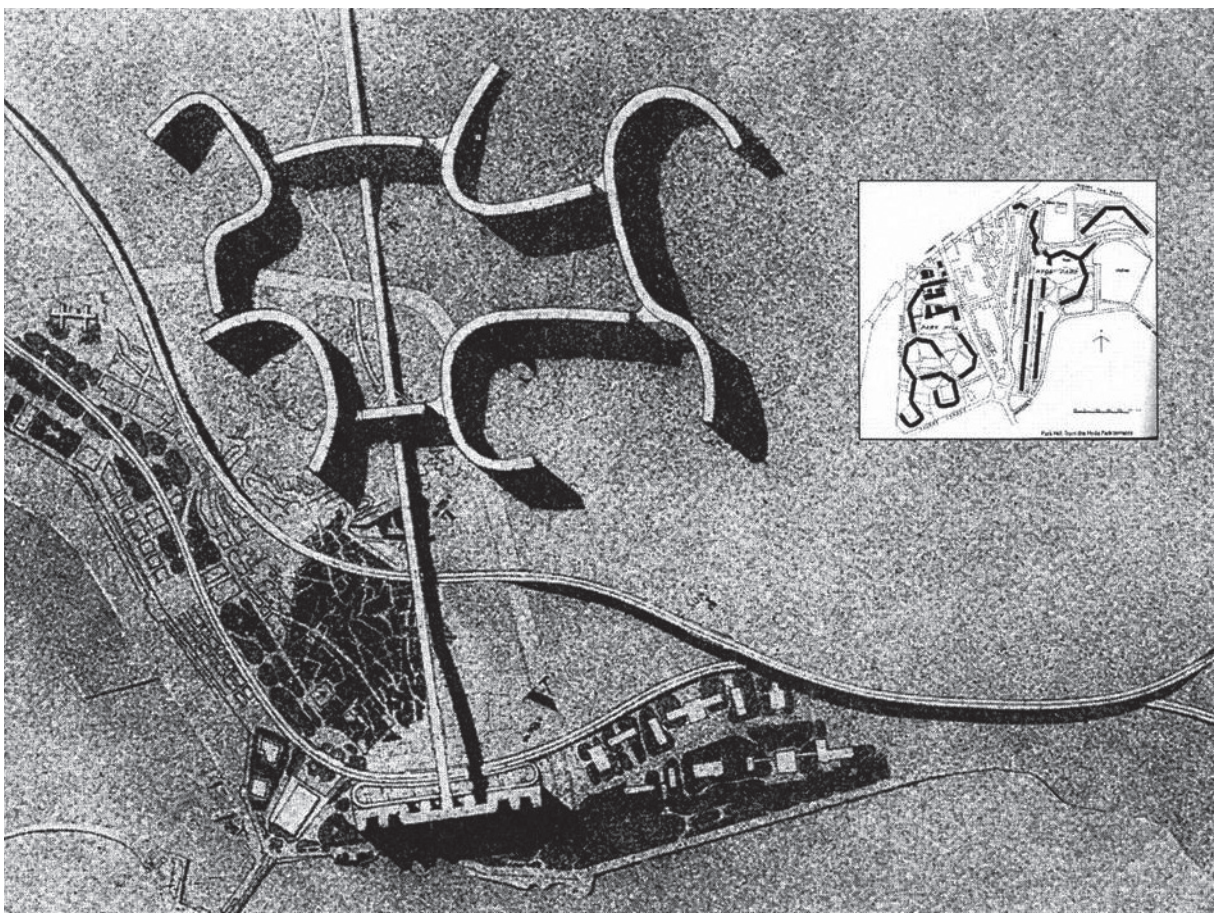


Fig. 4. **Le Corbusier's Plan Obus for Algiers, 1931, with Sheffield Park Hill and Hyde Park estates inserted to the same scale. © Le Corbusier Foundation.**

— a broad outlook physically would lead to a broad outlook mentally. To appreciate the scale of his projects it is instructive to compare them to existing buildings, as shown on the attached Figs. 2–4. Fig. 2 compares a cruciform office skyscraper as proposed in the Plan Voisin with the Eiffel Tower, built 1887–89, and with the United Nations Secretariat in New York, built from 1947 on the basis of an original conception by Le Corbusier. (It is the nearest he ever got actually to building a large-scale modern office building, which he described as 'the first appearance of the Radiant City in the urban fabric of Manhattan', and it is of course set in a beautiful landscaped site of 7.00ha, with the wide space of the East River alongside it). The cruciform skyscrapers — and the Y-plan skyscrapers he proposed later —, would be 74m taller than the UN Secretariat. Fig. 3 is a computer graphic of mine of about 25 years ago showing the four Y-shaped skyscrapers of his Plan 37 for Paris transferred to Montparnasse and superimposed on a photograph taken from one of the lower platforms of the Eiffel Tower, with the Ecole Militaire and the dome of the Invalides in front. Fig. 4 shows the Fort L'Empereur residential area of Le Corbusier's Plan Obus for Algiers of 1931 — designated by him a 'Cité Jardin en Hauteur' [Vertical Garden City][11] —, with the plan of the housing projects at Park Hill and Hyde Park in Sheffield, UK, built 1957–65, inset to the same scale. Their layouts were supposedly influenced by the Plan Obus but can be seen to be a fraction of its size. This difference of scale matters not just psychologically but also because the ground surface between the major buildings can be more useful the larger it gets. The 'space apart' is the key — the space between the buildings —, because it is that space that allows the expansion of the mind and the penetration of light and greenery — and brings psychological freedom. It is also the key architecturally, because if in Corbusian terms architecture is 'the masterly, correct, and magnificent play of forms under light'[12], then a building needs to be seen freely in space for its forms to tell and for light to play on them. It is to allow those forms to make their impact that the suppression of surface detail — the traditional staple of architecture — can be justified. Buildings without either surface detail or space — the condition of very much building today — lack means of expression. That sense of space — and with it, light and green-

ery — does not have to be on the vast scale of Le Corbusier's urban projects, where it is exploited to the most dramatic effect, but can be present through a whole range of scales. It is an attitude of mind. It may be put alongside the concept of *ma* in Japanese landscape gardening — 'Ma is essentially a Shinto concept and refers to the significance and balance of the space between things.'[13]

The concept of the 'Green City' and its space was present effectively in the work of all the major architects of the Modern Movement: of Mies — think of Lafayette Park in Detroit or even the space in front of the Seagram building —, of Gropius — the Wansee housing project of 1932 —, of Goldfinger in the UK. Frank Lloyd Wright's Broadacre City project was also programmatically 'green', where he thought in terms of broadly spaced individual houses but was ready to deploy towers amongst them — even the 'Mile High Illinois', scaled beyond reason. That sense of space has been lost — it is certainly not present in the Kings Cross development I referred to earlier where the executives of Google and of Facebook (also based there) will not be enjoying the mind-expanding conditions envisaged by Le Corbusier, nor to my knowledge anywhere else in the world. It is a sense of space — and light and greenery —, which starts from a person in a room and the conditions in which they are set and their view out, which was the humane contribution of the Modern Movement. It needs to be rediscovered.

NOTES

1 Le Corbusier, *Précisions sur un Etat Present de L'Architecture et L'Urbanisme*, Paris, 1929, 155.
2 *Le Corbusier Oeuvre Complète 1938–46*, Editions Girsberger, Zurich, 1946, 69.
3 The Masterplan was prepared by architects Allies and Morrison, with Demetri Porphyrios, who have also designed individual buildings.
4 Le Corbusier, *Urbanisme*, Paris, 1925, *The City of Tomorrow*, Frederick Etchells (trans.), London, 1929.
5 Le Corbusier, *The Decorative Art of Today*, caption in Preface to the 1959 Edition, James Dunnett (trans.), London, 1987.
6 *Le Corbusier and Pierre Jeanneret The Complete Architectural Works 1910–1929*, W. Boesiger & O. Stonorow (eds.), London, 1966, 110–119 (first edition, Paris, 1929). "The Street" was originally published in *L'Intransigeant*, May 1929.
7 Le Corbusier, *Towards a New Architecture*, Frederick Etchells (trans.), London, 1946, 54.
8 Le Corbusier, "The Street," op. cit.
9 "Le Corbusier and the City Without Streets," Thomas Dekker (ed.), *The Modern City Revisited*, London, 2000, 69.
10 Le Corbusier, *The City of Tomorrow*, Frederick Etchells (trans.), London, 1998, 184. Two photographs of the view from the Eiffel Tower are also included in the text at this point.
11 Le Corbusier, *The Radiant City*, London, 1964, 247
12 Le Corbusier, *Towards a New Architecture*, op. cit., 31.
13 Monty Don & Derry Moore, *Japanese* Gardens — *A Journey*, London, 2019, 39.

MAKING MELBOURNE MODERN: URBAN TRANSFORMATION AND THE 1956 OLYMPIC GAMES

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ABSTRACT.

The 1956 Summer Olympic Games, the first held in the southern hemisphere, transformed the Australian city of Melbourne. It signalled Australia's coming of age as a sporting nation and as a catalyst for urban change it was unprecedented. A dreary provincial city was forced to conceive and promote itself as modern and forward looking. The need to provide stadia, venues, athletes' village, and supporting infrastructure meant the recasting of landscapes and urban space on a scale never before seen in Melbourne. The city was dressed for the occasion: 19th century cast iron verandas were removed from shopfronts and new tram stops replaced old ones. Modern art, for the first time, was brought outside into the streets and onto public buildings, in service of modernizing Melbourne's image.

Today, there remains mixed evidence of that urban transformation. Yet, the legacy has been profound. Some individual buildings, elements of infrastructure, and works of art have become heritage landmarks. Others, like the Melbourne Cricket Ground, which stood in as the main athletics stadium at the time, have been demolished or completely replaced. The athletes' village survived but is now a ghetto for the socially down-at-heel. Not everyone was a winner. Yet, Flinders Park, close to the central business district and next to the Yarra River, which saw temporary facilities erected for the games in 1956, is today a complete sports and entertainment precinct of international standing. Without the Olympic Games, such a development would never have occurred.

1. INTRODUCTION

Melbourne was a dreary provincial city in the 1950s — described by one woman artist as about "as exciting as a glass of warm beer". The Games of the XVI Olympiad (1956) changed all that. Modernity and modernization were intrinsic to the Antipodean Olympic venture.[1] Today, evidence of the city's urban transformation is mixed. Yet the legacy, as in other Olympic host cities before and since, has been profound.[2] This paper describes the role of the Olympic Games as a catalyst for urban change in Melbourne: from its uncertain beginnings to the eventual transformation of a city.

2. THE BID AND BEYOND

The City of Melbourne's 1948 bid to the International Olympic Committee was, for novel effect, contained within a book bound in merino wool. Inside this woolly volume, the site proposed for the Melbourne Games was the Royal Agricultural Showgrounds at Flemington in the city's inner west. New buildings, speculatively proposed, were depicted in a ponderous Streamlined Moderne style. The main stadium resembled the Los Angeles Coliseum, home of the 1932 Olympics, while the swimming stadium looked like a giant radiogram and was planned to be the first covered-indoor swimming facility ever built for an Olympic event. In April 1949, it was announced in Rome that Melbourne was victorious over Buenos Aires, Detroit, Los Angeles, and Mexico City. Despite concern at the time of the "painfully real possibility that Melbourne could become a world laughing stock in 1956"[3], there was celebration. In June 1949, at the Lord Mayor's Ball, the stage of the Melbourne Town Hall featured a giant image of a lone Aboriginal holding an Olympic torch and looking toward Mt Olympus and its toga-clad citizens set behind a vegetal parterre.[4]

In the following six years, despite the efforts of former Olympian Sir Frank Beaurepaire, President of the Olympic Invitation Committee, a combination of lack of funds, local bickering over venue sites, and bumbling organization meant that much was changed and compromised. The physical setting for the crucial months of November and December 1956 was a "haphazard accretion of new and old, a typical post-war response of making do."[5] In 1955, when International Olympic Committee (IOC) President Avery Brundage visited the city to inspect progress, he was appalled and highly critical of the city's organizational abilities, and the constantly changing sites and management teams.[6]

The reality was that, given the lack of funds, redevelopment of the showgrounds was not an option. New sites had to be found and existing buildings either upgraded or turned into instant sporting venues. The Royal Exhibition Building (1880) was used for weight lifting and wrestling, and inserted into one of its courtyard spaces, was a temporary open-web steel arched structure for basketball. South of the city, another 19th century building, the St Kilda Town Hall (1890) hosted the fencing. At Williamstown, the existing rifle range was given new earthworks and metric dimensions for the shooting but no spectator seating. Disaster also struck in 1955, just twenty months before the Games began, when the existing Boxing Stadium in West Melbourne burned down. A new and inexpensive building, the West Melbourne Stadium (known as Festival Hall from 1959) was quickly built to accommodate boxing and gymnastics. At the University of Melbourne, a training facility for Olympic athletes and in-

tended for student use after the Games was funded by Beaurepaire and designed by Eggleston, MacDonald & Secomb. It included a swimming pool, basketball court, upper gymnasium and trophy hall containing Leonard French's mural 'Symmetry of Sport' and outside his geometric glass mosaic friezes. Its combination of expressed steel portal frames, clear functional defined volumes, and inclusion of modern art held great promise for other new structures required by the Games.

3. COMPETITION AND COMPROMISE

As existing buildings were quickly brought into use as Olympic venues, two national design competitions were held in 1952 for what were regarded as the two most important stadia: athletics and swimming. The site for the main Olympic Stadium was now proposed to be Princes Park in the inner suburb of North Carlton. The site for the Olympic Swimming Stadium was Fawkner Park, south of the city, in the inner suburb of South Yarra. However, both sites were ultimately scrapped as was one of the competition winners while the winning design for the swimming stadium had its site moved to the other side of the Yarra River but with no change to its design.

The winning main stadium design by Frank Heath, a member of the Architects' Panel of the Housing Commission of Victoria was a staid affair that met with little approval from the local profession. By comparison, the commended entries by younger architects like Melbourne-based Bernard Joyce and his team, Peter Muller and Adrian Snodgrass from Sydney, and young Viennese-born Canadian émigré architect Harry Seidler were far more exciting, each a dramatic experiment in formal and structural expression. By contrast, it appeared that the competition jurors had opted for an expedient, conservative form designed by an architect with formidable documentation capacity. In the end, Heath's design was put aside and it was decided instead to upgrade and expand the existing Melbourne Cricket Ground (MCG), close to the city centre and within easy walking distance from Jolimont and Richmond railway stations. The firm of Purnell & Pearce, who had been responsible for the MCG's 1937 Southern Stand designed a new Olympic Stand that increased seating capacity to 101,000. Loosely based on Heath's design for Princes Park, the new reinforced concrete stand sat in ungainly fashion next to the 1927 red-brick Romanesque-styled Members' Stand. An athletics track was laid within the cricket oval dimensions. It was not ideal for spectator sightlines nor for the first introduction of television to Australia: everything seemed a long, long way away.

The story of Melbourne's Olympic Swimming Stadium was altogether different. The competition winners were a team of young Melbourne graduate architects: Kevin Borland, Peter McIntyre, and John and Phyllis Murphy. The design, while owing something of its conceptual principle to Harry Seidler's commended main stadium entry, was the first time that a truly experimental engineering structure had been used at an Olympic Games, and the first in a long line of architects designing structurally inventive Olympic buildings: Pier Luigi Nervi (Rome, 1960), Kenzo Tange (Tokyo, 1964), Frei Otto and Gunter Behnisch (Munich, 1972) and Herzog & De Meuron (Beijing, 2008). In Melbourne, a steel-truss roof held in tension a series of angled open-web girders that supported the reinforced concrete spectator seating plats. It was a brilliant, minimal solution of structure and support with dramatic fully-glazed ends to east and west.

Instead of being built in Fawkner Park, the swimming stadium was relocated next to the Yarra River, just south of the MCG and immediately adjacent to what had been known since 1933, ironically so, as 'Olympic Park', the cinder athletics track that was home to the Victorian Amateur Athletics Association (VAAA), which had vigorously protested the 1948 bid document proposal for the showgrounds as the main Games venue. For the VAAA, it was a blessing. While the Olympic Swimming Stadium rose quickly and spectacularly beside the Yarra River, the whole of Olympic Park was redeveloped. A new athletics track was installed: it would become the main Olympic training venue and its central field would host the soccer. Next door a velodrome was constructed as well as a track cycling venue that would also host hockey at its centre. Almost by accident, there had now developed a true Olympic precinct that was well served by train and tram, and within easy walking distance of the main stadium. It was a fortuitous circumstance whose ad-hoc emergence would have a significant legacy.

If proximity of venue had been largely achieved by good luck and lack of planning, the Olympic Village at West Heidelberg was not close at all: it was on Melbourne's suburban periphery and deliberately so. It was a Housing Commission of Victoria development for low-income residents, the largest garden-suburb estate in the commission's history. Protected by a 'girl-proof' fence on its perimeter, the estate comprised detached and semi-detached brick and concrete tilt-slab houses and walk-up flats as temporary accommodation for 6000 athletes, as well as dining halls, community centres, dental clinic, hospital, shopping centre, sporting fields and 50 acres of imported mature trees and shrubs. While contemporary photographs indicate happy athletes, neighbouring Commission residents looked on enviously while their own streets remained unmade and without landscaping. While the government's aim was well-intentioned — the village was planned to revert to social housing after the games — practically, it was inconvenient. Athletes had to be bussed in daily from what many considered to be a remote nowheresville.

4. INFRASTRUCTURE AND DECORATION

The move of the main stadium to the MCG and the expansion of Olympic Park from 1952 necessitated upgrading

adjacent public transport infrastructure. Both venues were less than a kilometre from Melbourne's central business district with easy access by foot, tram or train. However, the expectation of a tenfold increase in services and spectator demand on suburban trainlines, especially from Melbourne's southeast, required upgrading nearby Richmond Station, where all southeast suburban trainlines converged. A new flat-roofed cream brick station building was constructed, together with new platforms and canopies, and five new steel truss bridges designed by British engineers Freeman Fox & Partners installed over Swan Street.[7]

The arrival of international athletes and the media was also addressed. Melbourne's international terminal at Essendon Airport — the 1926 Aero Club with a Nissan hut tacked onto its rear — was primitive. To quickly make do, a new steel arched igloo hangar, built for Ansett-ANA, was fitted out as the temporary International Terminal with timber partitions, pot plants and plywood Olympic rings ready for opening on 31 October 1956 when 72 Romanian athletes and 1 official arrived.[8] Even the airport's control tower was only just completed in time for the Games.

Back in the city, Melbourne City Council was also in clean-up mode, aiming to give an impression of a modern, up-to-date metropolis. All tram stops were 'modernised': old woven wire barriers were replaced with simple galvanized steel tubes. And radically, all 19th century cast-iron verandas were removed as part of a 1954 by-law and replaced with cantilevered awnings. Two new hotels were built, the most advanced being Mussen, McKay & Potter's 13-floor Hosies Hotel in Flinders Street (1956) with an elevated beer garden and a three storey-high abstract modern ceramic panel mural of three clinking beer pots on its Elizabeth Street face. The artist, English and German-trained artist Richard Beck (1912–85), also designed the only poster commissioned to officially promote and commemorate the Melbourne Games. At the time, a major piece of public art such as this was rare in Melbourne. However, it was soon joined by Arthur Boyd's 'Olympic Pylon', installed in the north-facing plaza of the Olympic Swimming Stadium.

For the occasion, the city was literally dressed with temporary and ephemeral decorations, and not always well. Melbourne Town Hall was draped in coloured lights and department store Coles had a mural attached to its façade depicting Olympic rings of smoke wafting up from a swagman's campfire. Georges' store had statues of Greek nudes silhouetted in sporting poses on the first floor. The official decorations were better co-ordinated with a special committee appointed to select designs by young architects that were placed at visually strategic locations around the city.[9] The most striking was Peter McIntyre's 18-metres high steel lattice and gas-lit Olympic Torch suspended above the intersection of Flinders and Swanston Streets and suitably on axis with Melbourne's war memorial whose design also derived from ancient Greece.

5. LEGACY

In the end, despite the shambles in the lead up to the Games, the XVI Olympiad was an outstanding success, earning the mythic title of the 'Friendly Games', while made infamous by the Cold War 'Blood in the Water' water polo stoush between Hungary and the USSR and the sensational images of a bleeding Ervin Zador sent around the globe. But what is the physical legacy today? In short, one could argue, not much. There is no sign of any basketball, wrestling, or weightlifting at the Royal Exhibition Building: it has been completely restored to its 19th century grandeur with all 1950s and later accretions removed. St Kilda Town Hall has been refurbished — no sign of the fencing exists. Festival Hall, only ever designed as a replacement structure, home to the boxing and gymnastics, was controversially listed for heritage protection in 2019 but more for its connection to live music than its Olympic history. All the stands at the Melbourne Cricket Ground were completely replaced for the 2006 Commonwealth Games, including the 1956 Olympic Stand. At Olympic Park, the velodrome and the cycling track were demolished and in 2011, the athletics training venue and its stadium were demolished and replaced by an Australian Rules Football training oval. The Williamstown Rifle range is now a housing estate. At Lake Wendouree in Ballarat in country Victoria — venue for the rowing — there's a concrete memorial (an elevated boomerang supporting the Olympic rings) to Olympic presence but the lake has all but dried up.

The only purpose-built Olympic sporting venues to survive have been the Beaurepaire Centre at the University of Melbourne, now restored by Lovell Chen and heritage-listed since 1994, and the Olympic Swimming Stadium, which endured a Centre Pompidou-like transformation in 1983 by one of its original architects (Kevin Borland) in the 1980s before its return to near original form by another of its original architects (Peter McIntyre) in the early 2000s and its heritage listing in 2002 together with Arthur Boyd's 'Olympic Pylon' in 2001. Surviving too and listed in 1999 has been Hosies Hotel and its mural, despite the building being converted to offices and apartments. Remarkably, and without any heritage protection, Richmond Station and its steel truss bridges have served the city for more than sixty years and with virtually no change. Out at the Olympic Village, much of the housing survives but in a depressed state and with no listing or protection. Its shopping centre is grim and unsafe, though the training pitch continues to be well used by the Heidelberg United soccer club.

Yet, the most permanent legacy has been the resilience and growth of the site of Olympic Park and the space between it and the MCG. Over the years, the precinct has seen the extraordinary consolidation of multiple sporting facilities in this precinct, including the Melbourne Tennis Centre (1985–1987; Ar. Cox Richardson & Taylor with Peddle Thorp & Learmonth), the Great Southern Stand at the MCG (1989–

1992; Ar. Daryl Jackson with Tompkins, Shaw & Evans), Hi-Sense multi-purpose arena (1999–2000; Ar. Peddle Thorp), the Northern Stand at the MCG for the 2006 Commonwealth Games (2006; Ar.: MCG5 Sports Architects consortium), AAMI Stadium (2010; Ar.: Cox Architecture); the National Tennis Centre (2012; Ar.: Jackson Architecture) and the Margaret Court Arena (2014; Ar.: NH Architecture). The result is a world-class sporting precinct that doubles as a 'major event precinct' for the State of Victoria — and due largely to good fortune rather than long-range planning from the 1950s.

What this precinct tells us is that the spaces and structures for sport follow complex and often competing demands for upgrade and renewal, spectator growth and crowd control with the corollary of shifting physical legal requirements for health and safety, the increase and decrease in popularity of a particular sport at a particular time, the increasing role of television as a guiding design determinant for stadia since the 1990s, and as a result, the undeniable fact of potential obsolescence. That Melbourne's Beaurepaire Centre and Olympic Swimming Stadium (albeit without public access and with no pool) survive at all is due to the advanced state of their design combined with high quality works of public art, social and technical significance and ongoing functional relevance. They do not function as examples, as Ramshaw and Gammon might note, of sport heritage linked to international tourism.[10] In this regard, the Melbourne Tennis Centre does operate at that level with an active programme of commemorative addition to bolster its destination as not just a place to see a tennis match but also as a sports heritage destination. The Australian Sports Museum exists within the Melbourne Cricket Ground and describes itself as "one stop shop for celebrating sport in Australian society".[11] The 1956 Olympics is one exhibit among many.

Sport — as it was in ancient Roman times — continues to be part of a political ideal of 'bread and circuses' (*panem et circenses*) to keep people happy through distraction and that goal rather than heritage will inevitably rule on the future of modernist sporting structures. In Melbourne, the memories of the 1956 Olympics are strong and fondly archived. But more powerful today is the self-conscious maintenance of a strategic political agenda that ensures that city's 'big events' are devoted to sport tourism as opposed to sport heritage and tourism. As such, the former Olympic sites — if they survive at all — will always remain in a state of constant upgrading with any heritage structures from 1956 always teetering at the edge of disappearance.

NOTES

1 Concepts of modernity and modernization as key aspects of the Olympic urban process are discussed in S. Gammon, G. Ramshaw & E. Waterton, "Examining the Olympics: heritage, identity and performance", *International Journal of Heritage Studies*, Vol. 19, No. 2, 2013, 119–124. See also U. Strohmayer, "Non-events and their legacies: Parisian heritage and the Olympics that never were", *International Journal of Heritage Studies*, Vol. 19, No. 2, 2013, 186–202.

2 The literature on the urban effects of Olympic Games is extensive. See, for example, B. Chalkley & S. Essex, "Urban development through hosting international events: a history of the Olympic Games", *Planning perspectives*, Vol. 14, No. 4, 1999, 369–394; G. Andranovich, M. Burbank, & C. Heying, "Olympic cities: lessons learned from mega-events", *Journal of Urban Affairs*, Vol. 23, No. 2, 2002, 113–131; and J. Gold & M. M. Gold (eds.), *Olympic Cities: City agendas, planning, and the world's games*, 1896–2012, London, Routledge, 2007.

3 R. Boyd, "Olympic Games and Housing", *The Age*, 4 May, 1949, 4.

4 "Olympic Note at Ball", *The Herald*, 29 June, 1949, 5. An image of this floral/graphic tribute is held by City Collection, City of Melbourne, accessed on 15 January, 2020, http://citycollection.melbourne.vic.gov.au/the-lord-mayors-ball-1949/.

5 Philip Goad, "Competition and Circumstance: Urban Legacies of the Olympics", J. Barrett & C. Butler-Bowdon (eds), *Debating the City: An Anthology*, Historic Houses Trust of NSW with The University of Western Sydney, 2001, 143–163.

6 Graeme Davison, "Welcoming the world: The 1956 Olympic Games and the re-presentation of Melbourne", *The Forgotten Fifties, Australian Historical Studies*, Vol. 27, No. 109, 1997, 64–76.

7 *Cross-Section*, No. 46, August, 1956, np.

8 The Civil Aviation Historical Society & Airways Museum, "Essendon Olympic Terminal 1956", accessed on 15 January, 2020, http://www.airwaysmuseum.com/EN%20olympic%20terminal%201956.htm.

9 D. Islip, "1956 Olympic Decorations: the final fling", *Fabrications*, Vol. 11, No. 1, July 2000, 26–43.

10 G. Ramshaw and S. Gammon, "Heritage and Sport", E. Warton & S. Watson (eds), *The Palgrave Handbook of Contemporary Heritage Research*, London: Palgrave Macmillan UK, 2015, 251–252.

11 Australian Sports Museum, "About Us," accessed on 15 January, 2020, https://www.australiansportsmuseum.org.au/our-stories/about-us/.

Session 2-d

DRIVING MODERN URBAN LANDSCAPE REGENERATION: COMMERCE, UTOPIA, AND QUALITIES

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Chronologically and historically, time is always moving forward, and the layering process of the urban landscape has been going on continuously since the beginning of the city's history. This session's presentation and discussion will focus on the issues related to modern urban landscape regeneration.

The first paper by Edward LEUNG — Docomomo HK, "Monetarizing Modern Magnitude: Capturing Market Value and Conserving Characters for Semi-Public Spaces in 20th Century Commercial Buildings in Hong Kong," delves on the economics of heritage, by focusing on the enhancement of commercial values through the conservation of Post-war Semi-Public Spaces of Hong Kong. In this city, many prominent modern buildings in the 60s up to the 90s successfully integrate large indoor spaces by allowing the public to access at regular times. By blurring the line between citizen rights and commercial purposes, these modern design innovation and intervention have been able to bring about comfort, cleanliness, security, weather-control, fashionable-decoration, and shopping-opportunities, into an otherwise inherently dense, disorderly, and hazardous metropolis streetscape. In this paper, the author argues the relevance of the urban commercial lives as one of the vital driving forces of the Modern Movement for today and to the future.

The second paper, "An Open Megastructure in Curitiba" by Leonardo Tosiaki Oba & Raquel C Milani – Docomomo Brasil), dealing with the issues related to the growing of cities and its emerging demands that have inspired several utopian proposals. The speakers will present the Curitiba "Structural Axis" consolidation under the Sereta Plan as a unique megastructure typology. This paper presents Curitiba's historical background and some insights confronting the resulting urban landscape with the presented theories and the visions of future.

The third presenter, Hannia Gomez from Docomomo Venezuela, will present a paper "Saving Collage City: The Future of Caracas Modern Urban Landscape," evaluating the challenges in the conservation of Modern Heritage in one of the best examples of a major modern city in Latin American context due to political changes, rapid urban development, and reconstruction of the city — especially of its modernity and unique urban qualities. In this paper, the presenter will analyze the imminent change of government faced by Caracas Modern Cityscape and its remarkable Modern Heritage, the impacts of unstoppable construction boom, and the possibility of conserving of its modernity and unique urban qualities.

The fourth paper, "Tackling Sustainability in Modern Housing Neighborhoods," by Fanny Gerbeaud, Aline Barlet, & C Mazel from ENSAP Bordeaux, is looking into the diverse neighborhoods in the UNESCO World Heritage sites in Bordeaux, France, and its transformations, under the overarching issue of sustainability in urban design. It is probing the questions regarding the place of these modern districts in the contemporary metropolis, and how they evolve concerning their inhabitants' practices and perceptions. It focuses on two modern districts that, despite their different dimensions, typologies, and locations, share urban qualities and a strong potential for evolution, also committed local communities.

This Urban Landscape Regeneration session's discussion on the economy, sustainability, utopia, and conservation, is directly related to the current global pandemic situation, which brings inevitable impacts towards the new challenges and prospects on urban landscape regeneration and conservation.



MONETARIZING MAGNANIMITY: SEMI-PUBLIC SPACES OF MODERN COMMERCIAL BUILDINGS IN HONG KONG

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ABSTRACT.

The Semi-Public Space in Central Business District (CBD) of modern city — in the format of set-back plaza, day-lit atrium, thoroughfare, footbridge or shared leisure/ meeting space, owned and managed by commercial developers — has become a major feature of Modernism. By cleverly balancing public enjoyment and commercial agenda, developers introduce such spaces to offer comfortable shopping opportunities and shared working environments that attract tenants and customers.

The author of this article, taking experience in projects in major renovations of 20th century commercial buildings in CBD of Hong Kong, explains how a thorough understanding of the market logic may open up renewal opportunities. This paper argues that, despite popular scepticism, rather than demolition and rebuilding, old commercial compounds may implement innovative and daring re-modelling of semi-public spaces to not only bring commercial benefits, but also preserve their architectural characters.

1. EXPLORING ALTERNATIVE TO MAXIMIZING AREA

> "The intent behind the Modernistic Style,... it was reserved for the worldly realms of offices.... it was an exclusively urban style".[1]

The speculative urban office tower or compound is the most apparent public perception of "Modern Buildings", mostly because of its abundance and dominance in a cityscape. Yet it is this type which often gives "Modern Buildings" a negative public image, due to its monotony, density, enclosureness, exclusiveness, and contextual indifference. Speculative office compounds appear to give aesthetics, user comfort or community benefit a fairly low priority, while compressing as much rentable floor area onto the site became top priority. This article attempts to explore alternatives to the logic of rentable space maximization for urban commercial architecture. Taking some examples in the Central District of Hong Kong, where precious floors are devoted to semi-public spaces, this article hopes to show that innovative design can improve both the public domain and the market value.

2. TREND OF MODERN URBAN COMMERCIAL BUILDINGS

2.1. Historic Perspective in Early 20th Century Offices

The concept of modern offices, as explained by architect and researcher Frank Duffy, probably originates in late 19th century, where industrialists and traders discovered that profitably lies not in the warehouses, but in the clerical pools, where placing workers in close proximity facilitated exchanges of data and communication that supports the business.[2] Early 20th century management model on crude maximization of working efficiency may have led to the forever compacting of the clerical spaces.

Such objective evolved into numerical formulas, so that "the function of (office) building is to produce rents, and economic considerations govern design decisions".[3] The monotonous city-blocks of early 20th century Chicago and New York, made up of vertical office blocks of densely packed rooms without much public spaces, were sadly driven by estate agents and planning authorities.

The density pressure of the old CBDs persisted. Afterall, "cities depend for their very existence on the concentration of people and power that has always been the underlying theme of development in the industrial world".[4] But optimum density alone is not always a winning formula. Developed in mist of depression in 1923–39, the mega real estate of Rockfeller Centre of New York opted to lower investment risk and attract diversified customers by shifting some office bulk into a Radio City Music Hall, a luxury cinema, a sunken plaza used as open-air skating surrounded by restaurant, and series of roof gardens. Such accidental programme later became a successful model much copied by other developments.

2.2. Shift in Area Efficiency Calculations in 1960s

The shift in business calculation, from concentrated rentable bulk to creating semi-public spaces arose around the 1960s. English Modernist architect, Sir Leslie Martin, by studying comparative building forms, concluded that, contrary to conventional perception, the tower solution is least efficient, whereas buildings around a central courtyard actually achieves the highest floor area on same piece of land. The Willis Building in Ipswich (Architect: Normal Foster, 1975) built on a tight site, departing from the conventional highrise solution, extends the curved curtain wall upto the meandering streets, allowing office spaces to gather around a generous atrium. The 1961 Zoning Resolution of New York which encouraged developers to provide public plazas, or thoroughfares, either indoors or outdoors, in exchange for an increase in allowable floor area up to 20%, led to innova-

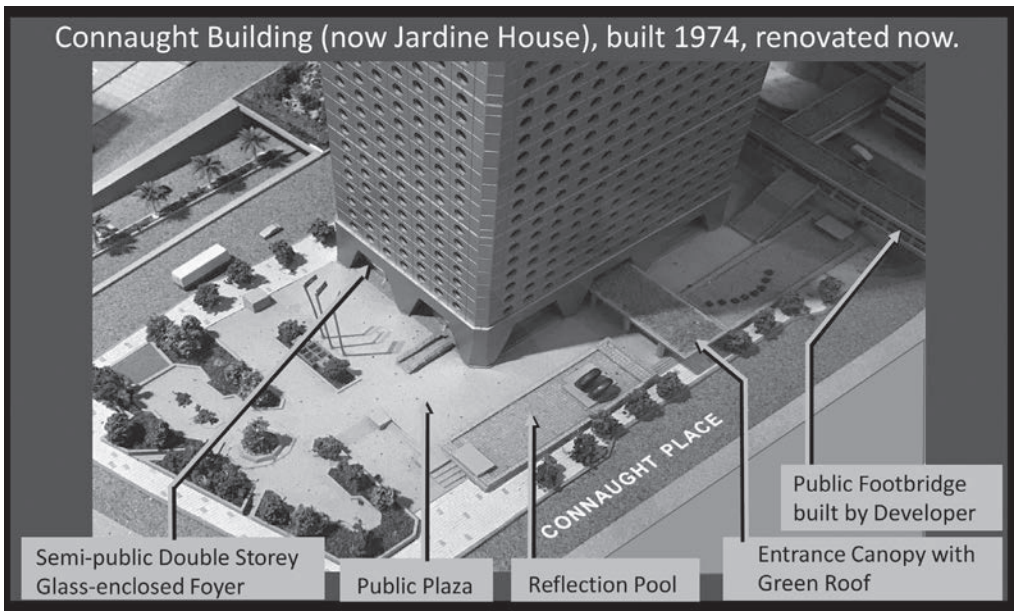


Fig. 1. **Jardine House, built 1974, renovated now. © Edward Leung.**

tive architectural masterpieces such as the Citicorp Centre (Architect: Hugh Stubbins, 1978) with its open-air public plaza under an office tower, and the Ford Foundation Building (Architect: Kevin Riche, 1967) with a twelve-storey indoor space enjoyed by workers and the public.

2.3. Trends of Urban Retail and Office Regenerations

Economic recovery in 1980s facilitated architects and developers to mature their abilities to integrate retail opportunities with urban office working-style, in the form of indoor day-lit semi-public centralized plazas inspired by the ancient Roman concept of Atrium. "The growth of the atria as safe and comfortable plazas in the cities in the 80s, that implies ... the desire to restore the function of downtown areas as appropriate urban cores".[5]

The ensemble of the Trump Tower (Architect: Swanke Hayden Connell, 1982), the IBM Garden Plaza (Architect: Edward Larrabee Barnes, 1983) and the AT&T Tower (Architect: Philip Johnson, 1984) in midtown Manhattan formed a series of popular and successfully connected semi-public spaces. To connect these multi-storey retail mall and office foyer atria running several city blocks, "the pedestrian walkway system was created for the purpose of making pedestrian movements in downtown core safer and more convenient"[6], which serve as additional customer circulation spaces, though not rentable spaces. By end of 20th century, "the components of a diverse urban retail setting include all spaces tucked in and under office buildings ... and numerous other public and private elements of the city".[7]

Even the typical office floor planning began to change by end of the 20th century when the contemporary business model that emphasized creativity and interactive collaboration demanded different spatial allocations. "As the environment of the office becomes less solitary and more plural, so the balance between space given over to individual workstations and to group activities is shifting rapidly".[8] The pioneering concept of skygardens as sharing and breakout spaces for cooperate teams in Commerzbank in Frankfurt (Architect: Normal Foster, 1997), points to the direction that providing opportunities for interactions was more commercially beneficial than maximizing desk areas.

3. OVERVIEW OF DEVELOPMENTS IN HONG KONG

3.1. Loss of Victorian Office Buildings

The Central District of Hong Kong is particularly worth studying as a condensed story of transformation under property pressure. None of the 19th century grand and highly decorative Victorian office blocks remain today. The 1926 Pedder Building, whose arch colonnade over the pavement still gives us the only remaining hint of the semi-public space common for commercial buildings of that era.

3.2. Square Blocks under Volumetric Control

The old development controls under early building laws of Hong Kong was mainly based on Volumetric Control (ie: permit maximum volume in proportion to site area, inherited from 19th century height and size formula). The Princes Building of 1964 and the Mandarin Oriental Hotel of 1963 were the only two remaining prominent buildings in Central District of that era. Confined by volume, both buildings pack small offices and hotel rooms around central lift-stair cores on upper floors, while concentrating luxury shops along internal narrow arcades on the lower podium floors.

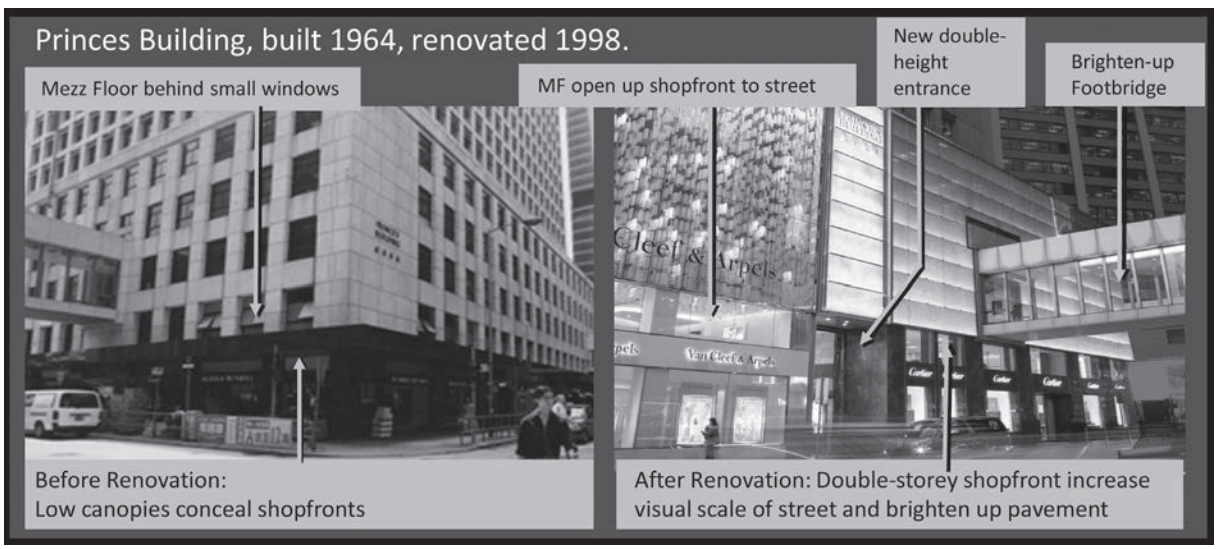


Fig. 2. **Princes Building, built 1964, renovated 1998. © Edward Leung.**

The low concrete canopies that building laws permitted over pavement became the generous semi-public spaces for window shopping.

3.3. Plazas and Atriums Encouraged by Plot Ratio Formulas

By the late 1960s, building laws was drastically overhauled by, firstly, replacing the volumetric formula by the new Plot Ratio control, of permitting total gross floor areas for commercial buildings generally up to 15 times site area without height limit (which is equivalent to that for downtown Manhattan), and secondly, introducing the Bonus incentive of granting extra office area 5 times of that ground floor public passage dedicated to public (also modelling on the New York 1961 Zoning Resolution). Such new code led to the 52-storey Connaught Centre (now known as Jardine House / Architect: James Kinoshita, 1974 / **Fig. 1**), which, by setting back the building on three sides to form a public plaza, the gained bonus plot ratio attained the maximum, creating the then tallest building in the Far East. The modernist purist ideal of a tall rectangular tower contrasted with the planar landscape of the plaza with low lying rectangular reflection pools and horizontal entrance canopy, recalling the format of the Seagram Tower of New York (Architect: Mies van der Rohe, 1958) and the Centre Point of London (Architect: R Seifert, 1966). To connect this new reclaimed site back to the old business district, a new 30m pedestrian footbridge was built across the highway, integrated into the first floor indoor arcade of the building, allowing seamless walking from footbridge through the arcade onto the new plaza.

The statutory calculations by means of "area" instead of "volume" enables the creation of the first large indoor atrium space in Hong Kong in an extensive compound known as The Landmark in 1979–1980. The central day-lit atrium, designed with fountains and trees, and viewable from the projecting balconies of the upper shopping floors, clearly recalls the European civic square. Modern indoor footbridges from adjacent commercial building, penetrating to the atrium at high level, integrating with hanging cafés and balconies with plants, may have made reference to IDS Centre of Minneapolis (Architect: Philip Johnson, 1973). However, the retail market of Hong Kong then was not yet matured, and thus the retail arcades and office lobbies were segregated at that time, but may warrant revisiting in the new era.

The two neighbouring masterpieces — the Hongkong & Shanghai Bank (now known as HSBC) Headquarters (Architect: Norman Foster, 1986) and the Bank of China (now known as COB) Tower (Architect: I M Pei, 1990), showcased pioneering office designs of world-class finance headquarters. In both cases, the street level public spaces integrate with the cooperate lobbies to welcome customers. As for their upper floor office spaces, while Forster created double-storey spaces to be shared by different departments throughout the tower, expressed as open slots carried by steel bracings on the elevation, Pei also created high volume special conference spaces within the tower, with stunning sloping glass roofs shaped by its unique exterior form. What neither the architects nor the corporations anticipated then was the subsequent booming of dealers in the later 1990s which led some shared spaces to be unfortunately converted to office desks, which needs to be reconsidered by 21st century.

4. NEW OPPORTUNITIES IN HONG KONG

4.1. Case Study One: Princes Building

Entering the new millennium, high-end retail becomes more accessible in Hong Kong and attracts the new genera-

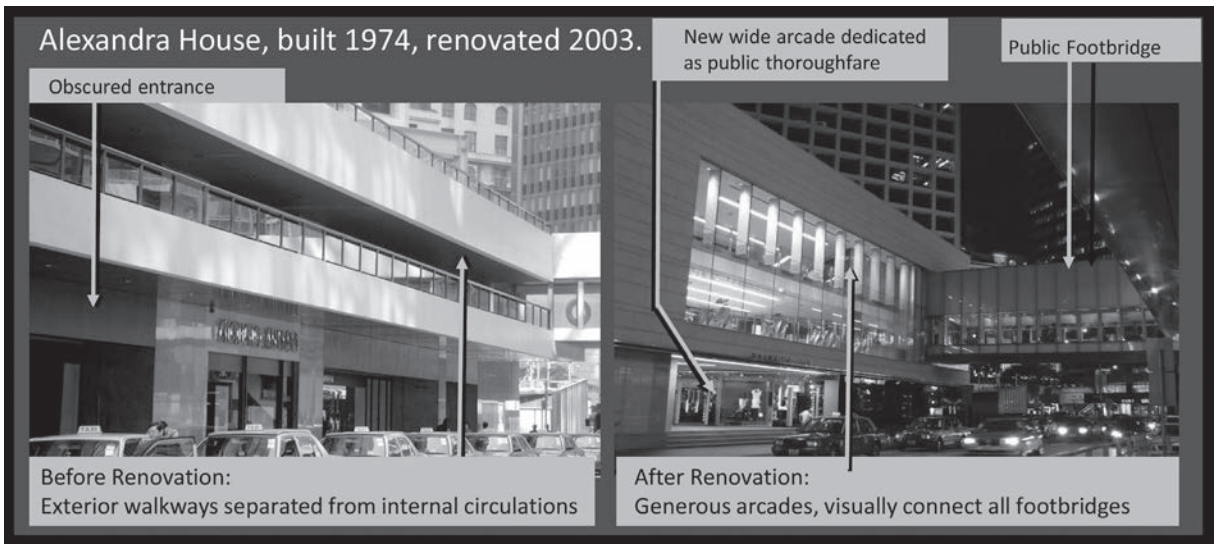


Fig. 3. **Alexandra House, built 1974, renovated 2003. © Edward Leung.**

tion who prefers more generous arcades and efficient shopping time. Combining this market demand with the rising retail rents, developers may be tempted to demolish existing 20th century buildings to create newer centres. However, another approach can be a reconfiguration, carried out in phases, which sustains operation of upstairs office tenants, while keeping existing retailers and tenants, as in the case of Princes Building (**Fig. 2**).

Her small exclusive shops along narrow arcades designed to serve the post-Pacific-War expatriates to this Pearl of the Orient deserves review in the new era. The bold move proves that, contrary to conventional assumption, making generous internal arcades actually increases rental areas by eliminating back corridors and leading customers into rather than around the shops. The design also converted small horizontally laid-out shops in favour of larger, vertically designed high-end shops. "Superlative

Developers rediscover the merit of "superlative pedestrianism of Manhattan and Hong Kong that… the continuous presence of tall buildings along the avenues allow them to support a continuous array of shopfronts"[9]. The low street canopies were removed to create the double storey giant shopfronts, enlarging the visual scale and casting lights onto streets, thus incorporating pavements into semi-public shopping routes.

4.2. Case Study Two: Alexandra House and Landmark Atrium

In early 2000s, the bonus incentive for dedicating private floor areas into public thoroughfare in Hong Kong was relaxed to encourage retail investments, encouraging the extensive reconfiguration and conversion of arcades into dedicated passages for both Alexandra House and Landmark Atrium. In the renovation of Alexandra House (**Fig. 3**), the old arcades were re-aligned and widened to create visual corridors from one bridge to another, which not only appeared more inviting to shoppers, but also surprisingly increased rental areas. Cafes and restaurants, instead of enclosed behind shopfronts, are located on both sides of arcades, thereby offering the dual function of the arcades also as additional customer circulation areas.

The re-design of the Landmark Atrium (**Fig. 4**) was even more courageous — by realigning the arcades and merging them with office foyers and open cafés, these new thoroughfares are offered to be open to public 24/7, in exchange for bonus plot ratios that created new retail arcades from a previous mechanical purpose floor. Making of double-storey shops not only eliminated the first floor arcades and increased rental areas, but also created tall iconic flagship storefronts facing the atrium that revives the original European Plaza concept.

4.3. Other Case Studies: HSBC and Jardine House

The financial institutions also observed the trend of reducing fixed desk floors in exchange for shared working space that promote interaction with customers and creative strategic planning of teams. HSBC currently intends to revert the previously occupied sky-lobbies back into shared spaces for casual meetings.

Jardine House is also undergoing renovation. The old beer-bar in the basement that served the expatriates well, is now converted to a modern foodhall for international cuisines. By opening a public arcade through the foodhall, it actually increases usage, where officer workers can meet and shop at relaxed manner at lunchtime, while jazz-bands perform in the shared space to entertain diners in evenings.

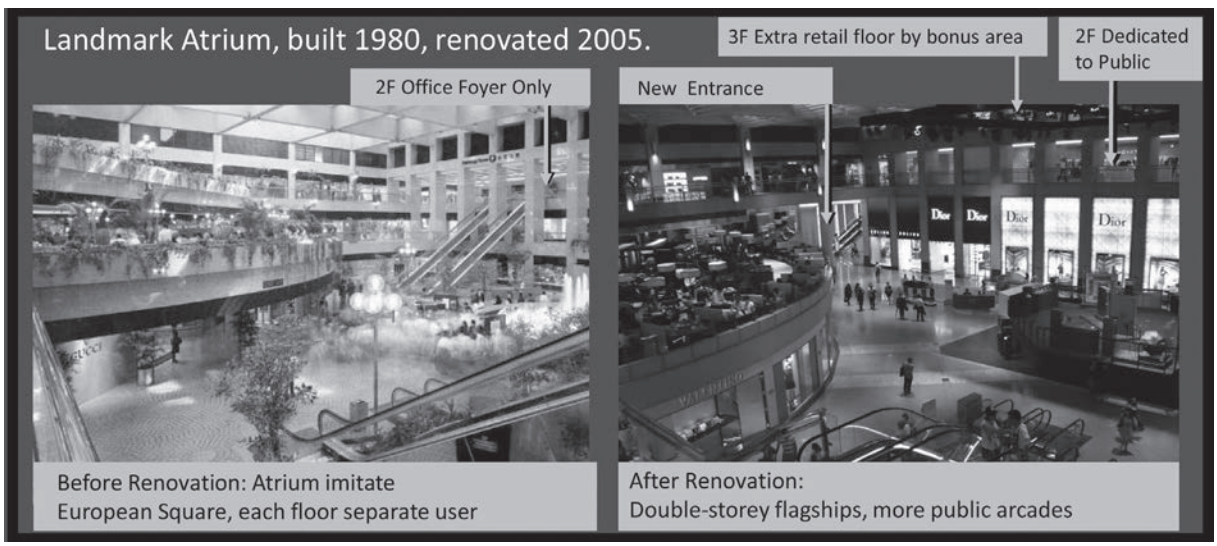


Fig. 4. **Landmark Atrium, built 1980, renovated 2005. © Edward Leung.**

In anticipation of future developments at the harbourfront, the first floor arcade currently connecting the footbridges will be reconfigured to house more dining spaces, and there are plans to further integrate these with previously underutilized office spaces directly above.

5. CONCLUSION: VALUE OF SEMI-PUBLIC SPACES

To re-introduce the Semi-Public Space as one of the noble and anchoring concepts of the Modern Movement, within a private commercial compound — on spread-sheet may appear to diminish rentable carpet space, while in actual fact serves to improve the environment and utilization, whereby in the end makes perfect business sense.

Stock market value of a developer is measured on Net Asset Value (NAV), which includes land value, invested upgrades, market goodwill, and bonus advantages of her real estates, rather than short term rental returns. Hence, once the developer periodically upgrades a commercial building to increase its NAV, the less unlikely the building will need to be demolished to make way for complete redevelopment. To preserve prominent 20th century commercial architectures, this article demonstrates that the most effective approach is to smartly support, instead of to fight against, the financial calculations of the developers. The above examples in Central District of Hong Kong illustrates how magnanimous conversion of previous dense offices and shops into comfortable semi-public spaces in the form of plazas, arcades, atriums, or even roof gardens, or shared conference spaces, actually attract financial business because of its diverse life and accessibility to the shared facilities.

Urban commercial lives have been one key driver of Modern Movement. If we still believe in this ideology, there is no limit to innovative opportunities to enhance the commercial values in parallel with the architectural heritage.

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AN OPEN MEGASTRUCTURE IN CURITIBA

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ABSTRACT.

The growth of cities and its emerging demands have inspired several utopian proposals. For such a challenge the modern architect's tendency has been to pursue the unity of language within a single system as a megastructure. Most of these attempts, based on personal tectonic interpretations, have not been accomplished, contradicted by the reality. Under *Serete Plan* guidelines since 1965, Curitiba consolidated its "Structural Axes" past five decades. These urban "strips" have been privileged with exclusive zoning for tall residential and office towers served by transport and highways. From above, Curitiba presents a view of a unique typology of megastructure highlighting these axes. Such a silhouette inevitably recalls the heroic genealogy of modern linear dream-designs. Taking a closer look, one can see many anonymous architects' traces of their successes and failures. It is a collective construction of an urban landscape in which such details and qualities of isolated architectures turn out to be irrelevant. At ground level, the grand architecture disappears showing an urban landscape with a continuous gallery of shops, a friendly transport system and walkways where the city life takes place. This paper presents the case study of Curitiba, its historical background and some insights confronting the resulting urban landscape with the presented theories and the visions of future.

1. INTRODUCTION

Modern interventions are often associated with the destruction of the pre-existing context. Paris (1853) with Haussmann, Rio de Janeiro (1902) with Pereira Passos and New York (1924–1964) with Robert Moses are examples of this rupture with the historical context. Some of them avoided this problem by occupying "*tabula rasa*" produced by war or natural disasters or, when available, virgin lands, like *Chandigarh* and *Brasília*.

They are all guided by a vision of the future. When too far from reality, it is relegated to the territory of utopia. Technology reduces that distance. Thus, urban proposals evolved first in terms of territorial planning (linear cities). Later, embracing technological advances, they manifested themselves as megastructures. Despite their fascination, these visionary proposals were not carried out. Perhaps because the city is not a great architecture and cannot be realised all at once.

Curitiba has been consolidating a unique urban morphology under the guidance of its Master Plan since 1965. Seen from above, 50 years later, it resembles an extensive megastructure. At ground level it is diluted in individual constructions organized linearly, resuming a friendly urban scale.

To decipher these achievements, some historical and theoretical background will be reviewed. Then, the conceptual basis of the original 1965 Master Plan will be verified to understand the situation in 2020 and discuss the prospects for the future (**Fig. 1**).

2. LINEAR CITIES & MEGASTRUCTURES

The Industrial Revolution accelerated the urbanization and urged to rethink the city-countryside relationship. There was a critical need to provide more housing, organize the production and movement of people and goods. In such context of crisis and inspired by emergent technologies, urbanistic speculations prospered.

The first "*Linear City*" (1882) by Arturo Soria y Mata (1844–1920) was an experimental neighbourhood on the suburbs of Madrid. It had a central strip 40m wide for Electrical Trams, infrastructure and walks for pedestrian and carriages. The houses were up to 3 floors and spaced apart from each other. Roads bordered by woods separated the ensemble from the agricultural context.

From Soria y Mata, a genealogy of ideas follows. Edgar Chambless' "*Roadtown*" (1910) is a linear city mounted over a railway operating underground. In the upper level, socialization areas along promenades with panoramic views of countryside.

Nikolay A. Milyutin (1930) collaborated with Moisei Ginzburg and Mikhail Okhitovich for proposal for *socialist cities*. Industries and housing are distributed parallel to the railway and separated by parks, proposing to "*ruralize urban life and urbanize the countryside*". For "*disurbanists*", a city was poison and the country house its antidote. Eliminating the city, they prevent the urban-rural antagonism with a general decentralization.[1] The ideas of Milyutin, Ginzburg and others were the basis for Le Corbusier's Plan for the *Zlin* Valley in Czechoslovakia (1935).[2]

For Rio de Janeiro (1929) Le Corbusier reinterpretes "*Roadtown*". His megastructure advances over the city "*without disturbing anyone*". On the roof, a highway connects the hills to link the city to its highest and healthiest places. Car lifts connect to the city at ground level at strategic points. Under the road would be garages and at the lower floors, with double height, space to build houses to suit everyone's taste with panoramic views.

In Alger (1930) he continues to develop this idea, which begins to seem more feasible, especially after visiting the



Fig. 1. **Curitiba: aerial view towards the east side. © L. Oba, Jan 2020.**

Fiat Lingotto Factory (1934).

His proposal for Rio did not materialize, but they germinated by the hands of young local architects such as Affonso Eduardo Reidy (*Pedregulho Housing*, 1947) and Oscar Niemeyer (*Copam Building*, 1950's). However these buildings are just small segments of the proposed linear city and so is his *Unité d'Habitation* (1950's). Designed as isolated architectures, they did not inspire any contextual continuation.

Brasília is also essentially a linear city configured on its North-South wings with the monumental axis giving the character of a capital.

The book *"Les trois établissements humaines"* (1945) was the result of these experiences. It proposes a networked structure, forming a sort of "*built biology*", with agricultural units and industrial axes connecting radio-concentric cities of exchanges.[3]

Transport associated with infrastructure formed a powerful linear inductor that freed the city from centralization and encouraged all these proposals. In the 1960s, pressure from megacities and technological excitement led utopias to a new level of *Megastructures*.

Yona Friedman opposed to everything that was rigid or permanent. The city itself was an obstacle to his general mobility theory. "*Ville Spatiale*" was an infinitely extended space-frame structure floating over the city. Dwelling units would fill in the voids in between the structural modules as will and for free.[4] According to Koolhaas, it floats

> *(...) like a metallic blanket of clouds, promising unlimited but unfocused potential renewal of "everything", but never lands, never confronts, never claims its rightful place.*[5]

The Plan for Tokyo proposed by Kenzo Tange in 1960 escaped the existing city and advanced linearly over the bay. Following this path, Japanese Metabolists wrote a fantastic page of possibilities in the history of architecture. However, such were the gaps between their proposals and the reality that they were not realized. There is no architecture, no matter how big it might be, that resolves the city in only one gesture. Rem Koolhaas believes that after a certain dimension, the Great Building can no longer be controlled by architectural gestures. Composition, scale, proportion, tradition, honesty everything is lost. Quality does not matter anymore. The impact depends only on its size.

Bigness "reveals" nothing, it "*perplexes*". And worst, it isn't part of an urban tissue anymore, it just exists, *"(...) at most, it coexists."*[6]
It suggests a disturbing landscape of isolated, self-sufficient, and gigantic "*bubbles*" standing alone, leaving outside an interstitial urban space of exclusion.

Bigness is not an objective. It results from the need for densification and happens through the accumulation of smaller components forming the multifunctional whole. To face this challenge, it is necessary to be aware of complexity involved in public/private issues and search for a design strategy sensitive to pre-existences, flexible and open to changes. And the result need not be homogeneous. From its cumulative character, an "*under-construction*" aesthetics may emerge.

3. A PLAN FOR CURITIBA

The *Agache Plan*[7] (1943) guided the development of Curitiba for more than 2 decades leaving as legacy the *Plan of Avenues*, functional centres, parks, and squares. In 1960's it was already outdated. Random urban interventions were pointing to the need for a new plan. Professors and students



Fig. 2. **Curitiba: Sete de Setembro St.— view towards the east. © L. Oba, Feb 2020.**

of the newly created Architecture course[8] formed the critical mass to discuss this issue, also inspired by the inauguration of *Brasilia* (1961).

The competition for *Preliminary Plan* was won by *Sociedade Serete de Estudos e Projetos* in collaboration with Jorge Wilheim in 1964.[9]

The new plan´s public presentation was held during the seminar "Curitiba of Tomorrow" in July 1965. A technical advisory team[10], created by the Mayor, organized the seminar's contributions, and prepared the Master Plan for approval keeping its conceptual basis and inserting new topics such as Historical sector revitalization. The detailing of Master Plan extended to the end of his administrative mandate.

In 1971, Jaime Lerner[11] was named Mayor. He had a remarkable Master Plan in his hands, ready to be used, and a team prepared to do it.

4. PRELIMINARY PLAN OF URBANISM

The 1965 diagnosis for Curitiba predicted an alarming growth from 500,000 to 2,250,000 inhabitants (1990). The central area suffered with serious congestion due to excessive concentration of activities. People were reluctant to occupy better regions in the North and West due to the lack of infrastructure. There were only a few cultural and recreational spaces and activities typical of cosmopolitan life. The Neighbourhoods were isolated, requiring diametrical connections.[12]

Identifying an incipient proliferation of irregular allotments and *favela* outbreaks and, predicting significant demographic growt[13], Wilheim proposes a morphology that allows free expansion, abandoning solutions that "encircle" the city, that is, "*perimeter rings that would be fatally overcome with time*":

> *(...) We prefer to seek a linearity of expansion, along certain dominant, spontaneous and strongly marked guidelines. We call these guidelines structural lines (...) giving it, (...) a scale, a function, a use, and a possibility of growth, appropriate to the important function that they should have.*[14]

Two *structural axes* (North and South) would make the diametrical connections of the city passing tangents to the *central ring*. They would cross isolated districts connecting their traditional centres in order to reinforce polinuclear strategy and alleviate the centre.

Defined as a *tripod* (land use, road system, public transport) the *Axes* would induce social, economic, and environmental development along its path.

To allocate transport, local traffic, and highways, it would be necessary a 60 to 80m wide track. That was too much to accommodate on existing streets. Rafael Dely (1939–2007) proposed the "*trinary system*": he allocated in the central street only the BRT channel and two lanes of local streets. He transferred the "highways" to the parallel streets for higher speed connections.



Fig. 3. **Curitiba: Padre Agostinho St. — north border highway. © L. Oba, Jan 2020.**

The structural sector should be occupied by 20-story towers occupying 1/3 of the lot, setback of 10m from the border of street and 30m in between the towers. The remaining area should be "*maintained with gardens (...) for recreational or landscape purposes*"[15] This inspiring "*superquadra*"[16] contradicted the need for densification and viability by private sector and suffered adaptations.

With great constructive potential (4x), exclusive permission to build high towers served by public transport and infrastructure, the structural axes attracted and concentrated the interests of the investors.

They were consolidated with more tolerant legislation. However, issues related to insolation and privacy reflected in the perception of the market. And this certainly facilitated the approval of the minimum distance, height divided by 6, to the boundaries of the lot.[17]

The morphology is regulated by "*Plano Massa*"[18]: In front of central avenue, a 100% occupancy is allowed for shops and services on ground and 1st floors. The stores must set back 4m to form a covered gallery expanding the sidewalks. The towers above may occupy 50% and its heights depend on the "Height/6" formula.

The city grew less than expected and the "*Structural Axes*" consolidated more in some segments than others. From Santa Candida to Pinheirinho, only 1/3 was built as planned, another third was occupied by lower constructions and the rest remains unoccupied. If all Real Estate investments were concentrated on it today, it would still take 18 years to complete it.[19]

Jorge Wilheim counted on a team of talented local architects who developed the Preliminary Plan, implemented, and monitored the construction of the new city. A planning experience with a realistic strategy, recognizing local constraints, believing in long-term construction, attracting private investments, and preventing disruption to the process. In all this process, the leadership of Jaime Lerner must be emphasized. His vision, desire for change and political and administrative skills were fundamental in making the plan happen.

5. CURITIBA TODAY

Lacking significant natural resources and with its rivers being canalized or covered, the Structural Axes have become Curitiba's main landmarks. They guide and support the understanding of the city, helping people to apprehend their existential space. There are feelings of being to the right or to the left of "structural lines", as the Parisians do in relation to the Seine (**Fig. 2**). Establishing the "axis" on these urban connections was like underlining these paths with towers, galleries, bus stops, new lighting, and traffic hierarchy (**Fig. 3**).[20] With the same parameters throughout its length, those who expected a monotonous repetition are surprised by the diversity and rebellious dynamics of the city in submitting to the norms and forecasts.

In more consolidated sections, the "slicing" is visible



Fig. 4. **Curitiba: Martim Afonso Street. © L. Oba, Jan 2020.**

even with the galleries trying to unify the buildings. There are architectures, interruptions, misalignments, textures, and colours that seldom match with each other (**Fig. 4**). The connection between opposed "walls" of buildings takes place on the ground floor across 3 lanes of cars and buses. Air crossings still face legal barriers although they are already a reality with good and bad international examples.

Transport efficiency required greater distance between intersections and to make the system viable, tunnels and viaducts were avoided. As a result, there is a lack of transversal permeabilities. With the upgrade of the bus to Metro liberating the street, new alternatives may be presented.
At the outer edges, highways have become barriers for the rest of the city. Going to work or coming home, means facing long lines of traffic jams. The difference between the two sides is visible. Safe connections for pedestrians to the "other side" would be desirable.

In his path across the city, the axes have incorporated traditional landmarks: churches, squares, historical buildings. Places with great potential for unique interventions, opening and giving breath toward the city, breaking a little, the pattern of the megastructure. Places to become the anchors of development giving the Structural Axes a proper identity.

A megastructure is part of the city, but it is not the city itself. So, it must keep an open relationship with it and help its development.

6. FINAL CONSIDERATIONS

The "*Bigness*" of the Structural Axes was never the objective, but the result of the process. They were built by a gradual addition of small objects. There would be no other way to build a structure over 23km long. Each new project is just a part of a whole, under a permanent construction process. And this unfinished feature is part of their "under-construction" tectonics.

That means leaving the comfort of isolated forms and face the complexity of large collective and integrated forms. We will be dealing with "*buildings that have reasons to be together*".[21]

One must evaluate the context and design the new as its extension and leave open connections for the future. The quality to be sought is a balanced blend that preserves the identity of a part and the sense of continuity of whole.

City is too big to be designed, so is a megastructure. The scope of unity to be designed will depend on each case but should always be an ensemble, not an isolated lot.

Reviewing the historical and theoretical backgrounds, this paper studied the creation, implementation and development of an urban experience that plunged into the physical reality of a capital city in 1965 and made a unique *megastructure* a reality after 5 decades. By discussing its results, pointing out problems and speculating on future solutions, it's expected to contribute to a critical, rather than docu-

mental register of this case and inspire researches for new urban design strategies concerning large scale and its impacts in urban landscape.

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SAVING COLLAGE CITY: THE FUTURE OF CARACAS MODERN URBAN LANDSCAPE

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ABSTRACT.

One of the most beautiful natural sites and modern urban landscapes in Latin America is that of Caracas. Placed on a high valley along the last branch of the Andes, Caracas simultaneously developed on its coastline on the Caribbean sea. Founded on the western-most area of the valley as a Spanish colonial city in 1567, Caracas grew following a reticular pattern for three centuries, until the arrival of its first suburb, El Paraiso, in 1895. When the oil boom boosted Venezuela's economy in the 1930s, urban development rocketed to the east. Following a horizontal movement, a vast array of planning ideas derived from the Modern Movement were implanted on the existing agrarian lands. A new modern Collage City appeared as soon as 1928, when Olmsted Brothers designed the Caracas Country Club. A large list of suburban communities, garden cities, workers neighbourhoods, university cities, highways and viaducts, middle class clusters, picturesque urbanizations, hanging neighbourhoods, suburban new centres as well new infrastructure and mega structures, makes Caracas Modern Heritage stand as one of the best examples of a major modern city in the region. In this paper, we will analyze the challenge that the Caracas Modern Cityscape and its remarkable Modern Heritage are facing in front of an imminent change of government in Venezuela. We will try to foresee in which ways the unstoppable construction boom which the future development and the reconstruction of the country will bring, can also attain the conservation of its modernity and its unique urban qualities.

"Nowadays people know the price of everything and the value of nothing" — Oscar Wilde, *The Picture of Dorian Gray*.[1]

1. INTRODUCTION

Being modern today inescapably means the conservation of the Modern Movement. When it comes to Urban Design, it encompasses the universal conservation of the modern city in all of its different regional expressions and diverse global locations, to resist and adapt to Twenty-first century development: unstoppable growth, modernization, new technologies, environmental threat, and also political change.

The modern cityscape and heritage of Caracas (**Fig. 1**), capital of Venezuela and the greatest protagonist of the Modern Movement in the country, is about to face the biggest challenge of its urban history, as it is in front of an imminent change of government. After twenty-one years of regression under a leftist regime which in the recent times shifted into a radical narco-dictatorship that destroyed the country, once the nation regains its freedom and democracy is back, the metropolis — as the nation — will find itself with all its public urban institutions knocked down, its urban legality inoperative or vanished, its public and private investment slowed down to a minimum, its patrimony abandoned or disfigured, no new infrastructure and very few new contemporary architecture, while the media and all modes of public control of the urban realm have almost disappeared.

Caracas in 2020 seems stopped in time. It is like a modern version of ruined Havana, but surprisingly standing in a much better condition. In spite the crisis, the actual modern ruin that Caracas is now has kept most of its MoMo urban fabric from the end of the 1990s, while its characteristic city image and its spectacular scenic panorama remain pretty well conserved. This is basically due to the general quality of the modern city in itself, its great modern architecture, urban planning and infrastructure, which have acted as a resilience factor. Besides, there is also a matter of pride of place.

Therefore Caracas, which has been under siege for more than two decades by a harsh revolution that despised it for being the successful urban expression of the former democratic era, is now like a snapshot of its own appearance by December, 1999, when Hugo Chavez arrived to power and the city was at the peak of its development as a modern Twentieth-century metropolis.

This is a very special situation to take into consideration for the sake of the future preservation of Caracas urban landscape and of its modern legacy, but also for the resumption of its urban development.

2. SPECIFI_CITY

One of the most beautifully specific natural sites and modern urban landscapes in all of Latin America is that of Caracas. The city developed from west to east on a promising territory with strong topographical features: a high longitudinal valley and a long picturesque strip on the Caribbean coastline, both at the footsteps of the high mountain of El Avila, the last northern branch of the Andes.

The impact of the presence of nature (the mountain is covered by a dense tropical jungle with cascades and creeks falling on both sides) and the strong contours of the unique geographical location (the sculptural quality of the long and monumental mountain range), became with time a radical

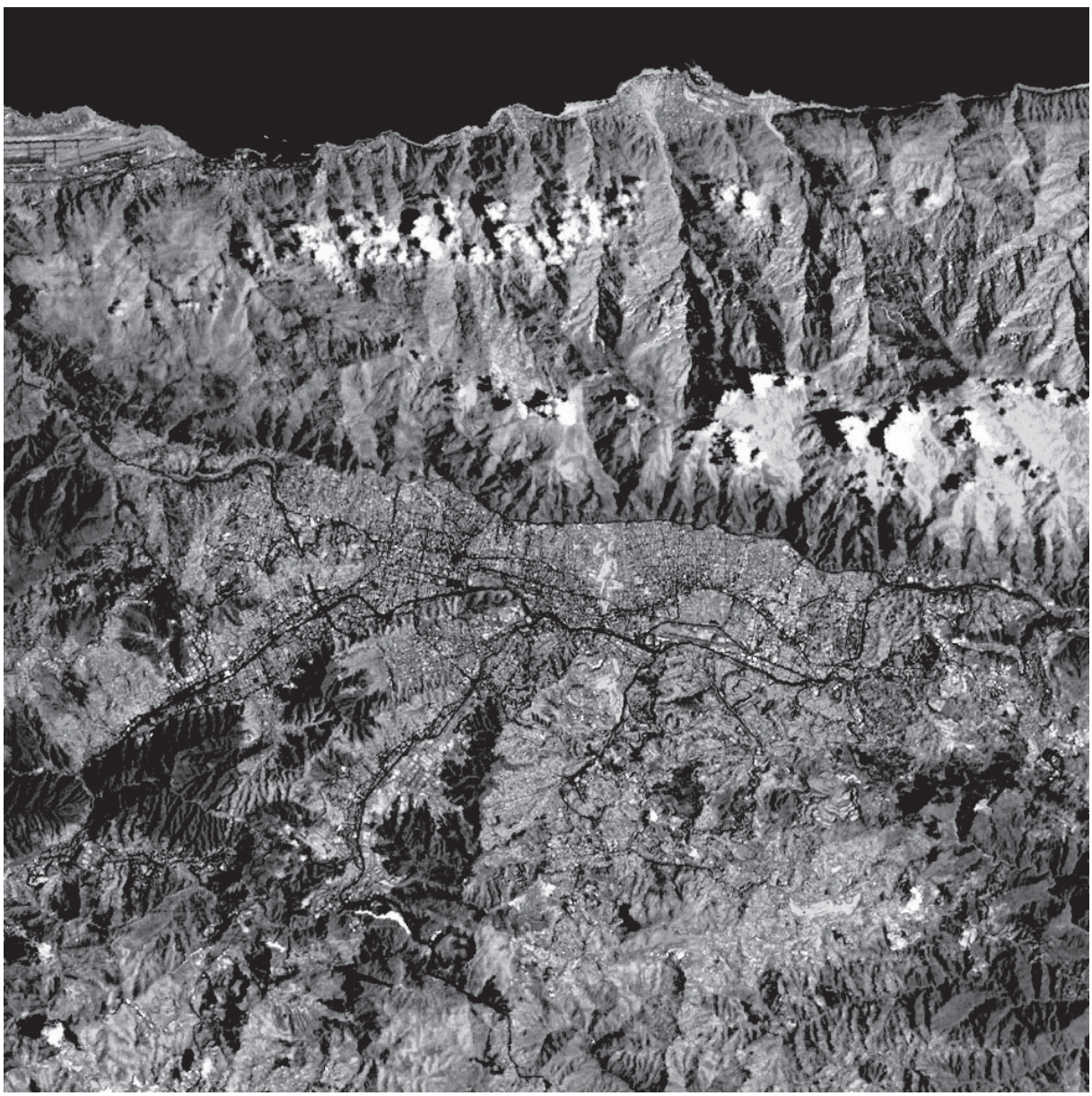


Fig. 1. **Caracas satellite view. © Archivo Fundación de la Memoria Urbana, 2005.**

influence on the shape of the city being formed at its footsteps, for the city to come.

They made Caracas a Specific City.

3. COLLAGE CITY_ECLECTIC URBAN MODERNITY

Founded on a first unsuccessful attempt on the site of Caraballeda on the coast in 1560, Caracas was finally settled on a higher site in the westernmost part of the valley as a Spanish colonial city in 1567. For three centuries, it developed following the reticular pattern of the Laws of the Indies, until pre-modern urbanization began with the arrival of its first suburb, the French-inspired and organic El Paraiso (1895), on the southern bank of the Guaire river.

When the oil boom boosted Venezuela's economy in the 1930s, changing the country's fate forever, urban development rocketed, and the city left behind its colonial centre to urbanize the territory to the east, also along the coastline. Following this horizontal movement, colonial haciendas began to be supplanted one by one with as many modern urban dreams as there were urban developers.

During the Twentieth-century, the dual tropical condi-

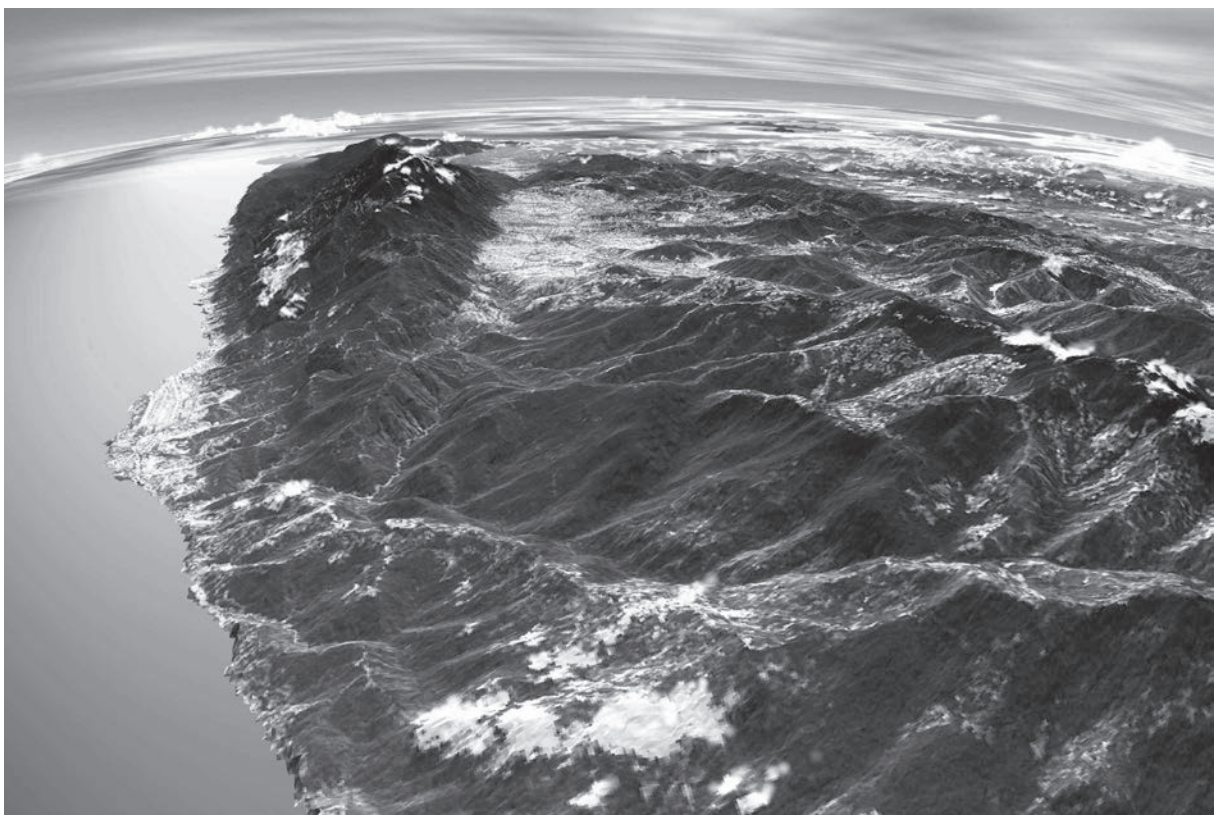


Fig. 2. **The sea side and the valley side of Caracas. © Archivo Fundación de la Memoria Urbana, 2008.**

tion of the city — even botanic and climatic — of being simultaneously on a plateau in the mountains and on a coastal waterfront, enticed the production of a diversity of urban developments and of eclectic architecture typologies that led to the remarkable richness of the actual Caracas Modern Heritage.

Planning ideas derived from the Modern Movement implanted a vast array of urbanisms on the existing agrarian colonial patterns of roads, architectural farms, industrial complexes, and agricultural fields. A new modern Collage City appeared as soon as 1928, when the firm of Olmsted Brothers from Brookline, Massachusetts, planned the urban and landscaping design for the suburban neighbourhood of the Caracas Country Club. From then on, a large list of 1920s suburban communities (like late Art Nouveau Los Chorros), 1930s Garden Cities (like Neo Hispanic La Florida and Campo Alegre), 1940s workers neighbourhoods (like the New City of Nueva Caracas), 1950s university cities (like UNESCO World Site Ciudad Universitaria de Caracas), 1960s middle class clusters (like the new Suburban Development of Prados del Este), 1970s picturesque urbanizations (like the Suburban Neighbourhood of La Lagunita Country Club), 1980s hanging neighbourhoods (like the Suburban Development of La Tahona) and end-of-the-century suburban new centres (like the up graded town of Guarenas) emerged to create the complex patchwork that characterizes this modern metropolis.

Venezuela's wealth attracted massive and successive waves of immigrants — mainly from Europe — in the first half of the Twentieth-century. But it also brought prominent engineering and architectural firms from all over the world, which aimed to take part in the construction of the brilliant and new modern Latin American city.[2]

This promoted the fast growth and enrichment of the construction industry from many points of view, bringing in important investment, importing experienced workforce, getting great names from the architectural and artistic world and introducing in the country major construction companies, new imported materials, technology and foreign enterprises, all of which came to participate in the passionate building of the booming capital.[3] Caracas won works by world-acclaimed figures like Harrison & Abramovitz, Eugene Freyssinet, Alexander Calder, Gio Ponti, Holabird, Root & Burgee, Riccardo Morandi, Phillip Johnson, Richard J. Neutra, Felix Candela, Rafael Bergamin, Emery Roth, Eduardo Torroja, Fausto Melotti, Lathrop Douglass, Arthur B. Froehlich, Harry Bertoia, just to name a few of the international authors that contributed to the embellishment and mod-



Fig. 3. **The Canonical view: a postcard of Caracas. © Archivo Fundación de la Memoria Urbana, 1970s.**

ernization of the city.

Onto this already eclectic urban panorama and startling geography came also the impact of a new breed of infrastructure and mega structures, never known before in the region. Following the Caracas Arterial Plan proposed by New York City developer Robert Moses in 1947, a vast system of modern highway and viaducts were placed along the valley from the mid-century on, and also through an area called since the colonial times Puerta de Caracas (Caracas Gate), in order to connect the city with its coastal side where the airport and the port are located. Furthermore, the implantation of huge developments of cities within the city for housing, like the 23 de Enero (Carlos Raul Villanueva,1952) or Parque Central (Siso & Shaw, 1974), or for culture, like the Ciudad Universitaria de Caracas (Carlos Raul Villanueva, 1954) and the Teresa Carreño Opera House (Tomas Lugo, 1981), kept on enlarging Caracas modern patrimony, making it stand as one of the best examples of a major modern Latin American city, pairing Ciudad de Mexico and Rio de Janeiro.[4]

Caracas Urban Modernity became as eclectic as its new social spectrum, enriched and empowered by the artistic force of the immigrants and the input of all the newcomers — local and global professionals — from the design world.

4. AN OVERWHELMING CITY PANORAMA

As the city developed in the modern times as a horizontal palimpsest of interconnected urban utopias, and in spite of this unplanned diversity, by the mid-century the urban fabric started to produce a homogenous, regular skyline. Reinforcing this natural tendency, by the end of the 1950s, a limiting cornice line was set by the government at the specific height of 1,000 meters above sea level (only on the valley side). The explanation for this unexpected and remarkable regulation is that as early as 1958, a pioneering decision protected El Avila mountain on both sides, declaring it a National Park and Monument.

> *Venezuela had signed an agreement for the protection of the flora, the fauna and the natural scenic beauties of the countries of America, which the country ratified on October 12, 1940, and was converted into an Act by the National Congress on June 15, 1941. Right after, the President of the Republic by mandate number 473, of December 12, 1958, decreed the creation of the Parque Nacional del Ávila, on a surface of 66, 192 Has, whose boundaries were specified in the same decree.*[5]

From then on, the mountain remained unbuilt, its natu-



Fig. 4. **Caracas urban fabric and the Parque Nacional El Avila, limited by the Cota Mil highway. © Archivo Fundación de la Memoria Urbana, 2012.**

ral jungle protected from any development, keeping intact its overwhelming panorama.

The legislation, which regulated over all the capital city's urban fabric, achieved for Caracas instead of a Skyline a Mountainline, and in time helped to turn it into a monumental pedestal for El Avila. The city became an urban plinth for the most majestic of palaces: the mountain itself. An urban panorama dreamt and achieved — slowly, and perhaps unconsciously — by the collective mind of the Caraqueños since ancestral times.[6] Ever since, the overwhelming presence of the mountain keeps ruling over the urban landscape on both sides of the mountain range, sea side and valley side, becoming its main monument, and, arguably, its main architecture (Fig. 2).[7]

Shortly after, the decision to build two monumental highways, definitely finished to define the horizontal shape of Caracas modern urban landscape: the Cota Mil (1963), divided like a clean concrete cut the urban fabric below from Parque Nacional El Avila, and the Autopista del Este (1961), crossing the city's patchwork of multiple urbanisms from east to west with a varied fauna of formalistically shaped modern viaducts, reinforced the linear and horizontal quality of the city's modern shape. Another helpful regulation, called the Approach Cone Regulation, also came to limit the height of buildings in the surroundings of the La Carlota Airport, an airport placed in the middle-east of the city.

With all these decisions, Caracas began to turn into an eternal belvedere of its natural landscape... and of itself. Canonical views of Caracas urban panorama always depict the city from the southern hills, with the mountain as a backdrop (Fig. 3). A situation that was best perceived for the first time — and beautifully described — by Italian master Gio Ponti after his first visit to the capital in 1954.[8]

5. FUTURE SHOCK

Democracy is in the horizon for Venezuela. And so is the return of investment and economical life. Some signs of these had been showing up in the last months of 2019, when a small construction boom began in certain prime locations. Nevertheless, in March 2020, with the outburst of COVID-19, the political situation worsened in the country, delaying the

solution of a crisis that, inevitably, one day will come to an end.

What will happen in a city that is institutionally destroyed but treasures an incredible modern heritage still standing? What will happen with its majestic urban panorama, its monumental modernity in harmony with nature, unique in the world? In which ways the predictable construction boom that will boost with the return of liberty to the country will comply with this existing image of the city, built along 454 years of history?

Will the future development and the reconstruction of the country that will come when political change occurs in the near future also attain the conservation of its modernity and its unique urban qualities? Is Caracas prepared for that, or will it fall into a sort of Future Shock, losing all its character to become just another skyscraper-populated city, with the erasing of most of its small and middle scale remarkable examples of its Modern Tropical architecture and urban forms (Fig. 4)?

What is to be done to stop this from happening?

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6 In pre-Columbian times, the Caracas, which was the name of the nation made of the various native Indian tribes that lived in the area where the city is now placed, worshipped the mountain as a deity. They called it *Waraira repano*, which means "Big Mountain Range". Therefore, they respectfully never built on the mountain, but on the neighbouring hills, in order to be able to adore it from the distance. Some of this pre-Columbian memories and feelings remain in the population, reflecting in the image of the city to-today. Hannia Gomez. "Quinientos años de forma urbana", El Nacional — Arquitectura, accessed on June 10, 2002, https://hanniagomez.blogspot.com/2010/04/quinientos-anos-de-forma-urbana.html.

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TACKLING SUSTAINABILITY IN MODERN HOUSING NEIGHBOURHOODS

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ABSTRACT.

Recognised since 2007 as a UNESCO World Heritage Site owing to its exceptional 18th century urbanism and architecture, Bordeaux (France) also features emblematic districts representative of diverse modern trends. After World War II, and benefiting from the national stature of its mayor, the city underwent major transformations to ensure its place as one of France's major metropolitan centres.

Multifunctional slab neighbourhoods (Mériadeck) flourished on "tabula rasa" terrain, while smaller, dense row-housing projects (Pontet-Lamartine), reflecting a "reasoned modernity", took root in the first ring of the emerging metropolis. Built on the cusp of the oil crises, these "all-automobile" neighbourhoods subsequently witnessed the growth and densification of the Bordeaux Metropolis and must now face the harsh judgment of sustainability that governs urban design. What place do these modern districts occupy in the contemporary metropolis, and how can they evolve with regard to their inhabitants' practices, and perceptions?

This contribution addresses these questions by sharing the results of a two-year joint research programme. We focus on two modern districts that, despite their contrasting dimensions, typologies and locations, share urban qualities and a strong potential for change. They also demonstrate their residents' commitment to accomplishing a physical and moral rehabilitation for this heritage, while meeting the challenges of sustainability on a metropolitan scale. The interviews and the architectural and environmental surveys carried out during our research are used to show how inhabitants' involvement both preserves and adapts their modern heritage to better anchor it as a component of the sustainable metropolis.

1. POST-WAR MODERN NEIGHBOURHOODS: A SECOND-CLASS' HERITAGE?

Recognised since 2007 as a UNESCO World Heritage Site owing to its exceptional 18th century urbanism and architecture, Bordeaux (France) also features emblematic districts representative of diverse modern movements. After World War II, and benefiting from the national stature of its mayor, Jacques Chaban-Delmas, the city underwent major transformations to ensure its place as one of France's major metropolitan centres and to foster its citizens' fulfilment in a modern world. This modern urban environment both embodied the progress and development of the "Trente Glorieuses",[1] and complemented the outdated — but majestic — historic city centre in terms of functionality and mobility.

Thus, multifunctional slab neighbourhoods flourished on "tabula rasa" terrain, while smaller, dense row-housing projects, reflecting a "reasoned modernity", took root in the first ring of the emerging metropolis. Built on the cusp of the oil crises, these "all-automobile" neighbourhoods subsequently witnessed the growth and densification of the Bordeaux Metropolis. They sometimes face the harsh judgment of sustainability, which governs the design of the "sustainable city" of the future. Indeed, Bordeaux recently regained its splendour during the mandate of the Mayor Alain Juppé (former French Prime Minister) with the return of the tramway, the landscaping of the Garonne riverbanks, and a strong ambition to promote dense housing development and soft mobility solutions. As a result, the modern housing neighbourhoods are commonly described as "energy thieves", hampered by their brutalist architecture. Today they represent a second-class heritage.

Though difficult to manage due to their large scale and architectural details, and expensive to renovate although they are recent, is this existing heritage obsolete? What place do these modern districts occupy in the metropolis and how can they evolve with regard to their inhabitants' practices and representations?

This contribution shares the results of a two-year joint research programme (2017–2019) conducted by the PAVE and GRECCAU Research Centres (ENSAPBx) and the University of Cincinnati (DAAP). It shows two modern neighbourhoods that, despite their contrasting dimensions, typologies, and locations, share urban qualities and a strong potential for change. Mériadeck (1951–1980), in the very centre of Bordeaux, is a deck-and-tower scheme with separate circulation systems and cross-shaped towers that overlook one of the first protected heritage areas in France. Pontet-Lamartine consists of 28 patio row-houses (1970–1971). The owner-residents are proactive in promoting their modernist heritage and in developing civic life, for example joining forces to safeguard amenities such as shops, services, shared public spaces, and a park open to a rapidly densifying surrounding neighbourhood.

This paper discusses the spatial and urban qualities of



Fig. 1. **Meriadeck, J. Royer, J. Willerval and P. Lagarde architects, Bordeaux (France), 1951–1980. © A'Urba, 2007.**

modern post-war neighbourhoods, as created by their designers, which can be described as sustainable today. Combining an objective and a subjective approach, our work reveals specific urban features in these districts that, rather than confirming their obsolescence, demonstrate their value in terms of uses quality. Finally, we highlight the inhabitants' commitment to achieving a physical as well as a moral rehabilitation for this heritage they appreciate, while meeting the challenges of sustainability on a metropolitan level.

2. TWO MODERN NEIGHBOURHOODS: COMMON STRENGTHS, DIFFERENT FATES

During the "Trente Glorieuses", France engaged in a policy claiming housing as a right for all. This was a decisive change, as little importance had been given to housing since the creation of the HBM companies (Low-Cost Housing, 1889) and the Loucheur law (1928). To achieve this ambition, architects had at their disposal theoretical models developed by hygienists during the 19th century. The Culturalists, following on from Site and Howard, took as their reference the irregular composition of the medieval city and small-scale garden cities. The Progressists extended the scientific approach of Haussmann, Cerda, Garnier, with large urban blocks and their abstract composition influenced by Neoplasticism.

The CIAM IV led in 1933 to the Charter of Athens, which banned traditional architecture and town planning in favour of regularity and geometry, the separation of functions and flows, space, clean air, and sunlight. Few cities in France applied it strictly, except for Firminy Vert, where the mayor, Eugène Claudius-Petit, Minister of Reconstruction and Town Planning (1948–1953), praised Le Corbusier's ideas. The influence of the Charter of Athens, however, became a major reference for architects and building owners, as testified by the Mériadeck district (Bordeaux). The mixed housing, tertiary and commercial areas, up on a high slab reserved for pedestrians, are detached from the historic city and the traffic. The master plan, divided into squares linked together by footbridges, is composed of cruciform buildings based on a functionalist approach and solar and thermal considerations. This clear break from the classical city reinforces the insular character of this new district, although both have been included in the UNESCO perimeter since 2007.

Beside this large urban and architectural complex, criticised for its extreme density and out-of-scale aesthetic, detached housing extends to the periphery and participates in the urban sprawl. Mixed housing settlements, with small collective and individual units, are seen as an alternative. The Pontet-Lamartine neighbourhood (Pessac, P. Calmon — AUA studio) addresses this concern for urban development on a human scale with small terraced residential buildings and row-houses with a patio gathered around green relaxation areas. It contributes to the experiments of this period by combining intimacy and density while assuming a modern architecture consisting of flat roofs and purist design.

These modern creations received more blame than praise when they were built, but the passage of time has revealed their uses quality and their heritage value. Mériadeck's central location is all the more remarkable today as Bordeaux has expanded. At the heart of an area of shops, services and cultural life, its tree-lined slab offers a world in itself: a unique urban promenade, with no streets, avenues or squares, it does indeed — in the traditional sense of the word — have the city at its feet. The typology of the towers with their vast balconies enables residents to be in touch with the green canopy of the park and to enjoy a splendid view over Bordeaux (**Fig. 1**).



Fig. 2. **Pontet-Lamartine, P. Calmon architect, Pessac (France),1970. © Google, 2017.**

Although overtaken by urbanisation over time, Pontet-Lamartine continues to enjoy its preserved outdoor collective spaces thanks to its *non ædificandi* buffer zones. Less generous in recent developments, these unbuilt and intimate spaces contribute to the social interactions of the inhabitants, and the spacious halls and patios provide transitions between public and private life that can be personalised (Fig. 2).

The urban composition pattern, using an assembly and offset arrangement (checkerboard pattern), ensures that homes are not overlooked, while bringing light, sunshine and openness to the landscape, in line with the architects' persistent hygienic concerns. On the basis of a few typical housing units, repetition becomes a pretext to create diversity into uniformity.

The abundant housing typologies proposed by the Modern Movement appeal to different profiles (families with young children, disabled or elderly people, students). This represents a first step towards social diversity and inclusion when other typologies and locations unintentionally exclude these profiles. Moreover, these neighbourhoods' capacity to change — from housing to activity and vice versa — and evolve to welcome new uses and users adds to their qualities of sustainability.

3. A SUSTAINABLE LIVING ENVIRONMENT FOR ITS INHABITANTS

This conceptualized modernity is confronted with the inhabitants' daily activities, not only with their life as neighbours and citizens, but also with issues that could not have been imagined at that time, such as energy transition, the era of soft mobility or urban densification. Nevertheless, the living environment in these two disparate neighbourhoods still demonstrates qualities in terms of mobility, amenities, and atmosphere.

In Mériadeck, property prices have long remained lower than in the historic centre, because of its architecture considered brutal and dated in its design. However, benefiting from larger flats, very accessible with numerous amenities, living in modern architecture is felt to be a real opportunity. With its covered car parks, convenient pedestrian access and multiple public transportation options in the congested city, the inhabitants experience the city without the usual cares of city life. In fact, the "all-automobile" slab and the urban planning in general still truly complement the historic centre. For Pontet-Lamartine, the inhabitants' satisfaction is related to the amenities and numerous transportation options more than the location itself: the metropolitan ring road, the tram system cyclable lanes contribute to its sustainability. Modern post-war districts now manage parking differently, without eliminating it entirely. In Mériadeck, underground car parks are used by local residents, shoppers and local companies who need a vehicle for their business. Pontet-Lamartine provides garage and street parking, easing the city traffic and complementing families' new lifestyles.

Vast built spaces and highly structured unbuilt surroundings are typical of the Modern Movement. They complement each other as a counterpoint to the fully built-up older districts or the contemporary neighbourhoods, offering commercial or sports facilities that enhance the residents' and neighbours' quality of life. These "voids" also favour the emergence of interesting uses: green island cores, slab ends, and planted alleyways create transitions between private and public spaces, conducive to meetings and individual uses.

> *Coming from a farming background [...] we like to stay in a green setting, to be at home while having close neighbours (Pontet-Lamartine).*
> *There is everything you need: car parks, much larger apartments than you wanted, a caretaker, elevators, a garden... the most extraordinary effect here is that you enter via a garden (Mériadeck).*

The amenities, the spatial flexibility to adjust to today's needs, the quality of the urban atmosphere sustain local life

and proved themselves highly efficient during the confinement. Far from the "usual" drawbacks of urban living such as noise or heat, their location near or in the very heart of the city centre makes them a resource in an otherwise very mineral environment. Dense buildings combined with the strong presence of vegetation limit the heat island effect, which was not identified at the time these Modern districts were first conceived. Mériadeck and Pontet-Lamartine's summer comfort is particularly conducive to the practice of outdoor activities, even in periods of high heat. Their central cores are also very quiet sound environments, protected from one of the main sources of noise in the urban environment, i.e. traffic. "The slab urbanism concept in relation to the street is very clear: no cars, no noise, that's for sure, it's a real comfort" (Mériadeck).

Bordeaux is composed of disparate parts — the charming stone city, the ecological contemporary settlements — where the architectural and urban land reserve of the Modern districts contributes fully to the city's sustainability, fluidity, and functionality. Up to the architectural scale, the patio-house typology, the gardens, the free-plan and modular design guarantee a potential for expansion that is greatly appreciated when, for instance, the concrete skeleton and slab of a tower in Meriadeck is recycled in order to develop new office space or flats. Mériadeck and Pontet-Lamartine are secretly popular for these types of urban and architectural use, a bulwark against the obsolescence of modern districts which is quite rare in today's constructions and not often known by the urban services. Nevertheless, residents are generally very careful to preserve the urban and architectural homogeneity and details. Renovations are carried out for the most part in accordance with the original design, which is perceived as truly qualitative. The way in which this post-war heritage is viewed and understood is essential to the potential sustainability of the modern legacy.

4. THE INHABITANTS, GUARDIANS OF THE SUSTAINABLE MODERN HERITAGE

For its spaces, but also for its cultural and social value, modern town planning is now mobilising its inhabitants. Our research shows that people discover the qualities of modern urban planning by practising it for themselves. The inhabitants therefore maintain and adapt it by both respecting and optimising the existing architecture and urban plan. First, as they "awaken to architecture" by living in their modern district, they try to maintain and optimise the amenities, keeping the idea of the original design and concept expressed in this modern urban piece. In addition, they enliven these neighbourhoods, sometimes confronting experts or city professionals to draw attention to the necessary (moral and physical) rehabilitation of the modern districts in order to better anchor them in the metropolis. In addition to the maintenance of the neighbourhoods, the purpose behind mobilising the residents is to set up collective projects for heritage or sustainable development (social or environmental projects) directly related to the modern conception of space. These cultural or ecological projects are led by the most committed inhabitants of the modern districts, such as representatives of the district co-owners, experts in the urban history of Bordeaux. Some projects are initiated by the residents' association "Safeguarding Mériadeck", which promotes modern heritage as an example and inspiration for building the attractive city of tomorrow. Notably, its founder created the **docomomo** files for Mériadeck and is a member of Bordeaux's UNESCO council. Other projects try to optimise the sustainability assets of modern heritage in an "evolutionist" way, even if it means incorporating contemporary technologies or practices that exploit modern potential: the 5th façade for renewable energies; planted areas on the slab to develop shared vegetable gardens, and activities for the surroundings. Defenders of modern urban planning highlight the original collective dimension of energy management (geothermal energy, waste collection) and the generosity of the modern project, which is still operating today although undermined by a strict regulatory framework and what is felt as a disinvestment by the public authority with regard to this urban planning: "When they made Mériadeck, they thought of a collective management of energy, waste, traffic, and parking. That's what's interesting: today what's left of that?" (Mériadeck).

Indeed, in a context where city actors are often perceived as reluctant to make greater use of modern urban planning, our research demonstrates the driving role of the inhabitants in the recognition of such complexes. They are essential levers for leading these areas — and the city — towards greater sustainability, through their detailed knowledge of the specific features that make modern districts interesting, but also through their commitment to act in and around these neighbourhoods. Raising awareness and supporting these inhabitants in the management of their modern heritage seems essential if they are to effectively lead it towards a brighter future. Although bearing the value of this heritage themselves, they are nonetheless helpless when it comes to carrying out a large-scale project with a cultural vocation (applying for the Remarkable Contemporary Architecture label), or energy-related (building insulation or renovation), or a social issue (mediation or neighbourhood development project). This results in the decision to close down these districts — closure of the "esplanades" in Mériadeck — or in the fragmentation of responsibilities for maintaining common spaces, as it is quite difficult to determine which is the leading authority. When lacking a consensus on which aspects must be preserved or on the methodology to follow in such operations, post-war modern housing neighbourhoods and their owners find themselves under threat despite their labelling or their commitment as inhabitants. As this quotation shows, raising awareness without ensuring that all the stakeholders can discuss together may be vain.

"This is the third year that we are fighting, [that] we are working with the associations so that this basin can be restored. And there's no question of turning it into a grassy area again!" (Mériadeck)

5. SUSTAINABILITY, THE KEY TO POST-WAR MODERN NEIGHBOURHOODS REHABILITATION?

The modern project certainly did not materialise as originally imagined. The contemporary city, with its densification and environmental preservation issues, has caught up with these modern districts which must now prove their worth and their qualities in order to resist and exist in the urban fabric.

The values of modernity continue to convince its main stakeholders: the inhabitants and users. These post-war neighbourhoods are synonymous with a quality of life and a specific sustainability that require, on the one hand, a rethinking of the quantitative and normative criteria used to renovate the existing modern housing stock with a view to optimising it, and on the other hand, better integration of the inhabitants' work and expertise in order to take advantage of the legacy of modernity in the city of tomorrow. In this sense, the modern project continues outside the avant-garde context, as a starting point for appropriations that can bring its spirit back to life, thereby updating the quest for progress from a more environmental but equally holistic perspective.

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NOTES

1 The Mériadeck and Pontet-Lamartine settlements were developed in the context of the "Trente Glorieuses", a term devised by the economist Jean Fourastier to describe the period during which France sought to deal with the shortage of housing and amenities due to the war and the human consequences of decolonization and globalization.

Session 2-e

RE-ACCESSING THE URBAN VALUES OF MODERN ARTIFACTS

Rui Miguel Rebelo Leão
Docomomo Macau Chair

With this theme we will look at works which go beyond the strict realm of the built form and touch issues that relate to the urban sphere and the space between buildings. This dimension takes us to a different type of scale and code, raising different concerns and an expanded field of urban intent when faced with the renovation, conversion or re-use of this type of operations.

This table hosts four papers under the theme of Urban Landscape, under the following order: first, a paper by Frank Mahan and Van Kluytenaar, entitled "Preserving Modernism: Adaptive Reuse for an Urban Future"; followed by a paper by Viktorija Prilenska entitled "Spatial retrofitting of modernist housing estates". Afterwords, we will listen to Maciej Janowski, Hanna Smulczyńska and Agnieszka Janowska's paper, entitled: "Toward Nature. A Transformation of a Stadium", and we will conclude with Silvia Segarra Laguness paper on "Urban furniture and townscape in Mexico (1920–1960)".

Mahan and Kluytenaar will examine four examples of Modernist architecture by Skidmore, Owings & Merrill, each recently renovated and adapted to merge the legacy of the Modern movement with the future of the contemporary city.

They will demonstrate how understanding the preservation of Modernist architecture as primarily the preservation of an idea allows for a thoughtful bridging of the past and future, productively intermixing time and place. Through close, detailed analyses of the original concepts articulated by Lever House (1952), Manufacturers Hanover Trust (1954), One Chase Manhattan Plaza (1961), and the U.S. Air Force Academy (1963), their paper shows the ways in which renovation and reuse can extend original ideas into an urban cityscape of the future.

Prilenska, on her paper will look at how, in the context of socialist welfare state, emerging after the Second World War, modernist ideas provided relatively cheap and fast solution for growing housing shortages and deficiencies. Thus, large housing estates mushroomed in urban periphery, often replacing existing neighbourhoods labelled as "slums". Unlike their peers in the former Western Bloc, large housing estates in Baltic States provide a reasonably good socio-economic mix and are free from stigma. Furthermore, the land and the dwellings are privately owned, and provide housing for the two thirds of the urban population. In these circumstances radical changes are unnecessary and hardly possible. Nevertheless, large housing estates are increasingly car dependent and call for improvements in the public space.

The paper explores the potential strategies for spatial retrofitting of modernist neighbourhoods by reviewing the international examples and discussing their applicability for the Baltic context.

Thirdly, we will listen to Maciej Janowski, Hanna Smulczyńska and Agnieszka Janowska, on their paper entitled: "Toward Nature. A Transformation of a Stadium", in which they will elaborate on the political, social, and biological processes which have influenced the modernist form of the Edmund Szyc Stadium in Poznań (Poland). This stadium was built as a result of a political decision which ignored the natural conditions, the time of construction, and economic factors. The place was abandoned by people, and nature has slowly regained it. The old stadium has become a complex ecosystem consisting of various species of plants and animals. Today, non-governmental organizations and city activists are fighting for that area, and politicians have joined them in the hope of making it an entertainment center rather than an arena of ecological actions.

The authors question whether city dwellers actually not need more contact with the flora and fauna which keeps evolving in order to adapt to the urban environment? And

whether observing this unique process of the formation of an urban ecosystem isn't a more important for of learning.

The former stadium became an integral part of the system of Poznań greenery, and it can become a part of the social network which integrates the inhabitants of the city. This article was written on the basis of the research of botanists, entomologists, zoologists, and architects engaged in the protection of the stadium as a unique urban ecosystem.

Finally, Silvia Segarra Lagunes will wrap up this session with her paper: "Urban furniture and townscape in Mexico (1920–1960)", she will look at how, throughout the decades between 1920 and 1960, the new proposals made by the modern movement in architecture and urbanism caused a substantial change in urban landscapes, and how the end of the Mexican Revolution coincided with a renovating movement, both social, cultural and urban, in which the main intellectuals and architects of the time met in order to introduce the country to modernity. Urban objects for the rational city, together with the introduction of new materials and industrial processes, were in line with the functional character of the modern movement, resulting in a more sober urban image, with respect to that derived from industrialization.

In the capital city of Mexico, the appearance of new functional public spaces, accompanied by lights, benches, wastepaper bins, signage and advertising, public transport stops and green spaces, as well as architecture, was combined with the existence of elements taken from other currents and aesthetic products that developed in parallel, especially in the early years, such as Art Deco or nationalist manifestations realized mainly according to the Neo-colonial style.



PRESERVING MODERNISM: ADAPTIVE REUSE FOR AN URBAN FUTURE

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ABSTRACT.

This paper examines four examples of Modernist architecture by Skidmore, Owings & Merrill, each recently renovated and adapted to merge the legacy of the Modern movement with the future of the contemporary city. Understanding the preservation of Modernist architecture as primarily the preservation of an idea allows for a thoughtful bridging of the past and future, productively intermixing time and place. Through close, detailed analyses of the original concepts articulated by Lever House (1952), Manufacturers Hanover Trust (1954), One Chase Manhattan Plaza (1961), and the U.S. Air Force Academy (1963), the paper shows the ways in which renovation and reuse can extend original ideas into an urban cityscape of the future. The renovation of Lever House, for example, rejuvenated its public art gallery and plaza, merging architecture and city; the adaptive reuse of Manufacturers Hanover Trust reclaimed the transparent glass box for 21st century urban retail; One Chase Manhattan Plaza, an icon of urban transformation, became a primary component of the Financial District's evolution into a 24-hour mixed-use neighbourhood; and, finally, the U.S. Air Force Academy addition — modernist preservation at its most speculative — produced an integrated, yet entirely new building from the logic of the original urban scale campus. By adapting old forms for new uses, replacing out-of-date, decaying materials with state-of-the-art technology solutions, and extending public spaces further into their urban settings, a new approach to the preservation of Modernist architecture can be a roadmap for the 21st century city.

1. INTRODUCTION

In 1952, the same year that Skidmore, Owings & Merrill (SOM) built the watershed Lever House skyscraper — thereby heralding a new synthesis of modernist ideals in architecture — the French philosopher Maurice Merleau-Ponty published "Indirect Language and the Voices of Silence," one of the most important reflections on modern aesthetics in twentieth-century philosophy.[1] The essay describes the way in which the individual elements of an aesthetic object bestow significance on one another precisely by virtue of their juxtaposition. Their rigorous, rule-based arrangement produces a matrix of meaning which corresponds to the lasting quality of the work. Strikingly, important aspects of the enterprise of modernist architecture — particularly as expressed in the work of SOM — invite understanding in terms analogous to those found in Merleau-Ponty's thought. Moreover, this understanding has far-reaching implications for what it would mean to preserve the kind of aesthetic objects that modernist architecture sought to produce. Focusing on the idea or intention of these original designs, rather than the preservation of literal building elements, allows for the successful bridging of past and present and the embedding of modernism into the twenty-first century city.

2. LEVER HOUSE (1952)

New York's Lever House (Fig. 1) — an architectural icon heralding "the beginning of a new wave of American skyscraper construction and a new synthesis of modernist architectural ideals" — was restored in 2001 and its famous glass and stainless-steel curtain wall was completely replaced.[2] The density or intensity or weight of decision — which is to say intention — in the making of its original form is everywhere evident. The plan features an open, colonnaded space flowing into the width of the Park Avenue sidewalk. Only one third of the ground floor is indoor space which is primarily enclosed by glass panels demonstrating an early desire to connect to its urban surrounding. The second floor then hovers over the entire site taking the form of a horizontal slab wrapped around the open courtyard below providing public open space in the center of Midtown Manhattan. The original design intention for this courtyard included a sculpture garden designed by Isamu Noguchi, creating an oasis of art at the nexus of tower, city and plaza. Inspired by the white sand gardens of Kyoto, Noguchi imagined the garden courtyard as a pristine marble stage from which three granite columns would rise from a reflecting pool surrounded by informal seating. Although eventually unrealized, Noguchi's involvement expresses the original desire for the building to engage the urban landscape though open space and art. And the entire massing centers around this open space. The just 53-foot-wide tower, a vertical slab set perpendicular to the avenue, is entirely glazed on three facades (as well as the returns on the rear façade) giving the building a crystalline and volumetric quality. Its exterior walls are a grid of stainless-steel mullions, anchored to the structural skeleton at each floor, which hold in place large and small panels of fixed glass. The large panels, functioning as windows, are green-tinted heat absorbent transparent glass and the small panels are tinted wire-glass spandrels concealing the floor slabs behind. These darker bands give the structure a horizontal emphasis that provides a delicate counterpoise to the verticality of the building's columns and metal framing. And this juxtaposition of vertical and horizontal in the facade thematizes the vertical and horizontal

volumes of the building more generally. It is the purposeful mutual inflection of elements throughout — its syntax — that gives meaning to the building. Its meaning is found in the internal consistency of its concept. And it was to the appropriateness of its concept that Skidmore, Owings & Merrill's 2001 curtain wall replacement sought to respond.

Almost half a century after its opening, Lever House required restoration. The Landmarks Preservation Committee designated the building a historical landmark in 1982 — noting it as "outstanding for its spatial clarity, scale and beauty of form" — and allowed for a full replacement, in kind, of the building's curtain wall assembly.[3] This "radical facelift" has significant implications for a theory of the preservation of postwar modernist architecture.[4] It suggests that, in contrast to an emphasis on literal materiality, certain buildings are characterized less by their physical instantiation than by the concept of the design. And therefore, any attempt to preserve and restore such buildings must determine its original grammar — the rules of its design — in order to preserve the meaning of a given structure. The logic of its rules will determine the appropriate degree to which restoration and alteration can occur without altering the original meaning of the design. Thus, the entirety of Lever House's literal glass curtain-wall could be replaced with new, updated materials while maintaining the integrity of the initial design. And further, the restoration provided the opportunity to realize part of Noguchi's original proposal for the courtyard sculpture garden, realizing the original intention to merge architecture and city.



Fig. 1. **Lever House. Photo courtesy SOM. © Florian Holzherr.**

3. MANUFACTURERS HANOVER TRUST (1954)

Consider also the Manufacturers Trust Company Building, which is often seen as the very model of modernism. It is a steel and glass cube with an unbroken glass façade featuring a seven-foot-wide circular metal bank vault visible from the street. Breaking all modes for bank architecture of the time, these elements opened what had been a cloistered world more commonly housed behind masonry walls and produced a novel relationship between architecture and city. Bringing the vault — the sacred core typically hidden inside its bowels — to the glass front of the lobby rendering it visible from the exterior was as striking a move as any in the effort to connect building and city in meaningful ways. Particularly notable is the sense in which the meaning of the design is precisely the *appearance* of the building's materiality, rather than its materiality as such. In contrast to the formidable stone and shuddered fortresses of the premodern, the building's guiding design concept is the impression of an extreme, unparalleled lightness, all but eliminating the barrier to the city outside. The main banking areas appear to be contained within one forty-foot-high space and the second-floor slab seems to float. Both the concrete slabs and the external metal skeleton were kept extremely thin, enhancing the building's appearance of lightness. A true landmark in the delineation of space, it completely transformed our concept of the glass wall.[5] And its adaptability to new uses was inherent to its original design. Worried about the viability of the bank's future, the building's owner showed the plans to a number of different retailers to ensure its viability for future use.

More than a half century after its construction, the building's striking formal clarity and rich history remain. The evolution of the city, however, rendered its technical efficiency and programmatic relevance obsolete. In 2012 SOM adapted the building for retail, allowing old forms to meet the demand for new functions (Fig. 2). Beyond the mere replacement of the structure's existing materiality, the adaptation required more significant changes that would work within the logic of the original concept. By means of subtle architectural alterations that tailor the space for an alternate purpose, they preserved the formal ingenuity of a



Fig. 2. **Manufacturers Hanover Trust. Photo courtesy SOM. © Eduard Hueber.**

unique and historic architecture while simultaneously producing new relationships between architecture and city. The renovation and restoration of its glowing ceilings and polished plate glass façade brilliantly maintain the building's lucid grace and almost complete erasure of the threshold between architecture and city.

By preserving the original architecture while adapting certain of its features for programmatic change, the renovation produces a kind of urban monument, one that is simultaneously both retrospective and prospective. On the one hand, the building's preservation brings forth layers of accrued implication deposited by time and human experience into contemporary urban life — almost Victorian in its materiality. On the other hand, the vitality of adaptive reuse lies in its essential engagement with the precise demands of the present. It allows for an architecture that takes on new and disparate functions thereby producing new meanings and directly mediates between past and present in an ever-changing world of shifting values.

4. ONE CHASE MANHATTAN PLAZA (1961)

In 1961, SOM designed One Chase Manhattan Plaza, one of the largest and most important 20th century skyscrapers in New York City. From its inception, the building sought to dramatically alter both the skyline and character of its context. In an area where few new buildings had been constructed since the 1930s, One Chase Manhattan Plaza sought to reinvent its neighbourhood. The 813-foot-tall aluminium-and-glass tower stood in stark contrast to its masonry peers and its irregularly shaped two-and-a-half-acre open plaza was a refuge from the narrow, twisting streets of New York City's financial district. Its bold design paved the way for a renaissance in the area leading to the construction of Marine Midland Bank in 1967, the World Trade Centre in 1973 and the World Financial Centre throughout the 1980s.

The design of One Chase Manhattan Plaza began reshaping its urban context almost immediately. The final massing scheme, envisioned from the beginning (as early as 1955), involved engaging the City Planning Commission to close Cedar Street, thereby creating one large, uninterrupted site stretching from Pine to Liberty Street. In contrast to the setback, ziggurat-like forms of the neighbourhood encouraged by the city's zoning resolution, One Chase Manhattan Plaza took advantage of a rarely used zoning rule permitting buildings of unlimited height if covering only twenty-five percent of the site area. These two moves allowed for the project's most dramatic and distinctive fea-

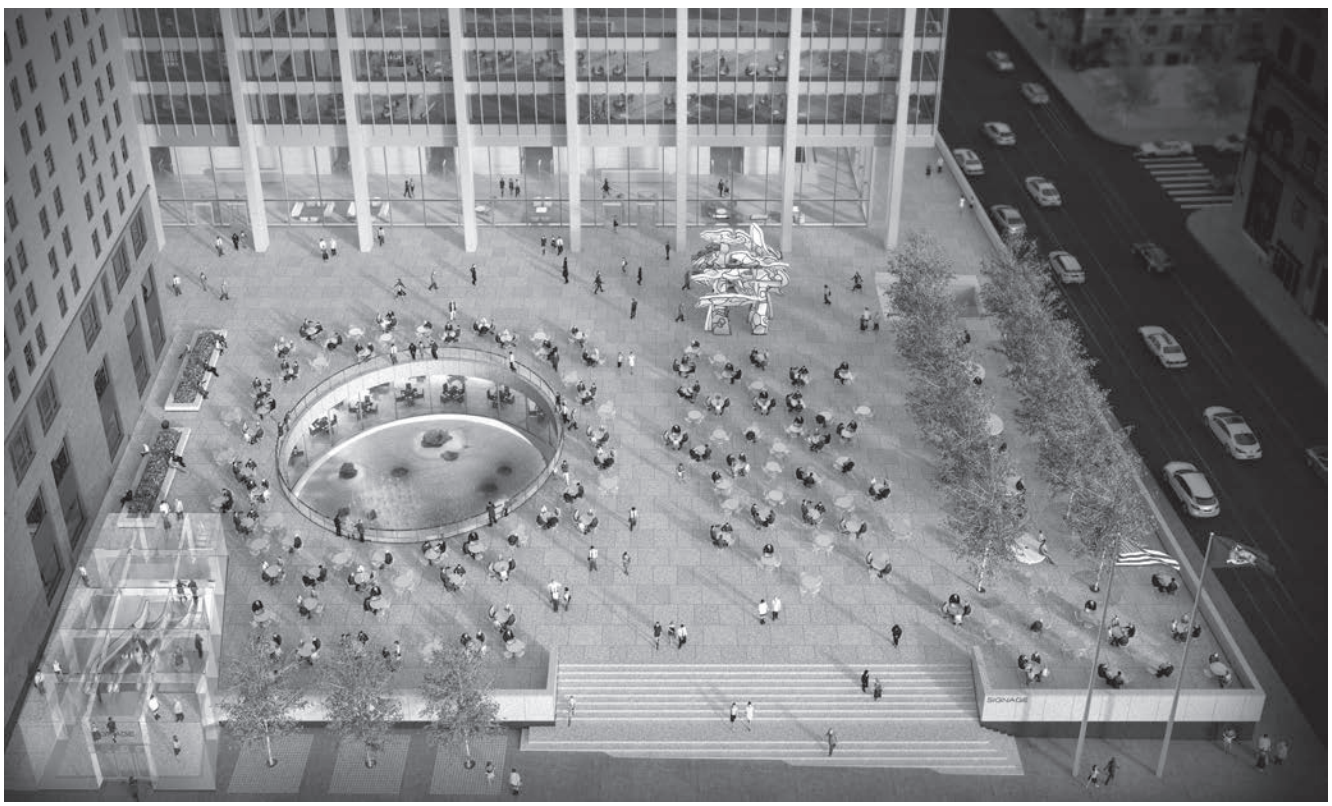


Fig. 3. **28 Liberty. Rendering. © SOM.**

ture: its two-and-a-half-acre open public plaza which levels the sloping site and conceals six floors of operations below, including the bank's main branch. The operational spaces receive natural light from a striking sixty foot wide oval light-well and sunken garden designed by Isamu Noguchi and gently contrasting the tower's gridded elevation.

From its bold origins, everything followed. SOM situated the tower on the northeast corner of the lot to allow the plaza maximum daylight from the south and west. Given the building's small portion of site area, its expressive three-by-five-foot structural piers were placed on the exterior of the floor slabs to maximize the amount of useable space and create deep floors of unusual openness. An asymmetrical floor plan with deeper southern floor plates takes advantage of the south-facing public plaza below. The density of logic and rigor inherent in its original design — its striking intentionality — conceived a novel relationship between architecture and city that was completely foreign to its context.

Over fifty years later, the iconic tower and plaza played a significant role in heralding Lower Manhattan's second renaissance. At the dawn of the twenty-first century, as the Financial District evolved into a twenty-four-hour mixed-use neighbourhood, SOM adaptively reused over 200,000 square feet of former banking area for retail use, repositioned the soaring tower for new office tenancy and realigned the plaza design with its original intent thereby transforming the site back into a vibrant community space (Fig. 3). Already present in its original design was the desire to create an urban nexus at the heart of New York City's commercial core. A half-century later, its original design allowed for a repositioning and reuse more adequate to the demands of the contemporary city.

5. UNITED STATES AIR FORCE ACADEMY (1963)

The idea of preserving architectural intent reached an apex in 2016 with Polaris Hall, SOM's addition to the United States Air Force Academy campus. With a scope far beyond that of Lever House or Manufacturers Hanover Trust, the project sought to extend the extreme rigor of the original concept into a completely new structure. This implies a theory of preservation at its most speculative, in which we locate the maturation of a future in the fecundity of the present. Its original design concept contained futures within its logic, allowing for precisely the kind of addition conceived almost a half-century later.

The entire campus is conceived at the urban scale and is

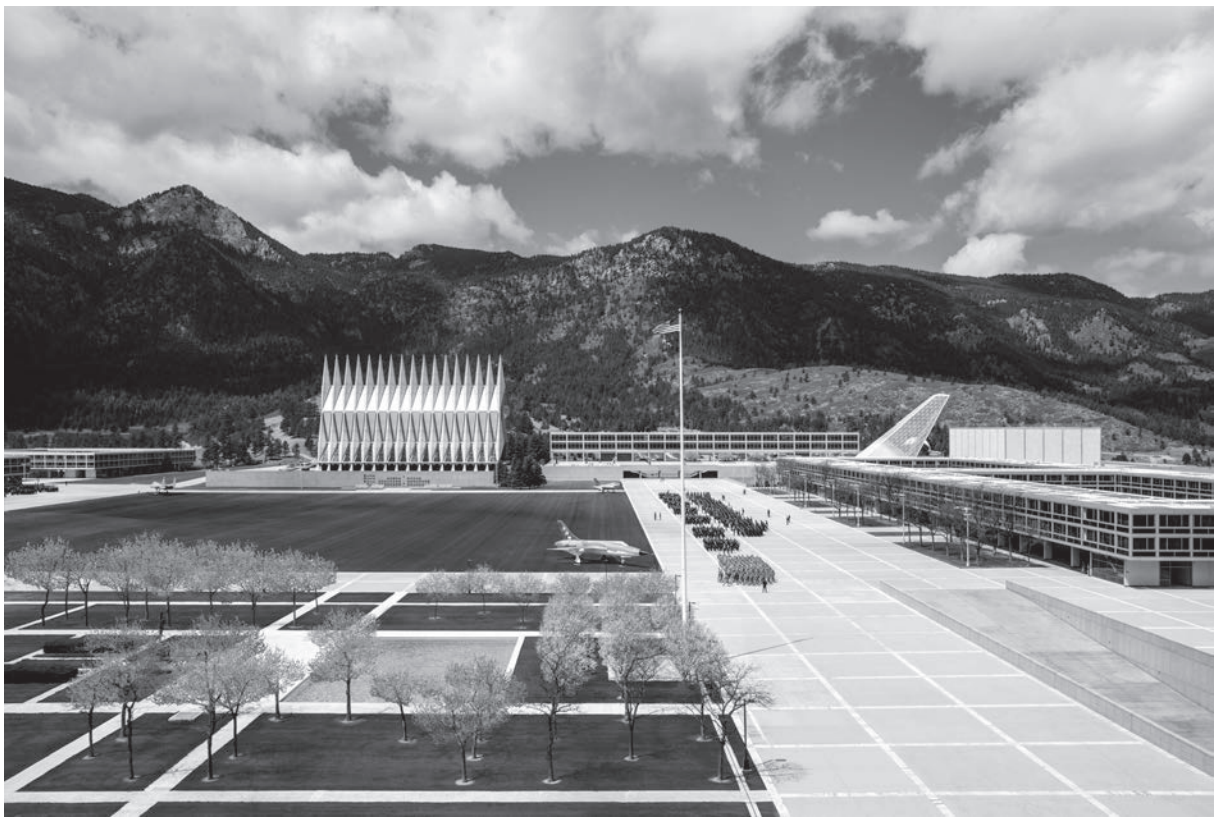


Fig. 4. **Polaris Hall. Photo courtesy SOM. © Magda Biernat.**

based on a seven-foot module that produced the relationships and proportions of the buildings throughout. The module organized the buildings and the space, but never restricted them resulting in "an extraordinarily sensitive composition of built and natural forms."[6] The corners of the grid were intentionally left open and implied, creating breaks in the horizontal plane that mirror those on the vertical plane, in the upper level loggias and height drops of the Academic Building and Cadet Quarters. The lengthwise visual momentum of the buildings — themselves floating on *pilotis* above open space — elevated above its surrounding terrain produced sensations of expansive soaring. Set against this backdrop of horizontality and the dramatic vertical peaks of the Rampart Range, the Cadet Chapel — the focal point of the Cadet Area — is intentionally distinct. Visually separated from the Court of Honor by its unique surface treatment, its wide ramp, and its dissimilar landscaping, the Chapel functions as the virtuosic *punctum* of the composition.

A half-century after its opening, the United States Air Force Academy sought an addition to its campus (**Fig. 4**). The design, a 105-foot glass-and-steel skylight aligned toward Polaris — the North Star and the Academy's metaphorical guiding principle — emerges almost inevitably from the existing urban landscape. Like the Academic Building and Cadet Quarters, its auditorium protrudes into the Terrace level mimicking the stepped terraces of the original design. It follows the straight lines of the campus, preserves crucial sight lines and adheres to the original masterplan grid. And yet the building provides its own metaphors. Its protruding skylight works as a metaphorical moral compass, a reminder of the Academy's core values. The size and shape of the oculus align precisely with the North Star, signifying the Academy's guiding values. The campus typology provides a unique insight into the question of the relationship between architecture and urbanism. As a kind of microcosm of a planned city, the U.S. Air Force Academy demonstrates perhaps most perspicuously how the density of intention embedded within a design — both at the scale of building elements and relationships between buildings — allows for the accommodation of new futures. Almost counterintuitively, the more rigorous and intentional the original design, the more fecund its concept, the better able to accommodate the indeterminacy of the city. Polaris Hall converts morality, sincerity, implicit hierarchies, and guiding principles into physical spatial conditions. It is a kind of secular corollary to the original Cadet Chapel; a temple of research and learning more adequate to the cultural mores of the twenty-first cen-

tury city. In this sense, it is a project that exists in the unique, liminal space between past and present, a portal connecting one to the other.

6. CONCLUSION

It is this unique condition that the practice of adaptive reuse engages more broadly. Its ability to preserve an existing building while replacing materials (Lever House), repositioning the program (Manufacturer's Trust), reinvigorating an original concept (One Chase Manhattan Plaza) or adding an entirely new structure (Polaris Hall), challenges certain widely accepted notions of historic preservation. Because of modernist architecture's unique focus on the rigor of concept, its preservation requires a shift in our understanding of what it means to preserve, which has typically focused on the preservation of the literal. In the case of Lever House, for example, the very materiality of the original object was wholly replaced while retaining its Landmark status, thereby shifting the framework of what it means to preserve modernist architecture. In a kind of response to Theseus's Paradox — the famous thought experiment in which the ship of Theseus, the mythical king and founder of Athens, has been completely replaced over time thus questioning whether the restored ship is the same object as the original — the renovation of Lever House expresses a determinate position. The complete replacement of its curtain wall assembly suggests a radical break in how we approach the historic preservation of modernist architecture.

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NOTES

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2 Landmarks Preservation Commission, November 9, 1982, Designation List 161, LP-1277.

3 Ibid.

4 Suzanne Stephens, "The restoration of New York City's Lever House is not so same-old, same-old, as architects SOM and William T. Georgis demonstrate," *Architectural Record*, March 2003, Vol. 191, Issue 3, 122.

5 Architectural Forum, "Modern Architecture Breaks through the Glass Barrier [Manufacturers Trust Co. Branch, N.Y.]." *Architectural Forum* 101, December 1954, 104–11.

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SPATIAL RETROFITTING OF MODERNIST HOUSING ESTATES

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ABSTRACT.

The Modern Movement substantially reshaped the urban fabric. The ideals and ideas established at *Congrès Internationaux d'Architecture Moderne* (CIAM), while eliciting controversy and debate in the literature, were globally acknowledged by politicians and practitioners. In the context of socialist welfare state, emerging after the Second World War, modernist ideas provided relatively cheap and fast solutions for growing housing shortages and deficiencies. Thus, large housing estates mushroomed in urban periphery, often replacing existing neighbourhoods labelled as "slums".

Today in many countries large housing estates are stigmatized for the lack of social diversity and cohesion, as well as for the antisocial behaviour and illegal activities of their residents. The modernist environment is perceived as factor contributing to the socio-economic problems. Therefore, large housing estates are subjected to refurbishment, downsizing or, in most drastic cases, to full demolition. Unlike their peers in the former Western Bloc, large housing estates in Baltic states provide a reasonably good socio-economic mix and are free from stigma. Furthermore, the land and the dwellings are privately owned, and provide housing for the two thirds of the urban population. In these circumstances radical changes are unnecessary and hardly possible. Nevertheless, large housing estates are increasingly car dependent and call for improvements in the public space.

The paper explores the potential strategies for spatial retrofitting of modernist neighbourhoods by reviewing the international examples and discussing their applicability for the Baltic context.

1. INTRODUCTION

The Modern Movement substantially reshaped the face of cities. The Futurama pavilion, designed by Bel Geddes for 1939 New York's World Fair, reflected the modernist vision of the city. Unlike other visions, the modernist utopia, fuelled by urbanisation and urban growth, rapidly disseminated throughout the countries of the Western and Eastern Bloc. The separation of industrial, office and residential spaces, insolated and ventilated buildings, equipped with essential utilities, revolutionized housing standards, whereas a car liberated cities from the tight borders of walkability and railway corridors, allowing the households to enjoy the quietness of suburbia by night and the buzz of the downtown by day.

Contemporary planning paradigm repudiates the once appreciated urban ideal. The modernist city is deemed as car dependent, unwalkable, unsustainable and, generally, dehumanized. It is disgraced and rejected like the infamous Frankenstein's Adam, which did not fulfil the expectation of his creator. Once celebrated modernist neighbourhoods with "streets in the air" for pedestrians and highways for cars are being either downsized or demolished and replaced by mixed-use compact neighbourhoods with street spaces shared by the variety of traffic and functions. Modernist neighbourhoods are stigmatized in a similar way as in the mid-twentieth century the now "trendy" Jane Jacobsian neighbourhoods we deemed as slums, cleared and replaced by now "outdated" large modernist estates.

In the Baltic countries the retrofit of modernist neighbourhoods, which constitute up to two thirds of the housing stock, to contemporary standards poses a significant problem. Housing units, and more importantly, neighbourhood spatial layout, do not meet the requirements for the mix of uses, walkability and environmental sustainability. Neoliberal land ownership policies and the lack of public funding does not allow ambitious clearance and/or redevelopment schemes. While the buildings may be retrofitted unit by unit, the patterns of streets and courtyards, as well as their functional contents, are much harder to change.

The current paper explores the potential strategies for structural retrofitting of modernist neighbourhoods by reviewing the international examples and discussing their applicability for the Baltic context.

2. THEORETICAL FOUNDATIONS

2.1. The Neighbourhood Unit

The design of large housing estates followed the planning ideals established by the *Congrès Internationaux d'Architecture Moderne* (CIAM), which advocated for the separation of functions and traffic flows, as well as for building high to accommodate sunlight, ventilation, and ample greenery.[1] These ideals stem from the idea of the Garden City by Ebenezer Howard (1898), which was further developed into the Neighbourhood Unit by Clarence Perry (1929).[2] The Neighbourhood Unit represents a cluster of residential buildings for the population of ca. 6.1 to 10.0 thousand residents capable of sustaining an elementary school of ca. 1.0 to 1.6 thousand children. The unit is spatially determined by straight outer roads for motorized traffic, whereas the inner paths follow an organic pattern with cul-de-sacs to intentionally discourage thorough motorized traffic. The unit features the essential daily use facilities, namely, a school, church and greenery in the centre and shops at the fringes. The area of the unit and the housing typology vary, depending on the context, from 160 acres and a mix of houses and

low-rise apartment blocks in suburbia to 16 acres and high-rise apartment blocks in the city centre.

2.2. Criticism and Alternatives

The Neighbourhood Unit approach, arguably, influenced the planning thought and practice internationally throughout the 20th century and was a hallmark of modernist housing estates.[2,3] The approach was a subject of controversy and debate from its adoption until today.[2,3] The main vectors of criticism concern the definition of the neighbourhood, segregation of traffic flows and functions, as well as the provision of services.[2,3]

Perry defines a neighbourhood as a spatial entity, whereas other authors argue, that a neighbourhood is socially constructed and transcends the spatial boundaries.[3] Thus, the neighbourhood emerges from personal and collective ties, rather then is designed by planners.[3]

Hillier[4] argues that the segregation of traffic flows and functions disrupts the development of urban economy, which, in turn, is fuelled by "fluidity" of mobilities and uses. Linear infrastructure, such as highways, railways and rivers, as well as large monofunctional areas, such as industries, school and university campuses, hospitals, shopping malls and large parks, result in spatial barriers obstructing the "fluidity". Multi-modal boulevards are viable alternatives to linear infrastructure which supports the connectivity and permeability of urban fabric, which, in turn, is reinforced by the mix of uses and building typologies.[5]

The hierarchical provision of services, allocated in line with the urban scale and the number of residents, is incompatible with contemporary lifestyles, which are diverse and often substantially extend beyond the imaginary spatial boundaries.[6] Mehaffy et al.[3] advocate for the Emergent Neighbourhood Model, which represents a diffuse network of multi-modal streets, which balances mobility and access. The urban fabric is structured by a grid of main streets with a step of 400m, which corresponds to a roughly five-minute walk. The areas between main streets are structured by a grid of local main and service streets. All streets are multi-modal, higher level streets accommodate more mobility types and traffic then lower level streets. The "centralities" emerge naturally as a consequence of higher mobility, whereas the areas of lower mobility create residential "sanctuaries". The model is reinforced by the empirical evidence from case studies of London, Portland, Bologna and Al Holuf, which obey the 400m rule.[2,3] The aforementioned model calls for the improvements in the walkability of modernist housing estates, namely, the combination of traffic flows and the introduction of new mobility modes and passages through large linear or aerial barriers.

3. TRANSFORMATION OF LARGE HOUSING ESTATES

3.1. Transformation of La Mina Neighbourhood

La Mina is a social housing neighbourhood built at the administrative border of Barcelona and Sant Adrià de Besòs in the late 1960s and early 1970s for rehousing the population of Barcelona slums.[7] It consists of five- and twelve-floor housing blocks, which follow the orthogonal pattern, and are situated on the long sides of a large rectangular area allocated for greenery and public facilities.[8] The area used to be spatially segregated by the river, highway and railway lines, the quality of dwellings was low and the public facilities are limited.[7] Upon completion, the neighbourhood was characterised by poor social diversity and cohesion, high unemployment, poor education, illegal activities, including drugs, as well as by the degradation of public spaces.[7]

La Mina transformation programmes developed in the 2000s focused on the improvement of social and spatial environment.[7,8] The spatial interventions aimed at improving the connectivity, creation of centrality and diversity.[7,8] The large public space in with public facilities in the middle of the neighbourhood, as well as industrial facilities in the South East of the neighbourhood, were demolished, and replaced by a boulevard (La Ramble), new social and commercial housing with commercial premises at the ground floor, and new public facilities, namely, police station, library, healthcare centre, schools, sports centre, and church. The flagship intervention, the boulevard, was envisioned as a new centrality, which connected La Mina to Barcelona and Sant Adrià via a tram line. Additionally, the common areas, such as stairs, elevators, and entrances, in the housing blocks were refurbished, and playgrounds were constructed.[8] The planned completion of the project was extended by five years, until 2015, and the total investment was estimated at 141 million euros.[7]

3.2. Transformation of Bijlmermeer Neighbourhood

Bijlmermeer used to be a rented social housing neighbourhood in the south-east of Amsterdam built between 1968 and 1975.[1] It consists of 31 high-rise blocks of flats with a total of 13 000 dwellings and 31 parking garages.[1] The plans of the housing blocks follow a hexagon pattern, shaping vast inner courtyards with greenery. The transportation flows were separated, by elevating the roads for motorized vehicles and allocating the paths beneath for pedestrians and cyclists. The dwellings were reasonably well constructed, large and well equipped.[1]

The originally planned facilities were reduced due to the budget cuts in the construction stage and the lack of cohesion between the agencies in charge.[9] In the 1980s the initially isolated Bijlmermeer was connected to the city centre via a railway.[1] Additionally, public facilities were completed, and a few large facilities were opened nearby, namely, a stadium, cinemas, theatres, a shopping mall and a complex of office locks.[1] Nevertheless, the neighbourhood suffered from "degradation, vandalism, a lack of safety, crime, drugs, and unemployment".[1] In the 1990s a transformation programme was introduced, which envisioned physical and social initiatives.[1]



Fig. 1. **Architecture office "ARHIS", apartment block "Primavera", Purvciems neighbourhood, Riga, Latvia, 2010. © Viktorija Prilenska, 2020.**

The radical physical changes were guided by a master plan of 2002 (Projectbureau Vernieuwing Bijlmermeer, PVB), which had to be completed by 2016.[1] Nearly half of the original high-rise housing blocks were demolished, the remaining blocks were refurbished, new low-rise housing was constructed, parking garages were either transformed or demolished, new facilities were constructed (swimming pool and sports centre, church, etc.). The elevated roads were lowered creating a diffuse street network. The amount of public spaces from 80% was reduced to 40% in the newly built areas.[1] The total investments into the project were estimated at 1.6 euros.[1]

4. LARGE HOUSING ESTATES IN RIGA, LATVIA

4.1. History and Contemporary Situation

In Riga modernist housing estates were constructed from the 1958 to 1990 to address the housing shortage of the rapidly industrializing and growing city. In the Soviet socialist paradigm housing was mainly constructed and owned by a state and was rented to residents for undefined period of time for a symbolic fee.[10] The neighbourhoods featured a mix of societal groups of various ethnicity, social origin and position.[10] In 1991, the dissolution of the USSR, 74% of Riga population lived in large housing estates.[10] With the shift of political paradigm in 1991, the state properties were denationalised. From the mid 1990s to mid 2000s the 85% of apartments were privatised.[10] Despite the political and economic changes, in 2011 the share of population living in large housing estates remained almost the same as in 1991 — 75%.[10] Denationalisation and privatisation resulted in complex and fragmented property structures, where modernist housing blocks belong to multiple dwelling owners, whereas the land under the building may, partially, belong to either municipality, dwelling owners residing or private entities.[10]

Large housing estates in Riga and other Baltic cities were built in line with the modernist planning principles and local context, resulting in "socmodernism".[10] Similar to the aforementioned international cases, the originally planned services and infrastructure were either reduced during construction stage or were unfinished.[10] The primary concern was the provision of housing, whereas accompanying facilities were of the secondary relevance and could be added or completed later.[10]

Although today large housing estates are well connected to the city centre by public transport, the private car ownership is relatively high, which leads to the substantial shortage in the parking spaces. A large share of commercial, cultural and sport facilities, which were established later, are located outside the estates, encouraging the further car use.[10] The quality of the public spaces is poor due to the unclear management responsibilities.[10]

4.2. Potential Transformation Strategies

Two-thirds of the population in Riga lives in large housing estates and, according to residents' opinion polls, is satisfied with the local built environment.[10] The absence of stigma and accompanying problems, complex property structure and limited financial capacity of local municipality prevent the radical transformation of the neighbourhoods. The incremental transformation is implemented by private entities, which either build new housing and commercial facilities, or refurbish and repurpose existing buildings.

Fig. 1 shows the infill housing block, built in the courtyard of the modernist cluster of apartment blocks. In contrast to the modernist blocks, new housing features a private parking lot and recreational area with a playground on the roof of the parking lot. The building is spatially isolated from the surrounding area.

Fig. 2 shows the private parking lot which emerged as a response to the shortage of the parking places in modernist



Fig. 2. **Private parking lot, Purvciems neighbourhood, Riga, Latvia. © Viktorija Prilenska, 2020.**



Fig. 3. **Shopping centres at Stirnu street, Purvciems neighbourhood, Riga, Latvia. © Viktorija Prilenska, 2020.**

housing estates. Private parking lots are typically gated and are equipped with prefabricated security booths.

Fig. 3 shows the newly constructed shopping centre on the left and a refurbished shopping centre on the right. Shopping centres usually include additional services, such as cafes, pharmacy, laundry, etc., and shape the centrality of the neighbourhood. The street façade of the new shopping centre is blind, whereas the street façade of the old shopping centre is open towards the street. The new shopping centre features a big parking lot, implying mainly car access.

5. CONCLUSIONS

The retrofit of the large housing estates is the subject of an ongoing debate in the field of architecture and urban planning. There are four strategies of addressing the issue, (1) do nothing, (2) demolish and replace, (3) downsize and/or upgrade, (4) preserve and refurbish.[10] The examples from the former Western Bloc countries feature ambitious redevelopment projects in line with the 3rd strategy. The old urban tissue is partially demolished and replaced by new tissue with diffuse street network, outdoor and indoor public amenities, and a mix of housing typologies. The remaining tissue is refurbished and complemented by new transportation links and public amenities. The aforementioned interventions occur in social housing neighbourhoods, are fuelled by significant social problems, as well as require political leadership and substantial financial investments.

In the Baltic countries and, specifically, in Latvia, public interventions in the modernist neighbourhoods are hampered by property structure, where most of the housing stock and land are privately owned, as well as by the lack of leadership and financial capacity from the part of municipality. Furthermore, unlike in other countries, the neighbourhoods feature a good social mix and do not exhibit significant social problems. The development in the neighbourhoods is developer-led and focuses on provision of commercial facilities for the existing population, as well as on the construction of infill housing. The lack of investment into the public space fosters car dependency of the neighbourhoods.

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TOWARD NATURE. A TRANSFORMATION OF A STADIUM

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ABSTRACT.

This article constitutes a summary of the research on the political, social, and biological processes which have influenced the modernist form of the Edmund Szyc Stadium in Poznań (Poland). The stadium was built as a result of a political decision which ignored the natural conditions, the time of construction, and economic factors. The place was abandoned by people, and nature has slowly regained it. The old stadium has become a complex ecosystem consisting of various species of plants and animals. Today, non-governmental organizations and city activists are fighting for that area, and politicians have joined them in the hope of making it an entertainment center rather than an arena of ecological actions. The question arises whether we — city dwellers — actually need entertainment now. Are we not more in need of contact with the flora and fauna which keeps evolving in order to adapt to the urban environment? Are we just observing a unique process of the formation of an urban ecosystem? The authors of the architectural design created on the basis of the research posit that the stadium should be protected not as an architectural form but as a natural environment which is intact but capable of activating the local community — an area as important for the city as ecology is to people. The former stadium became an integral part of the system of Poznań greenery, and it can become a part of the social network which integrates the inhabitants of the city. This article was written on the basis of the research of botanists, entomologists, zoologists, and architects engaged in the protection of the stadium as a unique urban ecosystem.

1. INTRODUCTION: CONTEMPT

In cities, there will inevitably appear patches of land unsuitable for cultivation because we can hardly avoid such problems and processes as: ownership issues, overlapping urban grid plans, uncontrolled development of the city, failed investments, and erroneous political decisions or designers' megalomania. The abandoned places and residual spaces are excluded from the process of the continuous transformation of the city. Consequently, they are appropriated by entities outside of the control of decision makers, architects, and inhabitants. Residual spaces have a different rhythm, under the gentle but continual influence of the excluded people and, first and foremost, nature.

The Edward Szyc stadium in Poznań is an example of a large-scale object created as a result of a political decision which ignored the time, natural conditions, and economic factors and which functioned mainly as a background for sports and propaganda spectacles driven by the will of policymakers in the Polish People's Republic. When that era ended, the stadium became a residual space, and its perimeters were overtaken by small business owners, who had been viewed as enemies by the communist rulers. The deciding factor in that process was contempt.

The construction of the stadium — designed by Sylwester Pajzderski — began in 1928.[1] The city authorities chose a very bad location on a section of the stream bed of the Warta river which had been buried in 1925. That area fulfills a key role in the wedge–ring structure of Poznań, the construction of which was initiated by Josef Stübben's ring plan (1903) and was continued with Władysław Czarnecki's concept of green wedges and bypasses (implemented in 1932–34). Temporarily flooded terrain was raised with the use of rubble and garbage and reinforced concrete structure was misdesigned — it was founded on watery ground .[2] Contempt for natural conditions, the factor of time and putting the immediate propaganda success above real needs meant that the wrong object was created in the wrong place, which fulfilled its functions only a few hours and was constantly renovated until the outbreak of World War II

During the war, a German labor camp was constructed in the stadium, and many Jews from Greater Poland were executed there, after having been used as slave laborers. The occupants treated both the place and the inhabitants of the city with characteristic contempt[3] (Fig. 1).

After the war, at the behest of the communist authorities, the stadium was altered, enlarged, and renamed to 22 July Stadium. That change was made for propaganda reasons, and the reference to the newest history[4] was a manifestation of the desire to obscure the past of the place. The construction of such a big — for those times — stadium in a country devastated by the war reflected the contempt of the authorities for the actual needs of the people (in 1950–1957). The culmination of that arrogant approach was making the stadium the venue of a great event, Dożynki — attended by the highest party and state officials — on September 8, 1972.



Fig. 1. **The history of the stadium in Poznań; a) the eastern façade, 1932 [Czarnecki, 1932], b) the stadium as a labor camp, 1942 [a frame from the *Stadion* documentary film produced by the Martyrs' Museum in Żabikowo], c) the stadium as the venue of a propaganda event: national Dożynki, 1972, [www.cyryl.poznan.pl, access: 08.01.2020], d) the stadium as a closed nature area [photo by H. Smulczyńska].**

In 1989, the name of the stadium was changed again, to Edmund Szyc Stadium, and the Football Club became the owner of the object. The club had financial problems, though, and had to sell the area to a Danish developer (1998) who intended to demolish the sports facilities and build a housing estate there. Both the decision of the club and the developer's plans caused mass protests of the inhabitants, activists, and social organizations which, supported by the authorities of Poznań, worked on the passing of a local area development plan for the stadium (2017) which excluded the construction of a housing estate there. In 2018, the city bought the area back, thereby creating new possibilities of shaping the form and function of the stadium.

The repeatedly dismissive or even contemptuous attitude toward the natural environment and later toward tolerance, people's life, history, memory, and — last but not least — actual needs made the stadium, from its very beginnings, an essentially foreign element in the structure of the city, which was rejected as such by the city.

2. HIDDEN EDEN

Since the beginning of the 1990s, any activity ceased at the stadium and around it a marketplace was built up in a semi-detached area which separated the stadium from the surrounding urban structures, making it a closed zone which, in a natural rhythm, transformed into a unique habitat of animals and plants of various species. The architectural form of an elliptical basin encircled by a broad earthwork with natural slopes turned out to be very susceptible to such an evolution. In the city center, space has emerged which is a natural refuge for urban flora and fauna, whose development is fostered by the formation of three main biotopes that interact with each other. These are:

- the meadow on the concrete surface of the stadium,
- the woods on the top and slopes of the stadium,

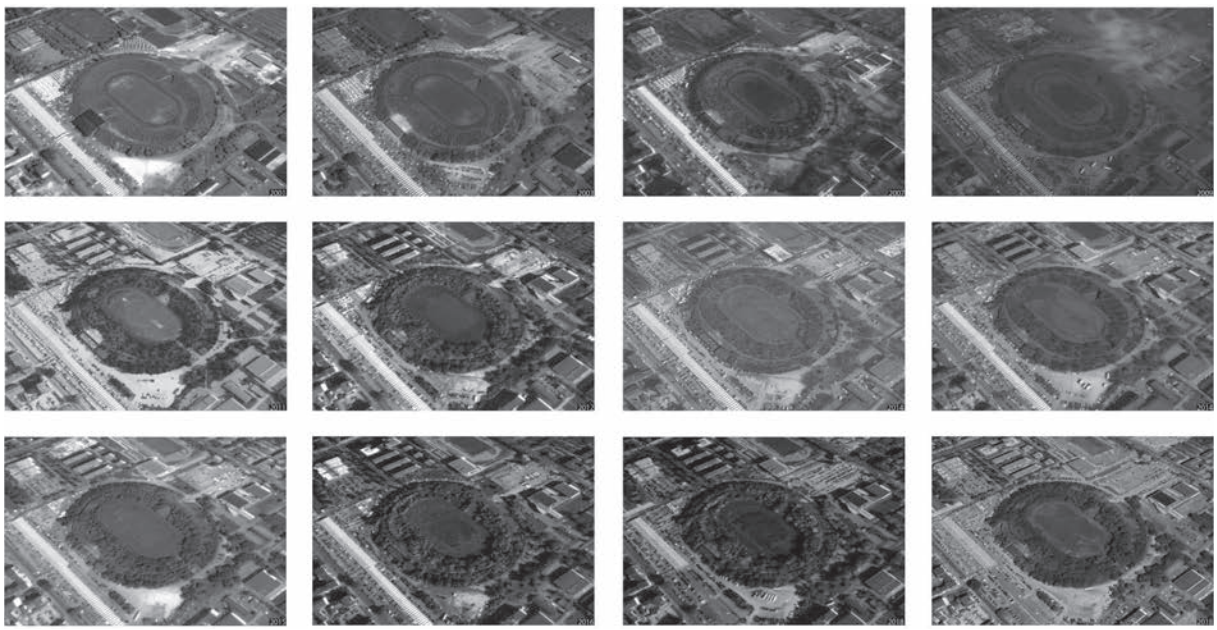


Fig. 2. **A study of the "fall" of the stadium. [Google Earth Pro, date of access: May, 2019].**

- and the few buildings and ruins left of the man-made structures.

The differences between the three zones are the result of the selection of species determined not so much by natural conditions but by the architectural form and the resulting function and construction. To travesty Louis Sullivan, we could say that *nature follows form and function* there. The hard ground on the stadium was conducive to the development of meadow fauna (Canada goldenrod, Viper's-buglosses, thistle), and the softer top and slopes of the earthwork provided better conditions for tree growth (boxelder maple, sycamore maple, white mulberry, white poplar and silver birch). Those are typical species of synanthropic habitats characterized by wind-pollination. That process had a decisive influence on the quality of the trees. All the trees on the stadium are self-sown, so they have very strong roots, and they are very healthy and resistant to long droughts.[5] Most of the high greenery and meadow plants have been recognized[6] as ruderal species resistant to high temperatures, drought and trampling (Fig. 2).

The fauna is just as varied as the flora. The results of Tomasz Knioła's ornithological studies indicate that there are 25 species of birds in the area, 15 of which — including green woodpecker — are strictly protected species which require active protection. Marcin Pakuła's chiropterological research shows that the stadium area is a feeding ground for strictly protected species of bats (common noctule, common pipistrelle, and soprano pipistrelle), one of which (serotine bat) requires active protection. The bats are attracted by the diverse entomofauna which, in turn, is fostered by the variety of blooming plants (including Viper's-buglosses and goldenrod) spread between the stadium structures (the remnants of the stands, the underground parts, and the buildings). According to Michał Michlewicz's studies, there are 16 species of ants in the stadium area (including two species from the red list of endangered species and two protected species), six protected species of bumblebees, 13 species of butterflies, and two species of dragonflies. Also, single foxes and roe deers were spotted there, which indicates the beginning of another stage of the development of the ecosystem.

It follows that we should change the reception of that place while remembering its history. We should take a closer look at the "world" created by our actions. It is not only a devastated area but also a unique habitat of plants and animals which found shelter there after people had left. Is a land unsuitable for cultivation indeed unsuitable for it? And what is it unsuitable for? Perhaps it is a residual space, a dead point on the map of the economic revenue of the city, but it is also an experiment which shows how nature adapts to the urban conditions, what the phases of that process are, and how we should design buildings and green areas in the future to make them habitable for people and nature. One important issue in that context is that of community.

3. CREATING A SPACE FOR THE COMMUNITY

The stadium is near the city center, but because of the temporariness of the economic, functional, and spatial solutions accepted after 1989, the area is yet to be put in order. Its current status is the effect of persistent efforts on the part

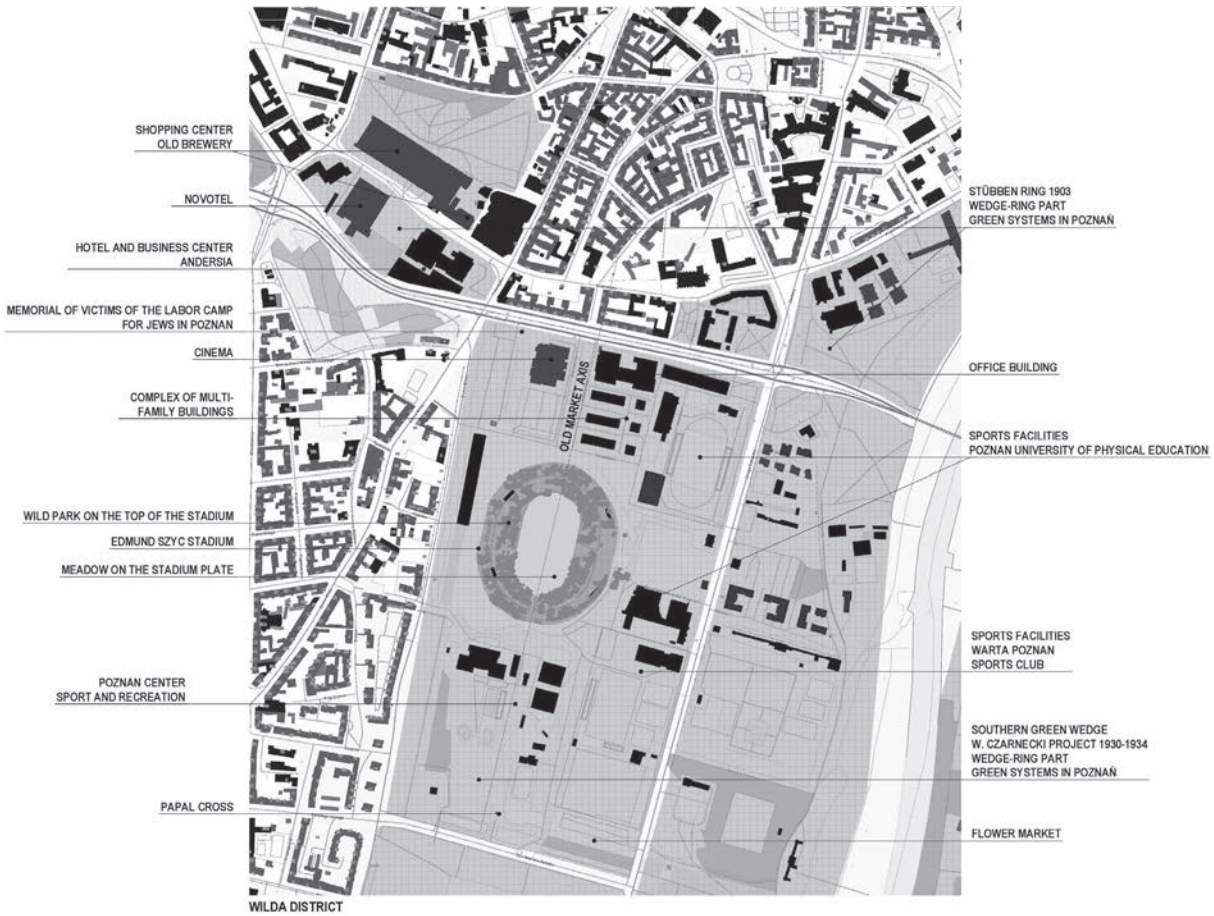


Fig. 3. **The stadium as an important element of the southern wedge of greenery constituting a part of the unique wedge-and-ring system of Poznań [the author's own work on the basis of: Czarnecki, 2006, http://sip.geopoz.pl/sip/nmap/mapa/1/default, access: March, 2015-January, 2020].**

of the inhabitants of the Wilda district and of activists associated in 14 associations. That status indicates that the way people view the former stadium has changed, from a background for propaganda exercises to a Place with which the inhabitants identify because of its natural values it has 'acquired' in a natural process — and not because of short, hyper-emotional events. The stadium lost its architectural form and became a special urban ecosystem of great importance for the local identity. Because of its closed and concentric nature and because of the emotional ingredient resulting from the memory of the past and from the knowledge about the environmental value of the place, the stadium, although abandoned, is seen as a place by the inhabitants and activists (Tuan's concept of topophilia, Lewicka's concept of *attachment to the place*[7]). It is worth noting that the stadium is currently perceived more as an element of nature than an urbanized space, despite the fact that the landscape it is in has been shaped by man.

For the first time in the history of the place, the inhabitants of the city had real influence on the form and function of the stadium. They blocked the plans of the construction of a housing development there, and then made the authorities buy the area back. Social consultations carried out in 2012–2016[8] revealed that the inhabitants interpret the *genius loci* correctly and would like the stadium to be turned into a park which would make up for the shortage of public spaces in Wilda. Thus, the inhabitants of the city, activists, and scientists interested in the preservation of that unique biotope combine their efforts with the forces of nature.

Therefore, project actions should take into account the context which encompasses, on the one hand, the delicate matter of social activity and the inhabitants' participation in possible interventions and, on the other hand, the developing ecosystem. Regarding the proposal of turning the stadium into a park, we should note that a park already exists there, and it has been developing for 20 years. It would be wrong to stop or disrupt that process. As a rule, changes like the planned one should improve the quality of space by means of various actions, from short-term artistic installation (Klaus Littman's installations on the Klagenfurt stadi-

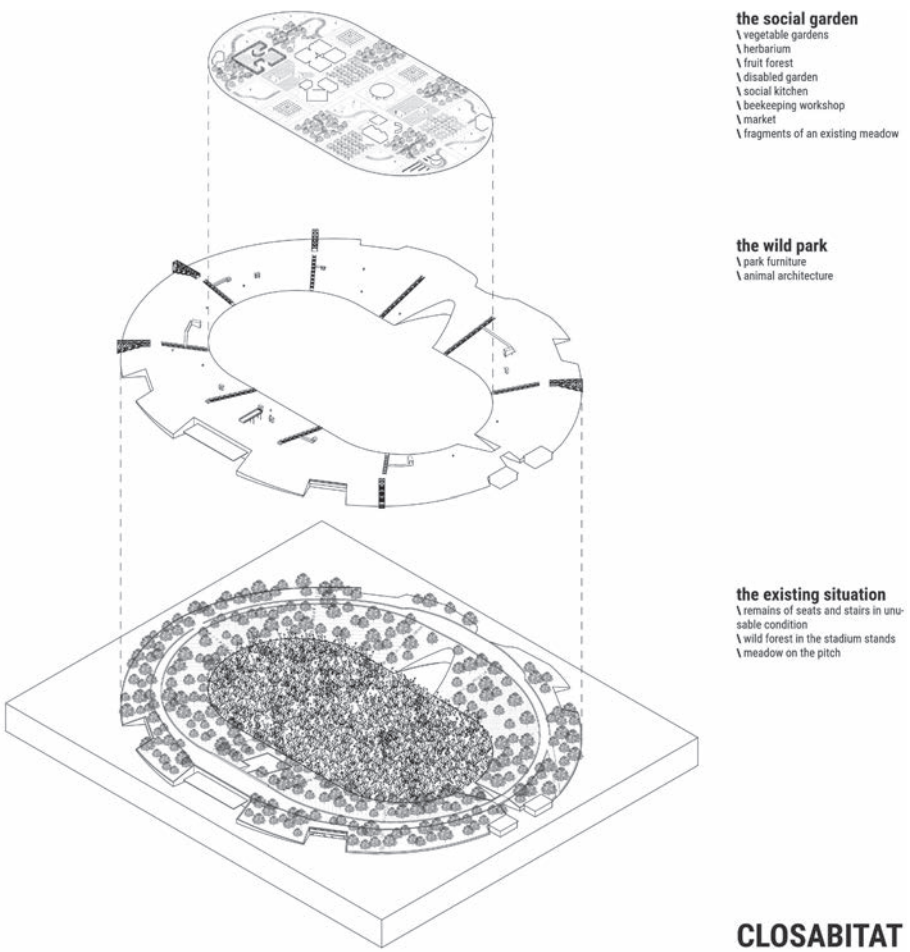


Fig. 4. **Exploding axonometry of Closabitat. Drawing by H. Smulczyńska.**

um) to the construction of light structures (the pavilions in the former forest stadium in Olsztyn). An entirely different solution was chosen for the Văcărești Nature Park in Bucharest where any interventions were restricted to a bare minimum. In the case of the Poznań stadium, its environmental assets are viewed as the most important ones, so any recreational and social functions must be introduced with the least possible interference in the ecosystem. That is why two functional zones have been created there: the Wild Park and the Municipal Garden. They correspond to the main biotopes, protect their exceptional features, and promote the coexistence of man and nature (Fig. 3).

The Wild Park encompasses the whole length of the slopes of the former stadium. It has been designed as a habitat for the urban fauna and flora, with minimal human interference. Apart from the already existing natural environment, nature sanctuaries have been planned for the park, with so-called animal architecture having been considered (towers for swifts, bird feeders, and nesting boxes). People will only observe nature there and explore it in a controlled manner. A scheme for pedestrian movement in the park was designed, too, with the use of remnants of the path which surrounds the top of the stadium. The path is linked to two sets of stairs, which will connect the park with the garden. In order to commemorate the events from the history of the stadium, it was proposed that elements of the stands could be preserved in certain places, as a kind of a lapidarium. Those elements would serve the double function of a matzevah and a habitat for plants and insects (Fig. 4).

The second zone is the Municipal Garden, which is designed to facilitate such activity of the local community and support the natural processes taking place there. Visitors of the garden would also experience a sense of community, learn new skills, and, most importantly, develop their social responsibility. The design includes ground and container gardens, an herbarium, and fruit orchards. Large fragments of the original meadow are left intact. Spots have also been reserved for an apiary with a beekeeping workshop and for complementary buildings: a social kitchen and a market. The light and open form of those structures is intended to look temporary, like traces of nomadic presence of people in the landscape, and to bring man and nature closer together.

The name of the project is created out of two key words: 'siedlisko' ('habitat') and 'bliskość' ('closeness'), which are combined into 'SIEBLISKO' ('CLOSABITAT').

4. CLOSABITAT

Every urbanization process results in topographic transformations, local climate changes, and, most importantly, disappearance of the natural biodiversity. Ebenezer Howard's idea of a city-garden has been replaced by the modernist concept of functionalist objects on vast lawns, in which the green areas have been reduced to parks, squares, and alleys which are not interconnected and are not the resultant of the natural flora of the region. As we are facing the climate crisis, it becomes vital that those artificial systems be opened and, consequently, combined in analogy to the natural ones. For that purpose, we have to change the way in which we design urban spaces, making its elements biocenotic carriers which, however, do not lose their primary functions.

In that context, the Poznań authorities' proposal to build a center in the area of the old stadium is not an initiative for the development of the city but an act of reuse of architecture as a political tool which would replace the actual processes occurring in the natural ecosystem — in this case, of the creation of unique bonds between "nature, the place, and people" — with an artificially unique architectural spectacle. Christopher Alexander's concept of *the nature of order* presupposes continuity of architecture and its gradual, almost biological development. The evolution of a habitat should contain the aspect of natural order which is created organically — gradually and without political interference — by people and nature.

Alexander von Humboldt wrote that nature speaks to man *in a voice that is familiar to his soul*. Nowadays, people and their cities should speak a voice compatible with that of nature. The city must become a tool for environment protection, just like it has been the tool and catalyst of civilization, freedom, and culture. The significance of Closabitat consists in the essence of the transformations which have already taken place: architecture has become nature, the spectators became a community, and the space — a place. The Closabitat concept, then, is an attempt at peaceful coexistence of all elements of nature. People, who are its part, cease to be greedy landowners and become mediators in the natural environment.

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NOTES

1 The authorities of Poznań intended it to be a part of the General National Exhibition (1929). During the opening ceremony, due to the instability of the main stand, the spectators — including the president of Poland Ignacy Mościcki — had to be evacuated.

2 Władysław Czarnecki, "Budownictwo w Poznaniu", *Architektura i Budownictwo*, Warsaw, Spółdzielnia Wydawnicza Architektów Polskich, 1932, 20.

3 Anna Ziółkowska, *Obozy pracy przymusowej dla Żydów w Wielkopolsce w latach okupacji hitlerowskiej (1399–1945)*, Poznań, Wydawnictwo Poznańskie, 2015.

4 On July 22, 1944, the Polish Committee of National Liberation proclaimed the July Manifesto. In 1945–1990, that day was the greatest national holiday.

5 Barbara Sudnik-Wójcikowska, *Rośliny synantropijne*, Warsaw, Multico, 2015, 22–29, 132–138.

6 The evaluation was based on independent research carried out by Anna Siekierska, Krystyna Jędrzejewska-Szmek, and Magdalena Garczarczyk. According to averaged estimations, there are about 1800 trees from 40 species on the 4, 3ha area of the stadium.

7 Yi-Fu Tuan, *Space and place: The perspective of experience*, London, 1977; Maria Lewicka, *Psychologia miejsc,* Wydawnictwo Naukowe Scholar, Warsaw, 2012.

8 In 2012, in a survey on the future of the stadium, 76% of the inhabitants of Poznań surveyed were in favor of the park, 22% for a recreational and sports facility, and 3% for a service, commercial and residential building. 81% of Wilda's inhabitants voted for the park, and 19% for the recreation and sports facility. In 2016, during *Updating the map of local needs for the city center of Poznań* workshop, the inhabitants of Wilda expressed the desire to have a park in the area of the stadium, which would complement the southern wedge of greenery and enlarge the green areas of Wilda.

URBAN FURNITURE AND TOWNSCAPE IN MEXICO (1920–1960)

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ABSTRACT.

Throughout the decades between 1920 and 1960, the new proposals made by the Modern Movement in architecture and urbanism caused a substantial change in urban landscapes. This phenomenon spread mainly in industrialized countries but very soon transcended the context of Latin-American countries.

In the Mexico of the time, the end of the Mexican Revolution coincided with a renovating movement, both social, cultural and urban, in which the main intellectuals and architects of the time met in order to introduce the country to modernity. The post-revolutionary renovation, which included the development of numerous public supplies and services, had also a reflection in the urban landscape.

Part of these changes were due to the aesthetic significance of the Modern Movement, the emergence of the automobile and the new urban proposals, but also to the contributions of industrial advances in the design of objects and more specifically in the design of urban furniture, which had acquired relevance during the second half of the 19th century. Urban objects for the rational city, together with the introduction of new materials and industrial processes, were in line with the functional character of the Modern Movement, resulting in a more sober urban image, with respect to that derived from industrialization.

In the capital city of Mexico, the appearance of new functional public spaces, accompanied by lights, benches, wastepaper bins, signage and advertising, public transport stops and green spaces, as well as architecture, was combined with the existence of elements taken from other currents and aesthetic products that developed in parallel, especially in the early years, such as Art Deco or nationalist manifestations realized mainly according to the *Neo-colonial style*.

1. INTRODUCTION

During the first half of the 20th century, urban spaces and urban furniture underwent a great transformation with regard to the characteristics that had defined them from 1850–1860.[1] The reason for this is found in the development of the new ideas for architecture and urbanism that had begun to take shape in the early years of the century. Also, scientific and technological improvements in topics such as electricity, communications or new materials, contributed to changes in urban life.

Among the first projects that foresee the development of the 20th century city, we find the one by Tony Garnier *Cité Industrielle* (1904) or Otto Wagner's essay, *Großstadtmetropole* of 1911 and his projects such as the design for the redevelopment of Karl-Platz in Vienna in 1909. Here, he proposes the substantial modification and that was about to happen in urban furniture and public spaces and integration between both areas. Inside these projects, a significant decrease in objects that are integrated into architecture and infrastructures is observed, just in the same way that "built-in" furniture became one of the most widespread interior architectural exercises during the Modern Movement. This new concept is manifested, perhaps for the first time, in Tony Garnier's project, in which the benches, pergolas and luminaires are integrated into the facades of the proposed houses, creating a continuous image, in his utopian city.

The integration of urban furniture recovers the functionality and reorganizes urban spaces after several decades of object proliferation intended for the streets, caused by the growing of industrial production in the 19th century and by eclecticism. The first decades of the new century also pose a new way of managing urban space: while, in previous decades, an important part of urban furniture and public services were granted by means of concession to private companies, from the 1920s onward, many public services and furniture began to be projected from the municipal technical offices, as indicated in numerous documents kept in the historical archive of Mexico City and in some other cities in the country.

In Mexico, as in other countries, modernity was translated into different aesthetic languages, in many cases influenced by the well-established ideas, consolidated at the end of the Mexican Revolution, on the one hand, the nationalist currents involved in the process of searching for a national identity far from the European-tinged eclectic aesthetics of the Porfirian era[2] and, on the other hand, Art Deco and Rationalism. The three tendencies, although displaying apparently antagonistic principles, shared the search for forms of expression in keeping with the new times. It was undoubtedly the manifestation of a modern behaviour. In a similar way, the promoters of the *Union des Artistes Modernes* (UAM) in France called themselves "modern" showing that modernity is not defined by monolithic aesthetic principles, but rather by a way of seeing the present in the new century.[3]

2. URBAN FURNITURE AND PUBLIC SPACES BETWEEN 1920 AND 1940

The first public space project that introduces, perhaps involuntarily, avant-garde ideas, was developed in 1913, for the most emblematic square in the country: The *Plaza de la Constitución* in Mexico City. The project marks a watershed that will leave clean the desired image for the new century,

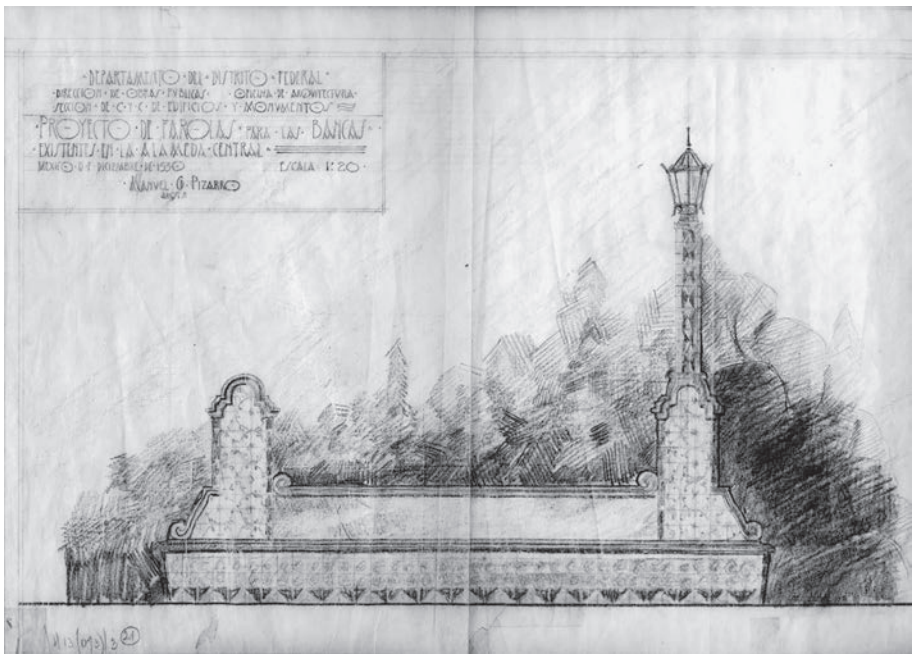


Fig. 1. **"Proyecto de banco para la Alameda Central", project for benches and lighting for Mexico City in Neo-colonial style, 1930, © Archivo Histórico de la Ciudad de México, Planoteca 413/073/3.**



Fig. 2. **Parque General San Martín, 1935 ca, © Colección incremento acervo, Fototeca Nacional, INAH.**

in which a total change in the formal organization of the square is proposed, starting with the removal of all the aesthetic elements that had shaped it: elimination of a large part of the elements characteristic of nineteenth-century squares and gardens like trees, urban furniture and ornamental elements such as benches, kiosks, fountains, sculptures and transport stops that had been placed after 1870. The dimensions of the square are reduced to open the perimeter roads to the circulation of the electric trams and a geometric layout inspired by the tradition of central Mexican squares is proposed, now ornamented with grass flowerbeds and the planting of some palm trees and low hedges. The "Proyecto de reforma a la Plaza de la Constitución" was published on the front page of the newspaper "El Imparcial" on July 12th, 1913.

According to the project's memory, the proposal was based on the need to clear the view of the Cathedral and the Sagrario, which were almost hidden by the trees in the square.[4] A few years later, the perimeter buildings were remodelled in a neo-colonial style, including the National Pal-

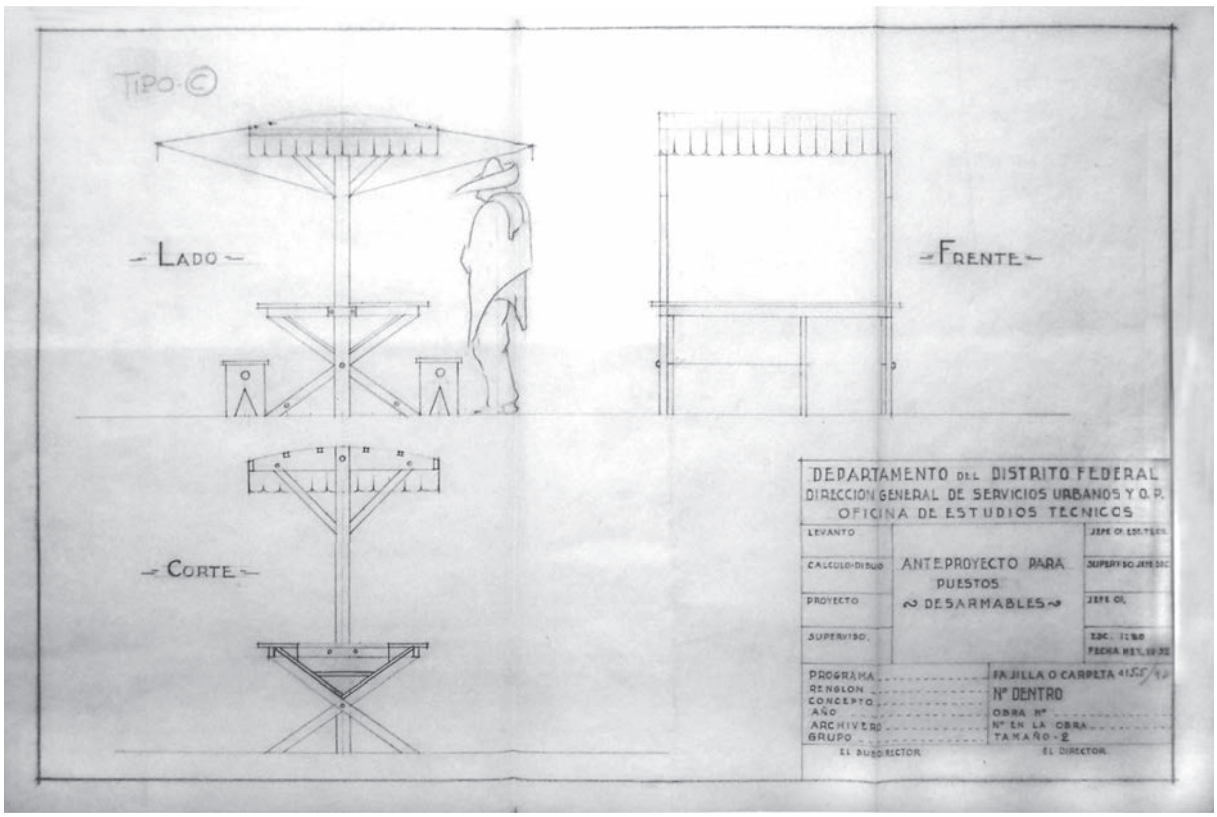


Fig. 3. **Project for mobile market stalls in Mexico City, 1932, © Archivo Histórico de la Ciudad de México, Planoteca 415-5/92.**

ace, and the expansion of two avenues (20 de Noviembre and Pino Suárez) was carried out, demolishing several historic blocks.

By 1920, Mexico City had exceeded its traditional boundaries and was expanding to encompass municipalities around the periphery.[5] Entire residential developments surrounded by new avenues were created leaving the historical zones aside. Undoubtedly, a large part of the changes were caused by the increase in vehicles and the need to expand the circulation areas, which had to be equipped with new elements such as traffic lights, protection fences for pedestrians and elements of various kinds for traffic control.

There were several *Neo-colonial* urban furniture projects carried out between 1921 and 1935.[6] These were mainly ornamental projects, intentionally made to reveal the spirit of the new age. Alongside these projects, other functional proposals were also developed, such as projects for mobile markets or public laundries, both made in concrete.

A leading example of *Neo-colonial-inspired* public spaces, is the development of the Polanco district residential dwelling, to the west of the city, in which a clear relationship is established between architecture and urban elements: landmarks, fountains, signposting, lighting benches; most of them designed by Enrique Aragón Echegaray (**Fig. 1**).

Among the Art Deco projects, the Parque General San Martín (known as Parque México), uses formal resources close to *Neo-colonial's* ones, although more sober, designed with geometric combinations which denote a craft-related inspiration (**Fig. 2**).

3. FUNCTIONALISM IN THE PUBLIC SPACES OF MEXICO CITY (1950–1960)

Functionalist urban furniture is consolidated from 1950 onward. In pictures of the period, the replacement of Déco or Neocolonial elements by objects designed with straight lines without superfluous elements it is clearly appreciated; function and simplicity mostly defining now these new objects.

The renovated furniture, also intended for parks and gardens, as well as for housing estates, housing units and educational centers, assumes simple geometry and quadrangular polygons, using and making the most of the modular pieces of industrial manufacture and rationalising to the maximum the manufacturing or construction processes of the elements built on-site. In different proportions they make up benches, litter bins, plant containers, lights or signpost holders.



Fig. 4. **Open-plan square of Palacio de Hierro store in Mexico City, ca.1958, © Archivo Segarra Lagunes.**

As the decade goes on, in tune with new projects, urban furniture becomes more dependent on architecture and, very often, makes the limits indistinguishable. More than ever, it is restricted to delimited areas such as esplanades, public gardens and parks. Benches become a continuation of sidewalks or walls and are built in the same materials, like fountains or tree pits. Sidewalks and circulation areas are defined by straight borders and concrete surfaces, being supplemented with some flower beds for vegetation and columns for lighting and wiring.

Now without a nationalist rhetoric, some elements use local materials such as clay and quarry or volcanic stones, in modular constructions that resemble puzzle pieces, giving the appearance of maximum simplicity and making the most of existing structure and surfaces: parapets turn into a continuous bench surface, high tree pits endorsed with the same function, signage directly built-in to the walls and finally, elements endowed with multiple functions of a fixed character.

The simplification was also possible thanks to the new ways of using some materials and to the commercialization of others for architecture and construction of that time. In addition to concrete, metal profiles, more resistant ceramic materials, glass and plastic materials.

The different functions performed by urban furniture are split more than ever into two groups of objects that are treated separately: the first group is made up of highly functional elements, which match the needs of infrastructures and supplies and which are essential for the proper functioning of these services, such as the poles for different types of wiring and public lighting, covers for drainage and electricity networks, sewers, sidewalks and roadways, some signalling elements — mainly those related to street nomenclature and house numbering — and borders and tree pits for gardens, as well as the new elements for road control and service (Fig. 3).

The second group is made up of elements already known, as fountains, benches, pergolas, signs, plant containers, gazebos, playgrounds[7], bars and bollards, signage and nomenclature elements and various ornamental elements that are used in recreational spaces such as parks, gardens and green and cultural areas, among which the spaces created for the dissemination of national culture are also counted, together with spaces around commemorative monuments including ornamental lighting.

Two facts become common denominators at that time: The continuity of architecture and urban functions, and art as a landmark: the *Torres de Satélite* (Luis Barragán — Goetritz) or "Tú y yo" (*Concesionaria Renault Florida*) by Mathias Goeritz. Inside sport venues, swimming pools, trampolines and stands, court covers and sun canopies acquire relevance, and, in the streets, fences and gates, public transport stops, gas stations and guard booths; walkways and pavements make up the entire urban image. These elements are resolved in a homogeneous way with respect to architecture in projects of residential buildings (multi-family), educational venues, sport centres and hospital facilities. Some examples for that are the *Centro Urbano Presidente Alemán* (CUPA) — multi-family buildings — (Fig. 4), the Ciudad Universitaria (National University of Mexico) or the *Jardines del Pedregal* district.

During the development of the Modern Movement, urban advertising was also configured as part of the architectural project, which for the first time took into account the existence of large luminous panels integrated into the facades or spaces provided for the placement of commercial or corporate firms. The city, that is now travelled around by car and less and less walked on foot, transforms its image according to the scale and speed of the means of transport, and this excludes the need to fill the streets with isolated advertising panels. Some examples can be mentioned as the luminous advertisement of the north facing of the Edificio



Fig. 5. **Public spaces in the *Centro Urbano Presidente Alemán* (CUPA), 2020, © ICA.**



Fig. 6. **Open spaces in the National University in Mexico City, ca. 1957, © Archivo Segarra Lagunes.**

Ermita of Juan Segura, which shows the slogan: "*México calza Canadá*".

Urban spaces for recreation are not only those in the public domain: many private owners join to offer part of their land to the community: warehouses, corporate buildings and other commercial companies offer open-plan squares, discreetly landscaped, with fountains, benches, clocks or children's playgrounds, inspired by some American examples such as the Rockefeller Center in New York (**Fig. 4**).

Typologically, these semi-public squares are not different from general urban spaces or from public urban developments, made with State funds, as happens in the open spaces of the aforementioned CUPA, whose open areas were complemented with benches and picnic tables, which were

built in modular and prefabricated pieces combining stone, cement or metal (Fig. 5). The gardens designed with grass beds and few rectangular-shaped trees are related to many of those created in areas not aimed to construction in new developments as, for example, in the large esplanades of Ciudad Universitaria[8] (Fig. 6).

In this last project, both due to the scale and the rationality of all its elements, urban furniture is fully integrated into the architecture. The proportions of the pieces, with horizontal voids and combined functions, make them a perfect interpretation of the role of design in the Modern Movement. Smaller elements are joined by the large roofed corridors that cover the distances between the faculties inside, as well as the landscaped areas drawn in perfect squares, some surrounded by walkways, which become recreational areas as well. The use of basalt stone in some details does not hide certain pre-Hispanic reminiscences, such as those observed in the tree pits located in the courtyard of the Faculty of Architecture.[9]

4. CONCLUSION

Projects for urban spaces throughout the first half of the 20th century have uncountable points in common on the world scale. The image of cities was significantly transformed and established the definitive difference between the historical city and the contemporary city.

The study of public spaces and, particularly, of their furniture continues to be a pending issue both in research on the architecture of the Modern Movement and on that field, which emerges from the history of design and the city. Collecting and documenting the furniture and urban elements of the time, constitutes, for the moment, the main tool for the knowledge of the objects existing in the streets and points to their consideration as a testimony of urban history.

NOTES

1 The concept of urban furniture, understood as the "elements that provide the necessary comfort for the use of the streets" as defined in 1961 by Gordon Cullen, had developed during the 19th century along with the systematization of its use thanks to mass production, and its elements became an essential part both functional and decorative. of the townscape Cf. Silvia Segarra Lagunes, *Mobiliario urbano, historia y proyectos*, Granada, EUG, 2012.

2 Belonging to the period of government of Porfirio Diaz that covered almost from 1877 to 1911.

3 Cf. Olivier Cinqualbre, et al. (eds), *UAM, une aventure moderne*, Paris, Centre Pompidou, 2018.

4 Probably the real aim of the project was to exercise a greater control of the square during the armed movement because visibility was very difficult with the tree mass that had been growing since its planting. In fact, between 1913 and 1915 the square was completely empty.

5 Its growth in those decades was remarkable: from a population of about 721,000 inhabitants in 1910 to almost 5 million in 1960. Cf. *Instituto Nacional de Estadística, Geografía e Informática*, consulted on March 30th 2021.

6 Several of this urban furniture is published in Silvia Segarra Lagunes, op. cit., 390–401.

7 The playgrounds topic constitutes a special section with respect to the rest of the urban furniture, collected in detail in the book: Aldo Solano Rojas, *Playgrounds del México Moderno*, Promotora Cultural Cubo Blanco, México 2018.

8 Some references for the urban furniture of the university city can be found in: Héctor Quiroz, Carlos Emilio Sandoval, *Uso y percepción de los espacios públicos en Ciudad Universitaria*, accessed on February 15th, 2021, http://www.revistas.unam.mx/index.php/bitacora/article/view/25196.

9 Much of the original urban furniture is still preserved, but since the seventies, various elements have been added such as the spherical lights of the esplanade, benches and tables and chairs that have tried to respect the formal design of the originals. The luminaires have also been replaced: originally, the lighting was concentrated especially in the covered walkways and there was the illumination of the buildings, for which there were relatively few low luminaires, in the pedestrian areas, consisting of steel columns.

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3

MODERN HOUSING

Session 3-a

MODERN MASS HOUSING — A BATTLEFIELD OF CONFLICTING RECEPTION MODES

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Mass housing is a vast, dense, multi-faceted subject whose relationship to the concerns of DOCOMOMO, in both its history and its contemporary issues, is as complex and problematic as possible. The fundamental challenge of the subject for a Modernist architectural-heritage grouping such as DOCOMOMO is not simply that it concerns a building type afflicted by large-scale redundancy and unpopularity. In the past, many conventional architectural conservation initiatives have been able to address problems of mass obsolescence in building-types as diverse as farms, churches or even early workers' housing, without excessive soul-searching. The relationship of these types to 'heritage' is relatively detached: they were designed many years ago, at a time when 'architecture' was something added to the carcase of a building, in keeping with the Vitruvian segregation of aesthetic and practical aspects. Even building types once strongly stigmatised as oppressive and unjust, such as 19th-century factories or workhouses, can be re-appropriated relatively easily today.

The position with postwar mass housing could not be more different, with 'design', 'production' and 'reception' inextricably tangled together. Unlike old-style preservation societies, DOCOMOMO is dedicated to a relatively recent architectural movement, which launched itself aggressively outwards in all possible directions, discarding the old, stolid Vitruvian framework in favour of an all-embracing utopian approach. Time after time, from the 1920s to the 70s, architects claimed that architecture was indivisible from various social, economic, technological or psychological factors — and that, because of that indivisibility, they had the right and the duty to pronounce and intervene in areas they had previously avoided (such as engineering) or which were newly invented (such as 'user studies'). Often, they called on the powerful mid-20th-century state to help them in these efforts.

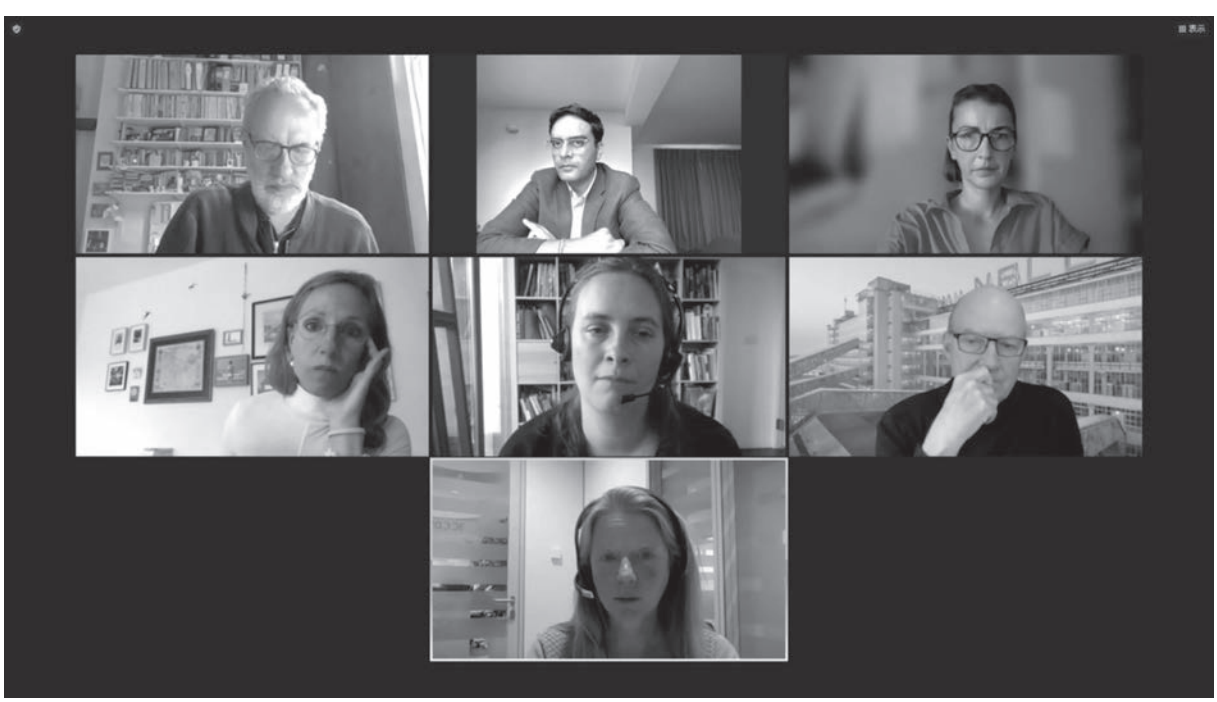
At the core of all these endeavours, especially in Europe and the wider socialist bloc, was the new area of mass social housing. This was a field of burning political concern to 20th-century regimes of all political varieties, and at the same time a central focus of agitation of the socially-minded intelligentsia, including architects, city planners, sociologists and public health reformists. Within this world, modernist architects set out to bolster their position through theories of community that aggressively invaded adjoining disciplines, especially that of town-planning. Yet the outcome of those efforts was sometimes very different from the grandiose aspirations, owing both to architects' often weak or marginal position within the establishment - by comparison (for example) with powerful industrial contractor organisations and local politicians dedicated to maximum output — and also to their lack of interest in communicating with and influencing these groups, rather than pursuing their own elite debates.

The partisan, contentious status of architectural modernism within mass housing was reinforced when creation shaded into reception. In some places, such as Western Europe and North America, there was the further complication of a subsequent violent rejection by 'public opinion' of mass housing as a whole. This rejection, and the consequent surgical attacks by demolition or Postmodern re-styling, has today left that often still substantial built legacy stranded in a fog of incomprehension, on the part both of the general public and of the new professional groups (mainly social housing managers and real estate capitalists) charged with the fate of that legacy. Yet in other places, such as the former USSR or the Asian Chinese city states, a more consistent and all-embracing programme of mass housing allowed a different, far less violently polarised outcome. And elsewhere again, for example in Latin America, large-scale mass building of apartment blocks was chiefly the work of the

private sector, usually without the violently politicised fluctuations of fashion associated with some European housing programmes.

Thus, it is no simple matter for an organisation such as DOCOMOMO, with its allegiance to modernist architectural values, to embark on a reassessment of mass housing, launching itself into a battlefield of conflicting modes of reception within which almost any conceivable 'architectural' position is overburdened from the start with potential biases and limitations. It would be tempting for an organisation of architects and architectural historians to try to shortcut this quandary by putting forward 'solutions' for the housing problem based on the supreme power of 'architectural quality'. The elitism of the original 1980s/90s DOCOMOMO love of the 'heroic interwar pioneers' could very easily be extended into the postwar period - showcasing elite housing designers who fought against supposedly prevailing mediocrity — and one could then continue into the present, picking out for praise the regeneration projects of present day 'iconic modernist' designers. But the result of that would be a further layer of bias and confusion — not least in the way that the stylistic resemblances of 'Modernist housing past and present' obscure the disparity between today's profit-motives and the social-democratic values of yesteryear.

In this conference session, both the history and the conservation of mass housing is addressed from a diverse range of viewpoints — taking our cue from the established DOCOMOMO formula of documentation followed by conservation. The session comprises four papers spanning Europe and Asia, but with a particular focus on the Low Countries, where the postwar construction of mass housing was strongly polarised between the relatively laissez-faire system within Belgium on the one hand (a system reflected in Els De Vos's paper on the development of modernist housing settlements for the middle-classes, and in Karina Van Herck's inventory overview of some highly individualistic high-rise and low-rise social housing projects) and, on the other hand, the Netherlands' strong integration of housing within municipal and national planning (a situation exemplified in the prolonged, multi-phase post-1960 expanded-towns programme described in the paper by Lidwine Spoormans, Ana Pereira Roders, Wessel de Jonge and Leeke Reinders). The fourth paper in the session, by Gaurav Sharma on the Sujan Singh Park housing development in Delhi, provides another, earlier case-study of a social housing project for the 'middle classes', here for Indian colonial government employees accommodated complete with service staff. In all cases, the papers carefully consider the often highly challenging contemporary challenges of documentation and conservation.



THE NEW LIVING. RESILIENT HERITAGE OF SOCIAL HOUSING IN FLANDERS

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ABSTRACT.

Between 2011 and 2018 the Flanders Heritage Agency conducted, with participation of the social housing companies, a systematic research study of the heritage value of all social housing in Flanders. This resulted in a thematical-typological selection of housing that was added to the online *Inventory of Built Heritage in Flanders*, and in a manual with practical guidelines for dealing with these heritage values. One of the most evident conclusions of this research was that whereas the more traditional social housing schemes can more easily find a new future, the modernist post-war social housing poses major challenges. The main questions this paper addresses are: what are the heritage values of post war modernist housing in Flanders? And how can we deal with these values today? This paper addresses these questions by highlighting some key-mo(nu)ments, such the internationally renowned Dwelling Unit at Kiel (Antwerp, 1949–1958) designed by Renaat Braem, and some outstanding structuralist low rise neighbourhoods in the rural region of the Campine (1960s–1970s). These cases represent not only distinct models of dwelling with different balances between the individual and the collective; they also illustrate different ways of dealing with heritage values by different actors. Hand in hand with the above-mentioned research questions this paper explores the topic of resilience, as a new way of thinking about the heritage and renovation of social housing, shifting the focus from problems to opportunities.

1. INVENTORISING SOCIAL HOUSING: EXPLORING THE LIMITS OF TRADITIONAL HERITAGE STRATEGIES

Between 2011 and 2018 the Flanders Heritage Agency conducted a systematic research study of the heritage-value of all social housing in Flanders (the northern region of Belgium) built before 1985 and (partly) owned by a housing company (research by Joeri Mertens, Evert Vandeweghe, Karina Van Herck, Julie Verhelst). The project was a joint initiative between the Flanders Heritage Agency and the Flemish Social Housing Company, which encompasses 120 local housing companies. The aim was to align the ongoing renovation program with the heritage value of the patrimony.[1] During the most recent decades, as in most European countries, the heritage of social housing has become the focal point of intense discussions. On top of the legal minimum standards for dwelling comfort have come rising demands for high energy efficiency, acoustic isolation, and fire safety. These requirements are drastically altering the appearance of social housing, for instance by adding outside insulation. This is especially the case for post-war modern architecture, with its large glazed surfaces or brutalist architecture. Moreover, due to financial cuts in budgets for renovation, and the long waiting lists for social housing, companies most easily opt for replacement of the buildings by new ones.

The final goal of the research was a representative selection of social housing to be added to the *Inventory of built heritage in Flanders*, an online database which provides an authoritative, expert basis for heritage management by cities and communities.[2] The survey covered the total surface of Flanders, involving 6000 housing groups, representing a variety of historical periods, building types and styles, though the focus was largely on the post-war period (85% of the housing groups). In order to deal with this diversity and quantity we developed a historical-typological framework, combined with a matrix of clearly defined heritage values and additional criteria (such as geographical spread). In consultation with the housing companies, 226 estates were added to the online Inventory. 47 of them were marked as "exceptional" — with the intention for further stringent selection for listing proposals after the project. Each housing project was provided with a historical and typological description and a brief evaluation that clearly spells out the heritage values and the elements that 'materialize' it (such as joinery or building envelopes).[3] In 2018, this study was complemented with an overall manual (by Heleen Schroyen), with best practices and practical guidelines for the reconciliation of heritage values with energy performance and contemporary living standards.[4]

In the inventory we placed a high emphasis on the legacy of the Modern Movement, since social housing provided a testing ground for leading architects and urbanists to experiment with new building materials, new architectural and urban forms and new concepts of living. With a few exceptions, this heritage is exclusively post-war. However, the usual next step of heritage protection didn't materialize, having been unable to generate a sufficient support base; due to reasons already mentioned before, and the uncertainty of restoring experimental building constructions. Moreover, in Flanders, total restoration (or renovation) of social housing areas is complicated, due to the complex ownership pattern. As part of the overall national dwelling policy of encouraging homeownership as the preferred tenure, most social housing estates partly belong to the housing company and partly to individual owners, whilst the public spaces and infrastructure belong to the municipality or the city.

Social housing seems to indicate the limits of traditional government-based heritage strategies; especially in recent times, with governments taking more and more a supportive instead of a directive role. In the light of this, now, two



Fig. 1. **Renaat Braem, Kiel Dwelling Unit, Antwerp, Belgium, 1949–1958. © Flanders Heritage Agency, photo Kris Vandevorst, 2010.**

years later, we want to ask how the heritage values of the post-war housing quarters were dealt with, and by whom? We do so by highlighting some rather well-preserved key-mo(nu)ments of the post-war period, representing different types, as well as shifting heritage strategies and actors. At the same time, we explore the question of what exactly turns them into 'resilient heritage' — at the same time as many other quarters are demolished or radically altered. By doing so, we propose to focus not on the problems of these historical quarters but on their potential as contemporary neighborhoods; providing steppingstones for a mental shift in the (international) discourse on the heritage of modern housing, moving from problems to 'building resilience'.

2. POSTWAR HIGH-RISE DISTRICTS (1950–1975): THE KIEL DWELLING UNIT (ANTWERP) AND TIMELESS ARCHITECTURAL QUALITY

Unlike most welfare states, in Flanders large scale modernist districts were never really adopted. Already in the nineteenth century, the Belgian Government had opted for a liberal approach to the question of housing, encouraging above all individual dwellings, private initiative and private property. In the rental social housing sector this led to a focus on small scale, social mix, and single-family homes with a garden. In the post-war period, only a few prestigious high-rise districts were erected, mainly on the fringes of the cities of Antwerp and Ghent. In the inventory we valued foremost the earliest estates, in which the CIAM-principles underpin the social programme of 'the new living'. 21 estates were granted heritage value. Owing to the regulation that social apartments cannot be privatised, total renovation is possible, and so these districts are in general rather well preserved. At the same time this makes them vulnerable, as they can be demolished in their totality — as was e.g. the case for the Kielpark Towers (due to technical reasons). Even in the case of drastic renovation, due to the sheer size (landmarks), and geometric volumes, the overall image often stays intact; a quality of resilience we could define as firmness (as opposed to fragility). The typical modernist division between expressive structure and temporal infill that characterizes many of these estates (e.g. the Arena Quarter), facilitates their renewal, as was intended in the original concept. Whereas the qualities of resilience mentioned here can be traced back to adaptability, the case of the Dwelling Unit by Renaat Braem, however, demonstrates something rather different (**Fig. 1**).



Fig. 2. **Renaat Braem, Kiel Dwelling Unit, Antwerp, Belgium, 1949–1958. © Flanders Heritage Agency, photo Kris Vandevorst, 2010.**

In the inventory, five CIAM-estates were indicated as "exceptional", of which three were designed by Renaat Braem — a former trainee in Le Corbusier's office. Above all, the Dwelling Unit at Kiel in Antwerp (1949 / containing 800 units), built after the example of Le Corbusier's Unité d'Habitation in Marseille (1946–1952), is *the* milestone in the history of modern housing in Belgium.[5] Already before its completion, the Kiel Estate was internationally widely published and even presented at the ninth CIAM-congress in Aix-en-Provence (1953). Chronicled as an unparalleled exemplar of 'social architecture', the estate is based on the concept of the minimum dwelling, augmented with communal services and greenery. Braem himself stated that the intention of offering the inhabitants the highest degree of freedom determined the principles of the design: the freedom to move, unobstructed views, and a free life thanks to the open and practical organization of space.

The district includes nine freestanding blocks on *pilotis* arranged in an organic layout, a small shopping centre, a semi-circular home for the elderly with social centre, and a sculpturally-designed building for district heating — symbolizing the collectivization of human needs. The earliest housing blocks (1947–1950) are composed of apartments with an individualized entrance on to open galleries, designed as autonomous streets-in-the-air (**Fig. 2**). In the later housing blocks Braem incorporated duplex apartments, approaching the ideal of an individual home. Hallways, galleries, staircases and elevator shafts were designed as spacious extensions of the street, stimulating spontaneous encounters. Based on the idea of a total synthesis in which all branches of design define the framework of life, murals, colour contrasts, vertical bands of colours and sculptures were designed to offer inhabitants the possibility of identifying with a large-scale environment. Moreover, a carefully orchestrated landscape design with resting-places and playgrounds formed an integral part of the district design — unfortunately not realized.

As the estate relies on the concept of total design, our inventory assigned value to almost every element ranging from layout, typology, architectural details, materiality, paintings, and statues — in other words, everything except for the interior of the apartments itself. Otherwise as Braem stated himself, this is not a flexible, adaptable, or — in today's terms — 'negotiable' architecture. All aspects of daily life are determined, in an almost totalitarian way, while at

the same time providing a feeling of openness and spaciousness. As a result, the estate has stayed relatively unchanged over the years, providing a steady quality of living. As its housing company points out: compared with other estates, Kiel has relatively few livability problems, precisely because its architecture has much potential and high architectural quality. Inhabitants also indicate that the housing concept is still relevant today. The limited surface of the dwelling units is not perceived as a limitation, as it is — exactly as intended — compensated by the sense of space. Most residents appreciate the panoramic view, the sense of space, and living in a green environment near the city with its amenities. In addition, renovations show that the apartments can also meet the contemporary comfort requirements (albeit with lower occupancy). It is exactly these CIAM-principles that we accorded heritage value, in combination with a high architectural quality — principles and qualities — that determine a living environment that is still excellent today.

As the estate's exceptional value is widely acknowledged, the housing company and the local government deal very carefully with it. Under the supervision of the city heritage department and with the expert support of the Flanders heritage agency, the Kiel Dwelling Unit was restored with great respect for its original architecture and concept (1990–2000, architects Vanhecke & Suls and Herelixka). Besides improving the dwelling comfort (without changing the floor-plans), a total renovation of the building facades, staircases, and galleries was carried out. Although the concrete skeleton structure was quite experimental at the time, as the outside façade consists of brick blocks (on precast panels) it could be replaced by a new insulated building envelope, only slightly changing the appearance. Restoration included the reconstruction of mural and ceiling paintings as well, entrance doors and so on. One flat was furnished as a model apartment. Unfortunately, this meticulous way of dealing with the estate has recently changed, due to financial cuts in renovation budgets and long waiting lists. In 2019, the home for the elderly and social centre (Van Roy Home) with its extraordinary mural paintings was transformed into dwelling units for families.

3. DENSE LOW-RISE NEIGHBOURHOODS (1965–1985): THE PARKWIJK AND EGELSVENNEN DISTRICT AND THE EMERGENCE OF NEW COLLECTIVITIES

Following the high-rise model, the critical seventies in turn gave rise to some outstanding structuralist low rise neighbourhoods, inspired by Scandinavian examples such as Terraserne in Fredensborg by Jørn Utzon (1959–1962) or Arne Jacobsen's residential complex in Søholm (1945–1954). Typical of this phase are the densely clustered new dwelling types — such as back-to-back homes, stepped rowhouses, patio or garden-room houses — combined with large communal green spaces. They are unique ensembles in Flanders, with a high architectural and urbanistic quality and with master plans based on living quality, community-building, and the presence of greenery. Architecturally, they are representative of Flanders's so-called brick-brutalism, which is rather fragile. In 24 of these cases, we designated them as of heritage value, indicating 10 as "exceptional". The future of these inspiring neighbourhoods, however, is highly uncertain. Most typically, they have a mixed ownership structure, complicating uniform renovation. The brutalist architecture, expressing the concrete structure in the outside façade, poses big challenges for energetic renovation. On a social level, the close-knit community of yore has diminished. As this kind of heritage finds itself in a stalemate that outlasts traditional heritage strategies, new players in the field are stepping forward, introducing new ways of working, new partnerships, and new (integrated) forms of financing. This also means new directing roles such as district managers, district companies or project drivers.

In the rural area of the Campine (the north of the province of Antwerp) the independent architectural organization AR-TUR took the lead in developing future scenarios for two neighbourhoods: the Parkwijk in Turnhout (architects Eugène Wauters, Paul Neefs and Carli Vanhout, landscape architect Henri Carlier, 1965–1977, 850 dwelling units) and the Egelsvennen District in Mol (architect Leo Verbist, landscape architect Henri Carlier, 1968–1981, 140 dwelling units).[6] The broader goal was to develop a broadly applicable method for the integrated sustainable renovation of social quarters with heritage value. The Flanders Heritage Agency was the supporting partner and provided expertise.[7]

Both areas are designed as a unity of architecture, urbanism and landscape architecture, with a mix of housing types (single family homes, bungalows for the elderly) and, in the case of the Parkwijk, common services such as a church and social centre, shops, and a school. Characteristic is the *Radburn plan*, with its separation of traffic and living, with the garage on the street side and the façade towards a common green space (**Fig. 3**). In the case of Egelsvennen the houses are placed as garlands in a pine forest, blending with the existing nature (**Fig. 4**). Over the years both districts underwent minor individualising transformations, such as replacements of garage doors, renovation of roof edges, or creative extensions of the private homes into the semipublic space. Just as in Le Corbusier's Pessac, the design of the district turned out to be what one might call negotiable, providing an organic way to compromise with livability, although the inhabitants also claim that it is they who adapt to their homes.

In 2018, AR-TUR started a participatory project for these two estates, including all stakeholders: residents, social housing companies, architects, energy experts, municipal authorities, governments, and all interested parties. With guided visits, presentations of inspiring examples, interactive workshops, and panel discussions, a common support base was developed. Collectively the qualities of the neighbourhoods were mapped and discussed, residents' stories



Fig. 3. **Eugène Wauters, Paul Neefs, Carli Vanhout, and Henri Carlier, Parkwijk, Turnhout, Belgium, 1965–1977. © Flanders Heritage Agency, photo Kris Vandevorst, 2015.**

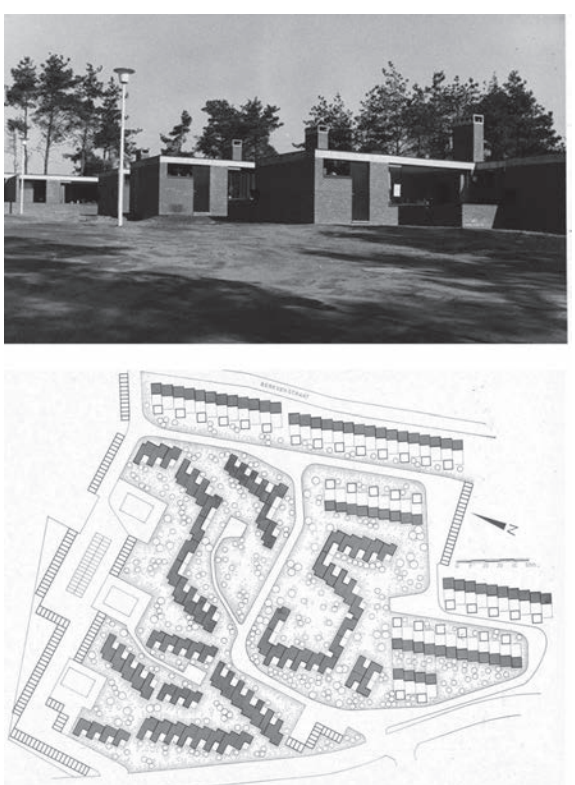


Fig. 4. **Leo Verbist and Henri Carlier, Egelsvennen District, Mol, Belgium, 1968–1981. © Archive of the Flemish Housing Company, 1970.**

and practices were collected, and future scenarios explored. In 2019 this trajectory resulted in the outlines of a co-creative working model: the Wijkmotor ('neighbourhood engine'). The Wijkmotor is a model for collective renovation, that starts with the creation of a 'neighbourhood collective' and the appointment of a neighbourhood manager. The model is based on the creation of a collective mindset driven by shared values and diverse expertise, instead of relying on individual and sectoral approaches. Financial resources are generated by merging all individual and sectoral resources with the goal of reinvesting it in the qualities of the district — with heritage value as one of many. The Wijkmotor focuses also on sensitization, empowerment, and taking pride in living in these neighbourhoods — all of which are essential to safeguard its future. However, concrete future scenarios, as a stepping-stone towards a common project, have yet to be drawn. In 2020 AR-TUR will set up a prototype for the Egelsvennen District. This includes also life cycle calculations of energy neutral renovation strategies, a district development plan that takes into account dwelling practices, and a renovation toolbox.

Translated back to heritage strategies and resilience, the Wijkmotor highlights the continuity between heritage values and contemporary values. Many of the historical values of the estates in question are indicated by the parties involved as contemporary qualities: the car-free and green character, shared services, playgrounds and meeting places, small neighbourhood shops, practical and compact dwelling units with little maintenance. By focussing on these kinds of values, the opposition between past and present, between conservation and innovation, is dissolving. This leads to a more positive view of the areas, stressing their potential rather than their problems. The Wijkmotor also places the intangible values of the Modern Movement in the foreground, especially community value, and restores them. By involving the inhabitants, the Wijkmotor also touches upon an essential, although often neglected, aspect of heritage: its meaning for people. As such the heritage of collective hous-

ing is becoming collective heritage again.

4. BUILDING RESILIENCE AND THE FUTURE VALUES OF HERITAGE

Returning to one of the starting points of this paper: what makes the heritage of post-war modern housing resilient? Usually resilience is understood as adaptability: the capacity to adapt to new circumstances — to new standards, to new energetic performances, to new target groups, to new social structures. In order to survive architecture needs to be flexible, as e.g. buildings with a clear division between structure and adaptable infill, or buildings that have the capacity to 'negotiate' with inhabitants (such as the Egelsvennen District), or that have strong outlines that facilitate adaptations without changing the overall image too much (firmness). The embedding of modernism in tradition — which in Flanders takes the form of a regional 'brick modernism', also adds to adaptability, with building envelopes that more easily meet up with energetic standards than e.g. exposed concrete. The Kiel estate, however, demonstrates another kind of resilience, one that is based on intrinsic and timeless quality. The heritage values coincide with or even surmount contemporary architectural and urbanistic qualities in housing, such as spacious entrances, galleries and staircases, large green spaces, integration of art and colourful elements.

In the end — ranging from adaptability and firmness to high quality — the nature of resilience might be not so different for buildings as for human beings. Also, just as for humans, the social fabric and support base is of the utmost importance, whether this comprises local governments, experts, inhabitants, neighbourhood associations or independent cultural organizations. Providing overarching knowledge and expertise, as we did with the online Inventory, is also crucial. In order to keep up with today's ever-changing world, however, one needs above all to stay relevant. And it is exactly here — as the last case showed us — that nowadays an interesting crossing-point is emerging, offering new perspectives for the heritage of social housing in Flanders. Today, Flanders is witnessing the emergence of new collectivities, sharing economies, and the urgent need for compact dwelling models. This chimes in with the intangible and urbanistic values of the modernist housing neighborhoods, such as social interaction, communal services, and the idea of the dwelling as a practical utility, combined with semi-public spaces and greenery. While the Modern Movement was originally ahead of its time, history is now catching up with it, making the values of the Modern Movement relevant again, although now in a rather pragmatic than idealistic way — almost out of necessity. This handful of neighborhoods, with their elite status as inspiring examples of compact collective dwelling in Flanders, today provide a unique resource of resilient heritage, and potential knowledge for emergent futures.

NOTES

1 The inventorisation was carried out by Evert Vandeweghe, Karina Van Herck, Julie Verhelst, and Joeri Mertens. Thanks to Evert Vandeweghe for his comments on this text.

2 The online Inventory of Immovable Heritage, accessed on January 15, 2020, https://inventaris.onroerenderfgoed.be/.

3 Karina Van Herck, Evert Vandeweghe, & Julie Verhelst, *Goed wonen voor iedereen: een rijke geschiedenis*, Brussels, agentschap Onroerend Erfgoed, 2016, accessed on January 15, 2020, https://www.vlaanderen.be/publicaties/onderzoek-naar-de-erfgoedwaarden-van-het-socialewoningbouwpatrimonium-in-vlaanderen-1; For a description of the research methodology, see also: Karina Van Herck, "Between commonness and utopia: inventorising social housing in Flanders" (lecture at the conference "Inventorisation of Modern Heritage: Urbanism and Landscape", organised by ISC / U+ L, hosted by the Scottish Centre for Conservation Studies at Edinburgh College of Art, Edinburgh, 13 maart 2014), https://sites.eca.ed.ac.uk/docomomoiscul/publications/e-proceedings-6/.

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5 The chapter on Renaat Braem is based on earlier archival research and interviews, see: Karina Van Herck, "Wooneenheid Kiel", Jo Braeken (ed.), *Renaat Braem 1910–2001 architect*, Relicta Monografieën 6, Vol. 2, Brussels, Vlaams Instituut voor het Onroerend Erfgoed, Brussel and ASP, 2010, 89–102; Karina Van Herck, "'Architectuur of revolutie'. Sociale woningbouw in Vlaanderen", Cahier Welzijnsgids, & Sien Winters (eds.), *Sociaal Wonen Vandaag. Een tijdsbeeld van sociaal wonen in Vlaanderen anno 2011*, Mechelen, Kluwer, 2011, 39–66.

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REGENERATION OF SUJAN SINGH PARK

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ABSTRACT.

Sujan Singh Park (SSP) is New Delhi's oldest multi-storied housing estate and a "landmark in pre-independence Delhi housing".[1] Built between 1943 and 1945, it was designed by the Anglo-Indian architect Walter Sykes George (1881–1962) who has been described as "a modernist follower of Lutyens".[2] Once popularly known as the drawing room of New Delhi, the estate experienced gradual decline over the decades. In 2014, the author became involved in a conservation-led program of regeneration of SSP. This paper builds on original archival material and on the author's practical work with the built fabric and direct engagement with the community living in SSP. The paper throws light on the evolution and the design of the estate and its cultural significance. The paper also discusses the approach and methodology of the regeneration project and how it might offer lessons for the critical conservation of modern housing in Delhi and beyond.

1. INTRODUCTION

New Delhi was planned between 1911–1931 by Edwin Lutyens (1869–1944) and Herbert Baker (1862–1946) in association with several other architects as the capital of British India. At the time there were only bungalows and low-rise dwellings in New Delhi. During WWII there was a shortage of government housing in New Delhi and in 1943 the New Delhi municipal corporation (NDMC) approached Sobha Singh (1890–1978), one of the leading builders of the time, to develop around 100 flats contained in a four-storied building on a plot located on the south-eastern fringe of New Delhi. The terms were worked out and a 99-year lease was signed. As per the agreement Singh would build, using his own funds and on completion the government would retain "the right to use the whole of the buildings or any part" by paying a fair rent. This arrangement was to continue "during and one year after the war". After this period "a certain number of the flats, not exceeding 50% of the total, were to be leased" to government officials at a fair rent and the remaining could be rented by Singh to recover his costs. The terms also stated that the government would help in the procurement of building materials. The buildings were deemed government buildings and the development was facilitated under a special provision of colonial law (Government Buildings Act 1899) without the need for formal planning approvals or building permits.

2. DESIGN AND CONSTRUCTION

Singh, who already had a working relationship with George, appointed him as the architect for the project. George had moved to India in 1915 and served as Herbert Baker's representative in Delhi until 1924, when he set up his own practice. George's remarkable career of over 45 years in Delhi spans the building of the Imperial Capital of British India to its transition into the capital of a modern nation state. George had previously worked with Singh on the Regal Theatre (1932), Modern School (1936) and also Singh's family residence '*Baikunth*' (1934–35). Between 1943 and 1945, George and Singh, who are today remembered as early overseers of the evolution of the built environment of New Delhi, worked towards developing the form of SSP.

The final scheme was developed as a series of T-shaped principal blocks arranged in a C-shaped configuration which was mirrored on either side of Cornwallis road on two 7.5-acre plots. Each principal block of SSP (Blocks A to G) contained twelve 3 and 4 room apartments. In addition to the 84 principal flats, 330 staff quarters (described as staff and servant quarters in the original drawings) and 110 garages were provided within 11 modernist slab-type blocks (Blocks H1, H2, H3 and H4 on the south side and Blocks J1, J2, J3, K and L on the north side). Blocks M and N were designed with godowns on the ground floor and quarters above. The four-story quarter blocks contained common toilets and bathrooms on each floor. A five-storey 88-room hotel block was added to the North side. Other ancillary buildings include an enquiry block and a laundry (Block P). Blocks Q, R and S were also added but they were not constructed beyond the foundation (**Fig. 1**).

George had already developed a restrained design vocabulary and had used exposed brickwork in a number of buildings such as St Thomas Church (1929–32), Lady Irwin College (1935) and St Stephen's College (1941). The point of departure from these early works was in the use of reinforced concrete slabs which were expressed externally in the form of cantilevered balconies. George skilfully combined a number of influences including Lutyens 'elemental style', art-deco and Mughal references with modernist functionality. Martin Meade writing in the Architectural Review, suggests that it was George's "innovatory use of exposed brickwork in housing — well before Le Corbusier, Pierre Jeanneret or for that matter Louis Kahn — that made the material popular in India"3. Jane Drew, Maxwell Fry and Pierre Jeanneret, who worked on the planning and design of housing in Chandigarh were in contact with George during their Chandigarh years and would have undoubtedly been aware of his pioneering housing work (**Fig. 2**).

Lift shafts, service staircases and garbage chutes were integrated into the design of the blocks. Inside, the apart-

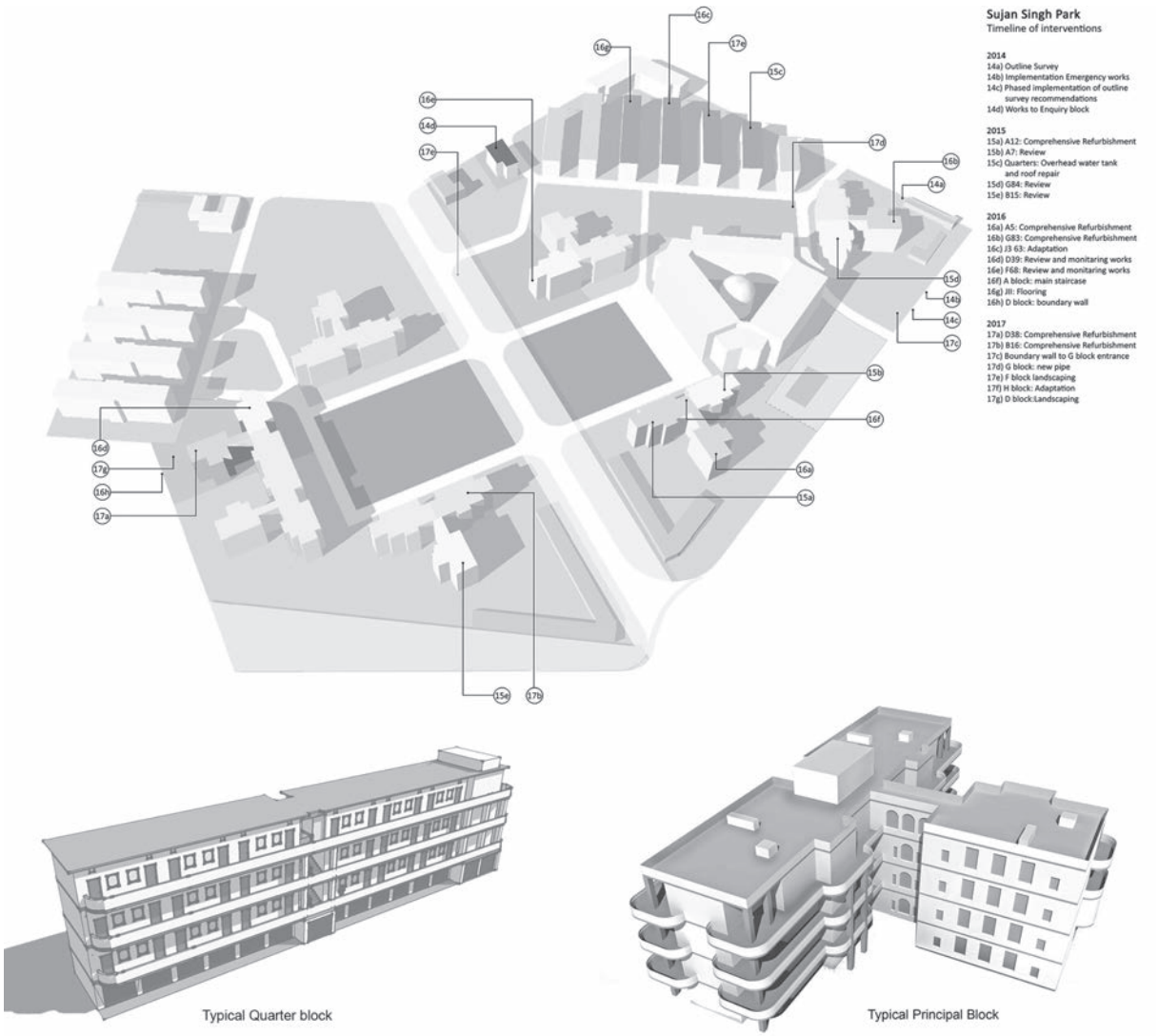


Fig. 1. **Top: Bird's eye view of SSP with a timeline of interventions carried out between 2014–2017. Bottom: 3D model of a typical residential blocks. © Under Mango Tree.**

ments featured rooms with high ceilings and large windows, terrazzo floors and fireplaces. The only internal decoration was in the form of a plain cove ceiling cornice and George's signature circle motif on the verandah columns.

SSP was used by the government to house army and civil officers on completion as per terms of the agreement. It became the first home of a number of people who migrated to Delhi during the partition of India in 1947. In post-independent India the flats became a coveted address and were home to Singh's extended family including his son, the renowned author Khushwant Singh (1915–2014), and to other notable residents including the modern architect Habib Rahman (1915–95). The quarters housed the cooks, cleaners, drivers and various staff workers who were employed in the estate. A number of the dwellings continue to be occupied by descendants of the original occupants with deep community associations with the place.

The four storied buildings of SSP defy the low-rise character of central Delhi with the principal brick buildings having a prominent urban presence along the bifurcating main road. The quarters are perhaps the earliest modernist social housing in Delhi. SSP could therefore be seen as part of the early effort to resolve housing problem in Indian cities. Even today the four-story complex (with 30% land coverage) represents a higher density alternative to the low-rise central Delhi.



Fig. 2. **General view (Block B & C), 1985. © Massachusetts Institute of Technology (courtesy of Peter Serenyi).**

3. DECLINE AND REGENERATION

The precinct experienced decline over the decades due to pressures on housing stock in central Delhi, litigations, poorly-funded modifications and lack of maintenance. In the late 1970s, a four-storey block of flats (Golf Apartments) and a school was built on a vacant plot within SSP. The legality of this development was questioned in later government reports. The garage area became one of the leading motor markets in Delhi.

By 1988, government policies had put a freeze on redevelopment in Lutyens Bungalow Zone (LBZ). SSP was classified as a 'Heritage Complex' under Group D of LBZ. In this category, the landlords were obliged to formulate a 'Special Development Plan' for the conservation and improvement of their complex. Alteration or demolition of any part of the heritage building was prohibited without prior approval. In 2009, "Sujan Singh Park and campus" was listed as a Grade-II heritage site. In 2011, a sealing drive and demolition drive was conducted by the municipal authorities which targeted commercial entities such as shops, motor garages and the other businesses which were running in SSP.

In 2014, Under Mango Tree (UMT) Architects were appointed as consultants to Sir Sobha Singh & Sons Pvt. Ltd., the original company founded in 1945, which to date manages the estate and allocates the flats. This resulted in the first phase of a conservation-led program of regeneration and phased refurbishment of SSP from 2014 to 2018. By then, the precinct was home to over 2100 people, a primary school and various businesses. Out of a total of 330 staff quarters, 105 were locked and out of use. 35 out of a total of 110 garages were being used as motor workshops, shops or small businesses; 53 were closed or were being used as stores and 29 had been converted into dwellings. The occupation was also varied with the majority of the estate with Sir Sobha Singh & Sons Pvt Ltd, followed by the government who had a possession of 13 flats, 41 staff quarters and 26 garages. The task of conserving such a site, in that sense, was difficult. How to conserve a site with such a chequered history and such diverse stakeholders?

4. APPROACH, METHODOLOGY AND LEARNING

UMT approached conservation by intervening in the form of small strategic interventions which were phased and delivered incrementally, and by combining both bottom-up and top-down policies which were capable of being carried out. Rental income from the first flat that was re-

stored under the project in 2014 (and let out as a serviced apartment) generated funds for the next refurbishment and improvement work and so on. This eventually created a self-sustaining funding model as far as the repair of the flats was concerned.

4.1. Community

UMT relocated their studio to SSP during the course of the project, first by creating a temporary studio within A-block and then by adapting and converting a disused garage at SSP into studio space. This was a strategic move which helped not only in the day-to-day co-ordination and monitoring of the works but also in working with the community. It embedded UMT within the community and removed barriers which enabled direct and sustained engagement with diverse stakeholders. UMT created employment and skill training opportunities locally. A young graduate from the staff quarters was one of the longest serving team members at UMT. Similarly, the estate hired staff and supervisors locally from within the community. The project also created a market for traditional and modern building skills and a pool of local masons, plumbers and electricians were engaged and trained. Through site presence and everyday interactions with the residents, UMT became more approachable to the community and were contacted by a number of individual owners for advice and various repair related issues.

4.2. Historical and Archival Research

George was one of the most prolific architects of New Delhi and yet not much has been written on his life and work. In the absence of published materials, the project had to rely on archival research. The author traced George's papers including letters and photographs in various archives in Delhi and London. The author collated oral histories by interviewing residents who grew up in SSP in the 1940s and 50s and knew its history and the timeline of later changes. The author also studied drawings that were in the possession of Sir Sobha Singh & Sons. These were supplemented by as-built drawings based on measured surveys. Original details such as window and door design, *jaali* design were hand measured and documented from flats where the original fabric was still intact (Fig. 3).

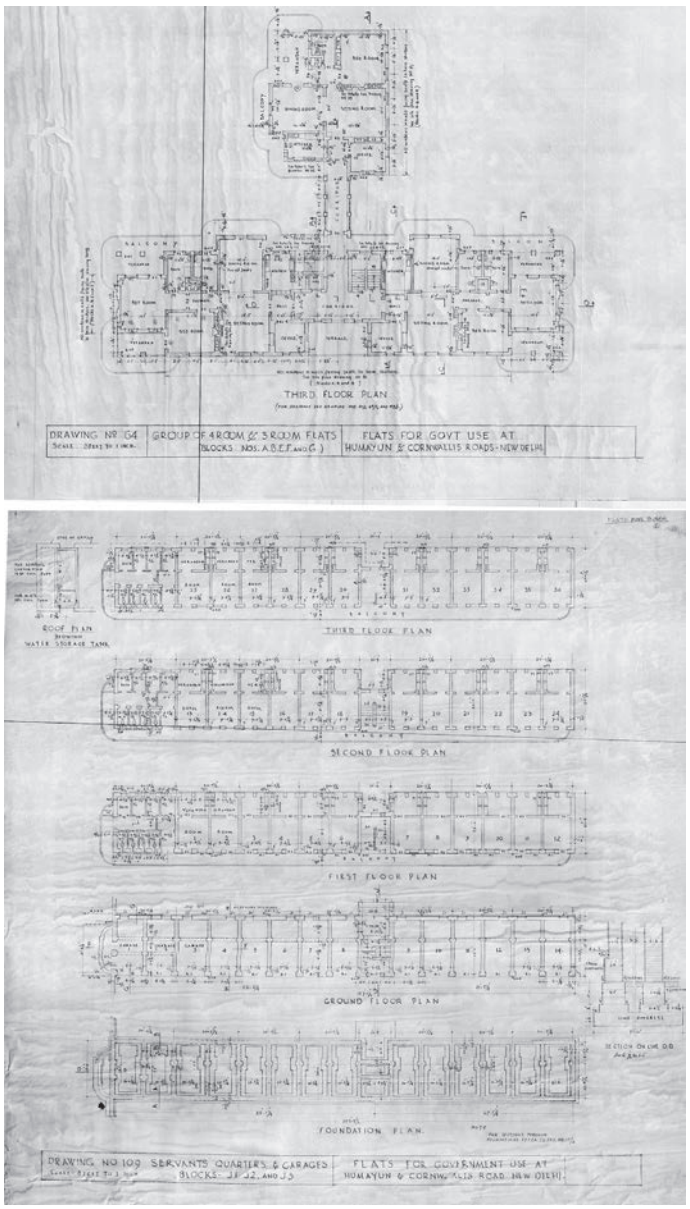


Fig. 3. **Top: Third Floor Plan (Blocks A, B, E, F, G). Bottom: Plan of Blocks J1, J2 & J3. © Sobha Singh & Sons.**

4.3. Built Fabric

4.3.1. EXTERNAL FABRIC

Initial surveys and investigations of the estate were undertaken to understand the extent of deterioration of the built fabric of SSP. These studies also provided a deeper understanding of original materials and construction techniques, changes, deviations and various related issues. The surveys and investigations also informed the over-arching conservation and design philosophy and provided the framework for future repair and restoration works to be carried out within the estate. In making recommendations, the aim was to put the buildings into good working order, while maintaining a balance between the need to repair economically, the desire to conserve significant historic fabric, and to restore the cultural significance of the building. In most cases it was seen that the original techniques of construction were quite sound and that the deterioration was due to later changes and localised repairs. Insensitive accretions such as sheds and stores were removed from the common spaces.

Various work items were classified as 'immediate', 'urgent', 'necessary' and 'desirable'. 'Immediate' works were



Fig. 4. **L to R: A12, A5, G83 and J3 Flat G83 after refurbishment. © Under Mango Tree.**

those items which were causing actual harm to the building fabric and which required immediate attention to prevent further damage. Work in this category such as repairs of chimney heads and roof terrace, covering of services shafts, waterproofing and proper drainage of roof were to be completed within six months to one year. Here remedial details were used in some instances instead of the original details in order to improve their performance. 'Urgent' works were items which were to be completed within two years. These included the opening up of secondary staircases which required engagement with residents in order to create consensus. 'Necessary' works while not causing actual damage were to be tackled within five years. 'Desirable' works were repairs of a long-term nature. In reality, efficient organisation of repair works and consent from individual occupants had a major bearing on the phasing of works in the initial phase.

4.3.2. REFURBISHMENT OF FLATS AND QUARTERS

Alongside the program of external repairs, comprehensive refurbishment of various apartment typologies was also undertaken. Flat A12, a typical top floor four bedroom flat, was the first apartment to be comprehensively refurbished. Next was followed by Flat A5, a typical three bedroom first floor flat, which was severely damaged. This was followed by Flat G83 (a typical three bedroom flat on the first floor); Flat D38 (a typical ground floor flat which opened into a garden) and flat B16 (a typical 4 room flat on the first floor). These covered all the flat typologies and the overall conservation plan and methodologies carried out in these pilot projects could be applied as a base for the future refurbishment of flats. Similarly, pilot refurbishment and fabric repair works were taken to typical staff quarter blocks and garages (Block J1 and L / Fig. 4).

The structure of the buildings relies on a system of load bearing brick masonry walls and reinforced-concrete slabs. During refurbishments, non-original openings within load-bearing walls for new door and window openings were systematically repaired and closed to maintain the structural integrity of the building. In many cases missing original columns, piers and sections of walls were reconstructed. A particular cause of concern was overstressed balconies due to accretions, which were removed from the refurbished flats.

In case of non-structural alterations, which had taken place over the years, the intention was not to put the clock back but to understand why changes had taken place in the first place and to manage them. The future of the estate was seen as dependent on its ability to manage change without losing authenticity or cultural significance.

Wherever decorative features like *jaalis*, fireplace surrounds, terrazzo flooring survived, they were systematically restored. In some cases, non-original finishes were accepted and repaired as found. Where the fabric was repairable, new finishes in keeping with the character of the original were used. Interior conservation works included up-gradation of mechanical, electrical and plumbing services.

4.3.3. ANCILLARY BUILDINGS

The old Enquiry block was adapted into a let-able office and rented by a prominent magazine publication. Similarly, some of the redundant motor garages in Block J3 were adapted to create non-commercial rentable workplaces. Most of the works to the staff quarter blocks included services infrastructure up-gradation.

4.4. Maintenance and Change Management

Great importance was attached to the need to maintain the building systematically and continuously. The Estate had its own team who undertook repair works. Although well intentioned, in some cases the repair methodology and the details of such works had to be reviewed and corrected. The staff was also sensitised to conservation best practice so that they could undertake minor repairs correctly in the future. The Estate now runs its own maintenance program,

supervised by an estate manager, which includes both minor and major repair works.

An on-going system for 'management of change' has been put in place by the estate management. Circulars creating heritage awareness, information on estate improvement initiatives, interpretation and change management approval process were distributed to tenants and occupants at different stages. As part of this change management system the alteration proposals of various flats such as A7, F61 and D39 were reviewed in the initial years.

5. CONCLUSION

There is a rich diversity of modern housing in India and apart from the well-known examples by the modern masters; much of it remains undocumented or poorly researched. There is a growing need to widen current definitions, create awareness and to develop a much wider understanding of this type of heritage. At a time when modern housing is being condemned in New Delhi and is being demolished, the revitalisation of SSP might offer an alternative, incremental conservation-led approach to redevelopment. Modern buildings are not merely objects or artefacts; people's lives, their lived history and memory is integrated with them and only by bringing the community and stakeholders together can these precincts be meaningfully regenerated. By critically reflecting on the lessons of modern housing we can address the current housing crisis in contemporary cities and begin to think about creating sustainable and resilient cities for the future.

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COMMERCIAL MIDDLE-CLASS MASS HOUSING IN BELGIUM

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ABSTRACT.

While remarkable public housing projects in Belgium, especially modernist high-rises, are documented extensively, high-rise housing projects for the private market have almost remained unexamined so far.[1] However, they significantly helped shape the urban built environment and they mirror the urban and political concerns of their time. This paper addresses the residential building complex of De Bist Neighbourhood, in the district of Wilrijk, in the south of Antwerp. The modernist project 'De Bist', situated near the district house, public library and sports hall, encompasses three residential blocks of different heights surrounding a shopping centre and a vibrant cultural centre. It was the result of a 1960 national competition to design a new centre for Wilrijk. This paper evaluates the quality of De Bist, taking into account its inherent characteristics (architecture, interior design, and urban layout), its meaning as a testimony of the social and political aspirations at that time, as well as the living quality and lifestyles of its (changing) population from the seventies until today. The study is based on interviews with a selection of inhabitants and passers-by and an analysis of plans, photographs, and maps. It will contribute to the debate about the meaning of middle class mass housing in Europe.[2]

1. INTRODUCTION

In the 1960s, considerable suburbanisation took place in Belgium, much like in many other European countries. Cities expanded and their surrounding municipalities transformed into suburbs; they became part of the cities. This was also the case with Wilrijk, a municipality with a fast-growing population on the fringe of Antwerp. On the initiative of the visionary Christen-Democrat mayor Louis Kiebooms, a 'commission for aesthetics' was established to develop a vision for the core development of Wilrijk. It resulted in 1960 in a national architectural competition for the modernisation of its centre (on a site of 1 hectare). The commission aimed to introduce new urban development ideas around the urbanization of the "Bist" area. The permitted building height of the buildings that surrounded the square was set at 10 metres, and the ground floor was allowed to be developed for commercial uses. This was very visionary at that time, because the Christian-Democrats, who dominated the Belgian political landscape, normally argued in favour of private initiative and single-family houses. The De Taeye Act (29 May 1948), named after its proposer, the Christian-Democrat minister Alfred De Taeye, granted premiums to individual home builders as well as a state guarantee for mortgage loans that covered the total cost of the construction of a home. For the majority, especially the working classes, only the countryside was feasible as a location for individual home ownership, as only these sites were affordable. As a result, Belgium is characterised by a 'disorderly' low-rise (sub)urban sprawl.[3] High-rise housing remained limited to a very specific segment of the housing stock, mainly in the social housing sector, and occasionally in the private sector. In this context, the initiative of the mayor was progressive. It resulted in the 1970s in a modern centre consisting of three high rise residential housing blocks with a supermarket, a shopping mall, a cultural centre and later also a library (Fig. 1).

This paper evaluates the quality of De Bist, taking into account its inherent characteristics (architecture, interior design and urban layout), its meaning as a testimony of the social and political aspirations at that time, as well as the living quality and lifestyles of its (changing) population from the seventies until today. It is based on a variety of sources, ranging from archival documents, commercial leaflets, plans, photographs, maps and interviews with some inhabitants and passers-by. While social housing has already been studied quite extensively, this is not the case with high-rise housing projects for the middle class.[4] This paper will contribute to the debate about the meaning of middle class mass housing in Europe.

2. MODERATE MODERNISM

The first and second prize winners in the 1960 national competition, respectively Eugène Leirens and Ronald Sepelie, both architects-urbanists, were asked in 1962 to design a joint project. During the first half of August 1964, the designs of the "national prize camp" were presented at a heavily attended exhibition. By means of plans, models, photos and texts the new urban development ideas were visualised. Visitors could admire impressive black and white sketches of the planned high-rises as well as the shopping centre (Figs. 2 & 3).

The sketches have a lot of similarities with those for the Luchtbal social housing estate in the north of Antwerp, made by architect Hugo Van Kuyck, who had received an architectural training in the US.[5] Both included high-rise housing, a shopping mall and a supermarket — that in Luchtbal the first in Belgium. The sketches of the commercial centre in the Bist resemble Van Kuyck's sketches for the open-air shopping mall at Luchtbal from the late 1950s . In both projects a horizontal, floating, thin roof connects the buildings and the public space with each 'other. That space



Fig. 1. **Towers of De Bist Estate. © Els De Vos, 2019.**

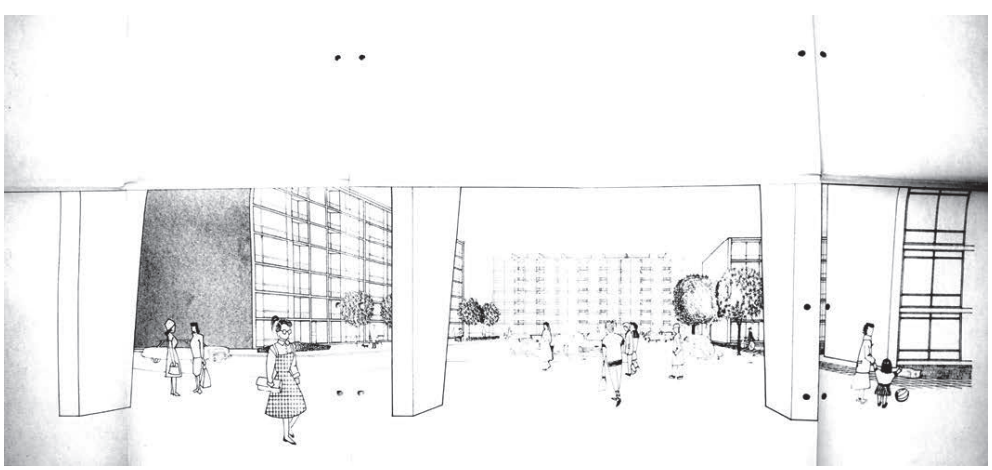


Fig. 2. **Sketch of the Bist Estate, by Leirens and Sepelie, 1962. © collection Flanders Architecture Institute.**

was intended for pedestrians, while on the main square a car park is suggested. Unfortunately, the covered shopping street in the Bist was not retained. The two-floor indoor shopping mall *De Kern* was built in its place. However, the first floor of the mall never functioned well due to its bad accessibility and the dark atmosphere.

In the Bist housing Estate, just as at Luchtbal estate, a modern typology of high-rise slabs with a load-bearing structure of concrete was combined with an architecture of brick, a local material. Michael Ryckewaert called this "mod-

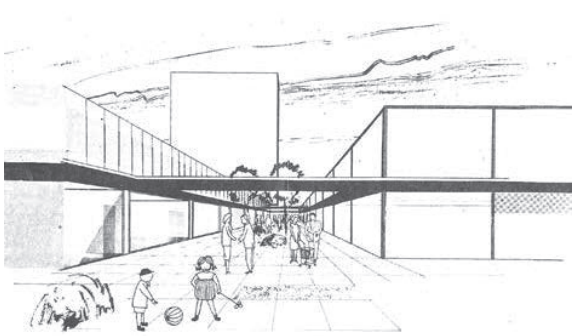


Fig. 3. **Sketch of open-air shopping mall in de Bist by Leirens and Sepelie, 1962. © collection Flanders Architecture Institute.**



Fig. 4. **Walkway with at the right the shopping mall of the Bist estate. © E. De Vos, 2019.**

erate modernism", an approach comparable to the functionalist architecture in the industrial areas.[6] The housing block at the main square was raised on 'pilotis'. The pillars at the side walls were W-shaped, referring to the capital letter of Wilrijk (Fig. 4). Unlike most social housing projects of that time, the project included no less than four big underground car parks: one public for the shopping and cultural centre and three for the users/inhabitants of the buildings. Besides, the site included also rows of individual garages and three open-air car parks. Car accessibility was clearly a priority in the project. However, car traffic and pedestrians were clearly separated. The sketches demonstrate convincingly the ambition of the architects as well as the authorities, to realise a modernist city centre with many facilities, according to modernist urban planning concepts.

3. THE PROMOTION OF THE BIST PROJECT

The leaflet of the construction firm and building promotor *Van Kerkhove & Gilson nv* from Ghent, presented the project as very modern, with a scale model of the housing estate on the front page. To give the project more credibility, the collaboration with the municipality of Wilrijk was stressed. The apartments were praised as a good investment, especially to counteract the effects of inflation. The following intrinsic qualities were stressed: the excellent layout of the plans, the high quality of the finish and the central location, above all easily accessible by car. Coloured images of the interiors gave an impression of its interior qualities. An open living room with a dining and siting area was used to illustrate 'comfort and standing', while a well-lit bedroom in a palette of yellow, salmon rose, and light green, exemplified a 'spacious, comfortable bedroom'. Housewives in particular were pointed to the well-equipped kitchen, while a picture of a white modern bathroom exemplified 'healthy hygiene', 'a basic right for everybody'.

The leaflet referred to the De Taeye Act, which was odd at first sight as the conditions for a De Taeye premium were not applicable for apartments. However, due to a combination of the De Taeye Act and the De Riemaecker Act, a so called 'degressive' premium could be obtained. That was a limited premium for the acquisition of an owner-occupied

first house that didn't met all the requirements of a regular De Taeye premium.[7] Therefore, the apartments' dimensions were within the requirements of the prescribed maximum 'habitable surface area'. Additionally, the municipality of Wilrijk had made a number of efforts to reduce the price, for example by the fixing of an indexable basic price and the provision of a bonus for the purchase of an apartment, store premises in the shopping centre or a garage in the underground car park. Additionally, the province of Antwerp offered a bonus for the apartments. The leaflet proudly stressed the project's affordability as follows: "An apartment costs 625.000 Belgian Francs and is centrally located. A new house or bungalow on the other hand, costs at least 1 million Belgian Francs and is situated kilometres away from the centre.

The construction of the buildings started in 1967 and the whole project was completed in 1979. The project was not completely built as indicated in the plans, as we can see from letters in the archive of R. Sepelie. The architects had to make changes in the design of public spaces and certain sites were not available because they were in the ownership of some aldermen of Wilrijk. Less than 50 percent of the proposed plan was fully implemented, due to political and financial reasons.

De Bist Estate includes the third shopping centre in Belgium (finished in 1973), a cultural centre and three separate residential blocks, all connected to an underground car park. Shopping lanes and car-free streets alternated. To ensure adequate sunlight reception in residential buildings, their orientation was strategically disposed. Overall, the project accommodates around 400 apartments, 50 shops and approximately 500 parking lots. Block C is the largest with 21 storeys (excluding the ground floor), followed by block A with 17 storeys and block B with 6 storeys. The majority of the housing blocks contain two-sided, two-bedroom apartments clustered around one elevator and staircase. They include a terrace at both sides and were equipped with all modern comfort. Block B and C contain bigger three-bedroom corner apartments. Block C contains two one-sided corner apartments at each end, while block B has one double sided corner apartment at each end.

4. "A MINI VILLAGE WITH A RELAXED ATMOSPHERE"

The majority of the residents are home owners. Many of them bought an apartment in the early 1970s and are still living there today. At the same time, new inhabitants have subsequently moved in; these are mainly elderly people who are attracted by the central location, the accessibility by public transport and car, the abundance of facilities (shops, bar, hairdresser, banks, health insurance fund, supermarket, sports hall, library, etc.). In addition, the informal ambience is an advantage. A lady in block B calls the Bist estate "a mini village, with a relaxed atmosphere where you get assistance from neighbours and friendly shopkeepers." Because the facilities are comparable with those of a service flat, she moved to the Bist estate and was thereby able to keep her 85-year-old mother at home. As she explains: 'All facilities are there, except that you have to prepare your own dinner and clean your apartment yourself'. Another inhabitant, born in a small village, explains that at the Bist estate people keep more distance in comparison to villagers, but she recognizes the pleasant atmosphere, the full terraces by sunny weather and, of course, also the close proximity of all the amenities. While the contacts between the original inhabitants are very close — they do the shopping for each other — contacts between newcomers are more distant.

Latterly, students, recent graduates, new couples and migrants have also moved in. These people are mostly less connected to the neighbourhood since they are more oriented towards Antwerp. Apart from the supermarket and some chain stores, the local shops and shopping centre are hardly frequented, because they are a bit outdated. These people appreciate the high accessibility by several modes of transport and the quality of the apartments. The well-lit apartments are considered big enough for couples and even for one-child families. In the early years several families bought two adjacent, two-bedroom apartments. This was also the case with a woman from block C, who had two children. She and her husband acquired two apartments with mirrored floor plans clustered around one elevator. They merged them together by providing a door between the two kitchens. The resulting bigger apartment allowed them to accommodate each child with an own bedroom. Once their children had 'flown the nest', the apartments were separated again, with one of the two, smaller flats passed on to their son. The experiences of this habitants show us that the layout of the apartments was life-cycle proofed, since they could grow together with their family. The fact that two apartments could be joined and separated easily allowed the inhabitants to anticipate the changing living needs of the family.

According to some interviewees,[8] the apartments on the highest floor were the first to be filled, mainly because of the marvellous view and quietness. Indeed, people who lived further downstairs often complain about the noise of trucks unloading at the shopping mall and supermarket. Interestingly, in the lowest block B, an inhabitant made an informal fitness room in one of the technical rooms upstairs. His neighbours also made use of it. This intervention can be considered as a first step of the transformation of these apartments into a kind of collective housing project.

5. CONCLUSION

The Bist housing estate was developed in 1960 as a prestigious project by the municipality of Wilrijk. The political aspirations of this project were high, namely to show how Wilrijk was ahead of its time by introducing modernist planning and architecture. At the same time, the authorities

aimed to make home purchase affordable for the (lower) middle classes by means of a bonus and premiums. The dimensions of the apartments were conceived to meet the conditions of a 'degressive' premium. Their efforts were successful as some families immediately bought two adjacent apartments in order to transform them into one bigger home, suitable for them to occupy comfortably with their children. In comparison to other private housing projects, such as the Amelinckx blocks at the Kruithoflaan in Berchem (Broes, Dehaene, 2016), the Bist housing estate is less elite.

To some extent, the architecture of the Bist housing estate can be compared with the architecture of other social housing projects, such as the Luchtbal housing estate of Hugo Van Kuyck (built in 1958–59). A 'moderate modernism' was applied, which was a hybrid of international modernism with the use of a local material (brick work). 'Pilotis' were also used in the project, although the majority of the ground floor was filled in with shops and other facilities. Other than in the social housing apartments, the windows of the apartments were much larger, often from floor to ceiling, and the terraces more generous. The architecture is more similar to the previously mentioned housing blocks at the Kruithoflaan, a project which was intended for the (higher) middle class.

Another important difference with social housing projects is the extensiveness of the commercial facilities. The provisions for car parking, too, are abundant. Clients and visitors can park their car in one of the many car parks and for each apartment a private underground parking place was foreseen.

Nowadays, the site looks a bit outdated, especially the first floor of the shopping mall. Moreover, the pedestrian street and square between the supermarket, the cultural centre, the shopping mall and block B is obsolete. As it is in private hands, it cannot be renovated as happened with the main square in front of block A. Notwithstanding the dilapidated street and old-fashioned shops, the Bist housing estate remains attractive for elderly, but also for younger people. Its central location, the quality of the apartments, the ease to make social contacts and its extensive facilities remain important assets. A future step could be the transformation of these apartment into a project of collective housing. The informal fitness room installed in one of these apartments can be seen as a first stepping-stone. And finally, flexibility offered by the design in merging and splitting apartments is a vitally important quality.

ACKNOWLEDGEMENTS

This paper is written in the frame of the project Middle Class Mass Housing (MCMH) in Europe, Africa and Asia (PTDC/ART-DAQ/30594/2017). The author thanks the following students: Lieselotte Crijns, Theresa Schleinitz, Cleo Van Laeken, Joke Van Houwenis and Nele Vrints.

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1 One of the examples is: BROES, Tom, DEHAENE, Michiel, "Real Estate pioneers on the Metropolitan Frontier, The works of Jean-Florian Collin and François Amelinckx in Antwerp", *Cidades, Comunidades e Territórios*, 33, Dec., 2016, 89–112.

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3 More details about this process: Bruno de Meulder, Jan Schreurs, Annabel Cock, & Bruno Notteboom, "Patching up the Belgian urban Landscape", *Consumption and Territory, OASE,* 52, 78–113, 84.

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8 Interview block C + Block B.

THE GROEIKERN LEGACY — HOUSING TYPOLOGIES IN DUTCH NEW TOWNS

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ABSTRACT.

Dutch New Towns are in-between old and new. They are not yet recognized as cultural heritage. At the same time, they are passing through major transformations. Research is therefore necessary to document and assess them, to inform stakeholders and prevent later regrets for disregarding this Groeikernen legacy. This paper presents a comparative analysis of five low-rise suburban neighbourhoods in Dutch New Towns. The central question in this research is: what are the urban and architectural attributes (tangible and intangible) of the residential architecture in Groeikernen? The applied methods were fieldwork, archival, and literature research. The paper presents two extreme positions in design concepts and societal aims that have dominated the Groeikernen residential architecture. On the one hand, the humanist approach advocating an organic architecture focused on the human scale, diversity, and inclusivity. This architecture was a countermovement to Modernism, producing mass housing in disguise. On the other end, a neo-rationalist reintroduction of the Modernist tradition by a pragmatic and formal architecture manifests mass housing unambiguously. This paper discusses the influence of these two positions on the architectural discourse, by illustrating their specific impact on the documented neighbourhoods. Many designs of housing typologies adopt characteristics of these extremes, playing on both sides. This leads to a rich collection of typologies, combining humanist and neo-rationalist characteristics. The exploration of tangible and intangible attributes of the Groeikernen legacy in this paper aims to enable a future discussion about its values, which is needed for the development of informed heritage policies, conservation, and transformation.

1. DUTCH NEW TOWNS

About one third of the present Dutch housing stock has been built between 1965 and 1985.[1] The characteristics of this stock differ from the early post-war building production on various levels. Regarding spatial planning, an alternative to the unrestrained expansion of cities was introduced in 1960. This alternative concept sketched out an outwardly focused model for the Randstad's growth. To regulate the problems of overcrowding and congestion, it was proposed to keep buffers open between towns and cities, preserve the 'Groene Hart' (Green Heart) as a central open area and concentrate urbanization at a limited number of locations elsewhere in the country.[2] Existing small or medium-sized cities were to be expanded to accommodate the 'surplus' of inhabitants of the 'donor' cities.

These 'Groeikernen' (growth centres) should grow into independent new towns and host between 50,000–100,000 people. A new national planning policy (1968–1988) proposed 'bundled de-concentration' as a happy medium between concentration in large metropolises and total de-concentration as urban sprawl. On the level of urban design, there was a drastic break with the post-war modernist planning schemes of mid-rise and high-rise multifamily housing in long straight blocks. From the early seventies, an enormous variation appeared in the composition of housing types, the form of streets, squares and building blocks, dominantly in low-rise patterns.[3] Also, the ideologies shifted on an architectural level, strongly influenced by the 'Forum-group'. Already in 1959, the new board of Forum-magazine accused architects and planners of making The Netherlands 'unliveable' and called for a new architecture that would create 'liveable cities' and coherence between people and things.[4] Although generally influential in the architectural climate of that time, it was especially in the suburban environment of the new towns that the humanist architectural and urban design of the Forum group prospered the most.[3] During the eighties, however, things changed again. The economic crisis led to a "no-nonsense" approach, low budgets and market-driven developments. This required austerity in design, resulting in longer blocks, more repetitive patterns and fewer exceptions and expressions.[5] At the same time, the architectural climate changed, returning to a rational and formal urban model with clear hierarchy, strongly based on modernist traditions.[6] Although planning policies shifted focus to the large cities and their urban renewal, the implementation of the new town policy continued until 1988. This new rationalist approach therefore also played an important role in the design of many new town neighbourhoods.

Presently, the Dutch new towns are in-between old and new. They are not yet recognized as cultural heritage. At the same time, they are passing through major transformations, such as energy transition, densification or depopulation. Research is necessary to document and assess them, to inform stakeholders and prevent later regrets for disregarding of the new town legacy. The large housing stock from the 1970s and 1980s is represented in many urban areas in the Netherlands. For this study, the Dutch 'Groeikernen' are regarded as 'living labs', since they are designed as new towns, reflecting the state-of-the-art on planning and architecture. Next to national comparability of characteristics and relevance, links can be made to new towns programs in other countries

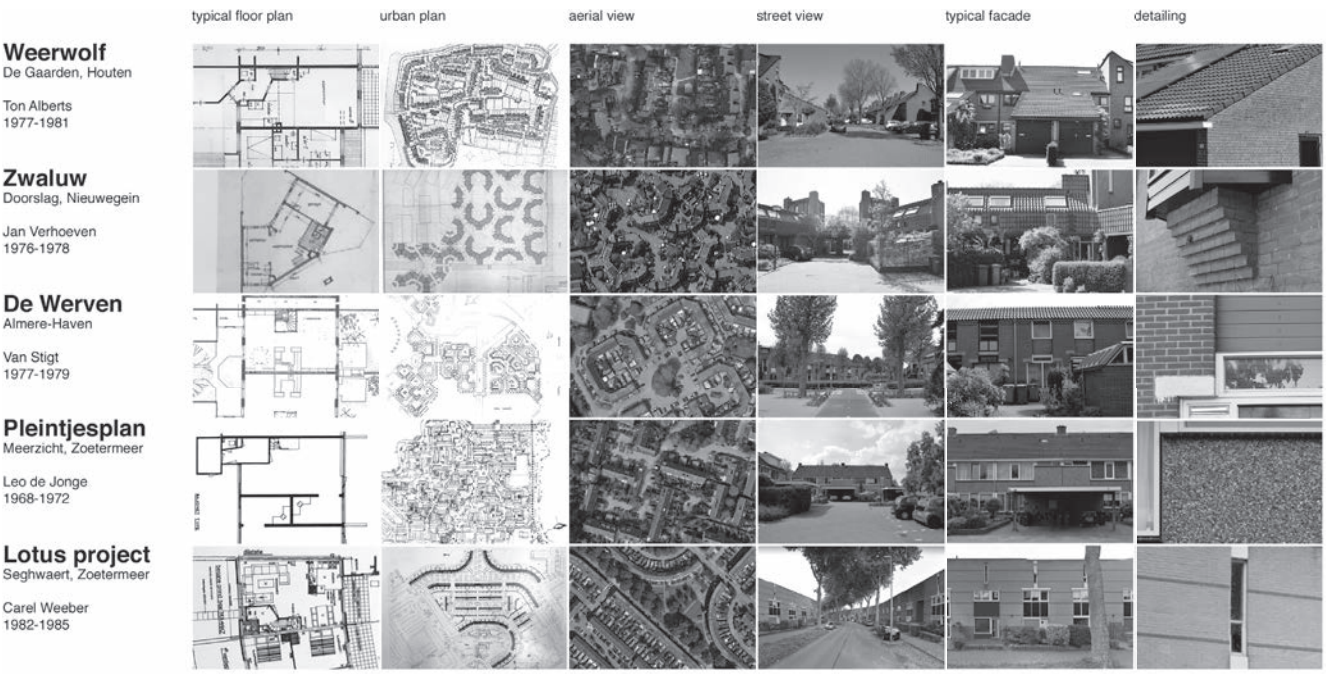


Fig. 1. **Matrix of urban and architectural physical attributes, per case.**

in North-western Europe. In the period between 1965–1985, the ideal model of garden cities was tested around metropolises, like the New Towns in the United Kingdom and Villes Nouvelles in France.[7] Although there are important differences in planning policy, culture and scale of the towns, also these programs developed as counterpart of largescale developments of the earlier years and share the characteristic low-rise suburban living environment, mainly consisted of single-family homes.[8]

This paper presents two different architectural positions that have dominated the new town residential architecture. It aims to define the urban and architectural attributes, tangible and intangible, of the residential architecture in the Dutch new towns. The applied methods were fieldwork, archival and literature research. The selection of case studies for this paper focused on low-rise suburban neighbourhoods with various patterns of terraced housing. Examples have been chosen to illustrate the different approaches represented in the new town stock. Matrices organizing architectural attributes have been set up to perform a detailed comparative analysis of urban and architectural physical characteristics and design concepts. This method is inspired by 'Learning from Levittown.'[9]

2. A RANGE OF ARCHITECTURE APPROACHES

Despite the attempt to create diversity in the new town neighbourhoods, the prejudice against their indistinguishable character and lack of identity remained.[10] In 1973, a cartoon stereotyped two men looking at some dull terraced houses, guessing the town's name.[5] But taking a closer look at each neighbourhood, one can observe differences in either urban structure, street scape, dwelling typology, articulation of form, façade composition, and use of materials (**Fig. 1**). These attributes and their differences are illustrated in this paper by discussing five case studies, ranging from humanist to rationalist.

2.1. Weerwolf

De neighbourhood Weerwolf (De Gaarden) in Houten was designed by the architect Ton Alberts in 1977–1981. Houten is a relatively small suburban new town near Utrecht and is known for its green structure as a key aspect in the urban plan.11 Alberts designed various housing projects in Dutch new towns, all developed in an organic architecture style, based on the anthroposophist ideology, assuming e.g. that natural colours and shapes positively influence people's emotional life.12 In the plan for Weerwolf, such ideology is found applied in the asymmetrical and irregular compositions of blocks and facades, the earthy brown shades and steep rooflines sketched as resembling a mountain landscape.13 The urban plan combines many dwelling types and links a wide gradation of private and public corners, squares, alleys, and streets.

2.2. Zwaluw

Zwaluw is a neighbourhood of 87 dwellings in Nieuwegein, a second new town to host inhabitants from Utrecht. Designed by Jan Verhoeven from 1976 to 1978, it is an exam-

ple of structuralist design.[5] Based on a geometric structure of rectangular and linking isosceles triangles, he designed a complex system of indoor and outdoor spaces. Zwaluw feels like a fort, surrounded by water and entered through a gate. Inside the complex, meeting places are central, materialized by a continuous interaction between public and private, paved and green spaces. Like in Weerwolf, many housing types of various sizes are combined, rooted in a belief of social diversity.[14] The architecture is articulated and seems labyrinthine, but is highly structured.

2.3. De Werven

De Werven in Almere is the first neighbourhood of a new town, built on new land reclaimed from the sea. In 1979, the first inhabitants, mainly coming from Amsterdam, arrived in this neighbourhood.[15] The architect Joop van Stigt designed 26 dwelling types that could be combined to 'cloverleafs' surrounding a collective courtyard. Also, for Van Stigt, the human scale and the social aspect was leading.[16] Strings of dwellings are shaped into introverted and extraverted court structures, providing both shelter and connection to the landscape or linking to other neighbourhoods. Although this project integrates many exceptions, it is based on a systematic logic and efficient building system. The urban court pattern exists of 26 different types and is repeated up to 671 units.

2.4. Het Pleintjesplan

In 1968–1972, after having developed high-rise flats in the early years of new town Zoetermeer, Leo de Jonge designed Het Pleintjesplan as a low-rise 'woonerf' neighbourhood.[17] This urban court pattern is, compared to De Werven, more rational and straightforward. Only three types of dwellings, composed in linear blocks with regular facades, are all oriented to the public courtyard. The gradual transition of private to public space is designed as a 'margin area' in front of the house with carport and storage. The courtyards have overlapping rectangular shapes that are surrounded, but not enclosed, by building blocks. This results in an irregular spatial experience, but is in fact a rational 'stamp' repeating to over 600 units.

2.5. Lotusproject

The Lotusproject at Weidedreef in Zoetermeer was designed by architect Carel Weeber in 1982–1985. It consists of 253 dwellings in long curved blocks. The rational urban structure reflects Weeber's preference for a formal objective urban morphology.[18] He often criticized the approach of his fellow architects, as accordingly, 'human' properties are only positive as opposed to 'unhuman' properties.[19] Although the architect is known for bulky urban blocks, he has designed numerous terraced houses in various new Dutch towns. The efficient urban structure was adopted in later phases of many new town developments. In the Lotus-project, the repetition of a singular dwelling type with a symmetrical façade composition in a straight block alignment creates simple and smooth walls on either side of a normal street.

2.6. Comparison

Architectural decisions and resulting project characteristics derive from different values and ideologies by the architect. One essential difference is a social versus a formal standpoint (see also Schrijver in 'Bouwmeesters'[20]). The organic architecture, with Alberts as the protagonist, aims to improve human well-being by the creation of beauty and harmony. This is directly opposed to the opinion of rationalists, like Weeber on the other end, stating that the architect cannot be responsible for society, but only for the architecture in his work.[19] Apart from intentions, also the means the architects use differ. Even when sharing ambitions, like stimulate meeting, providing shelter, human scale, diversity, these projects evidence different materializations. This becomes even clearer in the approach to exceptions, as an architectural instrument. The five projects show a gradual shift from irregularity as a goal, via balanced mixing of exceptions and rule, to intended repetition. The central position aims to provide diversity in shapes and people, while using the efficient logic of industrial building systems to enable affordable housing. On an urban level, the cases represent different patterns, as categorized by Ubbink.[5] Weerwolf follows a free pattern without any structure, Zwaluw can be characterized as a structuralist pattern. De Werven and Pleintjesplan both represent a court pattern. However, De Werven resembles the structuralist logic of Zwaluw, albeit less rigid, enclosing courts and interchangeable front and backsides of blocks. Het Pleintjesplan resembles more the rational pattern, like Lotusproject, in the revaluation of traditional urban form with front and back sides. The rational functionalism in Pleintjesplan, an early case, can be explained as a remnant of a modernist habit of Leo de Jonge. However, the later projects by Weeber reject a human approach and rehabilitate the modernist tradition. A trend can be noted from modernism to humanism, and later from humanism back to modernism. However, Weeber neither recognise himself in neomodernism, nor is interested in modern architecture.[21]

3. SHAKE-HANDS APPROACH

Many new town neighbourhoods adopt characteristics of both approaches, even if opposites. De Werven in Almere can be interpreted as 'shake-hands' of both social and formal architecture. The architect Van Stigt has a rather rational interpretation of the structuralist approach, stating: "For me this was not a major break with modernism. Because the functionality and rationality of building were the deciding factors for me, structuralism for me was the same as modernism: an extremely efficient method of spatial organisation and technical production methods."[20] At the same time, he expressed his social aims by the design of 'a living envi-

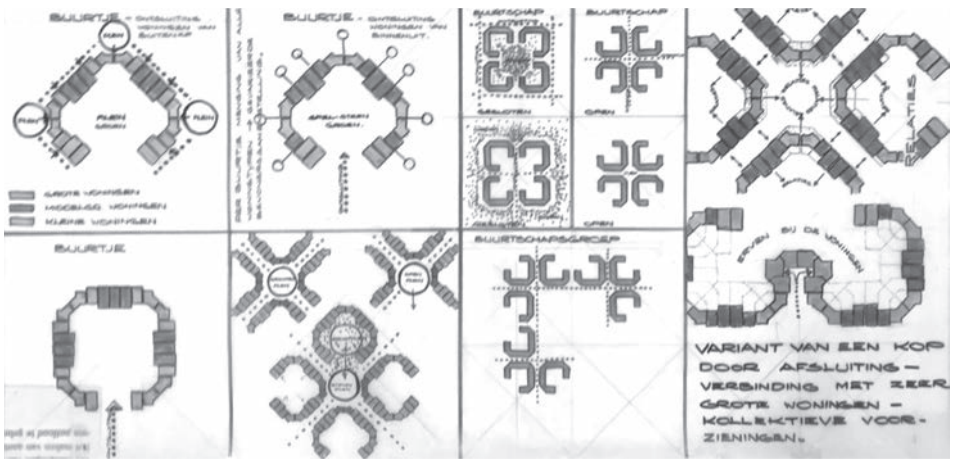


Fig. 2. **Van Stigt, De Werven, Almere-Haven, designed system of introvert/ extravert block types and linking courtyards. © HNI archive, 1977.**

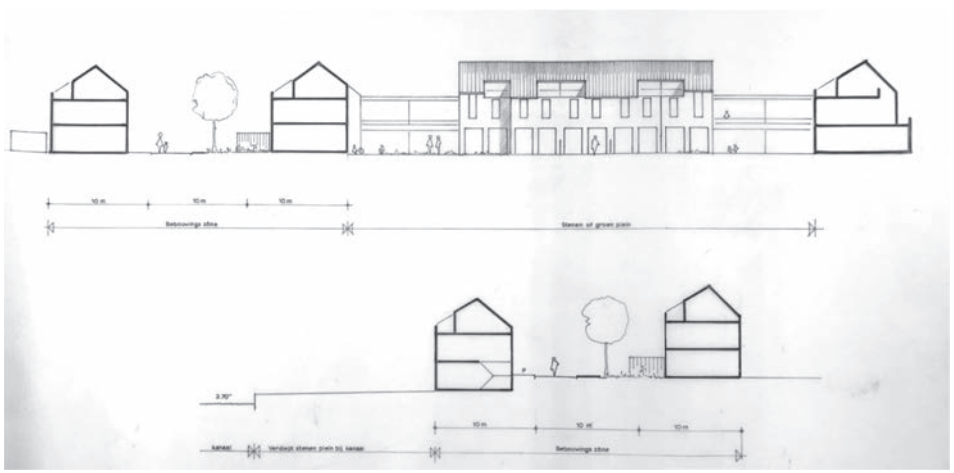


Fig. 3 **Van Stigt, De Werven, Almere-Haven, street section and orientation. © HNI archive, 1977.**

ronment that provides shelter' with 'a gradual transition area around the individual home that enable humans to relate to others, covered by their own territory, habitat, status and family.'[15]

The design of De Werven has the character of a toolkit, which is highly systemized and suitable for industrial production, but allows for additions and irregularity, accommodating the humanist needs. From the sketches and archives, it becomes clear that the many exceptions identified were intentional (Fig. 2). By alternating small and large dwellings on key positions in the 'cloverleaf', combined with locational elements (street/ garden/ water) various identities were created for specific places. Size differences of plot depth created variations in gutter heights, vertical articulation and a diversity of roof shapes (Fig. 3). Moreover, building blocks have been combined to introverted or extraverted compositions, oriented towards a collective garden, a square or a larger public space. The mixing and matching of dwelling types and building blocks served the important social objective of mixed populations.

Also, on the level of the individual house, this shake-hands approach is visible. The standard floor plan is two-sided in its orientation, with an almost symmetrical front and back room, interchangeable in use (Fig. 4). The service functions (stairs, toilet, bathroom) are positioned in the centre, so both rooms profit from optimal daylight and view. The range of reversible sections guarantee optimal orientation to the sun, which was key to the modernists. The 'trick' to make this possible is the addition of the entrance and storage as extra volumes, which in tandem, create the desired transition area, diversity in street scape, privacy and shelter. On one of the archival drawings, a project's title is inked as 'Hof van Heden', which is a play on words. Translated from Dutch, it means 'Garden of the Present', as a variant of 'Garden of Eden', expressing the compromise between idealism and realism.

4. CONCLUSIONS

The range of architecture approaches discussed in this

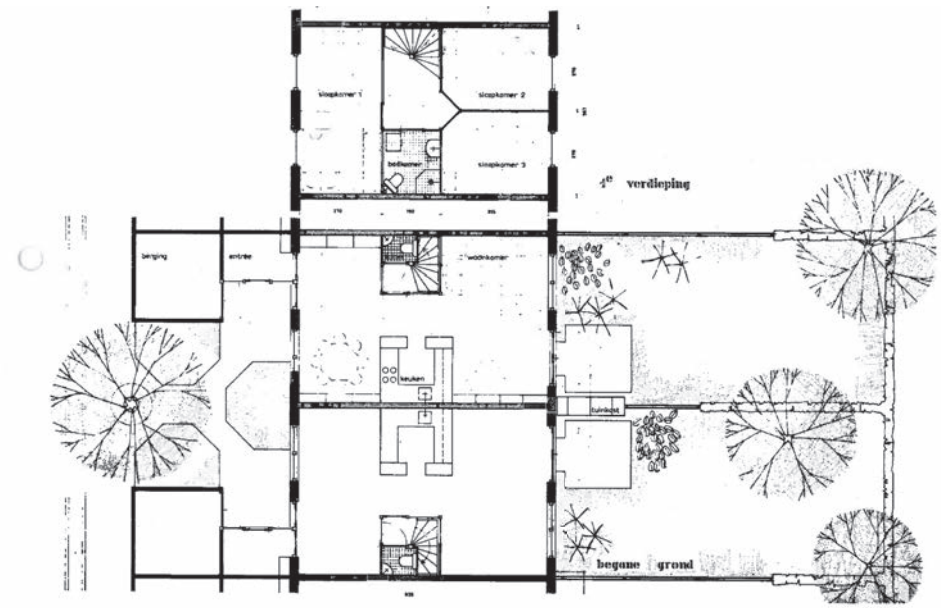


Fig. 4. **Van Stigt, De Werven, Almere-Haven, typical floor plan. © HNI archive, 1977.**

paper, illustrates the interpretation of the two extreme positions that influenced the Dutch new town stock. On the one hand, the humanist approach, starting in the late 1950s, advocating an organic architecture focusing on the human scale, diversity, and inclusivity. This architecture is regarded as a countermovement to modernism. Nevertheless, the neighbourhoods are extensive, offering mass housing in disguise. On the other end, there is the neo-rationalist approach coming up in the early 1980s, that reintroduced the modernist tradition by a design-oriented objective and formal architecture. It's clear and pragmatic architecture manifests mass housing unambiguously. The dominance of modernism in the post-war years, its opposition peaking in the 1970s and the later return to modernist ideas and forms is a general trend in Dutch new towns and the housing stock.[22] It is, however, not only a matter of chronology, but the background and beliefs of the architects, playing a role in the design and its attributes. Between the extreme poles, most new town neighbourhoods contain characteristics of both. The Dutch new town legacy marks a transition from ideology to market and represents a rich collection of residential architecture. More research is needed to identify the wide variety of attributes of this stock and the values they hold. This paper focused on the attributes as related to the conceptual design and the architect's ideals. However, a broader perspective, including a broader scope of values by a variety of stakeholders, is needed to reveal the meaning and potential as cultural heritage. The exploration of tangible and intangible attributes of the Groeikernen legacy in this paper aims to enable a discussion about its values, which is needed for the development of informed heritage policies, conservation and transformation.

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Session 3-b

REFLECTION ON MODERN HOUSING

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Housing is an essential requirement for human existence directly reflecting social conditions and the architect's ideas of human life. As seen in a series of themes of CIAM from 1928 to 1956, housing had always been among the major issues of the modern movement. During the housing shortage after World War II, mass housing was built all over the world. These structures are now 50 or 60 years old.

Residential buildings tend to be deeply connected to the patterns of daily life, and subject to ongoing revision, renovation, and remodeling. To preserve and use residential structures as cultural heritage, it is important to clarify their authenticity and integrity by tracing their history and carefully analyzing how an architect or property owner responds to the social demands of the times and in what mode or manner dwellers occupy them.

In this session, we would like to discuss modern housing and its resilient heritage from the perspective described above, focusing on various residences from the 1950s to 1970s in the world. An outline of the papers presented in this session is provided below.

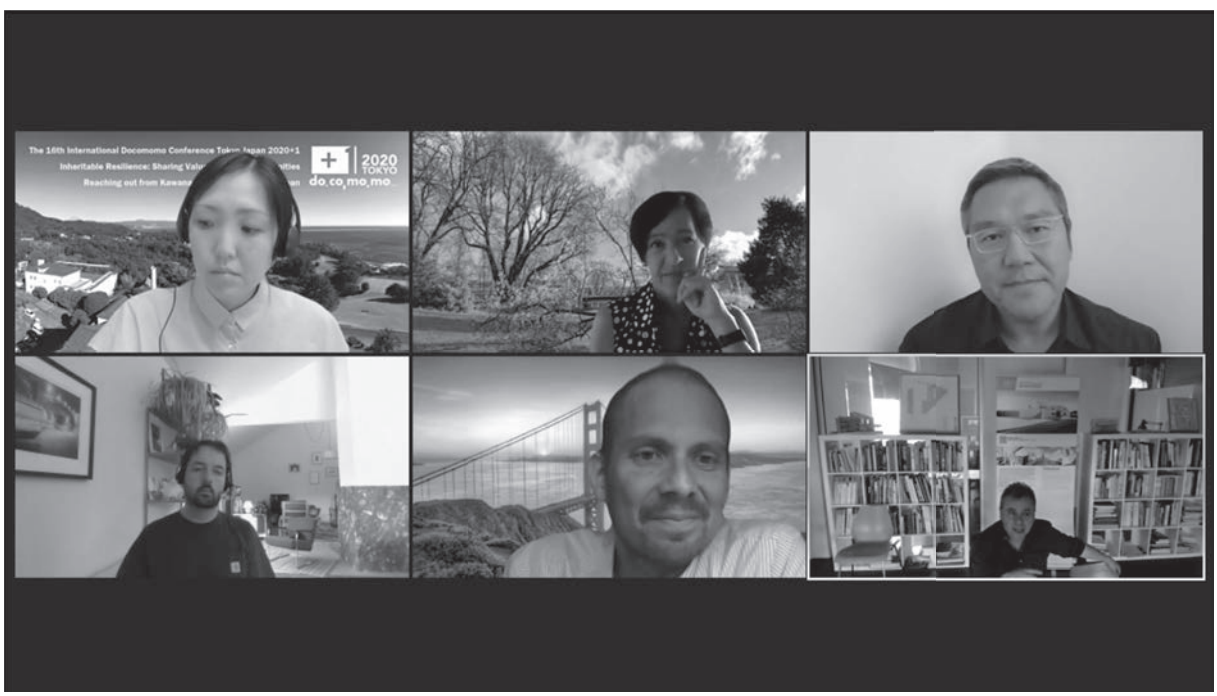
First, "From leisure housing to modern heritage: the village of Les Carrats by Georges Candilis," a paper by Catherine Blain and Laurent Duport, is a fascinating study of the village of Les Carrats, designed by Georges Candilis. The authors clarify the design principles for the housing units of Leucate-Barcarès and examine the resilient inheritance of these structures as a heritage of modernism.

Second, "The Metabolists' only built project: Part 2," a paper by Eui-Sung Yi and Alonso Toledo, focuses on the PREVI project (*Proyecto Experimental de Vivienda*, 1968-1973). The authors trace the transformation of housing during this period and the significance of the Metabolists' "first, last and only project" based on interviews with Peter Land and Fumihiko Maki.

Third, "Faded families: housing elderly couples in Flanders, 1919-1985," a paper by Evert Vandeweghe, gives a fascinating account of housing for elderly couples in Flanders. The author examines its history and ideals, focusing on three projects designed by second generation architects of post-war modernists: Pine Tree Court in Lokeren, The Bunkers in Ostend, and Acaciapad in Bruges.

Finally, "The *Unité* as universal model: housing in Angola and Mozambique," a paper by Ana Magalhães, discusses three mass housing projects in Angola and Mozambique, the Tonelli building, the Montepio de Moçambique building, and the Universal building, all influenced by Le Corbusier's *Unite d'Habitation*. The author examines the design and composition of these structures and how they interpret Le Corbusier's prototype, while reflecting the responses to the tropical climate and the desire for modernization.

Each paper discusses with modern housing from different times on different continents. It is my hope that the discussions in this session will contribute to and add various perspectives to our understanding of modern housing as heritage and to discussions of the "new normal" in housing, among the most pressing issues in the Post-Covid-19 society.


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FROM LEISURE HOUSING TO MODERN HERITAGE: VILLAGE OF LES CARRATS BY GEORGES CANDILIS

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ABSTRACT.

Village of Les Carrats is one of the many holiday accommodations created on the French seashore during the 1960s and 1970s. Built by Georges Candilis in the leisure unit of Leucate-Barcarès, planned within the Regional Development program of the Languedoc-Roussillon coast, this village was specific due to the novelty of its program and its architecture. Indeed, in order to meet the expectations of a social leisure housing program, Candilis developed a rich assembly of volumes based on the Mediterranean village theme. These qualities have quickly ensured the public appreciation of Les Carrats as well as a local recognition as a significant architectural achievement. But that did not prevent the announced closure of this social unit by its owner in the beginning of the 21st century and, therefore, the possible threat of its demolition. In 2014, in order to ensure its preservation, Les Carrats was included on the list of French Heritage. Today, its renovation and revival lie in the hands of a contemporary project, led by an architect specialized in historic buildings on behalf of a private developer. In this context, this article serves two purposes. On the one hand, in order to fully appreciate the specific nature of this leisure village, it sheds light on the design principles set by Candilis for the housing units of Leucate-Barcarès. On the other hand, considering the original project, it raises the question of the resilience potential of this Modern heritage.

1. INTRODUCTION

Nowadays, despite several publications on Candilis-Josic-Woods' work or theoretical ideas[1], Les Carrats remains relatively unknown by Modern historiography. Georges Candilis is generally recognized as an important figure of Modern Architecture for his belonging to the Team 10 group and his first fruitful professional collaborations: with Le Corbusier in France, notably on the project of the Unité d'Habitation de Marseille (1949–52), and with Michel Ecochard in Morocco, contributing to the housing program of Les Carrières Centrales in Casablanca (1951–53).

Modern historians are mainly familiar with a number of emblematic projects designed and built by Georges Candilis and his associates Alexis Josic and Shadrach Woods between 1954 and 1968, such as the housing units of Bobigny (1956–63[2]), Bagnols-sur-Cèze (1956–61) and Toulouse-Le Mirail (1961–66) and the Free University of Berlin (1963–73). As pointed out by Joan Ockman in 2008, if the North African experience allowed Candilis to experiment a "new language of architecture generated by patterns of inhabitation" (as the Smithsons called it), his collaborative years have also been of great conceptual richness, generating "a series of original urban and architectural concepts corresponding to the epochal shifts [of] the second half of the twentieth century".[3]

Tom Avermaete has also underlined the "central importance" of the issue of leisure within the office of Candilis-Josic-Woods, linked to the CIAM discussion on 'Housing and Leisure' initiated before the War (1937).[4] As summed up by Candilis in 1971, leisure is the primordial component of habitat for the greatest number:

> *The CIAM Athens Charter of 1933 excluded the concept of leisure. Its definition of four basic functions [...] guided postwar architecture and urbanism towards an anti-scientific, anti-psychological and, above all, anti-social formalism. [...] The acceptance of the prime importance of leisure in everyday existence, and its widespread and permanent presence, is bound to undermine ideas about tomorrow' habitat. Nowadays leisure affects the greatest number, and is subject to economic laws and has to be 'organized', so that it may be accessible to all.*[5]

Within their partnership projects, Candilis-Josic-Woods were always attentive to create free spaces for everyday leisure of every kind: cultural, sports, etc. But it is mainly Candilis who had the opportunity to develop this topic when he got appointed in 1963 by the French Government as part of the "urban planning agency" of the Languedoc-Roussillon Mission[6], in charge of the seasonal leisure development of the last 180 kilometres of French Mediterranean shore before Spain.

2. PLANNING "LEISURE FOR THE MASSES"

In the mid-sixties, while the French Riviera was invaded by tourists, the Languedoc-Roussillon coast had few villages, leisure resorts or harbours, and large gloomy ponds infested by mosquitoes. This problem was taken in charge by interdepartmental agreement, signed in 1958, that launched a wide operation of destruction of the reproduction sites. Moreover, on a national level, in line with the National Parks

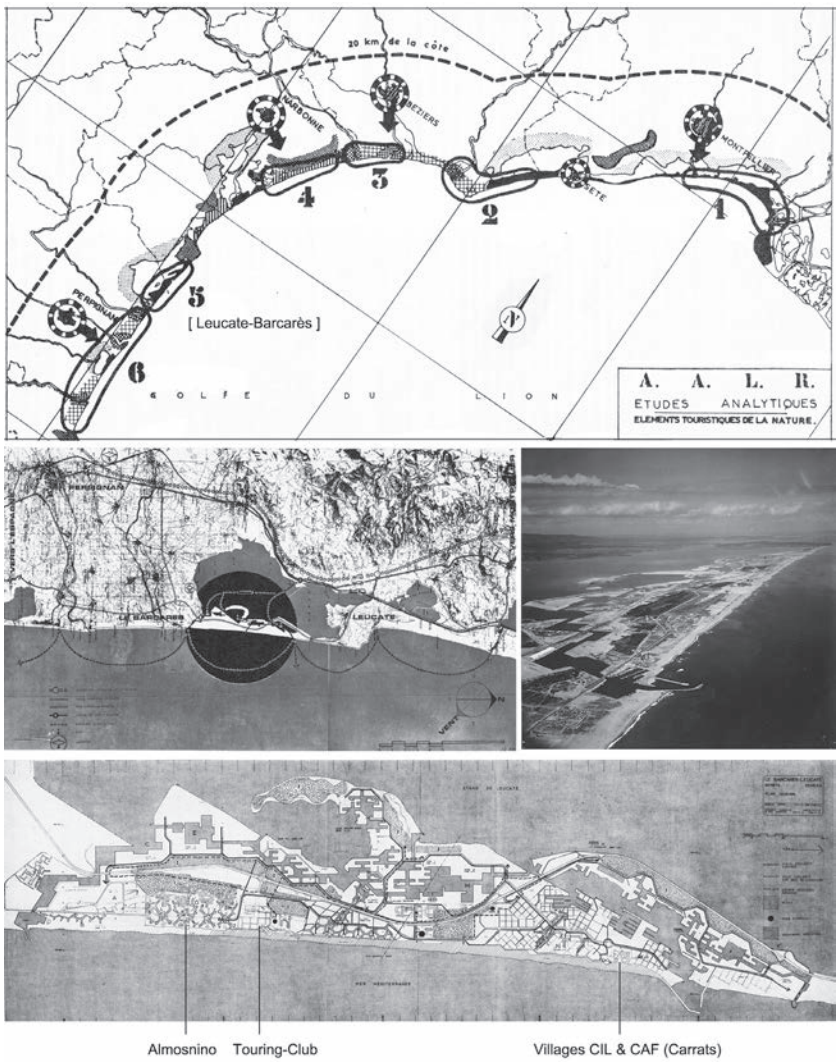


Fig. 1. **AALR (Agence d'Aménagement du Languedoc-Roussillon), Study of the six touristic units. *L'aménagement touristique du littoral Languedoc-Roussillon*, Notes et études documentaires n° 3326, Paris, La Documentation Française, 13 octobre 1966, 56.**
Candilis, Urban planning of Leucate-Barcarès Unit. Site plan and aerial view [Georges Candilis, *Recherches sur l'architecture des loisirs*, Paris, Ed. Eyrolles, 1973, 130], Master development plan. © Candilis archives, SIAF/CAPA/Archives d'architecture du XXe siècle.

Act (1960) which will lead to the conservation of untouched natural spaces (such as the island of Port-Cros, in 1963), the French Government announced a tourism policy providing investments for the creation of public infrastructures in the mountains and along the seashores: water networks, roads, navigable canals, marinas and holiday facilities, as well as natural areas and biological reserves.[7]

The implementation of these infrastructures was committed to the "study service" of the Languedoc-Roussillon Mission, composed of engineers working with the technical services of the 66 municipalities concerned by the regional program. But the specific task of the "urban planning agency", gathering one urban planner (Mauret) and seven architects and engineers (Candilis, Balladur, Le Couteur, Castella, Lafitte, Gleize and Hartané), was to physically organize the operation. In January 1964, relying on surveys that revealed the main characteristics of the local environments, existing villages and harbours, they wrote:

> *The structure which will best enhance [the] tourist capacity of the Languedoc-Roussillon coastline must [...] meet the following requirements:*
> *- Unify and diversify the tourist and economic organization of the coastline [...] on the scale of the needs and aspirations of our time.*
> *- Diversify each part based on the remarkable differences lavished by nature and history.*
> *- Define economic complexes of sufficient scale to provide summer visitors with a full range of modern equipment of all kinds and to achieve quality equipment.*
> *- Give the coastline [...] a characteristic personality which distinguishes it from comparable seaside regions, French or foreign, and which allows it to compete happily with them.*
> *- Contribute to the enrichment of the whole region and con-*

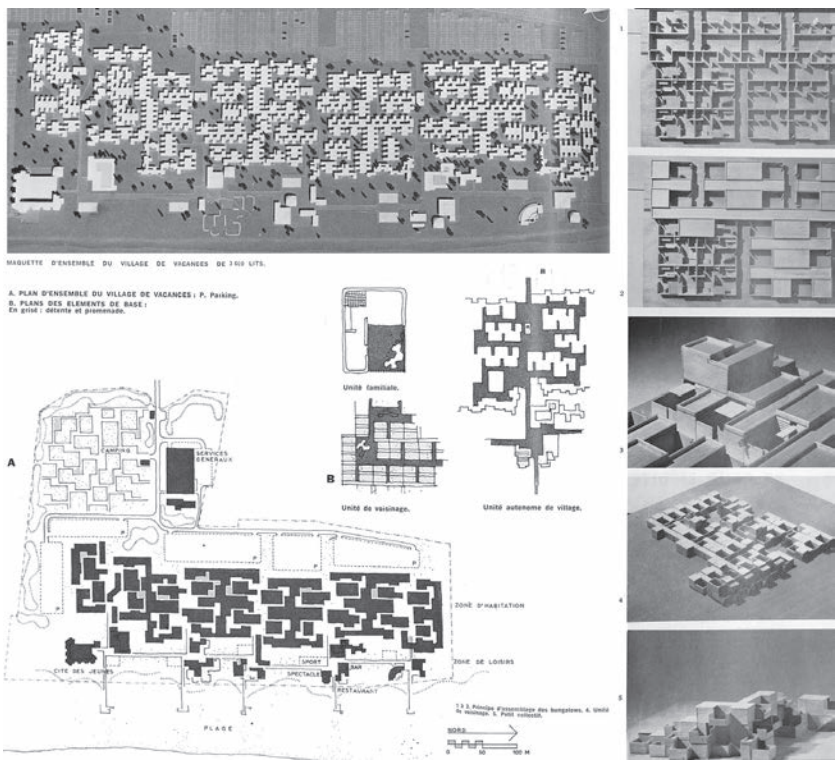


Fig. 2.
Studies of the Touring-Club village. "Village de vacances de l'unité Leucate-Barcarès", *Architecture d'Aujourd'hui*, n°131, April-May 1967, 17–18.

solidate its population.
- Allow a correct sequencing of achievements [...].[8]

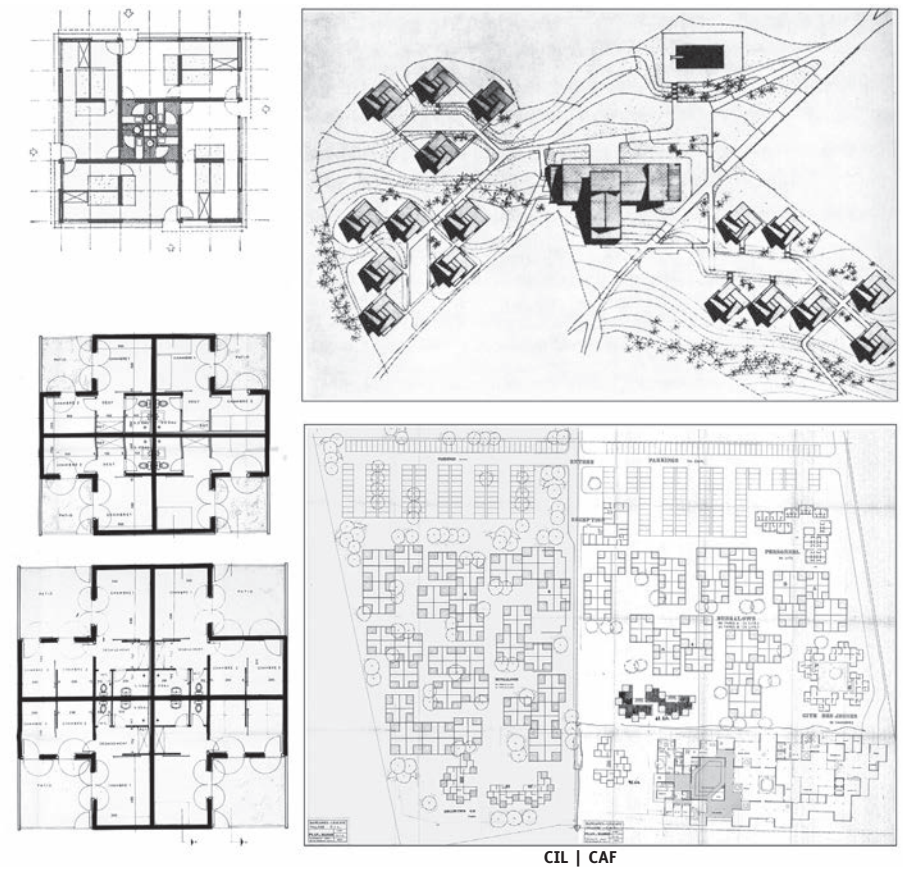
The novelty of the regional plan research is to introduce a new concept: the "touristic unit". Presented as a "tourist and economic complex of *consistent size*", that is to say "capable of ensuring the variety, quality and profitability of secondary and tertiary facilities", the "touristic unit" combines "several seaside and summer resorts, existing or to be created".[9] Thus, in 1964 was announced the creation of six "touristic units", capable of accommodating from 70,000 to 120,000 summer vacationists: from North to South, La Grande Motte, Cap d'Agde, Gruissan, Embouchure de l'Aude, Leucate-Barcarès and Saint-Cyprien (Fig. 1).

The detailed planning and implementation of these units were assigned to the agency's architects by subsequent contracts, appointing for each a "lead architect". The first two units that the Government decided to launch in 1966 were put in the hands of Balladur and Candilis: La Grande Motte and Leucate-Barcarès. Both programs included a variety of facilities and housing types, from private apartment buildings, hotels and villa districts to social tourism districts and camping and caravanning sites. The architects were free to give shape to this program. While for the first unit, close to the cities of Nimes and Montpellier, Balladur proposed a compact urbanization with high-rise pyramid-shaped buildings, Candilis was more attentive to the special nature of the site: a sandy peninsula of 15km long and 75 to 200 meters wide, connecting the existing village of Leucate and Barcarès harbour, facing both the Sea and the large interior lake. Therefore, he considered this unit as an opportunity to explore the "new problem" of a "site organized for leisure of the masses", calling for "a new architecture [...] so that the new human environment may stay shape, in harmony with the wonderful elements of nature".[10]

3. ARCHITECTURAL VARIATIONS ON A MEDITERRANEAN THEME

As defined by Candilis, the urbanization of the 700 ha of Leucate-Barcarès unit followed general principles: creation of a main circulation road serving the street network of housing complexes of variable densities (from 50 to 300 beds/ha), developed in several areas, along protected marinas on the lake side or facing the Sea, and creation of afforestation zones in order to temper the climate and to provide shade to the vacationists.

During more than 10 years, Candilis followed the implementation of these components, while planning and building a certain number of dwelling units and public or commercial facilities.[11] For his housing projects, ranging from small to large public or private programs, from individual houses to collective buildings (such as Les Carrats, the Greek village, the Lido leisure unit or the Miramars residency), he



CIL | CAF

Fig. 3.**VVF village of Albé, opened in 1959: bungalow and master plans [Alma Schmoluch, *L'aventure des VVF. Villages Vacances Familles, 1959–1989*, Paris, Ed. du Patrimoine, 2017, 132–133].**
Candilis, Carrats village in Leucate: Bungalow plans (types A and B) and master plan, 1967. © C.Blain & © Candilis archives, SIAF/CAPA/Archives d'architecture du XXe siècle.

clearly followed a homogeneous design line, generating variations of the Mediterranean architecture theme. As shown by Candilis in his essay on *Seasonal leisure and holidays architecture* (1973)[12], this design line relied on the very first housing projects he studied in Leucate-Barcarès, exploring the infinite potential of horizontal or vertical combinations of dwellings.

In 1965, Candilis simultaneously started the design of 3 housing projects. The first two, developed along the Barcarès beach, did not lead to achievements. Echoing the Toulouse research, the study for the "Almosnino field" (a private owner?) explored the feasibility of a dense program of 13,300 beds dispatched into shaped collective buildings of 3 to 5 levels (1965–1967, unbuilt). The second project, sponsored by the French Touring-Club, was a more reasonable — though ambitious — program of a holiday resort of 3,600 beds, dispatched in bungalows, collective buildings and a camping-caravanning zone, linked to collective facilities. This time, in order to give an identity to that program, Candilis extended the Moroccan grid research and tried to create "a continuous architectural structure formed of standard bungalows of two types, assembled to obtain essential variety"[13] (Fig. 2). The basic "familial unit" is composed of a bathroom and a closet space for 2 bedrooms of 2 beds, placed around a patio considered as the "real outdoor living room" (type A, $35m^2 + 11m^2$) — an alternative plan has only one bedroom (type B, $27m^2 + 11m^2$). In order to compose the general plan, these units are grouped in several "neighbourhood units" of 20 to 30 bungalows, distributed by pedestrian paths and public squares, finally constituting 5 "autonomous units" of 200 bungalows served by a central services building on the parking side and several facilities on the Sea side (restaurants, sports, spectacles, etc.).

This second project tactilely referred to the social holiday villages implemented since 1959 by the VVF association, with the support of the French Government.[14] That program had already found a typical architectural answer, consisting of a central building gathering all the facilities (including a collective restaurant) and standardized single storey bungalows, bundling around a bathroom core 4 family units of 2 bedrooms and a living room (without a kitchen / Fig. 3 up). For the Touring-Club, even if Candilis used the term "bungalow", his grid project was denying the pavilion solution. But things were different in the third housing project he was commissioned to study in 1965: a social leisure village planned on the Leucate seashore for two different public

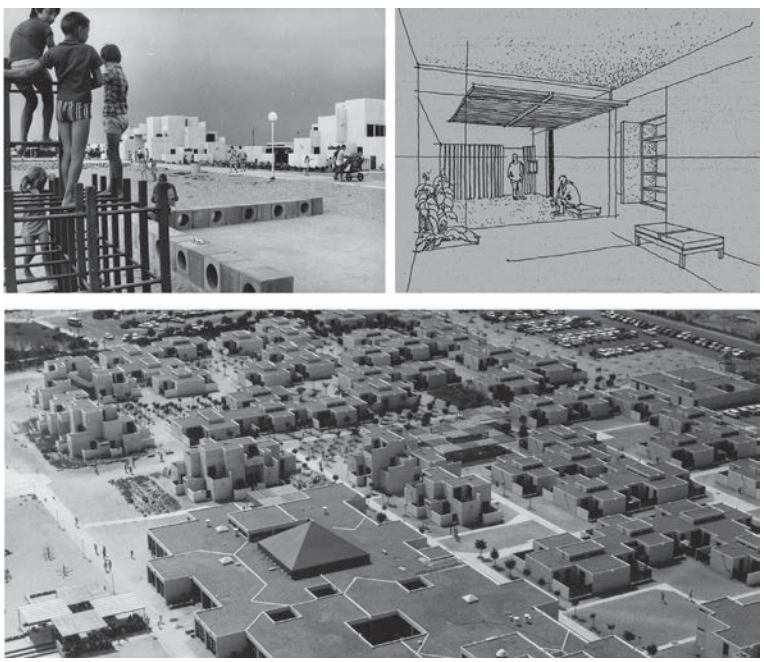


Fig. 4.**View from the playground, sketch of the bungalow's outdoor space, aerial view of the village (c1973). © Candilis archives, SIAF/CAPA/Archives d'architecture du XX^e siècle.**

funders: The Interprofessional Housing Committee (CIL) and the Family Allowance Funds (CAF).

4. LES CARRATS: AN EMBLEMATIC LEISURE ARCHITECTURE

First to be built in the Leucate-Barcarès touristic unit, this project gave Candilis the opportunity to demonstrate the value of his thoughts on leisure housing for the greatest number.

The first sketches of the village were drawn in 1966, the first vacationists were welcomed in June of 1970.[15] On the chosen field of 4.25ha with a Seafront of 245 meters, the program included 1270 beds (612 for the CIL, 658 for the CAF), distributed between 224 "bungalows" of 2 or 3 bedrooms, 60 collective dwellings and a "Cité of the youth" (56 bedrooms), and several collective facilities — such as a central restaurant, administrative services and a parking.[16]

Here again, like in the Touring-Club project, the compositional element of the project is the "familial unit" with a bathroom and a closet space, 2 bedrooms of 2 beds and a patio (**Fig. 3 down**). However, these units are smaller: type A, of 2 bedrooms, has 21m² + 11m² patio (32m²) and type B, of 3 bedrooms, has 27m² + 16m² patio (43m²). Furthermore, these "familial units" become themselves the basis component of another element: the "bungalow". For this project, indeed, Candilis revisited the "pavilion" archetype of the program. To do so, he grouped 4 units in a square plan, structured by a Greek cross which evolved in a *svastika* — a figure he already used in several projects. Each angle of the bungalow has a patio which assumes several roles, from the wind and sun protection to the relation to the public path.

The bungalows could have been autonomous but Candilis preferred to assemble them by 3, 4 or 5, offering random sequences in the original grid ensuring the architectural continuity of the whole. A similar assembly game rules the composition of the collective housing, of 3 levels maximum. They are shielding the bungalows and protecting them from the wind, located and oriented so that 80% have a view to the sea. Units at ground floor have a patio, those on the upper floors a loggia terrace with same dimensions. The stairs are located as sculpture to determine an outdoor walkway extending the path.

The whole village is organized by a central axis: a pedestrian path running from the parking to the beach, separating the CIL and CAF housing units. On the CAF side is the "Cité of the youth", located at a distance to the bungalows: a courtyard construction of 56 individual units distributed by outdoor passageway. The two programs however share the same reception office, staff accommodations and a large service building, called "the Croustet". Essential in the social leisure village, it includes a restaurant but also a collective kitchen and a bar, as well as spaces for sociocultural events and activities such as library, auditorium, infirmary, and nursery. Widely opened onto the beach, that building assumes a large part of the village's waterfront (**Fig. 4**).

The whole village's construction is made of standard concrete masonry unit (CMU) and bricks for the partitions. The flat roofs are waterproofed by bitumen membranes and the facades are made of rough concrete covered with a

white limewash. All the windows and doors are made of wood carpentry. Last but not least, like in all the touristic units of the Racine Mission, special attention is given to the landscape with Marram grass, Holly buds for the sand dunes and with grey or green Santolina, Prickly pears and Tamarisk for the borders, in order to integrate the village's constructions into a local, strong, and resistant vegetation.

5. A RESILIENT INHERITANCE?

The successful reception of Les Carrats was unprecedented: testimonies, memories of vacationists, tourists and staff members focus on the qualities of that social model of leisure and its architectural organization. From 1970 to 1999, the management of the whole site was ensured by the Federation of Family Allowance Funds of Languedoc-Roussillon (local services of the national CAF). But in 2000, the owners let the whole leisure unit in the hands of a public administrator, charged of the maintenance until a final closure in 2013. Alarmed by that situation, the local Heritage services conducted a survey which first granted Les Carrats of the *20th Century Heritage Label* (2012), with two other nearby constructions of Candilis, and finally protected the village as Historical Monument (July 2014).

In 2015, the village found a real estate developer to finance its renovation project: "Histoire et Patrimoine", specialized into refurbishment of historic landmark buildings. The challenge of this project, developed by the architect Nathalie d'Artigues, was to respect the initial spirit of the "leisure village" while meeting the new expectations or requirements in matter of holiday housing and facilities. The Heritage protection imposed the preservation and restoration of the leisure unit's general landscape (plots and outdoor spaces) and of the exterior components of all constructions (roofs and facades), as well as the integral restauration of a patrimonial unit of 4 bungalows — i.e., with their original interior dispositions and equipment, finishes and furnishings.

An early discussion concerned the use of the public facilities: the collective restaurant and all the other installations that were not necessarily required in the private program. The renewal of the corresponding constructions was the subject of a specific research, separated from the village housing units. Concerning these, the architect suggested minimalist and reversible interventions, allowing to integrate a small kitchen and to offer more comfortable bedrooms. For that purpose, partitions are knocked down and doors are made in the dividing walls between two "familial units". Thus, the bungalows now group the units by 2, producing therefore new partitions of spaces and allowing further typologies of 2, 3 or 4 bedrooms but also, and above all, 2 patios. A similar interior reorganization was operated within the collective constructions, as well as in the "Cité of the youth". At the end of this process, approximately 180 entirely renewed apartments (from studio to 4 rooms, 32 to 69m²) were put up for sale.

This transformation within the existing preserved frame seems to reveal how the architecture designed by Candilis intrinsically had the ability to change and to vary within time, without losing its distinctive qualities. A few vacationists will experiment the original housing units and, therefore, be aware of the fact that they are living in a Modern Heritage unit. Will the others also be sensitive to that patrimonial status or only consider their holiday apartments as typical Mediterranean style housing? In that case, Candilis would have proven the adequacy of his answer to the "new problem" of "leisure of the masses" — and maybe also its timeless quality.

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PREVI: THE METABOLISTS' FIRST, LAST AND ONLY PROJECT — PART 2

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ABSTRACT.

An expansion of the essay published in Docomomo Journal #50, this paper furthers the exploration into the Metabolist's work at PREVI, a social housing project carried out in the late 1960s in Lima, Peru, that would mark their first and only architectural collaboration. Supported by ad hoc surveying and insights from the perspective of Peruvian architecture, it presents a retrospective assessment of the impact this project had in its local culture and policy, framed within its significance in the history of Modernism.

The first part of this essay, published in 2014,[1] documented PREVI (*Proyecto Experimental de Vivienda*, Peru, 1968–1973), one the most ambitious social housing projects undertaken by the Modern Movement, which gave the Metabolists the opportunity to design and build their one collaboration as a team. This sequel details the unique stakeholders and circumstances that made this project possible. It is also a retrospective of how the Metabolist manifesto held up against half a century of transformations.

1. PREVI IN THE AGE OF SOCIAL RESPONSIBILITY

PREVI must be appraised within the great historic arc of Modernism, the first chapter of which marched under the banner of technological functionalism and social change borne from the post-industrial imperial decline. Its ethos was, however, challenged when the post-colonial, post-war global landscape demanded that manifestos be converted into actionable policy. As new republics emerged and demographics redistributed, political investments in infrastructure, new typologies and social housing became urgent. Urban planning framed all activities concerning social responsibility, of which PREVI would be an outstanding representative.

It deserves special recognition for its consilience of the following groups:

1.1. The Peruvian Government

The Peruvian architectural referent par excellence is two-time president Fernando Belaúnde Terry (1912–2002), who sponsored PREVI until his 1968 toppling by a military coup. In a country where every elected president in the past 35 years is currently embroiled in scandal, Belaúnde is remembered as the last bastion of decency in Peruvian politics. Always introduced as an architect, the highest award bestowed by Peru's Institute of Architects — the Golden Hexagon — bears his name.

PREVI is salient in his legacy of large-scale social housing complexes built over two non-contiguous presidencies (1963–1968, 1980–1985); which found a unique sponsor in Peter Land, who provided the international expertise, resources and attention required to launch Belaúnde's vision of social housing.

1.2. Peter Land, the United Nations, and the International Architecture Community

Land's Peruvian adventure began in 1960 when, while on a two-year leave from Yale, he was entrusted with running a graduate program in urban planning and housing at Peru's National University of Engineering (UNI); whose first Dean of Faculty — following its 1955 reestablishment — happened to be Belaúnde. Returning in 1964 to collaborate with the Housing Bank at the United Nations' behest, Land was hired to consult on urban social housing projects for Peru.

This is how PREVI's funding and social mission came to be formalized by the United Nations Development Programme (UNDP).

To secure its global relevance, Land summoned an impressive list of 26 foreign and local architects to participate in an international competition to design a 1500-housing unit masterplan along three principles:

a. Creation of a low-rise, high-density walkable community;
b. Occupation by resident-owned, low-income families; and
c. Affordability through "unfinished" designs to be completed by owner-residents.

The international architects were:

- Christopher Alexander (USA)
- Atelier 5 (Switzerland)
- Candilis, Josic and Woods (France)
- Charles Correa (India)
- Aldo Van Eyck (the Netherlands)
- Oskar Hansen and Svein Hartloy (Poland)
- José Luis Iñiguez de Ozono and Antonio Vázquez de Castro (Spain)
- Kiyonori Kikutaki, Noriaki Kurokawa, Fumihiko Maki — The Metabolists — (Japan)
- Toivo Korhonen (Finland)
- Herbert Ohl (Germany)
- Germán Samper, Rafael Esguerra, Álvaro Sáenz, Rafael Urdaneta (Colombia)
- James Stirling (UK)
- Knud Svenssons (Denmark)

The Peruvian architects were:

- Miguel Alvariño
- Fernando Chaparro, Víctor Ramírez, Víctor Smirnoff, and Víctor Wyszkowski
- Frederick Cooper, José García Bryce, Antonio Graña, and Eugenio Nicolini
- Jacques Crousse, Federico Píez and Ricardo Pírez León
- Juan Gunther and Ricardo Seminario
- Elsa Mazzari and Manuel Llanos
- Luis Miró Quesada, Oswaldo Núñez and Carlos Williams
- Carlos Morales Machiavello and Alfredo Montagne
- Eduardo Orrego and Ricardo González
- Ernesto Paredes
- Juan Reiser
- Franco Vella, José Bentín, Ricardo Quiñones and Luis Takahashi
- Luis Vier and Consuelo Zanelli de Vier

Though three international and three national winners were selected, the wealth of ideas presented prompted the initiative for a new grand masterplan, which Land developed himself. The architects were invited to contribute their modular housing units to the overall scheme.

This phase would be limited in scope, occupying roughly one third of the original site, or 500 of the original 1,500 housing units. Each team was asked to revisit their original proposal and adapt it to fixed lots, to create a smorgasbord of experimental housing. Though two modules were not executed because of material and technical complexities and the remaining phases were suspended after Belaúnde was overthrown, the houses remain built and are architectural milestones for Peru's housing policies.

2. THE METABOLIST MANIFESTO

The Metabolists were a group of progressive Japanese architects committed to re-interpreting Modernism for the reconstruction of their war-torn nation. Though obviously influenced by CIAM, Team 10 and the European Modern Movement, they advocated for *adapting systems* over formal language.

Despite surface differences between the Metabolist impetus and PREVI's vernacular, they shared deeper values. To revisit the Metabolist Manifesto:

> *The reason why we use such a biological word, metabolism, is we believe design and technology should denote human vitality. We will not accept metabolism as a natural historical process, but are trying to encourage the active metabolic development of society through our proposals.*
>
> *This volume consists mainly of designs for future cities proposed by architects. Our next issue, however, will include people from other fields, such as designers, artists, engineers, scientists and politicians [...] more will join "Metabolism" and some will leave; meaning a metabolic process will also take place in our membership.*



Fig. 1. **Land. PREVI masterplan, Lima, Peru. 1969. The parcels in red were assigned to the Metabolists. © 2020 Eui-Sung Yi and Alonso Toledo.**

"Metabolism" presumes open-ended scenarios that evolve through new inputs. Its socio-urban "operating system" demanded the cyclical and reiterative integration of diverse voices to establish robust parametric relationships for inputs and indices that could generate a new ecosystem of infinite urban infrastructural realizations. Metabolist projects addressed what Maki calls "the coexistence and conflict of amazingly heterogeneous institutions and individuals." Thus, their manifesto was an appropriate subtext for a project like PREVI.

3. THE METABOLISTS IN PREVI

Represented by Kiyonori Kikutake, Noriaki Kurokawa and Fumihiko Maki, the Metabolists were invited by Land for, among other reasons, their knowledge of seismic systems. They were among the three international winners of the first PREVI competition, and then summoned to contribute to the revised project, where they were assigned seventeen parcels on one of the site edges (**Fig. 1**) that enjoyed two distinct fronts: one on the northern property line, opening up to Lima, and a quieter southern facade facing inward. Arranged in linear fashion like a classic row house, the new collective masterplan was unable to exploit the Metabolist's original proposal to "slide" their housing bars to configure interesting public spaces.

They now proposed a base rectilinear housing unit composed of two parallel bars of unequal width. The wider bar was single story, with a central courtyard; the narrower bar,

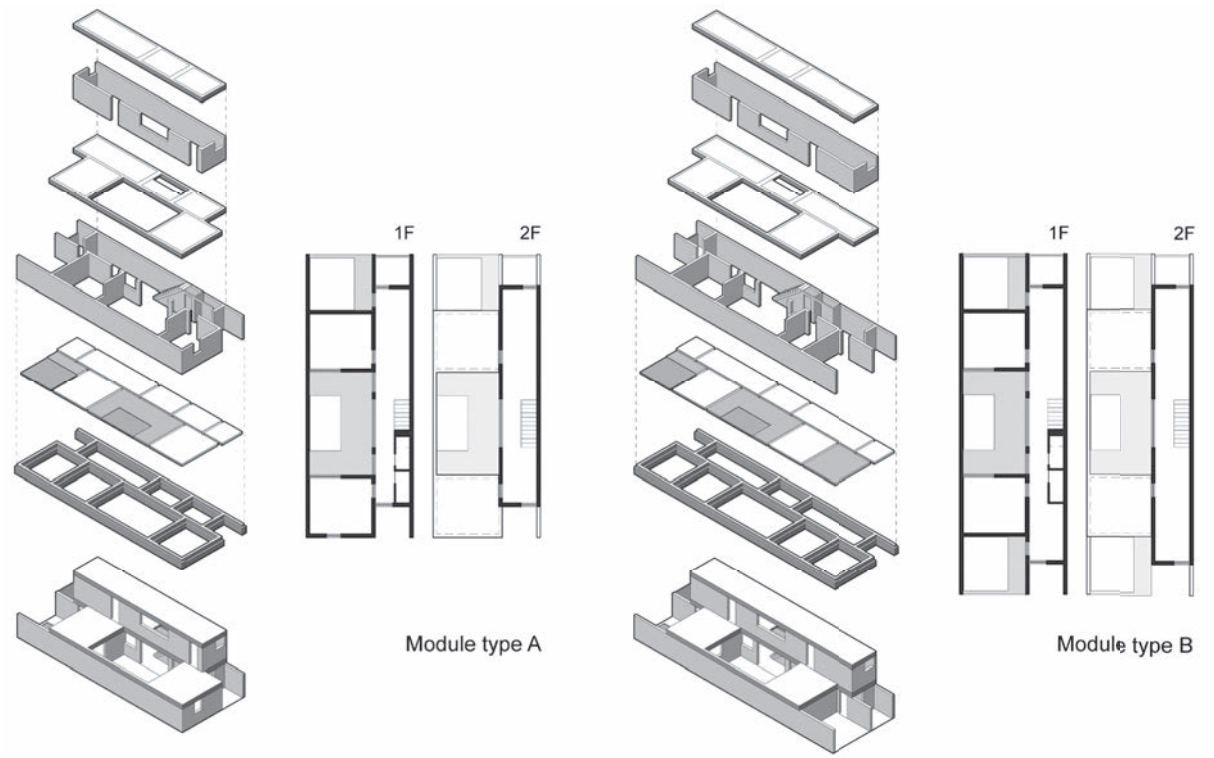


Fig. 2. **Metabolist PREVI houses, Lima, Peru. 1969. Axonometric and plan views. © 2020 Eui-Sung Yi and Alonso Toledo.**

a double story structure (Fig. 2) that adapted to the two standard parcel sizes they were assigned. Sited in parallel bands, the units formed a crenellated profile in elevation. Coming from Japan, their construction stressed seismic performance which, over time, proved critical as the residents expanded their buildings.

4. LOOKING BACK

Unlike other Modernist projects, PREVI's housing units were designed to be open-ended essays spanning generations. To see its transformed buildings fifty years later is to finally digest its real breadth, which raises larger fundamental questions:

- Do the housing transformations by resident-owners align with the architects' goals?
- Do the housing transformations demonstrate the resilience of strong planning principles over language?
- What is PREVI's significance for Peru and Peruvian architecture?
- What principles still sustain PREVI?
- Could a less ambitious mission produce the same outcome?

To evaluate PREVI's ambitions and address these questions, a photographic survey documenting the current state of the Metabolist's houses was carried out for this article, weeks before the outbreak of COVID-19 in Latin America (Fig. 3).

4.1. Do the Housing Transformations by Resident-Owners Align with the Architects' Goals?

Fumihiko Maki was respectful of the conceptual contract between the architects and future residents of PREVI, which incorporates the metabolic capacity of his manifesto.

In 2014, I arranged an interview with him[1], which was appended to my essay on PREVI published in *Docomomo Journal 50*.

> ***Maki:*** *I think that the Peru project was the only collaborative work among Metabolists [...]. We were always talking about metamorphosis, changes [but] we did not expect [...] that they would add more floors. A couple of years ago I met some researchers in the ETH Zurich that showed me a four-story high building. I was very much afraid that it might collapse without a sufficient foundation. It demonstrates how people can transform their own houses. Many successful people who made money started to have a shop in the front instead of a bedroom. I think this [is] a very good example of Metabolist philosophy: to be able to respond to changes.*
>
> ***Yi:*** *Would you say this was the first and the last collaborative Metabolist project?*
>
> ***Maki:*** *Yes [...]. We all went different ways after this.*
>
> ***Yi:*** *Are you philosophically ok with the owners taking owner-*

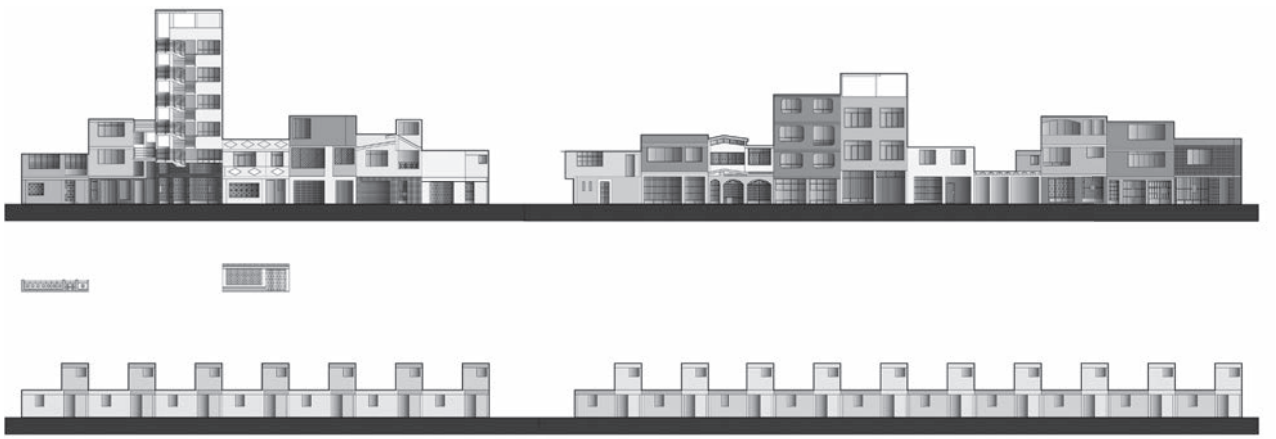


Fig. 3. **Metabolist PREVI houses, Lima, Peru. March, 2020. Before and after elevations (1972–2020). © 2020 Diacrtica.**

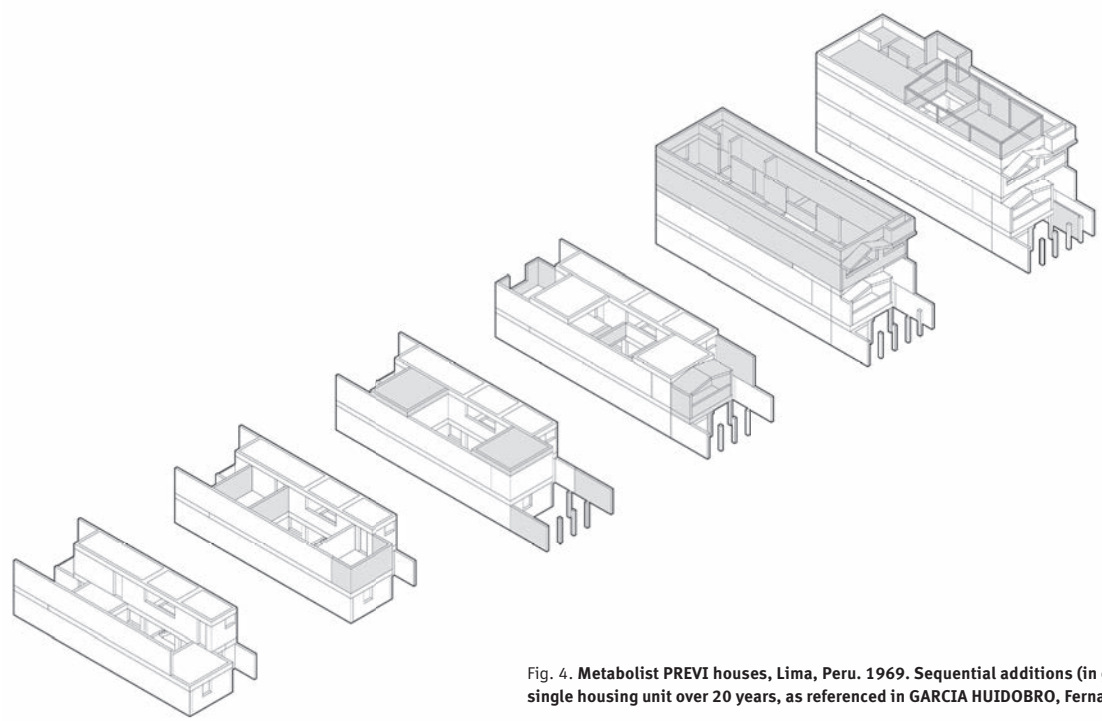


Fig. 4. **Metabolist PREVI houses, Lima, Peru. 1969. Sequential additions (in green) to a single housing unit over 20 years, as referenced in GARCIA HUIDOBRO, Fernando, et al.**

ship and changing it?
Maki: Oh yes. Nothing is a problem. No consultation. They just did it.

If at a safe remove, Maki expresses an alignment with, and an acceptance of, the transformation of PREVI's architectural language (Fig. 4).

4.2. Do the Housing Transformations Demonstrate the Resilience of Strong Planning Principles over Language?

As a complement to Maki's statements, Peter Land — in an interview for the same publication — touched on the subject of language and consistency.

Yi: *So, you're very much supportive of dropping the seed of infrastructure and having the residents expand it in their own way?*
Land: *Yes. I completely agree with that. Now the PREVI neighborhood is based upon the "casa creciente" (the "growing house"). So, the geometry and organization had to reflect that.*
Yi: *Are you happy with the way the PREVI houses have been adapted and taken over with comfortable things such as ga-*

ble roofs?

Land: *I think it is one disappointment, as Charles Correa said that flat roofs were an indispensable part of the design in Lima, as there is not much rain there and people could live on the roofs as well.*

While Maki and Land share the same *laissez-faire* acceptance of the transformation in PREVI's architectural language, Land is disappointed by how the planning principles he sought to embed in the PREVI homes failed to refrain resident-owners from modifying them to their own detriment.

It's not the flat roof that concerns Land, so much as the wanton, self-imposed restriction on vertical expansion. Similarly, Maki is nonchalant about a fourth floor, but concerned with its lack of structural integrity. The acid test of PREVI's planning principles is how permissive it is in allowing residents to grow their homes in ways that do not favor their economy, their functionality, or their safety.

What the Metabolists failed to consider was the aspirational component of their commission: the need for households to grow not only physically, but also in social standing. This explains why the standardized modules and austere choice of finishes were the first features to be challenged by owners, and precisely what makes PREVI relevant to contemporary discussions around the Peruvian vernacular.

As Patricia Lucas Alonso documents in her 2015 doctoral thesis, the most salient modifications to the Metabolists' PREVI housing modules involve the perversion of their structure. Finding the interior dimensions of the second-story bedrooms insufficient, owners did not hesitate to creep over their own interior light wells, exterior setbacks, and even over shared street space. In retrospect, these homes were fortunate to count with the Metabolists' stricter seismic indications, which permitted their unregulated expansion in a highly seismic zone.

The layout's dimensions were also immediately contested. The second-story bedrooms, 2.00m wide and 6.6m long, were designed to fit two longitudinally-aligned beds, but incompatible with the orthogonal configuration of side-by-side bedrooms customary in Lima. Upon moving in with their furniture, the owners quickly redistributed their homes, voiding the Metabolist's intended starting point for expansion from day one.

The Metabolist houses' most accepted feature — their placement within PREVI's site — has little to do with their design. Being located on the outer edge of the project, the homes were able to grow horizontally, towards the property line, to create private parking spaces — few of which had been foreseen. They were also able to use facades as storefronts, transforming rooms into shops serving the outside community, as Maki points out in his interview.

That the houses were able to support these modifications proves their resilience. Our survey found that only one of the seventeen Metabolist houses had been demolished and rebuilt with seven stories, evidence of the snapping point in their capacity to adapt.

4.3. What is PREVI's Significance for Peru and Peruvian Architecture?

Fueled by the country's real estate and construction boom of the past two decades, architecture has become a career draw for Peru's emerging middle class. This advanced the profession beyond its earlier perception as the more intellectual or aesthetically-driven counterpart to engineering.

Peru is leaving behind its longtime habit of building without planners or regulations, and — at least until COVID — career prospects in the field were on the rise, locally and abroad. With heightened awareness of the value of architecture, it is now seen as a virtuous calling, and its practitioners as a clique willing to step up to the unruliness of Peruvian cities.

Within the profession, however, one becomes aware that Peru's main contribution to modern architectural history is *specifically* PREVI. In the pursuit of "Peruvian architectural identity" — the grail of local design academics — PREVI anchors Peru's relevance to recent architectural history. It also bridges an older generation, nostalgic for Modernist grandeur, with a younger one, enthralled with the vernacular that rendered PREVI unrecognizable.

This vernacular, which seeks to understand what the natural "style" of Peruvian buildings is when ungoverned by planning, has become a teeming area of academic study; with PREVI as a whole — and the Metabolist houses, notably — as definitive case study in manifesting the spontaneous mutations of Peruvian housing against a blank-slate, late Modernist backdrop.

4.4. What Principles still Sustain PREVI?

To identify its principles, one must understand the role "experiment" plays in PREVI's acronym. PREVI was *not* an experiment to invent a complete set of radically new housing types — its conceptual (low rise-high density) and social (low income) parameters were firmly in place from the start. PREVI's purpose was to *demonstrate* these parameters within a walkable masterplan.

It was also the sole low rise-high density housing scheme of the '60s to take on the form of an international demonstration; making it exceptional not just as the proof of concept for a mode of rational low rise-high density land settlement, but for its extensive application of onsite prefabricated reinforced concrete construction.

PREVI was not meant to be a cure-all, but to shift popular perception of housing from *expense* to *investment*. The house would grow together with its owners — a fundamental Metabolist tenet — and the hits-and-misses of the complex would help planners shape future social housing policy. Retrospectively, this was a double-edged sword. Lima, whose metropolitan population exceeds 10 million inhabit-

ants, is overwhelmed by sprawl under the commercial patterns applied to it since PREVI, where owning a house on a small property one can adapt freely over time is for the very poor, or very rich: the apartment building is for the middle class.

4.5. Could a Less Ambitious Mission Produce the Same Outcome?

President Belaúnde would oversee several other, larger, social housing projects during his two terms, none of which came close to receiving the attention PREVI has.

Even so, it is difficult to gauge if PREVI's ambition did, in fact, translate into a best-possible outcome. Though the sampling of different architectural proposals under a directive of growth was a success, its disconnect with local idiosyncrasies — from bed sizes to parking needs and the desire to exuberate — guided the plan down unforeseen paths.

PREVI's biggest miss may have been how its emphasis on growth did not equally stress regulation, to align it within overarching urban principles of shared property and structural integrity. Permitting in Lima is so bureaucratic that PREVI is evidence of how the path of least resistance to growth is *build first, ask later*. As the country's proudest architectural achievement, PREVI may have done a huge disservice to its architects by demonstrating why DIY construction is pervasive in Peru.

While one can now establish PREVI's significance with relation to Peruvian housing policy, the Metabolists' legacy and the twilight of Modernism, one can only wonder how aware the 26 teams were of the historical import of their designs. Had this been the case, perhaps the masterplan could have made room for an additional, intangible housing unit per type; to be preserved as community or cultural buildings, and used as benchmarks against which to measure the organic growth of their sister houses. The current outcome remains true to the Metabolist's desire for architectural transformation, although they underestimated the nigh archaeological efforts required to record them.

PREVI continues to function as a social housing complex populated mostly by its founding families. They value it for many reasons, few of them connected to its relevance to Modernism. Though they are aware of it, given the constant flow of researchers studying the project, their daily lives are unaffected by the radical transformation — if not, the total reconstruction — of the historic housing modules they inhabit. Fifty years later, PREVI's adaptations are a sign of progress, even if it is the least affluent homes that best preserve their Modernist imprint and the Metabolists' vision.

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NOTES

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FADED FAMILIES: HOUSING ELDERLY COUPLES IN FLANDERS

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ABSTRACT.

Recently the Flanders Heritage Agency conducted a broad study on the heritage value of 20th century social housing in Flanders, the Northern part of Belgium. To better analyse and evaluate this patrimony, the 1,500 neighbourhoods involved were grouped in a dozen chronological and typological subthemes. One of the most fruitful of these themes was, quite surprisingly, the houses for elderly couples. Although these houses constitute only 5% of social housing, they emerged as an important category in the heritage research. Providing maximum comfort on a small surface, they approach the ideal of the modernist minimum dwelling. Moreover, these elderly quarters are characterised by a careful balance between quiet seclusion and social interaction, and often include community facilities and lush greenery for the whole neighbourhood. Architecturally these elderly houses cover a broad spectrum, ranging from extremely traditionalist to experimentally modern. Unfortunately, because of the minimal character of the individual houses (not being in accord with current standards), and the spatial generosity of their general lay out plan (mostly low rise in green space), these projects are quickly disappearing to be turned into building lots. Some, however, are undeniably worth preserving or documenting, not only as a historical reminder but also as an inspirational alternative for the omnipresent retirement homes, especially in the wake of COVID-19. In this paper a short introduction to the history and characteristics of this architectural type will be given, as well as a qualitative analysis of three modernist examples from a second generation of post-war modernists (1960s–1970s).

1. HISTORY AND IDEAL[1]

In 1954 Renaat Braem, one of the most influential modernist architects in Belgium, stated that housing for the elderly was — apart from the slums — the most important issue in housing policy.[2] Indeed, the ageing of the population grew exponentially after WWII, as a result of a higher life expectancy and a declining birth rate. Between 1830 and 1930 the segment of senior citizens (65+) in Belgium doubled from 3.5 to 7.6% of the total population. Only 50 years later (in 1980) that percentage had doubled again. This ageing occurred particularly in the cities. In Antwerp for example, the number of senior citizens tripled between 1900 and 1950.

On the other hand the care for these elderly in the family circle diminished, again especially in the cities. For some this pointed to a regrettable downfall of children's care for their parents. However, it seems that this was also a deliberate choice of many elderly who considered the care by their children as a very last resort. Most elderly chose to remain as long as possibly in their own home (with some adjustments). The traditional geriatric homes, where elderly couples were separated from each other, became less and less accepted during the 20th century. Already in the interwar period the socialist minister Emile Vandervelde explicitly spoke out against such separations.

An alternative form of elderly housing were small houses, specifically built for elderly couples and enabling them to live as independently as possible. During the second and third quarter of the 20th century this housing form was quite popular, because it met most with the demands of the elderly, and because it proved the cheapest solution. Already in the 19th century such houses for elderly couples had been built but these projects were quite small and often religiously motivated (the traditional apostle houses or godshouses which contained a small chapel). From the end of the 19th century onwards some municipalities (public welfare) started building similar housing, especially in the larger towns. However, given the boom of senior citizens and the lack of resources of many municipalities, these initiatives proved insufficient and from 1929 onwards social housing companies were involved. Between 1929 and 1983 the social housing companies built some 8.000 of these houses in Flanders, approximately 5% of their total stock.[3]

Between the late 1930s and the 1960s several publications tried to define the ideal house for an elderly couple. A first essential attribute was its minimal surface area which enabled a low building cost but also a minimal maintenance for the inhabitants. The smooth circulation for the less mobile defined the minimal space required. On the other hand these houses often displayed a relatively high comfort standard with a separate bedroom, a living room, a small but well equipped kitchen, a storage room and a sanitary space (evolving from an outside toilet to a full bathroom). Only exceptionally shared facilities such as communal baths were provided. Comfort was also translated in ground floor living, without any steps or, if necessary, providing a lift or avoiding steep stairs. Most houses also had central heating, water, electricity and/or gas, and use was made of qualitative materials that provided a good isolation and an easy maintenance. Important was also the provision of light and air, for example by promoting wider houses with living and bedroom next to each other, allowing light to flood on both sides.

As to the lay-out, ideally these houses were removed from the street by a green area. Some architects provided a small private vegetable or flower garden (the maintenance of which would benefit the health of the inhabitants) whereas others advocated public greenery. Road construc-

tion could be restricted to a minimum. A lot of attention was paid to a good balance between grouping and spreading, between privacy and social interaction, which led to the principle of limited concentration. Grouping had practical advantages (possibility of communal facilities, the closeness of a hospital...) and offered social interaction with peers. However, a forced concentration (for example in a separate district) was firmly rejected as to not isolate the elderly from society. Additionally, spreading gave the elderly an opportunity to stay in their familiar neighbourhood. To activate and socialise the inhabitants, many also pled for communal recreation facilities. This was often a small building that was used mainly by men for playing cards and that could easily be converted into an extra house (which it often did).

Concerning the design or aesthetic of these houses, publications remained quite vague, promoting a soothing environment in proportions and colours, and a restrained modernism as to not alienate the inhabitants. The same goes for the furniture: some promoted metal tube furniture as practical (lightweight and hygienic) but it was also recognised that the recuperation of furniture from the old home could help to create a familiar living environment.

2. MODERN(IST) REALITY

How did these ideals play out in reality? Almost half of the houses for the elderly in Belgium consisted of apartments, the other half were ground-based houses. Before WWII most elderly housing closely resembled standard row-houses, though they often received a more traditionalist outlook and were located in quiet side-streets and set back from the street with a small garden. In the larger cities (Ghent and Antwerp) low-rise apartment buildings appeared from the 1930s onwards. In the post-war period elderly housing often took the form of row-houses around a vast green courtyard, reminiscent of the traditional beguinages, though less secluded. Another widespread practice was to integrate houses for the elderly in a larger social district with family homes, in the form of small groups of coupled bungalows or duplex-houses consisting of two apartments.

However, a surprisingly large number of elderly housing projects reveal a more experimental approach. Indeed, for modernists elderly housing offered an opportunity to experiment with architecture and lay out. Providing maximum comfort on a small surface, they approach the ideal of the modernist minimum dwelling. In Brussels Willy Van Der Meeren constructed several groups of low-rise gallery flats for elderly to supplement his iconic high rise (inspired by Le Corbusier's Unité d'habitation), in the late 1950s using the prefabricated steel construction of his famous CECA-house, in the late 1960s pioneering with prefab modules in concrete (type Variel). The aforementioned Renaat Braem also provided gallery flats for elderly in his internationally renowned interpretation of the Unité d'habitation in Antwerp (district 't Kiel), realised in the 1950s. The low-rise character and the organic, expressive footprint of this elderly complex supplemented the more austere high rise on pilotis.

Braem and Van der Meeren are standard bearers of a first generation of post-war modernists who had an explicit social mission. In the rest of this paper we focus on three projects of elderly housing, designed by a second generation of modernists who started their careers in the late 1950s. These projects can be characterised as high density low-rise and can be seen as a continuation of this first post-war modernism, as well as a reaction against its overt functionalism. Whereas suburban standard allotments with traditional coupled or row houses dominated social housing during the 1960s and 70s in Flanders, these dozens of contemporaneous high density low-rise quarters were and are highly appreciated, revealing international influences from team X and experimental quarters like Siedlung Halen in Switzerland by Atelier 5 (1952–1962) and Søholm in Denmark by Arne Jacobsen (1945–1954).

Specifically on elderly housing there was also a lot of international influence during this period. Conferences were held on this subject (in October 1965 in Belgium and the Netherlands) and publications gave an international overview of the guiding principles and realisations.[4] Though this programme was realised quite differently (in Western Europe mainly by social housing companies and local governments, in the United States privately, and in Eastern Europe by the state), most agreed that housing for the elderly should be varied (in terms of autonomy and care) and stressed the importance of local anchoring. A short survey of housing projects in the US and Western Europe from 1967 indicates that most projects remained fairly small scale (up to a 100 units) but also that more than half of them still took the form of high- or middle-high-rise.[5] In this sense, the quarters further discussed in this paper are rather atypical.

2.1. Pine Tree Court (Sparrenhof) in Lokeren

A first quarter dates from 1962–1965 and consists of 41 houses next to a large social quarter on the outskirts of Lokeren, a small provincial town.[6] The architect Jos Van Driessche (1930) is mostly known for his large idiosyncratic villas in lush green.[7] Like most modernist Belgian architects of his generation he was deeply influenced by the organic modernism of architects like Frank Lloyd Wright, Alvar Aalto and Arne Jacobsen but he also underwent a profound German-Swiss influence, working as a trainee for Herman Baur (in 1954–1955) and the German landscape architect Herman Mattern (in 1957).

His primary concern for Pine Tree Court was to avoid it being used as a thoroughfare. Inspired by his work for Mattern on a new residential quarter in Hamburg-Lurup, he put forward the idea of separating pedestrian and mechanical traffic by limiting the width of the roads, and using a ring road, leaving the central axes for pedestrians. It took him more than a year to convince the housing authorities but afterwards the quarter was awarded and put forward as a



Figs. 1. **Jos Van Driessche, Pine Tree Court, Lokeren, Belgium, 1962–1965. © Jos Van Driessche, circa 1965.**



Figs. 2. **Jos Van Driessche, Pine Tree Court, Lokeren, Belgium, 1962–1965. © Jos Van Driessche, circa 1965.**

model. Typical for Van Driessche is the fusion of architecture and landscape, using striking architectural features in the gardens (such as terraces, paving, low brick garden walls and planters) and emphasising the architectural qualities of natural elements (such as the pines which provide a form of architectural sheltering, filtering the sunlight and breaking the wind). The large green space with benches also served the social interaction, as did the clubhouse and the provision of 13 family homes in the quarter (**Figs. 1-2**).

The houses for the elderly are bungalows in a stepped layout that guarantees privacy for the individual terraces and enhances the visual variation. The aesthetic is further characterised by the combination of white painted brick walls and wood and the irregular footprint of the individual houses. A lot of attention was also paid to the orientation: both bedroom and living room face South-East towards the open green. On the Northwest the entrance to the house is shielded at one side by an unusually large storeroom. Van Driessche provided these as to not clutter the house with the many things the inhabitants had gathered in their lifetime and could not part with. The interior of the houses is characterised by built-in cabinets, a high degree of comfort (central heating, electric kitchen stove,...) and, notwithstanding the minimal surface, a feeling of spaciousness, for example by providing a small visual opening below the ceiling.

2.2. The Bunkers in Ostend

A second project is located in the coastal town of Ostend.[8] Between 1925 and 1975 a large social quarter was built on the southwest side of this town, following a consistent pattern: an orthogonal grid with housing around central communal greens. The Bunkers (1969–1970) was one of the last phases and consists of 56 houses, mostly in the form of



Fig. 3. **Groep Planning, "The Bunkers", Ostend, Belgium, 1969–1970. © Evert Vandeweghe, 2021.**

low-rise apartments. The main architect Jan Tanghe (1929–2003) played a crucial role in architecture and environmental care of Belgium from the mid 1960s onwards as an activist, publicist, teacher and architect. In 1966 he founded Group Planning, a multidisciplinary office that became one of the most influential offices for architecture and town planning in Belgium. Tanghe's architectural output is very diverse, which springs not only from his collaborative nature but also from his vision of architecture as a societal means and a link in the environment, rather than a goal in itself.[9] In the late 1960s, when designing this project, his writings and designs revealed a clear influence from contemporary English architecture emphasising the need to combine multidisciplinary research, architecture and town planning (Fig. 3).

For The Bunkers, Tanghe adhered to the layout of this larger quarter: an orthogonal building lot with houses around a communal green courtyard, though with small but meaningful deviations. By enlarging the courtyard (trading in walled-in private gardens for built-in balconies), providing more access to the courtyard and extending the greenery to the front of the buildings, Tanghe enhanced the appeal of this courtyard and its function as a gathering place for the neighbourhood. Six family homes and a club house further boosted social interaction and animation. The built-in balconies with their closed brick balustrade provide the necessary privacy and function as a buffer for the bedrooms.

The aesthetic of this complex, which consist largely of identical modules, stems from the irregularity of the modules and lay out, and from the brutalist outlook with exposed brick and concrete, and protruding staircases. The popular name for this complex (The Bunkers) and the contrast between exterior and interior aesthetic (visible in the traditional lace curtains) tells us that this brutalism was not the preferred choice of the inhabitants. That many inhabitants, despite this aesthetic disagreement, are still very reluctant to leave this complex, is indicative of its intrinsic qualities.

2.3. Acaciapad in Bruges

A third quarter consists of 23 houses, delivered in 1982 and located on the outskirts of Bruges.[10] In contrast to the



Fig. 4. **Axel Ghyssaert, Houses for elderly, Acaciapad, Bruges, Belgium, 1975–1982. © Evert Vandeweghe, 2021.**

historicist townscape of Bruges, the houses of the Acaciapad were given a strikingly minimalist modern appearance, typical for architect Axel Ghyssaert (1933).[11] In the late 1950s he worked as a trainee for EGAU (Etudes en Groupe d'Architecture et d'Urbanisme), a leading office, responsible for one of the largest and most iconic social housing projects of functional modernism in Belgium (Plain de Droixhe in Liège). Like his contemporaries, Ghyssaert was strongly influenced by Scandinavian modernism but also by modern and traditional Mediterranean architecture (Fig. 4).

In 1968 Ghyssaert received a first assignment for elderly houses in Bruges but his design for an apartment building never materialised due to neighbourhood protest. When in 1975 he received the same assignment for a different building plot he reused the plans of the individual apartments but spread out as a low-rise quarter of interlinked patio houses. These have a square floor plan, divided into four smaller squares of which the southeast one consist of a terrace. In contrast to the closed outer gables, those that give onto the terrace are completely transparent: a south facing window for the living and an east facing one for the bedroom. The interiors of these houses are remarkably open, probably because they were built by the local government instead of a social housing company and thus Ghyssaert didn't had to comply with strict regulations of distribution. The minimalist, white and black aesthetic was also extended to these interiors, a.o. with black built-in cabinets.

In comparison to the other two quarters discussed, this quarter as a whole feels rather self-centred with only one entrance, flanked by closed gables, and arranged around a central communal open space with benches and tables for the elderly. Originally however, this courtyard also housed a small playground for children from the neighbourhood. Furthermore the closed character of the quarter seems a deliberate attempt to strike a right balance between social interaction and privacy, acting as a counterweight for the more open character of the individual houses with their fully transparent terraced gables. This balance was also pursued by the exact positioning of the houses to each other, the use of plate glass, the small protrusion of the house wall next to the terrace and the provision of bushes and hedges.

3. A FUTURE?

The future of these small scale modernist projects of elderly housing is highly uncertain today. In Ostend and Bruges they are facing (partial) demolition or drastic renovations because of current standards of minimal surface and energy (targeting thermal bridges). Pine Court in Lokeren seems safe in the short term but small adjustments to individual houses, lay out and greenery (such as extra parking spots) may present a slow degradation of its unique heritage value. Yet, the fact that these three quarters are still being used, now 40 to 55 years old, indicates their resilience. If preservation of these quarters is not always obvious, they are undeniably worth documenting, not only as a historical reminder but also as an inspirational alternative for elderly housing.

COVID 19 has revealed several flaws in current living conditions of the elderly. Apart from the many deaths in residential care centres, the lockdowns were especially hard for those in small apartments without any outdoor space, as well as those in large villa's, isolated in the suburbs. The three quarters discussed in this paper show that a way out of these problems may be found in striking the right balance in size and distance. The right size refers to houses that are generous enough to enable privacy and cohabitation, with at least a small private outdoor space. It also refers to a quarter small enough to develop a sense of community. An outspoken aesthetic can contribute to this community feel-

ing, even if only in a shared dislike as in the case of The Bunkers. Equally important seems the right (social) distance: enough to provide a feeling of privacy and protection but at the same time allowing inhabitants a quick and easy access to the outside world, visual as well as physical.

NOTES

1 Unless indicated, this chapter is based on Henri De Bruyne, "Maisons pour vieux conjoints", *l'Habitation à Bon Marché 10*, 1939, 242–254; Alfons Van Coillie, "Huizen voor ouderlingen te Roeselare", *Bouwkunst en Wederopbouw 4*, 1942, 73–79; E. Bastiaenen, "Woonzorg voor Ouderen van dagen", *Bouwen en Wonen (Maandblad voor nieuwe vormgeving) 3*, 1956, 117–120; J. Zwaenepoel, "De huisvesting van de bejaarden", *Wonen*, 1966, 42–49; Luk Deschamps, "Bejaardenhuisvesting: De bejaarden en de sociale huisvesting in het Vlaamse Gewest", *Wonen 3*, 1983, 2–11.

2 Renaat Braem, "Meergezinswoningen. Woningen voor ouderen van dagen Antwerpen-Kiel", Huize Mimosa, *Bouwen en Wonen (Maandblad voor nieuwe vormgeving)*, 10, 1954, 340.

3 Other actions by social housing companies were allowing elderly to live in with their children (without surcharge) and by reserving small and easily accessible living-units for the elderly, for example small flats on the first and second floor of their apartment buildings. Both solutions also mitigated the social exclusion of the elderly.

4 For example: G. Beyer & F. H. J. Nierstrasz, *Housing the aged in Western countries: programs, dwellings, homes and geriatric facilities*, Amsterdam-London-New York, Bouwcentrum-Center for Housing-Cornell University, 1967.

5 Beyer & Nierstrasz, 1967, 68–92.

6 This analysis is mainly based on an interview with Jos Van Driessche by the author (March 24, 2021) and: Inventaris Onroerend Erfgoed, "Sociale woonwijk Sparrenhof", accessed on March 30, 2021, https://id.erfgoed.net/erfgoedobjecten/302114.

7 Geert Bekaert, *Hedendaagse architectuur in België*, Tielt, Lannoo, 1995, 141.

8 This analysis is mainly based on: Inventaris Onroerend Erfgoed, "Sociale woonwijk Westerkwartier", accessed on March 30, 2021, https://id.erfgoed.net/erfgoedobjecten/122176.

9 Bekaert, 1995, 139.

10 This analysis is mainly based on Sophie Gentens, *Een onderzoek naar de woningbouwprojecten in het oeuvre van architect Axel Ghyssaert, 1960–1990*, unpublished master Art Sciences KULeuven, 2016 and Inventaris Onroerend Erfgoed, "Samenstel van 23 bejaardenwoningen", accessed on March 30, 2021, https://id.erfgoed.net/erfgoedobjecten/77326.

11 Bekaert, 1995, 141.

THE *UNITÉ* AS UNIVERSAL MODEL: HOUSING IN ANGOLA AND MOZAMBIQUE

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ABSTRACT.

The Marseille Housing Unit designed by Le Corbusier contributed to the definition of collective housing typologies after 1945. The *Unité*, a mixed repeatable block, will be exhaustively explored, not only in the European reconstruction during the post-war period, but also in other geographies, seeking its adaptation to different climates, cultures and social contexts.

In Angola and Mozambique, Le Corbusier's work had a special impact on architectural production during the '50s and '60s. Although the predominant urban model in the main African Portuguese colonisation cities privileged single-family housing, here and there, we find a few detail plans issued from the Athens Charter and that foster the construction of collective housing units.

These buildings, addressed to an urban colonial middle class, make a significant mark in the largest cities between the '50s and the '60s. Although much smaller in size than the Marseille Housing Unit, these are mixed housing, service and shopping blocks that stem from the premises of their reference model and test new housing typologies fit for a tropical climate.

In Maputo, the Tonelli building, the Montepio de Moçambique building or in Lobito, the Universal building are good examples of an interpretation of the Corbusian prototype. These projects reflect not only an appropriate response to climate characteristics but also the colonial society's desire for modernisation.

Such works, a legacy of the *Unité* and of the modern principles, are however belated examples, at a time when a critical awareness as to the dogmatism of the Modern Movement was arising.

1. INTRODUCTION

The Marseille Housing Unit designed by Le Corbusier between 1945 and 1952 contributed, in a significant and universal manner, to the definition of collective housing typologies in the second post-war. The "Unité d'habitation de grandeur conforme", which was developed as a prototype that rethinks the functionalist dimension through the expression-statement of *the house as a dwelling machine*, will allow for a wide experimentation in the study of mass dwelling, by researching new forms of combination and internal organisation for homes, circulation schemes and space hierarchy.

The *Unité*, a mixed repeatable block, will be exhaustively explored, not only in the European reconstruction during the post-war period, but also in other territories and geographies, seeking its adaptation to different climates, cultures or social contexts. But if, as William Curtis explained, "as a prototype, the *Unité* was unavoidable, the problem was to transform its fundamental lessons into a terminology more flexible attuned to particular cities, societies or climates."[1]

In the cities of Angola and Mozambique, former Portuguese colonies, Le Corbusier's doctrine and work had a strong impact on architectural production during the '50s and '60s. Although the predominant urban model in the main African Portuguese colonisation cities is characterised by a sector-divided city model with a design inspired by the Garden City, with extensive low density residential areas privileging single-family housing, here and there, particularly in Luanda or Maputo, we find a few detail plans that fall within the framework of urban models issued from the Athens Charter and that foster the construction of collective housing units.

It should be noted that, all along such decades, the greater autonomy of the overseas provinces, particularly Angola and Mozambique, together with a growing investment by the parent state will ensure economic development, and consequently a significant population increase.

This greater settlement of population in the overseas territory was translated into a significant development of the cities, through a systematic building up of infrastructures and the redevelopment of the residential areas, by waging, notably, on collective housing units. These housing buildings, mostly resulting from private orders and mainly addressed to an urban colonial middle class, started to be designed by the end of the '50s, and make a significant mark in the largest Angolan and Mozambican cities during the '60s.

2. MODERN HOUSING IN ANGOLA AND MOZAMBIQUE

In Maputo, the Tonelli building (1954–58 / **Fig. 1**) by Pancho Miranda Guedes, the TAP building (1955–60 / **Fig. 2**) by Alberto Soeiro, or in Lobito, the Universal building (1957–61 / **Fig. 3**) by Francisco Castro Rodrigues, are good examples of an interpretation of the Corbusian prototype. Pancho Guedes, trained in South Africa, visited the Marseille Unité early on, in 1953. However, most architects living in the overseas African territories did not often made local reconnaissance travels to international works. It would be mainly through periodicals that architects became aware of international projects and works. We highlight *L'Architecture d'Aujourd'hui* magazine, the most read international periodical among Portuguese architects. The Portuguese magazine



Fig. 1. **Pancho Miranda Guedes, Tonelli Building (1954–58), Maputo, Mozambique. © Ana Magalhães, 2008.**



Fig. 2. **Alberto Soeiro, TAP Building (1955–60), Maputo, Mozambique. © Ana Magalhães, 2008.**

Arquitectura also played an essential role in disseminating the Modern Movement architecture. The Corbusian lineage and the influence of the principles of the CIAM are, however, dominant, and the publication of the complete Charte d'Athènes, which started in 1948, merely stressed such dominance. Le Corbusier's Unité d'Habitation building in Marseille inaugurated in October 1952, would be published on the magazine immediately the next year.

Although much smaller in size than the 337 homes of the Marseille Housing Unit, these are mixed housing, service and shopping blocks that stem from the premises of their reference model and test new housing typologies fit for a tropical climate. Circulation in an external peripheral gallery, a clever composition of the housing cell combination



Fig. 3. **Francisco Castro Rodrigues, Universal Building (1957–61), Lobito, Angola. © Ana Magalhães, 2008.**

structure and a rational sense in the home internal organisation are common denominators to all those three projects and reflect not only an appropriate response to climate characteristics but also the colonial society's desire for modernisation.

The Tonelli Building, a housing building with twelve levels combining "duplex and single apartments", can be said to have originated in the *Unité* housing cell. As Pancho Guedes says about his family of buildings, which he called "boxes and people shelves", the Tonelli building is "the original human shelf".[2] It is located in downtown Maputo and was ordered by the Italian engineer Franco Tonelli, a European post-war refugee. This work seeks to contribute to a modernisation of the city, both as to its urban image and as to a new dwelling way proposal.

From a three-floor basis intended for shopping, services and parking all the remaining floors evolve, i.e., 56 apartments, of which 40 are one-room apartments and 16 are four-room apartments.

The duplex and single typologies are distributed alternatively, as advertised on the gable, which materialises in a huge bas-relief mural. The vertical accesses serving the horizontal circulation galleries are located in the centre of the volume and mark the symmetry of the plan and building. It is important to stress not only the modular alternation of the dwelling cells but also the variation of the height of the galleries. Different heights mark the accesses to the flats: the main gallery has a double height and, in the service gallery, access is made through an intermediate landing, which also shows the segregation of and distinction between the routes for "Europeans" and "indigenous" servants. Such alternation, made in a non-regular way, breaches the monotony of the façade. The North-eastern façade remains free for living spaces or bedrooms extended into balconies, which fall in a reticulated framework broken, here and there, by murals that approach the idea of an African identity in a contextual version. There is an apparent opposition between the functional clarity of the home organisation, which is translated into the modular design of the North-eastern façade, and the protruding framed windows irregularly spread along the gable, or the notched drawing murals with a geometry inspired in African decorative drawings on the base floors. Although the roof cannot be visited, just like the large volumes of the *Unité* terrace, the highlight goes to the huge parallelepiped chimneys and the intensely sculptural lift case.

Also in Maputo, we may find another example using the *Unité* premises, the TAP building (1955–1960), located at a corner in downtown Maputo, in the expansion area of the Araújo Plan (1887).

It is a mixed housing and service block, composed by a horizontal base body covering the whole plot, with four floors intended for offices and shops, and a parallelepiped body, with nine dwelling floors. As a housing unit, the building runs perpendicularly to the street axis, breaching the plane's urban design and asserting itself in the city.

The monumental scale of the block is stressed by the gable facing the street, through the use of a polychromatic ceramic mural (by Gustavo Vasconcellos), of an abstract composition, which granted it an iconic dimension in the city.

The base body is partially supported on circular section columns with bas-relief interventions, and forms a large covered portico hallway.

The treatment of the façades of the base volume, with the use of vertical "brise-soleil" that grant it an opacity character, is different from the composition of the height volume, intended for housing, marked by a grid with chromatic variations, which states the home organisation, and broken, in both façades, by balanced galleries.

The vertical volume combines *duplex* and *triplex* typology homes articulated with circulation galleries located in each façade. The North-eastern galleries are aimed at service circulation. Inscribed all along the façade, they jut out, every three levels, of a large vertical circulation tower located at the South-eastern top. They interconnect with the suspended balcony-galleries in the Southwestern façade, the nobler circulation, jutting out of a void of one of the block central modules corresponding to the main access.

The main and the service galleries are around 1.00m level apart, which corresponds to the partial organisation of the home in half-floor. As remarked in the case of the Tonelli building, this distinction of distribution spaces corresponds to the segregation between access and circulation spaces for "Europeans" and "indigenous people", which will contribute as well to a hierarchized reading of the home.

The structure of the dwelling block is composed of 12 modules, where thirty *duplex* apartments, alternating an ascending or descending development from the galleries, and three triplex apartments, aligned next to the module intended to the nobler vertical circulation where the lifts are located, are organised.

This complexity and sophistication of the modular structure refers to the researches on housing cell combination developed by Le Corbusier in the *Unité* prototype. The duplex apartments are therefore organised from the base module with their access through each gallery, thus distinguishing the social area of the home from the service area. On the second floor, whether ascending or descending, is located the private area of the house which fills two base modules and is alternately extended into balconies that mark the full-empty of the façades. The façades have an eminently plastic composition, marked by the modular rhythm of the windows and balconies, which go forward and backward. The galleries, as well as the large polychromatic mural reinforce such plastic and composite meaning of the building.

In Lobito, a medium-sized town within the Angolan population context, the Urban Plan (1949) was subsequently revised until 1966, into a regulatory plan, which structured and ruled the growth of the town. The influence of the rationalist principles of the Athens Charter is clear, both in the functional organisation of the city and in the concern for issues of suitability to site climate and geography.

It was within this framework, and in view of the significant demographic increase, that Francisco Castro Rodrigues, the then director of the Urban Planning of the Municipality, developed the Master Plan for the Town of Lobito between 1969 and 1972.

All along his extensive activity in Lobito, Castro Rodrigues designed several collective housing buildings, of which one might highlight a mixed block known as "Universal" Building.

In 1958, the plots were acquired by the "A Universal" Insurance Company, that established the program structure: large exhibition shops on the ground floor, on the first floor, office spaces; and on the upper floors, small-sized homes.

The "Universal" building is located on two adjoining L-shaped plots, and it makes the transition between two longitudinal street axes of the Comercial District and a large entrance square. It's obvious that the author's intent consists in assigning the building a monumental nature, justified by the location, thus dignifying the entrance to downtown Lobito, and the significance of the owner company.

The building is developed in nine floors in its main body, facing the Square, and closing the block, is extended sideways into a lower six-floor body in continuity with the existing buildings.

The foothold of the main body is drawn back and away from the street through a double height gallery, where a few shops and, on the mezzanine, offices and services are located. The protruding intermediate floor, intended for offices, in a "box" volume, makes the transition to the five floors intended for housing, in a 52-home total (**Fig. 4**).

The roof consists in a huge canopy supported by columns, thus creating a floor intended for studios and social relations spaces. In the sideway body, the roof closes with a large community laundry, which is partially roofed.

The whole building is served by a roofed gallery, in the back elevation, which is breached by two symmetrical staircases and an external service stairway. The two staircases allow for articulation of both L bodies and promote cross ventilation.

The composition of the façades is marked by a set of overlapping grids, which form balconies on the main façade and create shadow areas in the back façade gallery. The grid differentiation is stressed by the chromatic differentiation, as if in layers — marking the structure, the balcony, the flower holder, the railing.

On the main façade, the geometry of the grid reveals the building's inside partitioning. On the back façade, the use of honey-combed grids allows for shading and ventilating portions of the gallery and breaches the homogeneity of the composition.

The main design reference for this work is, once again, Le Corbusier's "Unité d'Habitation", both as to its monumental scale in relation to the city, and as to the work's composi-



Fig. 4. **Francisco Castro Rodrigues, Universal Building (1957–61), Lobito, Angola. © Ana Magalhães, 2008.**

tion process. The trial of the premises of the Modern Movement in their tropical version is claimed by its author. He easily develops all modernity themes: the exploitation of new dwelling ways, clearly shown in the inside organisation of the homes, the aggregation of homes around extensive open galleries, the proposal of community spaces, such as the laundry or social relations spaces on the roof; the combination of dwelling, leisure and work programmes.

The gallery is the large dominant constituent, which, in articulation with the various open-air staircases, permits the combination of the environment comfort requirements with the idea of a *promenade architectural*.

But the plastic expression as well glorifies the modern formal contents: the three-dimensional reticulated framework that marks the composition of the façades, the prolific use of colour that differentiates the structural elements, the concrete grids in different patterns and the plasticity of the canopies that shade spaces and routes. The grid on the building's monumental façade, as reinforced by the multiple colours that differentiate the "full" and the "empties" and defines the spaces and the volumes, is a visual reference to the '50s and '60s Le Corbusier's works, especially the 1959 *Salubra* catalogue. The predominant colours in the façade composition are vermilion, light blue, white and black. According to the architect's testimony, the colour, as a constituent characterising the architectural space and as an added value to the work within the urban context, must have always been an essential factor in the implementation of his designs. He also stresses the significance of colour use where approaching the African context and underlines the use of colour, which, according to his analysis, was often used in Angolan vernacular architecture.

3. MODERN MOVEMENT LEGACY IN A TROPICAL AND COLONIAL CONTEXT

The clever organisation of a structure combining housing cells and a double rational and functionalist meaning in home organisation are the common denominators to all these works and show that their authors were well aware of international collective housing models. The galleries evolve on the back façade, thus distinguishing the main façade facing the street from a back façade intended for circulation and service areas. Generally, the buildings are located on the site according to the urban mesh, "making up the street". The exception is the TAP building, which is located on the site perpendicularly to the main thoroughfare and is structured through two horizontal circulation galleries. While being, among the works examined in this paper, the one that most cleverly exploits the space structure and the cell organisation within the *Unité* premises, it is, simultaneously and contradictorily, the one that underscores the idea of segregation in a colonial context.

It is precisely this ideological contradiction between the predominance of a formal modern vocabulary, associated to an idea of democracy and progress, and at the same time the adaptation of the designs to the context of colonial society, that characterise the housing private order architectural

production.

On the other hand, such works, a legacy of the *Unité* and of the modern premises, are however belated examples, developed at the end of the '50s and all along the '60s, at a time when architects in Europe were gaining a critical awareness as to the dogmatic positions of the Modern Movement.

Today, in a post-colonial context, these three exemplary collective housing works, although very degraded, are densely inhabited by a varied population, who appropriate them in different ways, but who undoubtedly recover their founding meaning of a collective life.

More than forty years after the independences of Angola and Mozambique, identity and heritage issues are still a sensible topic. Far beyond the difficulty of dealing with the memory of this modern heritage, we are confronted with the History of these countries in transformation. Only an in-depth knowledge of the cultural and scientific value of this heritage may overcome other priorities, whether of a political or a social or an economic nature.

ACKNOWLEDGEMENTS

This work is financed by national funds by FCT — Foundation for Science and Techology under the Project UID — UIDB/04026/2020 and by CITAD — Centro de Investigação em Território, Arquitectura e Design.

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1 William Curtis, *Modern Architecture since 1900*, 3ª ed., London, Phaidon, 1999, 443.

2 Francesca Ferguson (ed.), *S AM 03 Pancho Guedes — An Alternative Modernist*, Basel, Christoph Merian Verlag / Swiss Architecture Museum, 2007, 57.

Session 3-c

MODERN HOUSING IN CHANGING CONTEXT OF SOCIOCULTURAL VALUE

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This session is organized by the significant arguments for establishing modern society, especially, modern housing in the history of modern movement in architecture.

After assimilating the civilized values of 19th century western culture and the living environment, mass housing was invented in the 20th century. This housing typology is a core idea of the Modern Movement. The relationship between private and public spaces is an essential condition for the development of family and community values. Mass housing became a tool of ideological and political agendas after World War II. The analysis of dwelling conditions implies an understanding of the occupation of space: related spaces, uses, and functions. Addressing the act of living as the main fact of culture, we can find that mass housing reflected an era and a doctrine of mass production.

From World War I to the present day, housing has been a central programme to the Modern Movement worldwide. Increasingly, we have been facing critical issues concerning the demolition and deterioration of such housing, since DOCOMOMO activities commenced in the 1990s.

Adding to it, post-industrial society has brought changes in our way of living that have had repercussions in the occupation of the dwelling space: consumerism and individualism have grown as new paradigmatic lifestyles; new communication systems have been developed allowing increasingly diverse ways of working; households are no longer exclusively composed of nuclear families; sharing and temporary forms of housing are increasingly common; and people relate to each other at a distance – a condition that Covid-19 has reinforced. It has become important to promote spatial occupations not envisaged when the buildings were conceived, and to address flexibility of use to accommodate current lifestyles and raise levels of satisfaction.

This session aims to consider how modern dwellings have responded to different ways of living, from their conception, up to the present day. More than six or seven decades later, are modern dwellings resilient or obsolete? How can modern housing sites and neighbourhoods be preserved while meeting contemporary concepts of comfort, in a continuously changing context of socio-cultural values?

Therefore, this session is expected to prompt discussions covering the whole range of the history of mass housing in the Modern Movement up to the resilient inheritance of modern housing, considering its production, demolition or conversion, in an era of depopulation.

Following to such arguments, four speakers of this session as distinguish academic researchers all who are interested in the cultural transformation of modern housing. The session will begin, Maria Tavares who will argue new paths being taken by architects committed to a process of social transformation in Italy, two Portuguese architects, faced with the housing deficit that was making itself felt in Portugal. Her interest here is not just the more operational side of the cases, but also to understand how low-cost housing, through the teachings of the aforementioned duo of architects, came to methodologically apply the principles of the Italian body.

Secondly, Moe Omiya who will explore this multifaceted building through the analyses of three different "intersections" West-East, British-German, and social class intersections, mainly focusing on a Canadian architect, Wells Coates. In concerning the East Asian influences on modernist principles, Coates' early life in Japan, and his design works, investigating Continental modernist principles mainly based on Bauhaus' ideas. She can explore the concrete elements of design as well as the idea of community "Zunft", and examine another modernist idea of breaking down the class barriers and the gender gap.

Thirdly, Yamit Cohen who will present Artur Glikson's planning theory as a broad ecologic and humanistic ap-

proach which stands as a critic of modernist technologically- deterministic planning practices of his period. She can describe Glikson as an innovator whose work precedes current planning trends and discuss the way he implemented his theory in practice through a specific case-study of the Integral Habitational Unit, in relating to Scottish city reformer; Patrick Geddes who had committed to the town planning in Israel and could have impressed his ideas to Glikson.

Finally, Arthur J. de Macedo who will present and discuss the concept project developed by the unique tower's creators in the city of San Paulo, Brazil as well as three individual proposed projects, designed by the twelve invited architects, focusing on architectural program, spatial solution, language and expression. He can point out that a comparative reading allows the identification of differences and similarities, to confirm the presence of the different architectural languages. The ultimate aim of his article is to establish the importance of this innovative proposal in the context of Brazilian modern architecture and housing projects.



AN UNUSUAL JOURNEY THROUGH POST-WAR RESIDENTIAL ARCHITECTURE

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ABSTRACT.

In September and October 1958, Nuno Teotónio Pereira and Nuno Portas embarked on a trip through Europe with the aim of coming into contact with different experiences in the area of housing. Spain and Italy were the recipients of short visits that sought to understand the social and economic structure in the post-World War II period and the responses of the various bodies responsible for the housing sector.

In a decade marked by new paths being taken by architects committed to a process of social transformation, these two Portuguese architects, faced with the housing deficit that was making itself felt in Portugal, brought back from this journey a number of modern references that inevitably were transformed into a kind of script to be put into practice, though also with an inevitable critical (re)vision.

In Portugal, so-called low-cost housing (HE or *Habitações Económicas*) had been using monies from the Federation of Social Security Funds to build "low-income housing" since 1947. In Italy, the main objective of the INA-Casa programme, which commenced in 1949, was to combat unemployment through construction.

Of interest here is not just the more operational side of the cases, but also to understand how low-cost housing, through the teachings of the aforementioned duo of architects, came to methodologically apply the principles of the Italian body, mainly by means of the similar impulses coming from a new generation that was motivated to experiment with renewed architecture that remained close to and was easily understood by the popular classes.

1. INTRODUCTION

Between 1946 and 1972, the debate around State-subsidized residential architecture in Portugal reached a level of unusual activity, not only for the product itself but also because of the methodological tools that supported new production dynamics. The architects of this generation were the main ones responsible for these new dynamics, finding peculiar ways to approach the architectural production practiced in Europe.

However, if it is true that the author's work was strongly recognized, it is also true that it was not unrelated to State entities that helped support the renewed energy of architects.

This paper proposes to revisit a trip that Nuno Teotónio Pereira and Nuno Portas made in Europe in search of new experiences in the area of housing. It intends to convene and recognize the teachings that the two architects bring from their journey, through the possibility that so-called low-cost housing (HE or *Habitações Económicas*), as a State-body dedicated to low-income housing, has provided them.

Initially, the purpose of the formation of HE is present in the middle of an enormous housing deficit as well the dominant role of Nuno Teotónio Pereira. Later, the paper focuses on the possibility of the trip, introducing the crucial figure of Nuno Portas as the promoter for the journey. Finally, INA-Casa, the Italian entity, is introduced, and affinities with HE are present according to operative categories that will show us a new reality practiced by the 2 Portuguese architects from then on.

2. HOUSING: A PURPOSE FOR THE STATE AND ARCHITECTS.

> *Some streets in Lisbon's Avenidas Novas district have seen the construction of large rental apartment buildings, and indeed some are still being built, that are aligned in terms of their exterior aspect with the proposals of classical architecture. They are buildings that aimed at least at being well built; indeed, they also offer modern conveniences. Well aired and exposed to the sun, with heating in winter, a lift, a service stairway, independent accommodation for housekeeping staff, one could easily call them luxury buildings. The rent, however, (...), which is well beyond the possibilities of each of us, has given rise to the most heated discussions and acerbic protests.*[1]

In a text published in the magazine *A Arquitectura Portuguesa* in 1945, the author did not hold back; he manifested his total despondency at the type of construction that private entities were carrying out in Lisbon. He entitled his short text *A Problem*, demonstrated total concern about the need for change in how the housing problem was dealt with. This short episode led to the appreciation of the *utilitarian* dwelling, i.e., that which, whilst not luxurious, received State subsidies and emerged as a response to the problem(s) that had been exposed.

Three months before publication of the short text, the Portuguese Parliament had approved the Law on Low-Income Housing. Apartment buildings of four storeys emerged as an alternative to the original programme of the *Estado Novo* regime, but private initiative did not react particularly enthusiastically to the appeal to cooperate in the new build-

ing programme.

Accordingly, 1946 saw a new effort on the part of the State to seek solutions that would provide more alternatives for achieving the goal of increasing housing in Portugal. Given the post-war context and the evident need for a review of the conditions proposed one year earlier by the law[2] that paved the way for "low-income housing", a Decree-Law[3], the strategic starting point for which was the Social Security Funds providing the financing for solving the housing problem.

Thus emerged, in June that same year, the low-cost housing programme known as HE, which was financed by the Federation of Social Security Funds, as a contribution to boosting low-cost housing through the application of the Social Security fund institutions' capital in the construction of "low-income housing".

The programme's field of action was very wide. At the territorial level, it was spread throughout the whole of the Portuguese national territory. In operational terms, it was responsible for practically all construction phases: from the planning to total and complete execution, including the financing. At the social level, it covered a considerable section of the Portuguese population, through the beneficiaries of the funds in the federation and the full-time members of the "People's Houses" [*Casas do Povo* or community-based social institutions].

The first phase of the process, which was implemented gradually over a period of time, focused mainly on the financing, given the readiness of the resources. But within a few years, the ambition of the project and the goal of controlling all works phases, gave the HE-programme a leading position in the construction and promotion of low-cost housing in Portugal. Through the then still young architect, Nuno Teotónio Pereira, who from early on had embraced the cause of housing for the greatest number of people, the HE low-cost housing programme gained new stimulus. As the only architect working on the programme during its first 10 years, his role within the body was important, building an image which, while overtly avoiding the official canons and their standardised designs, sought from the outset to respond in design terms to the principles of social commitment, in an effort to find a relationship with the context, the roots and the users.[4] The concentration of efforts with a view to coming together to resolve the housing problem in Portugal seemed to be establishing a common theme.[5]

3. A GUARANTEED OPPORTUNITY

In a notification date December 1958 to the Technical Department at HE, Nuno Teotónio Pereira showed an interest in submitting a report on a recent visit to housing experiments outside the national context:

> *In September and October of this year, I had the opportunity, in the course of quick visits to Spain and Italy, to come into contact with a number of housing projects carried out in those countries.*
>
> *Given that many of said projects appear to be of interest to us, I have drawn up a short report, (...) made with a twofold objective: to convey to the [HE] Federation what I think was most interesting and to call attention to the convenience of studying, with a certain degree of detail, the projects executed in these two countries, which have considerable geographic, cultural and social affinities with our own.*[6]

The visit, which took place in September and October of 1958, featured the important presence of Nuno Portas, who, as a recent addition to Nuno Teotónio Pereira's firm, and having in-depth knowledge of the reality beyond Portugal, sought to encourage his boss to make the journey. The young architect, who was somewhat restless and intellectually curious, had begun early on to look into the issue of collective, low-cost housing as part of a commitment to the population and those for whom he worked in his professional life.[7] Participation was the word of the day, and housing for the people was the main object of all investigation.[8]

The journey would thus give him the opportunity to become acquainted first hand with the experiments he had been analysing judiciously in the international magazines that came into the hands of Portuguese architects. Portas compiled a complete itinerary, including short individual files on each project, with a description of the neighbourhoods and the experiments to be visited. The result was a meticulous process of searching for innovative proposals.

The two architects left on their European journey with the aim of coming into contact with different experiments in the field of housing programmes and new architectures. Spain and Italy were the scene of short visits in an effort to understand the social and economic structure in the post-war period and the responses of the bodies with responsibilities for the housing sector.

While the journey across Spain was kept short, as the country was to be the object of future journeys, the main objective was to get to know the social and design realities in Italy, as promoted by the experimentation carried out by INA-Casa, the Italian counterpart to HE. These projects were regarded as fertile ground for design experimentation, that was very centred on the cell, the access systems and consolidating the urban composition.

The visit to Italy took 10 days, covering mainly the north of the country: Genoa, Alessandria, Piacenza, Parma, Reggio Emilia, Bologna, Florence, Forli, Cesena, Rimini, Ravenna, Mestre and Venice. On the way back they stopped in Milan and Turin.

But why the great interest in INA-Casa as a body and the architecture it produced, which was to assert itself in all of Italy? For Nuno Teotónio Pereira, as a specialist with a considerably important role in INA-Casa Portuguese counterpart, the interest was in understanding the analogies between the two structures, both in terms of the response to

the considerable housing deficit that was felt in both countries and the need to put into practice a new vocabulary that was heralded in by the architecture of this housing programme.

4. INA-CASA AND THE SOCIAL EMERGENCY

INA-Casa, the short form for *Instituto Nazionale de Assicurazione-Casa*, which was set up in February 1949, was a governmental body set up to execute a plan to increase unskilled worker employment. It was carried out for two periods of 7 years each, with a three-fold objective: to stimulate Italian economic growth by means of the investment of capital in the construction industry; to combat the high unemployment rate through construction projects that used local labour, materials and technologies; and to reduce the country's housing deficit.

The plan, known as the Fanfani Plan in honour of the Italian Labour Minister, Amintori Fanfani, whose idea it was, was essentially a legislative instrument that specifically built houses for the working classes, answering directly to the Ministry of Labour. The aim was to create an independent structure that spurned a concentration of bureaucracy, thus resulting in a slender and highly centralised structure. It made use of regional bodies that already existed, thus managing to cover the whole of Italian territory and contributing to the effectiveness and speed of execution.

As far as design of the dwellings was concerned, INA-Casa made use of freelance professionals, applying a competition system that proved to be a great opportunity for a new generation to practice on a large scale "an idiom of renewed communication with the working classes".[9]

More than one-third of Italian architects were actively involved in his housing programme, who, under the coordination of a centralised architectural office, examined the plots of land, controlled the design projects and the work sites. Taking care to weave new ideas into the various historic fabrics, they dedicated themselves to "protecting the cultural specificity of the communities to be rehoused, and also the cultural identity of the architectural image".[10]

There was a negative reaction to the hypothesis of using standardised designs, whilst allowing for the advantages of unified construction elements, to the benefit of the creation of a kind of album of designers.[11]

In the 14 years of the programme, more than 300,000 dwellings were built, distributed throughout hundreds of urban interventions. It functioned as an experimental laboratory, seeking an approximation to the popular imaginary while applying "a simplified building and linguistic lexicon that was capable of representing the new urban communities and identifying a possible point of contact between modernity and context".[12]

The proposals extended beyond the houses, taking in significant areas of land and providing the whole structure necessary for diverse collective functions.[13] Given the density of some of the ideas, the projects were distributed amongst different designers[14], thus constituting a wealth of different approaches from the formal and construction points of view.

According to Nuno Teotónio Pereira, it was in the urbanistic aspect that these projects became examples of great interest — from the small nuclei to the large neighbourhoods. Architecture of truly social significance worked, in his opinion, in the relationship between the distribution of the buildings and the exterior spaces with a heightened organic, structured and hierarchised character.

The two architects brought back to Portugal a number of working references. Nuno Portas, the editor-in-chief of the forward-looking magazine, *Arquitectura*, devoted himself to critiquing and disseminating the Italian experiments, enriching the Portuguese cultural scene. His collaboration at Nuno Teotónio Pereira's firm marked the beginning of a new process of formal enrichment that called the functionalist dogmas into question. He absorbed the necessary sources to initiate and give structure to new ideas, proceeding from experiments already formalised by his colleague.

The HE-programme at the time of the trip was not only in a phase of growth but was also undergoing great structural change. The visit as a learning experience confirmed some of the achievements already reached, but also positioned the interests anew as one was about to enter a new phase of design that was announcing itself.

5. CROSS INFLUENCES AND AFFINITIES

Nuno Teotónio Pereira reflected on the important analogies with the HE programme. It was time to create a new framework of models and motivations to be implemented. The affinities were clear.

5-1. A highly centralised structure:

The Portuguese body, which answered to the then Ministry of Corporations and Social Security, formalised the HE-programme and set up a technical team capable of responding effectively to the housing problem through the construction of "low-income housing", using funding from the Social Security Funds. Both bodies played a central, coordinating role, based in Lisbon (HE) and Rome (INA-Casa), from where they contacted with other smaller regional support structures. In the Portuguese case, these were the local governments and the network of regional architects; in Italy, it was the already existing regional bodies;

5-2. A work front on a national scale:

In contrast to other small plans aimed at problems that arose because of the housing deficit in specific contexts, the two bodies worked on a nationwide scale. The projects were ambitious, but nevertheless were able to cover all of the national territory;

5-3. An administrative and bureaucratic apparatus that was pared back to a minimum:

Both bodies had the objective of shunning large bureaucratic structures. The whole system of commissioning and managing a work was either the responsibility of the central services or based on direct commissioning (HE) or competitions (INA-Casa);

5-4. An advisory technical committee:

Despite the fact that HE did not have an official advisory technical committee until 1958, with all the work being carried out by Nuno Teotónio Pereira himself, the Studies and Projects Office was set up after the trip to Italy with the aim of studying and consolidating modes of operation in executing a project (from the large-scale urban complex to the functional specialisation of the dwelling and to construction methods);

5-5. A young and dynamic team:

Having technical departments that were, to varying degrees, limited in size but growing, both bodies allowed for the creation of a type of internal architectural office. In the HE case, it fed off young dynamic architects who were anxious to experiment with new forms of spatial organisation, as well as to achieve new feats in the field of research into the house or dwelling. In addition to the internal architectural office, the design projects were commissioned from freelance professionals, most of whom were also young, making it possible to distribute throughout the national territory architects who were best acquainted with the context in which they were to intervene. In both cases, the quality of the output came from the active participation of these professionals who, given the need to respond to the sheer number of projects designs requested, did not accept a lack of quality of said projects, instead basing them closely on the cultural realities and specific needs of the population to be housed and responding to the ongoing economic restrictions; for these reasons they rejected standardised designs;

5-6. A diverse functional programme:

One prerequisite for the architecture being approached in a truly social way was that the complex to be built included not only housing but also an array of other complementary functions. Whilst this issue was always taken into consideration in the Italian designs, in Portugal not always were such stipulations met. Indeed, the cases where the ideas did go ahead were few and far between, regardless of the architects' interest and desires. Financial issues, on the one hand, and the use of synergies in the urban context, on the other, in order to avoid duplication of functions, were the reasons found for this circumstance;

5-7. A formal import based around empathy:

Associated with the functional programme of the complex and the dwelling, where yards were sympathetically treated as common public spaces in projects in urban areas, or spaces for the private cultivation of crops close to the houses in rural areas, a new lexicon began to transform the contexts of integration of the housing complexes. Concurrent with the assessment of what was going on internationally, there was real interest in the national reality and the imaginary that came from popular architecture. There was a desire to communicate through the architectural detail, which came close to and was understandable to the lower classes.

New housing schemes were experimented with, committing to programmatic simplification through concentration of the functions in a centralised nucleus that became the main space in domestic life; this was frequently applied in vernacular situations, but also in the urban context. Accesses also took on a particular expression, in recognition of the commitment to freeing them from the built complex, so that the movement of the residents could play a stimulating role in the social life. This was a process that translated a certain degree of complexity if one focuses merely on programmatic simplification.

This new framework, which became particularly visible after the journey to Italy, coincided with a turning point in the HE-structure which, however, did not give rise to an impasse: Nuno Teotónio Pereira relinquished his role of specialist, becoming a consultant — a position he held until the body was closed in 1972. His place was taken by the attentive and energetic João Braula Reis in the leadership of the technical services.

6. CONCLUSION

Acknowledging the two architect's interest in the architecture that was produced in Italy post-World War II period, this article revisits a journey in times of change. It seeks to identify a new path to the design of the house, assuming the modern ideology reconciled with history and tradition. The journey truly constituted one more enriching experience not only for HE as a body but also for the architecture produced through HE.

ACKNOWLEDGEMENTS

This work is financed by national funding from FCT - Foundation for Science and Technology under the Project UIDB/04026/2020.

NOTES

1 Alberto AC, "Um problema", *A Arquitectura Portuguesa*, Issue No. 125, 1945, 6.
2 Law 2007 of 7 May 1945.
3 Decree-Law 35611 of 25 April 1946.
4 Maria Tavares, "Leituras de um percurso na habitação em Portugal. As Habitações Económicas — Federação de Caixas de Previdência", *Habitação para o maior número. Portugal, os anos de 1950–1980*, Lisbon, IHRU and CML, 2013, 21.
5 Maria Tavares, *Habitações Económicas — Federação de Caixas de Previdência, Arquitectura e Modos de Actuação no Exercício do Projeto*, Porto, PhD Thesis presented to Faculty of Architecture, University of Porto [FAUP], 2016.
6 Nuno Teotónio Pereira, "Informação LXIX/58 aos Serviços Técnicos das HE", Lisbon, Nuno Teotónio Pereira Documental Archive on Housing and Urbanism, LNEC,

1958.

7 Nuno Portas in 1957 joined the first studio in Lisbon's Rua da Alegria, which he shared with Nuno Teotónio Pereira, Raul Chorão Ramalho and Manuel Tainha; later, he joined the second studio, where Bartolomeu da Costa Cabral and Nuno Teotónio Pereira accepted him as a collaborator and, later on, an associate.

8 Maria Tavares, "O CODA de Nuno Portas e as Caixas de Previdência", *Nuno Portas 18 Obras Partilhadas*, Porto, Circo de Ideias, 2019, 50.

9 José António Bandeirinha, *O Processo SAAL e a arquitectura no 25 de Abril de 1974*, Coimbra, Imprensa da Universidade de Coimbra, 2007, 55.

10 Ibidem.

11 Rosalia Vittori, "La casa popolare dela ricostruzione", *Casa Pubblica e Città, Esperinze europee, riserche e sperimentazioni progettualli*, Parma, MUP, 2009, 146.

12 José António Bandeirinha, *O Processo SAAL e a arquitectura no 25 de Abril de 1974*, Coimbra, Imprensa da Universidade de Coimbra, 2007, 55.

13 For every housing complex that housed 1,000 to 2,000 people, the programme had to take into consideration: a church, nursery and primary school, shops, handicrafts workshop, police station, social services office, meeting room, games fields, children's playpark and respective garages for resident vehicles. Facilities for above that scale could also be provided for: such as a parochial centre, market, medical centre and cinema, thus establishing a dynamic based on acknowlegement of the fact that housing problems were not limited merely to the domestic space.

14 Names such as Ludovico Quaroni, Mario Ridolfi, Carlo Aymonimo, Carlo Chiarini, Maurizio Lanza, Franco Albini, Gianni Albricci, BBPR, Ignazio Gardella, & Luigi Castiglioni, to name just a few, were members of the design teams.

ISOKON FLATS: A MULTILAYERED MODERNIST INTERSECTION IN 1930s LONDON

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ABSTRACT.

In 2005, a pale, reinforced-concrete building was reopened in Hampstead, London. The Lawn Road Flats (1934), known today as the Isokon Building, regained its original "classic modernist" exterior and functional furnishings. With an ambition for the introduction of Continental modernism and reformation of lifestyles, the construction was commissioned by Jack and Molly Pritchard and designed by Wells Coates as one of the first modernist constructions in the UK.

Here lived the commissioners, British and other European artists, writers, thinkers, and Soviet spies. These communities encouraged interactive and cultural life led in and around the flats. The most significant figures included key members from Bauhaus School, exiled from Nazi Germany. In other words, the introduction of Continental modernism to this architectural work was followed by the actual sojourn of its proposers in it.

This paper explores this multifaceted building through the analyses of three different "intersections" I would observe: West-East, British-German, and social class intersections.

The first chapter concerns the East Asian influences on modernist principles, Coates' early life in Japan, and his design works. The second chapter investigates Continental modernist principles mainly based on Bauhaus' ideas. It explores the concrete elements of design as well as the idea of community "Zunft". Finally, the last chapter examines another modernist idea of breaking down the class barriers and the gender gap.

I would argue that the building was not merely among the first modernist constructions in the UK, but it functioned as multiple intersections, which enabled the encounters between various modernist elements.

1 INTRODUCTION

A block of flats that was nearly abandoned was reborn in Hampstead, London, becoming another specimen of the "classic modern". *Lawn Road Flats* (1934), known today as the *Isokon Building*, were restored to their original appearance and reopened in May 2005.[1] Further, in 2014, the former garage on the ground floor was converted into the Isokon Gallery, which displays the history of one of the first modernist architectural works in the UK (Fig. 1). This four-storey, white, austere construction with open corridors on each floor and a penthouse on top lies slightly back from the street. Only the entrance doors and small kitchen windows can be seen from the front side. Larger windows are placed at the rear side facing a dense green hill.

In 1929, an entrepreneur and founder of a furniture company — later named Isokon — Jack Pritchard (1899–1992) and his wife Molly purchased the plot to build their new residence. The duty to design a reformative, "modern" residence was assigned to Wells Coates (1895–1958). While Coates shared with Jack the ambition to introduce the idea of Continental modernist architecture to Britain, his unique background of being born and raised in Japan deserves as large attention. Coates and the Pritchards agreed to build a block of multiple flats instead of a detached house. Flats' rent would include domestic services such as cleaning and meal services.[2] This decision was made on the assumption that it would appeal more effectively to the public and encourage "social reformation". After some financial and material struggles, the building, consisting of 29 flats of three sizes with a penthouse for the Pritchards on top, was finally opened in July 1934.

As the Pritchards commissioned this building with multiple flats, its history is inextricably linked with its residents' histories. There have lived British artists, journalists, architects, and writers, including Agatha Christie, and key European figures who were exiled from Nazi Germany/Austria. This included Bauhaus members, constructivists with Russian backgrounds, and even some Soviet spies.[3]

Despite its rich history, the Isokon drew little attention and was not studied much after it had fallen on to the hands of local council in 1972 and the Pritchards had moved out in 1974. Having been nearly abandoned, it rarely drew attention from either potential tenants or developers. C. Buckley has once published a work on the operations of Isokon company along with an exhibition in 1980. Pritchard himself has published his memoirs in 1984 with rich anecdotes. These are two of the very few works relevant to Isokon written in the last century.

The restoration finally began in 1997, when architectural journals, including contributions by K. Long and by C. Croft, started to feature its subsiding situation. We can see constant relevant publications since its reopening around 2005, including ones by A. Grieve and by J. Allan with Isokon Plus, both of which provide an overview of this building. While D. Burke's close examination on the residents of the flats mainly focuses on the spies' activities in Hampstead, S. Cantacuzino, L. Cohn, and E. Darling have published biographical publications on the architect, Wells Coates.

Its close relationship with German Bauhaus movement,



Fig. 1. **Wells Coates, *Lawn Road Flats* (known today as the *Isokon Building*) with Isokon Gallery, London, UK, 1934, restored in 2005. © Moe Omiya, 2019.**

which celebrated its 100th anniversary in 2019, has let the Isokon gain attention again in wider contexts. Following the rich previous studies on German Bauhaus and the New Bauhaus in the US, a new publication by A. Powers (2019) focuses on Bauhaus members' exile from Nazis to both the UK and the US. Another comprehensive book by L. Daybelge and M. Englund (2019) also features the relationship between the Isokon and Bauhaus in an accessible storytelling manner.

By referring to the informative publications above, this paper presents three analyses, each featuring an "intersection" that can be observed in Isokon: namely, the "intersections" between the West-East, British-German, and the social classes. Though these aspects of Isokon have partly been mentioned separately in previous studies, this paper aims to create a new stereoscopy of Isokon by showing that these "intersections" themselves are intertwined with each other. The Isokon enabled the encounter of multiple modernist principles, producing a multi-level crossing in 1930s' London.

2. WEST—EAST INTERSECTION

2.1. Wells Coates and Japan

The Isokon's architect, Wells Coates, was a Canadian raised in Japan. His unique background and the prevailing view of Japanese influences on Continental modernism deserve attention here.

Born to a Canadian Methodist Missionaries' family in 1895, Coates spent his first seventeen years of life in Japan. Although his parents let him receive British education from private tutors, their strong interest in Japanese culture and education played a significant role in his childhood. His well-known remark on his early life, "the man whose eyes have been trained in the East will only rarely want to open them in the West", shows how the Japanese experiences remained engraved on his views.[4]

Coats has not left much of his own thoughts on Japanese architecture but has described his knowledge and analyses in journals, diaries, and letters. Above all, his detailed depiction in an article on Architects Journal from 1931 mentions the usage of horizontal lines and sliding screens/door to flexibly separate inside and outside.[5] Some Japanese elements are indeed recognisable in his own designs, including a renovation work of a mansion in Kensington, where he introduced huge wood-paper sliding screens as curtains and doors, stressing the horizontal lines and quiet atmosphere.[6] In his own studio, he arranged space for working and for relaxing in one room without a tall solid partition.[7] Furthermore, the relaxation area had mattress directly on the floor without frames, which also indicate the floor-sitting custom he must have known from Japan. In previous studies, these conspicuous adoptions of Japanese elements have caused some over-emphasis on his Japanese influence.[8]

2.2. Isokon and Japanese Principles

Compared to his above-mentioned works, Coates' understanding and knowledge of Japanese architecture culminated in the Isokon in a more abstract and theoretical manner. Coates did not employ obvious elements of direct Japanese indication. Instead, the spacious usage of the penthouse rooms with a straight flow plan that penetrated the



Fig. 2. **The Isokon flats and the staircase tower, London, UK, seen from the north. © Moe Omiya, 2019.**

whole flat and wide-open glass doors to outside are reminiscent of a significant feature of Japanese concept of indoor-outdoor flexibility.

Meanwhile, the flats to be rented enjoyed high reputation in how the rooms were effectively arranged for their size.[9] Coates introduced sliding doors for the sake of efficient usage of the small space with minimum amount of furniture pieces (Fig. 3). Efficiency and functionality were more thoroughly achieved in the kitchen and the bathroom. In line with the minimalist principles and to reduce time-consuming housework, all the necessary facilities were equipped within the hand's reach. Bathroom was also equipped with the simplest storage spaces and was all monochrome coloured.

While these minimalist ideas had begun to spread in European industrial circles, for Coates it must have been natural to adopt the trends into the Japanese concepts of compact arrangements in small rooms. Coates indeed had absorbed the "lack of concern for extraneous detail, the idea that space should be left to speak for itself, that the architecture itself should not be decorative but the setting for life".[10] He did not employ Japanese elements as fashionable, exotic decoration, but had a rather "authentic" or "genuine" understanding of Japanese principles of space usage.[11]

2.3. Western Modernism and Japan

The overlap in Japanese traditional usage of space and Western modernism have often been pointed out. By 1930s, Japanese architects and art historians including Tetsuro Yoshida and Jiro Harada, and the German architect Bruno Taut, who lived in Japan between 1933–1936, published books on Japanese architecture in English and German. Still Coates had an advantage of being able to compare Western and Eastern concepts within his own experiences and propose both as his own tools.

For most Western architects, however, it was only after their own visit in Japan that they came to appreciate this "overlap". For example, Walter Gropius noted after travelling in Japan in 1950s "that the old handmade Japanese house had already all the essential features [...] for a modern prefabricated house, namely, modular coordination — the standard mat [...], and movable wall panels".[12] Coates' daughter, Laura Cohn remembers Gropius writing him enthusiastically from Japan about the "most modern conception" of old Japanese houses and asking "Why didn't you force us to stop everything and go to this country long ago?".[13]

In this milieu, it was not easy for Coates to introduce the Japanese principles into his modern designs under a consensus with the clients, especially during his earlier career before 1950s. Yet, his deep and "authentic" understanding of the ideas let us perceive a modest but fundamental West-East "intersection" in the Isokon.

3. BRITISH-GERMAN INTERSECTION

3.1. Pritchard, Coates, and German Modernism

As mentioned above, it was German modernism that played vital roles for Pritchard. Concerning the Isokon, there were two significant phases in relation to this. The first was Pritchard's and Coates' acquaintanceship with German modernism and their attempt to bring its spirit to Isokon, followed by the second phase: the modernism pro-



Fig. 3. **A current flat in Isokon with the window facing the rear side, London, UK. © Moe Omiya, 2020.**

posers' actual arrival in Isokon.

Pritchard and Coates have travelled in Germany — including Bauhaus Dessau — a few times.[14] Both repeatedly emphasised their conviction of "a need to challenge the status quo and a desire to order their world using scientific, rational facts".[15] The Isokon thereby has more German modernism elements for its exterior, compared to its above-discussed interior that resonates Japanese principles. Its exterior can be attributed to Gropius' Bauhaus buildings and Konsum building in Dessau and Törten.[16] Especially the windows of Isokon's staircase tower is reminiscent of Bauhaus students' flats. (Figs. 2 & 4)

Concerning the concept for the Isokon building, Coates used the term "minimum flats". The term "minimum" was the focus of Gropius' argument at the second *Congrès Internationaux d'Architecture Moderne* 1929 (International Congress of Modern Architecture) that took place two years before. The theme of the congress was "Die Wohnung für das Existenzminimum" (The Apartment for the Minimal Living).[17]

Along with Gropius' design principles, Pritchard was inspired by the concept of an interactive community, "Zunft", to create a community in and around the Isokon.[18] Gropius' idea of comprising a communal space for entertainment served as a model later when Pritchard commissioned Marcel Breuer to plan a bar on the basement.

3.2. The Arrival of Bauhaus Members

While Pritchard and his colleagues were determined to spread the ideas in their homeland around 1930s, Gropius was undergoing lack of architectural commissions. His previous works were criticised by the Nazis for being international and Bolshevistic. These backgrounds of Pritchard and Gropius were brought together by their common friend, Philip Morton Shand.[19] By inviting Gropius, Pritchard also tried to allocate some commissions to him.

In October 1934, Gropius finally arrived in Isokon and further invited his colleagues, László Moholy-Nagy and Marcel Breuer, who then arrived in 1935. This move indicates mutuality, or what can be called "symbiosis". Forced to leave, the Bauhaus Meisters nevertheless held strong enthusiasm for and retrospection of Bauhaus. Being able to live in a building that followed German modernist principles must have been extraordinary for them in exile.

In this way the prominent characters of German modernism and ambitious British thinkers were physically brought together.

3.3. The Paradox of "Zunft"

The Isokon was constructed fifteen years after Gropius advocated the concept of modern "Zunft". Regarding the residents, the flats may well be characterised by the interactive, communal life. Pritchard regularly hosted parties and events with his peers from various fields.[20] Here largely contributed Marcel Breuer's "Isobar" (1937), a Bauhaus legacy to the flats. Commissioned to design a membership dining club, Breuer created a modern restaurant with a spacious bar. This enclave played a synergist role in realising Pritchard's vision for a lively cultural community.

It is ironic, however, that the Isokon's "Zunft" resembled that of "Bauhaus Zunft" not only for its principles but also for its inadequacies. In other words, the communities of both "Zunfts" were rather very closed ones. Despite the di-



Fig. 4. **Walter Gropius, Students' Flats, Dessau, Germany, 1925–26. © Moe Omiya, 2015.**

verse specialties, both communities ended up failing to involve those outside their original community. It was a mere "comfortable", closed community with people passionate for "reformative", "open" society.

In this sense, the ambition to carry out the "modernism" in the pure sense of the term that would break old barriers was not fulfilled.

3.4. The Reception of Modernism in Britain

The Isokon community's attempt to be open and to spread modernist ideas more widely partly failed because of the poor reception of the British society. As a matter of fact, the key Bauhaus members all left the UK for the US after a few years without leaving prominent legacies. British economic circumstances had diminished the commissions for British architects, not to mention for foreigners.

While the exchange of British and German theories certainly happened here, the intersection remained nothing more than a literal intersection. In other words, the British and the German paths towards the "reformation" crossed precisely at these flats, but without merging, without growing into a wider stream.

However, it is worth noting that the encounter of Isokon and Bauhaus communities resulted into another intersection a few decades thence. After his above-mentioned travel in Japan, Gropius invited Coates to his house, where they had enthusiastic exchange on their views on Japanese houses. Gropius remembers this in a private letter, "I think we came closer to understand him than at any time before".[21] Here, the Isokon has brought its West-East and British-German intersections together into a long-lasting and multilayered intersection.

4. SOCIAL CLASS INTERSECTION

4.1. Housing Reformation

One key principle the European modernist architects, especially the Bauhaus school, emphasised was "social reformation". The improvement of the working class' housings in terms of capacity, affordability, and the potential to be mass-produced was a chief motivation for the architectural reformation in early 20th century. This overlapped well with the modernists' ideas of defying the tradition and reforming the architecture in cooperation with industry.

Especially at Bauhaus school, this principle concerned the working class and women. Already on Bauhaus establishment, Gropius advocated building a community without class-dividing presumption. By employing craftspeople for the school's workshop education, Bauhaus members attempted to break down the barrier between classes.

As well as their collaborative practices "with" the labourers, their practices "for" the labourers are also worth noting. Gropius and other Meisters designed multiple cost-effective estates which were built with prefabricated materials. However, these movements partly resulted in another aspect of modernism: pursuing simplicity from the aesthetic viewpoint.

Despite the attempt to follow Bauhaus principles, it appears the Isokon hardly reflected the reformation of the working class' living. The flats were obviously not targeted at the working class but at "the free living Hampstead intelligentsia".[22] In a campaigning article, Pritchard himself stated

"[the] buildings are designed for middle-class people from moderate means[...]".[23] Therefore, the introduction of modernism in Isokon was not so much about social reformation as the innovative design.

4.2. Reformation of "Female" Housework

Yet, the Isokon inarguably represented defiance against one traditional classification: the assumption about women's position, which was also a target for German modernists. Concerning Bauhaus school, already during the first years, nearly a half of its students comprised women. However, most of the female students were automatically allocated to particular workshops — either textile, pottery, or metal — that were regarded as female activities. Prominent students including Anni Albers and Gunta Stölzl described their tasks as something done better by women and left remarkable pieces of work. Still, Bauhaus curriculum has recently often been criticised for its discriminatory gender segregation that undermined Bauhaus' reformative modernising policies.[24]

In this regard, a remarkable feature of the Isokon was that it included "domestic service".[25] An advertisement said, "Everything that is unnecessary, inconvenient or 'labour-making' has been left".[26] It was Pritchard's wife Molly that came up with the idea. Consequently, this characteristic was featured in various publications. There indeed lived a considerable number of women who made a living for themselves, including professors, secretaries of ministers, and artists.[27] This also suggests active integration encouraged for both male and female Isokon residents.

This concept to lighten the domestic workload can further be traced back to Coates' mother, Sarah Agnes Wintemute Coates (1864–1945). Agnes established a girls' school in Japan, Yamanashi-Eiwa, to promote women's education. She also published periodicals in mothers' association, Meiji-Haha-no-Kai, to introduce Western housekeeping and to advocate an improvement in women's position both at home and society.[28] Raised by Agnes, it must have been natural for Coates to adopt the design and services that would support all the modern residents.

To conclude, regarding the social class, the intersection did not take place in Isokon as it was attempted in Germany. However, the flats did see some resistance to a traditional classification in the form of a progressive intersection of gender roles.

5. CONCLUSION

Eighty years after completion, the Isokon today does not appear to contain advanced technologies or present a novel appearance. The flats certainly cannot avoid criticisms for being an immature combination of borrowed ideas. However, some incomplete atmosphere reminiscent of the experimental spirit in progress can be observed. The blank walls and space may present some margin to be fulfilled, or to welcome more experiments for further reformation.

This paper explored the history surrounding the Isokon building, analysing three different intersections: the modest but fundamental West-East intersection, the non-merging British-German intersection, and the intricate intersection among social classes. All these varied intersections were inevitable, which created an "agora" in this place. Ninety years since its birth, the Isokon may well draw wider attention again, as a crystallisation of multiple modernist intersections layered with one another.

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NOTES

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12 W. Gropius, & I. Gropius, *Apollo in the Democracy: The Cultural Obligation of the Architect*, New York, 1968, 109.
13 Cohn, op. cit., 11.
14 Grieve, op. cit., 16.
15 Daybelge & Englund, op. cit., 14.
16 Professors at Bauhaus School were called "Meisters" after a debate on what to name each member's position.
17 Daybelge & Englund, op. cit., 60.
18 H. M. Wingler, *Das Bauhaus: 1919–1933 Weimar Dessau Berlin,* Bramsche, 1962, 38.
19 Daybelge & Englund, op. cit., 10.
20 Grieve, op. cit., 17.
21 Cohn, op. cit., 20–21.
22 Grieve, op. cit., 14.
23 Ibid., 14.
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26 Ibid., 63.
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After finishing an art school, Agnes studied architecture under the guidance of Louis Henry Sullivan (1856–1924), one of the best-known American architects from the early modernism period.

ARTUR GLIKSON'S EXPERIMENTAL HOUSING: MEN-SOCIETY-NATURE

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ABSTRACT.

In 1962, Artur Glikson (b. 1911 Koenigsberg, Germany; d. 1966, Tel Aviv, Israel) was the only architect to present a paper in the distinguished CIBA Foundation's scientific conference titled "Man and his Future", held in London. In his paper "Man's relationship to his environment", Glikson laid out his then revolutionary ideas about the agency of men and their dynamic relationship to the environment. To put it in his own words:

Man, a powerful agent of change in space, himself undergoes change in time. This fact transforms his role in any natural community into a dynamic, unstable and often contradictory relationship unique among species: dynamic in space — the give-and-take relationship with the earth and his life — and dynamic in time — the recurrent change, destruction and renewal of such give-and-take relationships in reference to new situations (Artur Glikson, Man's relationship to his environment, 1962).

This article presents Artur Glikson's planning theory as a broad ecologic and humanistic approach which stands as a critic of modernist technologically- deterministic planning practices of his period. It describes Glikson as an innovator whose work precedes current planning trends and discusses the way he implemented his theory in practice through a specific case-study of the Integral Habitational Unit, a term coined by Glikson for a residential quarter he designed and implemented as the culmination of a complete planning operation spanning from regional scale to the design of all the architectural elements of the neighbourhood.

1. INTRODUCTION

As an architect and planner my search for spatial qualities generating diverse, yet coherent environment led me back to Glikson's neighborhood in Kiryat Gat, where I grew up. The unique interrelations between residential units and their surrounding landscape organized around a system of pedestrian paths connecting all the elements of daily life, from the most intimate spaces through small communal yards to larger regional systems, have fueled my interest in Artur Glikson's planning methodology and practice as outlined in this text that examines the Glikson Neighborhood as a case-study for his larger Humanistic-ecological approach to urban habitation.

2. BACKGROUND

Glikson (1911–1966) was a German born Israeli architect and planner educated at the Technische Hochschule in Berlin-Charlottenburg. He fled Nazi Germany soon after his graduation and settled in Palestine. From 1948 to 1950, Glikson was a member of the expert team led by Architect Arieh Sharon, commissioned to devise Israel's first National Masterplan. The ambitious endeavour was aimed at creating a new Israeli civilization in the newly conquered land. In that context, Glikson's ideas about the relationships between Man and Environment were crystalized and his fascination with the planning theory of Patrick Geddes, to whom he was introduced by Lewis Mumford[1], became obvious through direct references to Geddes' Valley Section and the Notation of Life diagram as well as his extensive use of surveys as an operational tool.[2]

3. THEORY

Glikson had been strongly adverse to all prevalent notions that set utopian visions as a goal for physical planning, as well as the more deterministic strands which set to achieve clearly-defined final spatial outcomes. According to him, physical planning is a journey, an evolutionary process of creating human environments.
The concept of a human environment describes "the space which surrounds human movement, work, habitation, rest and interaction — towns and villages, settlement influence areas, the rural and the accessible virgin landscape. This environment is generally defined as a set of biological and physical facts in space, as modified by man."[3]

3.1. Evolution

Glikson uses evolution as a framework by which to understand a changing human environment, while accounting for the mutual influence and interaction between Man and Environment. He lists three fundamental values every creative attempt to modify the environment should strive for — as has been the case since the inception of urban settlements:

1. Creation of life-enriching interactions between places and communities through an ordered mobility
2. A sense of human and communal affinity with the territory and its natural environment that can only develop within a sedentary settlement
3. Tolerance and cooperation between contrasting material interests and diverse lifestyles, within the complex environmental structures that are cities and metropolitan areas.

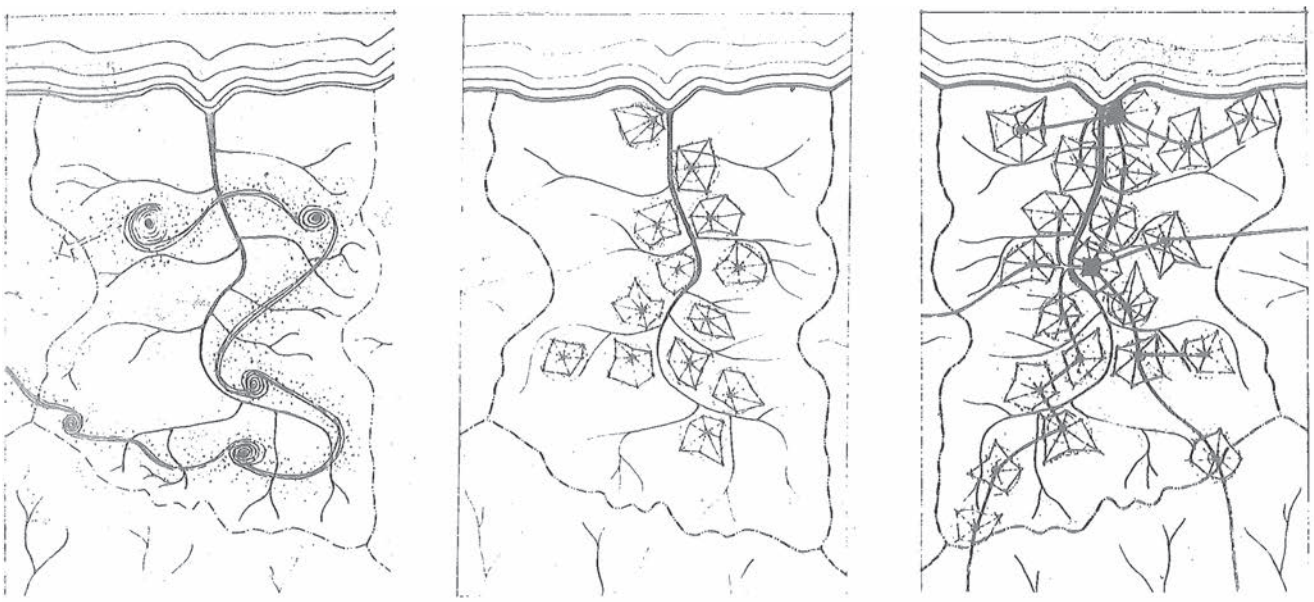


Fig. 1. **Glikson Artur, Evolution diagram of regional human inhabitation, from left to right: Mobility, Sedentariness, Urbanity; "Men's Relationship to His Environment", the CIBA Foundation's annual conference, London, 1962.**

3.2. Space and Time

"'Landscape' does not mean a complex biotic[4] and spatial fact, surrounding and accompanying man's daily movements, but only an illusory notion of a recreational environment."[5]

For instance, the increase in mobility did not result in increased access between city and landscape, or lead to the consideration of mobility as a new field of human experience, but rather to an ideology that sees space as an empty impedance to be traversed and bridged in a flowing mechanized motion, towards the solitary goal of connecting selected locations.

Phenomena such as population growth, industrial mass production, improved mobility, cultural encounters and the reciprocal relations between human and environmental problems, contribute to making certain goals in the same man-environment relations more difficult to attain, but also create a one of a kind social opportunity.

Glikson argues these conditions are "neutral" facts, and the quality of human response would determine whether the result be environmental catastrophe, or a renewal of "environmental breathing". With the ideal of human solidarity guiding us, we are required to introduce new influences and structures into the creation of environments — from the local scale of planning cities and rural settlements, to maintaining regional identities, and finally to mass mobility that allows belonging to a particular place while keeping in direct contact with a global environment and culture. Reciprocal relationships between environments on a global scale, work as a basis from which a new objective can come to define the affinity between humans and the environment: "... namely continuity — meaning the world-wide spatial continuity of the humanized and natural environment as well as its temporal continuity integrating the natural and historic environment with contemporary creations."[6]

In other words, realizing environmental affinity means reaching back to the past to draw values into the present. This is part of a process born from contemporary conditions — not for the purpose of constructing a future utopia, but from realizing our interest in future generations will lead us to change the present, and challenge those ideologies of historical determinism with "a pattern of continuity on space and time"[7] (Fig. 1).

3.3. Ecology

In an age when technology is seen as the primary generator of action, Glikson's ecological planning without exhausting natural resources was exceptional and revolutionary. He laments the fact that technological progress sets the tone, rather than climate, water management, topography, etc. Despite man being the progenitor of technology, we see it as an irresistible process, and therefore "...it is the order of the machine in which now the comprehensive designer must find his place."[8]

This is how in regional planning both environment and society become subservient to the developments of power and mechanized tools.[9]

3.4. Technology

'Technology is neutral', its virtue is its ability to expand

what is possible for human settlement, production methods, and community interactions. Faced by the extreme centralized power held by technology, it should be used to decentralize power. Technology must be incorporated into regional planning — as a counter measure against the detrimental physical and social effects of industrialization, technological development should be converted into regional evolution, within a comprehensive planning framework. "It is not incumbent on modern development to be stretched or "clustered" along highways; trains, cars or helicopters should rather serve to make accessible even the remotest spot where environment or resources attract human settlement."[10]

In every aspect of planning and technology we must choose a perspective that is not technological but rather follows themes of social organization and environmental recuperation. Thus, technology will not generate the planning and leave men dependent on it but stay a neutral tool to implement the evolution of environmental and physical-planning.

4. THEORY INTO PRACTICE

Between 1949–1953, Israel spiked from 700,000 inhabitants to over 2 million — an unprecedented challenge in terms of immigration and its management. The consequences of this influx were cultural, societal, economic, and an enormous challenge in terms of planning. Receiving this new population called for broad economic and planning solutions, creating employment sources and accommodating the immigrants. To tackle the latter, new cities and agricultural settlements were planned all over the country, with an emphasis on the scarcely inhabited Negev Desert in the south, and the mountainous region in the north.

The planning and construction of these cities were under the purview of the Department of Housing — within this department, the planning unit, headed by Glikson from 1953 to 1958, was responsible for comprehensive unified planning, weighing various considerations pertaining to individuals and groups, and physical, social and economic planning.

4.1. Lakhish Masterplan

Glikson's most complete work was as head of the taskforce for masterplaning the southern city of Kiryat Gat. Loyal to his theoretical approach to the relation between a city and its surrounding area, and the manner by which regional structure and function dictates the make-up and shape of its components, he proposed a landscape plan for the entire Lakhish Region, a masterplan for Kiryat Gat, and one particular experimental neighbourhood.

The core of his landscape planning for Lakhish — a dry and desolate land by nature — was his perspective of environmental and regional planning:
"Landscape development is an integral part of the development of natural resources, because environmental values are not limited to aesthetics."[11]

He set two main goals for his plan: making Lakhish more attractive as a place for permanent residence; developing the region to accommodate tourists traveling to the south. His plan relates to the region as a "home" for village dwellers, and to landscape development as a necessary operation for creating a functional rural area. The development of environmental values would increase the quality of life and solidify the emotional attachment between residents and their region. He based the region's economy on roads for motor vehicles, and convenient paths for cyclers and pedestrians traveling between the villages and urban centres, while adding archaeological and historical sites as cultural landmarks. According to his ecological approach he developed operations dealing with winds, land erosion and creating micro-climate through forestation: defining areas for planting new trees, selecting the appropriate flora, and establishing protected natural parks.

4.2. Kiryat Gat

Kiryat Gat was planned as an organic part of Lakhish Region, and its growth was to come hand in hand with the growth of its surrounding settlements. The main goal of the city's masterplan was to manage the city's growth from 20,000 to 80,000 residents in three phases. To achieve this, Glikson recruited experts from various fields: demography, economy, sociology, biology, and land preservation, to name a few. He analysed the landscape patterns around the city, the topography and morphology of the land intended for construction and based on the data determined the city's development and growth phases.

The city's unity was a guiding principle for traffic planning in order to avoid dividing the city into a collection of disconnected neighbourhood units, and every step of the city's development was determined by travel times for both pedestrians and vehicles.

4.3. The Integral Habitational Unit

The Integral Habitational Unit was an experimental project that concluded Glikson's comprehensive plan for Lakhish and Kiryat Gat. The dramatic population growth spelled out crisis for urban environments and community life. The Integral Unit was the means to better understand problems of urban development and study the conditions of a clearly defined residential environment. The urgent need to mass produce houses that would broadly appeal to their intended residents made these housing units generic, boring and anti-urban. In comparison with Le Corbusier's "machine for living", Glikson's integral unit is an attempt at creating unity within diversity; an attempt to work around the inherent rigidity in accommodating a large population and the inherent dullness of mass construction by creating a diversified unit of neighbouring residences, encouraging values of urban living, and then setting up community services to accommodate those values.

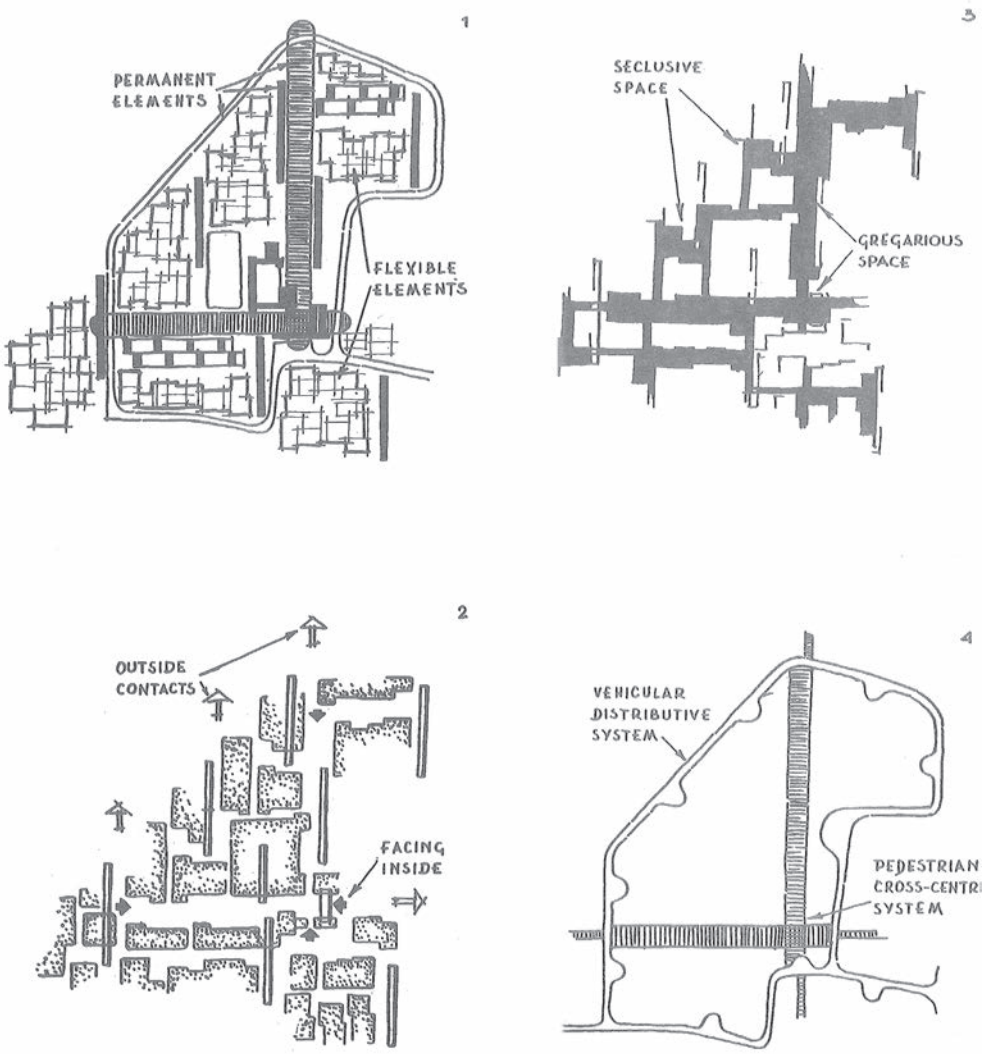


Fig. 2. **Glikson Artur, Diagrams for the Integral Habitational Unit: 1. Centre; 2. Pedestrian Movement; 3. Diversification; 4. Integration.**

4.4. Methodology

4.4.1. SURVEY

Glikson began planning the residential quarter by defining the city as a centre for regional community, serving functions of employment and residence, and asserting that "towns are the centres of regional communities and are the organs by which these regions come into contact and unite themselves with the larger national community and with humanity"[12] (Fig. 2).

His method included conducting surveys in many fields relating to the existing situation, by which to study the physical, social, economic and governmental problems of Kiryat Gat. Up to that point, the process of absorbing immigrants used the most basic statistical data on the arriving families and lacked an adequate demographic understanding of the people the city was supposed to house and incorporate into its fabric. As a result, planners were unable to adjust apartments to the needs and demands of their customers, and despite significant differences between families arriving from various continents, the apartments were planned to accommodate no more than 5 people. Furthermore, social contact between new immigrants and already established communities was scarce.

4.4.2. PROGRAM

A program committee was formed, which included Glikson, planning advisors, a sociologist, a demographer, an economist, an engineer, representatives from the Immigration Department at the Jewish Agency, and representatives of local government. The committee suggested to base the integral habitational unit around five subjects:

Demography — in order to achieve diversity, assuming that a heterogeneous make up would not only enrich community life, but also create additional economic opportunities for the neighbourhood and city. They proceeded to choose immigrants from mixed backgrounds and combined

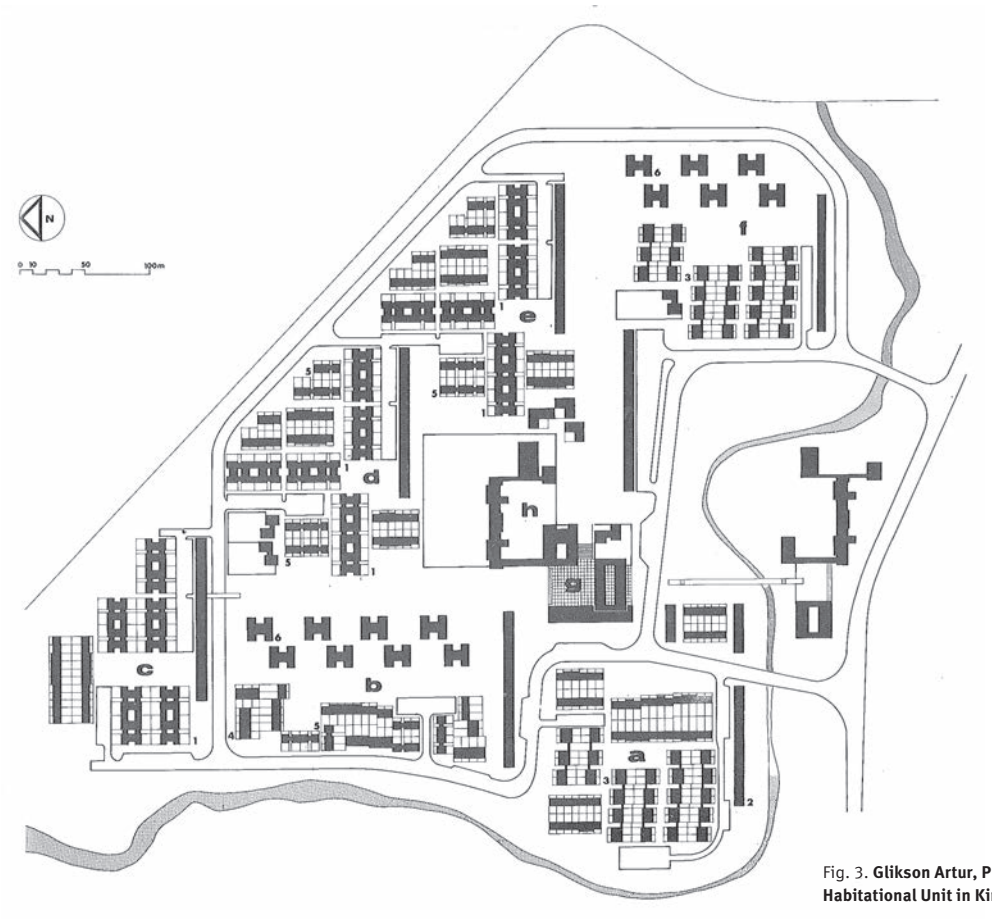


Fig. 3. **Glikson Artur, Plan of the Experimental Integral Habitational Unit in Kiryat Gat, 1965.**

them together with veteran immigrants and long-term residents. Every family was marked for size, the age of the head of the family, country of origin, profession, and seniority. According to this, a variety of housing types were developed to provide for various changing needs.

Society — In order to mix communities from diverse backgrounds, the social research was tasked with learning the quantitative and qualitative facts that could bear either a positive or negative influence on neighbour relations. These findings would help determine the optimal conditions for socially structuring the neighbourhood unit.

Economy — this study was based on the region's resources, its products, and their influence on the city's economy. In addition to studying the city's current and future economic conditions, they collected data on the number and type of shops the integral unit would frequent, and the economic ability of every group to purchase or rent apartments.

Density — the study analysed the fixed and variable components of land uses, to determine the net and gross ratios in optimal density. This was achieved by examining and analysing cities similar in climate and topography. The results of this study included a summary of land requirements for the residential areas in terms of quality and quantity.

Construction methods — the ground in Kiryat Gat requires a specialized technique for laying foundations, which adds to construction costs. To solve this, the team studied possible construction methods and recommended using certain prefabricated elements, their appropriate sizes, and proper installation techniques. The planner and engineer worked closely together on designing the units, and finally decided on a unique structure using conventional construction methods.

The objectives of the surveys and studies were to reach guidelines for specific planning programs, and to avoid using terms like "the average resident" or the "typical" residential quarter.

4.5. The Plan

The findings collected in these studies were validated by the program and planning decisions. The working assumption had been that the current situation is an acceptable and realistic starting point. This constituted a good basis for planning that considers future scenarios and leave a wide margin for future developments and changes in the residential unit's needs, as well as demographic, sociological, economic, and environmental conditions. Landscape and climate had a profound effect on the entire plan and the overall configuration of the unit. The integral habitational unit was planned for about 1,000 families, roughly 3,700 people, divided into sub-units each containing some 200 apart-

ments. Each of these sub-units had an open space for public functions, and all these spaces were connected by a system of pedestrian pathways that flowed into one neighbourhood centre. Integration was achieved in several levels: sub-unit, quarter, city and landscape, and the structure and character of each unit was defined by establishing affinities between these environmental components. Many experiments were made in planning new apartment typologies, while carefully planning their correlating neighbour units. The variety of apartment types and neighbour-unit types within the overall plan, was an attempt to rise above generic architecture and "... avoid the regimentation of the prospective population"[13] (Fig. 3).

The vehicular circulation was designed to allow vehicles to arrive at the centre, and from there diverge into an external ring road. The purpose of roads was to provide a technically efficient service, and to minimize the obstruction to pedestrian traffic — the unit's inner spaces had almost no architectural connection to the ring road. The pedestrian paths, together with the open spaces of the sub-units and neighbourhood centres, were among the fundamental qualities of the unit's plan (Fig. 4).

5. CONCLUSION

These are the three fundamental values in Glikson's theoretical thought: enriching contact between places and communities through mobility, the affinity fixed settlement allows between people and their communities and the surrounding environment, and the mutual acceptance and tolerance of human differences within complex environmental structures, all demonstrate his interest in providing "... a setting that would do justice to the complexities of nature and the varied needs of human life."[14]

This theoretical framework, that sees man and technological progress as two forces combining to create an environmental culture, and the ambition to reach an equilibrium of the two, is critical towards the modernist fascination with the wonders of technology, that more often than not tends to exploit and negate nature. This approach does not come from a naturalistic romanticism, but by recognizing the importance of the equilibrium that exists between the two and understanding technology as a tool rather than an object in and of itself.

Glikson's work in Lakhish Region and Kiryat Gat is seen as a climactic realization of his theory and planning principles, in a scale that does justice to his universal and local approach towards the evolution of man and nature.



Fig. 4. **Glikson Artur, View of a Pedestrian Path in the Integral Habitational Unit, year and photographer unknown.**

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NOTES

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3 Evron Boaz (ed.), *Ministry of Housing Quarterly*, Jerusalem, Ministry of Housing, 1967, 5.
4 Biotic refers to objects and processes relating to or produced by living organisms.
5 Evron Boaz (ed.), *Ministry of Housing Quarterly*, Jerusalem, Ministry of Housing, 1967, 9.
6 Ibid., 11.
7 Ibid., 13.
8 Ibid., 14.
9 Glikson directly criticizes Le Corbusier's Radiating City's fundamental organizational logic based on vehicular traffic.
10 Evron Boaz (ed.), *Ministry of Housing Quarterly*, Jerusalem, Ministry of Housing, 1967, 15.
11 Ibid., 81.
12 Ibid., 94.
13 Ibid., 101.
14 Ibid., 3.

SÃO PAULO PLURALIST TOWER: AN UNBUILT BRAZILIAN HOUSING PROJECT

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ABSTRACT.

Conceived by the Italian designer Gaetano Pesce, the innovative design of the São Paulo Tower was the proposal of a housing building based on the idea of pluralism, where for each floor a different architect was called in to develop the architectural project. Twelve Brazilian architects, who, according to the building's creators, represented the best architecture practiced in that period in the city of São Paulo, Brazil, were invited to design the different apartments. They produced a housing building composed of eleven duplex apartments, totally different internally and externally. The result is a unique tower, where the different projects are placed in a linear way, and based on a pre-designed base structure, form a kind of vertical street, with one duplex apartment per floor.

The main objective of the article is to present and discuss the concept project developed by the tower's creators, as well as three individual proposed projects of the eleven designed by architecture studios invited. An analysis of these proposals is presented, focusing on architectural program, spatial solution, language and expression. A comparative reading allows the identification of differences and similarities, to confirm the presence of the different architectural languages. The ultimate aim of the article is to establish the importance of this innovative proposal in the context of Brazilian modern architecture and housing projects.

1. INTRODUCTION

As a result of the partnership between the Italian architect and designer Gaetano Pesce and the real estate companies *Método Engenharia SA* and *Lopes Incorporações*, the project of the São Paulo Pluralist Tower aimed to make the building an architectural landmark in the city of São Paulo.

Freedom, exclusivity and personality were the great triggers used to promote the project's commercial launch. As examples of the slogans presented are, "Torre São Paulo, one house per floor; The buyer of the São Paulo Tower will not find a flat like his or her own anywhere in the world, not even on the top floor; Torre São Paulo, a project that the best architects in Brazil would sign, and they did".[1] The proposal worked on the special idea of people's psychological need for evidence of their presence in the urban landscape, proposing a utopian, avant-garde building that would make what seemed impossible, a reality.

The proposal — with a utopian feature and ahead of its time — aimed at a building that would accommodate houses designed independently, and without aesthetic connection within each other, proposing a totally new way to design an apartment building on the world scenario, based on the pluralism of ideas (Fig. 1).

While travelling to Brazil, Gaetano Pesce met the architect and designer Adriana Adam, with whom he conceived the idea of the pluralist residential building. Adriana Adam was also responsible for the interlocution with the commercial managers of the proposal, who showed interest in all the conceptual and aesthetic potential that the project contained.

The city of São Paulo in Brazil was since the beginning the cradle and the site chosen for the implementation of the project. However, the team of professionals initially conceived to participate in the proposal was different. A priori it was intended to name international architects, but the national protectionism around the Brazilian architecture did not allow it.

Adriana Adam then proposed a call for Brazilian architects, forming a team of eleven architecture offices working in the city of São Paulo.

The expectation was to reproduce this type on other sites, listing new architects for each new tower, disseminating the concept and rooting this new typology in the architectural scene.

A meeting was held to present all the professionals involved, and to explain the concepts and technical premises of the proposal, and a draw was also made to define the floors for each designated architect.

There was no interference in the development of the individual proposals, as well as no exchange of information between participants, allowing total freedom of creation, thus ensuring the expected aesthetic result of the building, as an expression of the plurality of architectural thoughts and ideas.

The result was a unique tower composed of eleven duplex apartments, totally different internally and externally, where the different projects are placed in a linear way, and based on a pre-designed base structure, form a kind of vertical street, with one duplex apartment per floor.

The main objective of the article is to present and discuss the concept project developed by the tower's creators, as well as three individual proposed projects, designed by three of the invited architects. An analysis of these proposals is presented, focusing on architectural program, spatial solution, language and expression. A comparative reading allows the identification of differences and similarities, to confirm the presence of the different architectural languages. The aim of the article is to establish the importance of this innovative proposal in the context of Brazilian modern architecture.

In spite of the interest, acceptance and support it generated, the project did not materialize for different factors. Without entering an exhaustive analysis of these factors, these facts can be pointed out as the main causes: in the government of Fernando Collor[2] Brazil lived a strong economic crisis and suffered with a high inflation; between the decades of 1980 and 1990 Brazil had six currencies; finally, the growing high prices of marketing units. One can consider the utopia and innovation of the proposal also adversities, but in the background, lagging behind the economic factors and difficulties of the Brazilian scenario.

2. ARCHITECTURAL PROGRAM

The urban plot for the development of the project with an area of approximately 2100m² was located at the intersection of Rua Gil Eanes and Rua Álvaro Luiz Roberto Assumpção, in the Campo Belo neighbourhood[3], in the city of São Paulo.

The São Paulo Pluralist Tower comprehended eleven distinct proposals of duplex apartments. The levels of the tower would be occupied by the proposals of the following authors: first floor: Miguel Juliano; second floor: Ricardo Julião; third floor: Ruy Ohtake; fourth floor: Carlos Bratke; fifth floor: Paulo H. Casé; sixth floor: Eduardo de Almeida; seventh floor: Marcos Acayaba; eighth floor: Roberto Loeb; ninth floor: Paulo Mendes da Rocha; tenth floor: Vasco de Mello and Tito Livio; eleventh floor: Eduardo Longo.

The idealized infrastructure was that of a high luxury condominium, with 4 parking spaces and 2 deposits per residential unit, security guardhouse, social hall, swimming pool, sauna, party room, bar, gym, children's playground, employees' locker room, caretaker's flat, visitors' parking and gardens designed by Roberto Burle Marx. All of this support infrastructure was designed outside the tower's projection, in small semi-underground buildings, allowing the tower, which was placed diagonally regarding the site, to develop freely, thus ensuring the best presentation of the building to the city.

In a preface in the promotion notebook, Pietro Maria Bardi[4] praises the proposal and stresses that the building will interest other adherents to the proposed Type.[5] He states that it involves changes in principles and opening of original constructive modes in the real estate sector, with an

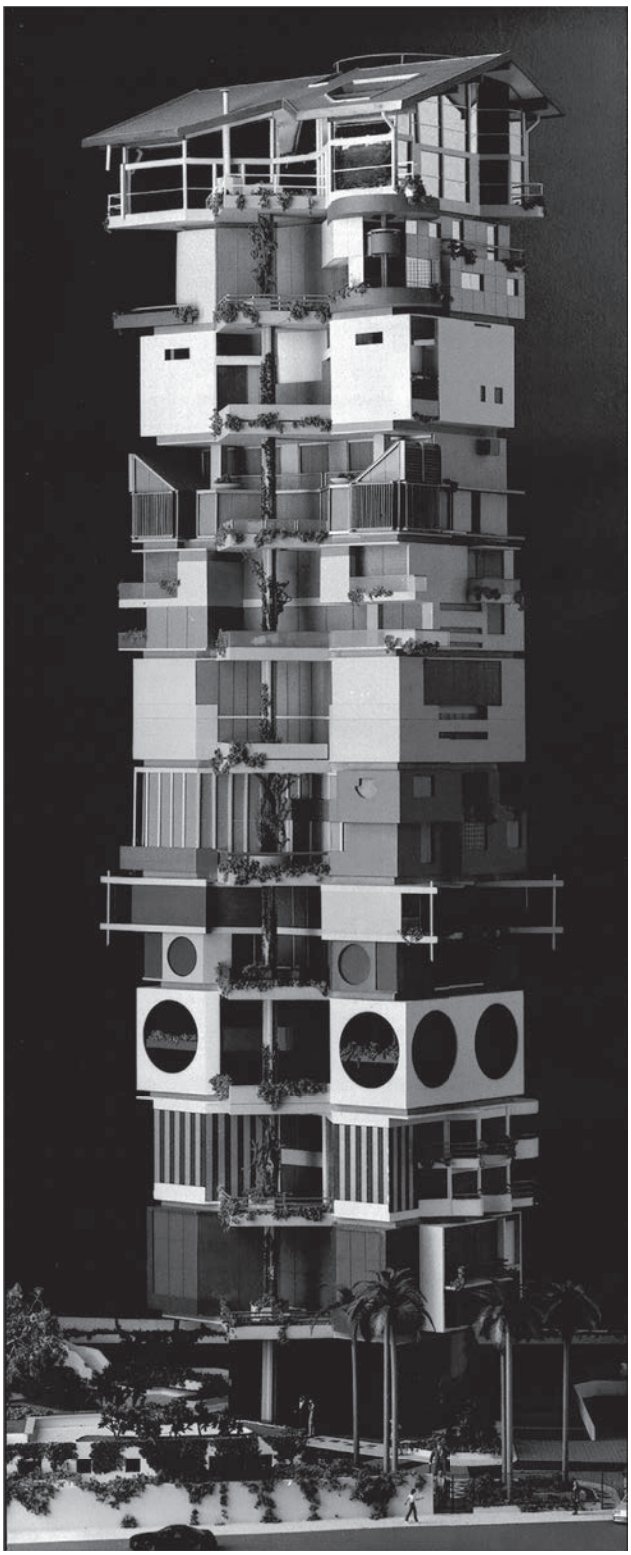


Fig. 1. **Gaetano Pesce, Adriana Adam, Miguel Juliano, Ricardo Julião, Ruy Ohtake, Carlos Bratke, Paulo Casé, Eduardo de Almeida, Marcos Acayaba, Roberto Loeb, Paulo Mendes da Rocha, Vasco de Mello, Tito Lívio, and Eduardo Longo, Torre São Paulo, São Paulo, Brazil, 1990, Façade. © Promotion Booklet of the São Paulo Tower, Construtora Método e Incorporadora Lopes, 1990.**



Fig. 2. **Paulo Mendes da Rocha, Torre São Paulo, São Paulo, Brazil, 1990, Plan Proposal. © Promotion Booklet of the São Paulo Tower, Construtora Método e Incorporadora Lopes, 1990.**

elitist standard. He ends with the statement that the project will produce criticism, attacks and discussions for housing architecture and Brazil.

3. SPATIAL SOLUTION

The Tower Base Structure (TBS) refers to the project developed by the creators, and that later made it possible to incorporate the individual projects of the duplex housing units developed separately.

A technical booklet was developed and delivered to the participant architects, presenting the TBS, as well as the guidelines and standards for the design of the proposals.

The booklet also included key information for the development of the proposals; such as: table of areas, calculation rule for site occupation, volumetric progress beyond the defined slabs, heights between slabs, structural system with dimensioning of beams and columns, vertical circulations, and electrical-hydraulic distribution.

An addendum stated that for commercial viability reasons, a request for the development of two simplex housing units using the same area as would be allocated to one duplex housing unit could be made to the architects.

The TBS project consisted of three independent sectors, as follows: Service Tower, located on the rear façade, intended for the implementation of the vertical circulations of the building, consisting of stairs and service lift; Apartment Tower, this being the area intended for the housing unit, including in the central axis a structural body that housed another vertical circulation, with a social lift and shafts for the passage of electrical-hydraulic installations; and Garden Tower, on the front façade, present only on the lower floor of each housing unit, intended for the open terrace of each apartment.

Like Le Corbusier's Domino House (1914), the TBS ultimately shelters eleven duplex type residential units, a covered ground floor, a basement floor and an attic.

The total area of up to 406.00m² available for each duplex unit, were distributed as follows; 349.50m² for the Apartment Tower, with 60% occupation on the lower slab and 40% on the upper slab; 24.30m² for the Garden Tower; 25.35m² for the Service Tower; and 7.29m² for the social hall.

Despite the existence of the technical booklet, no guidelines were presented on the configuration of the architectural programme, as well as on aesthetics, plans, openings and façades, materials and finishes, allowing the architects total freedom of expression.

The structural system previously conceived for the TBS, was fixed and did not allow changes by the architects. Its design, in reinforced concrete, considered only four pillars (with section of 0.75x0.60cm each), arranged in a rectangular disposition, and a pillar (with an X-shaped section) in the central axis of the Garden Tower. The structural calculation considered the possibility of implementing walls at any point of the slabs, as well as the possibility of supporting a mezzanine structure, made of wood, metal or any other material.

The free height between the floor of the lower slab and the ceiling of the upper slab of the unit (after deducting the structural elements) was 5.50 metres. This allowed the architects to specify the height between the lower and upper floors, having the full 5.50 metres to design the two floors.

The beams were designed to provide openings for the passage of ducts. However, these infrastructural elements would only be dimensioned after the definition of all the architectural designs, i.e., in the executive project phase, a stage that was never carried out.

The existing vertical circulations in the TBS were also fixed elements, not allowing its alteration. However, architects were free to create staircases and lifts between the floors of each unit, regardless of their size, shape or structure. The pre-established circulation of the building allowed access to all floors; however, the choice of which floors would be served was also a decision of the architect in charge.

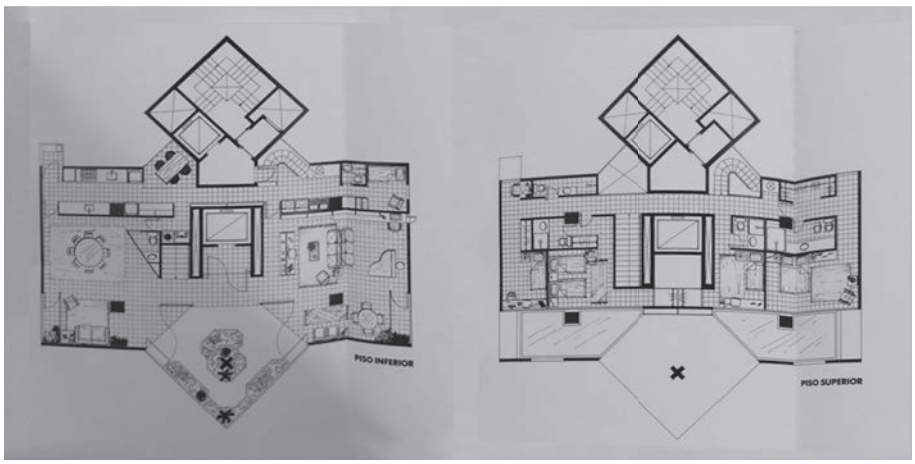


Fig. 3. **Paulo H. Casé, Torre São Paulo, São Paulo, Brazil, 1990, Plan Proposal. © Promotion Booklet of the São Paulo Tower, Construtora Método e Incorporadora Lopes, 1990.**

Although the structure allowed for almost total creative freedom, it also to a certain extent dictated the volumetric proportion of the building through the TBS guidelines. For example, the Service Tower on the rear façade and the Garden Tower on the front façade had a fixed function, from and size, being similar elements between floors when analysed as a whole.

4. DESIGN LANGUAGE AND EXPRESSION

The architectural analysis of the eleven distinct proposals is extensive and thus unfeasible for the present article. So, it is decided to present only three proposals that represent three different architectural languages and expressions found in the tower. The first one is representative of the so-called Paulista School of Architecture[6], while the other two constitute two different ways of contesting the hegemony of this same school.

The article assumes the condition of being a sample analysis, among many other possible interlocutions to be analysed among the eleven different proposals developed, in order to identify similarities, contrasts and projetual identities of Brazilian architecture.

4.1. Paulo Mendes da Rocha's Proposal — 9th floor

Born in Espírito Santo – Brazil in 1928, graduated from the Faculty of Architecture and Urbanism at Mackenzie University in 1954, and winner of the 2006 Pritzker prize, this apartment is composed and distributed as follows: on the lower floor, 70% for the social area in the front zone, connected to the Garden Tower. This area is composed of dining room with support room, toilet, social living with living room, piano, card game table, and a small office; in the side facades a small terrace; all integrated environments and without divisions, except the bathroom. In the rear facade, kitchen, pantry and laundry room; technical terrace and the staff nucleus, with bedroom and bathroom (Fig. 2).

On the upper floor four bedrooms were designed, two suites arranged in the central area of the plan; on the left façade a bedroom/office with a bathroom in the hallway; and on the right façade a double suite with a dressing room.

Details of the project that stand out are: the layout developed by right angle lines and with few divisions, allowing the integration of environments; two bedrooms without doors, a situation observed in other projects of the architect; some environments such as pantry and card game table with double height; lifts stop only in the lower floor; for circulation between floors two staircases were designed, one social and one service, both with access to the corridor of the rooms, and a lift; the facade is white and symmetrical, with few rectangular openings.

4.2. Paulo Casé's Proposal — 5th floor

Born in the city of Rio de Janeiro in 1932, he graduated from the National Faculty of Architecture of the University of Brazil, now UFRJ, in 1958. This programme is composed and distributed as follows. On the lower floor practically ¾ of the floor is destined to social sectors, composed by two living rooms, card game room, access to the Garden Tower and to small terraces, office with suite in the right front façade, and dining room with a social bathroom near the left rear façade. Items such as kitchen, pantry, laundry room and staff bedroom suite are located on the rear right façade. On the upper floor there are three-bedroom suites, one of which is for the couple, a linen room, and a TV room with bathroom on the right front façade (Fig. 3).

Features that stand out in the proposal are: layout with a strong presence of acute angles and diagonal cut-outs; both lifts stop only at the lower floor; creation of only one staircase for the vertical circulation between floors; walkway on the upper floor to connect the environments through the voids created; a terrace that opens to the interior of the flat, thus looking over the living room on the lower floor.

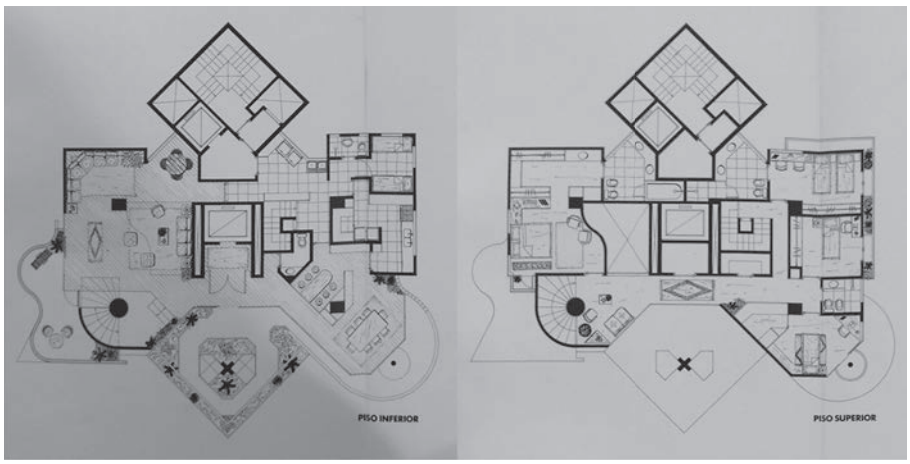


Fig. 4. **Vasco de Mello and Tito Livio, Torre São Paulo, São Paulo, Brazil, 1990, Plan Proposal. © Credits: Promotion Booklet of the São Paulo Tower, Construtora Método e Incorporadora Lopes, 1990.**

The façade is composed of a large window frame modulated with glass, with an expressive presence, which enters the social area in the form of a partition; extrusion movements and cut-outs at right and acute angles; openings in circular, square and rectangular geometries; and the use of strong colours such as red, orange and bluish glass.

4.3. Vasco de Mello and Tito Livio's Proposal — 10th floor

Both born in São Paulo in 1940, Vasco de Mello and Tito Livio are graduated from Mackenzie University in 1964. They present the program composed and distributed as follows: on the lower floor 3/4 of the floor is destined to social sectors as social living, card game table, social bathroom, dining room, and pantry that unlike the other projects analysed, is in the social field and not service. On the right rear façade are located items such as laundry room, kitchen, pantry, bathroom and staff bedroom. On the upper floor two suites are placed, one of them for the couple; two more bedrooms with a separate bathroom; in the hallway, a living room with a view to the Garden Tower, and a wardrobe (Fig. 4).

The layout is characterised by its organic forms, featuring a large presence of curved walls. Some environments arranged at an angle, and walls that do not necessarily follow a Cartesian and symmetrical order stand out in the project, forming environments with varied and non-rational geometric compositions. The social lift stops at both floors and two staircases were created, one social, large and circular, and another for the service with a freight lift in the middle. On the façade, the geometric variation is repeated, marked mainly by the presence of different terraces, circular, rectangular, organic and acute; as well as the movement of extrusion and cut-outs; and the presence of the colours violet and pink in specific points.

5. FINAL CONSIDERATIONS

The São Paulo Pluralist Tower project was cosmopolitan since its inception: designed by an Italian, thought to be built in Latin America, and designed by architects from different Brazilian cities.

Pluralist projects can express to society, regardless of the aesthetic sense, the various concepts, techniques and artistic expressions present in a given place and period, since they elect the same object, in this case a housing unit, to be worked on by different professionals, with distinct styles, techniques and visions.

With utopian characteristics, these projects enable professionals to develop their concepts without prejudice and shyness, manifesting their effective architectural features. The result of the proposal expresses a democratic architecture, in the sense of enabling free artistic manifestation, heterogeneous like modern society, in opposition to the dogmas and dictatorial precepts of homogeneous traditional architecture.

The study of the unbuilt São Paulo Pluralist Tower is important for a better understanding of the Brazilian architectural scene, especially in the period between 1980 and 1990.

It also contributes to improve the studies about the different architectural languages and expressions present in it, all idealized for the same proposal, and under the same guidelines. Finally, it allows the presentation on an international level of a unique typological proposal, which could be lost in time by the simple fact of not having been built.

NOTES

1 Promotion Booklet of the São Paulo Tower (Caderno de Promoção da Torre São Paulo), Construtora Método e Incorporadora Lopes, São Paulo, 1990.
2 Fernando Collor de Melo was the President of Brazil between 1990 and 1992, when he resigned due to an impeachment process.
3 The Campo Belo neighbourhood is today known as Brooklin Novo.
4 Pietro Maria Bardi was an important Italian writer, journalist, curator and architecture critic who migrated to São Paulo in 1946.
5 "Type is the idea of an element that can serve as a rule for a model", Quatremère De Quincy, *Type. In Encyclopédie Methodique — Architecture*, Liège, chez Panckoucke, Tome III, 1825.
6 Term used to identify the architecture produced by a group of São Paulo architects led by Vilanova Artigas.

Session 3-d

MODERNIST HOUSING ACROSS COUNTRIES AND TYPOLOGIES

Ola Uduku
Research Professor in Architecture at the Manchester School of Architecture

This housing-themed session engages us with three varied analyses of housing. The thread of modernist housing and planning runs through all three submissions. Pottgiesser & Dragutinovic's analysis of community involvement in post-war planning in Yugoslavia gives a different view on how the public was able to engage in planning at a level different from the state or private providers. Our contemporary involvement with the commons and what this might contribute to current day planning is something for this session to investigate. Moore and Mosquera's history and analysis of modernist housing in Kuwait provides a good contextual introduction to how contemporary housing has developed in this middle eastern nation. The current issues related to housing appreciation and heritage are rightly brought up in the presentation, and will provide further material for discussion. Finally, Salve's study of cross-shaped housing types gives an in-depth analysis of how housing form has influenced housing and other institutional forms such as prisons and hospitals, from the 15th century to the present. Contemporary post-pandemic issues of ventilation and daylighting are also discussed in relation to such planning. In all the session provides a forum of discussion and analysis of these issues and others which have in the past and still could influence our attempts in the documentation of post war housing heritage in Europe and the Middle East specifically but also within a global context.



REUSE OF COMMON SPACE AS A TACTIC FOR MASS HOUSING REVITALIZATION

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ABSTRACT.

Urban decay and obsolescence of post-war mass housing is a global phenomenon. Although the reasons for housing deterioration are different, the altered relationship between public and private spaces is essential for the mass housing. The research hypothesizes that strong polarisation of the urban landscape into private and public is firmly influencing urban decay and obsolescence of post-war mass housing neighbourhoods. Taking New Belgrade blocks as the case study, the research investigates this correlation, following the gradual transformation of the urban landscape of modernity in parallel with different factors. Moreover, the research sheds light on the specific Yugoslav housing policy and developed collective self-management of the urban commons from the time of construction. Although these strategies have been neglected over the time, they are valuable for contemporary, increasing discussions on community-driven approaches for comprehending and managing change in urban environment, specifically for residential neighbourhoods. Furthermore, the research is analysing different contemporary strategies and community practices that are reinventing the public-private relationship in the context of mass housing, contributing to the development of a methodology for mitigating obsolescence and causes of housing deterioration. The methodology is revitalizing the important value of common spaces and the role of community and is reusing the modernist idea of co-creation, contributing to inheritance of the modernist concepts. Moreover, if applied, it would increase liveability of urban space and well-being of its residents, contributing to transformation strategies for adaptation to current needs, and therefore ensuring vitality of mass housing as a core typology of the Modern Movement.

1. INTRODUCTION

The contemporary discussions on community-driven approaches for comprehending and managing change in urban environment, and especially for revitalization of residential neighbourhoods, are being increasingly important. In context of privatisation and commercialization of public and common spaces in cities, increased individualisation and struggles for social justice, the concepts of *urban commons*, *common spaces* and process of *commoning* are re-emerging today, both in the scientific context and urban practices.

Stavros Stavrides, a researcher, teacher and activist, sees commons as an open system shaped by people who believe themselves to be equally responsible, both in maintaining and repeatedly questioning them. What is also important to stress, he clearly distinguishes common space from what we call public space, in that "common spaces are developed as a common ground, as areas of negotiation or of collective endeavors created out of necessity. In contrast, public space has always been connected to the governing body that *authorizes* its use." Common space, is created through participatory processes, and it can always be in the making; "emerging as people collectively develop their relations."[1] He is partly basing his presuppositions on the work of the anthropologist and geographer David Harvey, that is describing commons as a relation of people with the conditions they describe as essential for their existence, collectively.[2] Moreover, the increasing discussions on the topic are being influenced by the economist and Nobel Prize winner Elinor Ostrom, that is addressing the issue from the economics perspective, showing that natural resources (like forests) are highly effectively managed by "commons-like organisations that allow a self-managed community of users equal access, without private ownership or state control".[3] The self-management, as a very important aspect for urban commons, was present already in the post-war period in Yugoslavia, and it will be specifically addressed in the Chapter 3.1. This aspect, but also other ideas and concepts related to urban commons, common spaces and resources (that will be addressed in the Chapter 3.2.), are especially relevant for the management of mass housing. The neglected collective spaces of these neighbourhoods are crucial for their vitality. Namely, these neighbourhoods were planned in a different socio-political context, when the sense of community had an important role, and so the notion of common space was truly significant. Therefore, this paper investigates the potentials of common spaces to support the revitalisation process of mass housing, focusing on New Belgrade housing blocks as a specific part of the modernist post-war mass housing phenomenon.

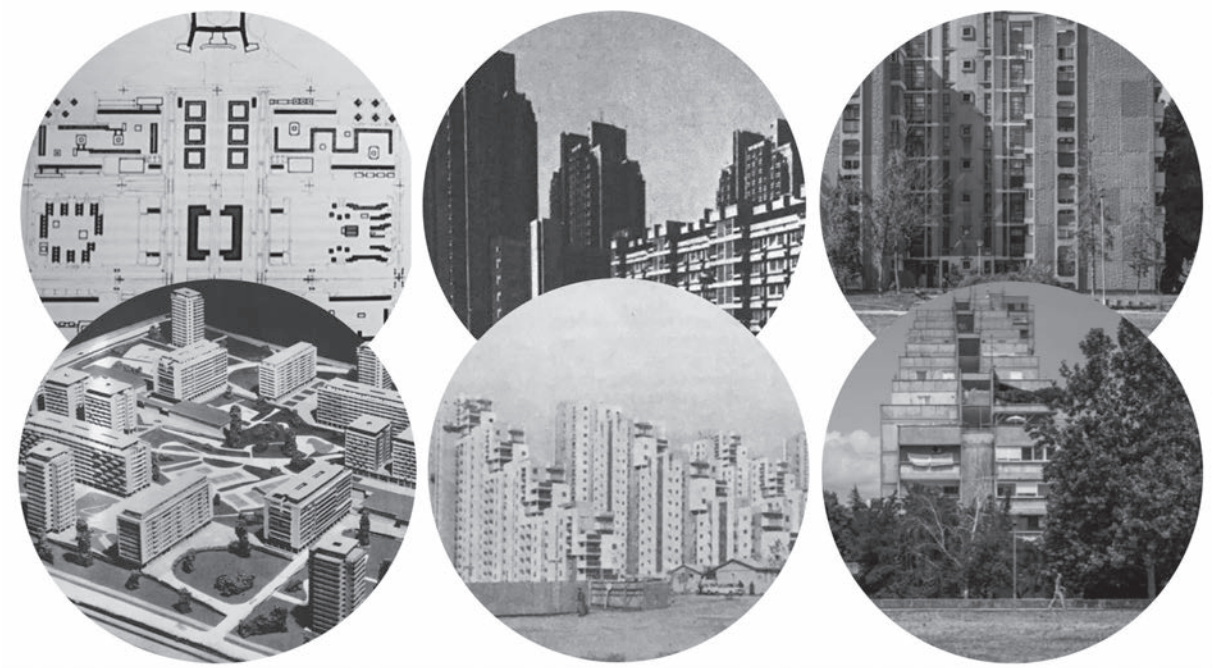


Fig. 1. **New Belgrade: a) planned, b) built and c) lived space. © Illustration Anica Dragutinovic, November 2018, image credits: a) Group of Authors, *Novi Beograd 1961*, The Direction for the construction of Novi Beograd, Belgrade, 1961. b) Journal "Izgradnja", 1978. c) Photography Ogino Knauss, www.calvetjournal.com/features/show/6695/suspended-city-roaming-streets-of-novi-beograd.**

2. OBSOLESCENCE OF THE URBAN LANDSCAPES OF MODERNITY: THE CASE STUDY OF NEW BELGRADE BLOCKS

Today, mass housing areas are being characterised by urban decay and obsolescence on different levels. Privatisation and commercialization of public and common spaces on one hand, and individualisation and suppressed importance of community on the other, are strongly affecting the issues these neighbourhoods are facing. A very important case study for the phenomenon of interest is New Belgrade (Serbia, or at the time of construction Socialist Yugoslavia), one of the largest modernist post-war mass housing area, with around 250,000 inhabitants today. The importance of the case study is based on the notably present correlation between the transformation of the relationship between public and private spaces over the time and urban decay and obsolescence of the housing blocks. Although, historical narrative of New Belgrade itself is not the focus, the chapter aims to show this correlation, following the gradual transformation of the urban landscape of modernity (Fig. 1) in parallel with housing policy changes, ownership, process of privatisation and other factors.

New Belgrade emerged in the first post-war years from marshy land on the left bank of the Sava River, opposite to the historical Belgrade. It was conceived as a city to symbolize a new beginning of the socialist state with a nation-building agenda. Although planned as a centre of administration, culture and economy, the housing shortage came to the forefront, and the city was eventually built in the 1960s and 1970s as a city of housing.[4]

Affordable housing was a focus in whole post-war Europe. However, in the East-European countries it had specific consequences in terms of ownership and housing policy. The whole New Belgrade was planned and built as a socially owned city. Consequently, housing was a common good, and flats were socially owned, just as streets or parks.[5] The housing policies in Yugoslavia, such as the "Right to Residence", [6] as well as the ownership situation, were very important for realisation of the mass housing project. One of the key elements in the design of New Belgrade housing blocks was the dialogue between private and public. This was achieved, firstly, through the ownership situation. Namely, the status of being socially owned has blurred the line between public and private spaces within the blocks. The flats were indeed the most private zones, but even the flats were not privately owned. The fine gradient towards the public was further supported by common spaces within the blocks, for example local community centres and urban common spaces. The collective ownership, and therefore design of the blocks as a whole (from private to public spaces, or individual to collective spaces), was supposed to enable communal and participatory use of the facilities. However, before even being completed, the modernist project already began its socio-spatial transformation. The so called post-socialist transformation, caused a set of changes: housing policy change, privatisa-

tion of the housing and eventual urban landscape transformation. By the end of 1993, 95% of socially owned housing was privatized in Belgrade. New Belgrade flats were practically shared among the sitting tenants and political elite for extremely low prices, and it served as a "shock absorber" in the post-socialist transition.[7] The privatisation prevented the social obsolescence — the issue that is very often present in case of mass housing in Europe and is claimed to be one of the main reasons for their demolition today.[8] However, technical and functional obsolescence emerged due to the failure of the state to create legally clear housing policies and better maintenance regulations.[9]

This set of socio-political and economical changes marked the emergence of the post-socialist urban reality and contestation of the modernist landscape, while questions about the opportunities of collective and cooperative appropriation of space remain largely unresolved.[10] Instead, the usurpation of public spaces intended for the community, their privatisation and transformation into large retail and business facilities has been occurring until today. The commercialisation of these spaces did change the role of urban planning "turning its back on participatory, integrated planning".[11] Moreover, the modernist residential buildings are being excluded from the process of formal transformation and left to decay. The polarisation of the urban landscape into public and private is strongly affecting their condition, and therefore is recognised as the core issue. In order to overcome it, revitalisation of the concepts of common spaces and collective management of housing and urban spaces is seen as crucial for the issue. In further chapters, potentials of these concepts and community-driven approaches for co-creation of the change will be analysed.

3. COMMUNITY-DRIVEN APPROACHES FOR MASS HOUSING REVITALIZATION AND CO-CREATION OF THE CHANGE

The focus of the chapter is on the contemporary community-driven approaches for comprehending and managing change in urban environment, specifically for residential neighbourhoods. Before analysing contemporary practices that are reinventing the public-private relationship in the context of housing (3.2.), the paper sheds light on the specific Yugoslav housing policy and collective self-management of the urban commons from the post-war period (3.1.). Although neglected over the time, it is valuable intangible heritage that can contribute to the development of a methodology for mitigating obsolescence and causes of housing deterioration.

3.1. Yugoslav Collective Self-management of the Commons

The financialization of the mass housing in Yugoslavia, and namely New Belgrade housing, was consequently directing the ownership situation, policies and management of the housing. The housing was financed by a social housing fund, which later decentralized: further transferred to the state authorities and socially owned enterprises that became the formal investors. The socially owned enterprises were organized according to the workers self-management system, and after construction of a building or a neighbourhood, an enterprise (workers) was responsible for the distribution of flats. As a result, flats were not state owned, but socially owned.[12]

Societal ownership of New Belgrade blocks in general was "based on the ideological premise of the right to a residence as a universal right for the common public good".[13] Lefebvre theory, that Blagojevic refers to, and especially the point where he reasserted his concept of the right to the city in direct relation to self-management, is of great importance. The right to the city "comes as a complement, not so much to the rights of man ... but to the right of the citizen" and "leads to active participation of the citizen-citadin in the control of the territory, and in its management ... also to the participation of the citizen-citadin in the social life linked to the urban".[14]

The influence of these social factors on spatial practices and management of the housing was present. The collective ownership was supposed to enable communal and participatory use and management. However, with the change of ownership status within the post-socialist, neoliberal reforms at the end of the 20th century, the use value, based on the premise that a place of residence is not a commodity, is replaced by the rising property value within the real estate market.[15] Consequently, usurpation of urban spaces of the blocks, intended for the community, is neglecting the importance of citizen-citadin participation in co-creation of the urban reality.

3.2. Contemporary Strategies and Community Practices for Revitalization of Residential Neighbourhoods

The concepts of collective management of housing and urban spaces are being revisited within the contemporary discussions on community-driven approaches and practices for revitalization of residential neighbourhoods. The four projects (**Fig. 2**) that are unfolding full potential of the contemporary concepts of *urban commons*, *common spaces* and process of *commoning* will be analysed in this sub-chapter.

The right to housing and the right to the city through commoning processes has been addressed in the Spreefeld cohousing project in Berlin (BARarchitekten, Carpaneto Schoeningh Architekten, FATkoehl Architekten, 2013). The project presents an alternative to the privatization of land, acting in the interests of the common good — in that the waterfront remains accessible to the public. The ground floor feature "option spaces": shared spaces, "intentionally left unfinished by the architects, to be completed by the community according to their needs and desires". One has become a multi-functional event space with shared kitchen (**Fig. 2**: Spreefeld), the other a wood workshop, and the third



Fig. 2. **(a) Kalkbreite, Mueller Sigrist Architekten, 2014, (b) R-urban, AAA, 2008, (c) Dragon Court Village, Eureka, 2013, (d) Spreefeld, BARarchitekten, Carpaneto Schoeningh Architekten, FATkoehl Architekten, 2013. © Image credits: (a) Martin Stollenwerk, (b) Andreas Lang, (c) Ookura Hideki / Kurome Photo Studio, (d) Andrea Kroth, published in: C. Hiller, et. al. (ed.), *An Atlas of Commoning: Places of Collective Production*, ARCH+ Journal for Architecture and Urbanism, 2018.**

a space for art and culture. The common spaces of Spreefeld cohousing can be used also by non-residents, offering meeting places for the broader neighbourhood community. "The project unfolds its full potential as a materialized manifesto for an alternative, bottom-up approach to urban renewal".[16]

The Kalkbreite cooperative (Mueller Sigrist Architekten, 2014) is an example that is striving for an economic, cultural, and ethnic diversity. The residents live in a community household, where 20 mini apartments share a common dining space and a kitchen. Some residents live in so-called cluster flats. There are also "joker rooms", which residents can rent when hosting extended family. "The variety of innovative apartment typologies in this project transgresses conventional notion of private and public space, reflecting the broad array of social configurations and living constellations in which we live today".[17]

An alternative for the modernist separation of functions comes from the Japanese Dragon Court Village project (Eureka, 2013), that is combining living and working, as a "(re) productive space that facilitates a community-oriented form of cohabitation".[18] The borders between public, common and private space are dissolved through spatial porosity and mix of uses.

The paradigm of community has been present in projects on different scale as well. R-urban is a network of resident-run facilities: an urban community farm, a recycling lab, a unit for communal living, organized as "civic hubs in a circular neighbourhood metabolism". Several leftover sites in France have been transformed into urban community gardens (Atelier d'Architecture Autogeree, 2008), together with neighbourhood communities. The participatory practice aimed to co-produce ecological, social and cultural resilience — a system that is adaptable to changing circumstances. *AgroCite* is "a testing field for establishing principles of circular economy", empowering citizens to become active "prosumers" (producers and consumers at the same time). Residents are involved in the change through collaborative spatial practices. The project shows the social relations are "integral to the production of space that will ultimately make commons sustainable and resilient".[19]

The four projects are questioning the notion of community as well, focusing on the user, not only as a *resident*, but rather a *citadin*. As Stavros Stavrides argues, common spaces should "spill beyond the boundaries of any existing community; outsiders, foreigners, and newcomers should be invited into them, constantly".[20]

4. REUSE OF COMMON SPACES OF NEW BELGRADE BLOCKS

This chapter presents a study on the identification of the potentials of urban common spaces of New Belgrade blocks, intended for community but neglected and underused over the time. The method of explorative mapping of impulses of modernism in everyday life and their reading and interpretation was applied, leading to proposals for their improvement. The focus was on re-articulation of the dialogue between public and private, and adaptive reuse of the neglected common spaces and elements of architecture, that would emerge as materialized added value for the housing. The research framework was a student workshop organized by the author (as part of her ongoing PhD re-

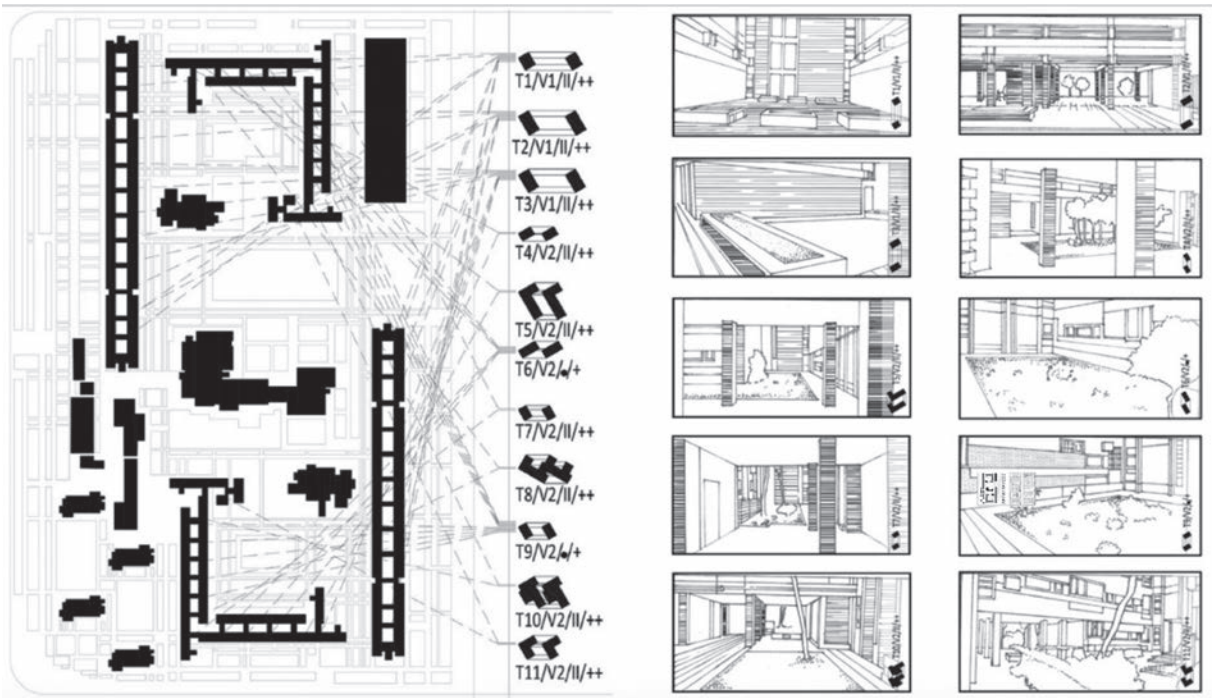


Fig. 3. **Identification of the atrium typology in the Block 23 and visual interpretation of the atrium ambiences. © Illustration Research team C3: T. Ciric, M. Ristic, J. Ristic, J. Korolja, December 2018.**

search) at the Faculty of Architecture in Belgrade in the Fall Semester 2018/19. In the workshop participated 55 students of Bachelor and Master Studies of Architecture.

The first part of the investigation was applying a systematic observation and photo-documentation mapping specific socio-spatial phenomena. For example, research team C3, investigating on the block 23, mapped atriums of the linear buildings within the block 23 as an example of urban common spaces, spaces between public and private. After observation and photo-documentation, the group analysed the atriums and classified different types (Fig. 3). The atriums were observed and understood as public interiors of the blocks. Therefore, reuse of these spaces would improve the current tension between public — private, individual — collective, compact — fragmented, durable — ephemeral.

The further mapped phenomena were obsolete facades, open public spaces dominated by cars, but also modernist composition of the blocks leaving underdefined surrounding landscape in which the buildings are floating in. The analysis of the surrounding landscape was especially addressing the relation between built and unbuilt. These groups were investigating on the potential of *programming the landscape* as a tactic to define the space, but still leave it open and porous. The tactic is mediating between the scales of the blocks — starting from micro points in the landscape, multiplying the identified ambiences, and reactivating the whole block eventually (Fig. 4).

5. CONCLUSION

The paper shows the importance of commons, and both social and spatial relations, for (re)production of sustainable and resilient neighbourhoods. The research on the contemporary practices, but also policies and management from the socialist period, can contribute to the further development of the methodology for mass housing revitalization through reuse of common spaces. The research focuses on New Belgrade blocks, and eventually presents the study on potentials for *spatial* interventions within them. In the next step, the *social* process of production and management of these spaces will be further investigated. Moreover, the concept aims to be generative, and therefore its applicability to similar case studies in Europe, but also Non-European countries in Africa, Asia or Latin America is to be investigated further.

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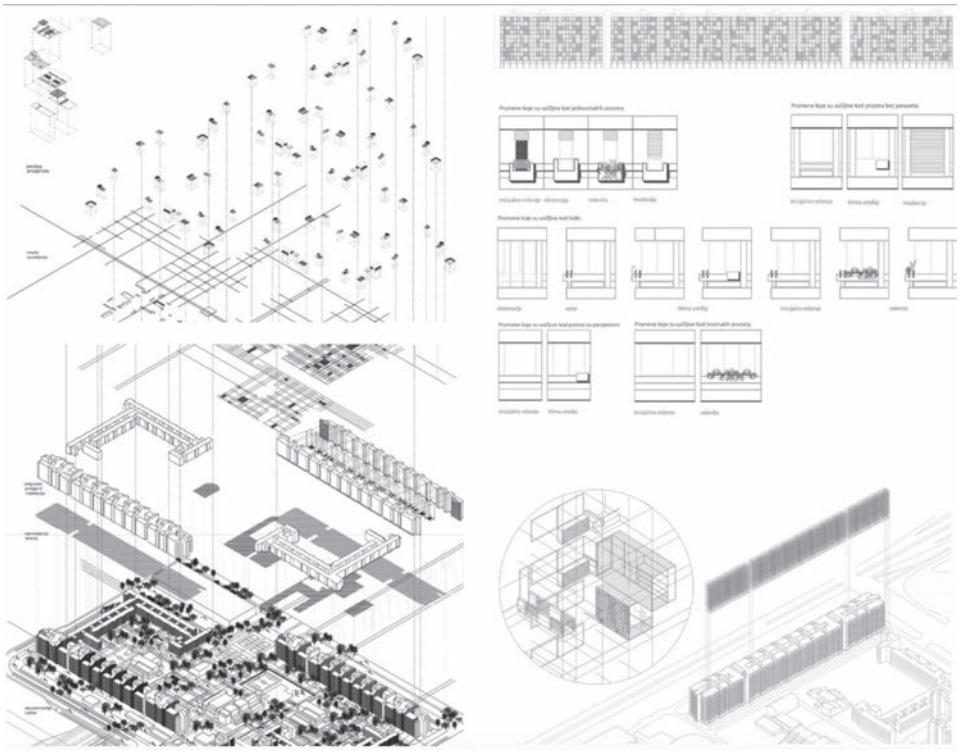


Fig. 4. **Transformation concepts for the Block 23 (a) Landscape programming, (b) Facade re-design. © Illustration (a) Research team C1: A. Maksimovic, N. Djuric, K. Dimitrijevic, M. Bozovic, (b) Research team C2: Z. Stanojevic, A. Stojanovic, N. Lalic, O. Miskovic, December 2018.**

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RESILIENCE IN HOUSING: THE CASE OF THE CTT BUILDING, LUANDA

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ABSTRACT.

Buildings over the years have reduced their ability to respond to the requirements of human activities, in the face of climate change and the changes imposed by the economy based on demands for comfort and energy efficiency. Given this state of vulnerability in housing, considering resilience as an adaptive capacity is a necessity. This article investigates indicators of resilience in buildings, considering general and environmental comfort (thermal, acoustic, luminous). Theoretical research and the application of post-occupation assessment (APO) are used. APO applies to a collective housing building (example of modern architecture) in Luanda. The CTT building can be considered a reference of applicability in Luanda. Technological rehabilitation (retrofit) is presented as an alternative to demolition. It is admitted the revitalization of the building preserving original aspects and adapting it to the new requirements and standards. With the results it is intended to foster discussion on the indicators of resilience in housing buildings, its assessment tools, shows that the modernist style of buildings can be adjusted for the years 2020 and contribute to the National Program of Urbanism and Housing.

1. INTRODUCTION

1.1. Need to Adapt

The needs of populations and housing must respond to multiple aspects, such as responding to the climate (Corbela, 2011), ensuring adaptive comfort (Sato et al., 2014), environmental performance (Pinheiro, 2006) supporting extreme events (Alves 2014: 1), adapt to socio-economic conditions (Correia, 2012) demanding that the relationship between the dynamics of development of societies and the resilience of cities and buildings be understood.

This article analyses the principles of modern architecture (simplicity, functionality, integration, lighting, spatial continuity and free plan), in order to be able to constitute indicators of resilience of residential buildings (hypothesis).

This article derives from the research of a doctoral training program in the area of thermal comfort in housing in Angola, under development at the Instituto Superior Técnico (IST-UTL) and correlates the work with the ongoing research project called "Middle Class Mass Housing in Europe, Africa and Asia"[PTDC / ART-DAQ / 30594/2017]. whose case study is the CTT building. Aiming to link performance as a basis for resilience.

1.2. Housing in Angola. What is the Scenario?

Residential buildings are essentially a shelter (Roaf et al., 2009; Nicol et al., 20129), and therefore they must offer comfort and provide satisfactory environmental conditions for use. The National Housing and Urbanism Program in Angola (2004–2019) has raised some criticisms that reinforce the vulnerability of the construction sample, characterised by poor spatial, and constructive quality of housing, the non-observance of changes in family profiles and their real needs, the periphery of the sets, the lack of infrastructure and an urban design that integrates them to the nearest existing cluster, the use of models from different geographies.

The modern built heritage of housing in Luanda is vast, abandoned and unprotected. We intend to analyse these elements in the case study, in the Correios building (CTT) to understand "how and if" buildings of modern architecture, have the capacity to resist, adapt and transform in the face of the imposed impacts and the unforeseen impacts (Amaral, 2018) of a natural and socio-economic nature.

An attempt is made to re-read the legacy of the production of modern architecture in terms of its functionality, among other principles of urban morphology and the modern building, rather than promoting the simple return to its form (Melo, 2018).

2. METHODOLOGY

The methodology was based on the analysis of data collected in the housing building of CTT in the district of Correios, Rangel in Luanda. Documentary analysis was carried out with bibliographic research: articles, academic papers, case studies, information available on the internet; with fieldwork, gathering information in the apartments studied and collecting opinions from residents available for this purpose.

The survey considered: (i) historical survey; (ii) conservation status assessment; (iii) positioning in the neighbourhood as a whole; (iv) survey of the built physical object; (v) post-occupation assessment (APO) with the recording of changes in the building's common interior spaces, in the housing units; (vi) registration of changes to the building's façades; (vii) analysis of interior thermal comfort; (viii) gathering the opinion of residents about thermal comfort to assess the sensation and thermal preference under existing conditions, based on the adjusted model of Matias (2010) and Lamberts (2016) and (ix) discussion of the interconnection of performance with resilience.

3. RESILIENCE. A RESPONSE TO CHANGE

Urban resilience is considered in the New Urban Agenda-Habitat III, 2017 and in the Millennium Development

Goals as the agent of resistane to the vulnerabilities of cities and as an opportunity for sustainable development (UNISDR, 2017). Given this scenario, how to measure adaptability (indicators) and what qualities (attributes) should cities and buildings have to be resilient? What do buildings inserted in the constantly changing urban context need to resist the vulnerability caused by different impacts (Bortoli, 2018)? Resilience is a common concept in ecology, physics and psychology. Traditionally, resilience is understood as the ability of a system to absorb disturbances and reorganize itself when subjected to changes, while maintaining its essential functions, identity and mechanisms (Walker, et al. 2004; Thackara, 2009). In the built environment, the theme has begun to be more in-depth in recent times. Habitat III, 2016, thematic document 15 considers that resilience recognises the urban area as a dynamic and complex system that continuously needs to adapt to various challenges, in an integrated and global way, in which the urban system can be understood at from physical (example of infrastructure) and spatial (example: urban planning and design) scales. Frota and Schifer, (2014: 23) highlight resilience as a quality of the living organism, like the human body which, when exposed to cold or heat, triggers the thermoregulatory mechanisms to maintain homothermia in which these mechanisms can be understood as adaptive capacities of man to adapt to changes in the apprehension of external temperature. Nunes and Pinheiro (2019) highlight the importance of resilience being evolutionary and including the connection to performance. Within the scope of this research, resilience is understood as the capacity of the building to resist, adapt and absorb changes of a physical, environmental or social order, maintaining its normal functioning without collapsing. It is the ability of a system to function even if a part of it is damaged and the recovery from the crisis occurs without losing its main function (Melo, 2000:45).



Fig. 1. **(A) The building in the city.Luanda plant. Redesign Inês Lima e Fernão S. de Carvalho, 2018. (B) Neighbourhood, of Post Office, CTT building. August 2019. © Google Earth, 2019. (C) Urban Plan 1968. Correios neighbourhood,. Luanda, Angola Inês Lima and Fernão Simões de Carvalho, 2018.**

4. THE CASE STUDY

Luanda coastal city inserted in the zone (Bsh) It is characterized by excess heat and relative humidity of the air. In the hot season the weather is uncomfortable.

4.1. The CTT Building

The CTT building in the Correios neighbourhood, Rangel in Luanda, intended for collective housing for employees of the Telegraph and Telephone Post Office (CTT) Fig. 1-A & B, is the only building built of the urban project by the architect Fernão Simões de Carvalho (1968–1969). For reasons of context at the time, the construction of the urban project did not continue. The intervention area, at that time, was on the edge of the city of asphalt and the suburban area; currently with the ruptures of the historical process, the discontinuities of its urban and constructive development the area is considered suburban. (Martins, 2000)

4.2. Historical Survey. The Planning in Section

The draft of the urban plan of the neighbourhood of Post Office (1968–1969) integrates the single-family housing; collective housing; and equipments (Fig. 1-C).

One of the strategies of the Modern Movement in the search for new typologies in collective housing was the technique of "planning in section" — based on the development of architectural design from the study of the transversal section(Perez et al., 2020). The application of this model can be perceived in the organization of the CTT building, which presents a solution of housing cells connected by a staircase and the slab of the apartments undone by floor. The possibility of openings on two opposite facades, allowing cross ventilation, the undone location of the floor of the apartments giving more privacy to residents, the preservation of

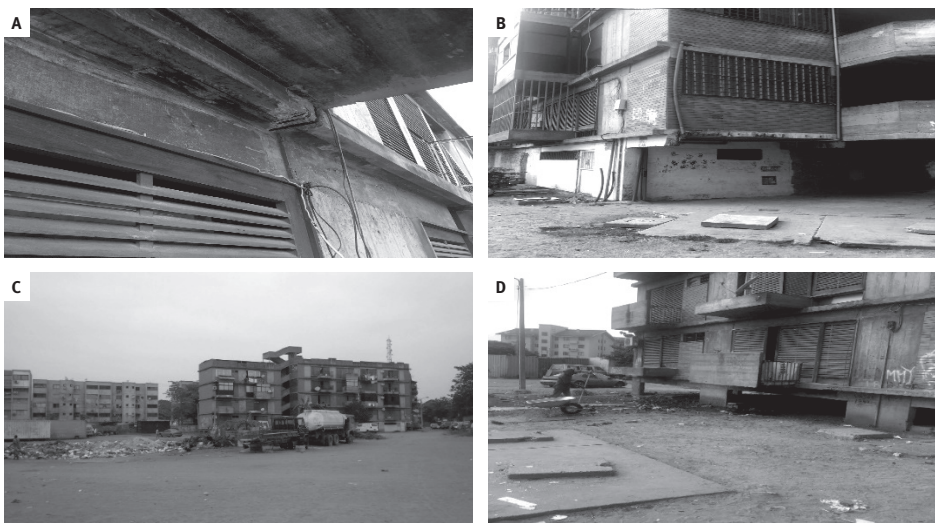


Fig. 2. **(A) Cracking, beam armor dcarnating, Humidity. (B) Water and sewage Exterior network. (C) Isolated building. (D) Poorly harnessed free space.**

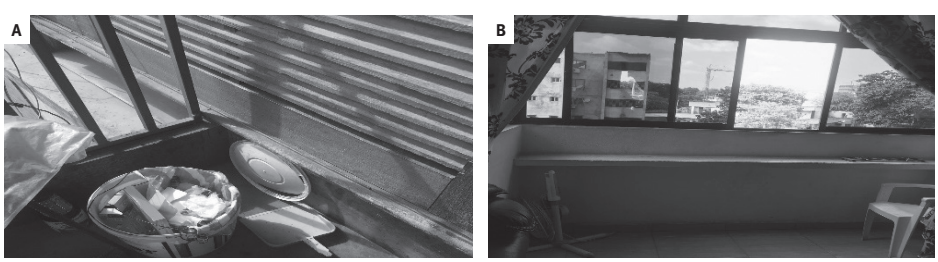


Fig. 3. **(A) Flower space used as storage. (B) Integrated balcony in living room.**

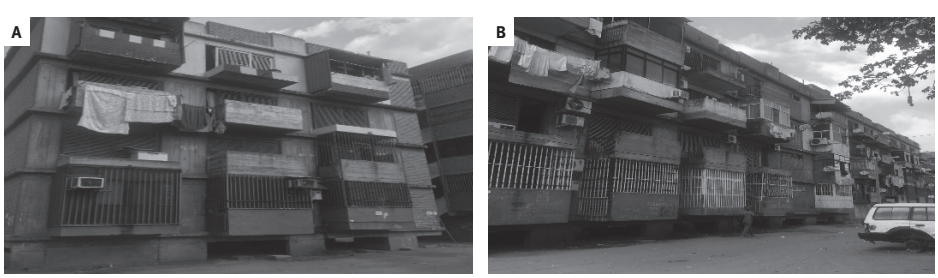


Fig. 4. **(A) Balcony and flower space closed. (B) Ground floor balconies grilled.**

the intimate area in the apartments.

4.3. Registration Conservation Status (August 2019).

The building's residents have a different profile from the one considered in the initial project. There is a lack of maintenance of the technical networks, and an absence of maintenance actions on the building . The free space continuous to the building has no rule. It presents pathologies such as moisture and cracking in the walls, reinforcement of stripped beams, inoperative water and sewage networks, a poorly functioning electricity network (Fig. 2).

4.4. Building Transformations

The ground floor spaces, initially intended for apartment storage and service areas, are converted into storage spaces. The service entrance space was turned into the kitchen, the occupation of planter space turned into storage, and the closure of the balcony to expand the living room (Fig. 3).

The changes in the balcony and flower box introduced on the facades are the result of the need to increase the apartment space. The ground floor balconies are grilled for safety reasons (Fig. 4).

4.5. Interior Thermal Comfort

The characterisation of interior spaces in Luanda is based on the situation of a "very humid" climate according to the one proposed by Firmino (et al., 2015 / Fig. 5).



Fig. 5. **Thermal comfort diagram as a function of temperature and relative humidity (Firmino, et. al, 2015).**

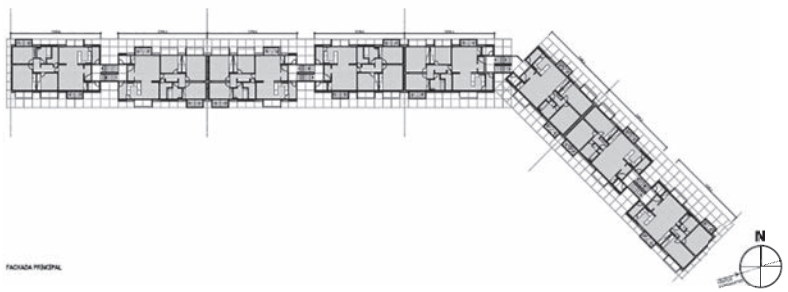


Fig. 6. **General building plantCTT, Luanda. Inês Lima, 2018.**

4.6. Assessment of Thermal Comfort. Analysis of the Sensation, Estimate and Thermal Preference of the Residents of the CTT Building.

The CTT building with the ground floor raised above the ground, has an orientation along a longitudinal axis parallel to the north-south direction, constituting an isolated block in a free area, without obstruction and away from the remaining buildings in the vicinity. It consists of four double blocks, each integrating two wings connected by an open stairway in tropical fashion. The thirty-two (32) apartments are at different levels of level; the apartments located in the middle, have two facades facing the outside, the apartments at the ends of the building have three, which favours cross ventilation and somehow natural lighting inside the apartments (Fig. 6).

The thermal comfort evaluation was based on two moments (Silva, et al., 2012). The first with the collection of names, age, clothing used, activity and physical space lifting. The second moment, with the analysis of the sensation, estimation and thermal preference of the residents.

a) The scope of the "sensation" refers to the thermal state of the resident at the time of the conversation-inquiry. Given the thermal environment of the moment of the conversation, the question was asked: How do you feel at the moment (Table 1)?

The thermal sensation of the residents indicates that the interior environment of the room at the time of the conversation was good this morning. The answers also gain acceptance on the neutral level (sti = 0), claim to be neither cold nor hot at the time of the conversation, held in the cacimbo.

The hot season is comfortable with the open windows and cacimbo season is comfortable, but it needs sweater.

b) The "estimative" scope, relates the condition in which the resident is at the moment. How do you consider (how is it) the thermal environment (eti) at the moment? (Table 3).

The thermal estimate in CTT buliding indicates that it is slightly comfortable. They say that the room is comfortable, but that at certain times of the day in the hot season (late morning and early afternoon) is warm and uncomfortable (in the night with de windows closed).

c) The scope of the "preference" evaluates the preference of the resident at the moment and relates the condition in which the resident is at the moment, with the following question. How would you like the thermal environment to be right now? (Table 4).

30% of the dwellwers preferred it to be less hot (slightly colder) and in 70% Huambo preferred it to be as it is in that moment.

Evaluation of the importance and satisfaction of the interior space environment (Table 5).

Very cold	Cold	Colds Slightly	Neutral	Hot Slightly	Hot	Very hot
-3	-2	-1	0	+1	+2	+3

Table 1. **Seven-point thermal sensation scale (sti).**

CTT Building-, Luanda		
Designação	**Yes**	**No**
Hot house in hot season	30%	70%
Cold house in cacimbo season	50%	50%
Comfortable	70%	30%

Table 2. **Thermal sensation dwellers. Evaluation in the two epochs (La Cruz et.al, 2018).**

Very Uncomfortable	Very Uncomfortable	Neutral	Slightly comfortable	Confortable

Table 3. **Five-point thermal estimation scale (eti).**

Very more cold	Very cold	Slightly more cold	Just as it is (neutral)	Slightly more hot	More hot	Very more hot
-3	-2	-1	0	+1	+2	+3

Table 4. **Five-point thermal preference scale (pti).**

CTT Building - Rangel, Luanda	70% entre 5 e 4 30% entre 2 e 1
Level of **importance** relative to thermal comfort	
Level of **satisfaction** regarding thermal comfort	70% entre 2 e 1 30% nível 3

Table 5. **Level of importance and satisfaction regarding thermal comfort. Scale: 1 to 5 1. Very Low 2. Low 3. Medium 4. High 5. Very High.**

5. RESULTS AND DISCUSSION

Twenty-four apartments were occupied, eight apart-

Total Apartments	Occupied Apartments	Sample	Sample Percentage
32	24	8	32%

Table 6. **Apartments. Sampling and percentage.**

ments were visited and its residents were interviewed (32%, Table 6). The conversation was organised to assess the level of satisfaction of residents in relation to technical, functional and behaviours in the built environment.

In relation to the neighbourhood, the implantation of the building, free from the constraints of street alignment and the idea of a block, shows a rupture with the urban morphology of the traditional city. The modern morphological principles related to urban resilience, such as the collective appropriation of the soil, the neighbourhood unit, the high density, the low land occupation and the implantation for better sunshine, are evident in the neighbourhood.

The building has a favourable orientation to winds and shading. No measurements of the environmental variables were carried out inside the apartments, however the surveyed residents attached significant importance to thermal comfort and expressed satisfaction, emphasising that with open spaces the house has natural air conditioning. The surveys were carried out during the cacimbo season (July and August 2019), in the morning period (availability). Conversations in the apartment took place with the available residents.

Regarding functionality, the answers converge to a satisfactory level regarding the distribution of areas with the separation of the social and private areas, the existence of cupboards and storage, a light and ventilated living room.

The surveyed residents are of two age groups: between twenty and thirty years and above fifty-five. During the conversation the residents were "sitting, talking and at rest"; the clothing in use corresponded to cacimbo clothing, with light sweater.

Regarding the adaptation to the indoor climate mentioned by Roriz (2003), the evaluation in the apartments shows that the thermal sensation can be influenced by the expectation regarding the previous experience and the aspiration of the moment. They consider the two-bedroom apartment to be small, compared to the household (usually more than six people) and the location of the kitchen integrated in the living space is not well adjusted.

They expressed satisfaction regarding the apartment, the spatial organization, the natural lighting and ventilation of the room, the durable materials. They express their displeasure regarding the common and external space, which is clearly degraded, due to the lack of management and maintenance.

The search for evolution and potential resilience must be based on the development of solutions that can reconfigure over time, namely: *General Comfort* with Technical Efficiency, Economy, Well-being, Convenience; *Functionality: Feature that aggregates function and integration; Flexibility:* Transformation-related project strategy. The results obtained indicate different aspects to be considered in the search for resilience.

It should be noted that these are not the only ones, as mentioned by Nunes (et al, 2019) but they can be one of the aspects to consider.

As a limitation, that the data used in the article do not have a systematic survey of the apartments, as it was conditioned to the availability of residents, nor does it include the measurement of indoor ambient conditions (humidity and average radiant temperatures).

6. CONCLUSIONS

The developed study shows that the typology of the building designed based on the principles of modern architecture (simplicity, functionality, integration, lighting, spatial continuity and free plan), allows its adaptation to the changing needs of users without having to change its basic structure. It appears that this flexibility ensures the safeguarding of its essential characteristics and, consequently, contributes to the preservation of the value attributed to the heritage of the modern period, showing the potential to evolve over time and in this perspective be resilient. The identified indicators, validate the quality of the design and performance, and today is recognized as a contribution of the buildings resistant to vulnerabilities (resilient buildings). Technological rehabilitation can be an alternative, to adapt the building to new uses, to improve the internal environmental quality, to optimize energy consumption, to increase the architectural and economic value of the building. The preservation of adaptation to new requirements and standards can be adapted in the revitalization process.

Can the CTT building be considered a reference of applicability in Luanda these days? it is admitted that the modernist style of the buildings can be adjusted for the years 2020? The evidence indicates positively.

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DISAPPEARANCE OF MODERN HERITAGE IN KUWAIT, ADAPTIVE REUSE OF 'AL SAWABER' HOUSING COMPLEX

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ABSTRACT.

After the discovery of oil in Kuwait in 1940, a *tabula rasa* of the historic city centre made place for modernist buildings and structures. However, the replacement of the original built fabric inhabited by fishermen and functioning as trade route from the Persian Gulf to Aleppo, was seen as an historical and socio-cultural loss; the same is happening today. In this light, the paper addresses the current modernization process of the city of Kuwait, which is resulting in the disappearance of modernist housing all over the city, in particular the 'Al Sawaber' housing complex. The first part of the paper presents a brief history of the various planning processes Kuwait went through. The emerging modern state embraced the 1960s utopian movement. And therefore, renowned members of TEAM X were invited to rethink the city of Kuwait. The second part zooms in on the extraordinary case of the 'Al Sawaber' housing complex; constructed in a period of modernist experimentation. Nowadays 'Al Sawaber' is being demolished, like many other modernist constructions in the city, 'to make the Kuwait's future regeneration possible'. Questions are raised about the arguments pro-demolition. In conclusion, we explore alternative strategies for urban renewal and adaptive reuse of the 'Al Sawaber' project. The analysis of the modernist approach of housing in the 1970s provides significant material on how to reuse this mass housing typology. Our personal project investigates the importance of the public spaces and the necessary economic development of the city without losing sight on the social aspects connected to a dynamic process of modernization. Therefore, it is important to enhance the potential of the existing built fabric, but at the same time invest in new functions that adapt this heritage to current needs.

1. INTRODUCTION

This paper elaborates on the development of Kuwait to become a modern city in the period of 1950 to 1980. The first part describes the historic, economic and social context of Kuwait and its transformation after the first shipment of crude oil, which contributed to the creation of the Modern Kuwaiti Nation.

The second part focuses on the modern architecture built in Kuwait during the post oil period, which still represents the largest part of the existing urban landscape. Unfortunately, modernist buildings, like the 'Al Sawaber' housing complex, constructed in 1981 and designed by architect Arthur Erickson (1924–2009); and many other modern constructions currently face the threat of demolition, mainly because of the so called 'urgent' transformation of the city centre. In addition, this paper reflects on the built environment of Kuwait and elaborates specifically on the modernistic approach to housing in the 1970s, and more specifically the 'Al Sawaber' complex. In conclusion, the research presents possible strategies about how to deal with this housing complex. In particular, it focusses on the design of the urban landscape and the introduction of new programs and functions. In general, it points out that adaptive reuse can be a valuable alternative for demolition. One can ask what defines the value of 'Al Sawaber'? And whether it is a relevant project for the city? Specifically, what are the different historical layers that contribute this this potential relevance? The answers to these questions might give us real arguments for the adaptive reuse of this modern heritage architecture.

2. THE EMERGENCE AND PLANNING OF MODERN KUWAIT

2.1. Planning Processes

The urban development of Kuwait can be divided into two periods: the pre-oil era and the post-oil era. In the first period (1610–1930), the city primarily functioned as a fishing village, fulfilling an essential role in the trading economy. Kuwait was the principal commercial centre for the transit of goods between India, Muscat, Baghdad, and Arabia. It was establishing itself as the major trading route from the Persian Gulf to Aleppo.[1] In 1938, oil was discovered in the fields of Kuwait. The exportation, which started in 1946, resulted in the increase of revenues, new infrastructures, and communal facilities for the city. These proceedings mark the beginning of the 'modern' era that brought a profound transformation to the urban landscape of Kuwait, as the old city centre was demolished. At that time, the need for a city master plan and general urban strategy was prominent, therefore Kuwait's municipality commissioned several proposals related to urban renewal and civil projects, from the early 1950s to the 1980s.

2.2. The Master Plans

By looking at the different master plans, the challenging mediation between the modernist reformations and the

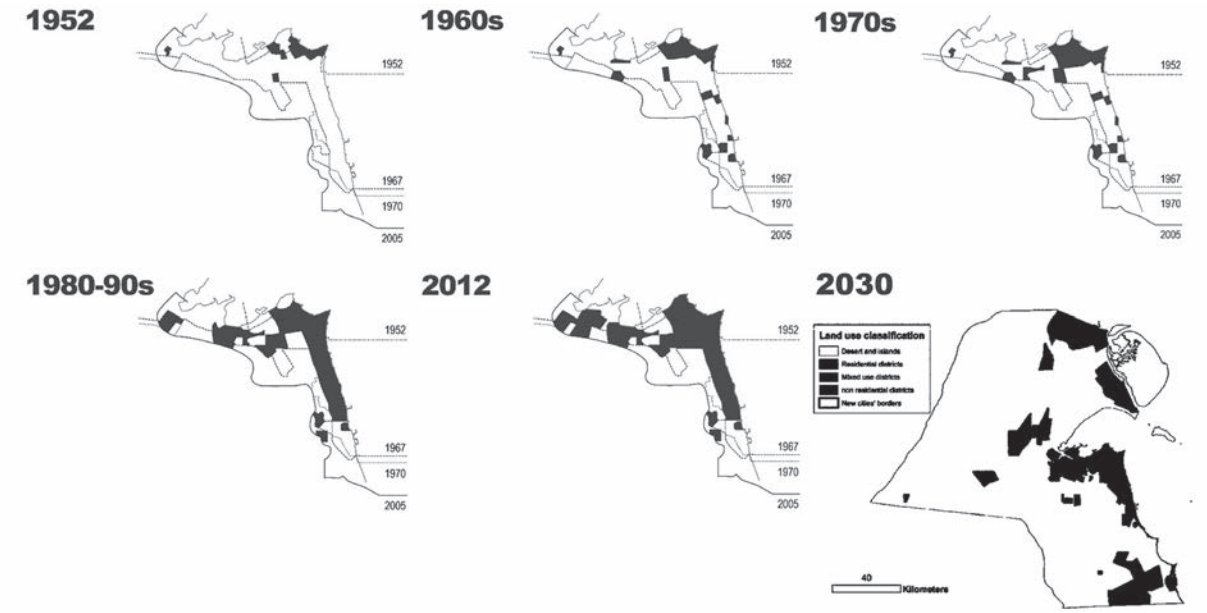


Fig. 1. **Planning timeline, Kuwait City, Kuwait, 1952–2030. © Credits collage by Diana Mosquera, 2019, based on plans by Mohamamd Alsayegh, 2017.**

preservation of the pre-oil traditions comes to surface.[2] The first master plan was developed in 1952, by British architects Charles Anthony Minoprio (1900–1988), Hugh Greville Castle Spencely (1900–1983) and P.W. MacFarlane (dates unknown). Their visions were influenced by the Garden City and New Town concepts. However, these ideas were considered controversial and did not meet the (future) needs of the city at that moment, as the team of architects lacked a connection with the Kuwait's culture and was too unfamiliar with the scale of the city.[3] In 1960, the Kuwait Municipality changed their perspectives. The (disappointing) results of the first master plan and the regrets about the demolition of the old city resulted in a new vision and strategy. The new master plan focused on restructuring the old town, incorporating additional residential and industrial areas and extending radial highways.

There was a new attitude towards modern architecture, as the municipality proposed a number of strategic projects that enhance the atmosphere of the central area of Kuwait. These projects, that proposed new ideas to reconstruct the city (**Fig. 2**), were commissioned to prominent members of the TEAM X generation, like Georges Candilis (1913–1995), together Josie and Woods of France, Reima Pietilä (1923–1993) of Finland, the office BBPR of Italy, Jorn Utzon (1918–2008) of Denmark and Peter Smithson (1923–2003) together with Alison Smithson (1928–1993) of the United Kingdom. In the following chapter, we zoom in on this last, most interesting proposal.

In 1978, the Shankland Cox Partnership[4] reviewed the second planning phase, focussing on three basic elements: the old town centre, the urban landscape and the physical setting of buildings, oil explorations, (water) infrastructures etc. However, in 1980 Kuwait experienced a major economic crisis resulting in drastic changes to the master plan. In response, another evaluation of this second master plan took place in 1983 (**Fig. 1**). This review emphasized the question of the National Housing Authority to create circa 25,000 dwellings/units (single detached house type). In this light, the idea of collective housing was introduced to Kuwait. This happened for the first time with the project of the 'Al Sawaber' housing complex, consisting of high-rise buildings with apartments of 100 to 300 sqm.

New revisions of the master plan were done by 1997 and 2012 (**Fig. 1**), as the consulting office 'Salem Al Marzouk and Sabah Abi Hannh' (SSH) was commissioned to elaborate a plan that focused on the booming economy and the population increase. They do this by creating new commercial spots in the city (reconnecting the physical and social components) and targeting the popular 'Marina' waterfront.[5] As result, a large number of properties became vulnerable for demolition in the light of the city's 'regeneration'. That is the case for the 'Al Sawaber' complex, condemned to be demolished.

As shown on the schematic plans (**Fig. 1**), Kuwait transformed from a small town to a metropolis in a relatively short period of time. The city experienced a fast-urban growth process, linked to the discovery of oil and the particularity of the outnumbering of non-citizens versus Kuwaiti citizens by a factor of about 2.3. The economic prosperity came with a complex urban development, that resulted in an uncontrolled expanded city. Currently, housing shortage is still prominent and the idea of reestablishing residen-



PROPOSALS FOR RESTRUCTURING

KUWAIT

In 1968 four architectural firms of international standing were invited by the Government of Kuwait to submit proposals for the reconstruction of a city which had largely disappeared with the oil boom. The general proposals, which covered the city as a whole, were followed by detailed proposals in the form of demonstration buildings. This article is in two parts, the first part dealing briefly with the four general proposals



Plan of Kuwait showing the four areas selected for the demonstration buildings and a fifth area for Utzon's prize-winning parliament building.

Key

1. Candilis
2. Pietila
3. B.B.P.R
4. Smithson
5. Utzon

Fig. 2. **Proposals for demonstration buildings in Kuwait, Kuwait city, 1961. Selections of four areas of development to restructure Kuwait city. © Kuwait Municipality, 2019, https://www.baladia.gov.kw/sites/ar/Pages/main.aspx.**

tial land in the old town is desirable. The concept of bringing back life to Kuwait City may shed light on the adaptation of the existing complex of 'Al Sawaber'.

3. ALISON AND PETER SMITHSON'S URBAN STUDY AND MAT-BUILDING

After the analysis of the different master plans, this part of the paper elaborates on the proposed master plan of the Smithson's for Kuwait's redevelopment. The Smithson's developed their conceptual projects for Kuwait based on the notion of 'adaptive reuse' of the remains of the older (largely demolished) town, which is relevant also in the light of the contemporary debate on how to deal with the modernist layer of the city. To develop their concept, they performed an extensive urban study of the existing built fabric and a new idea for a demonstration building was introduced.[6] During these inquiries and site visits, the Smithsons pointed out the value of Kuwait as low-profile city in direct contact with the waterfront. Described in their own words, their proposal wanted to create *"a city in which it is easy to move around on foot in the shade in every direction without being embraced by cars or car noise; a city of apportioned vehicular movement and parking; a city with some of its best old features restored and put to use."*[7]

Their design incorporated the idea of the 'Mat-building'; a concept that they developed during their time in the Team X movement (1956). The 'Mat-building' is a strategy that stresses interconnectedness (1) of buildings. In Kuwait, the demolition of most of the houses in the old city left large empty surfaces that were used as car parks. The Smithson's took advantage of those open spaces to structure the Kuwait City Mat-building. The second element was interchangeability (2). This idea was based on integrating the maximum possible variety of functions. These facilities were placed in terms of the needs and the optimal functioning of the site and its surrounding events. The aim was to reintroduce the vibrancy of the old Arab city life.

4. THE 'AL SAWABER' HOUSING COMPLEX

4.1. The Emergence of 'Al Sawaber'

Kuwait's urban landscape developed from a small cellular village formed by traditional Arab houses to a regional metropolis in a period of circa a decade. This fast development of the urban area was the result of the government's desire to utilize the income, generated by the oil production, for the creation of the modern state of Kuwait.[8] From 1954 to 1981, the housing typology, promoted by the state, focused on the single-family detached house. The government relocated the residential areas outside of the old city, promising a better living condition with modern facilities and comfort. However, the population increased from 250,000 in 1954 to 1,35 million in 1980 and the single-family houses, concentrically organized and disconnected from the city centre, were no longer a solution to meet this growing housing shortage. In this light, typological experimentation began, resulting in a variety of housing projects. In 1977, the government com-

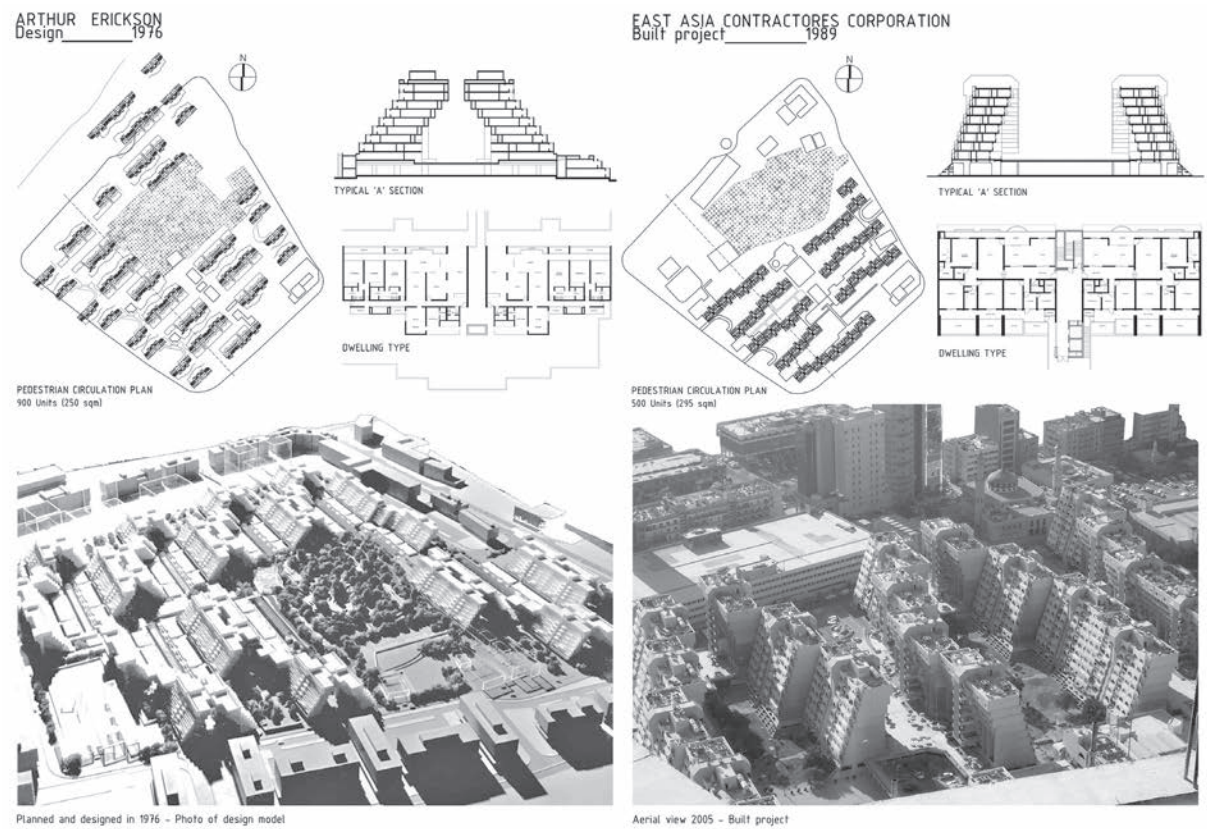


Fig. 3. **'Al Sawaber' initial design by the architect Arthur Erickson, Kuwait City, 1976. © The 'Al Sawaber' Project, National Housing Authority Kuwait: Development Study, part C. Arthur Erickson Architects, Canada, May 1977, Kuwait Municipal Archive, Kuwait. © Credits for image Arthur Erickson Foundation.**
Versus 'Al Sawaber' built project by East Asia Contractors, Kuwait City, Kuwait, 1989. © Plans and section by Diana Mosquera, 2019, based on East Asia Contractors Corporation © Credits for image Mishal Al Musaileek, 2016, http://mlalmusaileekh.blogspot.com/2016/10/al-sawaber-with-my-indulgence.html.

missioned the Canadian architect Arthur Erickson to design a residential neighbourhood for 4,950 people in Kuwait Old City, named 'Al-Sawaber'.[9] Only a decade after the construction 'Al Sawaber', it was already destined for demolition. The arguments given for its destruction were: the lack of architectural value of the blocks, the size of the apartments (not meeting the Kuwait's living standards) and the lack of (fire) safety. However, arguments that are more realistic are: the demographic shifts, the Gulf war (1991) and the multiple physical transformations of the apartments contributing to the deteriorated image of 'Al Sawaber'.

4.2. Arthur Erickson's Design vs. Developer's Project

The modifications made to the design of Erickson are crucial in understanding its current condition, in which cultural aspects, climate and strong economic forces play a major role. So to speak, there was a decrease of density, from 900 to 520 residential units and an increase of the size of apartments. Furthermore, the communal spaces and commercial facilities were not built according to the original plans (Fig. 3) and the main central green area was not developed as principal public space. In addition, 'Al Sawaber' was also affected by the first economic crisis (1982) after the oil discovery (1938). Therefore, the project was only completed twelve years after the design.

Although, the original plans were redesigned (Fig. 3), many of the primary principles remained, like the public gardens that connect the blocks and centralise the old cemetery, or the alignment of the blocks that provides enclosure and protection from visual instruction. The slightly changed A-formed, stepped buildings give the character of hillside villas (contrasting to the existing housing typology) and emphasize the connection with nature.[10]

Beside these factors, residents themselves did also some (radical) alterations, such as blocking the windows for privacy issues and controlling of the sun light, changing the private terrace into an interior space (to increase the footprint of the living area) and altering the shared corridors in the public spaces. These adaptations aggravate after the Gulf war (1990–1991), resulting in many empty, strongly altered apartments rented out to migrant workers.[11]

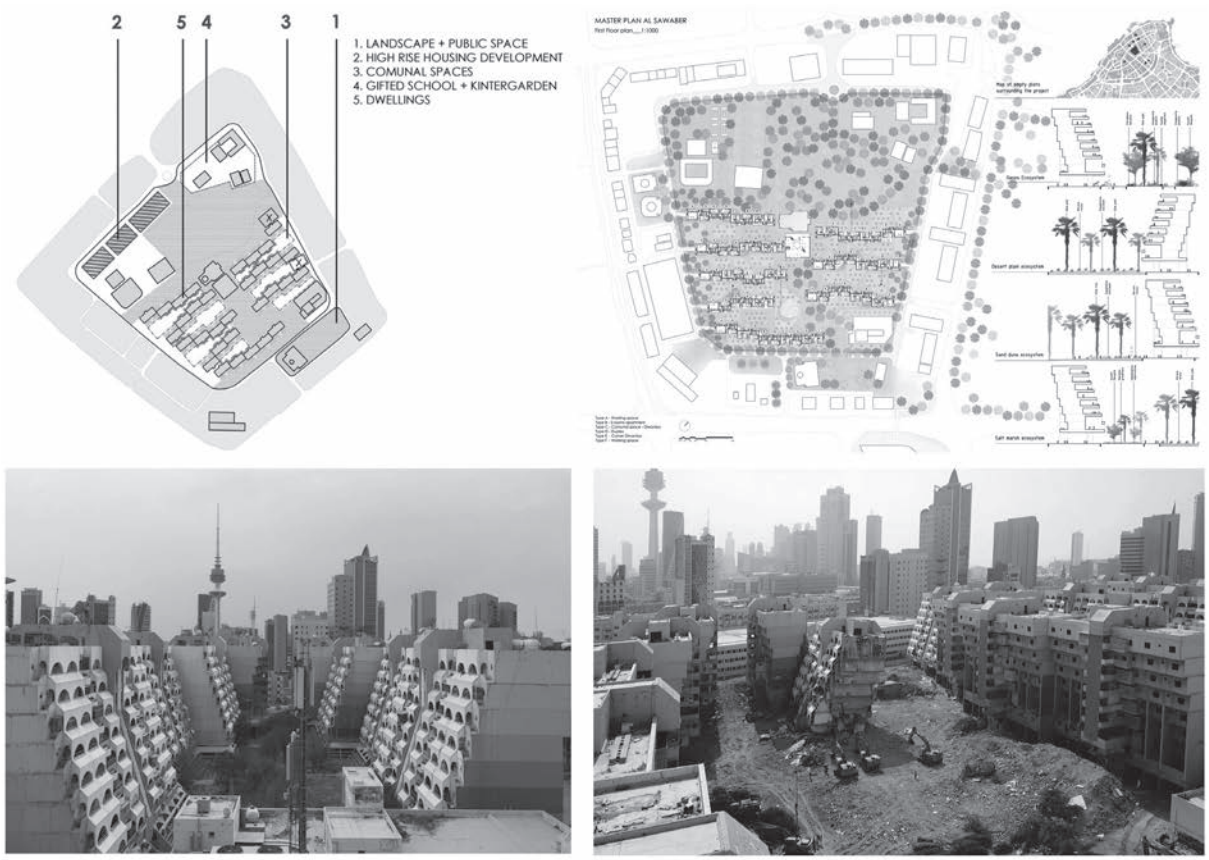


Fig. 4. **Scheme and masterplan of adaptive reuse interventions at 'Al Sawaber', Kuwait City, Kuwait, 2019. © Plans by Diana Mosquera, 2019, based on East Asia Contractors Corporation before demolition. Versus during demolition of 'Al Sawaber'. © Credits image (left) Arab times, 2018. © Credits image (right) Tareq Alhouli, 2019.**

5. DESIGN EXPLORATIONS AND CONCLUSION

We believe that the 'Al Sawaber' housing complex is an essential part of Kuwait's history and heritage. The complex is representative of a particular era in the history of the city's growth and development and is, irrespective of its alterations (both of its plans during the construction as the alterations by its inhabitants later on) a remarkable piece of modernist housing. In the light of the now largely performed demolition we investigated the potential of the regeneration and adaptive reuse of the site as an alternative for demolition, using the methodology of 'research by design'.[12] The study was performed in the context of a master project (Fig. 4) and thesis in the Master of Adaptive Reuse at the Faculty of Architecture and Arts of Hasselt University (Belgium) in 2019. The main heritage values of the site were found in its unique architectural typology (terrace houses), the arrangement of the different blocks, and the link with the public space. Hence, the proposal aimed to preserve these values, and even strengthen some of them further. The proposed interventions can be summarized into three main actions: (1) to clear the typology from later alterations that did not have any quality, (2) to adapt the lay-out of the apartments to the local housing culture and tradition, and (3) to develop the public space between the blocks as a garden for the housing estate and a public park for the city. The re-definition of a ground floor that opens to the landscape and acts like a green carpet could bring pedestrian life to the site. The extreme climate conditions of the location were taken into account in the selection of the vegetation and the creation of shaded areas.

Although the 'Al Sawaber' housing complex was at the time of its construction considered high-rise buildings and a dense housing environment, nowadays the complex contrasts the extreme density and height of its surroundings. Although this was perceived the most important trigger for its demolition, we looked at it from a different perspective: presenting the limited height of the buildings and the open spaces in between the blocks as an opportunity for the city to create a public space that could benefit not only the inhabitants of this housing complex but also the whole surrounding neighbourhood.

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THE ADOPTION OF CROSS-SHAPED BUILDINGS FOR MASS HOUSING IN THE MODERN MOVEMENT

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ABSTRACT.

During the period between the two World Wars, cross-shaped buildings were adopted for new urban utopias, such as can be seen in the Plan Voisin of 1925 and Villa Radiuese of 1930, both by Le Corbusier. Before Modernism architecture, in the 17th, 18th and 19th centuries, the cross-shaped building typology was only used in the design of hospitals and prisons around the world, such as the Hôpital des Incurables, Paris (1634), the French Hospital Design Plan by Petit (1774), the Pentonville Prison, Barnsbury, London (1840–42). This paper will explore the history of the cross-shaped and Y-shaped floor plans typologies for mass housing blocks during the Modern Movement, looking at housing projects like workers' housing in Stromnyka Street, Moscow (1924) from Russian architect Nikolai Ladovisky, the well-known HighPoint I building in London (1953) designed by Berthold Lubetkin, or the alternative plans for the new Stuyvesant Town proposition in New York City (1944) designed by Marcel Breuer.

1. INTRODUCTION

The design of isolated towers and high-rise typologies for mass-housing buildings was promoted during the beginning of the Modern Movement. Walter Gropius, in his seminal book *Scope of Total Architecture*, addressed the advantages and disadvantages of high-rise apartment blocks. Among the advantages, Gropius mentioned was that, in the city, the high-rise typology provides a maximum amount of air and sunlight while also allowing a maximum amount of outdoor space, a wide park with vegetation for the children to use without fear of traffic, as well as a more favourable distribution of the cost of any central services. He also mentions that the safety of elevators should be improved so that children can use them without danger.[1]

2. CROSS-SHAPED BUILDINGS IN MODERN MOVEMENT

Hans Poelzig's Y-shape project for the competition of a high-rise office building in Friedrichstrasse, Berlin in 1921, could be considered to be one of the first examples of the adoption of this specific building typology during the early years of Modernism. The first years of the 1920s were marked by a search of new typologies for high-rise buildings as seen in the floor plans of the Max Berg studies for high-rise buildings of 1922. During the period between the two World Wars, cross-shaped buildings were adopted for new urban utopias designed by Le Corbusier and other members of the Modern Movement. In the Plan Voisin presented in 1925 and Villa Radiuese in 1930, Le Corbusier designed cruciform high-rise buildings to be offices and for commercial uses.

In the project for the competition of the Garden City of the Future in 1936, Marcel Breuer and F. R. S. Yorke, working together in London, presented an urban plan composed of highly diverse building typologies and shapes, differentiating between the functions of buildings types like the hospital, the theatre, schools, housing, and offices. The office buildings were designed in a double Y-shape, that became very characteristic in Breuer's later work, as we can see, for example, in the UNESCO headquarters in Paris, a single Y-shape, and in the IBM headquarter projects in Le Gaude, France (1960–62) and Boca Raton, Florida, U.S.A (1968–72), both designed with Breuer's typical double Y-shape.[2]

While the *Zeilenbau* pattern of parallel rows of buildings frequently multiplied the vertical circulation to access the apartments or, where vertical circulation elements were located at the ends, a long corridor to access the apartments results in one long façade. The advantage of Y-shaped or cross-shaped buildings is that they use one central vertical core for access to each floor, reducing the space needed and the cost in case of installing elevators due to the height of the building.

3. CROSS-SHAPED BUILDINGS AS A HOSPITAL TYPOLOGY

The strategy of locating a central core for circulation and having multiple wings or corridors connected with the centre, was commonly used in the design of hospitals, asylums and prisons during the fifteenth to eighteenth centuries. The Ospedale Maggiore in Milan (1458), the *Hospital de los Reyes Católicos* for pilgrims in Santiago de Compostela, Spain (1501–11) the *Hôpital de la Charite*, Lyon (1619), the *Hôpital des Incurables*, Paris (1635–49), among others, were designed in a cruciform floor plan, generating square courtyards and setting the locations for control and watch in the centre of the crosses. This cross-shaped floor plan also helped provide natural ventilation and ease of supervision. Using this typology allowed four times as many patients to be watched or receive religious consolation from an altar in the centre of the cross.[3]

The cross-shaped typology for these buildings evolved through the years to a more panoptic floor plan. More wings or arms were added to the cross from the centre to take the maximum advantage of the central point to watch and su-

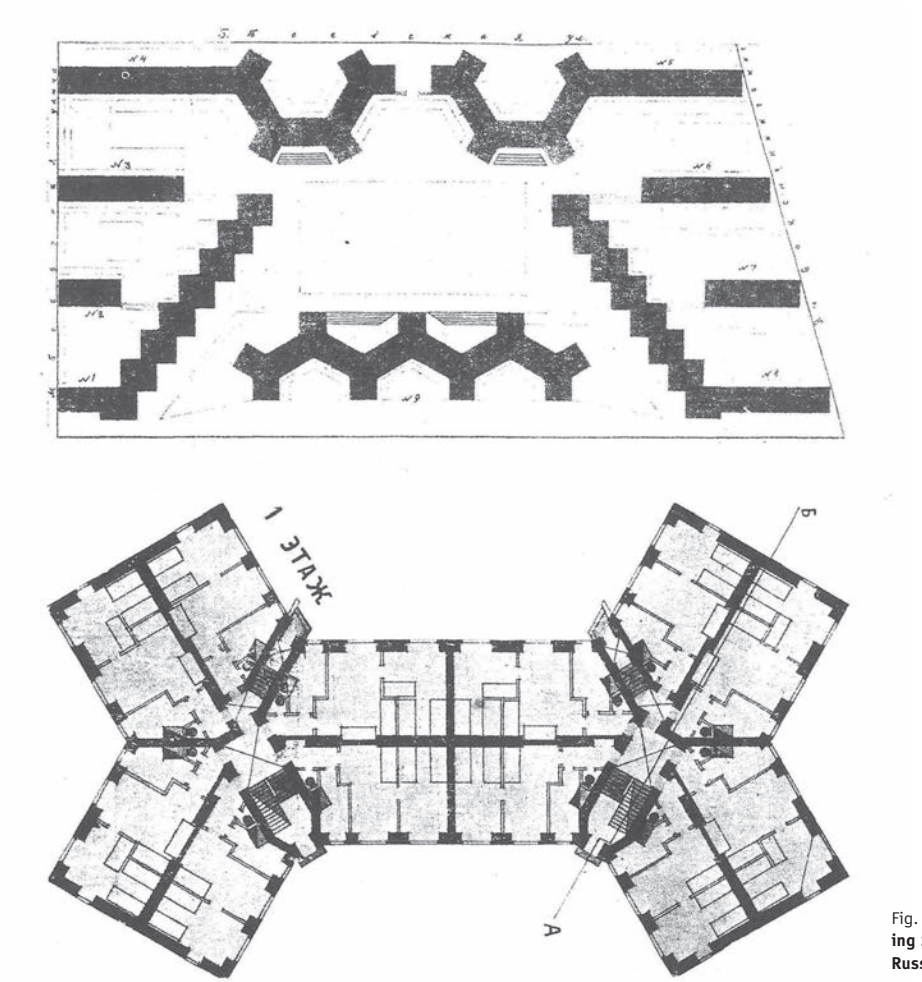


Fig. 1. **Nikolai Ladovskii, Worker's Housing Stromynka Street (un-built), Moscow, Russia, 1924. © Nikolai Ladovskii.**

pervise. A hospital plan by Petit in 1774 shows a six-armed cross, and the asylum plan by Bevans in 1814 shows a seven-armed cross. Others like the West Riding Pauper Lunatic Asylum of 1815 shows a double cross floorplan. These panoptic plans were also adopted for prisons in the nineteenth century like the design plan for Eastern State Penitentiary in 1829, or the panoptic plan at Pentonville Prison of 1841.

During the twentieth century, a diversity of cross-shaped typologies for hospitals, asylums, and other no-housing buildings continued to be used, although in some cases they were designed outside of the modernist style. The St. Andrew's cross can be seen in the design of Berkeley Carteret Hotel of 1930, and in the Veterans' Administration hospital of Albany, N.Y. of 1955. An architectural drawing of 1930 for the Cincinnati Children's Hospital presents a double Y-shaped building, that was designed before Marcel Breuer presented his project for The Garden City of the Future with its unique double Y-shaped office buildings.

4. ADOPTION OF CROSS-SHAPED BUILDINGS FOR MASS HOUSING

The early approaches to Y-shaped or cross-shaped buildings for working class housing can be seen in the early 1920s in Russian avant-garde architecture. In 1924, the Russian architect Nikolai Ladovskii, founder of the first professional organization for contemporary architecture ASNOVA[4], presented a competition project for worker's housing on Stromynka Street in Moscow, in which Ladovskii combined building units in a variety of ways. In this project, the design presents linear blocks, square units in a diagonally stepping combination, and Y-shapes combinations creating a honeycomb pattern[5] (**Fig. 1**). In 1925, a year later, Ladovskii collaborated with El Lissitzky on the design of housing for workers for a large textile company in Ivanovo-Voznesensk, Russia. The project delineated residential blocks, arranged at 120° creating zig-zag buildings, that saved costs for vertical circulation by locating the common-use staircase at the crossing

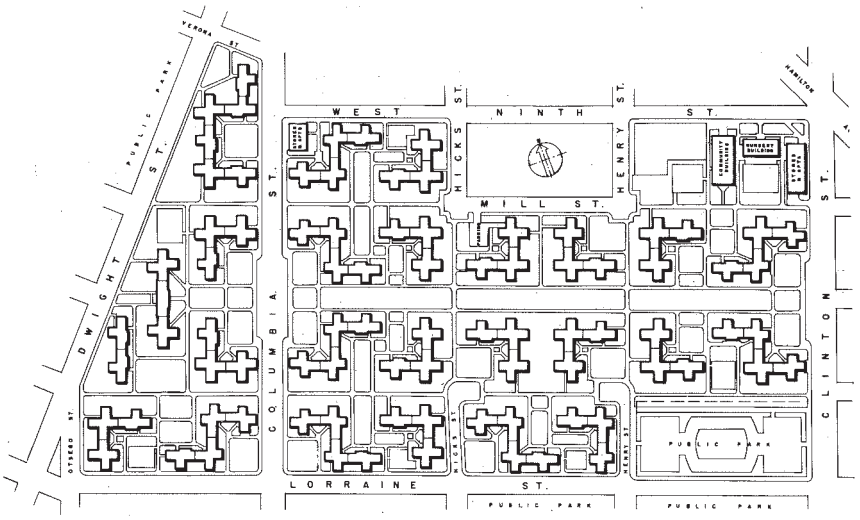


Fig. 2. **William F. Dominick et al, Red Hook Houses final stage design, Brooklyn, NY, USA, 1939. © New York City Housing Authority.**

points. At the number 15 Sivtsev Vrazhek Pereulok of the Khamovniki District of Moscow, a building completed in 1932 and presumably authored by Ladovskii, follows the Stromynka and Ivanov pattern.

During 1927, working in an urban plan competition for the new industrial town of Kostino, Ladovskii proposed a variety of other housing types. One type for multifamily apartments blocks is organized in 3 story isolated starshape buildings, in which one central staircase gives access to 6 different small apartments. A very similar building layout can be seen in Berthold Lubetkin's project for an apartment building for railroad workers in 1917, as his entry submission to the Stroganov School of Applied Art, which reveals the germ of an idea for his later work, due to its triaxial Y-form[6], although it was designed in a more classicist style.

Berthold Lubetkin was trained in the SVOMAS (Free Art Studios) and the Vkhutemas, and he was an early associate of ASNOVO, before he left Russia in 1922. Between 1922 and 1931, Lubetkin continued his education by joining several Architecture Schools in Berlin and Paris.[7] While in Paris, Lubetkin in partnership with Luis Iturralde, Bolivian architect and Lubetkin's mate at the Ecole Speciale de Architecture in Paris, designed a proposition for collective housing. The design of this housing block is a triaxial building, a 120-degree Y-shape block, that follows the scheme of the railroad apartments designed in 1917 by Lubetkin. The design is very schematic, but paid attention to its orientation, construction and interior arrangements. This project reveals Lubetkin's interest in a geometrical clarity and economy in the construction of housing buildings.

In 1932, Lubetkin, with six graduates from the Architectural Association, founded the TECTON partnership in London. After his works for London, Whipsnade and Dudley Zoos, the businessmen Sigmund Gestetner contacted Lubetkin to develop a project to provide accommodation for his employees in Highpoint, a healthy site 30 minutes from the City of London. Gestetner, interested in the developments of modern architecture, supported Lubetkin economically to travel to the USA to study tall buildings[8], providing him the opportunity to explore off-the-ground housing. A comparative block studies for the project of Highpoint One developed in 1935, shows the preference for the double cruciform shape which provided the advantage of full cross ventilation, a minimum of party walls, and allowing for the maximum enjoyment of views, but also had the disadvantage of apartments overlooking each other in the 90º corners, less than ideal orientation for some flats, and a high perimeter ratio. The double cross design and its previous studies could easily have been influenced by Le Corbusier's Plan Voisin that was exhibited in the Pavilion of de L'Esprit Nouveau in 1925 while Lubetkin was in Paris and he later admitted how much its cruciform towers surrounded by green spaces created an enormous impression on him.[9]

Later, in 1946, Lubetkin developed his first designs of 120-degree triaxial Y-shaped housing block for the Bevin Court. In this case, the building, with a ground and seven housing floors, accommodates 130 dwellings arranged as maisonettes. It has its main access at the central point with an elegant and sculptural circular stairwell, which due to the length of the three arms, provides access by extended corridors at every other floor to secondary stairwells at the ends of each wing.

In New York City, during the nineteenth century, housing development consisted basically of row houses arranged at the perimeter of each block or back-to-back houses compacting the entire block. By the end of nineteenth century the first slum clearance projects were developed, transforming those back-to-back blocks into perimetral blocks while



Fig. 3. **William F. Ballard, Henry S. Churchill, Frederick G Frost, & Barnett C. Turner, Queensbridge Houses, Brooklyn, NY, USA, 1939. © New York City Housing Authority.**

increasing the building height. While Europe, under the *Zielenbau* concept, was developing large areas of *Siedlungen* during the first half of the twentieth century, in New York and most American cities the development of housing was being built on a block-to-block basis[10], introducing interior gardens into perimeter designed blocks, with a few exceptions. Some studies were made to adopt Gropius' concept in New York City[11], such as the Broun and Muschenheim proposal for an immense slum clearance project for the East Side in 1935 that covered about fifty Manhattan gridiron blocks, or the twelve block area of Williamsburg Houses in Brooklyn completed in 1938 by the Public Works Administration, which represented a radical shift in the approach to housing design.[12]

This radical approach promoted in the 1930s and 1940s by Robert Moses and New York City Housing Authority, created in 1934, designated large areas for demolition to develop massive projects for new housing. The USHA (United States Housing Authority) that was created in 1937 to fund low-cost construction, published a series of diagrams in 1939 proposing the ideal design alternative to develop housing blocks that maintained minimum dimensions between buildings and provided maximum light and air.[13] The first project funded by the USHA in New York City was the Red Hook Houses in Brooklyn, completed in 1939. The final design presents six-story cross-shaped building units combined and articulated for a total of 25 different buildings that contained 2,545 apartments (**Fig. 2**).

The Queensbridge Houses project was the next low-cost housing project funded by USHA in Queens, New York. Completed in 1940, it contained 3,149 apartments in Y-shaped interconnected buildings. The advantage of the Y-shape in this case was that the shape develops more façade area and therefore allowed more rooms to be located on each floor around a single vertical circulation core with an elevator, but the layout creates a sense of chaotic and confused relationships between the buildings and between the buildings and streets[14] (**Fig. 3**). Jane Jacobs was one of the main critics of this type of slum clearance efforts as they destroyed the "organized complexity" that characterized the existing neighborhoods.[15]

In 1943, the radical destruction of eighteen blocks in the Lower East Side of Manhattan, under the tutelage of Robert Moses using what was later called the "bulldozer approach", provided a large area to develop the Stuyvesant Town project for 24,000 people. The final design ignores the Manhat-

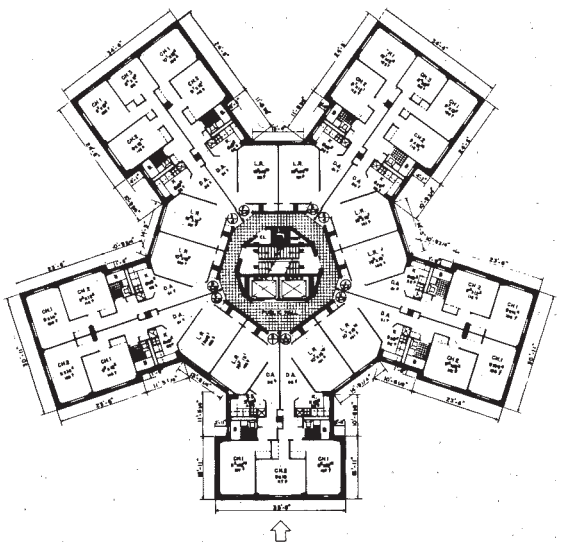


Fig. 4. **Fellheimer, Wagner, and Vollmer, Albany Houses floor plan, Brooklyn, NY, USA, 1950. © New York City Housing Authority.**

tan gridiron, locating thirty-five thirteen-floor buildings along the perimeter and internally. The towers are a combination of cruciform and "T-shaped" units. The architect Marcel Breuer unsuccessfully led a group of architects in criticizing the design of the proposed Stuyvesant Town, and in 1944 proposed an alternative design changing the location of the towers on the site, the distribution of the apartments and the shape of the towers to a combination of double Y-shape that created better spaces between buildings, more access to daylight, and less interruption of views.

As in the earlier hospital typologies, the development of mass-housing towers using more cost-efficient shapes in terms of common vertical circulation elements and elevators, resulted in the appearance of multiple- arm or "asterisk" towers that maximize the number of apartments served by the circulation core, as we can see in the project for the Albany Houses, nine fourteen-storey towers designed by Fellheimer, Wagner and Vollmer, completed in 1950, and the public housing project for the Farragut Houses from the same architects, completed in 1952, both in Brooklyn, New York (Fig. 4).

5. CONCLUSIONS

During the Modern Movement in Europe and the United States of America, the search for better living conditions for the working class, including better access to sunlight, ventilation, views, green space and open areas around housing blocks for leisure and youth activities, resulted in the development of more cost-effective typologies related with better access to the dwellings using centralized stair and elevator cores, which was particularly important as the building's height increased. The parallels between the development of housing typologies and those of hospitals, asylums and prisons in the past is evident, as they were each looking to the same cost-effective shape, whether for housing or watching and supervising patients or inmates while also trying to provide natural daylight and ventilation. It is interesting to see how the designers and developers of mass-housing adopted the precedents used by hospitals, asylum and prisons, using "Y" and cruciform plans that evolved into multiple-arm shapes in order to balance the efficiency found in serving a larger number of apartments with the need for natural daylight, ventilation, and views.

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Session 3-e

BIRTH, LIFE AND RENEWAL OF MODERN HOUSING

Louise Noelle Gras

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Since ancient times, the house has had a particular meaning for the human being; at the dawn of Greek culture, the story of the arduous ten years of Ulysses' return to his home, reflected in the Odyssey, makes clear the significance of the home. However, it is rather a symbol, an ideal perception of the domestic space since, for many centuries, the architectural fact is limited to the realization of palaces or mansions of dignitaries. With the advent of the Renaissance, not only wealthy merchants had access to the construction of important dwellings, but also some architects had this privilege. Suffice it to recall the houses of Giorgio Vassari, an important artist, who took on the task of approaching the study of his colleagues, in the middle of the 16th century, with *Le vite de' più ecellenti pittori, sculptori e architettori*; these residences, richly decorated with frescoes of his authorship, have survived to this day, one in Arezzo and the other in Florence, and constituted a decisive moment in the social emancipation of artists. Soon after, other did the same, soughing to promote their social relevance. However, it would only be until the end of the 19th century that private houses would acquire a particular relevance. This condition is related to the fact of the growing well-being of the bourgeoisie, who were looking not only for better spaces to develop their lives, but also to publicly demonstrate their prosperity. Furthermore, advances in materials and construction techniques, as well as novel studies in health and hygiene, accompanied by a series of theoretical writings, encouraged this progress. In this sense, works such as that of Eugène Emmanuel Viollet-le-Duc, *Histoire d'une maison*, encouraged the possibility of building private homes, offering a kind of manual for the domestic architecture of the nineteenth-century French bourgeoisie. The natural path was then to design the housing for the common man, to pay attention to the needs and desires of the families that were shifting to the cities offering the possibility of better wages. Industrialization, commerce and new ways of transportation fostered the new solutions for a social

In any case, it is an accepted fact that the house is an architectural genre that, in the first half of the 20th century, was able to integrate avant-garde concepts while promoting novel ideas, to achieve excellent examples of creativity. The same can be said about mass housing, that envisaged not only the welfare of the community, but took special care in the spatial and urban solutions. In a certain way, by studying all the new domestic spaces, it is possible to trace their undoubted contributions to the Modern Movement. This leads to not only analyze the issue of habitability, promoted by Le Corbusier's "The house is a machine for living", accompanied by his "Housing Manual", but the various physical aspects of the dwellings. Furthermore, determining factors such as climate and economy are fundamental to the results of many of the conservation projects.

Taking these ideas into account, it is interesting to start with the proposal by Marta Sequeira, that ponders on the presentation of Le Corbusier's Immeuble-villas project, in the Salon d'Automne of 1922, in Paris. It consisted of a new housing type, including private spaces in the 120 apartments with garden, alongside with restaurant, sports, study and party facilities. The origin of this complex project lies in a relationship with a real estate society proposing luxury buildings in Paris, with the French good taste and the American sense of comfort, the *Groupe de l'Habitation Franco-Américaine*: amazingly it represents the origin of a whole new approach to housing. This new typology like much of the architecture of the 20th century, became an attractive and complex proposal, especially for the emerging working class, but with various outcomes in its appreciation and in its conservation, restoration and protection. Three of the presentations in this session deal with this condition, and demonstrate the varied conservation states of housing en-

sembles throughout three continents. Julia Gatley shows how in New Zealand's first Labour government, from 1937 to 1949, about 30,000 rental housing units were built, with detached and semi-detached houses as well as blocks of apartments. Unfortunately, four of the seven best known of these blocks have come under threat of demolition, in recent years. Nevertheless, it can be said that one has been saved and reused as student housing, one demolished, and the fate of the other two remains uncertain. These varied outcomes, are at the source of enquiring why public housing is so vulnerable, while pondering the various solutions and the role of the public agencies. From Chile, Horacio Torrent deals with modern housing complexes that have recently been incorporated to a process of valorization, aiming at its permanence. In the five cases presented, there is a common desire within the inhabitants, to seek their declaration as monuments to protect them against the threat of real estate business. Some have attained the status of *zona típica*, mostly at the request of the community and sometimes with the participation of Docomomo Chile; the author proposal is "conservation, resilience and co-production", to achieve this daunting task. Finally, Marie Moors stages the housing project *Arenawijk*, in Deurne, Antwerp, currently threatened with partial demolition, to replace it with a new housing development; designed by Renaat Braem, a well-known Belgian architect and urban planner, the Arena district is an interesting combination of the CIAM principles and his own. Since it is not protected, this participation addresses the richness of the site, and with research-by-design, proposes precise architectural interventions, to find new possibilities for reuse and conservation.

In this way, it is possible to assert that, in many parts of the world, modern housing is been facing varied challenges; it is necessary to recognize that their proper conservation is closely linked to the use or re-use that they may find. For this reason, the idea of renewal, alongside with the input of the community and organizations like Docomomo, will be fundamental for the protection of this heritage.



LEARNING FROM LOSSES: NEW ZEALAND'S MEDIUM- & HIGH-DENSITY STATE-OWNED RENTAL FLATS, 1930s–1950s

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ABSTRACT.

From 1937 to 1949, New Zealand's first Labour government built nearly 30,000 rental housing units up and down the country. Most were detached and semi-detached houses, accompanied by thirteen blocks of state rental apartments or flats, five of them of four or more storeys. Subsequent governments built two more slab blocks in the 1950s, each of eleven storeys. Collectively, these medium- and high-rise buildings were of great significance in the development of modernism in New Zealand. Four of the seven best known of them have come under threat of demolition in recent years. Of these four, one has been saved and reused as student housing, one was demolished in 2019, and the fate of the other two remains uncertain. This paper examines the reasons for these varied outcomes. It asks why high-rise public housing is so vulnerable. What have the main drivers been behind initiatives to demolish these buildings; and, conversely, what are the factors that have contributed to the ongoing use and reuse of some of them? It shows that formal heritage recognition through established legal mechanisms is the essential first step for retention. It also identifies occupant demographics and ongoing maintenance and repair programmes as important factors in increasing the chances of preservation.

1. INTRODUCTION

Housing had a privileged place in the development of modernism. Consistent with this, it has been recognised as important in heritage conservation initiatives focused on the modern. For example, housing was one of twelve building types used by Elain Harwood to structure her mammoth *Space, Hope and Brutalism* of 2015.[1] It was in public housing that many of the architectural developments occurred.

New Zealand's best known modernist housing schemes are those built by the country's first Labour government during its 1935–1949 term. Labour introduced a strong social welfare programme, including, from 1937, the construction of state-owned rental housing. By 1949, it had built nearly 30,000 such units up and down the country. Most were detached and semi-detached houses, along with thirteen blocks of state rental apartments or flats, five of them of four or more storeys. Subsequent governments built two more slab apartment blocks in the 1950s, each of eleven storeys.

While the detached and semi-detached state rental houses were designed through the New Zealand Institute of Architects and the Fletcher Construction Company, the blocks of flats were designed by architects in the newly created Department of Housing Construction (DHC), renamed the Housing Division of the Ministry of Works in 1943. These higher-density buildings, particularly those of the late 1930s and the 1940s, provided the DHC architects with the opportunity for direct engagement with modernism. They embraced it fully, and these medium- and high-density buildings were of great significance in the development of modernism in New Zealand.

I have written about Labour's state rental flats at length since 1994.[2] At that time, the seven most admired blocks were all government owned and used as rental housing. Today, only three of them are. The remaining four have all come under threat of demolition in recent years, with one demolition realised to date. This paper examines the successes and the failures, and the reasons for them.

2. THE BUILDINGS

The state rental flats of the 1930s and 1940s were very different from the New Zealand housing that preceded them, which included turn-of-the-century cottages and villas, 1910s and 1920s bungalows, Labour's English cottage-type state rental houses, and isolated experiments with higher densities and modernism; the state rental flats are recognised as the buildings with which the country fully embraced modernism.[3]

The first of them was the Berhampore Flats (1938–40), also known as the Centennial Flats, in the Wellington suburb of Berhampore.[4] The complex comprised 50 flats arranged in quadrangular courtyard fashion around a garden and circular community room. The northern block is single storeyed so as not to shade the garden, while elsewhere the scheme is two and three storeyed. It contains a mixture of studio, one- and two-bedroom units and two larger three-bedroom units.

Next came the Dixon Street Flats (1940–44) in inner-city Wellington (**Fig. 1**). At eleven storeys, it was New Zealand's first slab apartment building.[5] It comprises 117 flats, all of one-bedroom with the exception of the two-bedroom unit originally provided for the building's caretaker. Upon completion, the number of one-bedroom units attracted criticism from people who believed that housing for families with children should be the government's priority during and immediately after the war. Thus, subsequent blocks of state rental flats included fewer one-bedroom units.



Fig. 1. **Department of Housing Construction, Dixon Street Flats, Wellington, New Zealand, 1940–1944. © Julia Gatley, 2004.**



Fig. 2. **Housing Division of the Ministry of Works, McLean Flats (left), 1943–1944, and Gordon Wilson Flats, 1954–1959, Wellington, New Zealand. © Julia Gatley, 2019.**

Concurrent with the completion of the Dixon Street block, the McLean Flats Wellington (**Fig. 2**) and Hanson Street Flats were completed in Wellington (both 1943–44).[6] In Auckland, the Greys Avenue Flats (**Fig. 3**) and Symonds Street Flats (**Fig. 4**) were designed from 1941 but not built until 1945–47, because of opposition to higher density housing in the northern city and ongoing shortages in the supply of steel during the war.[7]

The McLean Flats and the Greys Avenue Flats were both built as stage one of larger developments. In both cases, the



Fig. 3. **Housing Division of the Ministry of Works, Upper Greys Avenue Flats (left), 1954–1959, and Lower Greys Avenue Flats, 1945–1947, Auckland, New Zealand. © Julia Gatley, 2015.**

second stage was delayed until the mid-1950s, with ongoing opposition to higher density housing explaining the delay. Eventually, from 1954 to 1959, sibling buildings were built on the two sites — the Gordon Wilson Flats in Wellington (Fig. 2) and the Upper Greys Avenue Flats in Auckland (Fig. 3).[8] Both were newly designed in the 1950s rather than following the original 1940s designs for the sites, and both were slab apartment buildings comprising mostly two-bedroom maisonettes.

3. RECENT HISTORY AND STATUS

Of these eight schemes, the Hanson Street Flats have largely been forgotten and are little known by architectural historians, while the other seven schemes discussed above are widely published and well known. They have met with very varied fates, as shown in Table 1.

Building Name	Location	Dates	Current Status	Heritage NZ Listing	Council Scheduling
Berhampore Flats	Berhampore, Wellington	1938–40	State-owned flats	Category 1 in 1998	Scheduled
Dixon Street Flats	Central Wellington	1940–44	State-owned flats	Category 1 in 1997	Scheduled
McLean Flats	Central Wellington	1943–44	*Empty; future uncertain*	Category 1 in 2020	*Unscheduled*
Lower Greys Avenue Flats	Central Auckland	1945–47	State-owned flats	Category 2 in 1981	Scheduled
Symonds Street Flats	Central Auckland	1945–47	Student housing	*Unlisted*	Scheduled
Gordon Wilson Flats	Central Wellington	1954–59	*Empty and under threat*	Category 1 in 2020	Scheduled
Upper Greys Avenue Flats	Central Auckland	1954–59	*Demolished in 2019*	*Unlisted*	*Unscheduled*

Table 1. The seven key blocks of state rental flats and their current status.

Formal listings are clearly a crucial factor for retention. New Zealand has a dual system of heritage identification. The country's national heritage agency, Heritage New Zealand Pouhere Taonga (HNZPT), has legislated responsibility to list historic places as either Category 1 or 2, depending on their degree of significance and value. Under the Resource Management Act 1991, the term "scheduling" is used as an alternative to listing, with local authorities required to schedule heritage buildings and places in their district plans. The HNZPT listing is a form of recognition only, with no protection measures, while local authority scheduling does include protection, as a resource consent is required for proposals to add to, alter or demolish scheduled items. If affected parties support a resource consent application, then the consent can be issued, but if one or more affected parties objects to an application, then it will be publically notified and heard. In the event that one or other party appeals the decision from a local authority hearing, then the case will be elevated to the Environment Court. The Dixon Street Flats, Lower Greys Avenue Flats, Symonds Street Flats and Gordon Wilson Flats are also registered by DOCOMOMO New Zealand,[9] and the Dixon Street Flats are on the DOCOMOMO New Zealand Top 20.[10]

While the clear pattern is that those buildings that are local authority scheduled are more likely to survive and remain in use than those that are not scheduled, various other fac-



Fig. 4. **Housing Division of the Ministry of Works, Symonds Street Flats, 1945–1947, Auckland, New Zealand. © Julia Gatley, 2020.**

tors are also having an impact.

Of the seven schemes, the three that have been both scheduled and listed for some years — the Berhampore Flats, Dixon Street Flats and Lower Greys Avenue Flats — all remain owned by Housing New Zealand Corporation and used as state rental housing. All three are reasonably well maintained. With their units of differing size, the Berhampore Flats host a more varied demographic than some of the other schemes. This includes single people, couples and small families. The scheme is in a well-established suburb, not wealthy, but well serviced by public transport, a shopping area and schools. It has a community feel and is not threatening to visit. The Dixon Street building has long been occupied largely by senior citizens, who again share a sense of community. The Lower Greys Avenue building has experienced periods of disrepair and vandalism, but Housing New Zealand's programmes of maintenance and repair, and initiatives to support tenants, have put it on a firmer footing in recent years. Tenants tend to be more family- and community-oriented than those placed in its former 1950s neighbour, the Upper Greys Avenue Flats.

The Upper Greys Avenue Flats, demolished in 2019, were unscheduled, meaning there was no mechanism by which the building's demolition could be prevented. The question becomes, why did Housing New Zealand Corporation choose to demolish it? Staff identified it as no longer fit for its purpose. They have an ongoing need for inner-city housing for Auckland's most vulnerable people, who often have multiple issues, among them, mental health conditions, drug and alcohol dependency, unemployment, criminal records and a history of homelessness. The Upper Greys Avenue Flats did not work well for this demographic, because the gallery access to individual units compromised security and privacy; the occupants often needed to live alone and therefore did not make best use of the two-bedroom maisonettes; and the lifts were too small to accommodate stretchers.[11] Had the building been used for a different demographic, then it may well have survived — certainly the inner-city location was desirable — but Housing New Zealand did not have another inner-city site for accommodating its most vulnerable residents and is now replacing the Upper Greys Avenue Flats with a much larger complex, with greater support services (social, medical and security).

Between the buildings that are still used as state-owned rental flats and the one that has been demolished, there are three other outcomes.

Only a few years ago, a future for the Symonds Street Flats had seemed unlikely. In 2013, newspapers reported leaks and rusting pipes inside the concrete walls and Housing New Zealand vacated it of its tenants.[12] The Category A heritage scheduling meant demolition was not permitted. The housing agency explored retrofitting and repair options, but ultimately decided to sell the building rather than proceeding with the proposed works. Near neighbour the University of Auckland purchased it in 2016, and adapted it for use as housing for postgraduate students.[13] The work included new kitchen and bathroom facilities for each unit and new roof-top apartments in place of the original laundry

and drying areas. Heritage fabric was retained where practicable, and the new work took its lead from the old while being clearly identifiable.[14] The project was very well received when the building reopened in 2018–19. Proximity to the University was an important factor in the reuse. The heritage scheduling was also important, as heritage protection is not the University's main priority, and its track record suggests that if the building had not been heritage scheduled, then it would probably have demolished and replaced it; it currently has resource consent to demolish its most admired purpose-built student housing complex (International House, 1965–68), to densify that site.

The recent history of the Gordon Wilson Flats parallels that of the Symonds Street Flats, except in the final outcome. Reports identified problems with the construction of its concrete façade and in 2012, Housing New Zealand vacated it of its tenants, in order to undertake repairs.[15] A subsequent report revealed more serious structural problems, and suggested that in the event of an earthquake, the façade could fall from the building.[16] Again, rather than initiating repairs, Housing New Zealand chose to sell the building, with the purchaser being another near neighbour and tertiary institution, Victoria University of Wellington, in 2014. Victoria University wishes to demolish the building, to establish a new thoroughfare between its main campus and the city centre. Rather than following the established process of applying for resource consent to demolish a scheduled building, it instead sought to have the building removed from the heritage schedule in Wellington City Council's district plan. Despite opposition, the Council initially approved the de-scheduling application. A local not-for-profit society, the Architectural Centre Inc., appealed the decision, meaning the case was heard in the Environment Court. The Court overturned the Council's decision and upheld the heritage scheduling. The building remains extant, but unoccupied, unmaintained and in limbo. It is in a poor state of repair and may yet fall victim to the strategy of demolition by neglect.

Next door, the McLean Flats were identified as seismically substandard in 2014. Housing New Zealand again vacated it of its tenants and planned to repair and redevelop it, but did not proceed with the work and instead sold the building to Victoria University in 2019. Like the Gordon Wilson Flats next door, it is unoccupied and unmaintained. While it is not heritage scheduled and there is nothing to stop Victoria University from demolishing it, the University's most recently published proposal shows it opting to keep and adapt this much smaller building.[17]

4. CONCLUSIONS

This paper has reflected on the status of state-owned rental flats that were important in the development of modernism in New Zealand. Of the seven such buildings that are well-known and most admired, three remain in their original ownership and use, one has been adapted for a related use, two are unoccupied and their future unknown, and one was demolished in 2019.

In general terms, formal heritage recognition through established legal mechanisms is the essential first step for heritage retention. In other words, for as long as modern buildings remain under-represented on official heritage lists or schedules, they will remain vulnerable to demolition.

While medium- and high-rise public housing is particularly susceptible to threats of demolition, the building type itself it is not actually flawed, and the way such buildings are managed does much to ensure their ongoing viability and vitality. The demographics of the occupants are an important part of this. The paper does not dispute that slab apartment buildings with long narrow gallery access and two-bedroom maisonettes are ill-suited to the most vulnerable of the twenty-first century's public housing tenants. Rather, it takes the view that when well maintained, medium- and high-rise public housing schemes, particularly those with inner-city locations, are well suited for use by other demographics and communities. This includes small families, for buildings with varied apartment sizes located near shops and schools, as in Berhampore; the elderly, for inner-city schemes of one-bedroom flats, as in Dixon Street; and students, for sites close to university campuses, as in Symonds Street.

Substandard seismic strength is an ongoing issue across much of New Zealand's building stock. There are means by which most, if not all, earthquake-prone buildings can be strengthened. It is owners who can be reluctant, either because they cannot envisage a building revitalised, or can see greater development potential in demolition and replacement. Thus, there is much work yet to do, to convince members of the public that modern housing is high in historic and cultural heritage value, and thus worthy of retention and ongoing investment.

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REVIVING MODERNIST HOUSING: ARENA DISTRICT OF RENAAT BRAEM

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ABSTRACT.

The modernist housing project 'Arenawijk', in Deurne, Antwerp (BE), is currently threatened with (partial) demolition in order to make place for a new, more contemporary housing development. The initial plans were designed by Renaat Braem (1910–2001), one of the most prominent Belgian modernist architects and urban planners. The Arena district can be considered as an interesting cohesion between the internationally acknowledged CIAM principles and the, sometimes contradictorily, personal theories formulated by Braem himself. Hence, the site is a very significant part of Belgian modernist heritage. Nevertheless, the project is not protected. The demolition plans were initiated due to various reasons. This contribution addresses the historical richness and uniqueness of the Arena district as starting point for research-by-design. It is assumed that precise architectural interventions, based on a process of research-by-design, may herald new possibilities for reuse. The first part of the paper is based on the emergence of the site and illustrates Braem, as polemic figure, in a broader context. A second part will point out the value assessment of the unique characteristics of the site, based on the first historical situation and the new layers added by Braem. In conclusion, some further research suggestions will be made.

1. INTRODUCTION AND PROBLEM STATEMENT

The housing project 'Arenawijk' (Arena district), in Deurne, Antwerp (BE), one of the most remarkable examples of modernist social housing in Belgium, is currently threatened with (partial) demolition to make place for a new, more contemporary housing development. The buildings are kept more or less in their original architectural appearance, whereas the project is not protected and the construction is in poor condition. Decay, carbonatation and cracking of the concrete structures are persistent problems due to the use of materials and techniques that were experimental at the time. Moreover, none of the buildings meets contemporary energy performance regulations, acoustic requirements, fire safety policies or minimum surface standards. In addition, various spaces in between the buildings are neglected and unattended and therefore suffer from illegal dumping of waste. Besides, the lack of meeting places, community initiatives and 'eyes on the street' enhance social problems like street youth and loneliness.

The aim of our research is to investigate how to meet the goals of contemporary redevelopment of the site with the preservation of its heritage values. This will be done by research-by-design, in which we seek how to add a contemporary layer to the existing built fabric. This paper exposes the tangible and intangible heritage values of the site, and the unique character of the Arena district. The definition of the heritage values will be used as starting points for the research-by-design.

The methodology is in first instance based on analysis of primary and secondary literature sources of the Arena district and its leading architect Renaat Braem (1910–2001). Secondly, we interviewed different stakeholders, such as the social housing company, the agency Immovable Heritage, engineers and architects that have been involved in the recent analysis of the site, social workers, and inhabitants. The interviews were recorded and transcribed. This paper is part of a PhD research entitled *'Re-reading modernist housing estates: an inquiry into the value of threatened heritage sites and the possibilities of adaptive reuse as a method for re-evaluation'* at Hasselt University (BE). The research project aims to address the challenges of modernist post-war housing in Flanders, assuming that precise architectural interventions, based on a process of research by design, may herald new possibilities for reuse. It is necessary for such sites to change and adapt, in order to allow for their ongoing use.[1] By utilising a designer approach, we aim to address the fragility of this post-war housing typology.

2. THE EMERGENCE OF THE ARENA DISTRICT

In the aftermath of WWII, the need for housing in post-war Antwerp was prominent as the number of inhabitants of Deurne had more than quadrupled between 1921 and 1960. In this light, the planning and design process for the Arena district was carried out from 1946 onwards. Architect Renaat Braem was commissioned together with urban planner Octave De Koninckx (1914–1967), engineer August Mennes (1884–1953) and architects Geo Brosens (1891–1967), Flor Laforce (1902–1973) and Louis Kuypers (born in 1923) to design a large-scale housing project on the only unbuild site in Deurne at that time. The building site was characterised by a former fortress, constructed as part of the reinforced camp of Antwerp built by the Belgian State around the Spanish ramparts in the mid 19th century, and used as a shelter during World War II. Braem retained the fortress complex and reused it as a community centre. In addition, Braem intended to flank the fortress with seven imposing towers of 20 floors and 80 dwellings each.[2] Nevertheless, the beforementioned ideas stayed in a conceptual daylight: the Arena fortress never became the centralised cultural institute as Braem had imagined (nowadays it functions as

sporting complex) and the towers were never built.

However, medium high housing blocks of circa four floors were built. They follow the irregular outer circumference of the former fortress constructions, and enclose the green area. The buildings in the South and North of the Arena district pursued a different formalistic language; respectively a more organic, longitudinal formation with galleries and two-storey duplex apartments oriented to the park, combined with a more orthogonal emplacement of smaller blocks, in which apartments on one level are organised around communal stairwells. After the completion of the swimming pool in the North of the district, Lode Wouters (born in 1930) together with architects Fons Mostien (1940–2004) and Boud Rombouts (1947–2015) completed the Arena district with another circa 180 dwellings between 1980 and 1982: ten low-rise and middle-rise complexes, in three clusters spread over the terrain (**Fig. 1**). This happened to the dismay of Bream and the environmental movement and action groups who protested against occupying the open green areas.[3] In this paper we only zoom in on the first phase of the project, particularly the intentions and constructions of Renaat Braem.

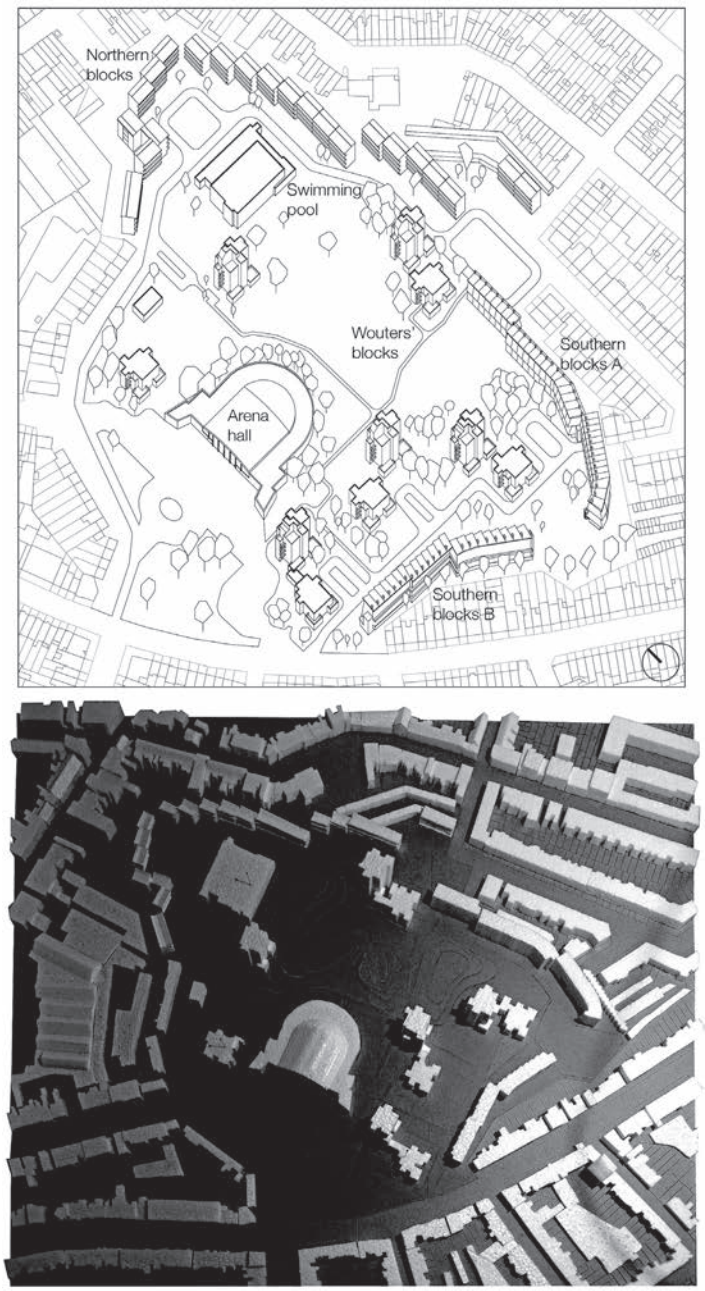


Fig. 1. **Renaat Braem, Arena District, Antwerp, Belgium, 1964, Isometric drawing and model of the Arena district in its current appearance 2019. © Marie Moors, 2019.**

3. BRAEM AND THE ARENA DISTRICT

3.1. Renaat Braem as Polemic Figure

Renaat Braem played a leading role in the Belgian modern movement. He was the only Belgian architect who did an internship with Le Corbusier (1887–1965) between 1935 and 1937, immediately following his architecture studies in Antwerp. Le Corbusier was a pivotal character in Braem's frame of reference, someone to whom he constantly mirrors himself, but also someone whose ideas he questioned. Le Corbusier appreciated Braems (radical) work, like his social housing project 'Kiel' in Antwerp, as he published it in *L'Architecture d'Aujourd'hui*,[4] and it was also Le Corbusier who had introduced him as member of CIAM. Braem took part in the CIAM-congresses of Brussels (BE) on 'Rational Land Development' in 1930 and of Aix-en-Provence (FR) in 1953 on 'Habitat'.[5] Besides, Braem was a lively representative of socialism, this comes forward in his design of the '*Lijnstad*' or his publication '*Het lelijkste land ter wereld*' (1968),[6] in which he openly criticized the lack of urban strategies and policies in Belgium. In this book, Braem illustrates a day in the life of a Flemish family where everything goes wrong because the architectural structures do not meet the human needs.[7] He was persuaded of the social role of architecture to shape the classless society.

3.2. The Values of the Arena District

The Arena district is representative for the modernist social housing through a number of characteristics. Firstly, there is the concept of the self-contained residential 'neighbourhood unit' promoting the community centric lifestyle, organised around a school and surrounded by shopping facilities and green space. A second characteristic is the ensemble-value of the buildings and the open green park structure in which every dwelling has its own terrace oriented to the park, to enlarge the indoor spatial feeling and accentuate direct contact with nature. Thirdly, the use of experimental materials like reinforced concrete in the form of a modular system of load-bearing partition walls (distance

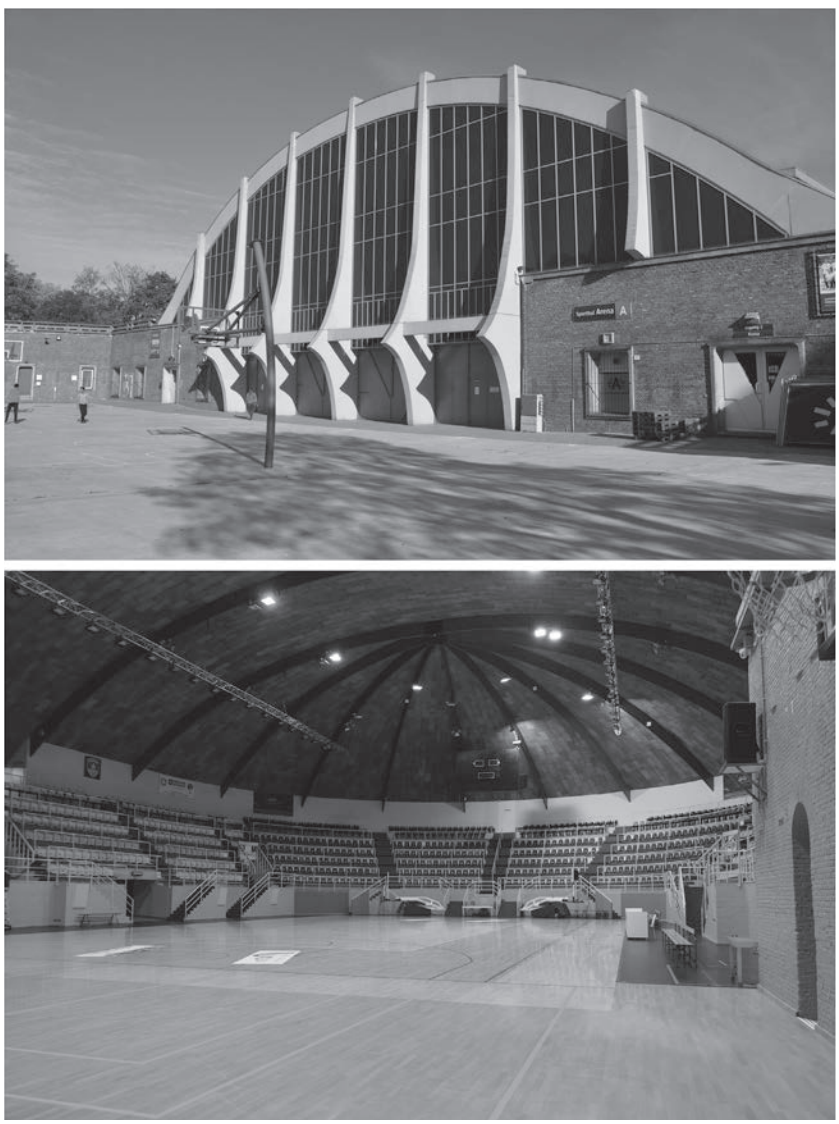


Fig. 2. **Renaat Braem, Arena District, Antwerp, Belgium, 1964. Current state 2019 of the Arena hall exterior and interior. © Marie Moors, 2019.**

between track centres is five meters). In addition, the buildings are raised on *pilotis* to serve as collective carpark in which the car was considered an object of modernity, which should have its place in the public space. Nevertheless, the open space was turned into closed individual garage boxes after a few years.

Besides being representative for the generic modernist social housing concept, the Arena project also touches upon some very unique and exceptional aspects: the historical stratification of the site, the human scale and the formalistic language and iconography.

3.2.1. THE HISTORICAL STRATIFICATION OF THE SITE

The richness of this existing historical layer was the starting point for Bream's concept and vision for the Arena site. Additional to the integral retainment of this fortress complex, an adaptive reuse as a community centre for the South of Deurne was proposed. Different plans and strategies were considered: the inner courtyard of the 'reduit' is like an arena, in which the adjoining semi-circular spaces were suitable to be reused as service spaces. The areas at the front were more appropriate for the main entrances, a caretaker's home, exhibition areas, offices, conference rooms and a café-pavilion. Beside covering the arena with the famous 'glulam-trusses', that manufacturer De Coene had developed in 1955, Braem also had the idea to add a 'stage-tower', so the site was suitable for sportive as well as cultural manifestations. There are even drawings in which he suggests to transform the round shaped part of the fortress into a gigantic sculpture with organic openings in contrasting colours. In

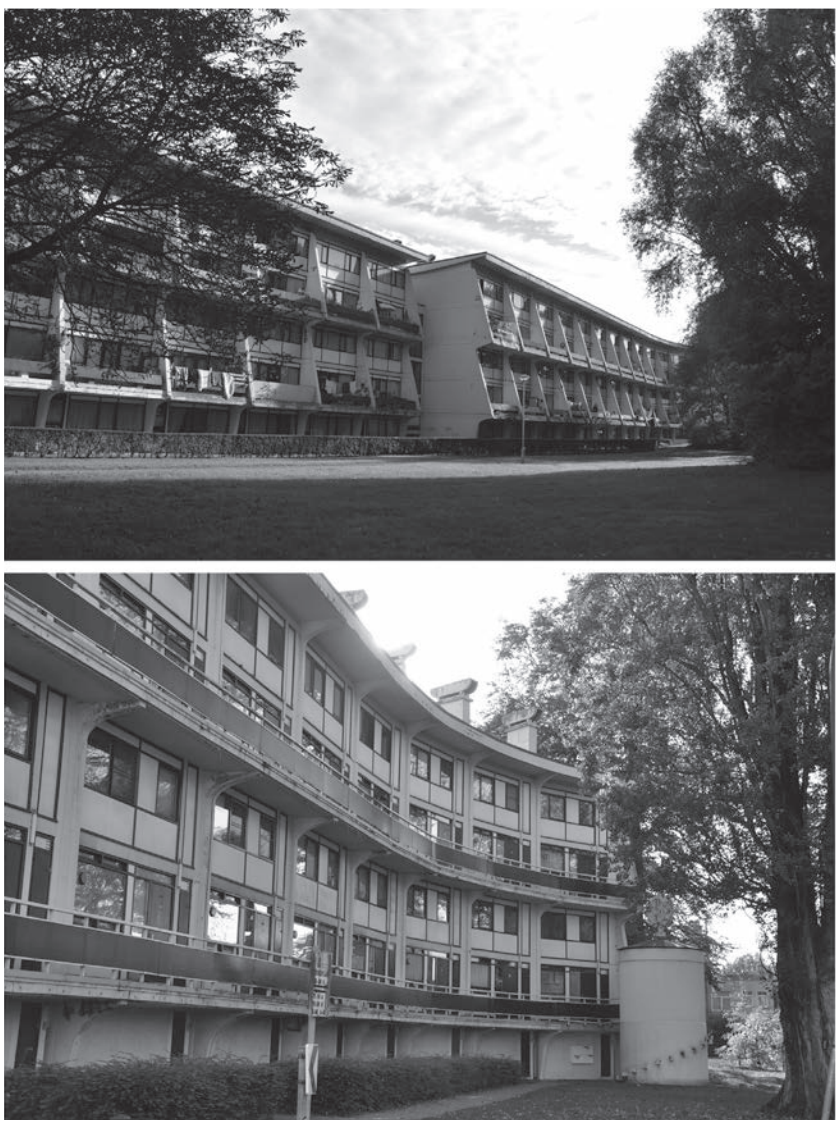


Fig. 3. **Renaat Braem, Arena District, Antwerp, Belgium, 1964. Current state 2019 of the Southern blocks of the Arena district. © Marie Moors, 2019.**

addition, there has been a plan to make the rooftop permanently accessible by making 'air-bridges' from the surrounding park. This explains the expressive forms of the chimneys and ventilations shafts on the roof of the Arena hall, openly discussed at the time by Belgian art critic K.N. Elno (1920–1993). Up to the present day the hall is only used as sporting complex (**Fig. 2**). Besides making plans for the adaptive reuse of the former fortress and placing the housing settlements at the periphery of the fortress constructions (and therefore also image-determining for his architecture), he argued to safeguard the valuable trees on the domain. These aspects can easily be linked with projects like Giancarlo De Carlo's (1919–2005) masterplan for Urbino (1958–1964), which was emerging in the same time span and which presents a detailed survey on the existing historical, functional, architectural, and social layers of the city, seeking for a strong sense of continuity between the existing and new architecture. [8] Another project that aimed at continuity was Golden Lane in London of the Smithsons (1952), in which they proposed 'streets in the sky' that connect clusters of flats, as they cross and add new layers to the topography of the existing city fabric. Also, for their urban study for the Kuwait City (1968–1972), the Smithsons used the characteristics and qualities of the former settlement to create a new identity for the place. [9] Braem and his design for the Arena district can be considered as 'adaptive-reuse *avant-la-lettre*', in which he openly demonstrates his contextual attitude.

3.2.2. THE HUMAN SCALE

'Braem is often perceived as the socialist architect of the

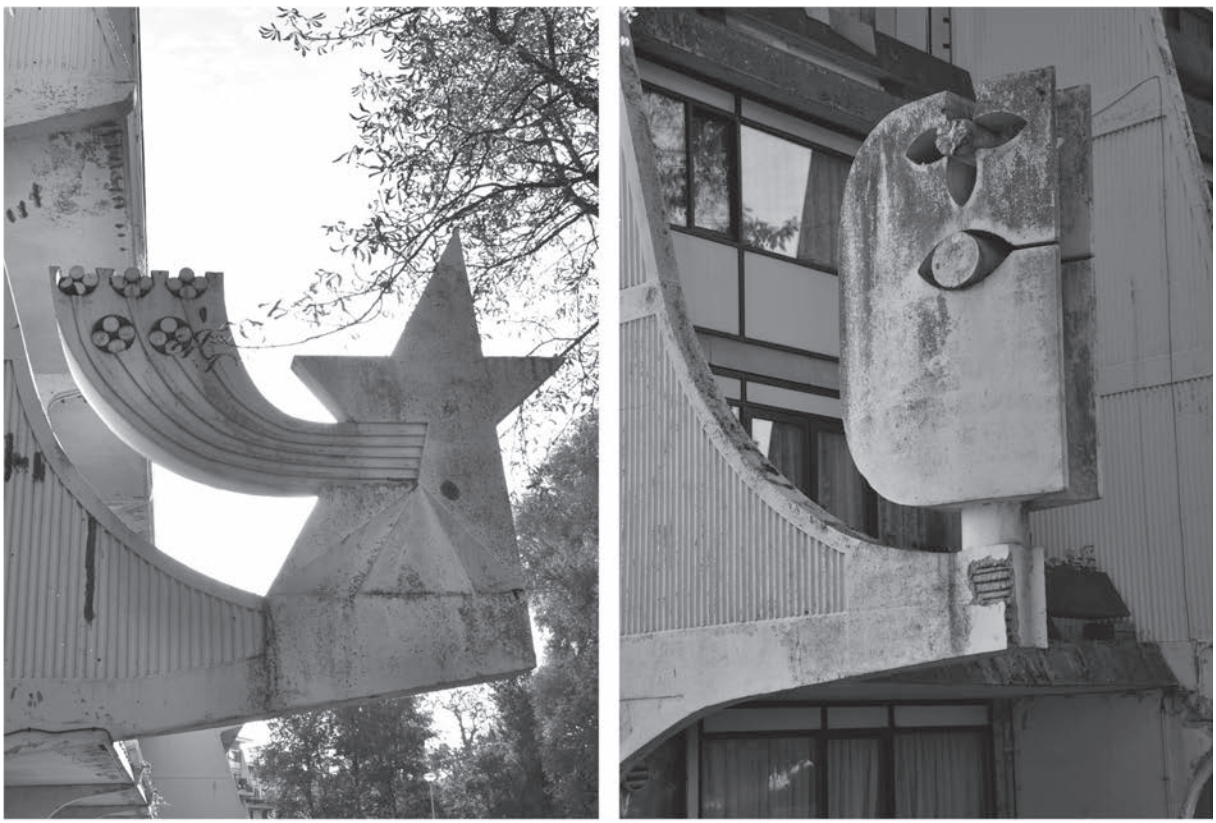


Fig. 4. **Renaat Braem, Arena District, Antwerp, Belgium, 1964, Sculptures of Braem in the Arena district representing love and luck: respectively flowers blossoming from a star and a flower growing through an abstract representation of a head. © Marie Moors, 2019.**

'second generation of modernists', already reacting on and reinterpreting the radical CIAM- principles, shifting to TEAM X (although he never became a member)'. [10] Within his socialist persuasions and linked design choices, his connection to TEAM X, and his 'more human approach' to modern architecture appears. When we project this idea to the Arena district, some particular aspects of Braem's search for human scale come to surface. In first instance, we conclude that the partition walls he introduced every five metres in the South blocks, can be interpret as a way to scale the project as individual dwellings. Also, by forming a 'gate' through one of the buildings, the idea of stepping in a 'housing arena' was emphasized. Additionally, Braem wanted to address a varied target audience from young families or single people to artists and the elderly. He does this by pursuing various, vibrant scenographies in his buildings, formed by a variation of different housing typologies (as much as the social housing company *S.M.Tuinwijk* permitted at that time): duplexes, studios, artist top floor apartments, gallery apartments (with personal front doors) etc. (Fig. 3). Moreover, withdrawing the towers contributed to the appearance of the lower four-storey volumes. This becomes clear when we compare the Arena district with one of his largest social housing estates 'Kiel' (circa 1955) in which the high-rise volumes define the project's modernist urban character.

3.2.3. THE FORMALISTIC LANGUAGE AND ICONOGRAPHY

The Arena district was Bream's final social housing project. During the last phase of his career, he renewed his interest for *Art Nouveau* as he evolved to a more sculptural formalistic language, named 'organic brutalism', inspired by the oeuvre of his predecessors like Henry van de Velde (1863–1957), Victor Horta (1861–1947) and Antoni Gaudi (1852–1926). This is clearly visible in the undulating profile of the stacked terraces and the broad overhanging asymmetrically angled roof surfaces with gargoyle of the Northern blocks, on one hand; and the sawtooth shaped two-storey duplex apartments with shifted overhanging roofs, organically shaped loadbearing partition walls, big number of chimneys as 'roof-crowns' and the ribbed structure of the facades of the South blocks, on the other hand. Yet, Braem dedicated publications to his interest for *Art Nouveau*.[11] His affection for the neo-styles was even more strengthened by the fact that he actively fought for the preservation of the Antwerp station and the eclectic neighbourhood Zurenborg in Antwerp (particularly the Cogels-Osylei), as active member of the Royal

Commission for Monuments and Landscapes from 1970 onwards until 1981. Furthermore, the Arena district is a beautiful example of the '*gesamtkunstwerk*', in which Braem realised a full assimilation between art and architecture, with symbolic statues of his own (Fig. 4). These monumental concrete sculptures, integrated into the buildings, are spread over the district as socialist accents of love and happiness. Originally they were intended to be painted in bright colours, but that never happened.[12]

4. CONCLUSION

The conclusion can be found in the discovered heritage values and the deployment of these values for the site's regeneration. The Arena district has undergone a critical shift in meaning: what was once a unique representation of a socialist answer to a military apparatus, is today a fragile and vulnerable projection of modernist social housing. In this light, a significant part of the Arena district, more specifically the Northern blocks, will be demolished in the upcoming future. However, we are convinced that research by design heralds many opportunities to not only preserve the present heritage values, but also add new layers and dimensions. There is already an extensive amount of research material on regeneration of projects with minimal to no heritage values.[13] But dealing with housing projects in a heritage context brings up new complexities. Suggestions for further research are, in first instance, a more in-depth analysis of Renaat Braem and his work in the international context of Team X and La Tendenza. It is important to mention that almost none of Braem's publications have been translated to English or French. Only some fragmented aspects of his work have been positioned in a broader context.[14] The aim of developing this broader framework is to understand the projects in time and space but also to argument new possible interventions and strategies in a research-by-design perspective, in which various scenarios could be developed, for the site's ongoing use.

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RESILIENCE AND CO-PRODUCTION: CONSERVING MODERN HOUSING IN CHILE

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ABSTRACT.

Modern mass housing complexes have been incorporated to a process of valorization that aims for its permanence. For some time now, the inhabitants of these housing complexes have requested their declaration as monuments to protect them against the threat of real estate business. In most cases — if not all of them — the declaration came at the request of the community, organized with the objective of protecting them in face of the possibility of their disappearance. The status of *zona típica* allows only keeping the housing complexes safe from the speculative process of urban land. Instead, the organization of residents within the projects has proved successful in obtaining help to actively preserve not only the buildings but also their public spaces with strategies of adaptive re-use of the land, as did the project of restoration of the elevated streets and bridges of Villa Frei, or the "*Quiero mi Barrio*" plan applied in Villa Portales and the community organization to improve the public spaces of Lastarria and Ex-Estadio housing in Arica. This paper aims to review the architectural and urban values of the complexes and the processes between different actors, including the community and the public realm, sharing resources and power during the last ten years, strategies of co-production, conservation and resilience have been able to achieve, preserve and value the legacy of modern housing architecture in Chile during the last ten years.

1. MODERN HOUSING COMPLEXES AS HERITAGE

During the 20th century, the construction of housing projects in Chile had such a leading role that it placed the country at the forefront of housing policies in the Americas.[1] In the 1950s, the Chilean housing policy proposed large scale and typologically diverse complexes that assumed the idea of predominance of a free, green ground, and greater density made possible by technological changes in construction and equipment. New urban landscapes were formed, based on strong abstract relationships and in the canonical forms of second post-war architecture. A great change of scale resulted in the construction of enormous portions of cities that challenged the usual forms of urban production, as well as its community administration and maintenance. These were promoted by state organisms, which disappeared in the 1970s–1980s facing the imposition of neo-liberal policies.

Recently, modern architecture has been incorporated into a heritage process that proposes its permanence in a new and unusual way. Almost all the complexes face speculative processes of urban land and, in some cases, gradual purchase attempts by some real estate operators. The housing complexes have been left at the mercy of real estate projects that require large areas of land, because they occupy sectors whose position in the city gives them enormous potential to increase the value of land, where the regulatory plans propose highly satisfactory densities for profitability. Faced with this threat, the communities have organized themselves to value the complexes, obtain public notoriety, put pressure on the institutional structure and obtain declarations for their protection.

In the last ten years, several modern housing projects have obtained an heritage status as *zona típica* (conservation area), a special category of National Monument established by law that aims to maintain the environmental character and protect the typical or picturesque aspect of places, towns or urban areas. The declaration allows the complexes to be kept out of the speculative process of urban land, but does not ensure funds for their conservation or maintenance. This is why the organization of the communities has proved vital to obtain the so needed aid for the effective conservation of the buildings and the adaptive re-use of their free spaces. Here, through a series of cases, the relations between conservation and the ideas of spatial co-production are presented, as well as the value of self-organization and self-management of the communities, as part of a resilient strategy towards heritage.

2. URBAN CO-PRODUCTION PROCESSES

Elinor Ostrom proposed in the 1990s an approach that is interesting when it comes to verifying the actions that communities are taking to preserve large housing complexes.[2] Focusing directly on the services provided by the welfare state, she basically pointed out that the regular provider of education, health or security were, more than often, the state or government agencies, and that as such the state has generally been the only provider of these goods and services. Co-production implies that citizens can play an active role in the public generation of the goods and services in which they are directly involved or are important to them.

Ostrom recognized the origin of the term in a direct relationship with urban and metropolitan policies, proving that the improvement in the production of a service, as opposed to a good, is difficult without the participation of

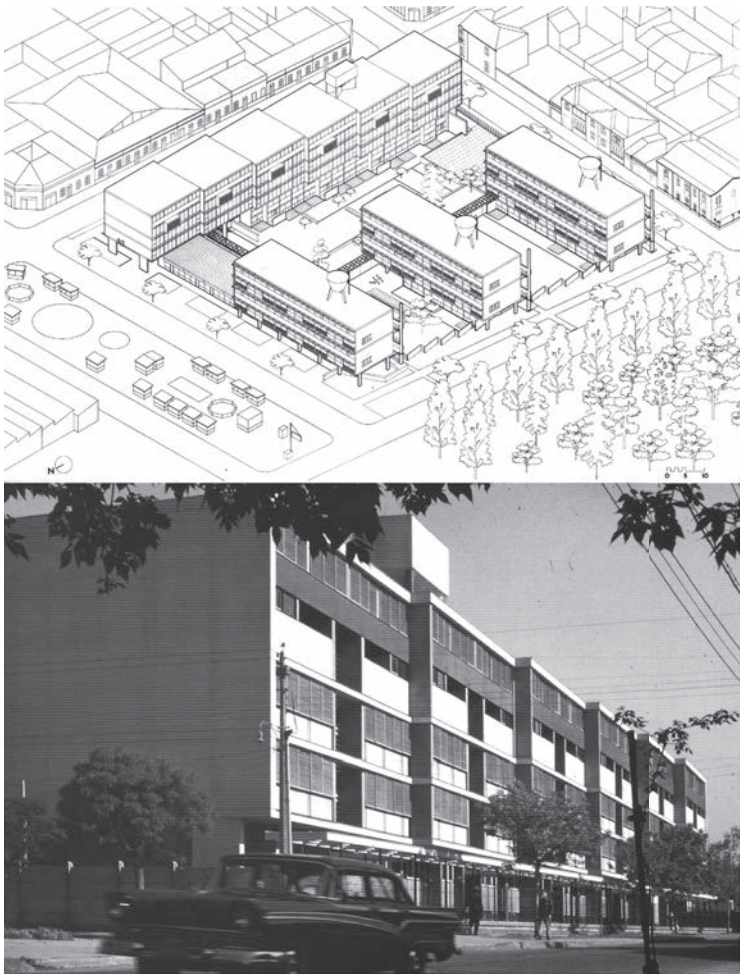


Fig. 1. **Matta Viel housing complex. Bresciani, Valdés, Castillo, Huidobro, 1954–55. Santiago, Chile. Axonometry. © Jeri, Suarez, Vidal, 2016: 40. Photo 1960. © Eliash-Moreno Archives of Modern Architecture.**

those who are supposed to be its beneficiaries. Thus, the term describes the potential relationship that can exist between the regular producer of a service (frequently the state) and the clients or receivers that want to be transformed by that provision — into safer, healthier or more educated people — ; this is equivalent, in our case, to the maintenance of infrastructures and communities that allow the valorization and preservation of the quality of life that these large housing complexes provide.

Alfaro and López have identified the multiple forms that co-production can take: from the citizens or government initiative, it can include public institutions, private companies seeking profit (for-profit organizations) and the third sector composed of non-profit NGOs. It can also focus on three different forms: participatory co-production, enhanced co-production and collective co-production.[3] Heritage conservation can clearly be considered a service, so it is important to understand both the actions initiated by the public authorities and the contributions of citizens in these processes. It is a matter of reviewing through some cases, considering the projects, the actors involved and the results, to verify the degree of co-production in the preservation of large housing complexes.

3. STUDY CASES

The Matta-Viel Housing Complex was designed by Bresciani, Valdés, Castillo, Huidobro (BVCH) in 1951, for the Social Security Fund of the National Savings Bank. The complex occupies an urban unit and is made up of a large longitudinal block and three smaller transverse ones, aligned with the layout of the perimetral streets (**Fig. 1**). It integrated a series of recreational spaces with large gardens, open areas and a swimming pool. From the beginning and for many years, the Social Security Fund was an integral part of its administration, collaborating in the care of the public spaces, the gardens and the general maintenance. Since 1975, the administration has been in charge of the owners, who have sometimes carried out maintenance works with a contribution of 50% from the municipality. However, the effects of

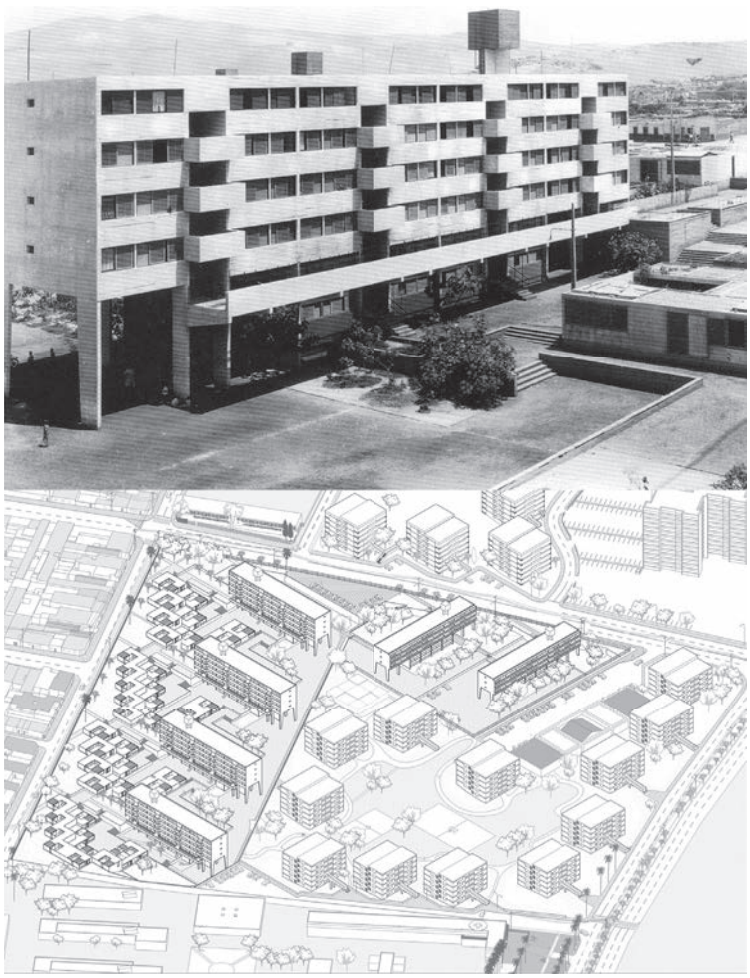


Fig. 2. **Arica Housing Ensemble. Bresciani, Valdés, Castillo, Huidobro, 1956–57. Arica, Chile. Photo Rene Combeau. 1959. Original Archives. FADEU-PUC. Axonometry. © Fondecyt 1181290.**

the 1985 earthquake caused deterioration, and over time, substantial changes were made to the facades and minor transformations on the buildings, especially to the windows.

It was declared National Monument as part of a typical zone in 2009, at the request of the community, organized against changes in planning that allowed growth in altitude in the zone. After the 2010 earthquake, the community proposed an emergency plan and subsequently took advantage of the state reconstruction grant to repair the damaged sanitary drainage infrastructure. In 2016, a group of young inhabitants organized themselves to recover the social memory, applying for funds provided by the National endowment for the arts, who published a book and a documentary, with wide participation of the population, as part of a process of preservation.[4]

The Arica Housing Ensemble was designed in 1953, also by BVCH. Six blocks are organized by elevated corridors that are directly related to the levels of the urban fabric, saving the differences of the topography. It is completed with staggered houses arranged on the upper edge of the site, organized around a central courtyard, articulating at different levels with each other and with the surrounding blocks (**Fig. 2**). It was promoted by The *Arica's Society for Progress*, which ceased to exist years later, and transferred the property to the residents. Initially a community was organized but the administration has been divided into sectors according to the entrance doors. The central common area has been left without a clear administration, which has led to its deterioration. Some administered areas are well cared for, although most remain abandoned and unused by its inhabitants. The blocks have suffered minor interventions, but the houses have been totally altered. The complex does not have any heritage protection and in 2019, a sanitation system was implemented, promoted by a Sectorial Resources Programme of the Ministry of Housing. To do this, the community had to organize itself and, although it is not a comprehensive recovery plan, it has resulted in an initial incentive to assess the whole complex.

The Lastarria Housing Ensemble, also in Arica, was de-

signed by Saint Jean, Moraga and Vallejo (1962–66). It consists of a superblock and a group of 21 houses, and is a clear example of the combination of houses in extension and apartments in density that characterised public housing in Chile. The block is 122 metres long, six floors high, and is made up of three sections that house 78 duplex units (**Fig. 3**). The entrances are on both sides of the block and show spaciousness with large openings that highlight the presence of ramps and stairs inside. The facades show the regularity of the sections, with total openings and panels with perforated bricks. It was built for the Arica Advancement Board (JAA), a decentralized state agency, which gradually handed over ownership of the departments, but retained a role in administration until its disappearance in 1978. In general, it has been well preserved, except for some houses that were altered from 1975 onwards, by handing over the front gardens, which were public, to individual ownership. It was declared typical zone in 2016, at the request of the block's community. Then some work was started to care for its appearance, basically by painting the building and restricting the fencing. Nothing has been done in the houses whose public space continues to deteriorate. The main actions have been carried out by the administration, while the social organization has not achieved an important role in the management.

Villa Portales neighbourhood Unit was designed also by BVCH (1953–60), for the private social security fund (EMPART). It is an enormous complex composed of 19 blocks and individual houses, with the long blocks, 200-metres in length, enclosing the ensemble on two sides. There are 1860 housing units, ranging from one to two-story houses, to simple apartments and duplexes in buildings between 5 and 7 floors high (**Fig. 4**). Since its population was part of the political opposition to the regime, it was left out of all public efforts during the 18 years of the dictatorship, changing administration between three different municipalities, without garbage collection or care of its public spaces. The official mistreatment made the joint administration take on an essential value in the work of the community, even though some blocks were administered in isolation.

Since 2004, **docomomo** Chile began a joint campaign with the central administration that consolidated the heritage value. In 2007, the Ministry of Housing and Urban Development implemented the Neighbourhood Recovery Programme *Quiero Mi Barrio* (I love my neighbourhood), to improve the neighbourhood environment and citizen participation. The incorporation to the programme allowed the recovery of their public spaces, liberating occupied sectors, regularizing parking lots, building sidewalks, including illumination and mainly transforming abandoned spaces into 14 interior plazas, with gardens and equipment.

After the 2010 earthquake, **docomomo** Chile did key work in documenting and recognizing the damage and deterioration. The plan was then extended to the co-owned spaces, mainly to act on the structures and sanitary installations, but also on the elevated streets and facades of the blocks.



Fig. 3. **Lastarria Housing Ensemble, Saint Jean, Moraga, Vallejo, 1962– 1966, Arica, Chile, Photo AUCA 5: 65, 1966. Axonometry. © Fondecyt 1181290.**

The successive interventions acquired a significant dimension on the architectural scale of the whole, but the results have not been up to the level of the heritage value. Although the programme has been considered a very good practice at a social level, several interventions were carried out, such as the incorporation of stuccoed panels on the original exposed concrete, or the replacement of deteriorated blinds with others that did not respect the original form, with no action to maintain the pre-existing values.[5] This was largely due to the absence of experts in modern heritage conservation, but also to the absence of an official declaration of heritage. Villa Portales, despite its international significance, has not yet been declared a conservation site, due to the complexity of its size and the social relationships between the community, the administration and the national and municipal public authorities. They have not been able to reach an agreement to present its candidacy as monument.

Villa Frei was designed in 1963 by Larraín, Larraín and



Fig. 4. **Portales Neighbourhood Unit. Bresciani, Valdés, Castillo, Huidobro, 1953–66. Santiago, Chile. Photo Rene Combeau. 1957. Original Archives. FADEU-PUC. Axonometry. © Lepratti, Alfaro, 2018: 135. Villa Frei, Larraín, Larraín, Balmaceda, 1963–68. Santiago, Chile. Axonometry © Pecorara, Gandino, Co-production workshop. Alfaro, Torrent, Profs. PUC, 2019. Photo AUCA 15: 78, 1969.**

Balmaceda for the national housing corporation (CORVI) and built by an EMPART, which initially managed it. It is a large complex made up of towers, blocks and single-family houses around a park, with some public facilities (Fig. 4). It was built in three stages, the first consisting of the towers and blocks, the second of equipment and houses, and the third of houses only. It was kept in very good conditions, due to the good construction quality and its social conformation. In 1976 the EMPART finished its administration, and in 1978 the houses and apartments were handed over to the owners. The towers and blocks sector, despite having different administrations, achieved a high level of conservation. Following the 2010 earthquake, **docomomo** Chile collaborated in the detection of the main damages to the buildings and began a process of comprehensive heritage assessment. In 2012, the announcement of the creation of a subway station in the park led to an increase in the value of land in the area, and therefore increased the appetite of the real estate business. The participation and consultation of citizens, which is mandatory due to the environmental impact of the subway, led to the organization of the community for the protection of the complex. The request for the protection was submitted in 2015 and the first sector was declared *zona típica*. The greatest achievement of the declaration has been the awakening of new community organizations and the affirmation of the valuation process that includes the restoration of paintings in some blocks, and conservation and maintenance in general.[6] The pedestrian bridges were restored, incorporating universal accessibility, restoring the original lighting and integrating art, based on an idea that emerged in the community and was financially supported by the municipality, in a co-production process.

4. CONSERVATION, RESILIENCE AND CO-PRODUCTION

Large modern housing projects were a central part of the architecture for development. Along with education, health, public equipment for sports and recreation, they were the protagonists of the great transformation that modern architecture proposed during the 20th century. The

present cases have already been widely valued as heritage, and all have initiated urban co-production processes, aiming to maintain their fundamental values. The first step in these co-production processes is to obtain public and community recognition of the heritage value, which has repercussions on the possibilities of its adaptive re-use and the preservation of the quality of life of its origins.

These large complexes emerged from the application of welfare policies, where the state played an important role through different agencies devoted to people's needs. Here the agencies (CORVI, EMPART, JAA) were not only their initial promoters, but also played a key role in their maintenance and management. With their disappearance and the shift to ownership systems, communities have been left in charge of huge developments to maintain.

The inhabitants have seen, in the form of heritage preservation, a way out of the difficulties of maintenance and, above all, to defend themselves from the real estate business and preserve their way of life, consisting of comfortable scales and population densities. Furthermore, they have recognized the role of the conservation area as a good opportunity, since by admitting the existence of official protection it allows them to receive subsidies and support from the state. It became a resistant action against the processes of urban speculation, and the organization for this purpose has awakened a resilient action.

The forms of co-production have been relatively limited, aimed at the renovation and repair of the sanitary facilities, maintenance and painting of the buildings, partial restorations, programs for the rehabilitation of public spaces and projects of cultural awareness and heritage enhancement.

The main constraints are related to the size of the complexes, which has a direct impact on the resources needed and the possibilities of organizing the communities. In smaller cases the organization has been better and the possibilities of obtaining resources greater. The options of co-production will depend not only on the size of the intervention, but also on the likelihood of configuring smaller units, determined by the morphology of the complexes organized by blocks or sets of houses.

One of the key achievements of this process has been the organization of the community to apply for grants and to make proposals autonomously, as a crucial condition for a resilient attitude.

In all cases, the structuring of governance has also had other actors who, not being part of the communities or agents of the state, have acted for the promotion and valorization of the heritage. Co-production can be a way of organizing the community with contributions from the state's competitive funds and non-governmental organizations, to enable the preservation and adaptive reuse of large housing complexes. Becoming a third agent in the relationship between community and state is **docomomo**'s challenge.

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NOTES

1 This paper is part of the research project FONDECYT Nº 1181290 "Modern architecture and the city: buildings, plans and projects in the development's laboratory, Chile 1930–1980". The author thanks Fondecyt, for the financial support. Research has also been carried out in the framework of DFG-KOPRO Int. Ansätze von koproduzierter Stadtentwicklung und ihr Einfluss auf die Entwicklung von Stadträumen (Deutsche Forschungsgemeinschaft).

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3 Paola Alfaro & Ernesto López, "The Urban as a Concrete Utopia? Co-production and Local Governance in Distinct Urban Geographies: Transnational Learning from Chile and Germany", *Emerging urban spaces,* New York, NY, Springer, Berlin, Heidelberg, 2018, 65–85.

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LE CORBUSIER AND THE IMMEUBLE-VILLAS. THE CUSTOMER AS A PRODUCTIVE RESOURCE

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ABSTRACT.

In November 1922, at the Urbanism stand of the Autumn Salon of Paris, Le Corbusier presented for the first time the Immeuble-villas project. It emerged as a new housing typology with private spaces — 120 apartments — and communal spaces — warehouse, central kitchen, restaurant, laundromat, running track, solariums, as well as sports, gaming, study, and party halls. Each apartment consisted of a small home with a garden, inside a big collective housing building. In 1930, Le Corbusier published thirteen drawings related to this project together with a presentation text in *Le Corbusier und Pierre Jeanneret: Ihr gesamtes Werk von 1910–1929*, the first volume initially published in German of the *Œuvre Complète*. In it, he pointed out that the Immeuble-villas project was designed "in the back of a restaurant menu". As usual, he relativized the creative process reducing it to an instant of inspiration. However, the amount of existing documents at the Foundation Le Corbusier about this project demonstrates that the conception process was far more complex. Apparently, the origin of the Immeuble-villas dates back to the contact Le Corbusier established with a prominent real estate society that was interested in realizing luxury buildings in Paris, where the French good taste was combined with the American sense of comfort: the *Groupe de l'Habitation Franco-Américaine*. While this relationship did not result in a concrete building, this potential client ended up playing a fundamental part in the project's genesis.

Between 1917 and 1921, Le Corbusier designed the Maisons Citrohan and Dom-Ino, inaugurated with Amédée Ozenfant his first painting exhibition, founded with the latter and Paul Dermé the magazine *L'Esprit Nouveau* and wrote articles that, once published in *Vers une Architecture*, constituted the most influential architecture book of the 20th century. While it remains a lesser known fact, besides being an architect, painter, editor and writer, between 1917 and 1921 he was also the owner and manager of a brick factory in Alfortville, in the outskirts of Paris.[1] Even though it may seem difficult to imagine today, given the intense Corbusian artistic production of that period, at the time his days were mostly occupied by the entrepreneurial practice, while the activities fundamental for the construction of the 20th century history of architecture were left for after working hours. But even if this practice did not contribute directly to his architectural production, it was probably due to the brick selling business that Le Corbusier first established contact with a prominent real estate society that was interested in realizing luxury buildings in Paris, where the French good taste could be combined with the American sense of comfort: the *Groupe de l'Habitation Franco-Américaine.*[2]

In 1922, this anonymous society was committed in constructing moderate rent housing in the plots where the dismantling of the city walls was taking place[3], in programming the beginning of the construction of four collective housing buildings and about 100 artist ateliers in Paris, as well as in building about 57 family houses in Maisons-Alfort. Probably due to the great proximity of the Alfortville factory to Maisons-Alfort, several contacts between Le Corbusier and the real estate society were established with the aim of supplying the construction with his *Briqueterie.*[4] Meanwhile, Daniel Niestlé, a friend of Le Corbusier and a member of the management council of *L'Esprit Nouveau*, visited the real estate society's offices — probably by recommendation of Le Corbusier and perhaps under the pretext of the role he had assumed one year prior as publicity solicitor for the magazine. The content of this conversation is unknown. Nevertheless, in the sequence of this visit, Daniel Niestlé received a letter from the society's co-director, Charles Seé, in which he manifested the intention of constructing a set of four buildings in Paris.[5] This letter is accompanied by a brochure, in which the group defined itself as a committee of eminent architects and engineers, competent administrators, gathered with the aim of contributing to the renovation of the French art of housing[6] (**Fig. 1**).

A strong immigration from the province and from abroad in the post-war had increased the population, and rentals became particularly expensive in the centre, originating what became known as "the housing crisis". Domestic service had become the object of concern for lawyers, hygienists, press and syndicates, questioning the model of the bourgeois family life and originating what became known as "the domesticity crisis". The economy in France had suffered a steep inflation during the war, which prevailed in the subsequent years, originating what became known as "the life cost crisis". The Groupe de l'Habitation Franco-Américaine aimed to respond to all these questions by lowering construction costs (through the employment of mechanical means at worksites, the scaling up of real estate operations, the standardization of construction elements and the serial production of buildings) and everyday expenses (through the collective purchase of perishable goods and fuel, as well as the sharing of common services and domestic service), also increasing the comfort.

The programme defined in this brochure was allegedly based on a research conducted in England, Switzerland, the Netherlands, Scandinavia, Germany and the U.S.A. — al-

though it is true that Charles Seé published, in November 1919, an article dedicated to the study of some new American cities[7], and that the allusions to American buildings were the most common throughout the text, which anyway were reflected in the group's name. These investigations had a repercussion in the construction of small family houses, but also of collective housing buildings — on whose programme the brochure focused.

According to this brochure, the buildings, made with a reinforced concrete structure, would be seven to eight storeys, and would have "wide courtyard-gardens". They would be conceived in a way to ensure an ample view, good lighting, and effective ventilation. They would have a reception hallway and "a comfortable waiting room" where a doorman would welcome visitors. The elevators would be "wide and comfortable", and the service communication would connect to the kitchens. A large party hall, with capacity for about 100 people would be placed in the ground floor. The gardens, which could envelop the constructions, would be decorated with green carpets and flowers, bushes, vines, porches, and fountains. The apartments would have a relatively reduced size, "but their convenience, the practical space configurations, the perfection and comfort of the amenities" would render living "very pleasant". They would comprise of the entry hallway, dining and living room, two or three bedrooms, bathroom, W.C., kitchen and servants' quarters. The apartments would have heating, sterile and heated water, central vacuuming, electricity and natural gas. According to the brochure, "nothing would be neglected to make these apartments pleasant" and everything would contribute "to provide the building's inhabitants an impression of comfort".

This group envisioned an interpretation of the great American hotel, which not long before had been the object of a special attention by Jacques Gréber. The building would include a shopping central, which would centralize orders (made directly to production sources, through an agreement with an important hotel and catering group) and that would sell them to occupants at cost price (reducing expenses from 25 to 30%). While each apartment would contain a private kitchen, a common kitchen would be installed in the basement, where meals would be prepared. A laundromat would ensure the laundry care, a team of seamstresses would take care of mends and a service team would be available to the tenants, who would only have to pay for the service hours. A telephone central would also be installed and maintained by a professional operator. The control of the common facilities, as well as human resource recruiting and management would be assumed by the director of a large hotel and catering company. The apartment occupants would, as such, have "all the advantages of a first class hotel, combined with those of a private apartment where they would feel perfectly at home".

The brochure also explained that the buildings would be constructed by real estate societies — co-owner community



Les IMMEUBLES du GROUPE

de l'Habitation Franco-Américaine

Comment des Architectes, Ingénieurs et Administrateurs ont pu concevoir des Immeubles de grand luxe, où le bon goût Français se combine avec le sens Américain du confort.

Comment par l'application de méthodes modernes, courantes en Amérique, mais encore peu usitées en France, ils abaissent le coût de la construction et par suite le prix des loyers.

Comment ils mettent à la disposition des occupants d'appartements un personnel domestique bien choisi et bien dirigé dont ceux-ci ne paieront que les heures d'emploi.

Comment par les achats en commun, ils réduisent les dépenses des occupants d'appartements de :

25 0/0 *sur les frais de nourriture.*
30 0/0 *sur les frais de boisson.*
25 0/0 *sur les frais de combustible.*

et également de

20 0/0 *sur les frais de blanchissage.*
30 0/0 *sur les frais de domestiques.*

Comment par suite ils solutionneront

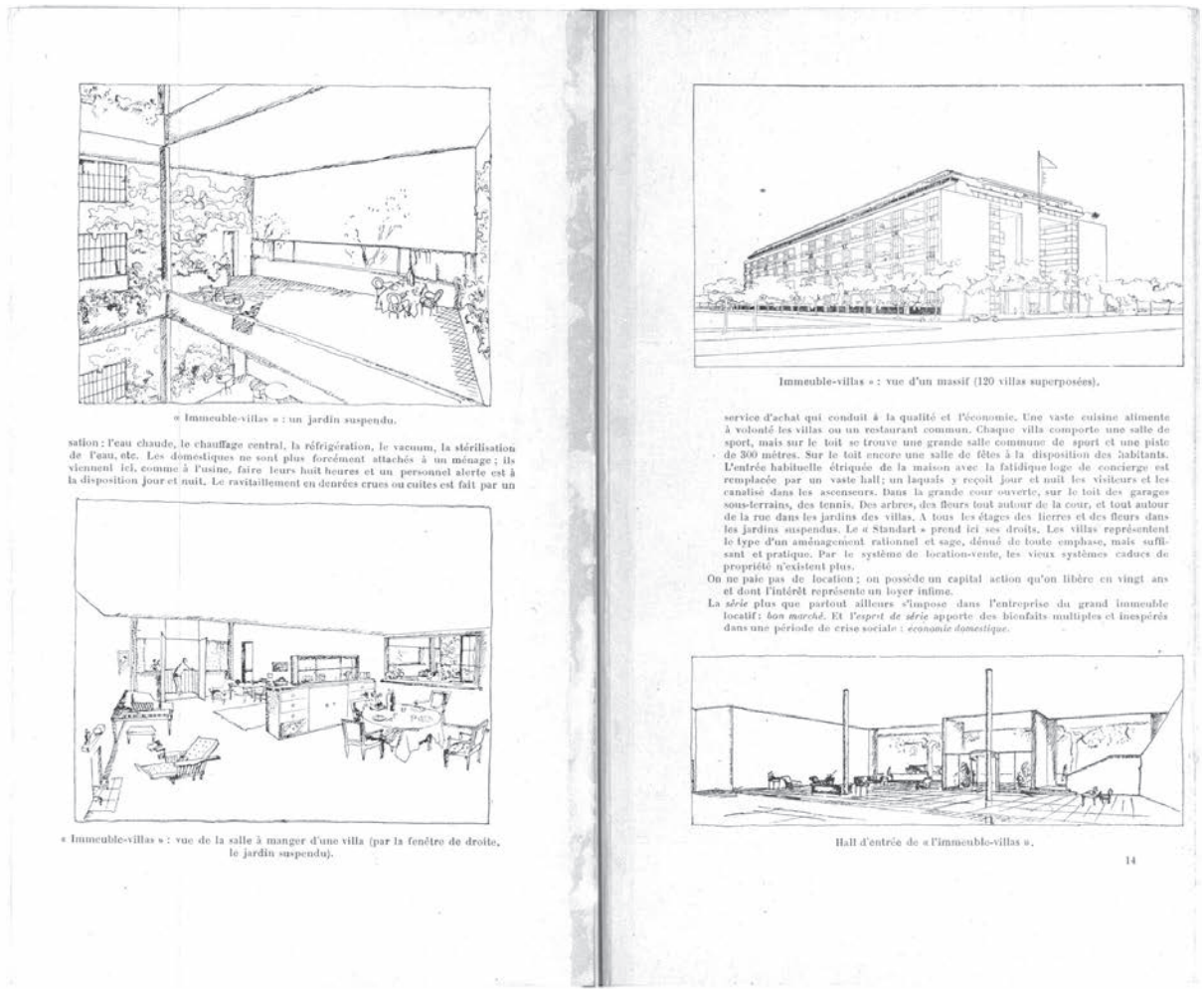
LA CRISE DE LOGEMENT.
LA CRISE DES DOMESTIQUES.
LA CRISE DE VIE CHÈRE.

les lignes suivantes vous l'expliqueront.

Fig. 1. **— Brochure "Les IMMEUBLES du GROUPE de l'Habitation Franco-Américaine". © FLC, FLC F2-16-122).**

groups, of which each inhabitant would own some shares corresponding to their parcel — managed by a board of directors, elected among shareholders. Half of the necessary capital for construction would correspond to the share capital and the other half would be acquired by a bank loan. The brochure also explained the economic advantages and classified the purchase of an apartment as a sound investment. In another brochure from that time, the group went so far as to announce it as "the most profitable and safe of any investments".[8]

At age 34, Le Corbusier did not have any duty in the scope of collective housing for Paris. He had just opened his atelier with his cousin Pierre Jeanneret — l'Atelier Le Corbusier — and recognized, in this real estate society, the profile of the enlightened client. On February 24th, he sent a letter to the group, signed "an administrator [of the magazine *L'Esprit Nouveau*]", therefore not identifying himself as Jeanneret — the name he would use in his communication as owner and manager of the Alfortville brick factory — nor as Le Corbusier — the alias used to sign his articles. To this letter he appended three issues of the magazine, marking



« Immeuble-villas » : un jardin suspendu.

sation ; l'eau chaude, le chauffage central, la réfrigération, le vacuum, la stérilisation de l'eau, etc. Les domestiques ne sont plus forcément attachés à un ménage ; ils viennent ici, comme à l'usine, faire leurs huit heures et un personnel alerte est à la disposition jour et nuit. Le ravitaillement en denrées crues ou cuites est fait par un

« Immeuble-villas » : vue de la salle à manger d'une villa (par la fenêtre de droite, le jardin suspendu).

Immeuble-villas » : vue d'un massif (120 villas superposées).

service d'achat qui conduit à la qualité et l'économie. Une vaste cuisine alimente à volonté les villas ou un restaurant commun. Chaque villa comporte une salle de sport, mais sur le toit se trouve une grande salle commune de sport et une piste de 300 mètres. Sur le toit encore une salle de fêtes à la disposition des habitants. L'entrée habituelle étriquée de la maison avec la fatidique loge de concierge est remplacée par un vaste hall ; un laquais y reçoit jour et nuit les visiteurs et les canalise dans les ascenseurs. Dans la grande cour ouverte, sur le toit des garages sous-terrains, des tennis. Des arbres, des fleurs tout autour de la cour, et tout autour de la rue dans les jardins des villas. A tous les étages des lierres et des fleurs dans les jardins suspendus. Le « Standart » prend ici ses droits. Les villas représentent le type d'un aménagement rationnel et sage, dénué de toute emphase, mais suffisant et pratique. Par le système de location-vente, les vieux systèmes caduca de propriété n'existent plus.

On ne paie pas de location ; on possède un capital action qu'on libère en vingt ans et dont l'intérêt représente un loyer infime.

La *série* plus que partout ailleurs s'impose dans l'entreprise du grand immeuble locatif ; *bon marché*. Et l'*esprit de série* apporte des bienfaits multiples et inespérés dans une période de crise sociale : *économie domestique*.

Hall d'entrée de « l'immeuble-villas ».

14

Fig. 2. **— Le Corbusier, *Vers une architecture*. Paris: Crés, 1923, 208–209. © FLC.**

therein three articles "by Le Corbusier"[9] and, simultaneously, manifesting "the utmost interest" by the group's ideas, highlighting their affinities and implicitly inviting the real estate society to present their projects to be published in a forthcoming issue.[10] The group replied a few days later, subscribing to the magazine and inviting Le Corbusier to meet their co-director, Charles Seé, for whom the articles in *L'Esprit Nouveau* "were in perfect alignment" with what they did.[11] Le Corbusier ended up calling Charles Seé and arranging for a meeting with him.[12] While the result of this meeting is not well known, a few days later Le Corbusier would be sketching in his personal diary the Immeuble-villas[13], and by the end of April he would inform Charles Seé that he had just finished the group's preliminary draft for Auteuil.[14]

Between Abril 27th and November 1st, there was no correspondence between Le Corbusier and Charles Seé, even though contact was maintained.[15] During this period, Le Corbusier would have been focused on participating in the Autumn Salon of Paris[16], where he presented his project for a city with 3 million inhabitants. The Immeuble-villas project is the only one of the three elements of this city that was represented in detail — being that the Groupe de l'Habitation Franco-Américaine sponsored the stand.[17] Le Corbusier's exhibition had a large media repercussion. The Immeuble-villas project was widely praised, particularly due to the ingenuity of the suspended gardens and the autonomy of each apartment — which much simplified the life of inhabitants (in particular of "housewives"). The project was essentially described as an alternative to the housing crisis and as a landmark of progress of modern urbanism. But Le Corbusier's ultimate purpose was not to be simply referred to by the press, but rather to build. In November 29 he contacted Henry Bellamy, the weekly *Le Progrès Civique*'s editor-in-chief, suggesting that the address of the Groupe was included in the article he would dedicate to this project, ensuring that potential partners would know how to make



Fig. 3. — **M. Daniel, perspective of the "Groupe Suffren". © Librairie de la Construction moderne, published in *La Construction Moderne*, 23, June 10, 1923, image No. 145.**

their investment.[18]

Le Corbusier took the characterization of co-ownership literally by designing a collective housing building composed of "120 villas superposes", but also by searching for a series of potential investors and co-owners. In a diary dating from November 20th, 1922, to January 20th, 1923, he wrote: "Immeuble-villas. Mme. Raaf, Francis Jourdain (amis de), Quai de la Tournelle, Niestlé, Marcel, La Roche, Roudeaud, Chopard, Besson, Parlowsky, Jaccard Warne (Pierre), Colomb (Albeic)".[19] Four of these potential investors would become future clients of his *villas* projects — Lotti Raaf (Villa Jeanneret), Daniel Niestlé (Maison Rambouillet), Daniel Sigismond Marcel (Maison Casa Fuerte, Maison Marcel) and Raul La Roche (Villa La Roche). Some were friends of the 1922 Autumn Salon of Paris's president — Francis Jourdain —, one was a Swiss engineer — Chopard (of the company Terner & Chopard) — and one was involved in the publication of *Vers une Architecture* — Georges Besson (head of the Crès publishing house and founder of *Les Cahiers d'Aujourd'hui*). It is not known whether some of these potential investors actually committed as co-owners of the enterprise, but on December 10th the Immeuble-villas project was presented in *Bâtiment et Travaux Publics* as to be realised by the Groupe de l'Habitation Franco-Américaine in a terrain in Auteuil or in Boulogne-sur-Seine.[20]

In 1923, Le Corbusier published, for the first time, the Immeuble-villas project. He did it in *Vers une Architecture* and in the scope of the text "Maisons en Série", which, with minor additions and adjustments to the original text, was published alongside some unprecedented case studies, as was the case of the Immeuble-villas project (**Fig. 2**). The definition of the Immeuble-villas project contained in this text is similar to the definition of the buildings from the Groupe de l'Habitation Franco-Américaine, being presented as a "large rental apartment building", where "a hotel management agency administers the communal building services and provides the solution to the servant crisis". Le Corbusier mentions a "mass-production construction using posts and slabs [...] cavity walls", highlighting that "more than anywhere else, *mass production* imposes itself on the large residential block: *low rent*. And the *mass-production spirit* brings benefits that are many and unexpected in a period of social crisis: *domestic economy*". Also, in this case, modern techniques "applied to so large an enterprise substitute the machine and organization for human fatigue: hot water, central heating, refrigeration, vacuum cleaners, purified water, etc." And also in the case of domestic, "are no longer attached to particular households; they arrive here, as at a factory, to put in their eight hours, and an alert staff is available day and night", and "the usual main entry to the house with the inevitable concierge's lodge is replaced by a vast hall; a doorman receives visitors here day and night and directs them to the elevators". Also, at Immeuble-villas "trees, flowers all around the courtyard and all around the street in the gardens of the villas [...] on all floors, ivy and flowers in hanging gardens". Just as the Groupe de l'Habitation Franco-Américaine mentioned in their brochure that their buildings would be constructed by a community of co-owners, Le Corbusier could not have left out in this publication that "with the rental-purchase system, old and outmoded owner-

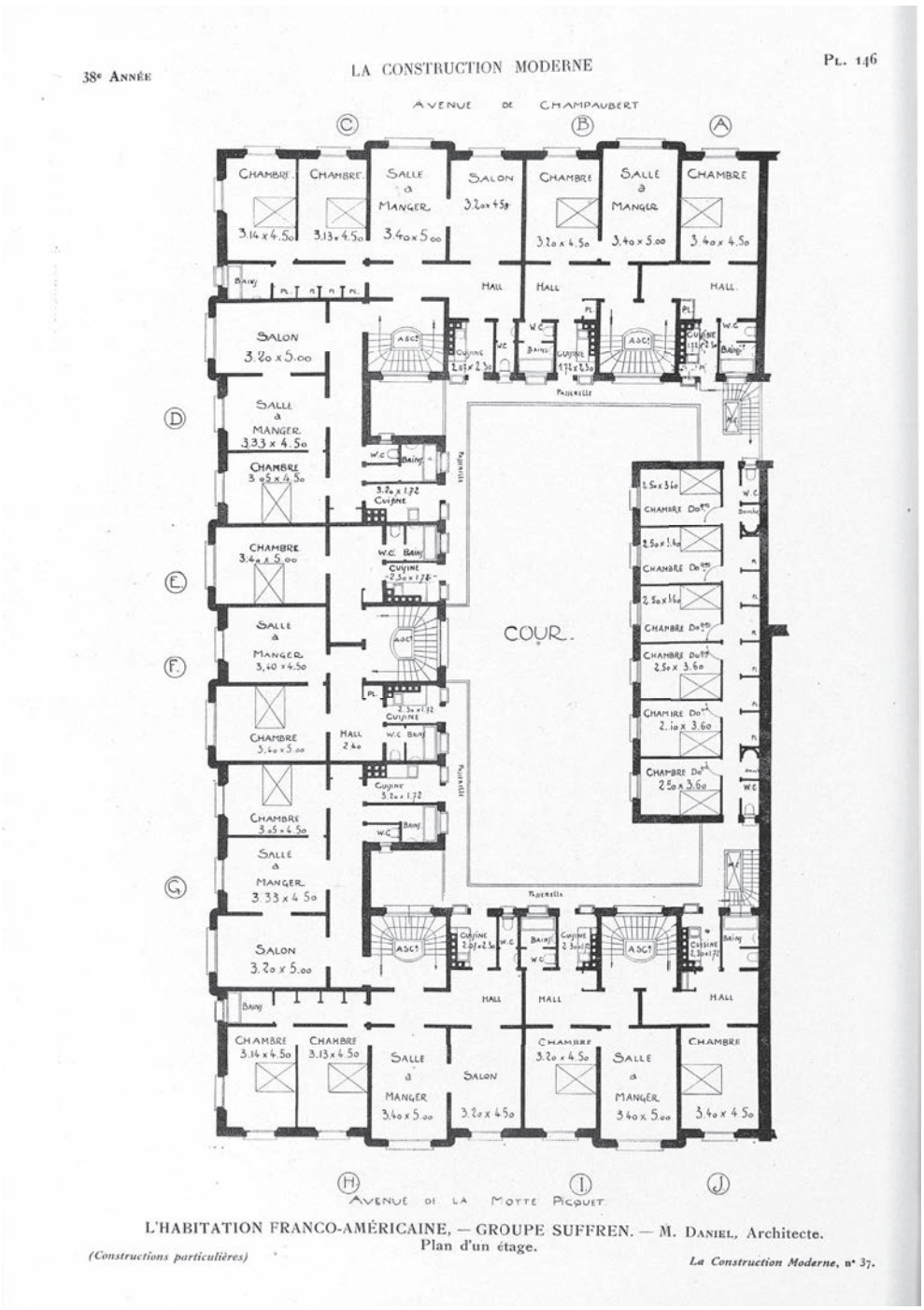


Fig. 4. — **M. Daniel, floorplan of the "Groupe Suffren". © Librairie de la Construction moderne, published in *La Construction Moderne*, 23, June 10, 1923, image No. 146.**

ship systems no longer exist [...] you pay no rent; you own stock that is paid off in twenty years and the interest on which represents a very low rent".

On January 31st, 1923, Le Corbusier prepared a letter addressed to Charles Seé, in which he announced the sending of the drawings concerning the Immeuble-villas,[21] as well as a list with a number of possible terrains for its implementation.[22] Despite having addressed a possible accord already in the first meeting with Charles Seé, Le Corbusier had been working without being paid — if we disregard the sponsorship of his exhibition at the Autumn Salon of Paris —, because in the same letter he requests that a cost estimate be

done and that an accord determining the duties of each partner be signed.[23] Le Corbusier also asked Charles Seé to provide the number of necessary investors — mentioning that he already had some interested and making himself available to find more.[24]

The construction the 105 apartments of the first collective housing building of the Groupe de l'Habitation Franco-Américaine, at the Rue Suffren, designed by M. Daniel, was only started in March, 1923. Even if the image and spatiality of this building (Figs. 3 & 4) are, in fact, very different than those of the Immeuble-villas, its programme is quite similar to that of the Groupe de l'Habitation Franco-Américaine's brochure. However, and in spite of all diligences, Le Corbusier and the Groupe de l'Habitation Franco-Américaine never constructed the Immeuble-villas, once the group became involved in a difficult financial crisis. Even though Le Corbusier continued, for years, trying to build the Immeuble-villas, having attempted to establish various partnerships — first with Charles Seé (working on his own account) and then with characters like Raoul Decort (author of the Maison Isotherme), Louis-A. Gas and E. Froté (from the Société Technique et Industrielle d'Entreprises), or Gustave Bonnel (manager of buildings in Neuilly-sur-Seine) — the truth is that no other client had such a decisive role in the definition of the building's programme as did the Groupe de l'Habitation Franco-Américaine.

ACKNOWLEDGEMENTS

Obs.: This research was conducted with the support of the Portuguese Foundation for Science and Technology — FCT (SFRH / BPD / 93776 / 2013) and the Research Centre for Architecture, Urbanism and Design of the Lisbon School of Architecture, Universidade de Lisboa (CIAUD).

NOTES

1 Tim Benton, "From Jeanneret to Le Corbusier: Rusting Iron, Bricks and Coal and the Modern Utopia", *Massilia 2003, Anuario de Estudios Lecorbusierianos*, Barcelona, Fundación Caja de Arquitectos, 2003, 28–39.

2 This origin was denounced by Pierre-Alain Croset, in the article "Immeuble-villas. Les origines d'un type", Jacques Lucan (dir.), *Le Corbusier: une encyclopédie. Ouvrage publié à l'occasion de l'exposition 'L'aventure Le Corbusier'*, Paris, Centre Georges Pompidou, CCI, 1987, 178–189.

3 BHdV Ms 2197.

4 About the sale of products from the Alfortville Briqueterie to the Groupe de l'Habitation Franco-américaine there is at least one document in the Archives of the Foundation Le Corbusier: "At the request of Mr. BIZOT, I send you herewith two minutes relating to tests made on the ARO SCORIES bricks manufactured in Alfortville. These reports made on various samples allowed the establishment of the product's final quality", letter by Jeanneret (Le Corbusier), addressed to Sée (Groupe de l'Habitation Franco-Américaine), dated April 18th, 1922, FLC G1-3-498. Even tough this document is dated April, 1922, it is very likely that the comercial relationship between Le Corbusier and the real estate society has begun prior, because this letter presumes at least one previous contact, in which it was defined that tests to the bricks being used were to be carried out, as well as a period to fulfil them.

5 FLC F2-16-112.

6 FLC F2-16-122.

7 Charles Sée, "Villes Nouvelles. La question des cités ouvrières aux Etats-Unis", *La Revue de Paris*, Paris, vingt-sixième année, tome sixième, Novembre-Décembre 1919, 798–821.

8 BHVP 113537.

9 Le Corbusier-Saugnier, "Trois rappels à MM. les architectes: 3e article", *L'Esprit nouveau*, No. 4, January 1921, 457–470; Le Corbusier-Saugnier, "Des yeux qui ne voient pas… II. Les avions", *L'Esprit Nouveau*, No. 9, June 1921, 973–988; Le Corbusier-Saugnier, "Maisons en série", *L'Esprit Nouveau*, No. 13, December 1921, 1525–1542.

10 FLC F2-16-114.

11 FLC F2-16-115.

12 In Le Corbusier's diary of that period there is a record of a phone call addressing Charles Seé (F3-3-3-027) and of a meeting with Charles Sée (F3-3-2-029). Both actions were carried out, because he placed a diagonal line over the respective instructions, after having fulfiled the tasks.

13 Marta Sequeira, "Le Corbusier's Immeuble-villas and an After Lunch Remembrance", *La Casa. Espacios Domésticos. Modos de Habitar. II Congreso Internacional Cultura y Ciudad*, Madrid, Abada Editores, 2019, 441–453.

14 FLC F2-16-116.

15 In Le Corbusier's diaries of the time, there are several records of contacts with Charles Sée (F3-3-3-006, F3-3-3-008, F3-3-3-015, F3-3-3-024, F3-3-3-028, F3-3-3-030-031, F3-3-3-037, F3-3-3-039, F3-3-3-044, F3-3-4-003, F3-3-4-013, F3-3-4-018, F3-3-4-023, F3-3-4-025, F3-3-4-033-035, F3-3-4-037-039).

16 FLC A2-11-14.

17 FLC F2-16-117.

18 FLC A2-22-29.

19 FLC F3-3-5-031.

20 FLC X1-2-83.

21 FLC 19085, FLC 19082, FLC 19083, FLC 19097, FLC 19070.

22 FLC F2-16-118.

23 FLC F2-16-118.

24 FLC F2-16-118.

Session 3-f

MODERN HOUSING TOWARDS A RESILIENT CITY

Kenji Watanabe
Professor of Tokai University

This session is organized by the significant arguments for establishing modern society, especially, modern housing in the history of modern movement in architecture.

After assimilating the civilized values of 19th century western culture and the living environment, mass housing was invented in the 20th century. This housing typology is a core idea of the Modern Movement. The relationship between private and public spaces is an essential condition for the development of family and community values. Mass housing became a tool of ideological and political agendas after World War II. The analysis of dwelling conditions implies an understanding of the occupation of space: related spaces, uses, and functions. Addressing the act of living as the main fact of culture, we can find that mass housing reflected an era and a doctrine of mass production.

From World War I to the present day, housing has been a central programme to the Modern Movement worldwide. Increasingly, we have been facing critical issues concerning the demolition and deterioration of such housing, since DOCOMOMO activities commenced in the 1990s.

Adding to it, post-industrial society has brought changes in our way of living that have had repercussions in the occupation of the dwelling space: consumerism and individualism have grown as new paradigmatic lifestyles; new communication systems have been developed allowing increasingly diverse ways of working; households are no longer exclusively composed of nuclear families; sharing and temporary forms of housing are increasingly common; and people relate to each other at a distance – a condition that Covid-19 has reinforced. It has become important to promote spatial occupations not envisaged when the buildings were conceived, and to address flexibility of use to accommodate current lifestyles and raise levels of satisfaction.

This session aims to consider how modern dwellings have responded to different ways of living, from their conception, up to the present day. More than six or seven decades later, are modern dwellings resilient or obsolete? How can modern housing sites and neighbourhoods be preserved while meeting contemporary concepts of comfort, in a continuously changing context of socio-cultural values?

Therefore, this session is expected to prompt discussions covering the whole range of the history of mass housing in the Modern Movement up to the resilient inheritance of modern housing, considering its production, demolition or conversion, in an era of depopulation.

Following to such arguments, two speakers of this session as remarkable academic researchers have based on Spain and Italy, firstly, Patricia Raul Noormanhomed will discuss how their dwelling conditions and the criteria defined for their occupation have contributed to emphasize inequalities within the colonial city, focusing on Mozambique as Portugal colonization and modernization by providing a broader view of what really meant the expansion of modern architecture in this territory, beyond the emblematic buildings that have captured the attention of most of the specialized literature.

Secondly, Francesca Albani will seek to bring out the importance of preserving the residential character of this social housing district within the social and economic dynamics on an urban scale of a city besieged by mass tourism leading to the depopulation of the lagoon and closure of commercial activities for residents, transforming the city into a sort of “amusement park”. She can point out, in the 1980s this neighbourhood was mainly populated by families, it is now made up of the elderly and single individuals, despite urban policies to favour young families.


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SOCIAL HOUSING AND URBAN SEGREGATION IN LATE COLONIAL MOZAMBIQUE

Patricia Noormahomed

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ABSTRACT.

During the second half of the 20th century, in the last years of the Portuguese colonial rule, Mozambique witnessed an extraordinary urban growth that extensively modified the appearance and social structuring of its main cities. This was due to the rapid and continuing increase of the urban population that led to a euphoric transformation with many modern high-rise developments replacing the old garden city models. However, these buildings were mainly intended for the wealthiest, while few initiatives were carried out with the specific purpose of solving the housing problems of the working and more modest social classes. Initiatives, mostly insufficient, of which it is worth highlighting those promoted by the *Junta dos Bairros e Casas Populares* (JBCP).

Throughout the 1960s and the 1970s, this institution planned a series of modernist settlements, primarily located on the urban peripheries, to accommodate the lower-income population. Among them, a particular set of collective housing neighbourhoods, the object of this study, that were widely reproduced throughout the main cities of the Mozambican territory.

Focusing on these, this paper aims to discuss how their dwelling conditions and the criteria defined for their occupation have contributed to emphasise inequalities within the colonial city. In so doing, it is intended to reassess the role of modern housing in the late colonial urban development of Mozambique by providing a broader view of what really meant the expansion of modern architecture in this territory, beyond the emblematic buildings that have captured the attention of most of the specialised literature.

1. AN INTRODUCTION TO A COLONIAL FRAMEWORK OF URBAN SEGREGATION

During the second half of the 20th century, in the last years of Portuguese colonialism, Mozambique witnessed an extraordinary urban growth that extensively modified the appearance and social structuring of its main cities. This development took place within the affirmation framework of the Portuguese colonial rule, under the *Estado Novo*[1] regime, which, in the context of generalised decolonisation of the African continent, refused to accept any ideal of independence for its "overseas territories". And it did so through a rationale that was based on the idea of Portugal as a "pluricontinental and multiracial nation" where the lack of geographical continuity did not prevent the "overseas provinces" to form an integral part of the Portuguese state.

To legitimise this, the Salazar dictatorship opted, from the 1950s on, for the settlement of these regions with citizens of the mainland as a way of maintaining its colonial rule. This caused a significant increase in the population of European origin in Mozambique that went from about 31,221 inhabitants in 1945 to a total of 162,967 in 1970.[2] The rapid and continuing increase in the population was accompanied by a large number of investments and speculative developments designed to meet the growing demand for accommodation for the middle and upper echelons of colonial society. Investments based mainly, in the urban context, on collective housing programs that, following the principles of the Modern Movement, rapidly replaced the old models of the garden city with ever higher buildings. As a result, a modern utopia materialised with large real estate investments promoted, mostly, by private initiatives and aimed, primarily, at the colonial bourgeoisie.

However, as this development took place, the dual and segregationist character of Mozambican cities was also accentuated as the dichotomy between the European urban centre, known as *Cidade de Cimento* [City of Cement], and the African settlements, the so called *Caniços* [reeds], was reinforced. The first constituted as "an organised city, and sometimes well organised, for whites and other 'assimilated'"[3], while the second as "a chaotic urban territory occupied by the African and other discriminated"[4] groups, entrenched in a process of social exclusion.[5]

But not only the growing real estate developments in the *Cidade de Cimento* contributed to this process of spatial, racial and social segregation, also, and as will be exposed throughout this paper, the few initiatives carried out with the specific purpose of solving the housing problems of the working and lower-income classes. Initiatives, mostly intermittent and insufficient, of which it is worth highlighting those promoted by the *Junta dos Bairros e Casas Populares* (JBCP).

2. THE *JUNTA DOS BAIRROS E CASAS POPULARES* NEIGHBOURHOODS IN MOZAMBIQUE

The JBCP was created in 1962 in order to finance the construction of affordable housing for the so-called *economicamente débeis* [economically weak].[6] Those who inhabited the *Caniços* "where ideals of revolution and hatred towards the



Fig. 1. **Junta dos Bairros e Casas Populares, Fundação Salazar, Maputo, Mozambique, 1971. © Author, 2019.**

regime would flourish".[7] The same ones that in the Luandan *musseques,*[8] had by then already demonstrated their ability to challenge the colonial administration, and who could once again put the Portuguese government to the test if they decided to replicate on Mozambican soil, the events that marked the start, in 1961, of the anticolonial war in Angola. Hence, after decades of neglect and lack of interest, colonial authorities then considered it urgent to find solutions to the multiple urban problems of the *Caniços*' inhabitants, including the lack of proper housing, as a way to win their "minds and hearts".[9]

Already since the end of WWII, the United Nations had been urging its members to improve the living conditions of the colonised people so that, little by little, the doors for their self-determination were opened.[10] The socioeconomic development of the indigenous population became at that time an important point on the ideological and political agendas of the colonial authorities in sub-Saharan Africa. And, as a result, the housing question was given a prominent place in the attempt to materialise a feeling of well-being among the African population.

In this scenario, various public offices were created throughout the continent with the aim of promoting the construction of decent housing for the natives. Such is the case, in the Belgian colonial context, of the *Office de Cités Africaines* (OCA) which built numerous modern settlements on the outskirts of the main cities of the current Democratic Republic of the Congo, Rwanda and Burundi.[11] Another example is the *Société Immobilière du Cap Vert* (SICAP) which promoted, between 1951 and 1960, approximately 3,426 dwellings in the surroundings of the Senegalese capital, the city of Dakar.[12]

Thus, the JBCP arose in Mozambique, in a similar way to the Belgian OCA and the Senegalese SICAP, in order to build houses equipped with the basic living conditions such as running water, sanitation facilities and waste management systems together with electricity and paving streets and sidewalks. With this, the development of a structured policy of construction of social housing that allowed the integration of low-income socioeconomic classes in the colonial urban structure was sought.[13]

Throughout the 1960s and the 1970s, this institution planned a series of modernist settlements, primarily located on the urban peripheries, to accommodate the lower-income population. Among them, a particular set of collective housing neighbourhoods that were widely reproduced throughout the main cities of the Mozambican territory. The first, still known in the capital, Maputo (former Lourenço Marques), as *Fundação Salazar* [Salazar Foundation], was promoted in 1971 in collaboration with the homonymous institution created in Lisbon in 1969 under the name of the former Portuguese dictator: António de Oliveira Salazar.[14] A foundation that aimed to contribute to the resolution of the urban housing problem throughout the entire Portuguese "Empire" by promoting neighbourhoods for the underprivileged. To do so, they appealed mainly to private funding

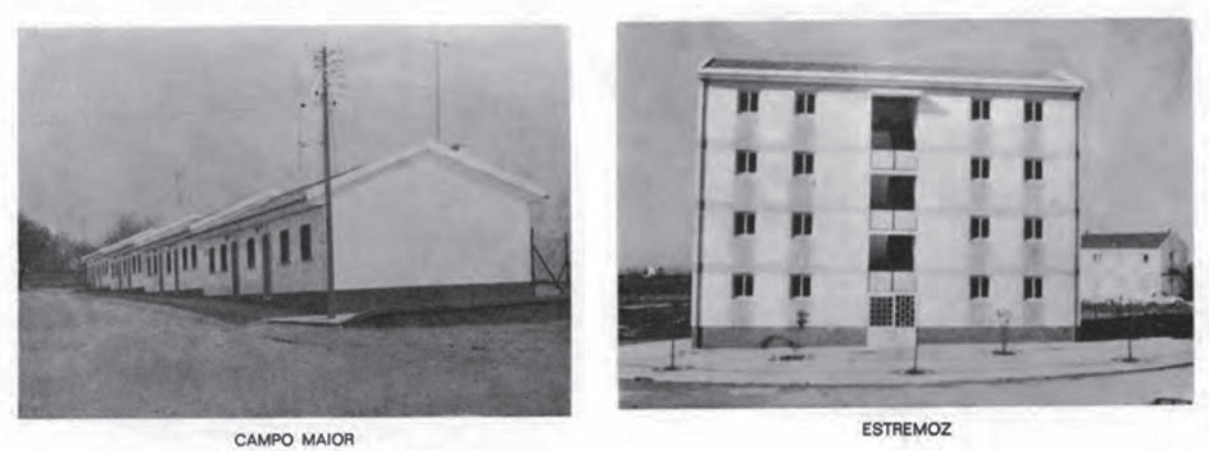


Fig. 2. **Fundação Salazar, neighbourhoods in Campo Maior and Estremoz, Portugal, A single-family housing neighbourhood in the first case; and, the most common model, a half-height multi-family housing block settlement, in the second case. © Freire and Borges, "O problema da habitação rural", 152.**



Fig. 3. **Junta dos Bairros e Casas Populares, Bairro Pais Ramos, Beira, Mozambique. © Author, 2020.**

from individuals and companies, but also to estate financing through collaborations with municipal authorities which supported their activities not only with legal access to public resources but also with donations and technical assistance of standard dwellings.[15] Such is the case of the settlement designed for the Mozambican capital (Fig. 1).

Initially promoted to accommodate the disabled Mozambicans of the Portuguese armed forces, this neighbourhood was built accordingly to the same prototype used by the *Fundação* in its metropolitan residential complexes (Fig. 2): a four-story block of collective housing with two apartments on each floor.[16] From the rationality of this model any combination was possible including, as in the case here under study, its linear aggregation in order to create a larger building where the final unit was formed by two blocks with two differentiated accesses and stairwells and a total of four apartments per floor, eight per module and sixteen per building. A combination that allowed the grouping of sever-

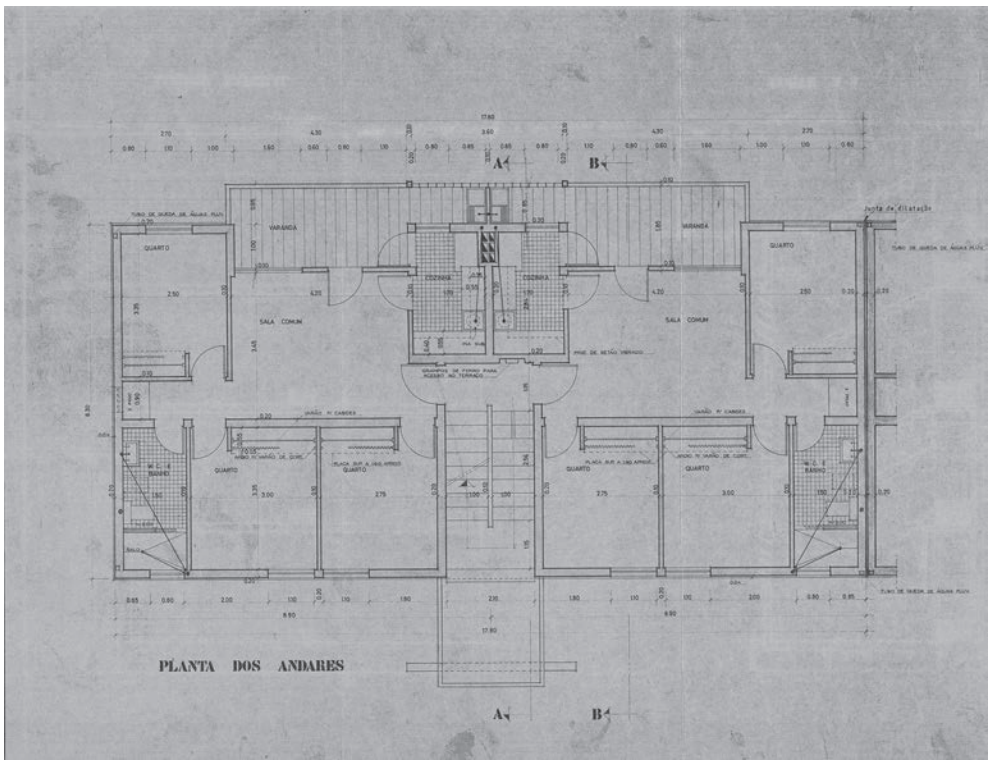


Fig. 4. **Junta dos Bairros e Casa Populares, Fundação Salazar, Maputo, Mozambique, 1971, Floor plan. © Conselho Municipal de Maputo, 19/71.**

al units in order to urbanise a transitional area between the urban and the rural, through an orderly and regular layout, in the style of the German and Central European *Siedlungen* of the early 20th century.

However, comparing to other collective housing blocks that were being built in Mozambique at the time, such as the *TAP-Montepio*[17] or the *Tonelli*,[18] this prototype can be considered neither original nor innovative. Here we do not find the rich formal expression of deep galleries, extensive panes of *brise soleil* and animated geometric panels that we can distinguish in the examples above. The only elements that contribute to break the sobriety of its layout are a series of fixed horizontal *brise-soleil* and/or geometric lattices protecting the open spans of the vertical communication core. But, despite all this, the block housing model of the *Fundação Salazar* turned out to be a true innovation in the field of affordable housing in Mozambique since, until then, most of the developments of this nature were still using single-family housing integrated in the garden city as their preferential model.[19] And it also proved to be extremely efficient. That is why new settlements emerged from it all over the Mozambican territory (**Fig. 3**).[20]

3. LOW-INCOME HOUSING AS A TOOL FOR COLONIAL URBAN SEGREGATION

The JBCP was the one in charge of promoting and financing their construction and then selling them on a thirty-year rent amortization basis. Through these, it was sought to provide affordable housing not only to ex-combatants, as in the first case, but, in general, the *economicamente débeis*, regardless of their "race". Although in the end this was not exactly the case. And it was not the case because, on the one hand, the layout used in the apartments was primarily designed to meet the living needs of a standard European family, the same "normal family" as in the universal prototypes of the OCA and the SICAP, and not a traditional African family, which were certainly more heterogeneous. Hence, the conventionality of the dwelling. A dwelling where the interior was divided into night (three bedrooms and one bathroom) and day (common living room and kitchen) areas, that open to a large terrace, without leaving much room for any possible rearrangement or adaptation of the space to the local way of living (**Fig. 4**). A dwelling that makes clear that in the JBCP thinking there was only one way of living, a universal one, that, in reality, was intrinsically European.

On the other hand, and unlike what one might expect from a social housing institution, the African population with fewer resources did not really have a place there. Not only were the rental prices too high for almost all of the African native population, but also the conditions defined for the occupation of the apartments demanded, according to several of the current inhabitants of these neighbourhoods,

a certain level of adaptation to European customs and ways of life, the so-called "assimilation".[21] Only from this assimilation was it possible, under the colonial authorities' point of view, to understand how to live in the proposed housing model.

Thus, by denying any type of adaptation to the African living, the JBCP neighbourhoods not only failed to improve the living conditions of the local population, but also, with the occupation criteria that excluded most of the African population, they also helped to maintain the existing socio-racial segregation that characterised the Mozambican colonial urban landscape. A segregation that became even more polarised given that, now, the *assimilados* [assimilated], the only one with the possibility of residing in these houses together with the *economicamente débeis* Europeans, were also submitted to a differentiation from the rest of the "African mass". This ended up by generating new patterns of urban segregation within the colonial city. Patterns similar to those observed by Beeckmans in the SICAP houses, where the dwellings ended up by being occupied, almost exclusively, by the so-called *evolués* [evolved], and that led this author to define them as the "Development Syndrome".[22]

4. CONCLUSIONS

Today, almost fifty years later, these residential blocks are still perfectly recognisable in the urban landscapes where they were inserted due to the homogeneity and scale of their elements. However, with the post-independence urban growth and the socio-spatial dynamics introduced by the new regime, they have attended, and continue to do so, a complex process of cultural and functional resignification. A process that has not be accompanied by a strategy to guarantee its proper maintenance, putting now their integrity in risk.

By focusing on these, this paper has aimed to provide a broader view of what the development of modernity in this territory really meant, beyond the emblematic buildings that have captured the attention, until now, of most of the specialised literature. At the same time, by going further than the physical and formal aspects of this architecture, it was intended to reassess its role in consolidating the discriminatory and segregationist character of the Portuguese colonisation in order to contribute to a more solid debate on Mozambique's built heritage. A debate, nowadays, ever more necessary when the country's modern legacy is in an increasingly widespread state of advanced degradation due to the lack of specific measures for its conservation.

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2 Cláudia Castelo, "'O branco do mato de Lisboa': a colonização agrícola dirigida e os seus fantasmas", *Os outros da colonização — Ensaios sobre o colonialismo tardio em Moçambique*, Lisboa, Imprensa de Ciências Sociais, 2012, 29.

3 José Forjaz, *José Forjaz: a paixão do tangível, uma poética do espaço*, Maputo, Escola Portuguesa de Moçambique, Centro de Ensino de Língua Portuguesa (EPM – CELP), 2012, 37.

4 Forjaz, 37.

5 While the urban population in Mozambique increased as a result of the arrival of new settlers from the mainland, these neighbourhoods also undertook remarkable growth, from the fifties, on due, in large part, to the immigration of indigenous rural population that spontaneously occupied the surrounding areas of the main Mozambican cities.

6 Carlos Silva, "Colonial Urban Planning in Lusophone African Countries: A Comparison with Other Colonial Planning Cultures", *Urban planning in Lusophone African countries*, Burlington, Ashgate, 2015, 27.

7 Albino Mazembe, *Experiências na Gestão de Terras Urbanas e Peri-Urbanas na área Metropolitana do Grande Maputo: O GUHARLM (Gabinete de Urbanização da Região de Lourenço Marques)*, 2007.

8 Name by which the peripheral neighborhoods in Angola are known.

9 Mazembe, *Experiências na Gestão.*

10 Luce Beeckmans, "The 'Development Syndrome': building and contesting the SICAP housing schemes in French Dakar (1951–1960)", *Canadian Journal of African Studies / Revue canadienne des études africaines*, 2018, 2.

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15 Freire & Borges, 150.

16 Freire & Borges, 150.

17 For further information, see Ana Tostões, *Arquitetura Moderna em África: Angola e Moçambique*, Casal de Cambra, Caleidoscópio, 2014, 274–289.

18 For further information, see Tostões, 290–307.

19 Such is the case of the Munhuana neighborhood, built in the forties in the capital and considered the model to follow for the construction of settlement for the indigenous population. Fernandes & Mendes, "Dicotomias urbanas em Moçambique", 7.

20 During this research, it has been possible to identify three other similar settlements: one in the capital, composed of eight buildings located a few meters from the aforementioned pioneer complex; another in the city of Beira built on the land of the former Pais Ramos airfield, where eight blocks were implanted; and another in the city of Nampula, composed of five blocks located at the edge of the city centre.

21 Until 1961, there were three population groups in Mozambique: the indigenous, the *assimilados* (assimilated), and the whites. *Assimilados* status was granted to Africans who had demonstrated that they had learned to speak Portuguese, that they had assimilated Portuguese values and customs, and that they had the means to support their families. Eduardo Mondlane, *Lutar por Moçambique*, Maputo, Centro de Estudos Africanos, 1995, 47–48.

22 Beeckmans, "The 'Development Syndrome'", 3.

SOCIAL HOUSING IN VENICE. THE GIUDECCA HOUSING ESTATE BY GINO VALLE (1980–1986) AND THE CHALLENGES OF CHANGE

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ABSTRACT.

In Venice in Italy, a multi-layered city with unique features, Gino Valle and Giorgio Macola built a social housing complex on Giudecca Island. It is a complex with a clear and compact shape, organised by transverse bands in harmony with the principle of development of the whole island. Rejecting the aggregative and typological schemes that the legislation of the time provided for public housing, Gino Valle designed a very rich range of typological variants with layouts based on three principles: individual access, vertical organisation of the homes around a courtyard (duplex and triplex units) and views over the lagoon. Module, type, grid, and repetition were design tools to generate a sophisticated and controlled system of variations with a "familiar" character to infuse the inhabitant with a deep sense of identification with the place. The paper seeks to bring out the importance of preserving the residential character of this social housing district within the social and economic dynamics on an urban scale of a city besieged by mass tourism leading to the depopulation of the lagoon and closure of commercial activities for residents, transforming the city into a sort of "amusement park". While in the 1980s this neighbourhood was mainly populated by families, it is now made up of the elderly and single individuals, despite urban policies to favour young families. Unless controlled, they may lead to the transformation and even loss of an important masterpiece of Italian architecture of the late 20th century.

1. INTRODUCTION

The Italian architectural landscape in the second half of the 20th century was characterised by a series of attempts to redefine architecture and its history in the light of the crisis of the modern. "In the aftermath of the Liberation, a difficult dialectic between knowing and acting was imposed on architects committed to giving answers to the new Italian reality"[1] wrote Manfredo Tafuri in the first chapter, devoted to the years of reconstruction, of his *Storia dell'architettura italiana*. The problem of the comparison with the recent past had led to a rethinking in the way of looking at architecture and the teaching of the masters of the 1920s and 30s. For the generations that grew up under fascism and had fought against the regime, the moral demands of architecture were a lesson in which history was understood as an instrument of thought and action, in keeping with the teachings of Benedetto Croce. The encounter with politics and professional practice appeared a necessity in the face of the undermining of the progressive ideals of architectural Rationalism. In promoting a post-Rationalist and organic approach, capable of going beyond Modernist stylistic features and archetypes, Bruno Zevi[2] and then Manfredo Tafuri[3] undertook a critical re-examination of modern architecture in the light of a wide-ranging historical discourse, defining history as an operational methodology of architectural work in a period, the 1970s and 80s when economic, social and cultural developments brought significant changes in human life.[4] The construction of social housing was undertaken using strategies that sought to combine the urgency of a "home for all"[5] with widespread affluence, generating new needs and solutions. The socio-economic dynamics, a lively architectural debate, urban plans and building regulations defined a form of construction in Italian cities that favoured construction of medium-high linear or tower blocks, as well as neighbourhoods consisting of two- or three-storey home units.[6] Within the extensive building production, often notable for speculative purposes, a large proportion of the buildings or complexes was designed by architects and engineers of national and in some cases international importance. These neighbourhoods gave rise to new parts of the city.

In this cultural, social and economic context, Gino Valle designed and built various social housing complexes that embodied the themes of typological repetition and constructional rationalisation. In particular in Venice, a multi-layered city with unique features, Gino Valle and Giorgio Macola built a social housing complex on Giudecca Island, immediately south of the central islands of Venice. The site is near the Stucky Mill, an flour mill designed by Ernst Wullekopl from 1895 now converted into a luxury hotel and apartment complex. Giudecca Island was historically an area of large palaces with gardens, the island became an industrial area in the early 20th century with shipyards and factories. Much of the industry went into decline after World War II, but it is now once more regarded as a quiet residential area of largely working-class housing with some chic apartments and exclusive houses. It is known for its long dock and its churches, including Il Redentore church designed by Palladio.

2. THE GIUDECCA HOUSING ESTATE

2.1 The Neighbourhood and the Giudecca Island

Working on commission from the local authorities, in the 1980s Gino Valle — with the support of Giorgio Macola, Maria Caterina Redini, Giuseppe Camporini, Alfredo Carnelutti, and Carlo Mauro — designed a very compact housing



Fig. 1, **Urban Section of Housing Estate by Gino Valle on Giudecca Island, Venice (© Gino Valle Archive, Udine, 1980).**

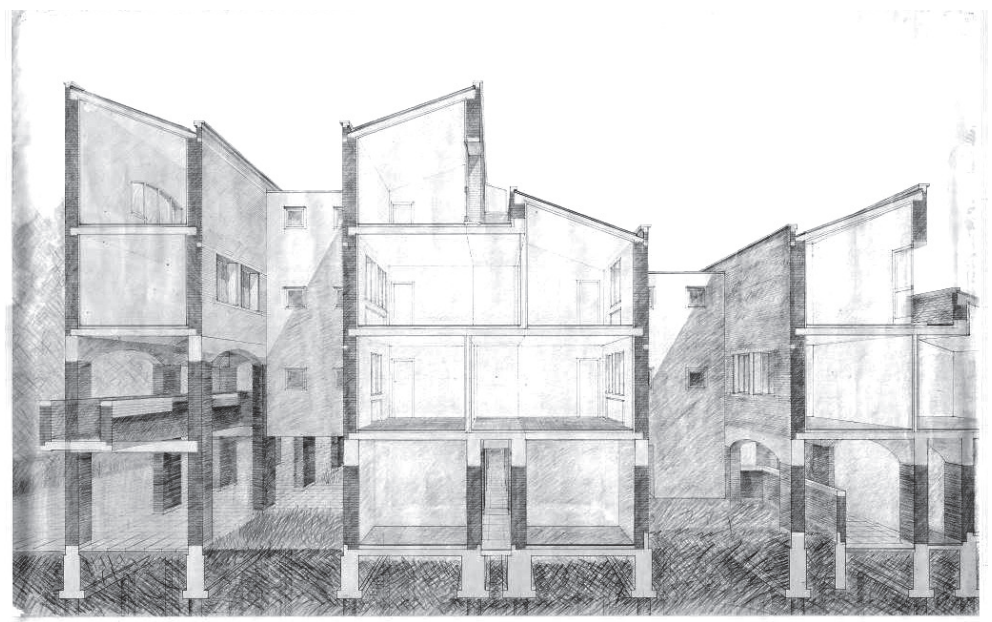


Fig. 2. **Giudecca Housing Estate, section (© Gino Valle Archive, Udine, 1980).**

complex of 11,000 square meters on the former site of the Trevisan boatyard on the Giudecca.[7] This project was developed in compliance with the technical regulations laid out by the Coordination Plan of the Detailed Plan for the Giudecca and through the funding ensured by Law 25 of 1980. The area for the development of the new working-class neighbourhood was almost entirely expropriated from the Trevisan boatyard, which was required to confine its business to the southern stretch of the island.[8] This was originally intended to be cut off from the new housing estate by a canal, which however was never built. The detailed plan, later replaced by a new one, called for the extension of green areas towards the boatyard. Most importantly, it called for an extension of the Molino Stucky's build fronts along the side canals (**Fig. 1**). This gave a clear and compact shape to the housing estate, organised by transverse bands in harmony with the principle governing the development of the whole island. The continuous façades of four-storey buildings ranged along the two side canals helped consolidate the borders of the complex, whose central part is developed through buildings that slope down from four to two storeys to give each housing unit a view of the lagoon (**Fig. 2**).

Through this project, Gino Valle further developed his reflection on the relationship between new buildings and their settings, by engaging with a unique city that tends to limit and influence projects. As a consequence, projects either adopt the formal solution of imitation, or display complete indifference to the setting. They almost invariably fail to strike the necessary balance between such a formally perfect city as Venice and the inevitable dissonances produced by the creation of something new. The peculiarity of Gino Valle's project, on the one hand, consists in forsaking sentimentalism and not giving in either to literary recollections of Venice, or to the sometimes almost Disneyland world it somewhat playfully evokes; on the other hand, it consists in seeking inspiration through a survey of the morphology of the city's existing building types, more specifically those present on the Giudecca. The project establishes a system of relations with the setting that range from a reinterpretation and confirmation of the morphology of the area through its division into bands, to the relation with the canals (**Fig. 3**). The choice not to alter the defining quality of the area has

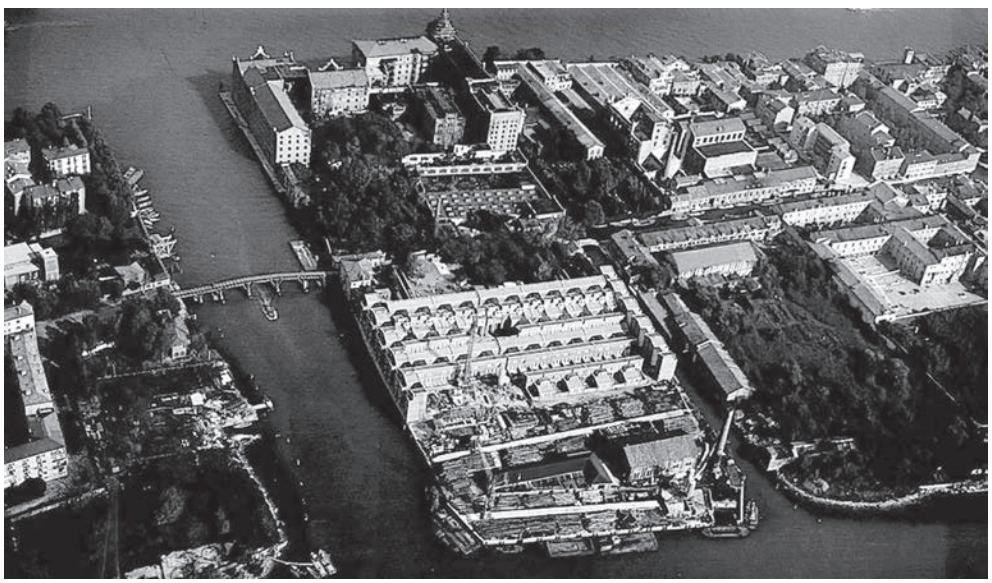


Fig. 3. **View of Giudecca Housing Estate, 1986 (© *Domus* 678, December 1986, 39).**

led to an orthogonal arrangement of the axes of the modular grid, following the directions of the predominant morphological elements: the island's main pathways and the side canals.

The composition, materials and open spaces helped overcome the "extraneousness" of this complex with respect to the Venetian urban fabric, enabling it to create real and figurative connections with the context, synergistically integrating it with its setting. An article published in Domus in 1986 associates this project by Gino Valle with the houses developed by Ignazio Gardella at the Zattere in 1957, precisely because the former encapsulates the debate on the relationship between cities and architectural planning in those years. The reference to the city as a purely linguistic fact and the understanding of it chiefly in terms of typological aspects is especially discernible in the "definition of the open spaces, which prove most interesting, particularly when viewed within the context of the development of the popular housing models".[9]

2.2. Types of Homes

The housing project was designed to meet a series of government requirements concerning the size of dwellings, established by Law 513 on social housing issued in 1977. These guidelines led to the definition of 94 homes for roughly 370 residents: 28 at 46m², 40 at 70m² and 26 at 90m², for a total surface of 4,192m², of which 2,929m² for the checker-pattern buildings, 444m² for the terraced houses, and 819m² for the tower buildings along the sides of the estate.[10] The complex has a compact layout based on a regular 1.65 x 1.65 grid, whose size essentially derives from the fact that four modules define the minimum space of 9m², six the 14m² room, nine the living area, and three modules in a row the space of a stairway with a landing. In the central area, a space measuring roughly 100 x 35 metres articulates the inner distribution.

Gino Valle designed paths and open spaces with a hierarchy evoking the spatial qualities of typical Venetian outdoor spaces (calle, campiello, etc.). In the study of distribution to the homes we find the theme already investigated in the social housing estates in Udine or Santo Stefano di Buja, which drew on the scheme developed by Peter and Alison Smithson in the early 1950s. This was in open controversy with Le Corbusier's Unité d'Habitation, based on the idea that the distribution to the homes had to be achieved by veritable "streets in the air", not enclosed in corridors, but open to the landscape. This idea is calibrated with the intimacy of the access routes to the homes created with the skilful presence of walls that guide the steps and frame the vision of the architecture, almost always oblique (**Fig. 4**). Various paths branch off from the entrance: the staircase leading to the balcony of the entrances to the homes in the first row, the bordering "calle" (street) that leads to the entrances to the towers, the portico leading to the central "campiello" (small square). All these spaces are distinguished by a familiar character that creates an intimate perception of the spaces of distribution, as if they were the "antechamber" to the homes.

Rejecting the aggregative and typological schemes that the legislation of the time provided for public housing, Gino Valle designed a very rich range of typological variants with layouts based on three principles: individual access, vertical organisation of the homes around a courtyard (duplex and triplex units) and views over the lagoon (**Fig. 5**). This is a system of checker-pattern buildings sloping from north to south, and made up of three bands of dwellings ranging



Fig. 4. **Ground floor at the entrance of estate (© Albani, 2020).**

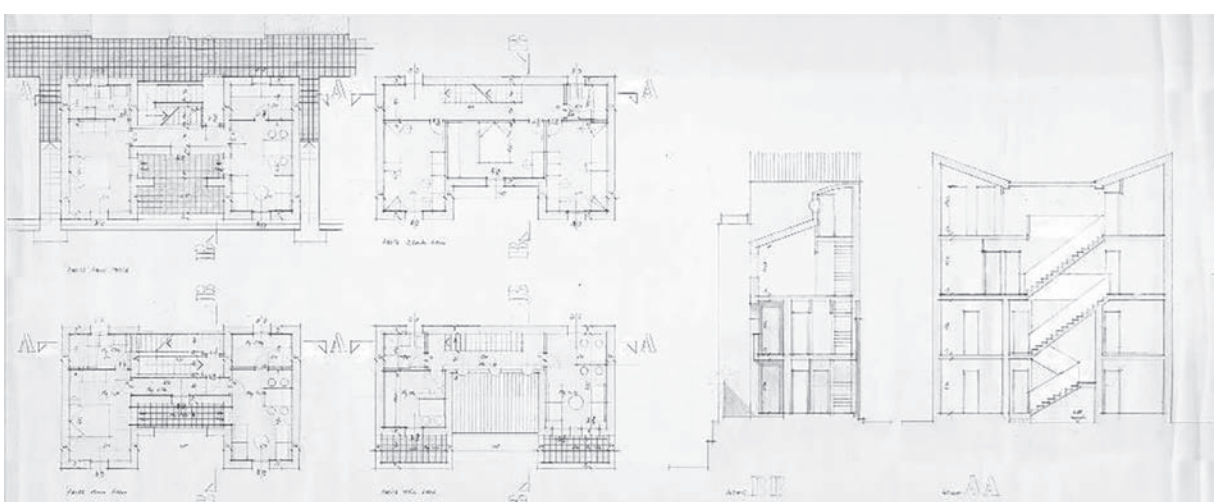


Fig. 5. **Plan and section towers on the channels (Gino Valle Archive, Udine, 1980).**

from four to two storeys. The first band, to the north, is formed by seventeen 90m² apartments and four 70m² ones accessed from a landing on the first floor. The 90m² apartments are distributed around an open space that makes it possible to set the living areas to the south. The second band is formed by sixteen 70m² duplex apartments whose kitchens/dining areas overlook a private green area. Extending along each side calle are five four-storey tower buildings. Each of these includes two 46m² apartments on the ground floor and first floor, plus a 90m² duplex on the second and third floors.[11]

The strength of the housing estate entirely derives from the contrast between the 'introversion' of the plan through the rooms overlooking the courtyard and the open views offered by the top floors. Module, type, grid, and repetition were design tools used to generate a sophisticated and controlled system of variations with a "familiar" character to fill residents with a deep sense of identification with the place.

2.3. Construction

Construction of the complex commenced in the summer of 1984 and ended in the autumn of 1986. The work was

carried out by the ICCEM company of Marghera, the structural engineering plans were developed by Giuseppe Crapiz, and management of the operations was entrusted to engineer A. Ravà, with the support of surveyors Nube and Morello from the Planning Department of the Venice City Council.

One of the defining features of Gino Valle's research is the continuity between planning and construction. In 1979 Gino stated:

> *I regard my profession as constant work in progress, as a continuous flow. Planning and projects are part of this continuity. Planning leaves the studio when construction begins, and at this moment it is 'an interrupted architecture', only a drawing, but it is a heap of drawings for construction, a score for a performance that will be the first and the very last. And the night of the premiere lasts a long time, for years of one's life.*[12]

The bearing structures of the complex are exposed face brick walls with reinforced concrete elements (pillars and main beams). The foundations, as is usual when building in the Venetian lagoon, consist of reinforced concrete girders resting on 15 and 30-ton driven and bored piles, and concrete and masonry flooring. The window openings measure one metre and are often combined (forming two- and three-light windows), with double glazed wooden frames. The openings have an exposed concrete lintel reminiscent of some of Kahn's doors and windows.

Each dwelling has an independent gas heating system and electrical system, with an individual meter.[13]

3. LIVING IN VENICE IN THE 21ST CENTURY

3.1. Mass Tourism and the "Expelling" of Residents

In the aftermath of the Second World War, Venice started attracting a considerable flow of Italian and international tourists, drawn to the uniqueness of the place. In the early 1950s, when the city centre had 174,800 inhabitants, the population started moving to the mainland — to Mestre and Marghera, which offered the kind of living conveniences that Venice lacked. After the opening of the Marco Polo International Airport at Tessera in 1960, and the creation of the artificial island of the Tronchetto in 1961, the city adopted strategies and policies increasingly designed to meet the needs of visitors, whose numbers were steadily growing, progressively sector has witnessed an unprecedented boom. Over the years, the number of visitors in Venice has constantly grown: in 2007, 3,626,853 arrivals and 8,842,874 presences were recorded; in 2012, 4,106,161 arrivals and 9,310,132 presences; this trend was confirmed in 2019, with 5,523,283 arrivals and 12,948,519 presences.[14] Conversely, the number of official residents has plummeted in the city centre: the highest number of inhabitants was recorded in 1951, 174,808 people; this gradually dropped to 78,165 residents in 1990, 66,386 in 2000, and only 53,976 in 2020.[15]

The drop in official residents and the increase in tourists are connected. The pressure from tourism probably represents the main factor behind the flight of residents from the city centre, as the attractiveness of the centre for tourists increases the value of local real estate: many residents have long sold or let their properties, moving to the mainland, while their former homes are used for tourist purposes.[16]

3.2. Changes in the Composition of the Resident Population

In addition to the phenomenon of depopulation, Venice is undergoing certain changes in terms of the composition of its resident population.[17] The average age of residents has increased and generational turnover is occurring very slowly. In the case of the houses on the Giudecca, the residents are mostly people who were assigned these homes in the 1980s, even though the allocation system is designed to promote the presence of inhabitants falling within different age brackets — especially young families. The main problem faced by this popular housing estate lies in the new needs of its aged population. The dwellings on the Giudecca are mostly duplex or triplex apartments with an internal stairway and a vertical distribution. As such, they are not well-suited to the needs of elderly residents, who sometimes have mobility issues. It is necessary, therefore, to plan new work, without radically altering the architectural and cultural features of a place that bears witness to the cultural debate raging in the second half of the 1950s, in terms both of the search for new affordable housing types and of the relationship between new buildings and their setting.[18]

4. CONCLUDING REMARKS

The relationship between tourists and the resident community in a city such as Venice affects the inhabitants' quality of life, lifestyles, and habits. The great tourist flows at times enter in conflict with the local inhabitants, creating serious problems in terms of the use of the urban space. For example, one consequence of tourist pressure on historic centres is the change of use of the architectural heritage, whose buildings are converted into tourist accommodation facilities to meet new demands. This increases the rift between residential and tourist areas, altering local balances. Mass tourism is regarded as a cause of social instability, of language changes, and of phenomena connected to the commercialisation of the architectural heritage that trivialise the tourist experience, eliminating all forms of authenticity, and turning the city into a place of consumption for tourists. This paper has sought to bring out the importance of preserving the residential character of this social housing district on the Giudecca within the context of the social and economic dynamics of a city besieged by mass tourism: a phenomenon that is leading to the depopulation of the lagoon and to the closing down of commercial activities for residents, turning the city into a sort of "amusement park".

While in the 1980s this neighbourhood was mainly pop-

ulated by families, it is now made up of the elderly and single individuals, despite the urban policies designed to favour young families. The architectural features, architectural barriers and the quality of the spaces determine the need to make alterations to adapt it to the standards required by current regulations and requirements of use. The main interventions generally consisted of overcoming architectural barriers to entering the housing, but in particular the great issue of the internal distribution of duplex and triplex home units, with an elevator system having to be developed within the housing in some cases. Unless checked, such changes may lead to the transformation or even loss of an important masterpiece of Italian architecture of the late 20th century. This risk should not lead to the processes of museumisation of the complex, with a series of spaces hosting cultural events dealing with architecture and art, in which Venice is very rich. Hence, it is essential not for the complex alone but the city of Venice, to retain the residential character of the place. At the same time, strategies aiming at its complete reuse should include interactions with cultural events, such as the Architecture Biennale, to promote its conservation and enhance the value of a complex much celebrated by architectural critics, but whose maintenance has all too often been neglected.

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BIOGRAPHIES

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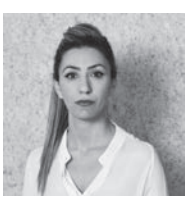
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Miles is Director of the Scottish Centre for Conservation Studies and Professor of Architectural Conservation at the University of Edinburgh. He has published extensively on modernist and contemporary architecture and housing, and on Scottish historic architecture in general: his books include the award-winning *Tower Block* (with Stefan Muthesius) and *The Conservation Movement*. His current research is focused on the international history of housing, on which he has newly published an overview monograph, *Mass Housing, Modern Architecture and State Power, a Global History* (Bloomsbury, 2021); a history of public housing in Hong Kong is also forthcoming.

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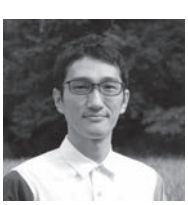
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After some medical studies, I went to the faculty of law of the University of Lille, France, where I got my Master degree in Town Planning, Construction and Environmental Law.
The fascination derived from an internship in the European Council of Town Planners led me to pursue a PhD on the complex relation between oil flows, and the legal framework that emerge in response to and in preparation for oil-related spaces and environments. I have been given the chance to do this PhD in the Faculty of Architecture of TU Delft in 2018, in the Chair of History of Architecture and Urban Planning.

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Frank Mahan is an architect and global leader of Skidmore, Owings & Merrill's adaptive reuse practice. His projects have revisited several midcentury SOM landmarks, including the U.S. Air Force Academy in Colorado, as well as Manufacturers Hanover Trust and One Chase Manhattan Plaza — both in New York. Frank's recent adaptive reuse portfolio includes restoring the Waldorf Astoria, repositioning two superblock buildings for Citi's Global Headquarters, and converting the Farley Post Office into Moynihan Train Station and offices. Frank is a member of Building Design+Construction's 40 Under 40 class of 2017, and winner of the AIA's 2019 Young Architects Award.

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Marie Moors studied architecture at Hasselt University. Her master project was on display at the Biennale Architettura 2018 in Venice in the light of the Young Talent Architecture Award by the Fundació Mies van der Rohe (finalist). In 2018, she held a one-year internship at the TeamvanMeer! office in Hasselt, which specialises in restoration projects and heritage throughout Belgium. Currently, she is engaged in a PhD (FWO fundamental research) entitled 'Re-reading modernist housing estates: An inquiry into the value of threatened heritage sites and the possibilities of adaptive reuse as a method for re-evaluation' and part of the research group TRACE.

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Diana Mosquera studied Architecture at Universidad del Valle (CO), Integrated Arts School, from 2004 until 2009. In 2015, she did a summer workshop on modern architecture in New York and Chicago and attended the course of addressing the urbanization challenge in Jerusalem. Afterwards she did her master's of Interior architecture and adaptive reuse at Hasselt University (BE), faculty of Architecture and Arts. Her thesis and master project focused on modern heritage and the adaptive reuse of modern housing in Kuwait. Currently, she is working as an independent architect for the Kuwaiti architecture firm of Alhumaidhi architects.

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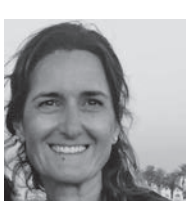
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He was a design columnist for Etiqueta Negra, and winner of the Rafael Marquina Bueno National Award for his research challenging funerary typologies. He is currently investigating occupancy as a metric for architecture during and after the pandemic.

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9784904700754

ISBN978-4-904700-75-4