



The Meyrin Satellite Precinct in Geneva. On the right, the Georges Ador's ensembles Meyrin Parc and Le Ciel Bleu (1960-64), the mall and schools; on the left, the housing complexes by architects André and Francis Gaillard (1961-69, 1961-71) and Virginio and Jacques Mainati (1970-73). © Centre d'Iconographie Genevoise-BGE, Geneva.

The European Large Scale Heritage

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The theme of this 54th **docomomo Journal** is **Housing Reloaded** facing Post-War Housing Complexes in Europe. The debate focuses on the challenges and strategies that have been encountered in efforts to preserve collective housing in Europe, seen as a major issue in the contemporary agenda. Symbols of architectural, technological and social aspirations, these *grands ensembles* of Mass Housing have nowadays begun to be appreciated by users and authorities, as integral part of the current city. Whether discussing demolition (as faced by the Smithsons' Robin Hood Gardens and Toulouse's *Le Mirail*, and commonly seen as a focus for social marginalization), or the growing phenomenon of *heritagization* (as implicit in the type of person now using the Marseille *Unité d'Habitation*), the debate today has mainly become centred on the question of: how to keep these large structures alive, while meeting contemporary standards of comfort? Characterized by adventurous experiments in the use of new materials and techniques, space creation and gender transformations, the obsolescence of these *big complexes* is determined on two different levels: the technical one (regarding comfort, such as thermal or acoustic, and the need for mechanical and safety improvements, as infrastructures, systems, elevators), and the functional one (involving space dimensions, organisation, orientation, and the introduction of new uses); all while complying with current regulatory standards. In addition, these buildings have frequently been intensively used and modified. After the 3 R's discussion (Tostões, DJ 52, 2015) on Asia and America, the aim is to address this type of question, and consider the large variety of strategies presented in this issue concerning experiences developed mainly in Switzerland, but also in France, Italy, Belgium and Portugal. We believe that this issue deserves an in-depth approach, considering Northern and Eastern Europe to be pointed out in a next DJ issue.

We wish to thank Franz Graf and Giulia Marino, for accepting the challenge to be guest editors of this DJ. Due to their painstaking and rigorous work, and to the skills of the experts who contributed with their knowledge and experience, it is possible to present this Journal, addressing such an important question.

In particular, the research conducted at TSAM — Laboratory of Techniques and Preservation of Modern Architecture, at EPFLausanne, deserves to be mentioned as an exceptional

experience. Combining theoretical knowledge and technical know-how, the laboratory develops strategies for the preservation of modern architecture, including maintenance, conservation, restoration, rehabilitation, restructuring, redeployment and extension. This is exemplified in the rehabilitation plan developed for the *Cité du Lignon* (2008–2011) (DJ 44, 2011), which was distinguished with the Europa Nostra (2013) and SIA Awards (2014), and in the preservation process conducted at *Miremont-Le-Crêt*. With a not-so-happy ending, it is told the story of the *Cité de L'Etoile*, caught between indiscriminate demolitions and restoration efforts. Representing an important turning point in attitudes to post-WW II housing, is the case of *Corviale*, which had always been seen as a symbol of social failure among large-scale housing in Europe, and which now is starting to be admired and gathering support for its preservation. The evolution of doctrines on modern architecture conservation is revealed on the story of restoration conducted over the years on the iconic Marseille *Unité d'Habitation*, while *Bloco das Águas Livres* shows how different rehabilitation approaches can be addressed inside the same building. The challenges presented by modern prefabrication systems in rehabilitation processes are explored in the “EH, Evolutionary Building” prototype housing and in the *Ieder Zijn Huis*. Finally, landscape is presented as an approach that cannot recommend a *heritagization* perspective, since it is constantly changing.

The Documentation Issues section presents the amazing story of the re-birth of the *Cercle de L'Ermitage* in Epesses. It tells how it was possible to rediscover Sartoris' original design, through research that managed to clarify different layers in time, functions and works of alteration. Some *thoughts on conservation and museography* are also discussed through André Wogenscky and Marta Pan's House Workshop.

The need to develop sustainable sites, neighbourhoods and landscapes is one of the main issues for the 21st century. Post-war collective housing remains one of the most significant modern products representing efforts to develop architecture as a vehicle for an egalitarian society and where thousands of people still live today. The proper rehabilitation of these structures, while addressing the demands of the contemporary agenda, would represent a tremendous potential achievement, in an overall context of economic, social and environmental sustainability.



Georges Addor, Jacques Bolliger, Louis Payot, Meyrin Parc Satellite Precinct, Geneva, Switzerland, 1960-1964. © Centre d'Iconographie Genevoise-BGE, Geneva.

Housing Reloaded. Collective Housing in Europe, 1945–2015

BY FRANZ GRAF AND GIULIA MARINO

"Should the grands ensembles be demolished?" This question was a major preoccupation for architects in the 1990s. Incidental as it may seem today, the question is not completely old hat. The initial, progressive shift towards the practise of maintenance is to be welcomed. But we still need to be conscious, looking forward, that the qualities or values of constructions built between 1945 and 1975 are only rarely recognized and safeguarded. A tremendous variety of strategies have been adopted, and this thematic issue on collective housing's present-day relevance proposes to revisit, on the European scale, this very multiplicity of approaches.

The recent work by the Austrian photographer Otto Hainzl¹ has been integral to the positive international reception being enjoyed by the *Nuovo Corviale* housing scheme in Rome (Mario Fiorentino, 1972–82). This prefabricated concrete project, more than 1km in length, was once decried as a symbol of the failure — architectural and social — of the post-World War II drive towards large-scale housing in Europe. How perceptions have changed: after 20 years of strident argument the international competition "Rigenerare Corviale" was recently launched by the Commune of Rome, strongly supported by the 8000 inhabitants who admitted to being literally "fascinated by the monster"². So it seems at last we are acknowledging — or claiming to — the innovative nature of this 1970s social housing experiment: and looking to preserve some of its characteristics.

The attention Mario Fiorentino's highly controversial work has been receiving recently indicates a key cultural shift. In the last 10 years, with the benefit of historical hindsight, we have begun to look again at housing schemes of the 1945–1975 period. There are so many, and they are often of considerable heritage interest; indeed they are increasingly being recognized as heritage in a way that would have been hardly thinkable not so long ago. The protection afforded to Ernő Goldfinger's Balfron Tower in London (1966–72) or the *Cité de l'Etoile de Bobigny* by the trio of Candilis, Josic & Woods, are cases in point. We would be fooling ourselves, of course, if we thought this represented a consensus: the go-ahead has been given for the destruction of Robin Hood Gardens, by Alison and Peter Smithson (1969–72), and as we speak Britain's Prime Minister is announcing the demolition of 100 "brutal high-rise towers [...] that are a gift to criminals and drug dealers"³. Nonetheless, all over Europe, and well beyond the confines of academia and the heritage lobby,⁴ we are witnessing a renewed interest in the large-format housing complexes of the later 20th century, an emblematic *corpus* that has, in the real sense of the term, helped shape the contemporary landscape. Only

now are these schemes beginning to be appreciated on their own terms, by users and public opinion alike.

Demolition or renovation — is that still the question?

Conspicuous as they are, these buildings are seen as plain and ordinary. So despite a plethora of consultations, public initiatives and research intended to shed new light on the theme of the *grand ensemble* — not least in its social implications — interventions can vary immensely. Ideas about how to protect contemporary architecture and the scientific tools for cataloguing it are becoming clearer. Traditional art-historical criteria are being refined by new kinds of assessment: "technological innovation, production techniques, the aesthetic of manufacture in series"⁵, themes perfectly embodied in the prototype EH House by Renzo Piano and Peter Rice (1977–78). Yet current architectural practise within existing buildings is still feeling its way forward. A tremendous variety of strategies have been adopted, and this thematic issue on collective housing's present-day relevance proposes to revisit, on the European scale, this very multiplicity of approaches. But the situation is on notice. Things are not as reassuring as they could be. Only rarely are the methods defined with the aid of suitably thorough supporting studies. It is a mixed picture on the ground where interventions pay only the scantest attention, most often by accident or misapprehension, to the material integrity, the cultural values of post-war architecture, whilst landscape character is overlooked altogether. In this context, large post-war housing schemes, originally conceived as a demonstration of architectural, technological and social aspirations, are now a major target for action when it comes to issues like energy consumption.

Should the *grands ensembles* be demolished?" This question was a major preoccupation for architects in the 1990s⁶. Incidental as it may seem today, the question is not completely old hat. The initial, progressive shift towards the practise of maintenance is to be welcomed. But we still need to be



01 Gret and Hans Reinhard, Tschamergut, Bern, Switzerland, 1958–61.
© Hannes Ineichen, Hans und Gret Reinhard, Niggli, 2013.



02 Gret and Hans Reinhard, Tschamergut, Bern, Switzerland, 1958–61.
Restoration of the scheme by Rolf Mühlethaler Architekten, 2015.
© Rolf Mühlethaler Architekten.

conscious, looking forward, that the qualities or values of constructions built between 1945 and 1975 are only rarely recognized and safeguarded. A real transfiguration of the contemporary city is silently under way all around us.

A silent transfiguration: from ordinary housing...

In his reinterpretation of the Wohnsiedlung Heuried, by Paillard and Leemann, at Wiedikon (1969), Adrien Streich hides a minutely conceived thermal upgrade in the fluid profile of his new envelopes. For the Göhnerswil-Volketswil (1969) by Marcel Meili and Markus Peter, metamorphosis provided an occasion to reflect on the methods of industrialized production by means of superimposed prefabricated timber-structured panels over the original *Plattenbau*. Lacaton and Vassal, along with Drouin and Hutin, at *Cité du Grand Parc*, Bordeaux, are building on the *Tour du Bois-le-Prêtre* experience, with an intervention that is primarily designed for economy and includes winter gardens and prefabricated concrete balconies, applied onto the façades, the original expression of which is to be utterly reconfigured.

Set against landmark operations such as these, on ordinary housing to which each designer has in his own way contributed a “+Plus” to the existing fabric (effectively a new building), it is a pity that more common practise generally misses the mark. Major physical interventions, clumsy on the aesthetic level, never mind the heritage impact, are the norm. They are made independently of the intrinsic qualities of buildings. Tougher energy legislation is compounding the issue. New, over-insulated and ventilated façades are popping out all over, flattening modeled detail and erasing lines of force that were once described with utmost care. We have metal siding and fiber-cement wrapped around volumes and cloaking balconies, losing nuanced reliefs, simplifying and impoverishing the volumetrics. Window joinery is growing thicker, replaced by heavier frames (most often in PVC) capable of supporting triple glazing.

And as for color — cliché of clichés — look no further than the “makeover” treatment of the remarkable BBPR Gratosoglio quarter in Milan (1963–71), or the Tour Super Montparnasse, Paris, by Bernard Zehruss (1966–69): intelligent juxtaposition of materials and textures, meticulously rendered by designers of the 1960s, ditched for a checkerboard of garish tones, “brightened by a touch of color,” usually an astonishing shade of red straight from the standard cladding industry color-chart. Even attempts to “preserve” original characteristics by adding a new external layer evoking the colors and materials of the existing — as seen at the *Courtilières* housing estate, by Emile Aillaud, at Pantin (1954–56) or the *Unité d’Habitation* at Evre in Belgium (1953–60) by Willy Van Der Meeren — look like caricatures.

These clumsy, irreversible “thermal renovations” follow a trend for “upgrading” or, more prosaically, achieving “code compliance” that too often rides roughshod over the need for a prior determination of the value of the built object and ignores its intrinsic qualities. Undertaken at huge cost, they should give us pause for reflection.

...to housing heritage

The imperatives of energy conservation — rightly recognized as inescapable — are becoming the pretext for giving buildings a new identity. In a more subtle way it seems that even objects acknowledged as of exceptional historical importance might not be free from harm in spite of the tight constraints of the heritage planning context.

While some interventions — such as the *Unité d’habitation* in Marseille — have fortunately established constraints for energy retrofitting as a priority from the outset, others cases like the *Siedlung Halen*, Berne-Kirchlindach (1955–61), an iconic housing estate by *Atelier 5* known and admired well beyond the Swiss border, face an uncertain future.⁸

In much the same vein is the recent “energy upgrade” of the *Miremont-le-Crêt* complex, Geneva (1956–57) by Marc



03 Aerial photo of the satellite suburb in heavy prefabricated units of Göhnerswil-Volketswil, Switzerland, 1969. © F. Furter, P. Schoeck-Ritschard, Göhner Wohnen, Hier+Jetzt, 2013.



04 Georges Addor, Jacques Bolliger, Dominique Julliard, Louis Payot, Lignon Satellite Precinct, Geneva, Switzerland, 1963-1971. © Addor & Julliard Archives, Geneva.

J. Saugey. Listed as a *Monument Historique* in 2002, it illustrates the limitations of the exercise where there is no clear strategy setting out what is to be achieved⁹. On one level, a fruitful cooperation involving the cantonal heritage and energy efficiency authorities has spared Saugey's building from the worst effects of "code compliance" — meaning radical alteration — allowing performance below the legal consumption limits thanks to a series of well-conceived offsets. But on another level, the need to demonstrate "exemplary" energy efficiency outcomes has by default sanctioned an overall "upgrade" strategy that uses a repertoire of hi-tech, thermal-performance products aiming to meet insulation values similar to those of new constructions, even though they have somewhat uncomfortable consequences in terms of the visual and architectural qualities of the original ensemble...

Responsible ways forward

Emblematic of these modern works, where notions of lightness and transparency play a crucial role, marrying technical and architectural innovation, the case of the "energy upgrade" at *Miremont-le-Crêt* encapsulates the difficulties of reconciling the cultural challenge of heritage conservation with environmental paradigms. As we have said, on another scale, built assets are repeatedly faced with hasty and all too radical transformations with no overarching strategy capable of placing limits on what is effectively a transfiguration of the contemporary city. Aside from cultural considerations — or even just the architectural ones, the general "dumbing down" of our environment — with recession on the horizon we should be looking at this practise with a new sense of urgency. In stating that "the different strategic options for restoration stem from, among other things, a precise analysis of the existing building", technical guideline 2047 *Rénovation énergétique des bâtiments*, recently published by the *Société des Ingénieurs et des Architectes suisses* (SIA), gives crucial indications.

This salutary stance has grown out of a number of highly significant experiences. A case in point are the guidelines developed for the impressive Barbican complex in London (1955-82)¹⁰ which identify the original elements as the sole traces of authentic fabric, the only evidence capable of expressing the complex's architectural qualities, including the often neglected issue of exterior spaces. In Switzerland we can point to the important work by architects Miller and Maranta in advance of the energy upgrade works to Hermann Baur's *Siedlung im Lee* scheme, in Basel (1963). From them we have learned that detailed knowledge of the fabric is a vital necessity for targeting thermal improvements to the built object at close quarters, to conserve its intrinsic characteristics but without rejecting substantial energy savings. By the same token, the intelligent pilot project for the upgrade of the *Tscharnegut* in Bern (Hans and Gret Reinhard, 1958-61), devised by Rolf Mühlethaler, which is now in progress, is a compelling demonstration of the indispensability of adaptation to current circumstances in terms of energy but also the typological needs of the sector. It manages to respect the striking urban forms within this representative post-war housing scheme, an ensemble well worth preserving.

Equally, the highly conclusive experience of the TSAM Laboratory and its applied academic research at the *Cité du Lignon* was recently extended to other late 20th century *grands ensembles* in the Geneva area for a research project supported by the *Stiftung zur Förderung der Denkmalpflege* (Foundation for the Promotion of Conservation). An appraisal of buildings according to a wide range of constructional types — from a masonry facade with openings in the *Quai du Seujet* (1964-76), to the externally insulated prefabricated concrete panel of the *Cité Avanchet Parc* (1973-77), not to mention the Honegger buildings in the *Carl-Vogt* (1960-64) and the curtain wall of the *Meyrin* residential suburb (1960-64) — has shown how the balance between

05 E. Göhner SA, Steiger+Partner AG, Walter Maria Förderer, Avanchet-Parc, Geneva, 1971–1977, scheme study. © Archives d'Architecture, University of Geneva.



06 Addor & Julliard, Julliard & Bolliger, Housing complex "*quai du Seujet*", Geneva, Switzerland, 1968–1976. © Addor & Julliard Archives, Geneva.

preserving the built object and making sizeable thermal improvements generally comes in at around 80–90% of the legal requirement, depending on the techniques used. The 10–20% that still needs to be achieved to attain current standards implies heavy and highly destructive interventions which are technically challenging and therefore entail an exponential increase in build costs for an equivalent life cycle. For existing housing assets, the price in conservation terms — and more prosaically, in terms of economic investment — appears out of proportion.

In place of this “intensive therapy”, which exacts such a heavy price, we should be looking at responsible steps to highlight the notion of “built heritage as resource” — essentially, something very akin to the *use value* imagined by Alois Riegl — accepting building performance ratings that, while not perhaps the best, at least sizeable or substantial reductions in consumption to be coupled perhaps with gains from renewable energy.

As for highly significant items — “young monuments” to use the phrase suggested in a thematic issue of *werk*, *bauen+wohnen*, recently — an explicit stance is required: can one reasonably aim for energy excellence by demanding of an existing building with acknowledged heritage value that it meet the performance needs of a new building, rigidly established by rules that have evolved into extremely strict limit-values? The response is nuanced. In balancing preservation of the built fabric with the environment, perhaps we need to be broadening the issue and reversing the trend. In other words, the building itself should define the limit of interventions, depending on intrinsic material characteristics opportunely mapped during preliminary studies. This gets around the issue of a strict application of standards, which so often have repercussions, and potentially irreversible ones, on the integrity of objects and, more broadly, the appearance of our cities. It is not a matter of neglecting the paradigm that requires us to respect the very legitimate need to reduce energy consumption and CO₂ emissions. Rather it is a matter of calibrating performance improvements more closely to the built object, prioritizing smaller, targeted interventions, *ad hoc* responses developed from closer contact with the built fabric and geared towards accommodating it in a way that improves user comfort. This pragmatic and sympathetic approach should be adopted more widely as part of the project of conservation of recent heritage. This is a “demanding brief”¹¹ illustrating, above all, the intelligent and culturally aware position the designer must be ready to occupy. ■

Notes

- 1 Otto Hainzl, *Corviale*, Berlin, Kehr, 2015.
- 2 <http://corviale.it>. The contest for the Corviale refurbishment followed several years of discussions on the future of the “Serpentone” (as it is known). Rediscovery of this ensemble — at one time regarded as a problematic estate — has benefited considerably from the input of residents through a series of socio-cultural initiatives.
- 3 David Cameron, “I’ve put the bulldozing of sink estates at the heart of turnaround Britain”, *The Sunday Times*, 10 January 2016.
- 4 For example, the good recent article in the French newspaper *Libération*: Tonino Serafini, Sibylle Vincendon, “Grands ensembles: démolir les clichés, pas les cités”, *Libération*, 7 October 2015.

- 5 Adopted in 2011, during the conference *Zwischen Baukunst und Massenproduktion. Denkmalschutz für die Architektur des 1960er und 1970er Jahre*, the Bensberg Charter aims to “refine classical history of art assessment criteria of the period to take account of the full breadth of programmatic aspects, such as technological innovation, production techniques, the demands of flexibility and variability, the aesthetics of production in series, etc.” Rheinischer Verein (ed.), *Charta von Bensberg zur Architektur des 1960 und 1970*, 2011.
- 6 Françoise Moiroux, “Faut-il détruire les grands ensembles? De l’univoque à la polyphonie...”, special report, *D’Architectures*, 2004, 141.
- 7 We refer to the research heading « + », a rehabilitation strategy for large scale housing schemes in France, devised by Druot, Lacaton & Vassal. Cf. Frédéric Druot, Anne Lacaton, Jean-Philippe Vassal, *Plus, Les Grands Ensembles de Logement. Territoire d’exception*, Gustavo Gili, 2007.
- 8 Despite “guidelines” published in 2013 by the Canton of Berne heritage conservation department, it is proving difficult to make headway with an energy retrofit project for the envelopes of the Siedlung Halen that respects the place’s exceptional heritage values; Franz Graf, Giulia Marino, “Mirabilia ou ressource durable? Le patrimoine récent à l’épreuve des enjeux énergétiques”, *Kunst + Architektur in der Schweiz*, 2, 2015, 58–65.
- 9 Giulia Marino, “Kampf um Millimeter. Renovation der Wohnhäuser Miremont-le-Crêt in Genf von Marc-Joseph Saugey durch meier+associés und Oleg Calame”, in *werk, bauen+wohnen*, 1–2, 2016, 36–41.
- 10 Barbican Estate, London, Chamberlin, Powell & Bon architects, 1955–82; listed Grade II, this exceptionally significant building was the subject of a series of studies by a working group composed of different institutional actors and Avanti Architects, to establish guidelines for conserving the tower blocks. Initial conclusions set out clear indications on respecting the materials and color palette used for the original façades. Timber frames of the large window panels could easily accommodate insulated glazing units to replace the single glass of the original. Avanti Architects, *Barbican Listed Building Management Guidelines*, vol. 11, October 2012.
- 11 “Editorial”, *werk, bauen+wohnen*, issue Junge Denkmäler, 10, 2013, 4.

References

- GRAF, Franz, MARINO, Giulia, “Mirabilia ou ressource durable? Le patrimoine récent à l’épreuve des enjeux énergétiques”, *Kunst + Architektur in der Schweiz*, 2, June 2015, 58–65.
- GRAF, Franz, MARINO, Giulia, “Modern and Green: Heritage, Energy and Economy”, in Ana Tostões, Liu Kecheng (dir.), *Docomomo International 1988–2012: Key Papers in Modern Architectural Heritage Conservation*, China Architecture & Building Press, Pekin, 2012, 183–193, 152–161.
- GRAF, Franz, MARINO, Giulia, “Strategien zum Erhalt moderner Architektur”, *werk, bauen+wohnen*, n° 10, octobre 2013, 20–25.
- GRAF, Franz, MARINO, Giulia, *La cité du Lignon 1963–1971 — Étude Architecturale et Stratégies D’Intervention*, Cahier Hors Série de la Revue Patrimoine et Architecture, Infolio, 2012.
- GRAF, Franz, MARINO, Giulia, *Patrimoine Moderne, Énergie, Économie: Stratégies de Sauvegarde*, EPFL–TSAM, Stiftung zur Förderung der Denkmalpflege, 2015.

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Georges Addor, Jacques Bolliger, Louis Payot, Meyrin Parc Satellite Precinct, Geneva, 1960-1964, Meyrin © Addor & Julliard Archives, Geneva.

Georges Addor's Housing Complexes: an Observatory on the Conservation of "Large-Scale" Heritage

BY GIULIA MARINO

The timeliness of swiss architect Georges Addor's oeuvre is indeed vast and heterogeneous. Illuminated by a few successful operations, which should be showcased as such, the picture is, however, highly nuanced, since many questionable conversions have hurriedly followed each other in recent years. The broader reflections on the methods and techniques of preservation of the contemporary heritage that emerge from the current relevance of Georges Addor's work appear to be decisive; extended to a broader production, they deserve to be addressed without delay.

The Genevan architect Georges Addor (1920–1982) had a brilliant career. In the space of fifteen years, he produced a series of outstanding works, testifying to his wholehearted commitment to the most significant trends in international architecture. Collective housing occupies an exceptional place in his oeuvre, which, without ever confining itself to mere imitation, consciously embodied the postulates of modern architecture, with a particular concern for extremely accurate material execution.¹

Apart from its heritage value, undeniably remarkable, but for which recognition is still relatively recent, the timeliness of Georges Addor's work also proves a privileged observatory on the preservation of 20th century heritage. The inventory of this *corpus* raises profound questions about the instruments for the preservation of architecture from the postwar period, which are capable of adapting to both large-scale developments and to its constructional specifics, inseparable from the burgeoning construction industry. At the same time, the output of the Genevan architect gives a clear idea of the multiple facets of the current practise of design in existing buildings, which in western Switzerland and Europe is still little concerned with the concept of material authenticity. The broader reflections on the methods and techniques of preservation of contemporary heritage that emerge from the current relevance of Georges Addor's work appear to be decisive; extended to a broader production, they deserve to be addressed without delay.

From innovation to persistence. Urban forms

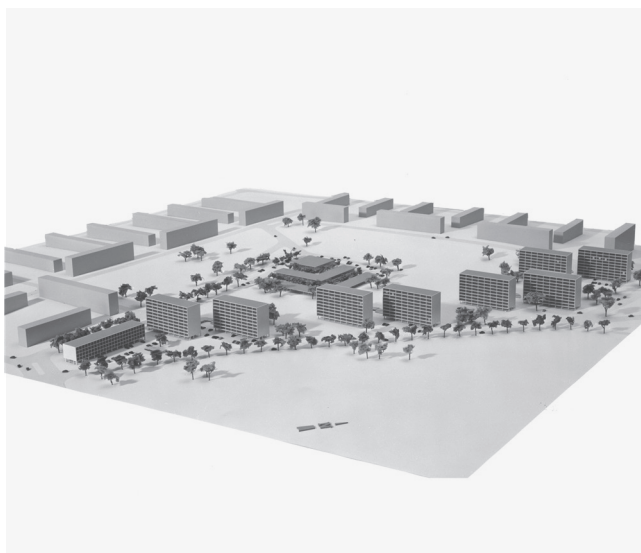
The panorama of works affecting Georges Addor's oeuvre is indeed vast and heterogeneous. Restoration projects that respect their original material substance contrast with more or less faithful critical reconstructions, even creative reinterpretations; likewise, far more frequently, major renovations in which the imperative of energy improvements

— legitimate and now recognized as unavoidable — have become a pretext for giving a building a new identity have become common. Illuminated by a few successful operations, which should be showcased as such, the picture is, however, highly nuanced, since many questionable conversions have hurriedly followed each other in recent years.

The case of collective housing, especially the housing projects which we are going to dwell on in this paper, is particularly significant in this respect. If, on the one hand, the urban forms, fortunately preserved in most cases, can still be appreciated today, the issue of their architectural qualities is far more controversial, notably with regard to the envelopes of buildings.

Clearly, the persistence of the urban forms of the complexes built by Georges Addor and his architects primarily reflects the intelligence and foresight embodied in the original design. Whether it was a matter of the strictest application of the postulates of the Athens Charter, as in the satellite precinct of Meyrin (1960–64), experimenting with the principles — certainly innovative — of “linear urbanism” in the city of Lignon (1963–71), or the scholarly reinterpretation of the “open square” in the very fine upmarket residential complex at Bude (1958–62), the arrangement of the volumes is perfectly calibrated. This is also true of their relation with the community facilities, which were designed at the same time, and the landscaping by Walter Brugger, which is undeniably very rich.

This equilibrium in the drafting of the plan has been a compelling argument to counter proposals for “qualified and differentiated densification with new buildings”² of the major complexes in Geneva, naively put forward as a solution to the housing crisis, which now seems endemic. In this way the project for a third tower block in Lignon, “a twenty-story building, aligned with the tallest tower, to be erected on the shopping center”³, was rapidly discarded



01 Georges Addor, Jacques Bolliger, Louis Payot, Meyrin Parc Satellite Precinct, Geneva, 1960–1964. © Addor & Julliard Archives, Geneva.



02 Georges Addor, Jacques Bolliger, Louis Payot, Meyrin Parc Satellite Precinct, Geneva, 1960–1964. © Addor & Julliard Archives, Geneva.

so as not to disrupt its remarkable organization and, above all, the functioning of the whole, in which the housing was deliberately laid out at the edge of the site so as to leave a large space free for the park with facilities. At Meyrin, too, one notes the coherence of these pioneering operations, which discourages any temptation to fill in the gaps between the buildings or to increase the height of the buildings. Finally, the case of Bude is emblematic: during discussions about the desirability of attributing heritage status to this upmarket residential complex, the findings of the studies of the possible potential for building on the site concluded that “there exists no real scope for inserting a new building”⁴. This finding not only reflects the remarkable character of the whole, but is above all a direct result of the very detailed condominium regulation developed by Addor & Julliard themselves, prohibiting any further construction within its precinct, through a series of draconian provisions intended to preserve its intrinsic qualities.

Site plan and “integrated protection”. A nuanced equilibrium

On this latter point, these three developments were recently the subject of a protective measure which “pays homage to the approach of its designers” and attests definitively to its heritage value. The listing of the “site plans” of Lignon and Meyrin Parc, respectively in 2009 and 2013, as well as of Bude, now under way⁵, is extremely significant and takes us to the heart of the issue of the identification of the most appropriate instruments for the specific protection of 20th century heritage. More prescriptive than a simple “label” for raising awareness⁶, but legally less binding than listing or “entry in the inventory”, the site plan first of all makes it possible to safeguard the architectural unity and coherence of housing estates, including their landscaping, whose contribution is generally and mistakenly neglected. Furthermore, in some cases, this measure could act as an

excellent instrument of “integrated protection”, thanks to the simultaneous adoption of an operational measure making it possible to precisely define the framework for future interventions, those which should be encouraged and those which should be firmly proscribed.

Conducted parallel with the procedure for the adoption of the site plan, the applied academic research proposed and developed by the Laboratory of Techniques and Preservation of Modern Architecture (TSAM) at the EPFL on the building envelopes of the Lignon housing estate adopts this approach. It constitutes an indisputable regulatory framework, the result of a careful weighing of interests between safeguarding the heritage values and the imperatives for energy improvement. The detailed specifications for the restoration of Lignon that emerge from this complex and multidisciplinary process, validated beforehand by the competent authorities and attached to the site map, thus set clear limits to future operations. Any intervention must hereafter preserve the materiality of the outer layer of the original curtain wall — prefabricated glass and aluminum panels attached to a wooden frame — so preserving the remarkable architectural unity of the whole in its integrity⁷.

If the operative guidelines developed for Lignon can be considered a success, the experience of the satellite precinct of Meyrin appears more problematic. Contrary to the recommendations for Lignon that were formulated in advance, the façades being at the time very close to their original state, the prescriptions of the TSAM laboratory for Meyrin intervened in a context that already appears extensively compromised. At the time of the adoption of the site plan, the high-rise buildings in Meyrin had suffered the most diverse alterations, generally to be classified as “major renovations”. The original wood-aluminum panels — a true prototype of those at Lignon — had been greatly altered (for example, by installing external slatted blinds), or clearly replaced. As for the new modules proposed to



03 Georges Addor, Jacques Bolliger, Dominique Julliard, Louis Payot, Lignon Satellite Precinct, Geneva, 1963–1971. © Addor & Julliard Archives, Geneva.



04 Georges Addor, Jacques Bolliger, Dominique Julliard, Louis Payot, Lignon Satellite Precinct, Geneva, 1963–1971 © Ph. C. Merlini, 2010.

evoke the geometry and materials of the original façades, without actually having the same refinement, they can be seen as a true attack on the architectural and technical qualities of the whole, comparable to such regrettable (and largely useless) measures as the external insulation of the fine gables with exposed concrete retaining the pattern of the formwork⁸.

Despite the preservation of some (rare) façades in the original state, the example of Meyrin is paradigmatic by the range of changes that have been made there. Likewise, its recent history embodying the difficulties of the process of protection of modern heritage, often dictated by emergency criteria or belated intervention. At Bude, for example, no fewer than *seven* prototype glazed sections have been submitted in recent years to the approval of the canton's heritage authorities, pending adoption of the site plan. Some more respectful solutions, in which the existing woodwork — in excellent condition — is simply adapted to accommodate new insulating glass, were discarded in favour of full replacement of the remarkable original wooden window frames with far more banal models. With legal protection expected in the coming months, the existing envelopes and splendid entrance halls will therefore already have undergone a major and irreversible alteration.

Conservation versus upgrading to standard?

Since it is a whole complex, therefore designed in keeping with the concept of repetition, the current relevance of the Meyrin satellite precinct is striking: the juxtaposition of the most disparate interventions — in some cases on the scale of a single building, belonging to several owners — permanently damages our understanding of the ensemble. This alarming observation applies to much of Georges Addor's work, which has been affected since the 1990s by extensive, in some cases very extensive, renovations. A true hallmark of the Addor & Julliard office, the production that made use of

the constructive type of lightweight envelopes — unusually in collective housing, and even mass housing — appears in this context particularly under strain. Embodied in many variants — panels or grids — all confused programs — from the luxury *Hôtel Intercontinental* (1960–1964) to the “hostel” for the deprived in the *Hôtel de l'Ancre* (1956–1959) — curtain walls have proved to be a “particularly sensitive part” of Addor's heritage and, more generally, that of post-war buildings.⁹ Their connotation as the true emblem of international architectural modernity, assigned to them in the 1950s and 60s, seems to have been rejected by extensive interventions, motivated both by demands for “upgrading” (essentially for better energy efficiency) and more prosaically for updating their image. The high technology of the original glass and aluminium envelopes — “quality materials and proven by experience”¹⁰ — further enhanced by often flawless execution, has been systematically undermined.

Because of the constructional specificity of contemporary heritage, its technological obsolescence is indeed considered *a priori*, and not always justifiably, as rapid and very marked, even inevitable, becoming the principal pretext for radical intervention. The great themes of 20th century architecture — from industrialised construction to lightness as a true paradigm of modernity — are both arguments used to decree their historical value and the reasons for major renovations. Despite a generally reassuring diagnosis that could have justified limited intervention simply to extend the first life cycle of the existing elements, Georges Addor's work has been subjected to substantial alterations.

In this logic, the thermal behaviour of the buildings' envelopes is particularly affected, as shown in the examples of Meyrin and Bude. Although operations such as Lignon or the very fine restoration of the administrative building of the Tavano factory (1955–1957) have shown that a balance between the arguments for conservation and improvements to consumption requirements is possible

05 Georges Addor, Jean-Jacques Honegger, Budé Housing Estate, Geneva, 1958–1962. © Addor & Julliard Archives, Geneva.



06 Georges Addor, Jean-Jacques Honegger, Budé Housing Estate, Geneva, 1958–1962. © Ph. C. Merlini, 2010.



07 Georges Addor architect, Malagnou-Cité, Geneva, 1954–1957. © Addor & Julliard Archives, Geneva.



08 Georges Addor, Low-rent buildings at Cayla, Geneva, 1953–1955. © Addor & Julliard Archives, Geneva.

with limited measures, appropriately studied — often more economical and without necessarily requiring exceptions to the standards in force — the sterile conflict which opposes the needs of energy to those of heritage is rarely resolved in favor of the latter. When having to deal with increasingly stringent limits on consumption, replacement or even “repackaging” becomes a conditioned reflex, perhaps a questionable exaggeration, and this is done in the absence of any prior analysis of the building.

The regrettable conversion of the set of low-rent buildings at Cayla (1953–1955), one of the office's exceptional achievements, which benefited from a very favorable international reception at the time, is in this respect very striking and alas, sadly representative. The campaign for the “energy renovation” of the envelopes conducted under the aegis of the Confederation proposed to preserve the architectural features of the buildings, while significantly improving their energy specifications. Intended to be “visible only at a second glance”¹¹, the operation actually consisted of a regrettable change, namely the trivialization of this iconic object, due to the external insulation, replacement of windows and glazed surfaces, and a somewhat fanciful colour layout.

Given the many changes that the Addor heritage has been subjected to in recent years, the attention of the heritage bodies primarily focuses on three major works whose qualities can still be appreciated today and which, for that reason, have benefited from the highest assessment in the Census [*Recensement de l'œuvre*] conducted by the TSAM laboratory¹²: the complex of the Battelle Institute, the Malagnou City apartment building and the envelopes of the Hôtel de l'Ancre (with the exception of the ground floor, already extensively altered). For “these objects of outstanding value, their inclusion is requested in the inventory of monuments or the adoption of a site plan”¹³. This would be probably very useful, marking a new legitimization of the heritage value of Georges Addor's work. Now, at a time when the headquarters of the Federal Customs Administration in Bern is being subjected to careful conservation, enhancing the materials and original finishes¹⁴, and where the beautiful restoration of the Untermoos school in Zurich has become a model to be followed¹⁵, we have the means to meet the challenge. Protection of these few works by Addor should therefore be complemented by interventions that are worthy of the task in buildings where the designer's every gesture was clearly subordinated to the intrinsic qualities of the building. Interventions respectful of these last major records of a major achievement would be the only recognition, belated but richly deserved, of an outstanding oeuvre that has been somewhat mistreated over the years. ■

Notes

- 1 See Franz Graf (ed.), Mélanie Delaune Perrin, Giulia Marino, *Addor Architecte*, Genève, MétisPresses, 2015.
- 2 Blaise Sahy, *Le Projet de Renouvellement Urbain Durable à l'échelle des Quartiers. La transformation des Cités Meyrin et Onex à Genève*, Les Cahiers du Développement Urbain Durable, No. 4, June 2007, 81–102.
- 3 Christian Bernet, “Une troisième tour au Lignon: l'occasion ratée”, *Tribune de Genève*, 30 June 2009.
- 4 Bruno Marchand, Antonio Martin Prieto, *Ensemble de Budé, Étude de Faisabilité pour l'implantation d'un Nouvel Immeuble*, Genève, État de

- Genève-Office du patrimoine et des sites, Ville de Genève-Service d'urbanisme, 2009.
- 5 The site plan of the Budé complex is currently passing through the last phase of the procedure, including a written response to objections.
- 6 The “label xx” introduced in France in 1999, can be cited as a measure for raising awareness of the cultural values of modern and contemporary heritage. Note that the attribution of the label does not entail any legal constraint concerning the preservation of the buildings.
- 7 Franz Graf, Giulia Marino, *La Cité du Lignon 1963–1971. Étude architecturale et stratégies d'intervention*, coll. Patrimoine et Architecture, Infolio, 2012. See likewise: Franz Graf, Giulia Marino, “Modern and Green: Heritage, Energy, Economy”, Barcelona, *Docomomo Journal*, No. 44, autumn 2011, special issue “Modern and Sustainable”, 32–39.
- 8 EPFL-TSAM, Franz Graf, Giulia Marino, *La Cité Meyrin à Genève. Étude d'Amélioration Thermique des Enveloppes*, appendix to the site plan No. 29484–526, Office du patrimoine et des sites — DCTI, Service de l'Énergie — DU, Commune de Meyrin, 2010.
- 9 On the issue of preserving the curtain wall envelopes and the evolution of restoration practises, see Franz Graf, Giulia Marino, “Pour un observatoire du patrimoine moderne et contemporain. De l'histoire matérielle du bâti à l'histoire matérielle du projet de sauvegarde”, *Revue de l'Art*, Vol.186, No. 4, 2014, 31–35.
- 10 Note that Addor & Julliard systematically presented the choice of durable materials as one of the office's strengths, to the point where it became a guarantee of profitability for developers. Addor & Julliard, Meyrin Parc, description, undated Archive Bolliger.
- 11 KLM, “Intervenir au niveau de la façade est délicat”, Berne, *Energiea-Bulletin de l'Office fédéral de l'énergie* — OFEN, No. 4, 2010, 12–13.
- 12 Franz Graf, Mélanie Delaune Perrin, Giulia Marino, *L'œuvre de Georges Addor architecte (1920–1982): inventaire, évaluation qualitative, recommandations*, Genève, Office du patrimoine et des sites de la République et canton de Genève — DCTI, 2009–2013.
- 13 République et canton de Genève, Commission des monuments, de la nature et des sites, sous-commission monuments et antiquités, *Recensement de l'œuvre de Georges Addor (1920–1982)*, 20 novembre 2013.
- 14 Verwaltungsgebäude der Oberzolldirektion, Bern, Gret et Hans Reinhard, Walter Stückeli, architects, 1951–53; restoration by AAP Atelier für Architektur und Planung. Note that this exemplary operation, currently under way, includes “derestoration” of the unfortunate alterations dating from the 1970s and 80s with the aim of recovering the coherence of the whole.
- 15 The Untermoos schools in Zurich (Eduardo Del Fabro architect, 1954–1955) and Feldli in St. Gallen (E. Del Fabro architect, 1957) — both protected — have recently been the subject of significant energy efficiency improvements (the Feldli school even received the Minergie label). The excellent results in terms of annual consumption have been attained through local restoration measures applied to the original large windows, whose frames have been retained.

References

- “Groupe HLM à Genève”, Paris, *L'Architecture d'Aujourd'hui*, 1954, 58–59.
- “Parc de Budé, Genève”, Chaux-de-Fond, *Anthos: une Revue pour le Paysage*, 1964, 29–38.
- GRAF, Franz (ed.), DELAUNE PERRIN, Mélanie, MARINO, Giulia, *Addor Architecte*, Genève, MétisPresses, 2015.
- GRAF, Franz, MARINO, Giulia, “Modern and Green: Heritage, Energy, Economy”, Barcelona, *Docomomo Journal*, No. 44, 2011, 32–39.
- GRAF, Franz, MARINO, Giulia, *La Cité Meyrin (Genève, 1960–1964): Étude d'amélioration Thermique des Façades*, Report EPFL-ENAC-TSAM, Lausanne, 2010.
- MARINO, Giulia, “Actualité de l'œuvre de Georges Addor”, in *Un Regard sur la Sauvegarde du Patrimoine Contemporain à Partir d'un Corpus d'exception, Addor Architecte*, Geneva, MétisPresses, 2015, 356–379.
- MARINO, Giulia, “Il plan de site come strumento di tutela dei quartieri residenziali del secondo Novecento. Il caso ginevrino”, F. Albani, C. Di Biase (eds), *Architettura Minore del XX secolo. Strategie di tutela e intervento*, Bologna, Maggioli, 2013.
- MARINO, Giulia, “Monument der späten Moderne. Die Grosssiedlung Le Lignon in Genf”, *Tec21*, 2013, 16–20.
- PAYOT, Louis, “Cité satellite de Meyrin”, Zurich, *Bulletin technique de la Suisse romande*, 1964, 71–73.



Marc-J. Saugey, Miremont-le-Crêt, Geneva, 1953-1957, detailed view of the façade from the balcony, with its aluminium *brise-soleils* and opaque panels and the pre-fabricated concrete parapets. © G. Klemm, n.d., Archives IAUIG, Fonds Marc-Joseph Saugey, cote 205.03.012.

The Miremont-le-Crêt: Preserving a Geneva Post-War Modern Icon

BY PATRÍCIA VENDRELL DUARTE

The collective apartment building, *Miremont-le-Crêt*, in Geneva is the product of the inventiveness of the local architect Marc Joseph Saugey (1908–1971), who planned and built it between 1953 and 1957. Listed as a Cantonal monument in 2002, it is considered today an original and unique example, far beyond the context of Geneva.¹ Recently, it has become the object of a large rehabilitation project, led by the Geneva-based architecture office, *Meier+associés*. Mainly focused on the building's envelope, the project also includes several technical improvements of some of its other components; all of them introduced with respect to Saugey's spirit and the building's existing substance.

Geneva in the post-War and the architect Saugey

During its recent history, Geneva has known several phases of economic and demographic growth; however the apogee of its development only occurred after the WWII², with the establishment of the UN European headquarters, in 1946.³ The city extended into its peripheral communes and gradually acquired the form of a metropolitan area⁴, demanding its “urban restructuring (...) and the creation of new dwellings, services and facilities”⁵. The architect Marc Joseph Saugey was one of the notable personalities who participated in these transformations.

Born in 1908 in *Vésenaz*, a village on the shore of Lake Geneva⁶, Saugey completed his academic education in Geneva, then starting an important collaboration with Louis Vincent, René Schwertz and Henri Lesemann, who together formed the *Atelier d'Architectes* (1933–1940). In 1940, he opened his own architecture office, building his most important projects between 1950 and 1958 — the *Hôtel du Rhône* (1947–1950), the *Malagnou-Parc* (1948–1952), the *Mont-Blanc Center* (1951–1954), the cinema *Le Paris* (1955–1957), the *Terreaux-Cornavin* (1951–1955), the *Miremont-le-Crêt* (1953–1957) and the *Gare-Centre* (1954–1957)⁷. Dying in 1971, Saugey managed to leave his mark on Geneva, with his *avant-garde* buildings of the 1950s, as well as “distinguishing himself, by his structural researches and new techniques”⁸, and by his active engagement in the urban-planning of the city.

The Miremont-le-Crêt: Saugey's “l'espace habitable”⁹

The *Miremont-le-Crêt* apartment building, located in the Geneva district of *Champel*¹⁰, is the result of the creative inventiveness of Saugey and was conceived from 1953, in close collaboration with the engineer Pierre Froidevaux and the artists Edouard Nierlé (1916–2006) and Louis Bongard, being built between 1956 and 1957.

The building's existing pedestrian access points are located on both sides of the volume, on the nearby streets:

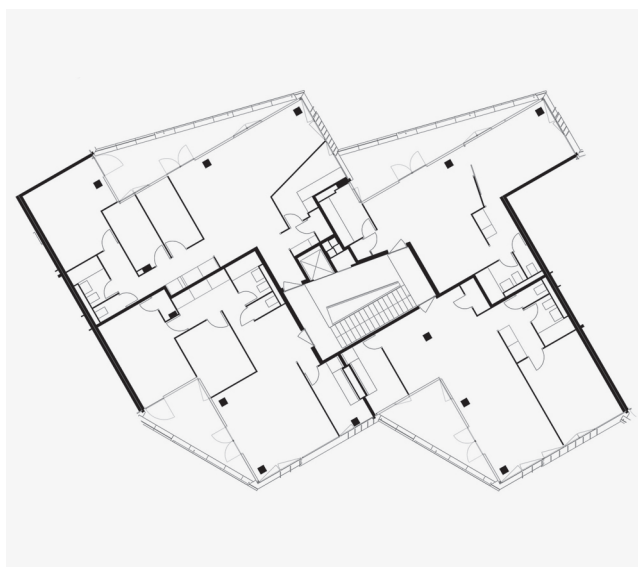
avenue de Miremont and *avenue de Calas*. They were designed to integrate with the surroundings of the building and, therefore, breezeways superimposed on the sidewalks lead the residents to the entrance halls (*Miremont* serving units A, B, C, and *Calas*, the D, E).

The two halls are open towards the garden that was conceived as an interior street, serving as a passage between both adjacent roads. With completely glazed façades, they allow a permanent contact between the building and its “exterior elements, natural or built”¹¹ — the circles and stripes of vegetation, the water basin and the mural paintings from Louis Bongard and Edouard Nierlé.

For the upper floors, Saugey proposed a plan type of four non-traverse apartments per vertical stairwell, each of them with a private triangular balcony. The whole building totals 139 single-level apartments, distributed over seven floors on the *Miremont* side and 6 floors (plus an attic) on the *Calas* side.

The organization of the plan, according to a frame of 60°, allows each apartment to benefit from a double exposure — East and West¹² — as well as a multiplicity of points of view towards the exterior, granting these “collective housing cellules, (...) the qualities of a *villa*”¹³. However, the fundamental element for the creation of this “*villa*” is the triangular balcony “around which a plan of great spatial fluidity is articulated”¹⁴. In addition, the diagonal orientation of the plan, together with the *brise-soleils*, leads to the preservation of privacy between the apartments and the nearby buildings.

Apart from the use of a punctual load-bearing system, Saugey opted for the rationalisation of the second-fix elements¹⁵, which was beautifully mastered in *Miremont-le-Crêt*, with the employment of a set of different materials that highlight the spatial qualities of the building — the prefabricated concrete panels covering the façade's opaque parapets, the translucent wired glass parapets, the blue pine window frames, their bottom fiber cement panels, and the aluminum *brise-soleils* and panels overlaying the façade's opaque sections.



01 Marc Joseph Saugey, *Miremont-le-Crêt*, Geneva, 1953–1957.
Type-plan of the apartments. © Atelier Oleg Calame.



02 *Meier+associés architectes*, *Miremont-le-Crêt*, Geneva, 2011–2014.
Axonometric view of the rehabilitation project for *Miremont-le-Crêt*'s façade.
Northwest façade. Not to scale. © Patrícia Vendrell Duarte, 2014.

In Geneva, “the new housing of the fifties was conceived fundamentally in terms of functional and technical rationalization (...) often to the detriment of research linked to the quality of space”¹⁶. Consequently, the city owes to Saugey its most remarkable typological innovations, with *Miremont-le-Crêt* being one of its finest examples¹⁷. The replacement of “single-function rooms with a single fluid and continuous space”¹⁸, turned to the maximum sunshine, “offered him the possibility of exploring [beautifully] the theme of space”¹⁹ in a housing program.

Therefore, *Miremont-le-Crêt* is Saugey's invention of an *immeuble-villa*, where “each apartment plays the role of an individual *villa*”²⁰, and “the plastic effect of the ensemble (...) breaks with the monotony of parallel blocks of buildings”²¹.

The *Miremont-le-Crêt*: preserving a post-War Modern Geneva Icon

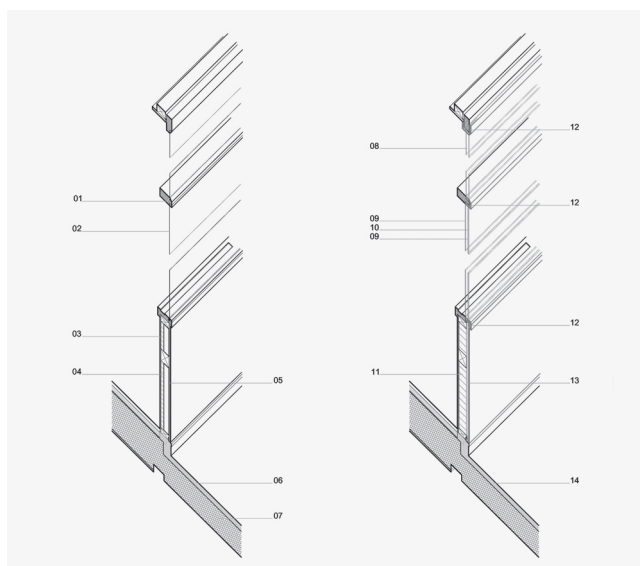
The first step towards the rehabilitation of *Miremont-le-Crêt* was taken by the *Institut d'Architecture de l'Université de Genève* (IAUG) [Geneva University Architecture Institute], that in 1998 wrote an appeal to the *Direction du Patrimoine et des Sites* [Directorate of Patrimony and its Sites]²² requesting the opening of a heritage classification process for *Miremont-le-Crêt*, motivated by some concerns arising from the execution of minor alteration works in the building.

Along with this process, a detailed study on *Miremont-le-Crêt*'s condition and the definition of the necessary works in the framework of future rehabilitation was given as a commission to the architecture office of Devanthéry & Lamunière²³ — which became an essential guideline for the restoration works. On February 20th 2002, by a decree of the Council of State, the *Miremon-le-Crêt* apartment building was declared

a Cantonal monument. The heritage classification statute issued by the State of Geneva contemplates, besides its exterior envelope, “the exterior spaces of the site, as well as the common areas on the ground floor of the buildings, (...), the stairwell enclosures, as common parts [of the buildings], and the original typology of the apartments”²⁴.

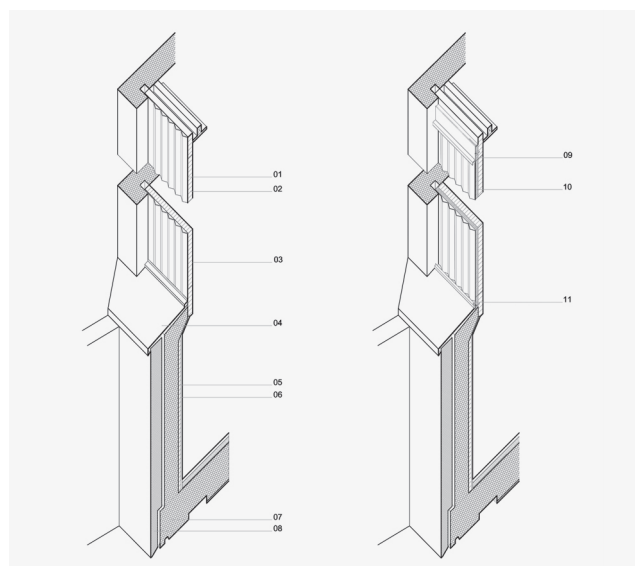
Since the *Miremont-le-Crêt* apartment building had never experienced any extensive rehabilitation intervention, many of its materials were starting to show signs of being worn or obsolete, and so, in 2010, the decision was made to restore the building. The project was awarded to the architecture office *Meier+associés*, and developed in collaboration with the *Atelier Oleg Calame*, between 2011 and 2014. Its program comprised primarily the renovation of its façades, including, however, the introduction of other technical improvements and restoration works inside and outside the entrance halls.

It is however important to refer that the main reference for the development of this rehabilitation project was the pilot study developed for the *Cité du Lignon*²⁵, in Geneva, between 2008 and 2011, by the TSAM — *Laboratoire des Techniques et de la Sauvegarde de l'Architecture Moderne* [Technical Laboratory for the Conservation of Modern Architecture] of the *École Polytechnique Fédérale de Lausanne*. The research carried for the rehabilitation of the building envelopes of the housing precinct was unparalleled, being innovative in terms of the methods applied, in the considered thought on the restoration of buildings from the 1950s and 60s, and in terms of rehabilitation techniques used, such as keeping the original window frames by inserting performance glazing, and in the use of efficient insulation materials such as aerogel. All these techniques were used in *Miremon-le-Crêt* — as



03 *Miremont-le-Crêt*, Geneva, 1953–1957 | 2011–2014. Axonometric sections of the balconies' glazed walls and their opaque parapets. Left: original project; Right: rehabilitation intervention. Scale 1:15. [01 fixed window frame in pine wood; 02 single glazing; 03 wood block board (8mm); 04 mineral wool insulation board (1.5mm); 05 "Eternit" fibre cement panel (10mm) with asbestos; 06 concrete screed (+tiled flooring added by the owners in many of the apartments); 07 reinforced concrete slab; 08 "Sofraver" heat mirror glazing THERM (24mm); 09 float glass (4mm); 10 PVC film; 11 aerogel (60mm); 12 reinforcing elements in oak wood; 13 "Eternit" fibre cement panel (10mm) without asbestos; 14 insulating coating resin]. © Patricia Vendrell Duarte, 2014.

05 Marc Joseph Saugey, *Miremont-le-Crêt*, Geneva, 1953–1957. View of the housing building from the *avenue de Miremont*. © Alain Grandchamp, n.d., Christoph Schmidt-Ginskey, "Miremont-le-Crêt 1953–1957. L'espace habitable", *Faces, Journal d'Architectures*, n°. 21, Dossier: Marc Joseph Saugey, Genève, EAUG, 1991, 53.



04 *Miremont-le-Crêt*, Geneva, 1953–1957 | 2011–2014, axonometric sections of the façades' opaque walls. Left: original project; Right: rehabilitation intervention. Scale 1:15. [01 corrugated aluminium sheet (2mm); 02 wooden fibre board (30mm); 03 plaster+paint (10mm); 04 protecting drip in aluminium (2,5mm); 05 cork (20mm); 06 plaster+paint (10mm); 07 reinforced concrete slab; 08 prefabricated concrete panel (80mm); 09 fixing and protecting element in aluminium (1,5mm); 10 aerogel (20mm); 11 fixing element in aluminium (1,5mm)]. © Patricia Vendrell Duarte, 2014.

06 Marc Joseph Saugey, *Miremont-le-Crêt*, Geneva, 1953–1957. View of the triangular balcony from the bedroom. © G. Klemm, n.d., Archives IAUG, Fonds Marc Joseph Saugey, cote 205.03.011.



07 Marc Joseph Saugey, *Miremont-le-Crêt*, Geneva, 1953–1957. View of the exterior garden and pedestrian passage from *Miremont's* entrance hall. On the left Louis Bongard's mural painting. © G. Klemm, n.d., Archives IAUG, Fonds Marc Joseph Saugey, cote 205.03.009.

described below — a fact which proves the importance of this research and its contribution to the understanding that the preservation of building complexes from this period can be sustainable.

Miremon-le-Crêt's rehabilitation intervention was essentially linked to the enhancement of its inhabitants' comfort, requiring the building's exterior envelope to be submitted to a significant thermal improvement. The architects' main goal was to reduce the envelope's original thermal losses, from 580 MJ/m².year to 200 MJ/m².year²⁶ — a special limit of heat loss accorded by the responsible authorities (since obtaining a heat loss complying with the SIA standard 380/1²⁷ — 120 MJ/m².year — would not allow a respectful intervention on the particular materiality and image of the existing building). However, this target was not only achieved but significantly surpassed, being now set at 160 MJ/m².year²⁸, rather close to the values imposed by the regulations in force in Geneva, especially considering the building's date of construction and the fact that its envelope is mainly composed of glazed façades and thermal bridges like the numerous balconies.

In order to achieve such values, the rehabilitation solutions proposed by the architects had to be primarily focused on the most critical elements of the building, in terms of thermal performance, which included *Miremon-le-Crêt's* façades, and more particularly its glazing surfaces. This challenge was, however, made bigger by the associated need to keep the appearance and substance of the building as close to the original as possible. Therefore, instead of attempting to renovate, in detail, all the elements of *Miremon-le-Crêt's* façades, they rather decided to operate only in the most delicate ones, in a very efficient way.

This was achieved by replacing the building's single glazing by a Heat Mirror glazing, although maintaining the original pine window frames, which had to be reinforced in order to cater for the new glazing; by switching the windows' opaque parapets insulation with a better performing solution — aerogel — as well as, substituting their exterior fiber cement boards with new ones — free of asbestos; and by adding an insulation layer — also of aerogel — to the aluminium walls and gable-end façade.

However, in order to preserve the building's original fabric, both the prefabricated concrete parapets and the wired glass ones, were not subject to any significant thermal improvement. The wired glass parapets were replaced by a double glazing solution — combining an exterior wired glazing with an interior single glazing (that is not sufficient to attain a satisfying thermal performance) — only because most of the original had already been substituted by solid elements or single glazing, and the remaining were largely deteriorated.²⁹ On the other hand, the roof was optimally insulated and solar panels were installed for pre-heating of domestic water — as required by the present legislation of the Canton³⁰.

In addition, a solution also had to be found for the building's entrance halls, whose entire glazing façade largely contributed to the heat loss of the building. Despite the existence in the entrance halls of an original and ingenious

system of heat radiation — a false-ceiling, made of perforated steel sheets that radiate the heat from hot water pipes located above³¹, large amounts of heat were lost through their single-glazed façades, making it difficult to cope with the required energy standards. Therefore, a choice had to be made between keeping the heating system and the original single glazing.

Taking into account not only the rehabilitation principles but also considering the co-owners' opinion and the economics of the alternatives, the decision taken was to keep the hall's glazing façade. Therefore, to allow the thermal insulation of the upper floors, an insulation layer was placed on the hall's ceiling, hidden by the original steel panels, although no longer fulfilling their original function.

Some renovation works were also planned to other parts of the building at the request of the co-owners, although the works had no influence on the building's heat balance. Therefore, the building's piping system was totally refurbished. Thus, apart from the substitution of both water-supplying pipes and drain pipes, inside the apartments, the rehabilitation project foresaw the creation of separated vertical drain pipes for the kitchen's wastewater and the roof's stormwater, as demanded by the present legislation of the Canton of Geneva³². In addition, the ventilation system, which contained asbestos, was also remodelled.

At the same time, a number of changes with the aim of returning the building to its original appearance were also carried out. On the façades, those included the treatment of the carbonation on the prefabricated concrete panels, that presented several cracks and fragments, and on the balcony slabs, where the carbonation of concrete was also causing the spalling of their edges.³³ The aluminum *brise-soleils*, panels, and respective fixings were cleaned and restored, with most of the fixings being replaced, as most of the original were corroded. Also the balcony floor coverings were renovated, since their tiled flooring contained asbestos. Thus, to avoid future infiltrations an insulating coating resin was applied to the balcony floors. In addition, some other rehabilitation works were conducted on the ground floor, both inside and outside the entrance halls. Apart from the renovation of the interior and exterior flooring, the walls were repainted in their original colours — following chromatic analysis to discover their previous colours. The covered interior and exterior circles and bands of vegetation were refilled with earth and replanted, and the original water basin, outside *Miremon-le-Crêt's* hall, was refilled with water. However, not without the construction of a new passage over it, allowing the reconciliation of Saugey's original project with the access needs of users.

By the end of the rehabilitation process the building will be back to a condition incredibly close to that found just after the completion of its construction by Saugey, both inside and outside.

In *Miremont-le-Crêt*, almost all materials and components that were still able to perform their role were maintained and/or rehabilitated, and any changes were introduced in compliance with Saugey's spirit, maintaining the basic appearance and functions of the building. Only the decision

to dismantle the entrance hall's heating system can be seen as a loss for the building and Saugey's original project and intentions, raising an important question. Should a rehabilitation intervention be more concerned in complying with the actual thermal standards rather than with the preservation of the original architectural quality and technical solutions of the building? Or should a balance be found between energy, comfort and authenticity?

The construction site opened in January 2014 on the building's Miremont-le-Crêt side and the rehabilitation works are now coming to an end, with the final works outside the entrance hall being finished. Following the achievement of the renovation works on the Miremont-le-Crêt side, the architects will initiate the works on the building's Calas side. ■

Notes

- The present essay summarises the work developed for the author's MSc dissertation — *Preserving the Legacy of the Modern Movement: Miremont-le-Crêt (1953–1957) in Geneva*. Developed during an exchange year at the *École Polytechnique Fédérale de Lausanne*, it had as coordinators Professor Ana Tostões (ISTUL) and Professor Franz Graf (EPFL). The information regarding the rehabilitation project of the Miremont-le-Crêt apartment building was provided by the architecture offices of Meier+associés architectes and Atelier Oleg Calame.
- 1 “Miremont-le-Crêt est un bâtiment dans l'histoire du logement bien au-delà du contexte genevois.” in Catherine Dumont d'Ayot, “Miremont-le-Crêt: manifeste de l'espace habitable”, *Patrimoine et Architecture*, n° 9, Genève, Georg Editeur SA, 2000, 29.
 - 2 Cf. Laurent Moutinot, “Préface”, *L'Architecture à Genève, 1919–1975*, Lausanne, Editions Payot, 1999, vol.1, 9.
 - 3 Cf. Catherine Courtiau, “Le contexte historique de la Genève internationale de l'après guerre”, Marc J. Saugey, *Spécialité, Urbanisme et Nouveaux Programmes de l'Après-Guerre: la Ville des Années 50 et 60*, Genève, IAug, 2007, 18.
 - 4 Cf. Laurent Moutinot, *op. cit.*, 9.
 - 5 “(...) la nécessité d'une restructuration urbaine (...) de la création de nouveaux logements, services et équipements.” in Catherine Courtiau (2007), *op. cit.*, 60.
 - 6 Cf. Armand Brulhart, “Marc Saugey (1908–1971) ou la Tentation d'Icare”, *Faces*, n° 21, Genève, EAUG, 1991, 8.
 - 7 Cf. Patrick Devanthery, “La Contingence et l'Apesanteur”, *Faces*, n° 21, Genève, EAUG, 1991, 4.
 - 8 “(...) distingué par ses recherches structurelles et de techniques nouvelles” in Catherine Courtiau (2007), *op. cit.*, 18.
 - 9 “L'espace habitable” — designation used by Saugey in Marc Joseph Saugey, “L'espace habitable, Miremont-le-Crêt”, *Architecture, Formes, Fonctions*, No. 8, Lausanne, Édition Anthony Krafft, 1961–62, 77–82.
 - 10 In the urban context of Geneva, Champel stands as “an excellent example of the development of the bordering areas of the city” [“un excellent exemple du développement des zones limitrophes de la ville”], where, during the 20th century, the existent “villas and scattered properties were replaced (...) by a district organized in parallel blocks” [“des villas et propriétés éparses son remplacées (...) par un quartier organisé en barres”] in AL, EB, “Champel-Florissant-Malagnou, le standing urbain genevois”, *xx^e, Un Siècle d'Architectures à Genève. Promenades*, Gollion, Infolio, 2009, 87.
 - 11 “(...) éléments extérieurs, naturels et bâtis.” in Marc Joseph Saugey, *op. cit.*, 77.
 - 12 Cf. CB, “Miremont-le-Crêt”, *xx^e, Un siècle d'architectures à Genève. Promenades*, Gollion, Infolio, 2009, 107.
 - 13 “(...) aux cellules du logement collectif (d'acquérir) les qualités (réputées être celles) de la villa.” in Catherine Dumont d'Ayot, *op. cit.*, 31.
 - 14 “(...) la pièce central autour de laquelle s'articule un plan d'une grande fluidité spatiale”, in *Idem*, p. 32.
 - 15 Cf. Christoph Schmidt-Ginzkey, *op. cit.*, 56.
 - 16 “(...) le nouveau logement des années cinquante se conçoit essentiellement en termes de rationalisation fonctionnelle et technique (...) au détriment souvent

des recherches liées à la qualité de l'espace.” in IC, “De l'habitat social aux grands ensembles”, *L'Architecture à Genève, 1919–1975*, Lausanne, Editions Payot, 1999, vol.1, 200.

- 17 *Idem*, 287.
- 18 “(...) chambres monofonctionnelles juxtaposées, par un espace unitaire, fluide et continu.” in *Idem*, 202.
- 19 “(...) lui a offert la possibilité d'explorer le thème de l'espace.” in *Idem*.
- 20 “(...) chaque appartement joue le rôle d'une maison individuelle.” in CB, *op. cit.*, 107.
- 21 “L'effet plastique de l'ensemble (...), rompant ainsi avec la monotonie des bandes d'immeubles parallèles.” in Christoph Schmidt-Ginzkey — *op. cit.*, 54.
- 22 Presently called Office du patrimoine et des sites [Office of Patrimony and its Sites]. It is under the tutelage of the Département de l'Aménagement, du Logement et de l'Énergie [Department of Planning, Housing and Energy] — DALE — of the République et Canton de Genève [Republic and Canton of Geneva].
- 23 Inès Lamunière, Patrick Devanthery, “Sauvegarder Miremont-le-Crêt?”, *Patrimoine et Architecture*, n° 9, Dossier: Miremont-le-Crêt (1956–1957), Genève, Georg Editeur SA, 2000, 11–28.
- 24 “des espaces extérieurs des parcelles ainsi que des locaux communs du rez-de-chaussée desdits bâtiments. Les cages d'escalier, en tant que parties communes, et la typologie originale des appartements.” in Arrêté du Conseil d'État, February 20 2002, 4.
- 25 Franz Graf, Giulia Marino, *La Cité du Lignon 1963–1971: Étude Architecturale et Stratégies d'Intervention*, Patrimoine et Architecture: cahier hors série, Gollion, Éditions Infolio, 2012.
- 26 Values provided by the architect Laurence Boyé (Meier+associés architects) on April 4 2014.
- 27 See the Loi sur l'Énergie and the Règlement d'Application de la Loi sur l'Énergie of the Canton of Geneva.
- 28 Value provided by the architect Laurence Boyé.
- 29 Cf. Inès Lamunière, Patrick Devanthery, *op. cit.*, 24.
- 30 See the Loi sur l'Énergie and the Règlement d'Application de la Loi sur l'Énergie of the Canton of Geneva.
- 31 Cf. *Idem*, 23.
- 32 See the Loi sur les Eaux and the Règlement d'Exécution de la Loi sur les Eaux of the Canton of Geneva.
- 33 Cf. Inès Lamunière, Patrick Devanthery, *op. cit.*, 24–26.

References

- COURTIAU, Catherine, DUMONT D'AYOT, Catherine, THOMÈ, Philippe, Marc Joseph Saugey, *Spécialité, Urbanisme et Nouveaux Programmes de l'Après-Guerre. La ville des Années 50 et 60* (research report under the direction of Bruno Reichlin and Jean-Pierre Cêtre, with input from Franz Graf), Genève, IAug, 2007.
- DUMONT D'AYOT, Catherine, “Miremont-le-Crêt: manifeste de l'espace habitable”, *Patrimoine et Architecture*, No. 9, Dossier: Miremont-le-Crêt (1956–1957), Genève, Georg Editeur SA, 2000.
- GRAF, Franz, MARINO, Giulia, *La cité du Lignon 1963–1971: Étude Architecturale et Stratégies d'Intervention*, Patrimoine et Architecture: cahier hors série, Gollion, Éditions Infolio, 2012.
- LAMUNIERE, Inès, DEVANTHERY, Patrick, “Sauvegarder Miremont-le-Crêt?”, *Patrimoine et Architecture*, n° 9, Dossier: Miremont-le-Crêt (1956–1957), Genève, Georg Editeur SA, 2000.
- MEIER, Philippe, Marc Joseph Saugey, *Architecte*, Collection: Architectes du xx^e siècle à Genève, n° 4, Genève, Fédération des architectes suisses, section Genève, 2012.
- SAUGEY, Marc-Joseph, “L'espace habitable, Miremont-le-Crêt”, *Architecture, Formes, Fonctions*, No. 8, Lausanne, Édition Anthony Krafft, 1961–62.
- SCHMIDT-GINSKEY, Christoph, “Miremont-le-Crêt 1953–1957. L'espace habitable”, *Faces, Journal d'Architectures*, No. 21, Dossier: Marc Joseph Saugey, Genève, EAUG, 1991.

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Georges Candilis, Alexis Josic, Shadrach Woods, *Cité de l'Étoile*, France, 1954–1963. © Richard Klein, 2010.

The Cité de l'Etoile, Bobigny, 1956–1963, Georges Candilis, Alexis Josic, Shadrach Woods Architects

BY RICHARD KLEIN

The *Cité de l'Etoile*, in Bobigny, design by Candilis Josic and Woods (1954–1963) is one of the housing estates, results of the french national competition named *opération Million*. Commissioned by Emmaüs, the 737 homes are a kind of synthesis of the experiments of Candilis in Morocco and the city planning thinking of the team. The demolition planned in 2008 has been avoided and the *Cité de l'Etoile* has been labelled 20th century heritage. The rehabilitation project brings to light the contradictions of an highly conflicting situation. Between blind demolition and a well-thought out project of restoration the question of the safeguard of collective social housing complex of the second half of the 20th century is still waiting solutions.

In a recent interview, the former Director of Heritage at the French Ministry of Culture and Communication remembered having been traumatized by the *Cité de l'Etoile* affair in Bobigny:

Whereas the property owner wanted to demolish the housing complex, the Minister of Culture registered the building on the statutory list but he was confronted with the anger of the residents. Tired of living in the dilapidated conditions of what was originally emergency housing, they wanted new accommodation and felt as if they had been taken hostage by the protection measure¹.

Even if the French heritage administration was in all likelihood shaken by the very paradoxical situation of this large urban housing complex during 2010, one might hope that serious lessons were learnt from the experience. The history of the *Cité de l'Etoile* — which in fact had never been emergency housing — is indeed an instructive example for all those who are involved in the understanding and safeguarding of 20th century architecture.

The Bobigny project emerged within the context of the housing crisis of 1954 and 1955. Even if Georges Candilis has recounted the way in which he thinks he influenced Abbé Pierre² in the decision to build permanent housing³, the very negative reaction to the Emmaüs emergency housing estates probably explains why the Emmaüs Organization for Low Cost Housing decided to build more long-lasting dwellings. The *Million*⁴ consultation was at the origin of the association between Georges Candilis, Guy Brunache and the engineer Henri Piot joined by Alexis Josic and Shadrach Woods and their proposal was mainly based on a cellular plan and its assembly (Figure 01). The basic dwelling was composed of two transversal spaces of

varying widths. The first, 3 metres wide, included the living room and the parents' bedroom, the second of 2.40m accommodated the kitchen, the bathroom and the children's bedroom. The living room served as an entrance and led to the kitchen and the bedrooms via a landing. The bathroom situated between the kitchen and the children's bedroom was a throughway. The position of the bay windows aligned with the corridors enabled one to get a glimpse of the outside. The groups of apartments were brought together with vertical circulation spaces and the team proposed several variations by multiplying the possibilities and the variety of layouts⁵. From this point of view, the *Cité de l'Etoile* in Bobigny is thus not only the most accomplished building project in the Paris region resulting from the *Million* competition, but even more, it happens to be the only completed example today⁶ (Figure 02).

This direct link with the *Million* competition does not, however, explain the very unusual nature of the scheme.

The Bobigny housing complex combined dwellings facing East-West designed for the competition, and other dwellings orientated North-South where the ground floor was vacant and, under the porticos, provided play spaces and passage ways protected from the rain and the sun. The ground floors left free contribute towards the fluidity of the whole by creating views across the site.

A long-term project

The construction of Bobigny is also unusual as regards the time-scale. Even if it was one of the first works launched following the competition phase, the length of time needed to finalize the project meant it was one of the last to be completed. The consequences of this time-scale are two-fold: the variations endured during the project's program provide an understanding of the constant objectives of the architects.

But the doctrinal context of the project changed between the moment of the elaboration of the project and the time of its completion. Georges Candilis and his team imagined the design of the Bobigny project in 1955 as a response to the *Million* competition, but the administrative phase for planning permission and resulting modifications lasted from 1956 to 1960. The building work took place between the end of 1957 to the middle of 1963⁷. More than eight years had passed since the *Million* competition (Figure 03).

Throughout the development of the project, and despite the instability of the overall program, the architects tried to maintain the presence of facilities which were to ensure the immediate extensions of the dwellings: school, shops, medico-social center, green spaces. What is specific in the different versions of the site plans is to maintain, in spite of the changes, the quality of the relationship between the empty spaces and the built spaces. The last version of the plan in which dwellings replace facilities that had not been built is particularly indicative of the desire to qualify the external spaces and the urban character of the project (Figure 06).

Bernard Huet has underlined the quality⁸ of the operations led by the Candilis, Josic and Woods team, Joseph Abram points out how the research to find a contemporary equivalent to the secular structure of the neighborhood was at the heart of the Bobigny, Blanc-Mesnil and Bagnols-sur-Cèze⁹ complexes, and both insist on the search for continuity and hierarchy demonstrated in the team's projects. The attention given to empty and green spaces confirmed the idea that the quality of urban design of the *Cité de l'Etoile* was extremely unusual, that the care for detail was taken further than for other complexes and that the form of the site plan resulted from a regular dialog between the design of the dwellings and that of the urban spaces. The children's playground, the main subject of the photo-reportage by Véra Cardot and Pierre Joly, adds a supplementary element to this observation. The Candilis, Josic and Woods team made the presence of children an essential element of their program. Each block of apartments has a play space placed within sight of the mothers; even from their apartment. Each play feature used left-over elements from the building site (breeze blocks, plumbing pipes) in order to build climbing walls, mazes and sand pits (Figure 04).

The *Cité de l'Etoile* issues

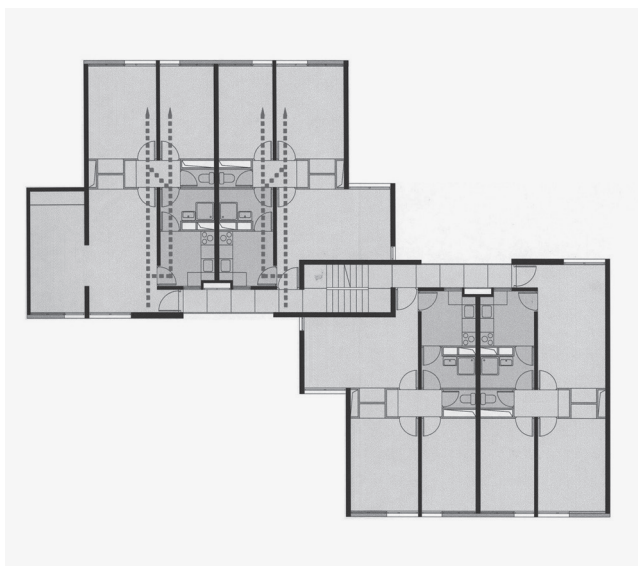
The projects of the Candilis Josic and Woods team dating from the middle of the 1950s are generally considered in light of their own texts in the edition *Candilis, Josic, Woods, A Decade of Architecture and Urban Design* published in 1968¹⁰, in which the *Cité de l'Etoile* illustrated their ideas on themes which feature in their production at the end of the 1960s, in the continuity of the debates of the group Team 10 which emerged clearly during the 10th *International Congress of Modern Architecture* (CIAM) in 1956 in Dubrovnik then at the 11th CIAM in Otterlo in 1959. The *Cité de l'Etoile* is chosen for the demonstration it provided at all levels from the scale of the site plan to the project as a whole, to the plans of the apartments as well as the plans for the play areas or the role of the stair wells.

But ten years after its construction, the *Cité de l'Etoile* also illustrated for its designers new precepts and new situations. Numerous historians have maintained that the *Cité de l'Etoile* anticipated the principles advanced by the architects themselves by neglecting to re-establish the initial doctrinal context when the complex was actually built. It was much more coherent to associate the Bobigny project with the 9th CIAM congress of 1953 and to the Doorn manifesto (1954) which replaced the functional hierarchy of the Athens Charter by the hierarchy of human associations rather, than to read in it anticipation of the subsequent theories of the team. The Moroccan experience of Georges Candilis presented at the 9th CIAM in Aix-en-Provence on the theme of the housing charter and mass dwellings is therefore essential as much from a theoretical to design point of view. The French housing crisis in the winter of 1954 and the situation of the most vulnerable created a transferable situation for experimentation in housing beyond metropolitan France. The *Cité de l'Etoile* therefore inherited the Moroccan experiments but also Algerian and Tunisian experiments¹¹ that we now know included the most stimulating attempts of the acculturation of modernity¹². This link can be seen very clearly in the design of the projects realized by the team between 1955 and 1963. In Bobigny, as in the team's other projects, the design, the composition, the chromatic contrasts, and the polychromatic aspects all have their importance. The way the built and empty spaces fit together defines the composition of the different façades. The combination of the horizontal openings (bedrooms, bathroom, kitchen), horizontal bars with low glass windows (living rooms), small colorful tiltable windows are elements of the design that resonated in contemporary abstract art (Figure 05). The volumes are also treated as an abstract composition and stairwells, passageways and balconies, as well as the tower, combine the abstract composition of the in-fills with the visualization of the load-bearing structure. These principles of composition are reinforced by the use of contrasts and polychromatic effects. The black used for the joinery participates in creating this contrasting effect between in-filled parts and glazed panels, just as different shades of grey for the solid sections of the façades and the gables, and the dark red marking the volume of the stairwells or the colored sequence of the little wooden infill openings. This contrast, which is no longer visible today, was indispensable for the perception of the overall design quality.

Elimination to *bistorical Ghetto*

Major transformations to the *Cité de l'Etoile* took place from the beginning of the 1980s up until just recently. These successive transformations have little by little effaced certain of its architectural and urban qualities, even making some of them invisible. From the 1980s onwards, as with other social housing projects, the *Cité de l'Etoile* was confronted with other factors linked to aging and the threat of obsolescence in a changed ideological context: post World War II architecture was treated with contempt and condescension. The transformations, the new, insipid color scheme, and the changes to the joinery erased this sophisticated and delicate design harmony.

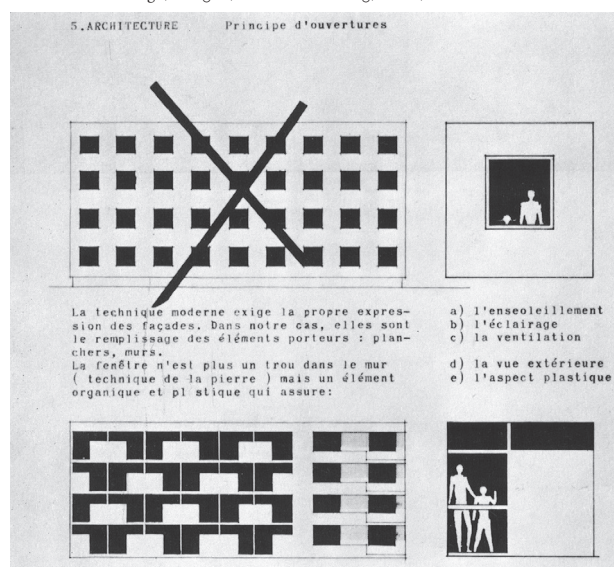
- 01 Georges Candilis, Alexis Josic, Shadrach Woods, *Cité de l'Etoile*, Bobigny, France, 1954 - 1963. Layout of the plan of housing for the *Million* competition. © Richard Klein (Dir.), *La Cité de l'Etoile à Bobigny*, Candilis, Josic & Woods, Paris, Créaphis 2014, 132, Archives Josic.



The difference between the original images regularly published of the *Cité de l'Etoile* and the transformations of its material reality from the 1980s onwards, partly explains the difference between the consideration of some and the disregard of others. The images of the estate circulated by those who wished to underline its value were taken from the original iconography dating soon after the buildings were completed. The positive reception in specialized circles continues and is based on the circulation of photographs of the original state of the housing complex whereas those who discredit it are based on the images of the degradation of its sanitary state. But, the partisans as well as the opponents share one thing in common: their lack of knowledge of how the project was brought about.

The most dramatic transformation phase of the *Cité de l'Etoile* is linked to the procedures implemented by the National Agency for Urban Renovation (ANRU) that corresponded in France to a wave of programmed destruction of social housing complexes. From May 2003 onwards, the destruction of the *Cité de l'Etoile* was envisaged. The future of the housing estate was the subject of an agreement written in December 2007 as part of the urban development program of the City of Bobigny and the ANRU, the text of which stipulated with a certain cynicism that “the renovation projects and new constructions respect the initial project”. But the global demolition permit for 178 dwellings, filed by Emmaüs on 10 February 2010 was rejected by the French State Architect for Heritage Buildings who considered that the proposed restructuring implied the loss of a major heritage element of the city. The Minister of Culture and Communication decided to give the building listed status on 21 April 2010. From then onwards, the case of the *Cité de l'Etoile* has fed the heritage chronicle at an unprecedented level of conflict. The property owners financed the making of a video clip called *Historical Ghetto* which denounced the Ministry of Culture's decision by underlin-

- 02 Georges Candilis, Alexis Josic, Shadrach Woods, *Cité de l'Etoile*, France, 1954 - 1963. Design principles of the façade for the *Million* competition. © Jürgen Joedicke, *Candilis Josic Woods: A Decade of Architecture and Urban Design*, Stuttgart, Karl Krämer Verlag, 1968, 38.



ing the material degradation of the urban complex (Figure 07). The Ministry ordered an historical expert analysis¹³ to determine the heritage value of the complex and to inspire a project that was more respectful of the initial qualities of the *Cité de l'Etoile*. A new feasibility study was commissioned from the Ellipse practise who, having presented its conclusions at the end of 2010 was, after another consultation, charged to carry out the restructuring project.

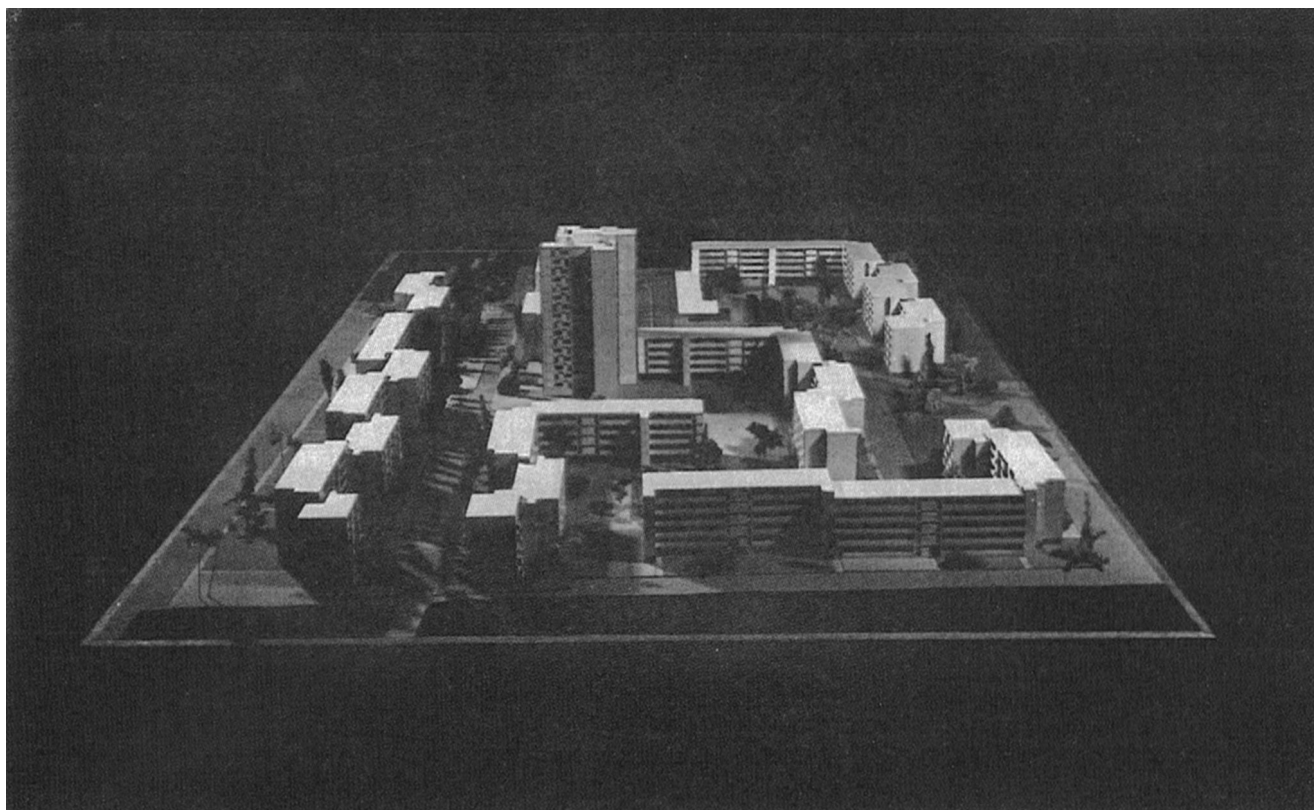
Saving appearances

The project currently is aiming for a result which takes the architectural heritage more into account whilst ensuring the physical but also the social longevity of the *Cité de l'Etoile*. From a formal point of view, the project aims to get as close to the initial layout and proportions of the façades, which means renewing the wood features and insulating from inside.

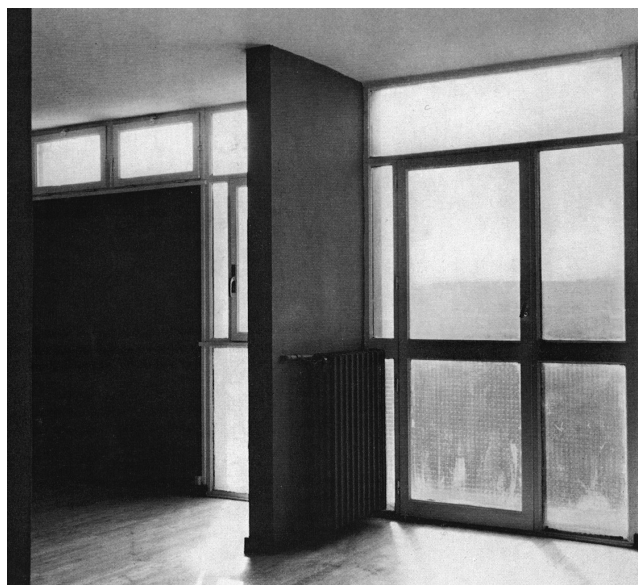
The restructuring of the apartments includes new interior partitions in order to provide more comfortable surfaces within the apartments. In spite of its considerable efforts, some demolition cannot be avoided, to comply with the logic at work under the auspices of the operations of the National Agency for Urban Renovation (ANRU).

The property owner and the project management team have just published a brochure presenting the future renovation project of the *Cité de l'Etoile*¹⁴. The rather vulgar advertising nature of the publication does not reflect the level of the work accomplished by the architects in charge of the project. As very often in such circumstances¹⁵, the reader won't find any images of the original beauty of the *Cité de l'Etoile*. The way the color scheme has been treated is significant of the situation. The original polychromatic aspect was of particular importance, contributing an art value to the Star housing complex and now helps to make its historic value legible. This character of the operation is attested by a very thorough stratigraphic study carried out at the end

03 Georges Candilis, Alexis Josic, Shadrach Woods, *Cité de l'Etoile*, Bobigny, France, 1954–1963. Model published in an advertising, *Cimaise*, No.51, January–February 1961.

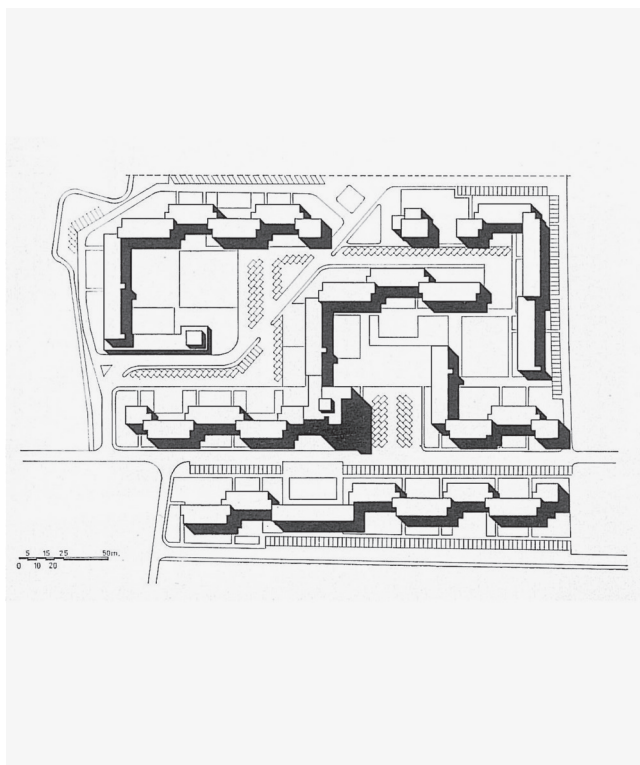


04 Georges Candilis, Alexis Josic, Shadrach Woods, *Cité de l'Etoile*, Bobigny, France, 1954–1963. The *Cité de l'Etoile* and one of the children's playground. © Jürgen Joedicke, *Candilis Josic Woods: A Decade of Architecture and Urban Design*, Stuttgart, Karl Krämer Verlag, 1968, 85.



05 Georges Candilis, Alexis Josic, Shadrach Woods, *Cité de l'Etoile*, Bobigny, France, 1954–1963. Inside one flat. © Jürgen Joedicke, *Candilis Josic Woods: A Decade of Architecture and Urban Design*, Stuttgart, Karl Krämer Verlag, 1968, 39.

06 Georges Candilis, Alexis Josic, Shadrach Woods, *Cité de l'Etoile*, Bobigny, France, 1954–1963. Plan. © Ionel Schein, *Paris Construit, Guide de l'Architecture Contemporaine*, Paris, coll. Environnement, 1970.



07 Georges Candilis, Alexis Josic, Shadrach Woods, *Cité de l'Etoile*, Bobigny, France, 1954–1963. Poster, invitation for the filming of the vidéo clip "Ghetto Historique". © Richard Klein, 2010.



of 2014 that confirmed the nature and the importance of the initial colors. Whereas the instruments of a possible restitution have been made available, the choices that are emerging are different. If the basic concept of the initial contrasts seems to have guided the authors of the current project, the addition of current “trendy” colors shows that they wanted to stamp the exterior with their own trademark rather than remain modest.

The restructuring of the *Cité de l'Etoile* will not yet be the example that many were expecting. Having escaped an unprecedented heritage conflict, this complex will have to be satisfied with an outcome that must once more be considered as an intermediate solution from a heritage point of view. It's a no doubt indispensable phase enable to the transition from the blind demolition of the previous stages to a well-thought out project of restoration of a collective social housing complex of the second half of the 20th century. ■

Notes

- 1 Philippe Bélaval, former Director of Heritage is currently Chairman of the Centre for National Monuments, was interviewed in the *VMF* journal n°264, November 2015, 5.
- 2 The priest known as Abbé Pierre, founder of Emmaüs, was the author of the radio appeal launched on 1st February 1954 following the death of a child.
- 3 Georges Candilis, *Bâtir la Vie, Un Architecte Témoin de Son Temps*, Paris, Stock, 1977, 202–203.
- 4 In 1955, the French government launched the *Million* operation which aimed to offer a new type of economical apartment with 3 rooms plus kitchen and bathroom for a cost of 1 million Francs.
- 5 For Candilis, Josic and Woods, the *Million* competition is at the origin of about twenty schemes ordered in three years and built mostly in the Paris region.
- 6 Compared with the devastating effects on different schemes resulting from the *Million* competition and designed by the team, the *Cité de l'Etoile* in Bobigny is an exception: buildings lifted, the addition of

roofs, outside lifts, façades smoothed, etc., have in most cases rendered these schemes unrecognizable.

- 7 The modifications of the site plan from 1958 onwards was to lead to a readjustment phase even while the building was being constructed. The first dwellings were completed in 1960. The apartment tower was completed in December 1962, and in July 1963, only final finishing stages remained to be completed.
- 8 Bernard Huet, G. Candilis, A. Josic, S. Woods — “Le mariage de la Casbah et du Meccano”, *L'Architecture d'Aujourd'hui*, No. 177, January/February 1975, 44–45.
- 9 Joseph Abram, *L'architecture Moderne en France — T2, Du chaos à la croissance, 1940–1966*, Paris, Picard, 1999, 109–110.
- 10 Jürgen Joedicke, Candilis Josic Woods: *A Decade of Architecture and Urban Design/ Ein Jahrzehnt Architektur und Stadtplanung/ Une Décennie d'Architecture et d'Urbanisme*, Stuttgart, Karl Krämer Verlag, 1968.
- 11 On this subject, Richard Klein, “The experience of the slum, Roland Simounet and the CIAM-Alger group”, in Jean-Lucien Bonillo, Claude Massu & Daniel Pinson (dir.), *La Modernité Critique, Based on the CIAM 9 of Aix-en-Provence — 1953*, Marseilles, Imbernon, 2006, 207–217.
- 12 Joseph Abram, *Modern Architecture in France — T2, From Chaos to Growth, 1940–1966*, Paris, Picard, 1999, 109.
- 13 Richard Klein, *Cité de l'Etoile in Bobigny, Historical Expertise*, ensap de Lille, Lacth, 2010, study for the Ministry of Culture and Communication. This expert analysis was published in part in Richard Klein (Dir.), *La Cité de l'Etoile à Bobigny, Candilis, Josic & Woods*, Paris, Créaphis, 2014.
- 14 Emmaüs Habitat — Ellipse Architecture, *Histoire d'Etoile*, Paris, Archibooks, 2015.
- 15 To take a well-known French example, the images of the restructuring (2002–2008) of the *Bois-Le-Prêtre* tower in Paris by the Frédéric Druot, Anne Lacaton and Jean-Philippe Vassal team almost never show the initial design and state of the tower (1959–1961, Raymond Lopez architect).

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Marcel Lods, Paul Depondt, Henri Beaudouin, the CEA housing estate, Grand'Mare, Rouen, France, 1968-1969. The whole Grand'Mare estate today. © Giulia Marino, 2015.

The Controversial History of the “Steel and Glass” by Lods, Depondt and Beauclair. The GEAI Housing Estate *La Grand'Mare* in Rouen (1968–2016)

BY GIULIA MARINO

Marked by numerous setbacks, the history of the GEAI housing estate *La Grand'Mare* in Rouen is troubled, even highly controversial. It clearly epitomizes the twists and turns in the debate over the preservation of postwar architecture, whose “industrialized” (often meaning “experimental”) dimension, is mistakenly made the excuse for its demolition. This is exemplified by the uncertain future of this now badly amputated pioneering housing complex, designed by Marcel Lods and his fellow architects.

The “great adventure of GEAI” began when Marcel Lods (1891–1978), the designer of various masterpieces of modern prefabricated architecture in France, lunched with Roger Lacharme, Director-General of the Glass Industries of the Compagnie Saint-Gobain. The architect was extremely persuasive:

*Monsieur, you manufacture glass. You have a large advertising budget, though it is no business of mine to say whether it is managed usefully or not. I want to make you an unusual proposition. To dedicate part of your budget to financing the construction of a prototype. I will present you with the idea for it, but I will conduct the studies and tests. On the other hand, I'm not able to organize the financing of the various elements to be manufactured and tested. If you agree, we will proceed as industrialists, that is to say we will manufacture the components and test them. Then we will see how to assemble them. In this way, together with the production methods of heavy industry, we will reduce the prices and construct more buildings, so that you sell more glass!*¹

Lacharme accepted the challenge and, together with other industrial groups — the Technical Office for the use of Steel (OTUA), Aluminium Français and Pêchiney Saint-Gobain — agreed to fund the development and construction of a prototype of industrialized housing. Lods, for his part, brought together a team of young designers consisting of Paul Depondt and Henri Beauclair to undertake the development program. This led in 1962 to the formation of the *Groupe pour l'Etude d'une Architecture Industrialisée* GEAI.

Clockwork precision engineering

The aim of this experimental operation was to establish a “total synergy” between the imperatives of architectural design — constructional, aesthetic and social — and the business aspirations of a resurgent building industry.

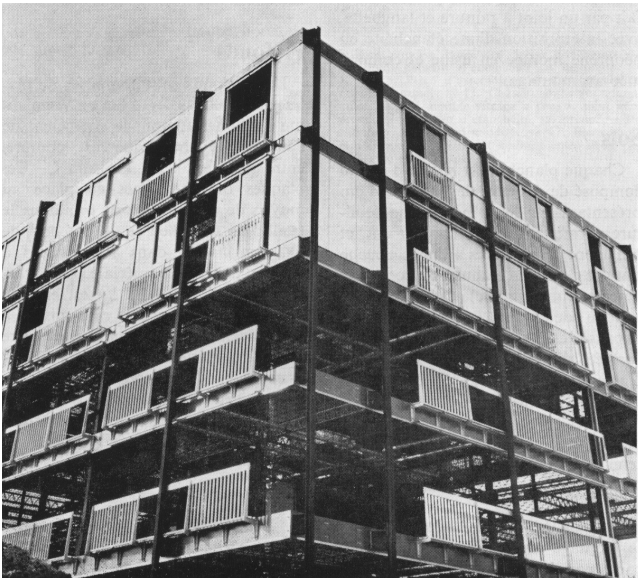
Industrialized metal construction, lightweight, flexible and rational, perfectly met this need. After four years of multidisciplinary research and the realization of a first prototype at Aubervilliers (1966)², by 1968 the process was considered sufficiently ready for its first important appearance: for the future “priority housing zone” of *La Grand'Mare* in Rouen, a project of 500 homes grouped into 25 four-story units variably assembled in a number of small clusters.

Marcel Lods, who saw GEAI as the culmination of the research he had conducted in the interwar period in association with Eugène Beaudouin and in collaboration with Jean Prouvé, presented his pitch: “In a word, we have to construct a ‘meccano set’, the children's toy that architects, who have yet to come up with a construction system offering so many possibilities yet with so much apparent rigor, always dream of”.

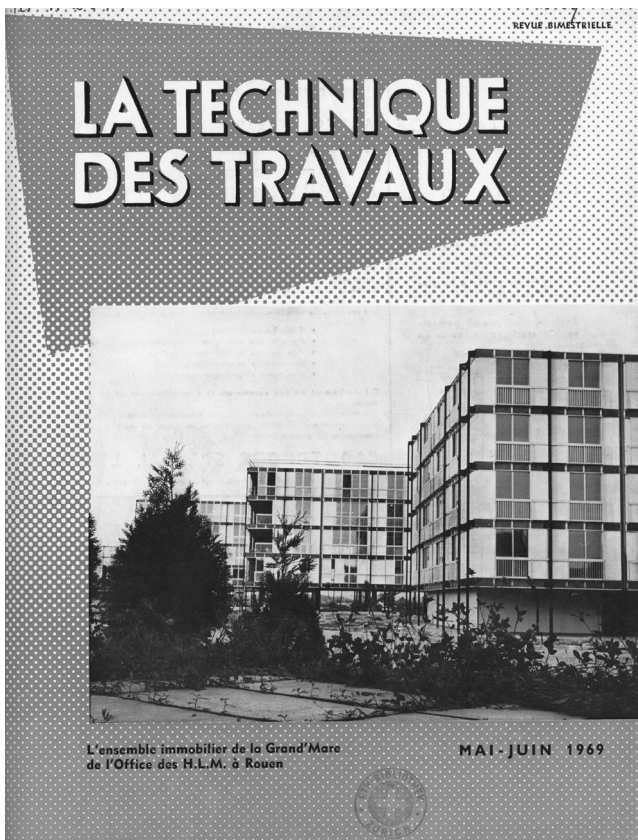
The “glass and steel” boxes of *La Grand'Mare* faithfully follow the logic of dry assembly. Thanks to a rigidly modular layout (on a 90 cm grid-frame) and the use of standardized (indeed, wholly factory-finished) components, the buildings at Rouen were erected using a construction procedure that “was simple, quick and efficient”³. In other words, “it is a question of increasing the factory operations (whose performance is certain) by all possible means, while reducing building operations onsite (whose performance is more doubtful) by every possible means”⁴. Detailed design of the bolted assemblies (which provoked criticism at GEAI — “the bolt is the enemy of industrialization” according to Jean Prouvé), and building tolerances, would play leading roles in a process deemed to deliver the largest number of comfortable homes at a modest price.

In this logic of the construction site freed from “clutter, replaced by packaging”⁵, it became essential to supersede the distinction between the elements of the structural work and those of the secondary works. The central core — the “sway

- 01** Marcel Lods, Paul Depondt, Henri Beauclair, the GEAI housing estate, *Grand'Mare*, Rouen, France, 1968–1969. Installing the façades from inside the building. © *La Technique des Travaux*, May–June, 1969, 5–6.



- 02** Marcel Lods, Paul Depondt, Henri Beauclair, the GEAI housing estate, *Grand'Mare*, Rouen, France, 1968–1969. The whole *Grand'Mare* estate today. © Giulia Marino, 2015.



- 03** Marcel Lods, Paul Depondt, Henri Beauclair, the GEAI housing estate, *Grand'Mare*, Rouen, France, 1968–1969. Installing the façades from inside the building. © *La technique des travaux*, May–June, 1969, 5–6.



- 04** Marcel Lods, Paul Depondt, Henri Beauclair, the GEAI housing estate, *Grand'Mare*, Rouen, France, 1968–1969. Metal frame, assembly of the floorplates with integrated utilities. © *Bâtir*, 174, April 1969.

frame” [*palée de stabilité*] consisting of the two principal columns in Corten steel connected by cross-pieces — was erected first, anchored to the concrete sub-structure and suitably braced to increase its stability. It provided the support for the lattice floorplates, remarkable for their lightness — definitely the most innovative aspect of the GEAI — assembled to “constitute the floor of an apartment which, by integrating the utility networks, will be installed in a single piece in the vertical structure of the block”⁶. Numbered, the components of each three-dimensional layer were then assembled *in situ* on an assembly line housed in a construction workshop. Veritably clockwork precision!

Lightness and comfort

As for the façades, they were particularly successful on the architectural plane by their juxtaposition in keeping with a very strict rule of opaque and transparent elements — notably the double casement window-doors. In addition, this welcome alternation mitigated the repetitive effect of prefabricated elements, namely an excessive monotony, by the presence of sliding shutters in micro-corrugated aluminum, creating a very striking movement by being superimposed on solid and transparent panels.

In constructional terms, the advantages of industrializing the building elements lay in extremely rapid installation, without being less effective in terms of airtightness and waterproofing, as well as thermal insulation. In fact the conception of the envelopes not only met the requirements of industrial construction through perfectly controlled phasing and simplified assembly (they were assembled by working in the interior of the buildings) but also revealed a special concern for thermal resistance, which was inseparable from the warm air central heating, intended to ensure the comfort of the inhabitants. The opening parts were thus made from extruded sections of anodised aluminum alloy and fitted in the factory with *Tégé* insulating glass. This was an innovative product featuring two panes of glass electrically welded around the edges, sealing a mattress of dehydrated air in the cavity, calculated to reduce heat loss by 40%.

The same concern for thermal performance — certainly remarkable in the context of the 1960s — is found in the composition of the three types of opaque infill elements, to which was added a special model that contained the forced-air heating blower port to the glazed surfaces.

From the enthusiastic reception...

After 15 months' work, the inhabitants moved into the first home units. In a documentary produced by French television, the new tenants (who, it seems, had been carefully selected beforehand) expressed themselves satisfied⁷. Apart from a few problems with acoustic insulation due to the cavity floors and lightweight partitions, they appreciated these spacious, flexible layouts, in a pleasant setting open to the wooded landscaped exteriors. With regard to the technical press, it recounted this pioneering achievement with great enthusiasm. An example was the review *Techniques et Architecture*, which devoted a number of laudatory articles

to the Rouen development, illustrated with a systematic report on the assembly of the housing blocks. Likewise, the GEAI method was shortlisted for the “innovation models” competition, and Lods, Beauclair and Depondt received the 1969 International Architecture Award from the Belgian National Institute of Housing, as well as the Reynolds International Grand Prix for 1970.

Marcel Lods' objectives were even more ambitious:

*We must not consider the Rouen operation as an end but a beginning.[...] Our commitment to the GEAI method reveals new opportunities every day. This will have to be the path of development for construction as it has been of all developments in industry. During this process, the principal result of finding a solution to each problem has been to raise several more, each of which is generates progress. To illustrate this concept with an image, we can say we have now reached the stage that the T-model Ford or 1919 Citroën represented for the car!*⁸

After the prototypes of Aubervilliers (1962–1966) and Noyon (OREAM Building 1967–1968), then the *Grand'Mare* estate (1968–1969), the series of built works continued (Elancourt 1971, La Courneuve 1972–73, office building in Villeurbanne 1970–1971), including a slightly modified version for the north American market, which took the form of a pilot project in Chicago (487 housing units, 1969–1972).

... to its troubled recent history

It was destined not to happen. Despite the positive reception of the first GEAI method that encouraged its inventors to continue the operation,⁹ its commercial success ran down very rapidly in 1975. The radical change in social housing policy in France and the effects of the oil crisis of the 1970s were the principal causes for this. On another scale, the history of the blocks in Rouen, punctuated with drama, contributed most of all to finally bury the ambitious project. In particular, following a fire at the *Collège Pailleron* on 6 February 1973 (leading to a drastic tightening of fire standards for steel construction in France), their low fire resistance was singled out for criticism. Paradoxically, the very nature of Lods, Depondt and Beauclair's inventive constructional process, conceived in terms of extreme lightness, became both its greatest asset and the strongest argument by its critics.

The many lives of “steel and glass”

The history of the foundation of the *Grand'Mare*, tumultuous or even controversial, was marked by numerous turnarounds and deserves to be told in detail. In fact, Marcel Lods' ensemble had narrowly escaped demolition in the early 1980s, just ten years after being completed. A fire — the first in a long series — which broke out in one apartment and quickly spread to the whole building by the service shaft, caused a death. The reaction of the Municipality was immediate and radical: it planned to raze the complex to the ground. But demolition proved difficult to implement because of the status of the property (in the meantime, some stories had passed into private ownership)



and administrative obstacles tipped the balance towards a strategy of extensive restructuring.

Saved from destruction once, the buildings were then the subject of an extensive makeover that involved the departure of the original inhabitants, who had been highly sensitive (and responsive) to the innovative “steel and glass” architecture and their lifestyle. After the makeover, very disadvantaged social groups were installed in the buildings. The social balance of the neighborhood changed and insecurity gradually grew. The absence of all maintenance and servicing fomented repeated vandalism; the degradation of the buildings was rapid and extensive. It was in this very problematic social context that the planned demolition of the *Grand'Mare* estate again made the news. In 2000, the City of Rouen again planned to destroy the development, but this radical solution was strongly opposed. International mobilization, insisting on the quality of the project by Lods and his associates, had its effect. For the second time, the complex was saved.

20 years after the first phase of work, the buildings were still very dilapidated and had to undergo complete renovation. A major redevelopment project was then introduced, aiming to rediscover the “positive, modern and innovative image of the district in its infancy”, including a proposal for the conversion of certain blocks into offices¹⁰. As a result, 18 blocks or 380 units, were rehabilitated¹¹. “*Les Lods* as good as new,” said the press. Block number 17 was sold to the Rouen HockeyClub. It commissioned the Parisian DND architectural office to carry out a conversion that respected the character of the building, which was completed in 2009. At the same time, architect Anna Deriquehem acquired one of the isolated blocks and carefully restored it (*Atelier de la Corderie architectes*), making some significant improvements that upgraded it to the current standards while remaining invisible on the plane of the heritage.¹² All the conditions seemed to have come together to restore the

“steel and glass” to their former glory, saving an emblematic complex.

Demolition of 18 blocks

And yet. Though these successful projects demonstrated that it was possible to act intelligently on the structure and the secondary works of “steel and glass” to preserve them, there was a further setback. A fire in January 2006 caused two deaths, furnishing the new municipal administration with fresh weapons, which on 24 October 2008, endorsed the demolition of three buildings. Alerted by a new mobilisation of architects, now supported by local residents, the French Ministry of Culture and Communication as the last resort signed a protection order as an emergency measure — unfortunately a common measure for 20th century architecture.

Registration of block no. 2 of the *Grand'Mare* estate in the supplementary inventory of historic buildings by an order of 9 July 2010 was certainly useful, but it proved to be ineffectual. Two further fires that broke out in 2011, due, it is important to point out, not to the constructional and material properties of the buildings, but rather the negligence of the inhabitants, were final. The emotion stirred by the death of two children finally “justified” to public opinion the destruction which GEAI had repeatedly escaped since the 1980s: completed in June 2013, the demolition, in every way regrettable, spared 7 buildings. And this was not the end...

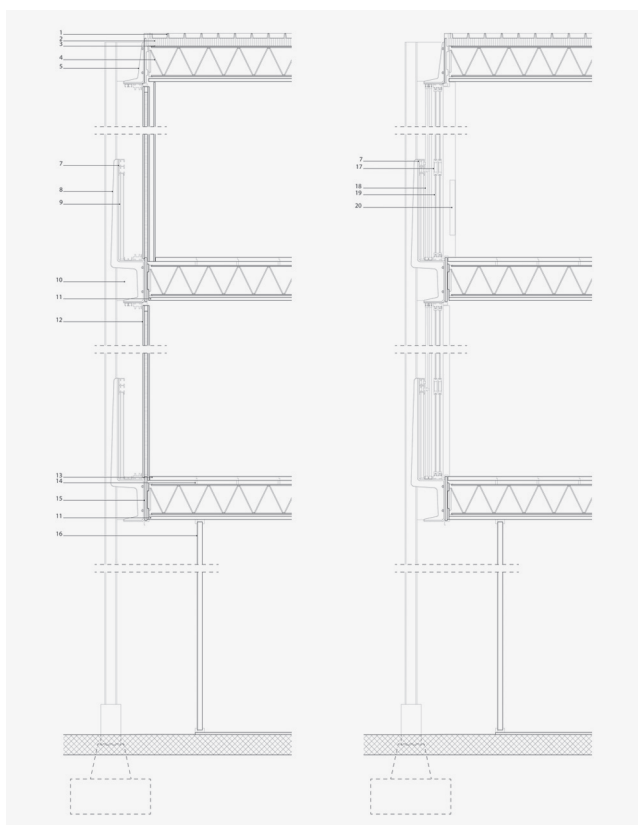
The uncertain future of the *Grand'Mare*

Despite their proven heritage value, amply argued over the numerous studies that have followed in these past 15 years¹³, the future of some original blocks of *Grand'Mare* today remains more uncertain. The feasibility of upgrading them is not in doubt — together with the reuse project by DND¹⁴ and the fine restoration work of the architects of the *Atelier de la Corderie*, it is worth citing in this respect the conversion of the GEAI by Villeurbanne to student

06 Marcel Lods, Paul Depondt, Henri Beaulair, the GEAI housing estate, *Grand'Mare*, Rouen, France, 1968–1969. DND architects, reuse of a “steel and glass” block.
© Giulia Marino, 2015.



- 07** Marcel Lods, Paul Depondt, Henri Beauclair, the GEAI housing estate, *Grand'Mare*, Rouen, France, 1968–1969. Constructional cutaways of the façade, on the solid section and French doors. © Aurélie Bichsel, Frédéric Bouvier, Marie Sagnières, EPFL–ENAC.



- 08** Marcel Lods, Paul Depondt, Henri Beauclair, the GEAI housing estate, *Grand'Mare*, Rouen, France, 1968–1969. Interior view of the façade. © Giulia Marino, 2015.



- 09** Marcel Lods, Paul Depondt, Henri Beauclair, the GEAI housing estate, *Grand'Mare*, Rouen, France, 1968–1969. The whole *Grand'Mare* estate today. © Giulia Marino, 2015.



accommodation in 2005–2007. Ignoring the potential of the buildings, a new application to demolish three blocks now seems to be on the agenda.

The controversial history of the whole *Grand'Mare* complex clearly epitomizes the twists and turns in the debate over preserving postwar architecture, with the generally problematic perception of it, while its “industrialized” dimension (often meaning “experimental”) mistakenly being taken as a pretext to justify its demolition. The notion of “lightness”, the cutting-edge value of GEAI’s architects, is now presented as a necessary and sufficient reason to decree the demolition of their buildings. In a period when the very fine Nanterre School of Architecture (Jacques Kalisz, Roger Salem, 1971) is neglected, and the *Maison des Sciences de l’Homme*, another emblematic work by Marcel Lods with Depondt and Beauclair (1957–70), subjected to heavy-handed renovation, only retaining the aluminum louvers of the existing materials, the surviving blocks deserve greater care. We can only hope that the remaining traces of the remarkable *Grand'Mare* ensemble, already unfortunately badly amputated, will be preserved as a major record of French industrialized lightweight construction, a source of constant innovation by an architectural current of capital importance in the architectural history of the 20th century. ■

Notes

- 1 Marcel Lods, cited in Pieter Uyttenhove, *Marcel Lods (1891–1978)*, *Une Architecture de l’Action*, PhD thesis in History, 3 Vols, EHESS (Ecole des Hautes Etudes en Sciences Sociales), 1999, 40. See also: Pieter Uyttenhove, *Marcel Lods. Action, Architecture, Histoire*, Verdier, 2009.
- 2 “Prototype expérimental du GEAI”, Paris, *L’Architecture d’aujourd’hui*, 128, October–November 1966.
- 3 Marcel Lods, quoted in *Revue du CIMUR*, 37, Paris, January 1969, 3–14, No. 5.
- 4 Marcel Lods, “Une expérience de 500 logements H.L.M. à Rouen dans la Z.U.P. de la Grand'Mare”, Paris, *Techniques et Architecture*, Vol. 29, No. 5, September 1968, 61–71: 64.
- 5 Marcel Lods, “Les constructions américaines — à la recherche d’une solution au problème mondial du bâtiment”, Clichy, *Revue de l’Aluminium*, No. 242, April 1957, 395–408, 407.
- 6 In addition to simplifying the operations of assembly of the secondary installations, the envelopes, fittings and finishes, the concept of integrating the utilities into the shell should be cited as one of the salient features of GEAI. As was the case with other industrialized lightweight processes (think of the American CDSS system), the utilities — plumbing, wiring and warm air heating — were an integral part of the construction strategy and were incorporated into the lattice plates in the factory. Cf. Giulia Marino, “Inertia vs. insulation: services in light industrialisation. Performance upgrading and adaptive re-use potential of the G.E.A.I. buildings,” in F. Graf, F. Albani, Y. Delemon-tey, G. Marino, *Material History of Buildings and Conservation Design, Critical Encyclopedia of Restoration and Re-use of 20th Century Architecture*, Report, Lausanne, EPFL–ENAC–TSAM, 2012, 181–185.
- 7 TV report, *Rouen La Grand'Mare*, 1973.
- 8 Marcel Lods, “Une expérience de 500 Logements H.L.M. à Rouen dans la Z.U.P. de la Grand'Mare”, *op. cit.*
- 9 In 1968, during construction of *La Grand'Mare*, a company for exploiting the GEAI method, operating under the name of SAGEAI, was set up, against the advice of the architects. The company was supposed to be responsible for the sale of the licences developed within the Group.
- 10 Agence Nicolas Michelin Architectes Urbanistes (ANMA), 2002–2005.
- 11 Agence Artefact, 2006–2008.
- 12 Anna Deriquehem architect, visit and interview on 1 April 2015, Rouen, interview conducted by Giulia Marino.
- 13 We can cite, for instance: “*Quel avenir pour les logements Lods dans le quartier de la Grand'Mare à Rouen?*”, the report of mission No. 007921-01 of the Ministry of Ecology, Sustainable Development, Transport and Housing and of the General Council for the Environment and Sustainable Development, headed by Christian Queffélec and Jean-Arnaud Calgaro, 25 August 2011, 20. See also: Aurélie Bichsel, Frédéric Bouvier, Marie Sagnières, *Ensemble de la Grand'Mare, Marcel Lods*, paper under the supervision of Franz Graf, Giulia Marino, EPFL–ENAC–TSAM, 2013–2014.
- 14 Benjamin Drossart, “*Marcel Lods 40 ans après: ré-emploi d’un Verre et Acier, — ensemble de la Grand'Mare à Rouen*”, in Franz Graf, Giulia Marino, *Building Environment and Interiors Comfort in 20th Century Architecture: Understanding Issues and Developing Conservation Strategies*, International Conference organised by EPFL–ENAC–TSAM, 2012.

References

- “Le GEAI Rouen”, Paris, *Revue du CIMUR*, No. 37, 1969, 3–14.
 “Le GEAI Rouen”, Paris, *Revue du CIMUR*, No. 38, 1969, 3–19.
 “Une réalisation récente de Marcel Lods un des précurseurs de l’architecture industrielle”, *L’Céil*, 179, 1969, 60–64.
 LODS, Marcel, “Une expérience de 500 logements H.L.M. à Rouen dans la Z.U.P. de la Grand'Mare”, Paris, *Techniques et Architecture*, Vol. 29, No. 5, 1968, 61–71.
Quel avenir pour les logements Lods dans le quartier de la Grand'Mare à Rouen?, report No. 007921-01 of the Ministry of Ecology, Sustainable Development, Transport and Housing and of the General Council for the Environment and Sustainable Development, headed by Christian Queffélec and Jean-Arnaud Calgaro, 25 August 2011.
 UYTENHOVE, Pieter, *Marcel Lods, Action, Architecture, Histoire*, Paris, Verdier, 2009.



Renzo Piano & P. Rite Engineers and Architects, Rigo Housing State, Corciano, Italy, 1980-82. During the construction. © RPBW-Renzo Piano Building Workshop.

“EH, Evolutionary Building” Prototype Housing at Solomeo, by R. Piano & P. Rice Engineers and Architects with Gruppo Isovibro Perugia: Architectural Study and Guidelines for Conservation and Reuse

BY CARLO NOZZA

The prototype “EH, evolutionary building” at Solomeo by the design team Piano & Rice Engineers and Architects Vibrocemento Perugia s.p.a. is an example of the experimental design of residential buildings for emergency situations and represents a crucial phase of transition from traditional prefabrication to open prefabrication. Built on the basis of the project prepared for the competition held following the disastrous 1976 earthquake in Friuli, many of the ideas tested in the prototype were later used to construct the RIGO housing estate at Corciano. The text describes the architectural study and guidelines for the protection and reuse of this significant modernist building, today abandoned.

The prototype “EH, Evolutionary Building” at Solomeo, by the design team Piano & Rice Engineers and Architects Vibrocemento Perugia s.p.a. is an example of the experimental architectural design of residential buildings for emergency situations and represents a crucial phase of transition from traditional prefabrication to open prefabrication.

“In the field of industrialised construction, open systems make it possible to flexibly use, mix and match components made by different manufacturers”¹.

*Unlike closed systems, in architecture open systems are not aimed at the production of a particular building, but allow for connections between prefabricated elements of different origins. When designing an open construction system, the architect establishes the function of the building elements and chooses the possible manufacturers. To avoid problems during assembly, the elements are typified in advance, produced in the workshop in accordance with the dimensional coordination and tolerances of manufacturing and assembly pre-established by the various schemes of combination envisaged.*²

“EH, Evolutionary Building” is a pioneering example of research in which the expandability of the *living space*,³ supported by the rational hierarchy between structural and non-structural elements, was a field of research in harmony with the evolution of the cultural needs of the period. The scheme of aggregation of the residential units envisaged different combinations: single-storey, duplex, rising to double height or with two separate levels, or the overlapping of two separate modules rising to double height or duplexes distributed by an external staircase, so constituting urban aggregations characterized by the participatory activities of the residents.

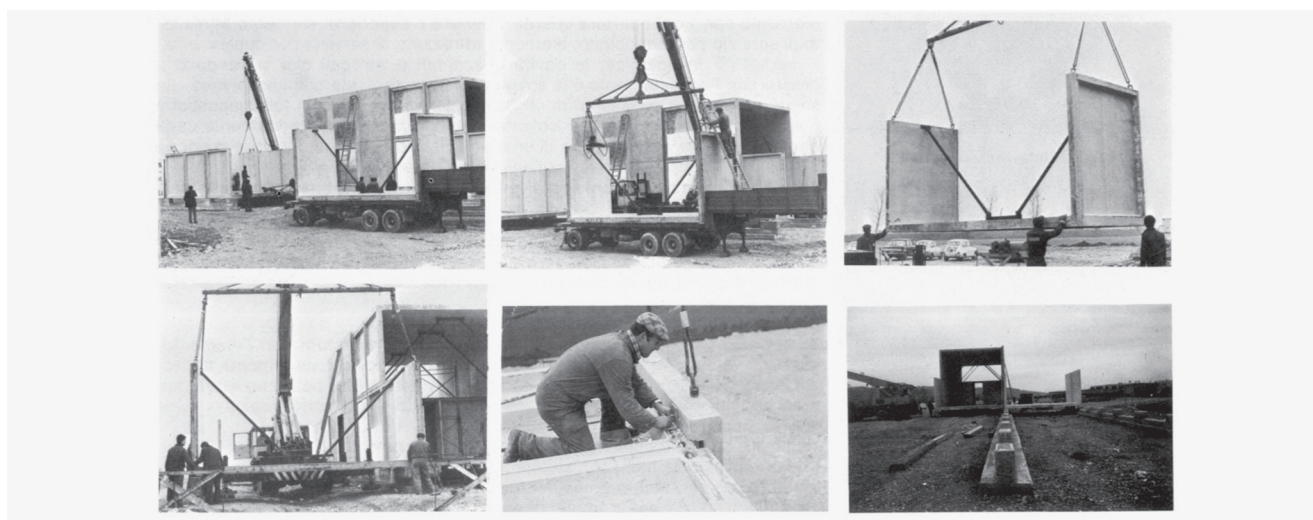
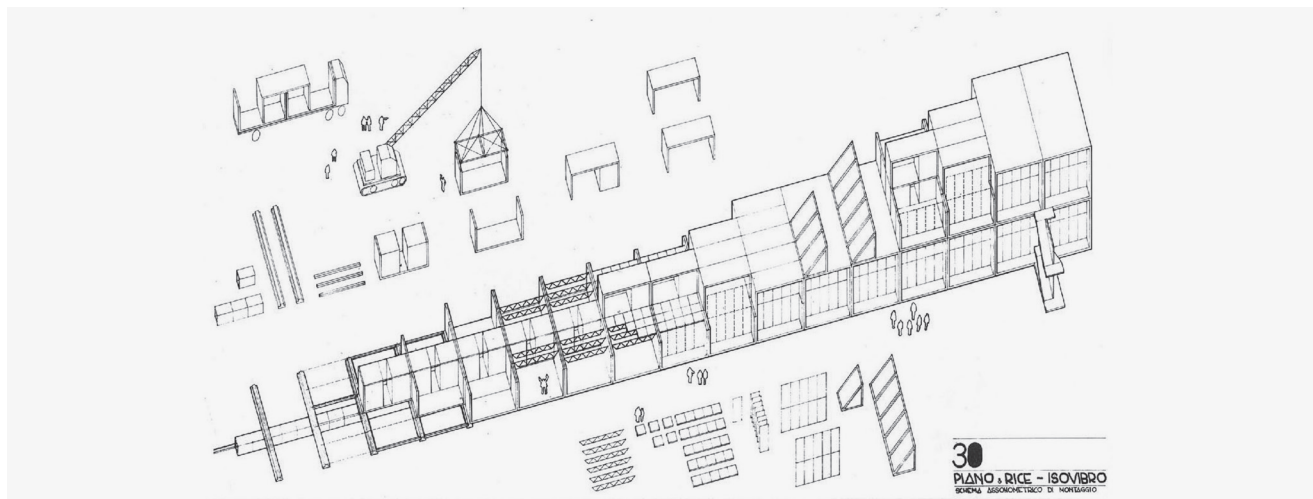
“Competition of Ideas for the Reconstruction of Friuli”

Between May and September 1976, a devastating earthquake struck the Province of Udine in north Italy. To cope with the urgent need for reconstruction, in the spring of 1977 the Italian Association for Industrialised Building Prefabrication and the Provincial Administration of Udine, in collaboration with the Chamber of Commerce, Industry and Agriculture of Udine, and the *Cassa di Risparmio di Udine e Pordenone*, announced a competition for the “Design of building systems for the reconstruction of Friuli while respecting the needs and housing traditions of its territory”. Several design teams were invited to take part in the competition. They consisted of professionals and building contractors and/or manufacturers whose collaboration within each team was considered essential, because the purpose of the competition was to “achieve integrated proposals for viable solutions in terms of design, technology, construction, organization and finance, which will represent a sound basis for developing the subsequent plans of intervention by the commissioning bodies”⁴.

The announcement of the “Competition for the Reconstruction of Friuli” proved to be of outstanding quality, since it embodied the design requirements of the architectural debate, intended to combine the theme of building with that of sociological analysis and the study of local traditions.

In general, the design teams were invited to reflect on the themes concerning settlement and housing, technology and funding. The theme of settlements was involved in the requests for an evaluation of the overall spatial standards for the housing, their general dimensions, distributional principles, and the technical solutions for the systems and

- 01 Renzo Piano & P. Rice Engineers and Architects with Gruppo Isovibro Perugia, EH, Evolutionary Building, Solomeo, Italy, 1977. Base module of 6x6 meters. Assembly steps.
© Studio Piano & Rice, 1978.



- 02 Renzo Piano & P. Rice Engineers and Architects with Gruppo Isovibro Perugia, EH, Evolutionary Building, Solomeo, Italy, 1977. Base module of 6x6 meters. Assembly of elements.
© RPBW-Renzo Piano Building Workshop. Photo by Ishida Shunji.

principal subsystems for the buildings. The theme of housing also involved the composition of the home units, calling for a broad variety and flexibility in the solutions proposed, in order to provide units whose composition and distribution would enable them to accommodate different groups of users.

As for the issue of innovation, the competition guidelines were explicit:

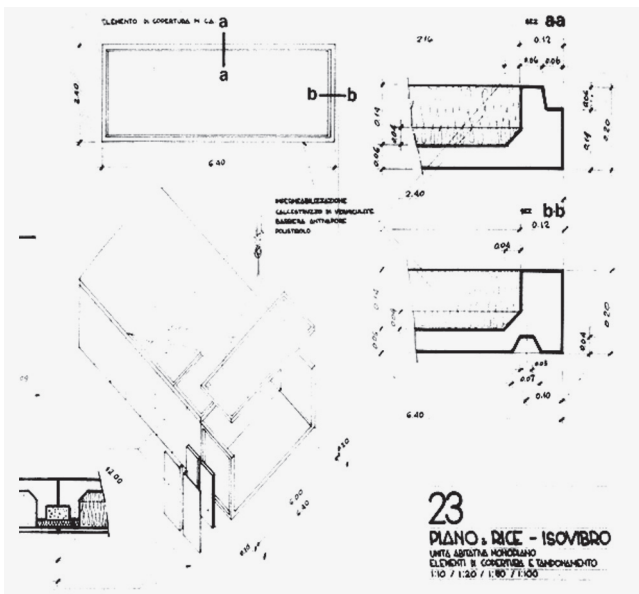
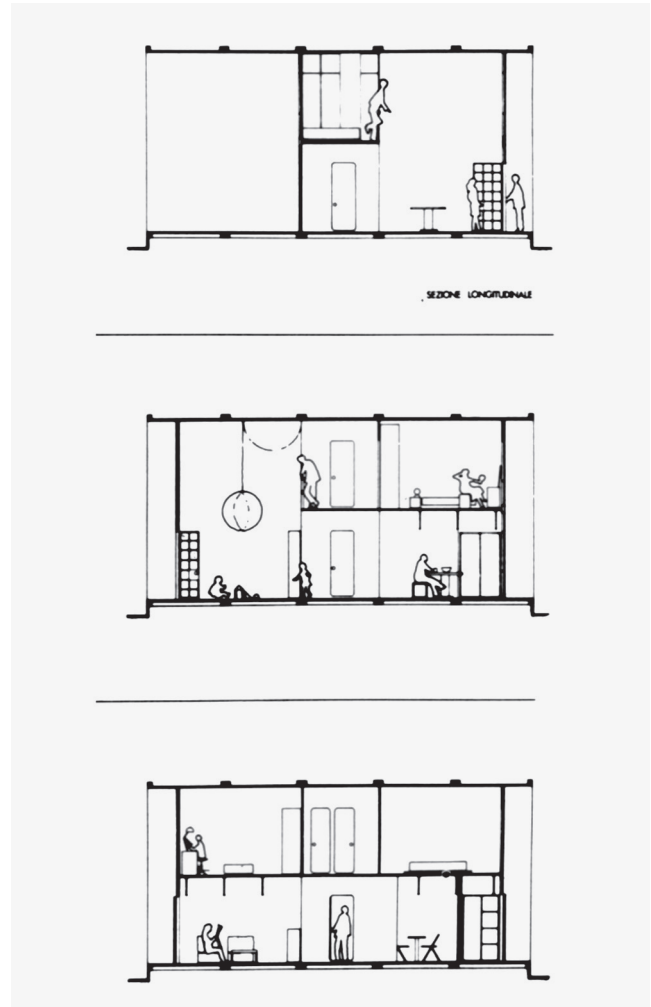
Participants are required to make an effort to interpret and renew the typologies by seeking to adapt the projects as far as possible to the needs expressed by the various cultural contexts in the territory, in which the traditional rural culture is accompanied by different realities represented by urban development and the industrial sector. In particular, the concept of privacy or individuality that characterizes individual housing, for which strong demand is expected, can be a source of innovative typological ideas, highly stimulating in proposing buildings of a collective kind. In this respect, reference should be made to the results of recent international examples, such as the 'Modèles-Innovation' promoted by the French government in 1972 and the TÆT LAV competition sponsored by the Danish government in 1974.⁵

As for the issue of flexibility in the home units, three possible meanings were indicated, as previously defined by I. Diotallevi and F. Marescotti. "*Flexibility of use*, which relates to the interior space of housing and is the ability to vary its layout; *flexibility of extension*, which is a feature of single-family houses and should allow the house to be extended and its layout varied according to the needs of the occupants; and finally *flexibility between home units* understood as characteristic of collective housing, which has to make allowance over time for possible variations in the layout and size of the home units"⁶. In the proposal "EH, Evolutionary Building" the effects of this demand for flexibility became apparent on the typological level, with the homes being divided into a service area, defined by the presence of units with the termination points for the utilities, and an open home space to be subsequently defined in collaboration with the occupants and on the technological level, with the provision of subsystems of structural components, independent of the intermediate floor and ceiling slabs, the system of internal divisions and the non-load bearing external infill walls.

- 03** Renzo Piano & P. Rice Engineers and Architects with Gruppo Isovibro Perugia, EH, Evolutionary Building, Solomeo, Italy, 1977. Interior of the house. It is possible to create a second level with light slabs supported by secondary truss-beam.
© RPBW- Renzo Piano Building Workshop. Photo by Ishida Shunji.



- 04** Renzo Piano & P. Rice Engineers and Architects with Gruppo Isovibro Perugia, EH, Evolutionary Building, Solomeo, Italy, 1977. EH typological evolution in section from: R. Piano & P. Rice, *Rapporto sul progetto a tipologia evolutiva E.H.*, © "Vibrocemento s.p.a."/today "Generale Prefabbricati s.p.a.". Perugia, 1979.



- 05** Renzo Piano & P. Rice Engineers and Architects with Gruppo Isovibro Perugia "EH, Evolutionary Building", Solomeo, Italy, 1977 EH assembly system and typical details from: R. Piano & P. Rice, *Rapporto sul progetto a tipologia evolutiva E.H.*, © "Vibrocemento s.p.a."/today "Generale Prefabbricati s.p.a.". Perugia, 1979.



- 06** Renzo Piano & P. Rice Engineers and Architects, RIG-O Housing State, Corciano, Italy, 1980-82. Diagram of units aggregation. © Studio Piano & Rice, 1978.



Among the various principles advanced on the *organizational plane*, two phases of construction were envisaged. In the first were installed the primary load-bearing structures and sanitary facilities, produced industrially within a short time frame, with guaranteed quality and affordability. In the second, the specific future occupants could draw on the services of a “neighborhood production unit” (a kind of workshop), in which the occupants themselves or local craftsmen would produce the elements necessary to the complete the home unit. The function of this “neighborhood workshop” was to provide the appropriate technology, not on the spontaneous level typical of self-build, but in terms of modern techniques and materials, making them available even to untrained operators. In this way the users were given an opportunity to customize the layouts of the interiors of the units, to make the non-structural partitions, to install the accessories and apply the interior finishes. These social and ethical motivations characterized the whole project, making it possible for the initial costs to be kept low and enabling the users to carry out some of the work and spread their cost over the medium-to-long term. On the *plane of composition*, each home unit was designed in an evolutionary way, with the potential to expand and contract in successive stages within the primary shell, which was capable of providing the structural, sanitary, acoustic and thermal performance attained from the outset

On the *structural plane*, resistance to earthquakes and the overall stability of the buildings was ensured by the elements constituting its primary structure. This was to consist of C-shaped three-dimensional elements and prefabricated median-size panels for transverse bracing and stiffening linked by means of connections cast *in-situ*. The secondary elements, such as the metal beams supporting the intermediate floors made from prefabricated wooden panels, the internal partitions in plasterboard and the glazed curtain walls of the façade, were not required to make any contribution to the strength and stability of the buildings.

To complete the construction, the basic load-bearing elements were then combined with prefabricated panels for the external finish of the building envelope. In the case of duplex units, non-load-bearing infill glazing rising to double-height in a painted metal frame could be installed, being assembled in the workshop complete with all the accessories and ready to be slide into the tracks on the wall. Finally a battery of photovoltaic panels could be installed on the roof to produce electricity for lighting and heating, with access provided by a naval-type ladder located on the south-east elevation.

Later, in 1979–80, based on the principles set out in the report, the Piano & Rice Engineers and Architects office, in collaboration with the prefabrication company Vibrocemento Perugia s.p.a., built the prototypes of the structure portion of a standard simplex unit, leaving it in the unfinished state, and a duplex unit complete with services



and finishes, with the exception of the array of solar panels on the roof, which was replaced by an external gas boiler and connection to the electricity grid. The duplex unit was then lived in for many years and through various vicissitudes until 2010.

Interpretation and broader application of the Prototype "EH Evolutionary Type Home Unit"

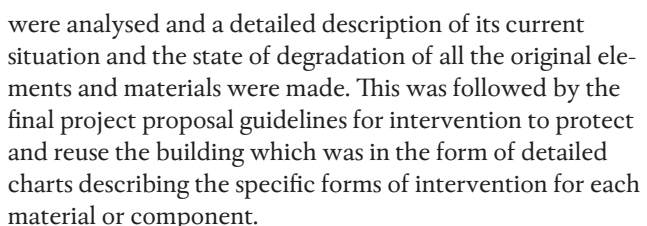
Following the completion of the prototype in Solomeo, Piano & Rice Engineers and Architects received a commission to design the RIGO housing estate in the municipality of Corciano, built between 1980 and 1982. The initial project envisaged a combination of the EH evolutionary home unit in different typologies to form clusters on one or two levels of units adaptable over time, in accordance with the principle of the articulation of the three-dimensional load-bearing elements with non-load-bearing walls largely glazed and moveable, as well as removable interior floors. Later, once the preliminary plans had been approved and when it was no longer a question of an emergency intervention, but of social housing at a controlled cost, it was decided to use the tried and tested 2S building system produced by Vibrocemento Perugia s.p.a., in order to keep costs down in the construction phase. The 2S construction system did not include the C-shaped three-dimensional prefabricated elements proposed for the prototype, which were difficult to transport. It consisted of simple insulated prefabricated concrete elements made of slabs, which comprised the load-bearing side walls and floor slabs connected to each other at the construction site by means of metal joints embedded in the cast concrete. Of the "EH evolutionary typology" there remained the dimensions and proportions of the internal

spaces and the concept of non-bearing infill panels in the façade. However, these were originally designed as largely glazed and moveable but were replaced with fixed modular prefabricated panels, lightened and insulated, consisting of largely opaque panels and always positioned so as to immediately exploit the whole available volume.

Guidelines for strategies of protection and recovery of the Prototype "EH Evolutionary Typology Home Unit"

The building clearly expresses its aesthetic, as well as the technological and social achievements of a pioneering age, of which it remains a historical record. The project to devise guidelines for preserving the building were developed at the *Accademia di Architettura di Mendrisio* of the *Università della Svizzera Italiana*, interpreting the method of work with a multi-disciplinary character already tested at the TSAM-EPFL Laboratory in Lausanne for restoring notable examples of modern architecture.

In this specific case, the recovery project began with careful research and an overview of the existing documents by consulting the files of the Renzo Piano Foundation in Genoa and the archive of Vibrocemento s.p.a., today Generale Prefabbricati s.p.a. in Perugia. These preliminary activities made clear the cultural value of the building and enabled it to be contextualised in its historical period. Then a detailed instrumental geometric survey was carried out and a dynamic energy analysis and structural analysis were conducted in collaboration with the University of Engineering of Perugia,⁸ for a preliminary assessment of the condition of the structure at the present time and possible consolidation to enhance its earthquake-resistance as well as upgrading the envelope's energy efficiency. Finally, the data collected



now abandoned structure. Firstly, the maintenance of the prefabricated elements and the related integrated insulation panels. In fact, the three-dimensional load-bearing and non-load-bearing elements still perform their function well while, in the light of recent Italian regulations, the anti-seismic resistance of the transversal median septum rising to double height needs to be adapted to the current standards. In this case, on a preliminary basis, it can be considered sufficient to strengthen the median element by applying collaborating carbon fibre fabric.¹⁰

Secondly, restoration of the functionality of the elements necessary to enable the large glazed panel on the north-east front to be slid along the rails in the wall. The recovery of this feature of the building, together with the restoration of the ability to assemble or dismantle rapidly and easily at least a portion of the floor that divides the double-height space facing the north-east front, could make the building's cultural and innovative value clear and enduring. The dynamic energy analysis made it clear that for improved comfort and energy saving, the standard hand-made float glass, will have to be replaced with low-emission double glazing.

Conclusions

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- 10 Renzo Piano & P. Rice Engineers and Architects with Gruppo Isovibro Perugia “EH, Evolutionary Building”, Solomeo, Italy, 1977. The house as a living and therefore evolutionary organism: two large sliding windows ensure plentiful light and inside residents are free to organize their apartments as they wish. © RPBW-Renzo Piano Building Workshop. Photo by. Ishida Shunji.



to be easily adapted to the various configurations and types of spaces. Only the sanitary fittings and their connections to the drainpipes were expected to be fixed and positioned in the central module adjacent to the transversal septum, which was also intended to have an anti-seismic function.

Finally, once the proposed interventions have been carried out, we will again be able to appreciate the potential of this building, designed to respond to the need for emergency housing and planned to be subsequently adapted by the user, with a few simple actions, to meet needs as they changed over time. For the maintenance of the building and its adjacent lot, it will be necessary to identify a suitable use for it, probably as a temporary residential or exhibition space. ■

Notes

- 1 Antonio Andreucci, Romano del Nord, Paolo Felli, Ettore Zimbelli, *Verso l'Industrializzazione Aperta*, Milan, I.T.E.C. 1979.
- 2 Gerald Staib, Andreas Dörrhöfer, Markus Rosenthal, *Components and systems*, München, Edition DETAIL, 2008.
- 3 Bruno Munari, *Spazio Abitabile 1968–1996*, Milano, millelire-stampa alternativa, 1996.
- 4 Edited by C. Noja, *Costruire e Ricostruire, Rassegna di Progetti del Concorso per la Ricostruzione del Friuli*, Milano, A.I.P., 1978.
- 5 Bruno Munari, *op. cit.*
- 6 Irenio Diotallevis and Franco Marescotti, *Il Problema Sociale, Costruttivo ed Economico dell' Abitazione*, Roma, Officina edizioni, 1984 [1948].
- 7 Renzo Piano, Peter Rice, *Rapporto sul Progetto a Tipologia Evolutiva E.H.*, archive “Vibrocemento Perugia s.p.a.”—oggi “Generale Prefabbricati s.p.a.”—Perugia, 1979.
- 8 For the site plan and the energy analyses, P. Belardi engineer UNIRO-MA—Sapienza, with A. Bellucci, L. De Matteis and C. Rossi, engineers UNIPG.

- 9 Franz Graf, Giulia Marino, *La Cité du Lignon 1963–1971, Étude Architecturale et Stratégies d'Intervention*, Lausanne, Laboratoire TSAM-EPFL, Infolio, Gollion, 2012.
- 10 Interview with the engineer EPFZ Massimo Laffranchi, — Furst & Laffranchi Bauingenieure GmbH.

References

- ANDREUCCI, Anna, DEL NORD, R., FELLI, P., ZAMBELLI, E., *Verso l'Industrializzazione Aperta*, Milano, I.T.E.C. la prefabbricazione, 1979.
- DIOTALLEVI, Irenio, MARESCOTTI, Franco, *Il Problema Sociale, Costruttivo ed Economico dell' Abitazione*, Roma, Officina edizioni, 1984 [1948].
- GRAF, Franz, MARINO, Giulia, *La Cité du Lignon 1963–1971, Étude Architecturale et Stratégies d'Intervention*, Infolio, Gollion, 2012.
- MUNARI, Bruno, *Spazio Abitabile 1968–1996*, Milano, millelire-stampa alternativa, 1996.
- NOJA, C. (ed.), *Costruire e Ricostruire, Rassegna di Progetti del Concorso per la Ricostruzione del Friuli*, Milano, A.I.P., 1978.
- PIANO, Renzo, *Pezzo per Pezzo*, a Cura di G. Donin, Roma, Casa del libro, 1982.
- PIANO, Renzo, RICE, Peter, *Rapporto sul Progetto a Tipologia Evolutiva E.H.*, archive “Vibrocemento Perugia s.p.a.”—oggi “Generale Prefabbricati s.p.a.”—Perugia, 1979.
- STAIB, Gerald, DÖRRHÖFER, Andreas, ROSENTHAL, Markus, *Components and Systems*, München, Edition DETAIL, 2008.

Carlo Nozza

(b. 1968, Italy). After graduating in Architecture at the *Politecnico di Milano* he worked from 1998 to 2004 at the studio of the architect E. Souto de Moura, in Portugal. From 2005 to 2011, he has been adjunct professor of architectural design at *Politecnico di Milano*, and from 2012 he is teaching assistant at *USI—Accademia di Architettura di Mendrisio*, where he is researching building design and construction.



Mario Fiorentino et al., *Corviale*, Rome, Italy, 1972-84. Façades facing Rome. © Filippo Lorenzi, 2016.

Reloaded *Corviale*, a City with a Single Building (1973–84) Mario Fiorentino Architect, Rome

BY ROSALIA VITTORINI

The *Corviale* is one of the most controversial pieces of 20th century Roman architecture, having been simultaneously debated, demonized, mythologized, loved and hated. The architecture is unquestionably extraordinary, and not only for its size. The complex, comprised of public housing and services for more than 8,000 residents, was designed between 1972 and 1974 by Mario Fiorentino, along with a large group of associates, and was built in the following ten years. As a result of deterioration due to its incompleteness, lack of maintenance, continuous squatting and difficulties for diverse residents to coexist, the *Corviale* has, for years, represented the manifesto of disastrous public housing policies in Italy.

The Project

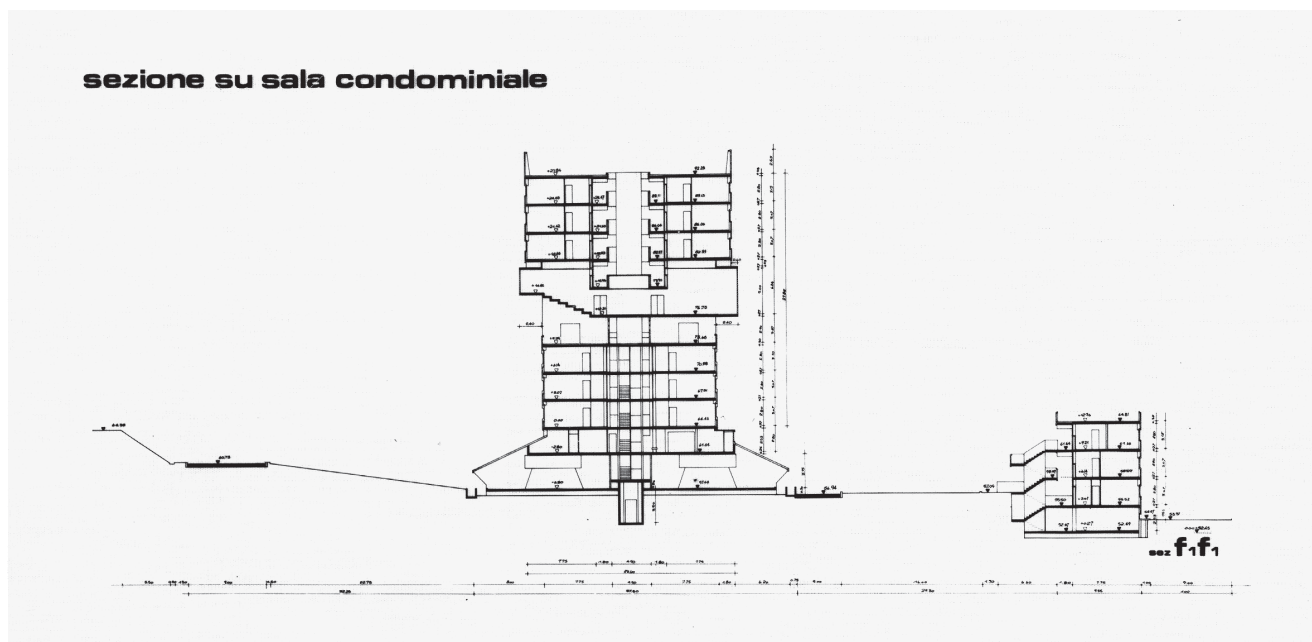
The *Piano di zona n. 61 Corviale* was one of numerous *Piani di Edilizia Economica Popolare* (PEEP) [Plans for Affordable Social Housing] organized by the City of Rome in order to identify new areas for the expansion of the city in accordance with Law No. 167 of 1962,¹ which aimed to combat land speculation. The *Corviale* is located along via Portuense in an area of approximately 605,000m² of unparalleled beauty, in the original and well-preserved landscape of the Roman countryside. It was supported by the IACP, *Istituto Autonomo Case Popolari* [Independent Institute for Social Housing] and by GESCAL, the *Gestione Case per i Lavoratori* [Housing Management for Workers], which had planned, respectively, social housing for 6,900 residents and cooperative housing for 1,600.

Mario Fiorentino, the general coordinator, set up a highly uniform project that compelled all designers to programmatically renounce individual expression in order to work towards a common goal.² The urban plan is organized around a sort of “city-building”, approximately 1km long in an elevated position (the crest of a hill with southeast-northwest orientation). The city-building is a complex system consisting of two parallel blocks, each with apartments ranging from 4 to 7 rooms, flanked by public services. The first building, which faces Rome, extends over 11 floors and is subdivided into 5 blocks, each with a stairwell that serves as the main vertical connection and which projects outwards over 5 different *piazze*, identifiable as nodal points by 5 different sculptures.³ It is characterized by an empty floor — the fourth or fifth — intended for communal facilities. This floor, which is also visible due to symmetrical projecting façades, separates the lower ones from the upper ones (accessed by balconies). The apartments are accessed using internal stairs

(lower floors) and balconies (upper floors). The cross-section repeats, uninterrupted, throughout the entire length of the building. The only variance is an addition of one floor where there is a drop in the topography, and the insertion, for each stairwell, of a meeting area for residents between the 4th and 5th floors. The second building, overlooking the countryside, is a smaller 2-story residential complex flanked by four different service-related centers: kindergarten, theater, day care and shops. This building runs parallel to the first and is connected to it by a series of footbridges, corresponding to the 5 main stairwells and crossing the access road leading to the garages, which are located in the basement. Along the side facing the city, in a sort of linear park, one finds all of the services for the neighborhood: the civic/cultural center, market, health center, church and public green areas. They are connected by an elevated walkway to the main building. A small linear building branches out from this complex, pointing towards the city and placed at a 45 degree angle, containing multi-story accommodation and a pedestrian street on the ground floor, which ends at the supermarket — an essential junction with the city.

The design of the structural solution by Riccardo Morandi⁴ coincides with the floor plan. Concrete load-bearing walls repeat every 6 meters, spanned by horizontal slabs placed on top. The façade of the building consists of alternating full and empty strips, i.e., precast concrete panels and ribbon windows.

Access to the main road is provided by a street which branches off of via Portuense and joins a ring road surrounding the public facilities, as well as leading to the 5 entrances of the housing blocks. To the east, beyond the area devoted to sports, one finds the school complex beyond which are the GESCAL houses.



02 Mario Fiorentino et al., *Corviale*, Rome, Italy, 1972–84. Section. © Domus, No. 617, 1981.

Overcoming the Ideology of the Neighborhood

Compared to other district plans in Rome, the *Corviale* looks like a radically original model, full of experimental implications regarding urban planning and architectural solutions as well as the construction process and forms of management. Unlike the previous INA Casa plan, which had redesigned public housing in Italy,⁵ Law No. 167 does not include any indications for the project, but rather only quantitative and dimensional information.

Precisely because of the quantities that the plan called for, Fiorentino seized on the opportunity to design a “piece” of the city. He rejected the first ideas based on schemes utilized in Italy and more or less derived from preceding European models. He headed towards a radical idea: “a single ‘residential unit’ that includes, in itself, the complexity of relationships present in urban life”⁶. The idea came from research, conducted in schools of architecture, into modern housing. As a frame of reference, the research used Quaroni’s renowned plan for the *Barene di San Giuliano* in Venice, a neighborhood conceived of as a large-scale

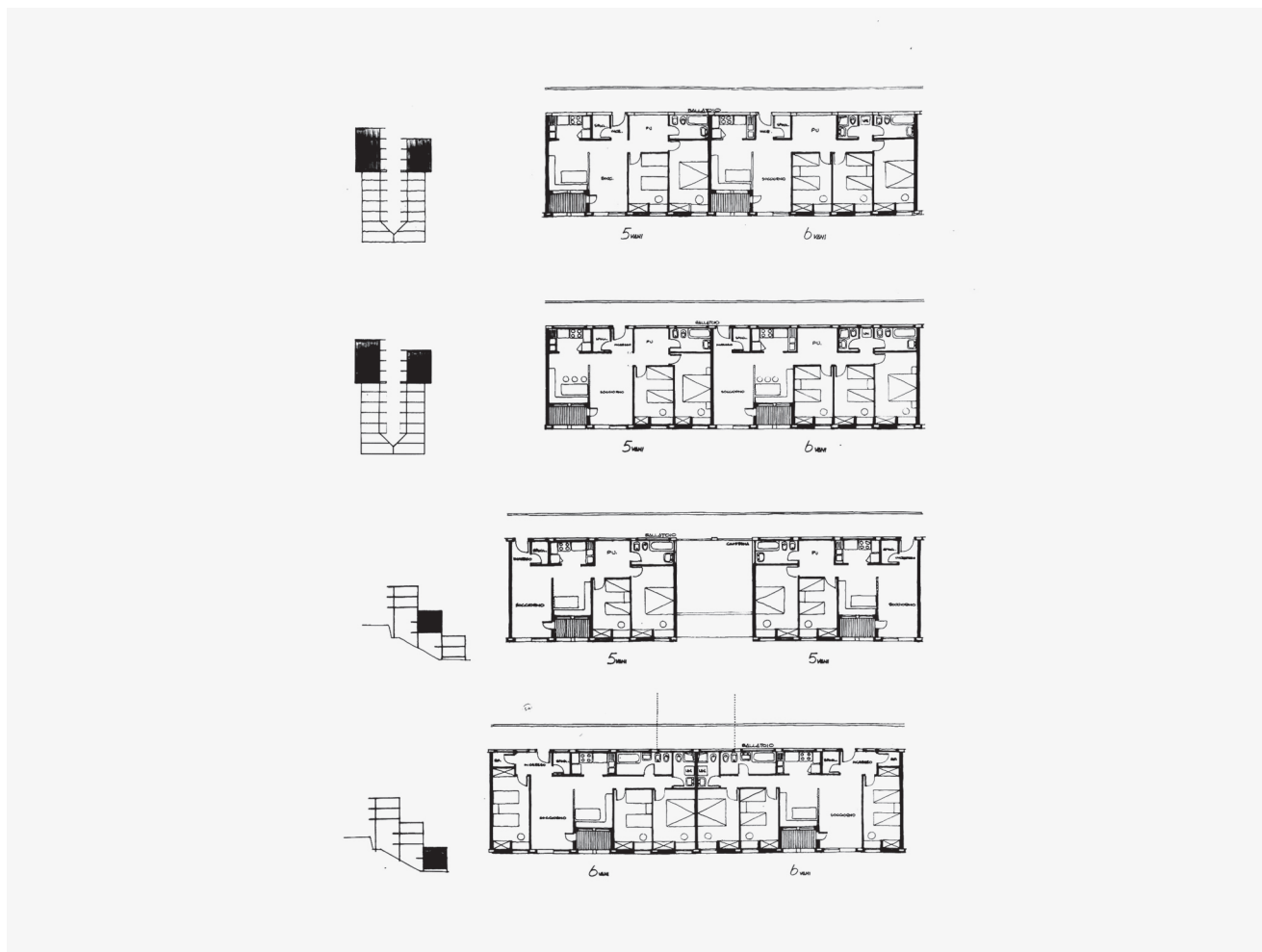
system of relations,⁷ shocking for its powerful symbolic significance in relation with the scale of its environment.

However, Fiorentino searched for continuity between his project and the historical city and its iconography.

*In an attempt to recover the value of ‘symbols’ (...) one cannot escape the references that the city of Rome itself suggests and forget the scale of the baroque and 19th-century city where, from San Michele (300 m) to the manica lunga of the Quirinale (250 m) (...) there are references to a dimensionally reduced urban structure but rich in out-of-scale images.*⁸

Fiorentino, overcoming the sterile tool of the *planivolumetrico* [volumetric plan] searched for a relationship between the morphology of the site and the characteristics of the settlement. This takes on its own identity, taking the form of a dam, serving the dual purpose as city’s edge and border. This idea is reinforced by the ground basement attachment a *scarpa* that roots the building to the soil as a fortification.

The out-of-scale complex plays the role of an architectural emergency, polarizing the urban-fabric of the suburb.

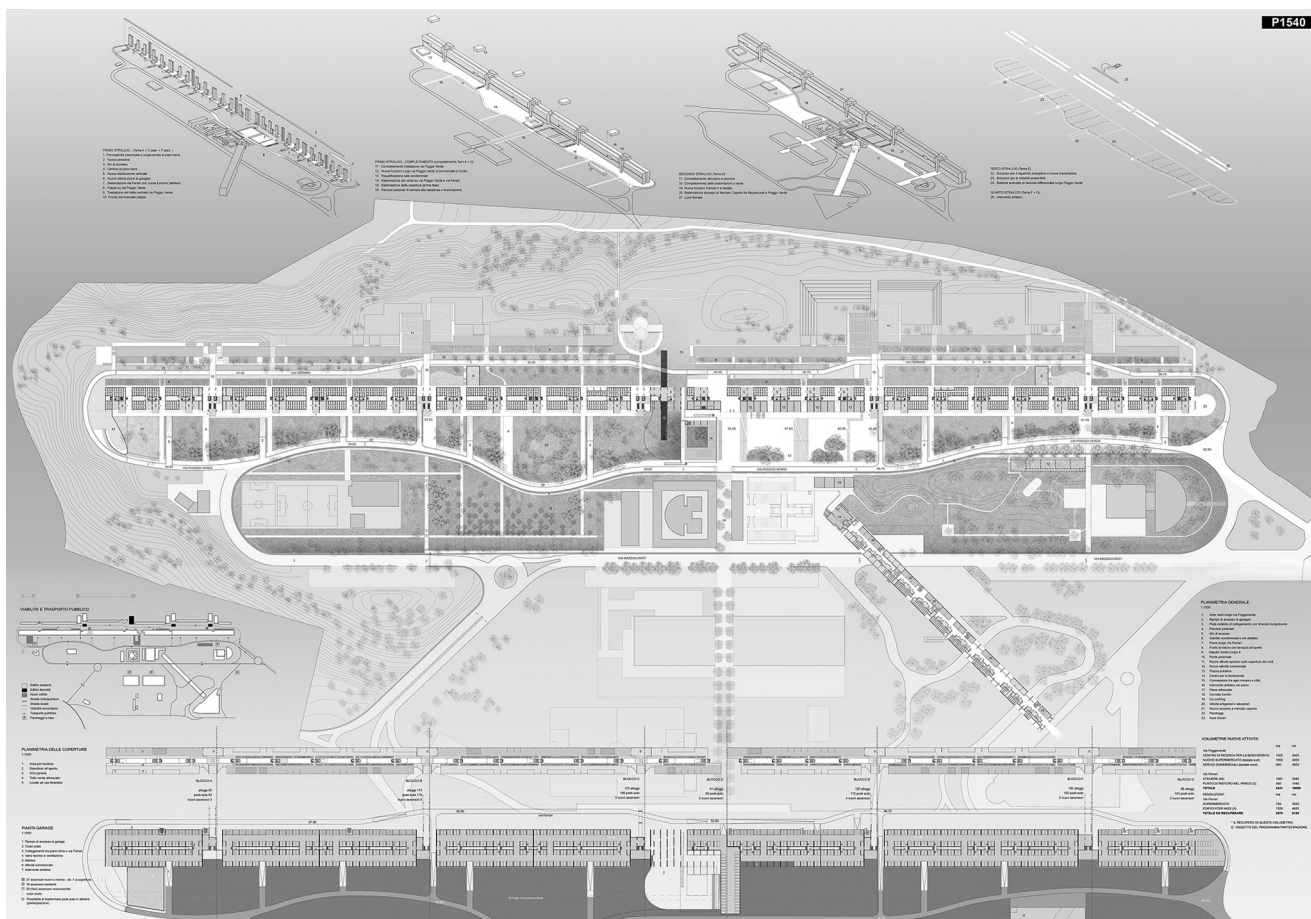


It is essentially a “magnet reorganizing a disintegrated urban site”⁹ which opens towards the city, beyond the tradition of the closed self-sufficient neighborhood, and freeing the “suburbs which not even Sironi’s brush could save”¹⁰.

While planning the *Corviale*, given the complexity of the program, they also applied a method of integral and coordinated planning, linking different skills and making choices aimed at encouraging the production of industrial components and building elements.¹¹ In an attempt to propose a new technological model, they granted only one contract that was able to guarantee the success of the project. This choice is connected with the architectural solution of identical façades in which the concrete panel can be considered as an element of mediation between the quality of architecture and the quantity of the building. The pattern of the incisions on the panel (designed by artist Nicola Carino) lends a more domestic and everyday appearance and lessens the city-building’s peremptory size, thanks to the sunlight. The subsequent division of the contract between several companies produced a heterogeneity of building systems hidden behind the carved panel of the façade. In

the main linear building, panels are precast, in the oblique building, panels (identical to the first) are cast on-site. The total prefabrication hoped for by the architect never came to be employed and the *Corviale* would end up reflecting the uncertainty of the Italian construction of the 1970s between hand-crafted systems and industrialized components.

However, one cannot view the *Corviale* only as a relationship between an architectural work and its designer, who defined it as “a tendentious interpretation of the strategy for building affordable public housing in Italy”¹². Fiorentino represents a generation engaged in the confrontation between theory and practise, as well as in urban politics¹³. As the idea of “system” and “application of standards” became more prevalent, architectural research, typological analysis as well as building systems lost their importance. The heated debate between architecture and urban planning saw the triumph of urban planning. The idea of increasing of the city through small and progressive additions that fit the context gave way to the construction of parts of the city with strengths and characters of their own. One experienced the “new dimension” that regards the town design



as an independent configuration tool capable of combining housing and services, architecture and landscape. In this framework, *Corviale* assumed a political role, acting as an organizing element of that disorganized part of the city, resulting from uncontrolled and rampant building speculation. It was an expression of the lively discussion about the expansion and growth of the city. It re-examined the subject of disciplinary research on the topic of public housing and again suggested the problem of the (failed) industrialization of buildings.

Serving as a model, the *Corviale* was — along with the *Monte Amiata* in Gallarate (Carlo Aymonino, 1967–73), the *Villaggio Matteotti* in Terni (Giancarlo De Carlo, 1969–75) and the *Zen* in Palermo (Team Vittorio Gregotti 1969 *et seq.*) — one of the “four examples of residential projects with international scope” in which “the expertise expended in the realization of the various public housing programs hardly ever became known”¹⁴.

The future *Corviale*

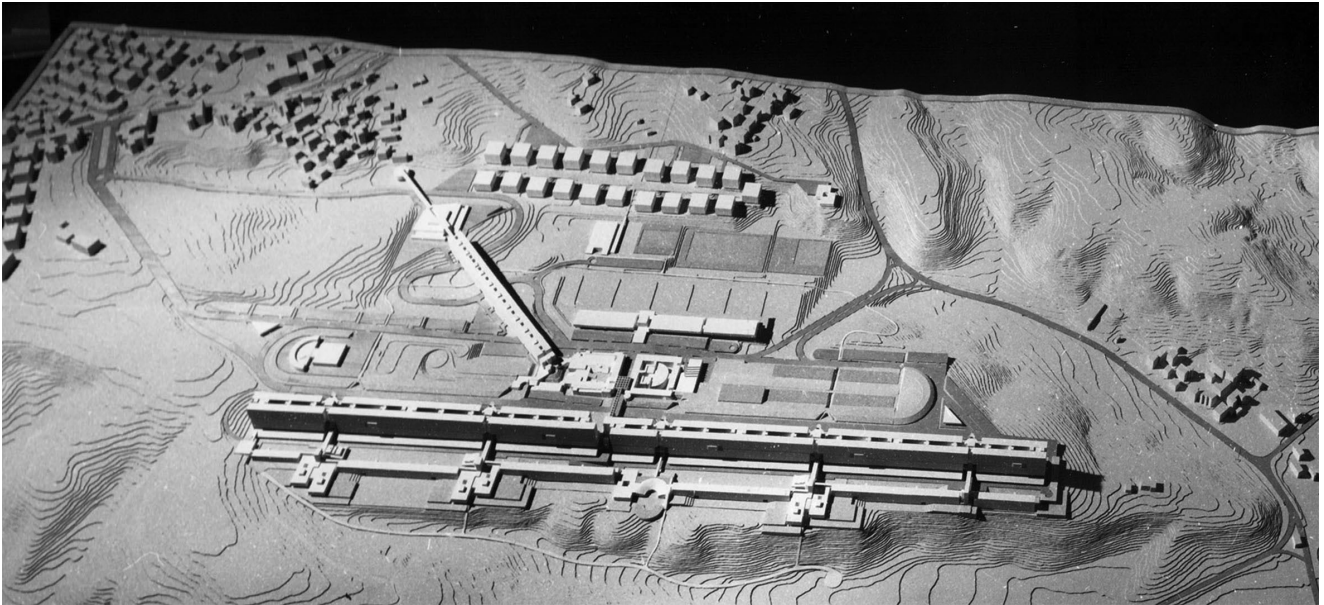
The success of the project was entrusted to the simultaneous construction of the housing and services. However,

beginning with the subdivision of the contract and then the failure of one of the companies resulted in the incompletion of the structures as well as creating serious difficulties in management from the very beginning. Many apartments were illegally occupied before being completed. The services were also not completed and were gradually transformed into temporary shelters. Even the spaces of the free floor were eventually illegally transformed into apartments with walls and makeshift facilities. The 5 *piazas*, were not realized.

The lengthy planning (1972–74) and construction (1975–84) were just the background of a difficult story. This story unfolded with repeated squatting and evictions, widespread disrepair (also due to the absence of maintenance) and a situation of great discomfort due to the social composition of the residents, voiceless and, therefore, anomalous compared to the richness of the city's social fabric.

Over the years, the *Corviale* has witnessed many initiatives to identify strategies for its redevelopment. At the end of the 1990s two buildings were completed as well as the theater, intended as the assembly room for the Municipality, which had placed some offices as well as the library

05 Mario Fiorentino et al., *Corviale*, Rome, Italy, 1972-84. Model. © GROMA, No. 2, 1993.



06 Mario Fiorentino et al., *Corviale*, Rome, Italy, 1972-84. TStudio-Gendalina Salimei, *Corviale*, Rome, Italy, 2009. Rendering of the project for the free floor. © TStudio.



07 Mario Fiorentino et al., *Corviale*, Rome, Italy, 1972-84. Exterior view, historic photo. © MAXXI Museo Nazionale delle arti del XXI secolo, Rome. Collezione MAXXI Architettura-Archivio Mario Fiorentino.



08 Mario Fiorentino et al., *Corviale*, Rome, Italy, 1972-84. View from a footbridge, historic photo. © MAXXI Museo Nazionale delle arti del XXI secolo, Rome. Collezione MAXXI Architettura-Archivio Mario Fiorentino.



10 Mario Fiorentino et al. *Corviale*, Rome, Italy, 1972-84. View of the balconies. © Filippo Lorenzi, 2016.



11 Mario Fiorentino et al., *Corviale*, Rome, Italy, 1972-84. The city-building under construction. © MAXXI Museo Nazionale delle arti del xx1 secolo, Rome. Collezione MAXXI Architettura-Archivio Mario Fiorentino.



(an important attraction) within the *Corviale*. However, in 2004, with a *Contratto di Quartiere* [Contract for the District],¹⁵ the City of Rome, the ATER (*Agenzia Territoriale per l'Edilizia Residenziale*, formerly the IACP) and the 15th Municipality proposed a complex activity directly involving the inhabitants through the workshop entitled “Imagining the *Corviale*.”¹⁶ In 2008 ATER invited tenders for the rehabilitation of the free floor, which was won by ATI (*Associazione Temporanea di Imprese*) headed by T-Studio-Guendalina Salimei. Their plan completely redesigns the floor as a green band containing common services and apartments.¹⁷

In 2012, in order to counter suggestions of demolition, a series of forums started. These also involved the commitment of the Ministry of Heritage and Culture¹⁸. The goal is to test a strategic plan on the basis of the principles of the Leipzig Charter on Sustainable European Cities as well as the European Landscape Convention. In 2013, the topics were expanded in relation to the objectives of Europe 2020.

On July 31, 2015 ATER announced the International Design Competition “Regenerate *Corviale*”, thanks to the financial support of the Lazio Region. The competition concerned the redesigning of the common areas and the horizontal and vertical paths required to “get a new, better urban and space quality as well as a better living and security for the people.” However, this also had the more ambitious goal of turning the *Corviale* again into a model of urban regeneration. The project chosen was that of the architectural firm of Laura Peretti that focused on the permeability of the city-building and “expressed the ability to control the various ‘scales’ of its complexity, with reference to the landscape, the urban space, circulation inside the building and public space.”

Finally, after about 40 years, the possibility of returning identity and perspective to this important and maltreated piece of the Roman suburbs seems to be materializing. ■

Notes

- 1 “Disposizioni per Favorire l'Acquisizione di Aree Fabbricabili per l'Edilizia Economica e Popolare” [“Provisions to promote the acquisition of building plots for affordable public housing”]. The PEEP includes public housing, subsidized housing, cooperative housing and also a share of private housing.
- 2 Coordination: R. De Simoni, M. Montani and E. Piroddi; Construction (divided into 5 groups): M. Fiorentino (leader), G. De Giorgi, A. Quistelli, H. Selem and F. Sferra Carini; F. Gorio (leader), C. M. Briganti, S. Danielli and E. Ricciardulli; P. M. Lugli (leader), R. De Simoni, M. Montani, A. Montenero and P. Visentini; G. Sterbini (leader), N. Dagostin, F. Donato and E. Piroddi; M. Valori (leader), G. Calpini, R. Einaudi, D. Levanti and G. P. Rotondi. Structural Design: R. Morandi (leader), G. Colombini, M. Valenzi and G. Via. Building services: G. Parolini (leader), F. Conti, C. Pierini, C. Platone and R. Sbriccoli; Scheduling and Costs: F. Novelli and G. Tardella; Artists: N. Carrino, C. Lorenzetti, T. Magnoni, P. Santoro, G. Uncini. Designer: S. Fiorentino.
- 3 The five blocks corresponded to the same number of management units. The block size was chosen based on the maximum size of a condominium manageable by IACP.
- 4 Riccardo Morandi is one of the best-known Italian engineers (also at an international level) especially for his studies on prestressed concrete.
- 5 As a young man, Fiorentino assisted in the *Tiburtino* project (1950–54), one of the first experimental neighborhoods *INA Casa*. He worked alongside Ludovico Quaroni and Mario Ridolfi (team leaders) as well as some of his current collaborators, such as Lugli and Valori.
- 6 Project report, now in Francesco Coccia, *Recupera Corviale*, Roma, Edizione Kappa, 2002.
- 7 The 1959 tender saw the participation of 57 teams of designers that were asked to design a self-sufficient district for 60,000 inhabitants, with 2,600 apartments. This was intended as the expansion of Venice to the edge of the lagoon.
- 8 Project report.
- 9 Manfredo Tafuri, “Diga insicura. Sub termine fagi...”, *Domus*, No. 617, 1981, 22–26.
- 10 *Idem*.
- 11 The project addresses all aspects, from the structure to the installations, from the typology to the technology, from the green areas to the roads, all the way up to the signs and the works of art.
- 12 Bruno Regni, Marina Thiery, “Una Visita Guidata Dieci Anni Fa”, *GROMA*, No. 2, 1993, 59–62.
- 13 Francesco Dal Co, Mario Manieri Elia, “La génération de l'incertitude”, *L'architecture d'aujourd'hui*, 181, 1975, 34–56.
- 14 Manfredo Tafuri, *Storia dell'Architettura Italiana 1944–1985*, Torino, Einaudi 1982, 148.
- 15 Tender announcement by the Ministry of Infrastructure.
- 16 An artistic and multimedia workshop realized with *Fondazione Olivetti* and *Osservatorio Nomade*.
- 17 The project, approved in 2009, is waiting for the awarding of the contract.
- 18 The forums involve the Ministry, the City of Rome, University *Sapienza*, ATER and the Lazio Region.

References

- CIOCCA, Francesco, *Recupera Corviale*, Roma, Edizioni Kappa, 2002.
Competition website: <http://rigenerarecorviale.aterroma.it>
FIORENTINO, Mario, *La casa, Progetti 1946–1981*, Roma, Edizioni Kappa, 1985.
MAXXI, *Museo Nazionale delle arti del XXI secolo*, Roma, Collezione MAXXI Architettura-Archivio Mario Fiorentino.
REBECCHINI, Giuseppe, “La progettazione dei piani di zona”, *Casabella*, No. 438, 1978, 25–41.
Interview with Mario Fiorentino: <https://www.youtube.com/watch?v=bv6GiVUonUk> transcribed: <http://wilfingarchitettura.blogspot.it/2012/03/0008-squola-mario-fiorentino-corviale.html>

Rosalia Vittorini

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Le Corbusier, Unité d'Habitation, Marseille, France, 1945–1952. Restoration project of the west façade. © Photo F. Botton/ssea, September 2007. FLC/2016, ProLitteris, Zurich.

The Marseille *Unité d'Habitation* after Le Corbusier: Or the Chronicle of a Permanent Construction Site

BY YVAN DELEMONTEY

Now that Le Corbusier's architectural oeuvre has been nominated for the third time for inclusion in the list of UNESCO World Heritage Sites, it is useful to revisit one of his icons built in the aftermath of World War II: the *Unité d'Habitation* in Marseille. Far from wishing to retrace the genesis of this outstanding building, it is a different story that I would like to sketch out here. Less well known, it is, however, fundamental to the material understanding and conservation of modern architecture. It is a history of the many repairs and other restoration projects that have accompanied this monument of 20th century architecture ever since its inception.

Sited at 280 Boulevard Michelet in Marseille, the “*Unité d'habitation de grandeur conforme*” built by Le Corbusier and the *Atelier des Bâisseurs* (ATBAT) between 1947 and 1952 is one of the most emblematic buildings of the past century. The culmination of long and patient reflection on housing, architecture and urbanism, the *Cité Radieuse* embodies of a quantity of inventions that are at once plastic, programmatic, typological, technical and structural, providing a living environment for the humanity of the future. Yet rarely in the history of architecture has the construction of a residential building crystallized polemics to such a degree, unleashing passions and multiplying obstacles to its construction. Without going into this history, whose broad outlines and many vicissitudes are well-known today,¹ this paper is concerned rather with the life of the building after its construction. Here I will explore the many interventions that have affected it down to the present and which testify to the evolution in methods and strategies of the restoration of the modern heritage.

“*Romantisme du mal foutu*” and defects

Building work on the *Unité d'Habitation* was carried out in Marseille in the difficult postwar context, where the innovative character of its construction techniques struggled with chronic shortages, procurement problems and administrative bottlenecks, encountering obstacles that eventually undermined the proper execution of the building. From this point of view, the “romanticism of the rough and ready” [*romantisme du mal foutu*]² later invoked by Le Corbusier in relation to his exposed concrete architecture took on a particularly bitter tone for the inhabitants.

Shortly after being completed, the *Unité d'Habitation* was at the centre of protests due to the poor waterproofing of the façades and rooftop terrace, plus the chronic malfunctioning of the forced air heating system. Following numerous complaints, the union of co-owners decided in 1961 to take the case to the Administrative Tribunal. In three law suits

(*Les Travaux du Midi*, *Asphaltoïde-Seuralite* and *Neu*) they applied for interim measures against the architect, who then admitted that the *Unité d'Habitation* was “an extremely powerful building but delicate in terms of technique”³. This was the beginning of a protracted legal battle that ended in 1974 with a decision unfavourable to ATBAT, *Les Travaux du Midi* and the *Fondation Le Corbusier*. The succession of expert reports was final, calling into question both design errors and flaws in construction.

As a result, one of the experts, the senior Marine Engineer Camille Sommer, was responsible for the first waterproofing work to be performed in 1963. Carried out with a single-minded concern for effectiveness, the sealing of joints and fissures and the application of a water-repellent opacifying resin to the vibrated elements denatured the original appearance of the concrete. Following repeated infiltrations of water, which continued all through the 1970s and 1980s, multiple repairs were made to the prefabricated parts and those cast in-situ in the building.

Listing as a Historical Monument and first “de-restoration” work

On 20 June 1986, the Marseille *Unité d'Habitation* was listed as a Historical Monument, a decision which followed its first inclusion in the inventory during Le Corbusier's lifetime, in October 1964. Protection was extended to the façades, the whole of the roof terrace, the area of the pilotis, the entrance hall, the internal “streets” and apartment No. 643, which could be visited⁴. The listing was timely because in the absence of effective maintenance, the building was, according to the newly-appointed chief architect, “in a particularly deplorable state”⁵. The list of damage observed is significant in this respect: crumbling of the cladding, exposed iron reinforcing bars, staining of the surfaces, fissuring of the joints, besides the accretions installed by some of the co-owners in the loggias and on the rooftop. Added to this were the many repairs made piecemeal to the concrete

- 01** Le Corbusier, *Unité d'Habitation*, Marseille, France, 1945–1952. State of the rooftop terrace in the 1980s. © Archives of architecture of the *Université de Genève*, Bruno Reichlin fund (slide library). FLC/2016, Prolitteris, Zurich.



- 02** Le Corbusier, *Unité d'Habitation*, Marseille, France, 1945–1952. Work on restoration of the east façade. Replacing the prefabricated cladding of the loggias rebuilt identically. © Photo F. Bolton/ssea, November 2015. FLC/2016, Prolitteris, Zurich.



- 03** Le Corbusier, *Unité d'Habitation*, Marseille, France, 1945–1952. One of the apartments most damaged by the fire. © Photo F. Bolton/ssea, February 2012. FLC/2016, Prolitteris, Zurich.



- 04** Le Corbusier, *Unité d'Habitation*, Marseille, France, 1945–1952. Work on restoration of the east façade. Prefabrication on site of the reinforced concrete cladding of the loggias. © Photo F. Bolton/ssea, November 2015. FLC/2016, Prolitteris, Zurich.



for nearly thirty years, while its premature aging further impaired the building's dilapidated appearance.

Assisted by the heritage bodies, the co-owners decided to undertake an extensive program of work to deal with the normal aging of the *Unité*, and fulfil the “wish to return to more authentic arrangements, conforming more closely to the project”⁶. Conducted between 1986 and 1996, the work focused on restoration the façades and rehabilitating various structures on the roof (elevator towers, ventilation stacks, the day-care centre, gymnasium roof, theater, etc.). They included the systematic removal of the sheets of plastic film used in the previous decades and its replacement with waterproofing mats of the same colour as the concrete, applied after high pressure surface cleaning and passivation of the steel elements. Described as “de-restoration” [*dérestauration*] by the chief architect himself, the initiatives favored spot repairs that emphasized the conservation of the “skin” of the building to the detriment of thorough repair of the damaged parts. While deploring the “patchy effect” of successive interventions, the architect in charge of the restoration work actually legitimated this form of intervention, because it had been accepted at the time by Le Corbusier in some parts of the building. In this way he inscribed his approach in the history of the building and the practise of its author, stating that “any resumption of work in this way preserved a certain coherence with the path that Le Corbusier himself had followed in making such repairs”⁷.

Among the various parts of the complex that were restored, the case of the elevator towers is representative of the theoretical problems of preserving the building.⁸ Indeed,

due to the poor positioning of the formwork during pouring, Le Corbusier was forced to apply a cement plaster over the whole surface of the tower; defects in its bonding then led to the danger of material falling in the 1980s. The question then arose whether an identical coating, with improved adhesion, should be applied to the elevator towers or whether it should be removed and returned to Le Corbusier's original arrangement by reproducing the pattern of the formwork that appeared under the cement plaster. The choice fell on the second solution through the execution of a lightly reinforced micro-concrete layer 5 centimetres thick. Apart from the technical decisions, this example is indicative of the difficulty — sometimes even the impossibility — of complying with a reliable state of reference. In this case was it the one originally executed, knowing that the formwork plans drawn by the ATBAT had not been followed, or the one finally applied as a result of rethinking?

Spot repairs versus comprehensive refurbishment

The early 2000s marked a new era in the restoration of the *Cité Radieuse* in Marseille. The arrival of a new chief architect of Historical Monuments augured well for the adoption of new practises and a break with previous methods. From the start, the building's closeness to the sea and defects in the installation of the concrete were the cause of many pathologies that the previous repair work had never fully contained. Then the architect identified the limitations of the strategy of repeated local interventions adopted previously and advocated “comprehensive renovation” aiming first of all at the permanence of the work, even to the detriment of its authenticity.

Launched in 2001, the restoration of the west façade was an opportunity to test the validity of this approach. A trial section (2001–2006), including the pilotis, was first chosen to develop the technical solutions essential to carrying out the work on a larger scale. Diagnosis and an accurate survey of the damage (fissuring, crumbling of the concrete caused by corrosion of the rebars, spalling, etc.) then revealed the fragility of the concrete, which suffered from “numerous pathologies with a low degree of severity”⁹. In addition to conventional methods, involving replacement of the areas affected, more advanced repair techniques were adopted, such as dechlorination and electrochemical realkalisation of the *pilotis*, or preventive impregnation with corrosion inhibitors applied to many of the prefabricated elements (vertical *brise-soleils*, railings, façade cladding panels, etc.). Unlike the *Maison Radieuse* at Rezé, where almost all the façade elements were changed in the late 1990s, here only the worst affected parts were removed and replaced with identical panels. An on-site prefabrication workshop was installed for this purpose beneath the *pilotis* at the foot of the building. In addition to physically restoring the façade, the work included the renovation of its original polychrome finish, altered over time, which rapidly emerged as a “defining issue in the relevance of the project”¹⁰. Thanks to careful study in the archives and stratigraphic surveys, the initial distribution and range of colouring appear to have been restored.

When work on the west façade was completed, an ambitious program to restore the roof terrace and its structures was launched in 2008. The preliminary study by the chief architect referred to “repeated infiltration that cannot be dealt with piecemeal”¹¹. Passing severe judgement on his predecessor’s method of intervention, and instancing the chronic deterioration of the terrace, the architect invoked the recent example of the renovation of the roofing of the *Unité d’Habitation* at Firminy to support the need for the building to be completely re-waterproofed and the cladding of the ceiling slabs restored to their original state. Work continued in 2010–2011 with the necessary restoration of some emblematic elements that were part of the roof, such as the planters, benches, ramps, theater and other *formes libres* [“free-formed objects”] designed by Le Corbusier. The two major concrete ventilation stacks, badly decayed, were made the subject of a thorough technical study that led to the structural reinforcement of their walls, repair of the damaged parts, and a general realkalisation of the concrete. The parasitic kiosk (a locker room) built in 1967 on the solarium terrace was demolished. The roof of the gym, a major component of the composition of the roof terrace, was completely rebuilt in order to prevent the infiltrations which had spread damage continuously ever since it was first built.

Currently it is the turn of the façade to be restored. Begun in spring 2015, the work is following essentially the same procedure as the restoration of the other façade, the degree of decay observed being equivalent on each side of the building. Some improvements have also been introduced, such as optimising the phasing of work to minimise the inconvenience to the occupants or inserting stainless steel

fibres to facilitate the installation of the concrete elements that need to be reconstituted.

Exact reconstruction of the apartments destroyed by fire

On 9 February 2012, a violent fire destroyed several apartments and hotel rooms in the *Unité d’Habitation*. The statement of damage revealed “the weakness of the internal structures in the wooden walls and the utility ducting that spread the fire”¹². Represented in the press as a “fire trap”, Le Corbusier’s building then raised the issue of the fire regulations even more sharply and rekindled debate about the waivers it had benefited from because of its unusual nature and its heritage status. Delayed by the need to remove asbestos and decontaminate the blighted areas, the diagnosis of the chief architect drew a comprehensive picture of the damage affecting the structure and utilities of the building, all due to the fire and smoke as well as the effects of the intervention of the emergency services and systems (flooding caused by the fire hoses, landing doors demolished with axes to evacuate the inhabitants).

Developed with the idea of preserving the decayed original elements, whenever this was possible, the reclamation project deals with both the impacted public areas (façades and internal “streets”) and the units completely destroyed [*hypersinistrés*], namely 8 duplex apartments, 2 studio apartments and 2 hotel rooms¹³. With regard to the reconstruction of nine of the apartments, it should be borne in mind that they are not listed, but the work was based on an agreement with the owners to restore the original architectural layouts of the interiors while incorporating the necessary technical improvements, especially fire protection. This entailed negotiating compensatory measures case by case with the security services, for example to enable the new landing doors to comply with the fire regulations while maintaining the original design characterised by the lack of surrounds, or the intermediate floors in wood and metal for the residential units to be remade new without altering their *Modulor* dimensions. The whole of the integral furniture was reproduced exactly, as were the *Prouvé* model stairs, the kitchen units designed by Charlotte Perriand (including the parts in diecast aluminium), or again the remarkable glass panes that open onto the loggias. In 2007 the many challenges to be faced and difficulties to be overcome already foreshadowed the “transcript” of a standard cell of the *Unité d’Habitation*, later presented in the modern and contemporary gallery of the *Cité de l’Architecture et du Patrimoine* in Paris.¹⁴ Begun in September 2013, the reconstruction work was completed in the autumn of the following year, the choice of the polychrome finish having been finally left to the residents in the absence of reliable information on the subject.

The difficult conservation of the Brutalist oeuvre

This rapid overview of the successive interventions to preserve the *Cité Radieuse* in Marseille provides a glimpse of the building in a new light, that of a permanent construction site. If the work done betrays the unsuspected



06 Le Corbusier, *Unité d'Habitation*, Marseille, France, 1945-1952. Reconstruction of fire-damaged apartments. Installation of the firewall partitions of precast gypsum panels. © Photo F. Botton/ssea, March 2014. FLC/2016, ProLitteris, Zurich.



07 Le Corbusier, *Unité d'Habitation*, Marseille, France, 1945-1952. Reconstruction of fire-damaged apartments. A kitchen and its furniture fully rebuilt identically. © Photo F. Botton/ssea, September 2014. FLC/2016, ProLitteris, Zurich.

fragility of this “mass of concrete” which was stranded there 60 years ago, though it may seem timeless to the layman, these interventions reflect above all the progress made in the techniques of repairing and restoring concrete, whether precast or cast *in situ*. They also reveal the evolution of the gaze in relation to a recent heritage which is now receiving recognition, with the result that practices are gradually changing. Finally, the interventions reveal the evolution of the doctrines of the conservation of 20th century architecture, which here embodies, in the early 2000s, the transition from one generation of architect-restorers to another. By their richness and diversity (repairs, restorations, exact reconstructions and conversions), these interventions have also raised a series of questions about conservation and the future of Le Corbusier's built oeuvre, in particular the post-war works known as Brutalist architecture. They highlight the innumerable difficulties, and even contradictions, posed by the preservation of an architecture whose defects and other forms of decay are somehow part of the character of the work, its very life. The *Unité d'Habitation* in Marseille is, therefore, emblematic also in this respect. ■

Notes

- 1 See Jacques Sbriglio, *Le Corbusier. L'Unité d'Habitation de Marseille*, Marseille, Parenthèses, 1992.
- 2 *Le Corbusier, Entretiens avec Georges Charensol (1962) et Robert Mallet (1951)*, Vincennes, Frémeaux et Associés, 2007.
- 3 Letter from Le Corbusier to the building manager of the *Unité d'Habitation de Marseille*, 25 October 1962, FLC 03-13-517.
- 4 In 1995, protection was extended to apartment No. 50, previously inhabited by Lilette Ripert, the first director of the kindergarten of the *Unité*, a fervent admirer and friend of Le Corbusier.
- 5 Telephone interview with Jean-Pierre Dufoix, chief architect of Historical Monuments, in August 2012.

- 6 Jean-Roger Cremer, Jean-Pierre Dufoix, *Cité Radieuse, Unité d'habitation Le Corbusier. Superstructures sur Terrasse, Façades, Couvertures, Sols*, preliminary study, May 1993, 15, DRAC PACA, Aix-en-Provence.
- 7 *Idem*, 77.
- 8 See Jean-Pierre Dufoix, “Le Corbusier: archéo-ingénierie 1986–1996 à la Cité Radieuse de Marseille”, *Les Cahiers de la section française de l'ICOMOS*, “Béton et patrimoine”, 1997, 127–133.
- 9 Laboratoire d'Etudes et de Recherches sur les Matériaux (LERM), *Diagnostic et caractérisation de l'état de conservation du béton de structure. Cité Radieuse, immeuble Le Corbusier — Marseille (13)*, study report No. 00.2524.001.01.A, February 2001, 58, DRAC PACA, Aix-en-Provence.
- 10 François Botton, “La restauration de l'Unité d'habitation de Marseille”, *Monumental*, No. 1, 2006, 67.
- 11 François Botton, *Unité d'habitation “Le Corbusier”. Restauration de l'étanchéité de la terrasse*, preliminary study, February 2008, n. p., DRAC PACA, Aix-en-Provence.
- 12 Régis Prunet, “Réglementation incendie et Monuments historiques”, in Roberta Grignolo (Ed.), *Diritto e Salvaguardia dell'Architettura del xx secolo / Law and the Conservation of 20th Century Architecture*, Mendrisio/Milan, Mendrisio Academy Press/SilanaEditoriale, 2014, 187.
- 13 See François Botton, “La restauration et la reconstruction de l'Unité d'habitation de Le Corbusier après incendie, Marseille, Bouches-du-Rhône”, *Monumental*, No. 2, 2014, 85. Another example is the architect's recent contribution to the 19th Conference Meeting of the Fondation Le Corbusier, entitled “Le Corbusier — his works and the challenge of their restoration”, held in Paris from 16 to 18 April, 2015; scientific committee: Franz Graf, Rémi Papillault, Jacques Sbriglio.
- 14 See Robert Dulau, Pascal Mory, *Le Corbusier Echelle 1: Expérience et Réalisation Pédagogique*, Paris, Ed. PC, 2007.

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Willy Van Der Meer, *Ieder Zijn Huis*, Brussels, Belgium, 1953-1961. North and East façades during renovation. © ORIGIN, Georges De Kinder.

Willy Van Der Meeren's *Ieder Zijn Huis*: Saving a Fragile Giant

BY MAURIZIO COHEN

The project for the renovation of the Willy Van Der Meeren apartment building known as *Ieder Zijn Huis* ["A House for Everyone"], in Brussels, raises a question that is crucial for the conservation of modern work using prefabrication techniques. The debate focuses on the original design and construction values, and above all on how best to keep them alive and contemporary despite the building's age and changing standards and techniques. In the wording of the renovation specifications, the project owner – the public company Beliris – laid stress on the importance of preserving the architectural qualities: "Given the building's importance in the architectural heritage, the renovation must reflect the original ideas of the designer, Willy Van Der Meeren". The point of the call for tenders was to establish an approach for the work that conserves the structure's architectural principles in terms of appearance and structural articulation, while making renovated apartments available that meet today's standards. The architecture firm Origin decided to focus on the building's values and on the comfort and convenience of the accommodation, while pursuing further the conceptual direction taken by the original designer. This meant exploring all the building's architectural and structural aspects in order to successfully showcase its qualities.

The municipality of Evere and the post-war context

Evere is a municipality on the outskirts of Brussels where housing demand at the end of the World War II was very high. The socialist mayor at the time, Franz Guillaume, became interested in the ideas of modern architecture, especially Le Corbusier. After visiting the *Cité Radieuse* in Marseille, he tried to persuade Le Corbusier to create a similar block of flats for his municipality — in vain.

Guillaume wanted to introduce high-rise collective housing in response to the growing number of applications, but also for ideological reasons. He wanted to get away from the local tradition of individual little houses that typified the Flemish Catholic petty-bourgeoisie. "He wanted the building to have the same symbolic value as the church: it was the secular watchtower of the village".

He therefore asked the social housing company *Iede Zijn Huis* to entrust the design to Willy Van der Meeren. This architect was not yet particularly well known, but was developing progressive ideas similar to those of the mayor: "Decent housing for all in a dynamic society." The order was dated 1953, and the first images of the preliminary plans were published in early 1954². A first development plan from that year enables us to gauge the initial ambition of creating an estate with various different types of buildings, tower blocks, units and lower apartment buildings³. Franz Guillaume's death in 1963 put an end to this urban development project. The tender process for the building took place in 1956, but the Brussels World's Fair of 1958 led to substantial price increases, which undermined the project.

A second tender process had to be organized in 1958 before construction work could start; the building was completed in 1961.

Willy Van Der Meeren

Van der Meeren is an important figure on the Belgian architectural scene. An architect, designer and publicist, he contributed to study groups on issues of housing and taught at the VUB (*Vrije Universiteit Brussel*) Faculty of Architecture. In 1958, he won the competition organized by the C.E.C.A. (*Communauté Européenne du Charbon et de l'Acier* [European Coal and Steel Community]) for mass-produced homes. His prototype of a prefabricated worker's house was revolutionary and had a profound impact. However, its production was limited by the prevailing mood in favor of conformist, single-family homes with a more traditional architectural style.

His engagement was radical and generous. He founded and contributed to art and architecture journals and emerged as the spokesman for a progressive modernity that emphasized social values and honesty in construction. His first projects reveal his interest in the ideas of Le Corbusier, but also his ability to reinterpret. In particular, the project for an apartment block at *Fort Jaco* in the municipality of Uccle to the south of Brussels heralded a series of ideas that were to be developed further in the Evere project. These included the use of a passageway on one of the façades — a kind of internal street — along which the apartments were arranged.



01 Willy Van Der Meeren, *Ieder Zijn Huis*, Brussels, Belgium, 1953–1961. West and North façades after renovation. © ORIGIN, Georges De Kinder.



02 Willy Van Der Meeren, *Ieder Zijn Huis*, Brussels, Belgium, 1953–1961. Detail of the East façade during renovation. © ORIGIN, Georges De Kinder.

The construction and development of the building

Van Der Meeren developed the project on the basis of three priorities: creating innovative solutions to keep costs down through the systematic use of prefabricated and modular elements, the application to the apartments of the principles of the “free plan” devised by Le Corbusier, and the use of color in the many collective spaces to signal their social role.

Cost control played a critical role, and led Van Der Meeren to devise a building in which most of the elements required little or no finishing after installation. This project is a clear example of the construction rationalism advocated by Van Der Meeren. He was developing a concept that he called “building design”, preferring this term to “architecture” to describe his approach.

The building has 105 apartments for 2 to 5 people, divided into 9 types and distributed by 2 stairwells over 12 stories. Galleries — “streets in the air” — on the east façade each serve three stories.

Much of the building is raised above the ground on piers. The ground floor consists of the entrances and service areas. Just like the passageways, the entrance halls and landings are spacious, illustrating the desire to apportion a significant floor space (almost a third of the building's 10,000 square meters or so) to meeting areas. As in Le Corbusier's housing units, the roof terrace is accessible to all and is used for collective purposes. The first story is a technical gallery with storage rooms for all the apartments.

The building's layout is made intelligible by its clear structure and the explicit distribution of materials according to function. The stair towers — which pass through the volume at each end and emphasize its groundedness — and the gables are of exposed brick; the porticos are of poured concrete; the façades are made of prefabricated washed concrete panels in which the window frames are inserted; and the louvers, railings and metal pillars on the

east façade form a latticework pattern that accentuates the recessed terraces.

Only the porticos and the reinforced concrete beams were cast on site, in smooth formwork. The portico columns grow more slender from floor to floor. The other elements are prefabricated and designed on the basis of Le Corbusier's *Modulor* dimensions. They consist of slabs, façade panels and stairs.

The hollow slabs are linked to the porticos. Their dimensions are constant (15.5 cm thick and 56.5 cm wide) and they were made with a metal formwork to obtain a smooth lower face that could be left exposed. The upper reinforcement of the portico beams is connected to the slabs' hollow cells by means of integrated metal rebars, thus providing longitudinal bracing.

The façade panels are self-supporting, all the same size (4.52 m by 2.56 m) and designed in 5 variants according to the configuration of the apartments' doors and windows. Consisting of two 5 cm concrete sheets around a 2 cm layer of insulation, they were all produced with the same mould. The outer surface is made of fortified concrete to withstand rain and frost, whereas lean concrete was used for the interior.

During the analysis of the building, the question came up of how the façade panels were installed and secured. Details of the technique used do not appear in any archive document or in any picture of the construction work. This point was to prove decisive for the direction of the renovation project.

The building's common areas are immaculate. In line with a common practise at the time, work was commissioned from artists to underline the importance of these areas. In the South entrance hall, one wall is covered with a large mosaic by Jo Delahaut, while the North entrance hall features a work by Jean-Pierre Turlinckx based on a Venetian mosaic. In front of the building, an abstract concrete sculpture by Rik Poot was set up in honor of the mayor. The



03 Willy Van Der Meeren, *Ieder Zijn Huis*, Brussels, Belgium, 1953–1961. Recomposition of the façade with the new prefabricated sandwich panels. © ORIGIN, Georges De Kinder.



04 Willy Van Der Meeren, *Ieder Zijn Huis*, Brussels, Belgium, 1953–1961. A typical storey dismantled during renovation. © ORIGIN, Georges De Kinder.

South entrance was enhanced by a cast concrete awning, partly painted blue, with a free and dynamic form.

Bright colors are used in the entrance halls and access passageways, making it easier to identify different areas and find one's way around. The apartment doors are also different colors, adding to the mood of vitality and reinforcing identity. Despite the obviously economical use of materials, Van Der Meeren drew attention to certain details that remind us of his work as a designer, such as the curved metal tubes used for the front-door handles to the apartments.

The renovation philosophy

Despite its fame and its qualities which have been recognized right from the start, the building has not been subject to any protection by the authorities. It was entered on the **docomomo** register in 2004.

In 2007, the last residents left the building and were rehoused by the housing corporation. Studies began in order to arrive at a precise diagnosis of the problems. The structure was damaged, the various technical systems were ageing and inadequate, and a series of alterations had modified the original architecture in an ill-considered fashion, sometimes with temporary solutions. In addition, changing views of housing due to societal and economic developments made it necessary to rethink the status of the original structure. By 2008, the overall nature of the work to be done was becoming clear. The architects and heritage specialists De Meyer, Verdonck and Verswijvermade presented the following proposal in a long text on the history of the building:

Rather than adapt it in its current state, it would be preferable to bring the renovation back into line with Van der Meeren's initial ideas and devise a project that both reflects those intentions and translates them into modern solutions based on the architectural plan. The conservation of the original building seems to us in this case to involve an unjustifiable restoration cost and to jeopardize

the standard of life expected in public housing. (...) Most of the damage and the main shortcomings are related to the physical behavior of the façade, the current state of the technical systems and the small size of the apartments⁴.

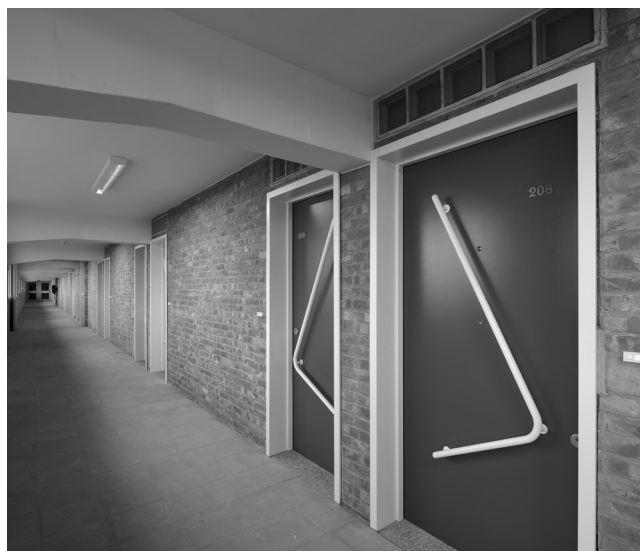
Discussions about the right approach were informed by a number of consultations which began in early 2000 when the building was registered by **docomomo**, and numerous studies carried out at institutes and faculties of architecture that highlighted the figure and architectural work of Willy van Der Meeren.

The firm ORIGIN summarized the problem as follows:

Willy Van Der Meeren's holistic architectural philosophy gives the building a soul, while imposing strict marginal conditions for its renovation. Taking all these principles into account involves striking a delicate balance — one, however, that is as fragile as a house of cards in which each element is connected to the others. (...) A renovation is necessary for reasons of safety and comfort, and the building's heritage value is an important factor. (...) Should the building be adapted to current standards, or should its use be adapted to the qualities of the building? Or to put it another way: are the ideas of progress and modernity and the functional and rational approach of the project's creator more important than conserving the original materials? At the time of the building's completion, everything was very innovative in technical terms. The architect and project owner genuinely intended to create opportunities for social progress, in order to give people dignity through the quality of their environment. Today, the building has become 'non-user-friendly', because energy costs are particularly high and the level of comfort is poor. The search for social progress, the idea of giving people dignity through high-quality progressive housing, is still on the agenda. It was therefore decided that the idea of progress and modernity developed by Willy Van Der Meeren was at least as important as the decision to adapt the building to the current requirements of comfort, fire resistance and insulation⁵.



05 Willy Van Der Meeren, *Ieder Zijn Huis*, Brussels, Belgium, 1953–1961. Restoration of the roof level. © ORIGIN, Georges De Kinder.



06 Willy Van Der Meeren, *Ieder Zijn Huis*, Brussels, Belgium, 1953–1961. "The street in the sky". A gallery after restoration. © ORIGIN, Georges De Kinder.

A decision has therefore been made to keep the elements cast in concrete as well as the slabs, ducts and stairs, and to completely replace the façade panels in order to remedy the various problems from which the building has suffered, while preserving intact Van Der Meeren's philosophy and strategies of architectural composition. The new panels are in line with new standards of fire resistance and thermal performance requirements, thanks to more effective insulation and the removal of numerous thermal bridges.

A crucial debate runs through the entire history of heritage conservation, concerning the question of authenticity. In this project the decision has been made — as often for modern architecture, especially from the post-war period — to place more emphasis on the value of the concept over the conservation of original characteristics which are no longer adequate. The problem that then arises is how to proceed in order to maintain an acceptable degree of consistency and avoid disfiguring the work.

It should be stressed that this renovation project was well received because ORIGIN had already established a solid reputation for its technical skills and thoughtful approach, not just to 20th century heritage, but to older buildings too. Equally, the role played by the public project owner, which stressed the need to focus on the cultural problem of the project's heritage aspect and its role in local and national history, is symptomatic of the desire to preserve a property representing a set of values we wish to perpetuate as part of our heritage.

The work

The ORIGIN team identified and decided on the relative priority of the issues: the buildings' physical shortcomings, with façades serving as large thermal bridges and poor insulation resulting in significant heating costs for tenants. Inadequate ventilation and high levels of humidity had caused damage from condensation in several places.

The entire building fails to meet fire legislation standards, particularly with regard to compartmentalisation, the fire resistance of the building materials and the risk of fire spreading by the façades.

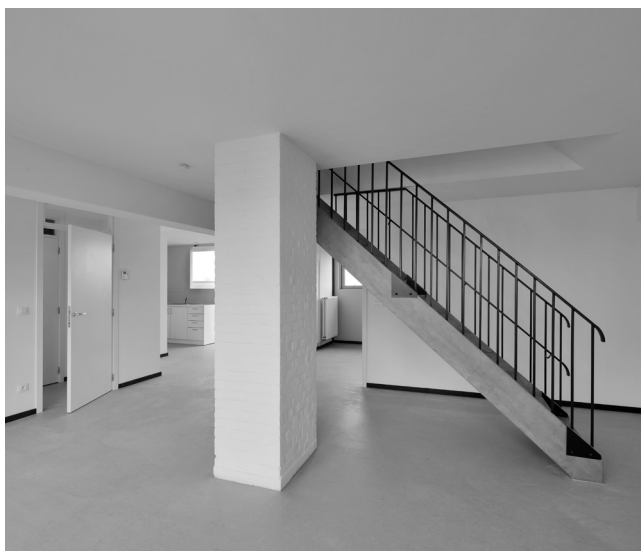
The acoustic performance is also inadequate, due certain functional choices that were made that are no longer suited to modern lifestyles. None of the technical systems meet the required standards of comfort and convenience, and in most cases they have deteriorated due to ageing, humidity and lack of ventilation.

The final major problem is the clearance height of 2.5 meters under the slabs and 2 m under the porticos, leaving little flexibility to alter the thickness of the screed.

The building has been carefully measured and surveyed in order to identify any differences between the project's documentation, the structure as built and alterations made over the years. In particular, checks were performed of the condition of the structural elements, the positioning of the reinforcement in the concrete, the state of the foundations and the building's transverse rigidity. This last point is crucial, because both the literature and the architect himself had stressed the link between the porticos and the hollow slabs, but gave no explanation about the concrete beams that connect the porticos horizontally. In-depth analysis revealed that these beams that run around the building are used to hold the façade panels in place, and do not contribute to the horizontal rigidity.

The operational focus of ORIGIN's plans is on creating new façade panels which, while consistent with the original façade design, are thicker, giving them qualities that the original panels lacked. It will therefore be necessary to demolish the beams that run around the building and pour new ones to secure the new panels.

The original layout of the apartments will be kept, with adaptations to meet normative and technical requirements. Van Der Meeren's initial idea of arranging the living areas



07 Willy Van Der Meeren, *Ieder Zijn Huis*, Brussels, Belgium, 1953–1961. The lower space of an apartment after renovation. © ORIGIN, Georges De Kinder.



08 Willy Van Der Meeren, *Ieder Zijn Huis*, Brussels, Belgium, 1953–1961. The street in the sky". A gallery after restoration. © ORIGIN, Georges De Kinder.

diagonally in order to bring in more light throughout the day is typical of his innovative approach. He regarded the conventional day/night separation as outdated, and plans were devised to adapt to possible changes.

Conclusion

The building's history is complex and has much to teach us about the importance of taking account of evolving techniques and architects' ambitions to invent new solutions. *Ieder Zijn Huis* embodies a wealth of social and spatial intentions. It has been conserved and renovated in line with the spirit and principles of Van Der Meeren: elements which were characteristic of the original architectural style have been replaced in a bold yet reasonable manner, while remaining faithful to Van Der Meeren's design. The achievement in this case is to have completed the entire process for a publicly-owned social housing building without any form of heritage protection. ■

Notes

- 1 Mil De Kooning, Willy Van Der Meeren. *Architectuur Stedenbouw Design Research Onderwijs*, doctoral thesis (unpublished), Department of Architecture and Urban Planning, University of Ghent, 1997, 118.
- 2 *Architecture*, 13, December 1954, 508.
- 3 This plan was illustrated in a model exhibited at EXPO 58 in Brussels.
- 4 Ann Verdonck, Koen Verswijver, Ronny De Meyer, "Intelligence architecturale et subtilité sociale dans un projet haut en couleur. L'immeuble de Willy Van Der Meeren pour Ieder Zijn Huis à Evere (1952 – 1961)", Paula Dumont, Brigitte Vander Bruggen (dir.), *L'Architecture Depuis la Seconde Guerre Mondiale*, Brussels-Capital Region, Brussels, 2008, 153 – 154.
- 5 Charlotte Nys, Jan de Moffarts, "Ieder Zijn Huis : la préfabrication appliquée à un immeuble de logements sociaux. 1960 – 2014", Jean-François Denoël, Bernard Espion, Armande Hellebois, Michel Provost (dir.), *Histoires de Béton Armé. Patrimoine, Durabilité et Innovations*, Bruxelles, FABI and FEBELCEM, 2013, 112 – 113.

References

- "Immeuble à 105 appartements Ieder Zijn Huis à Evere", *Architecture*, No. 31, 1961, 689–694.
- Charlotte Nys et Jan de Moffarts, "IederZijn Huis : la préfabrication appliquée à un immeuble de logements sociaux. 1960–2014", in Jean-François Denoël, Bernard Espion, Armande Hellebois, Michel Provost (dir.), *Histoires de Béton Armé. Patrimoine, Durabilité et Innovations*, FABI and FEBELCEM, Bruxelles, 2013, 110–116.
- DAEM, Kristien, DE KOONING, Mil, *Apartmentwall. 'Ieder Zijn Huis' Van Der Meeren*, Vlees & Beton 86, Bruxelles, Gevaert Editions, 2011.
- DE KOONING, Mil, "Willy Van Der Meeren", Mil De Kooning (dir.) *Horta and After. 25 Masters of Modern Architecture in Belgium*, Ghent, University of Ghent, 1999.
- DE KOONING, Mil, "Willy Van Der Meeren", *Vlees en beton* 21–24, Damme, 1993.
- DE KOONING, Mil, NYS, Charlotte, et al, *Willy Van Der Meeren. Ieder Zijn Huis. Passé et Futur d'une Unité d'Habitation à Evere*, Brussels, CIVA, 2012.
- DE KOONING, Mil, *Willy Van Der Meeren. Architectuur Stedenbouw Design Research Onderwijs*, thèse de doctorat (PhD not published), Département d'Architecture et d'Urbanisme, University of Ghent, 1997.
- MARINUS, Jef, "A chacun sa maison. Une rénovation structurelle qui respecte l'architecture", in *Béton*, No. 223, Brussels, March 2014, 10–15.
- PALM, Léon, VAN DER MEEREN, Willy, "Apport de la Charte d'Athènes à l'habitation belge", *Architecture*, No. 123, Décembre 1954, 499–510.
- VERDONCK, Ann, VERSWIJVER, Koen, DE MEYER, Ronny, "Intelligence architecturale et subtilité sociale dans un projet haut en couleur. L'immeuble de Willy Van Der Meeren pour IederZijn Huis à Evere (1952 – 1961)", Paula Dumont, Brigitte Vander Bruggen (dir.), *L'Architecture Depuis la Seconde Guerre Mondiale*, Région de Bruxelles-capitale, Brussels, 2008, 124–157.

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Jacques Simon, Landscape architect; Michel Marot, Daniel Tremblor and Robert Clauzier, architects; ZUP (Priority Development Zone) des Charillons, Reims, France, 1966-1970.
The allée of Paulownias. The Mougne Site before the 1998 renovation © Jacques Simon, ca. 1990.

Postwar Residential Housing Landscapes in France: A Retro-Pro prospective Approach

BY BERNADETTE BLANCHON

In the residential districts built after the Second World War, the qualities of landscapes are not, in most cases, taken into account in understanding projects nor are they considered as a resource in renovation projects except as a “compensatory greening” once the main spaces have been divided, privatized and fenced off. We suggest considering this residential landscape heritage as a potentially structuring one, through the landscape approach, based on three levels for interpreting space: that of the relation to the geographic and urban site; that of the neighborhood defined by its open and public spaces; and lastly, that of the materiality of places and practices. We see it as relevant since it is more global and adapted to the current context of projects.

In spite of a strict demolition policy conducted for several years¹, the renovation of housing areas built after the war in France still represents a substantial proportion of architectural and urban development commissions. Is it possible to transform these residential areas by means other than demolition of *heritagization*? In the same way as with the *residentialization* of outside spaces, we believe these practises to be a part of the principle of *tabula rasa* which they are supposed to denounce. Due to the recent crisis, large-scale demolitions were stopped; we believe this provides an opportunity to propose a landscape approach we see as relevant since it is more global and adapted to the current context for projects.

An alternative approach

The nature and qualities of landscapes are not, in most cases, taken into account in understanding projects nor are they considered as a resource in renovation projects. These are proposed as a “compensatory greening” which today more often comes in the form of shared gardens or green corridors, once the main spaces have been divided, privatized and fenced off. However, we think that detailed knowledge of the local history of the site over time and taking into account existing landscapes as an approach method — in combination with existing social and economic approaches — can provide alternative arguments in favor of the transformation of these areas.

Let us start by defining two pre-requisites. Firstly, we believe the architectural design of a housing project must include the outside spaces which are an integral part of housing². In addition, the landscape architecture approach to a project cannot recommend a *heritagization* perspective, since the urban landscape is by essence constantly changing. The living materials which compose it (soil, water, climate, plants, etc.) comprise a specific relation to time which means the landscape is constantly evolving. The practise of

designing the landscape may be considered as “the art of planning for the unpredictable”³. Therefore, to understand a project requires starting from what exists which provides evidence of previous states and future potential⁴.

Although it is common to consider the landscape dimension as being absent from postwar projects, historical and *in situ* studies we have conducted in many housing developments have shown a great diversity in landscape designs which were far removed from the indigent “green space”. These large-scale housing developments constituted a vast field of experimentation for the landscaping architectural profession which was emerging at the time. The young professionals trained in the new *Section du Paysage et de l'Art des Jardins* at the *Ecole d'Horticulture* in Versailles, from 1945, were able to experiment new practises with these projects⁵. In addition, the architects trained in the inter-war period had acquired a culture of the landscape and the garden which is identifiable in many instances. The multidisciplinary heritage of the tutelary figure of the landscape architect Jean-Claude Nicolas Forestier (1861–1930) was well-known shared at the time.

For the first professionals, the study of a selection of examples in which landscape designers participated made it possible to identify three stages, each one roughly corresponding to a decade, and which spanned between 1945 and 1975⁶. Initially, from 1945 to 1955, pragmatism and inventiveness made it possible to adapt the previously acquired practise of designing squares and parks to the scale of the large housing project. Then, from 1955 to 1965, a new generation of landscape architecture graduates gradually started to receive public commissions, however, in spite of the creative objectives of the *Section du Paysage*, they had to restrict themselves to greening these housing projects. Having reached maturity, the members of the new generation, who have benefited from their contacts with Northern European cultures, adopt a critical view of French training



01 Henri Pasquier, Paysagiste; F. Jerrold, Fournier et Petit, architectes, *Cité de l'Aubépin, Chalon sur Saône, France, 1952–1961*. The peripheral malls follow the different adjacent contours. © B. Blanchon, 2009.



02 Henri Pasquier, Paysagiste; F. Jerrold, Fournier et Petit, architectes, *Cité de l'Aubépin, Chalon sur Saône, France, 1952–1961*. © B. Blanchon, 2012. The southern beach in 1964, leaflet of the 2^e Congrès National des Syndicats d'Entrepreneurs Paysagistes de France, *Cité de l'Aubépin*. © Henri Pasquier 1964.

03 Henri Pasquier, Paysagiste; F. Jerrold, Fournier et Petit, architectes, *Cité de l'Aubépin, Chalon sur Saône, France, 1952–1961*. The southern beach has become a plant and animal reserve. © B. Blanchon, 2009.



04 Henri Pasquier, Paysagiste; F. Jerrold, Fournier et Petit, architectes, *Cité de l'Aubépin, Chalon sur Saône, France, 1952–1961*. Plant growth and fences render the spaces less discernable, and close the openings. © B. Blanchon, 2009.



05 Henri Pasquier, Paysagiste; F. Jerrold, Fournier et Petit, architectes, *Cité de l'Aubépin, Chalon sur Saône, France, 1952–1961*. Wooded spaces and hedges embellish the site. © B. Blanchon, 2009.



06 Jean Camand, landscape architect; René Boileau & J. Henri Labourdette, architects, *Ville Nouvelle de Sarcelles-Lochère, France, 1956–1970*. Entrance to the Parc Kennedy. The free angles of the buildings open deep transversal views providing visual and mental perspectives. Associated with plantings and ground modeling they provide articulations and expand the sense of space. © B. Blanchon, 2009.

and professional practises. At the end of the 1960s, a change of direction in the culture of reference of landscape designers away from horticulture was a part of the multi-disciplinary movements which then inspired French architecture⁷. Instruction at Versailles was increasingly provided by people coming from artistic disciplines such as painting, the decorative arts, and architecture, who focused on composition issues. Landscapers then became landscape architects able to design projects and master the living milieu. The technical, horticultural and botanical dimension gradually shifted into the background, before being considered in the 1990s as a reforming element in the practise of landscape design.

Gradually, via architectural composition and by claiming an independent status for the landscape project, landscape designers established an original approach. They were able to associate landscape design with the living milieu in their search for specific solutions. We shall now present this landscape design method as a way of interpreting existing situations and as a matrix for potential proposals through a selection of case studies. To observe and study them in space and through time we rely on the *landscape component* of the habitat which relates to three different levels for interpreting space and which are interconnected: *the level of the relation to the geographic and urban site; the level of the neighborhood* and of the structure defined by its open spaces and places of social contact; and lastly, *the level of the materiality of places* and of the practises that bring them to life⁸.

Discussion on the general coherence of rehabilitation projects

Our selection illustrates the different stages, from the perspectives of social housing policies, of architectural thought, and of the landscape design practises evoked earlier: the *Cité des Aubépins* in Chalon-sur-Saône (1952–1961) was one of the first experimental operations conducted by the French Ministry of Reconstruction and Urban Planning [*Ministère de la Reconstruction et de l'Urbanisme-MRU*], the housing project of Sarcelles-Lochères in the North of Paris (1954–1976) came at the peak period for such projects, and the urban development zone of Chatillons in Reims (1966–1970) are representative of the search for new alternatives.

In the *Cité des Aubépins*, built on the site of a former tile factory, the parallel housing blocks (built higher to the west, on the side of the prevailing winds and factories, and lower on the side facing the town center) are disposed around a large, slightly lower central area. Designed by the landscape architect Henri Pasquier (1909–1993), peripheral *allée*, sufficiently large to absorb the parking spaces which succeeded the areas set aside for boules players, adopt different forms and tree species, and generate different atmospheres to establish links with the adjacent areas (Figure 01). The careful remodeling of the terrain transformed the clay excavations into fish ponds which now harbor a greatly appreciated profusion of flora and fauna (Figure 02). The open spaces, in the form of meadows, play areas or sports grounds surrounded by dense plantations established by the landscape designer's use of forestry methods, are closing up and becoming less discernible pending coherent maintenance

which will complete the ongoing renovation of the buildings in this residential park (Figure 03). The landscape designer has also artfully deployed hedges, associated with the leveling of the ground, which filter light and establish connections between paths and links between the different spaces (Figure 05).

In Sarcelles-Lochères the carved stone buildings are set within an orthogonal pattern which follows the spaces that have been opened up. The architects have taken inspiration from the work of Robert Auzelle for the open-angled square design used to arrange 4-story housing blocks. The free angles of the buildings open deep transversal views providing visual and mental intersecting perspectives distinct from any formalized flows of movement (Figure 06). Two large malls structure the fabric of richly planted squares and are staggered around the main central space comprising a park and a commercial and administrative center. The project sits within the soft slope of the site aided by steps, low walls and embankments. This planted area designed by the landscape architect Jean Camand (1924–1989), enhances this socially stigmatized⁹ housing estate (Figure 07). Taking into account the fringes of the neighborhood, which have for the most part been neglected — due an abandoned motorway project — provides substantial potential for the current renovation work. So far, the original qualities providing subtle transitions, visual fluidity, and pathways have not been taken sufficiently into account in the redevelopment of the site. Although welcome openings have been made on the edges of the park and massive demolition work has been avoided, some of the housing blocks have had to make way for a new housing area. The installation of these “post-modern” buildings has not taken into account the slope in the site, generating disruptions in the links between spaces; the venerable trees which had remained in the sloping terrain perished, in spite of efforts to protect them, due their being encased in asphalted ground (Figure 08). A team of landscape architects has been called in to design a public park adjoining the neighborhood but they have not been commissioned to conceive its foundation and structure in relation with the original qualities of the site and local situation.

Installed on a site possessing no notable qualities, the residential area of Chatillons in Reims, where the landscaper Jacques Simon worked, is a good example of the attempt to establish links between the different green rooms delimited by the buildings and linked together by a network of passages and porches inside as well as outside the neighborhood and along an extended mall lined with *Paulownias* (Figure 09). This inner landscape composed of hillocks in scale with the buildings and built using construction debris, dilates the space towards a possible horizon. Silver poplars planted in dense copses appear to dance on the hillocks and punctuate the many children's play areas invented by the landscape designer. The whole project is infused by a strong poetic inspiration that provided a playful and sensory basis which was greatly appreciated by the inhabitants (Figure 10). After the buildings were refurbished — in 1987 — the outside spaces were the subject of a severe reappraisal which pointedly ignored the original qualities of the

site. This reappraisal mentioned aspects such as the aging of the installations and illegal parking, the poor quality of the trees or the narrowing of the field of vision from the apartments due to the hillocks (is it preferable to see the wall of the opposite building than a planted hillock?) and recommended a gradual privatization of the spaces after erasing the hillocks, the introduction of so-called noble tree species (prunus and birches, etc.), and the installation of planter boxes or of inner fences. These re-installations, based on a vague consensual notion of what a planted environment should be like, rendered the spaces commonplace and soulless (Figure 10). Some of these areas were *residentialized* by privatizing the gardens, which remain little used. In spite of all this, strangely enough, some of the original qualities of the site remain!

Conclusion: The landscape as a common ground

These spaces designed by pioneers of landscape architecture or urban art are on the point of disappearing. The idea is not to turn them into sanctuaries, even though some elements, albeit very few, deserve being preserved. The aim is to recognize the qualities of these sites to which little attention is paid and to try to understand the elements and the origins of the landscaping approaches underpinning them. Understanding the history of the site and the different periods may enable more relevant and appropriate interventions. At the moment of the birth and structuring of the profession, these pioneers contributed to its creation by coming to grips with the shift in scale of these projects and by inventing new modes of intervention. In the majority of cases the loss of knowledge, which could have inspired the management and transformation of the spaces being redeveloped, is regrettable. Planted spaces which have reached maturity represent a simple opportunity for preserving their atmospheric and landmark qualities, thus rooting these neighborhoods in a past which is prolonged into the future.

The aim is not to reproduce past projects either, but rather to understand and adapt their contributions to ensure they relate to current social, environmental and economic issues. We recommend, beyond the profusion of vegetation or participative gardening which landscaping often boils down to, that the open space — or space which is unbuilt and open to view and social uses — should be considered as structurally defining. We therefore believe that conceiving the urban landscape as being based in this residential landscape heritage, with its three levels, makes it possible to focus attention on neighborhoods, the architecture, and urban components, some of which may be commonplace or even mediocre¹⁰ and which are, sometimes a little too hastily, earmarked for demolition. The landscape method makes it possible to widen the notion of built heritage beyond the scope of architectural objects to give precedence to the consistency of urban entities in which ordinary and often unnoticed elements as well as forgotten local information play a part, and where even the notion of the space as a quality in itself remains undefined. Vegetation is one of these landscape components and the management practises of planted spaces should contribute to the identity of the

site, if possible in the knowledge of the initial objectives of the design. Such an approach is able to take on board current questions by reflecting on ways of organizing vegetation, and on how to address environmental and social issues while giving shape to them".

To embed the project within the memory of its extended site is to rediscover the interlinking systems of free spaces dear to the pioneering landscape architect Jean-Claude Nicolas Forestier, and to reconstitute physical and visual openings; to form an understanding of the structure of the site based on its empty spaces is to fight against the propensity to fill in and clutter up space, and it is a refusal to see in all open spaces opportunities to appropriate land. It involves not considering the shape of the terrain simply in terms of maintenance problems but thinking of the playful dimension by preserving the hillocks which are the basis of the habitat. In terms of uses, the many plant forms associated with the shaping of the terrain order the hierarchies between spaces. They should make it possible to ensure a relevance between the skills of the gardeners and the thinking underpinning the project. In addition to the division of space through *residentialization*, many views and openings have been lost and blocked by plant growth and could be reopened by moderate pruning, and spaces could also be reconnected by recreating ecological environments favorable to biodiversity. Without neglecting the importance of the need for security and privacy, we believe the expertise of landscape architects offers alternatives to erecting more fences.

Landscape designers have always sought to create places which answer the expectations of modern society but which are also able to contribute to its introspection. The mission of the landscape method today is to produce a social and ecological environment of quality, unencumbered by ideologies preventing its comprehension. It is by taking into account this vision of the redevelopment of existing urban housing, that we shall be able to address current expectations relating to the social uses and management of sites. ■

Notes

- 1 The National Agency for Urban Renovation [Agence Nationale pour la Rénovation Urbaine, ANRU], founded in 2004 and which was given more resources following the riots in 2005, was intended to finance the transformation of over 530 residential areas by 2013 through public-private partnerships. This transformation often entailed demolition work which was sometimes required to obtain subsidies. At the same time, *heritagization* actions were conducted for some of these operations, such as the attribution of the 20th Century Heritage label [Label Patrimoine du xx siècle] for 40 residential housing sites in the Île-de-France region in 2009. ANRU 2, since 2014 has apparently been defending a different approach.
- 2 Housing includes practises which span beyond the strict scope of the private dwelling to include aspects ranging from the urban situation to the window framing the sky and providing a view...
- 3 Alexandre Chemetoff, *Visits. Town and Territory — Architecture in Dialogue*, Birkhäuser, 2009.
- 4 Previous states will be reconstructed "backwards" based on the current state; see in *Colonnes*, 2011, "Archives et paysage: du site comme agent historique", 52–55, and Bernadette Blanchon, "Pratiques paysagistes: quelles archives?", 64–67.
- 5 It is not possible to present in this article all the findings of our research which are published in the form of research reports and articles in French and of which only a few have been published in English. See *Landscape Research*, 2010, featuring an article which presents examples

- 07 Jean Camand, landscape architect; René Boileau & J. Henri Labourdette, architects, *Ville Nouvelle de Sarcelles-Lochère*, France, 1956–1970. Parc Kennedy. Many vegetation structures gradually disappear. Namely the hedges which are not replaced, whereas the shrub covering is the best means of ensuring the biodiversity sought today. © B. Blanchon, 2009.



- 08 Jean Camand, landscape architect; René Boileau & J. Henri Labourdette, architects, *Ville Nouvelle de Sarcelles-Lochère*, France, 1956–1970. The district of Sablons in Sarcelles. The ground upon which the new buildings are set is higher than the natural ground level of the partly demolished neighborhood. Large old trees whose collars have been buried have died. © B. Blanchon, 2012.



- 09 Jacques Simon, landscape architect; Michel Marot, Daniel Tremblot and Robert Clauzier, architects, ZUP (Priority Development Zone) des Chatillons, Reims, France, 1966–1970. The allée de Paulownias. © B. Blanchon, 2011.



- 10 Jacques Simon, landscape architect; Michel Marot, Daniel Tremblot and Robert Clauzier, architects, ZUP (Priority Development Zone) des Chatillons, Reims, France, 1966–1970. The allée de Paulownias. The Mougne Site before the 1998 renovation © Jacques Simon, ca. 1990.

Paysage dans les ensembles urbains de logements, 1940–1980, *Les Grands Ensembles — une Architecture du XXe siècle*, Paris, Éditions Carré, 2011, 207–239.

BLANCHON, Bernadette, DELBAERE, Denis, GARLEFF, Jorn, “Modern-scape: reading the unexpected diversity of open spaces in French urban social housing developments (1940–1980)”, in Ivan San Martin (Ed.), *Living in the Urban Modernity*, **docomomo**, Mexico City, 2010, (Electronic publication).

BLANCHON, Bernadette, “Public Housing Landscapes”, *Landscape Research*, Vol. 36, N°6 — *Method and contents in Landscape Histories*, (Landscape Symposium, Society of Architectural Historians, Avril 2010, Chicago), 2011, 683–702.

CHEMETOFF, Alexandre, *Visits*, Basel, Birkhäuser Verlag AG, 2009.

Dossier “Archives et Paysage”, *Colonnes*, n° 27, Archives d'Architecture du XX^e siècle, Cité de l'Architecture et du Patrimoine, 2011, 51–82.

EYER, Elisabeth K., “Sustaining beauty. The performance of appearance, a manifesto in three parts”, *Journal of Landscape Architecture*, 2008, 6–23;

RACINE, Michel (Ed.), *Créateurs de Jardins et Paysages du XVI^e au XXI^e Siècle*, Vol. 2, Versailles and Arles, ENSP-Actes Sud, 2002.

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References

BLANCHON, Bernadette, “Jacques Simon et Michel Corajoud à l'AUA, ou la fondation du paysage urbain”, in Jean-Louis Cohen, Vanessa Grossman (Eds.), *Une Architecture de l'Engagement: l'AUA 1960–1985*, Paris, Editions Carré, Cité de l'Architecture et du Patrimoine, 2015, 214–225.

BLANCHON, Bernadette, “Pratiques et compétences paysagistes dans les grands ensembles d'habitations, 1945–1975”, *STRATES*, N°13 - *Le Paysage Urbain: Genèse, Représentations, Enjeux Contemporains*, Paris, Ladyss, CNRS, 2007, 149–167.

BLANCHON, Bernadette, DELBAERE, Denis and GARLEFF, Jorn, “Le

reflecting the 3 main stages of these postwar landscape design practices. See: Bernadette Blanchon, 2007 or the research report, 1998.

7 Bernadette Blanchon, “Jacques Simon et Michel Corajoud à l'AUA, ou la fondation du paysage urbain”, in Jean-Louis Cohen, Vanessa Grossman (dir.), *Une Architecture de l'Engagement: l'AUA 1960–1985*, Paris, Editions Carré, Cité de l'Architecture et du Patrimoine, 2015, 214–225.

8 This method was used in the following study, conducted in 284 Housing districts: Bernadette Blanchon, Denis Delbaere, Jorn Garleff, *Le Paysage dans les Ensembles Urbains 1940–1980*, 2 tomes, Ministère de la Culture, DGP/ENSP, Versailles, 2010. See Blanchon, Delbaere & Garleff, 2010, 2011.

9 Due to the fact that the district of Sarcelles was identified with the malaise experienced by inhabitants of the new suburban districts in 1960s which the press referred to as “Sarcellite” (which one might translate as “Sarcellitus” in English).

10 See for example, the renovation of the *Ecouin-sous-la-Combe* district in *Vaux-en-Velin* (Greater area of Lyons), by Latitude Nord, Gilles Vexlard and Laurence Vacherot, landscape designers, 2004–2012.

11 See Meyer, 2008.

Restoration of the *Cercle de L'Ermitage* in Epesses, Switzerland

BY JEAN-CHRISTOPHE DUNANT

In 1935, Alberto Sartoris transformed an old mill into a private club for artists: *le Cercle de l'Ermitage*. The young architect conceptualized the space as a manifesto of rationalistic architecture. The resolutely modernist choice of the intervention contrasted with the rural and bucolic existing building.

In 1971, the work disappeared under fake rustic decoration and everybody considered it lost, only remaining one of the most famous axonometries of the Italian master. Forty-five years later, the work reappears miraculously while the space is under transformation into a private residence. The demolition work has revealed an unexpected amount of original elements, which will allow a faithful and rigorous restoration of the *Cercle de l'Ermitage*.

"One day we will reconstruct the *Cercle de L'Ermitage*"

Alberto Sartoris, 1987

In 1933, a winemaker from Epesses and owner of a water mill, asked Alberto Sartoris, a rationalist Italian architect, to transform the latter into a private club for artists: the *Cercle de l'Ermitage*. The young architect proposed to rearrange the interior in a radically modern way, in order to embody and conceptualize the space into a manifesto of rationalistic architecture, without modifying the outer envelope. Once the construction work was finalized, the project was published in the internationally renowned journal *The Architectural Review*. The following year, the public administration refused to give out the license for a private club, fearing the place would turn out to be synonymous with debauchery. As a result, the building became a bar-restaurant, known as the *Vieux Moulin*. Until 1948, Sartoris continuously transformed the restaurant, adding multiple annexes, principally intended for service. But in 1971, at the time of a new transformation, the architect saw himself stripped of his piece of work, the latter disappearing under a jumble of fake beams and stucco.

In 1987, while studying architecture at the EPFL, I was intrigued by the title of one of the famous axonometric drawings from the architect Alberto Sartoris, the *Cercle de l'Ermitage*, Epesses. Living in this small village of the Lavaux region, I could not picture the whereabouts of this *avant-garde* architecture. I later discovered that the site corresponded to an actual restaurant and dancing club

decorated with heavy false rustic decor typical of the seventies. Only the typology remained, a luminous circle embedded in the ground of the dancing floor and a back stairway. I decided to undertake the study of this work and was able to meet Alberto Sartoris. He was so disappointed and furious about the demolition and disappearance of his masterpiece that he no longer wanted to talk about this case. However, the students' interest rekindled the flame of the old master who then said: "one day we will reconstruct the *Cercle de l'Ermitage*". This sentence, 27 years later, sounded like a prophecy.

Since, I have contacted every new tenant or owner to alert them of the historical content of the site and possible hidden remains. I took advantage of this opportunity to conduct structural surveys and analysis on site to examine for possible remains. After several bankruptcies, the restaurant ended up closing and was put up for sale. The new owner, intrigued by the origin of the building, commissioned me to transform the space into a private residence.

In the light of numerous parameters on which this renovation depended, the success of this operation holds to a miracle. There was indeed almost no visible trace of the original work. Moreover, resulting from inner transformation, there was a great possibility that decorative elements have been irreversibly replaced. Secondly, changing the building's allocation from bar-restaurant to a private residence, implied redrafting the original program. To make things even more complicated, the building is located in a wine-growing zone in the heart of Lavaux, a UNESCO World Heritage site.

Finally, the building is not labeled as a Historical Monument, and must therefore meet all standards (security, insulation, comfort, etc.) of a common transformation, without any possible concession.

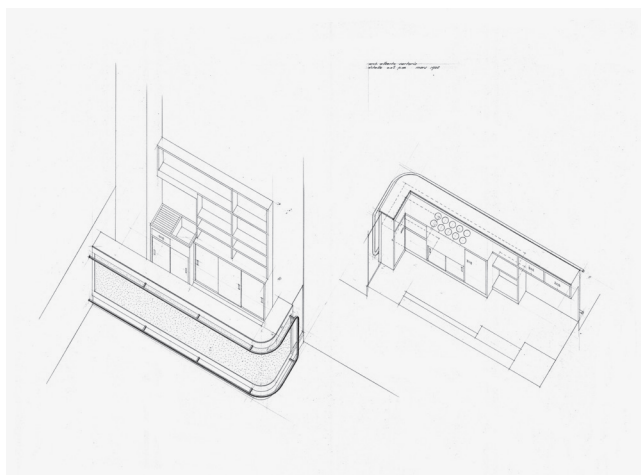
Archaeology of a relic from the 20th century

Given the lack of visible traces, it was difficult to estimate what could still remain from the *Cercle de l'Ermitage*. Therefore, the first concern was to restore the original space. The number and the quality of the items discovered during the demolition, will orientate the restoration project. This process is similar an archaeologist's exploration, but also implies that the space needs to be restored to a livable condition.

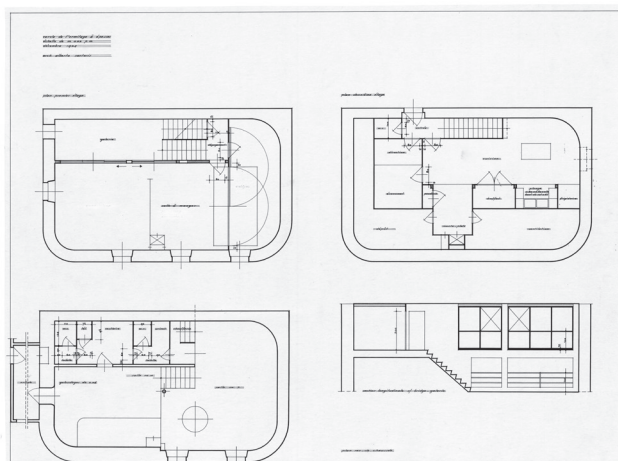
The demolition work has revealed an unexpected amount of original elements. They were hidden behind stucco decorations making up the interior space. Thus, thanks to this awkwardly makeshift job, important original pieces were discovered in their quasi-integrity despite their great fragility. An inner sliding glass screen, separating the restaurant from the gallery, still contained intact original structural window glass. A piece of the original steel railing gave important information about the sections, materials and colors of the internal barriers. The structure of a luminous ceiling of 15 square meters reappeared behind a false plaster vault. Finally, a 12 meter long wall, made of steel angled profiles, was discovered, although very damaged by rust. The main elements used by Alberto Sartoris for the *Cercle de l'Ermitage* appeared to be in a more or less good state of conservation, but sufficiently complete in order to restore the place in a very faithful manner.

Intervention strategy

As the building was not protected by the office of the Historical Monuments, the transformation work was undertaken through a regular process, under the sole responsibility of the architect and his client. The use of experts then became necessary. Some of Sartoris's archives, made available by the *Archives de la Construction Moderne* led by Professor Pierre Frey, were a source of essential information, including plans, color studies and black and white photos of that time. Additionally, the advice from Professor Franz Graf, (*Laboratory for Techniques and Preservation of Modern Architecture, EPFL*), helped develop a strategy of intervention balanced



01 Alberto Sartoris, *Cercle de l'Ermitage*, Epesses, Switzerland, 1935. Axonometric projection of the bar. © EPFL-ACM, Fonds Alberto Sartoris, 1935.



02 Alberto Sartoris, *Cercle de l'Ermitage*, Epesses, Switzerland, 1935. Plans. © EPFL-ACM, Fonds Alberto Sartoris.



03 Alberto Sartoris, *Cercle de l'Ermitage*, Epesses, Switzerland, 1935. Axonometric projection of the dancing-bar, chromolithography. © EPFL-ACM, Fonds Alberto Sartoris.

04 Alberto Sartoris, *Cercle de l'Ermitage*, Epesses, Switzerland, 1935. Bar. Opening of the club. In the background of the dance floor, the painting of R. T. Bosshard. © EPFL-ACM, Fonds Alberto Sartoris. Photo by Claude Budry, 1935.



05 Alberto Sartoris, *Cercle de l'Ermitage*, Epesses, Switzerland, 1935. Bar. Le Vieux Moulin, le Cercle de l'Ermitage disappears under a jumble of fake beams and stucco. © Jean-Christophe Dunant, 2010.



06 Alberto Sartoris, *Cercle de l'Ermitage*, Epesses, Switzerland, 1935. Gallery. Opening of the club. View from the gallery towards the dance floor and the bar. © EPFL-ACM, Fonds Alberto Sartoris. Photo by Grete Hubacher, 1935.



07 Alberto Sartoris, *Cercle de l'Ermitage*, Epesses, Switzerland, 1935. Gallery. Le Vieux Moulin, le Cercle de l'Ermitage disappears under a jumble of fake beams and stucco. © Jean-Christophe Dunant, 2010.

between maintenance and replacement of the existing elements. As we were facing an exceptional chromatic work, color was evidently a fundamental aspect of the transformation. An important stratigraphic study allowed us to precisely analyze the shades and type of the paints that were used. Finally, the artisanal experience of some companies significantly contributed to the success of this transformation.

In order to ensure a consistency in the intervention, five guidelines were established directing every decision:

- Free the main space of the *Cercle de l'Ermitage* which was to be restored, by placing the program of the living quarters in the annexes that were built later.
- Preserve as much as possible of the original elements, even though they have defects, traces of wear or alteration.
- Replace the items that are over-damaged by replicating them using the same construction methods and craftsmanship

of the last century. All the materials and colors were reproduced using the same process: steel, chrome, glass, linseed oil paint.

- Recreate the main fixtures, such as the bar made of chromed steel and glass, by examining Alberto Sartoris's archives, plans, axonometric drawings and various color studies.
- To proceed by analogy when the purpose and usage of an item changes. For instance, the original dumbwaiter becomes a fireplace in the living room on the upper floor and a wine rack on the lower floor behind the bar.

Strong aspects of the *Cercle de l'Ermitage*

The renovation allowed the enhancement of the project of Alberto Sartoris.

- The sheathing in steel angles: when Alberto Sartoris undertook the mill transformation, some exterior walls buried more than 7

meters underground had no water drainage installed, thus allowing the rain water to enter through the wall and inside the dwelling. He decided to install an inner self-supporting sheathing made of welded steel angles and recollect the permanent dripping water by a hidden collector installed between the existing wall and the sheathing, thus allowing the runoff of the excessive water back to the old mill's moat. The plastic effect and flexible look of the steel sheathing's folds, evokes a textile while the vertical lines enhance the sensation of ceiling height. As a result in resolving sanitary issues, this sheathing becomes a major element of the architectural project.

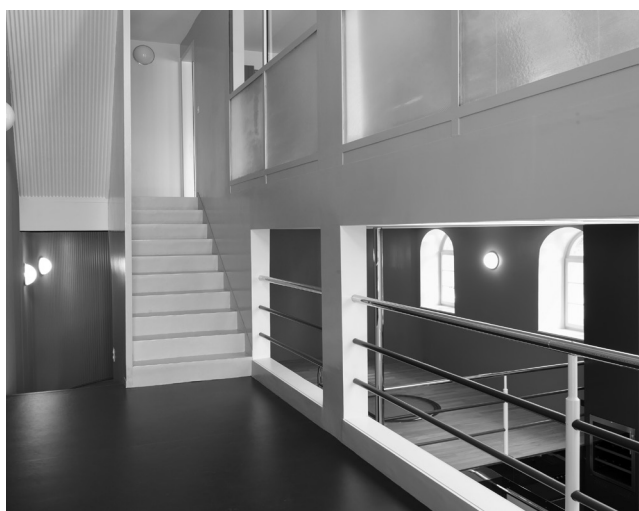
- The sliding glass screen: while planning the interior as a succession of superimposed platforms, Alberto Sartoris relates the floors to one another with no interruption. In fact, the sliding glass screen maintains this spatial continuity while protecting

08 Alberto Sartoris, *Cercle de l'Ermitage*, Epesses, Switzerland, 1935. Bar. The ongoing demolition work has revealed an unexpected amount of original elements © JC Dunant, 2012.



10 Alberto Sartoris, *Cercle de l'Ermitage*, Epesses, Switzerland, 1935. Gallery. The ongoing demolition work has revealed an unexpected amount of original elements © JC Dunant, 2012.

09 Alberto Sartoris, *Cercle de l'Ermitage*, Epesses, Switzerland, 1935. Bar rehabilitated. © Lucien Caceres, 2014.



11 Alberto Sartoris, *Cercle de l'Ermitage*, Epesses, Switzerland, 1935. Gallery rehabilitated. © Lucien Caceres, 2014.

the restaurant from the noisy bar bellow. The daylight coming from the upper floor windows, passes through the sliding glass screen, illuminates the mid-level gallery and reflects on the metal wall down to the lower space where the bar is set up; thus allowing the daylight to illuminate the most obscure corners.

- The luminous ceiling: a ceiling, more than 4 meters high, composed of 32 opal glass panels, lights up the entire area of the bar, evoking a winter garden's canopy. Through an intense and diffuse light, the luminous ceiling highlights the vivid hues of the walls and floors. On the ground of the dance floor, a flush oculus sheds light over the dancers' feet while bringing a bright counterpoint to the ceiling.
- The bar: a frame made of 15 millimeters thick glass slabs supports a top of black lacquered glass, all bordered in chrome steel. The bar's refinement contrasts with the rest of the surrounding space where color

dominates over materiality. Its refined design distinguishes itself from the rest of the work which has a rather more plastic, sculptural and chromatic appearance. The reflections caused by the chrome finishes and the glass coverings, duplicate the effects of depth through a game of symmetry. Recognized as an important built heritage work, the transformation of the *Cercle de l'Ermitage* is now protected by the Historical Monument's department. ■

Notes

- 1 Morton Shand, "The Cercle de l'Ermitage at Epesses, Canton de Vaud, Switzerland", *The Architectural Review*, No. 14, April 1936, 181–184.

References

Archives de la Construction Moderne — Ecole Polytechnique Fédérale de Lausanne, Fonds Alberto Sartoris.
COLLET, Cécile, "Le Cercle de l'Ermitage vivra enfin", *24 heures*, 30 march 2013, 25.
COLLET, Cécile, "Un lieu oublié est classé grâce à

sa restauration", *24 heures*, 16 october 2015, 21.
STECH, Adam, "Radical rebirth", *Wallpaper* No. 189, December 2014, 145
DUNANT Jean-Christophe, "Alberto Sartoris, Cercle de l'Ermitage, Epesses", *Patrimoine* No. 1, 2015, 102–107
SHAND Morton, "The Cercle de l'Ermitage at Epesses, Canton de Vaud, Switzerland", *The Architectural Review*, No. 14, april 1936, 181–184.
GUBLER, Jaques, Abriani Alberto, *Alberto Sartoris. Dall'autobiografia alla critica*, Milano, Electa, 1990.
NAVARRO, Maria Isabel, "Alberto Sartoris 1901–1998. La concepcion poetica de la arquitectura", *cat. expo IVAM*, Valencia, 2000.
ARBOIT, Stephanie, "Une vision renaît", *24 heures*, 21 june 2014, 23–27.

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(b. 1965, Switzerland). Diplôme d'architecte from the Ecole Polytechnique Fédérale de Lausanne in 1991. Founded the *Dunant & Locher architects* office in 2001. Founded *J.-C. Dunant architect* office in 2009.
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André Wogenscky and Marta Pan's House Workshop: Thoughts on Conservation and Museography

BY AUDREY AULUS

The aim of the Fondation Marta Pan – André Wogenscky is to promote the work of the architect and the work of the sculptor. Nowadays there are a lot of issues that arise regarding the accessibility and the museography of the house/workshop in Saint-Rémy-lès-Chevreuse. This house/workshop deserves a wider recognition and in that sense, before making any changes, the intervention has to be considered in the interest of the work's integrity. The house is a complex heritage object due to its conception made by an architect and an artist at the same time, evolving according to their needs and aspirations.

The concept of synthesis of the arts was a leading principle of modern architecture, which aimed to transcend disciplinary divisions to ultimately create “the new building of the future that will unite every discipline”. This artistic, quasi-ideological quest underlying the Bauhaus movement would gradually develop into a fruitful social utopia, although research remained individual for fear of loss of autonomy. Communion of minds eventually materialized in the 20th century, when artists and architects came to work together to promote a holistic approach. These included French creators André Wogenscky and Marta Pan, whose collaboration inspired two bodies of work characterized by the same demanding quest for modernity.

When they first met, André Wogenscky was a young architect and branch manager for Le Corbusier, while 23-year old Hungarian sculptor Marta Pan had just arrived in France. Both had several creations to their names, but they already shared the same convictions. However, their personal and professional relationship never altered the sovereignty of their own work. They inspired each other and created rich and comprehensive works, the most representative embodiment of which is their beautiful house/workshop in Saint-Rémy-lès-Chevreuse. More than a mere work of art, this first collaborative effort became their home for their entire lives and evolved according to their aesthetic needs and aspirations.

Built between 1950 and 1952, the house was designed to serve a threefold purpose: aside from the living areas, the house included a workshop for Marta Pan as well as a drawing studio for the archi-

tect. The house was made of raw concrete (a revolutionary 20th century material) and was partially covered with stone panels. Its façades, interspersed with red and black flat tints, were mainly painted white. Situated halfway up the hill on a 2,000m² plot in the rural region of Saint-Rémy-lès-Chevreuse, the house sat at the top of a driveway (Figure 01, 02). “The layout enables visitors to discover the house step by step, like a sculpture, all the way to the parking area in the north, from where they can view the building's exact proportions”. From that vantage point, the view opens all the way to the garden, visible beyond the house. In the park, Marta Pan's sculptures appear as tension points that regulate the landscape and tie it in with the architecture. At the entrance to the house, “the visitor's gaze focuses directly on two elements arranged at right angles”: the boiler situated in the hallway — transformed into an artistic installation with its colorful pipes — and Marta Pan's door handle, sculpted onto the simple plate-glass entrance¹ (Figure 03).

The 150m² house is an 11.5 metres sided square. The architecture follows a layout that spirals from the kitchen and develops with well-balanced proportions from the ground floor to the first floor, all the way to the roof (Figure 09). The kitchen, a 2.26 metre sided square, is the heart of the house, its cornerstone. Based on the same principle as the *Unité d'Habitation* in Marseille, it is designed for its inhabitants, i.e. it follows the *Modulor* theory that André Wogenscky developed with Le Corbusier. The functional kitchen, with its predominantly white lacquer, extends into a dining area, originally with a sturdy six-seater wooden table with

wooden cubes for chairs — replicas of Le Corbusier's (Figure 04). The furniture has since been changed and replaced with Arne Jacobsen chairs.

Kitchen, living room and workshop: the space flows all the way to the garden outside.

The house does not consist of distinct rooms, but rather of a large interior volume that opens to the south. Empty spaces on the upper floor create two high-ceilinged areas (4.80 m), one in the living room and the other in the workshop, while private spaces (workshops, dining room, bedrooms) have low ceilings (2.26 m). The layout comprises spaces with their own living functions and equipment, yet these are interconnected so the gaze goes from one to the next in an endless series of architectural perspectives.⁵ (Figure 05).

Large wooden windows invite the surrounding landscape to come inside, further accentuating the interior volumes. The sensation is highlighted with a “conversation pit” (a couch embedded in a recess in the floor) and the later addition of a water feature along the southern façade (Figure 06). The water flows from the inside to the outside and its constant murmur brings nature and water to life inside the house itself — two key elements of Marta Pan's work. The light is controlled with a concrete frame in the southern façade, which acts as a *brise-soleil* and regulates the light in the summer without eliminating it in the winter. While Marta Pan enjoys the view of the many birds that “come to nest, feed and bathe” outside her workshop, André Wogenscky's workshop on the first floor only has a thin horizontal window, based on the principle that nature disrupts intellectual concentration. The tranquil office nevertheless opens onto the living room and Marta Pan's workshop. Defying the day/night separation rule, the first floor also houses the landing, two bedrooms with ensuite bathrooms and a linen cupboard. A key element of modern architecture, the jointly designed rooftop terrace completes the ensemble. Grassy at first and later layered with pebbles, it shares the same principle as the solarium in *Villa Savoye* (1928–1931). Placed in the center, it includes a white curved wall that also acts as a wind-break (Figure 07, 09). The rooftop terrace is encircled by parapets, the height of which serves a twofold purpose: to lean on your elbows when standing and to contemplate the distant valley when lying down. As Marta Pan once said, the couple spent “wonderful holidays” there, living on the edge of the heavens as often as they could⁶.



01 André Wogenscky and Marta Pan, House/Workshop, Saint-Rémy-lès-Chevreuse, France, 1950–1952. The house in the 1950s. © Archives wsr, Fondation Marta Pan-André Wogenscky.



02 André Wogenscky and Marta Pan, House/Workshop, Saint-Rémy-lès-Chevreuse, France, 1950–1952. The house and the garden nowadays. © Audrey Aulus, 2015.

Household needs determined the spatial organization, which was nevertheless “pushed to the point of aesthetic organization”⁷. This study of proportions gave rise to different configurations and dimensions, thereby turning architecture into something akin to music⁸. From the outside, the façades create an abstract geometry, like a tableau resulting from specific internal functions (Figure 01, 02, 07, 09). The openings in the couple’s bedroom illustrate this perfectly: one corresponds to the field of vision of a person standing, another is elongated and corresponds to the field of vision from the bed (using only natural light), and a third is simply aesthetic. Just for the record, André Wogenscky was amused when he realized that the latter corresponded to the viewing height of his dog!

Convinced that the environment affects people⁹, André Wogenscky designed buildings according to the personality of its inhabitants, creating “organic architecture”. He assumed that our psychological behavior is affected by a combination of forms, proportions and rhythms created by the surrounding space, and that architecture affects our mental state. In his mind, a house should envelop and protect physically and psychologically, without imprisoning.

In order to do this, architecture requires dynamism, energy and action. In his book *Architecture Active* (1972), André Wogenscky develops his theory of an energy-charged architecture, which expresses itself in terms of forces. Colors and materials share in this reflection, *activating* the architecture. In the house, vermilion red galvanizes the whites, the greyness of the concrete and the blacks. This combination (different from Le Corbusier)

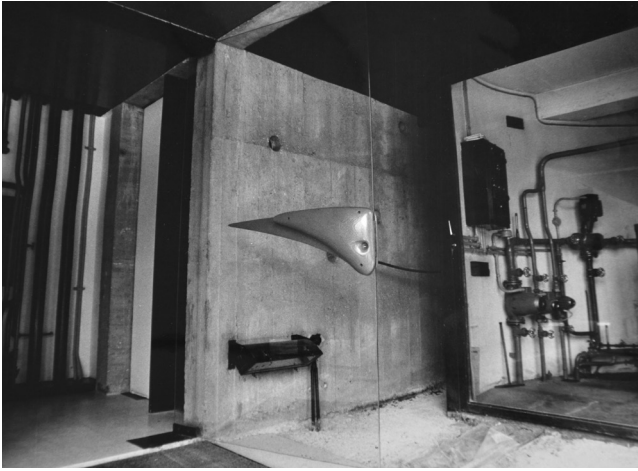
would become his signature for a long time. “Spots of color, like this red-orange (...), mark out the space in the change of levels with the driveway, on shelves and in corners — the kitchen especially — like landmarks, or like a rhythm”¹⁰. André Wogenscky added that color was a material above all else¹¹, and there is plenty of it in the house. In the high open spaces, the two big bare concrete walls¹² catch the light and bring colors to life. The wooden cladding that served as formwork draws lines on the surface. Whether mat or shiny, the ruggedness counterbalances the kitchen’s lacquered surfaces and the ground floor’s smooth marble, and contrasts with the small round and shiny tiles that decorate the bathrooms and the entrance to the office. The wooden windows, the warm wood of the wardrobes, the rugs that cover the floors and the wallpapered ceilings in the bedrooms capture this light to create a hushed atmosphere.

“Tactfully disrupting the strict laws of architecture to inject movement and perpetual growth”, such is André Wogenscky’s adage. In the same spirit, he uses curves as a counterpoint to straight lines. Curves point to Marta Pan: “The sphere is my spare body. Everywhere there are curves in the house, that’s me”¹³ (Figure 08). From the architect’s lines to the jointly designed spaces, Marta Pan’s input is everywhere: sculpted clay gargoyles decorating the façades, a small sculpture blocking the window of the drawing studio, the luminescent handrail along the length of the stairs and the external chimney for the boiler. André Wogenscky is like an acupuncturist, pointing at the sensitive spot, where function calls for emptiness and gratuitous-

ness; but it is Marta Pan who injects the final touch of energy. The architect thus leaves spaces (niches for sculptures) that integrate her ideas (the colored piping of the boiler for example) and takes her activities into account, with a large bay that connects the workshop and the garden (useful to bring in and take out large sculptures). The spaces dedicated to various activities are interconnected in one big space and create vertical and horizontal visual perspectives. No partitions, no doors and no frontal obstacles: only changing spatial perceptions. Based on the same principle as for *Villa Savoye*, the furniture serves to define the spaces, like the built-in cupboards in the bedrooms, which create a partition between the doorway and the bathroom. Continuity and independence express the close-knit life of the two artists, who respected each other’s work.

In 2011, the house in Saint-Rémy-lès-Chevreuse entered a new phase when it became the headquarters of the Marta Pan-André Wogenscky foundation. Featured on the additional list of France’s historical monuments from 1997, the house embodied more than ever André Wogenscky’s principle: “Every house should be a shelter, a dwelling and a temple”¹⁴. Destined to protect and promote both the architect and the artist’s work, the institution has been thinking about various issues relating to its accessibility to the public. Addressed in an end-of-year project for a Master’s degree in architecture from the *École Polytechnique Fédérale de Lausanne*¹⁵, these challenges focused on the promotion of a rich collection of works and archives, as well as on the suitability of the house and its site for special events. Access to the house, which

- 03** André Wogenscky and Marta Pan, House/Workshop, Saint-Rémy-lès-Chevreuse, France, 1950-1952. The entrance: Boiler and Marta Pan's door handle (Nowadays, the same model is visible). © Archives wsr, Fondation Marta Pan-André Wogenscky.



- 04** André Wogenscky and Marta Pan, House/Workshop, Saint-Rémy-lès-Chevreuse, France, 1950-1952. The interior of the house in the 1950s. View of the living-room, the kitchen and, in the background, the stairs and the water feature. The "Conversation pit" didn't yet exist. © Archives wsr, Fondation Marta Pan-André Wogenscky.



- 05** André Wogenscky and Marta Pan, House/Workshop, Saint-Rémy-lès-Chevreuse, France, 1950-1952. High-ceilinged areas in the 1950s, living room's. © Archives wsr, Fondation Marta Pan-André Wogenscky.



- 06** André Wogenscky and Marta Pan, House/Workshop, Saint-Rémy-lès-Chevreuse, France, 1950-1952. "Conversation pit" designed in the 1970s. © Archives wsr, Fondation Marta Pan-André Wogenscky.

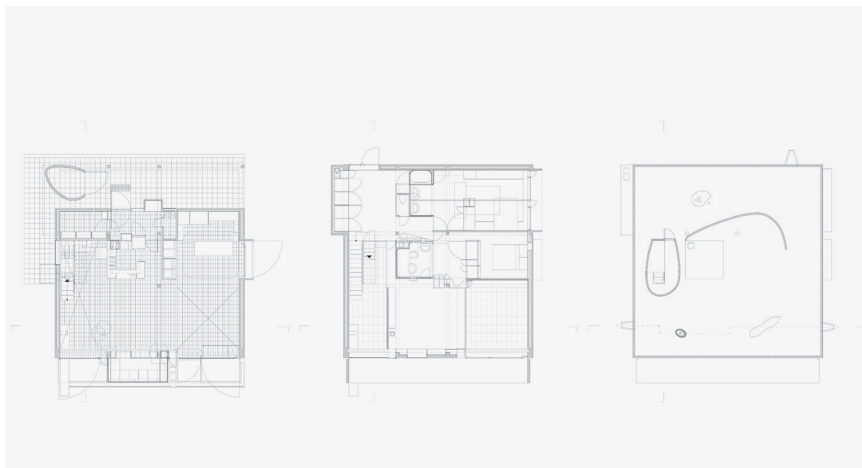


- 07** André Wogenscky and Marta Pan, House/Workshop, Saint-Rémy-lès-Chevreuse, France, 1950-1952. 1:50 scale model of the house (current state). © Produced and photographed by Audrey Aulus, 2015.



- 08** André Wogenscky and Marta Pan, House/Workshop, Saint-Rémy-lès-Chevreuse, France, 1950-1952. View of the current second floor high-ceilinged areas with first workshop of Marta Pan in the house (moved into the garage) and the rich collection of works and archives. © Audrey Aulus, 2015.

- 09 André Wogenscky and Marta Pan, House/Workshop, Saint-Rémy-lès-Chevreuse, France, 1950–1952 Plans of the three levels of the house. Modifications and the project of conservation according to the research. © Plans are drawing by Audrey Aulus, 2015.



was left untouched, raises other questions, relating to the security of certain artifacts, museography, and to the various measures required for its restoration and conservation. Recognizing a work is essential for its safeguard, forgetfulness and disinterest being the two worst enemies of heritage. Opening to the public has proven to be one of the best ways of gaining exposure. However, it must be thought through beforehand, with decisions based on meticulous analyses and material knowledge that integrate the house's transformation over the years. Lived in by André Wogenscky and Marta Pan for over 50 years, the house did indeed change to the rhythm of their own development and the extension of their activities, i.e. Marta Pan's workshop was moved into a garage built under the garden, the terracotta tiles on the ground floor were replaced with marble, and the southern façade underwent a complete overhaul with the installation of a "conversation pit" embedded in the floor, which perceptibly changed the space and its relationship with the landscaped gardens.

Transforming the house into a museum seems the best way of keeping its integrity and avoiding converting too many spaces. There is no question of removing the strata to return to an initial state, which would be both a material and immaterial loss, i.e. a negation of the life and development of the needs and thoughts of André Wogenscky and Marta Pan. With that mind, it seems inconceivable to use the house for another purpose, especially if the aim is to preserve its integrity and minimize the changes that accessibility to the public demand. For these reasons, conservation should not be called into question because of excessive modern norms. Reassured by a satisfactory survey

of the state of conservation of the house (carried out as part of the preliminary investigative work during the Master's project) we believe the material and its authenticity must prevail. Only the intrinsic aspects of the house's architecture can dictate the most reasonable solutions, both in terms of preservation and safety and security. ■

Notes

- 1 Elodie Vitale, *Le Bauhaus de Weimar: 1919–1925*, Liège, Editions Mardaga, 1989.
- 2 André Wogenscky writing about the house, Manuscript archives — Fondation Marta Pan-André Wogenscky, Saint-Rémy-lès-Chevreuse.
- 3 *Idem*.
- 4 The original handle was later replaced. Today, the same model is used for the entrance doors at the *Musée des Arts et Traditions Populaires* (built by Jean Dubuisson in Paris and inaugurated in 1972) — a project in which Marta Pan shared.
- 5 Manuscript text, WSR dossier, from the archives of Fondation Marta Pan-André Wogenscky, Saint-Rémy-lès-Chevreuse.
- 6 Martine Dassault, "L'esprit d'un sage", in *Décoration Internationale*, 78–83.
- 7 André Wogenscky's words.
- 8 The initiative paid off since Olivier Messiaen, one of the most influential contemporary music composers of the second half of the 20th century, apparently found a "musical landscape" there. François Barré, *André Wogenscky, Marta Pan: l'Œuvre Croisée*, Paris, Editions Cercle d'art, 2007.
- 9 When André created the magazine *L'Homme et l'Architecture*, he insisted that every cover read: "If you want to create men, start with the environment". See also his book: André Wogenscky, *Architecture Active*, Paris, Casterman, 1972.
- 10 François Barré, *André Wogenscky, Marta Pan: l'Œuvre Croisée*, Paris, Editions Cercle d'Art, 2007.
- 11 "There is no colour that is not a material". Quote by André Wogenscky in Annick

Pély-Audan's book, *André Wogenscky*, Paris, Editions Cercle d'Art, 1993.

- 12 Bare concrete, often used in the second part of the modern movement (towards brutalism), which usually conveys a feeling of austerity and functionality, is somewhat suppressed by color here.
- 13 François Barré, *op.cit.*
- 14 Dominique Amouroux, *André Wogenscky, Carnets d'architectes n°11*, Paris, Editions du Patrimoine-Centre des Monuments Nationaux, 2012. As stated by André Wogenscky.
- 15 Audrey Aulus, *La Maison-Atelier d'André Wogenscky et Marta Pan — Conservation, Muséographie et Extension*, work directed by Franz Graf, Giulia Marino, Elena Cogato Lanza; expert Dominique Amouroux, director of Fondation Marta Pan-André Wogenscky, *Ecole Polytechnique Fédérale de Lausanne*, Architecture Department, 2015. Derived from an in-depth analysis of archival sources and a comprehensive diagnostic survey, this end-of-course project focuses on the restoration of the house/workshop. Depending on the needs of the foundation and its desire to showcase its heritage, possible extensions have been considered in-situ, under the house. This has the advantage of not disrupting the interplay established between architecture, sculpture and nature.

References

- "Atelier André Wogenscky", *Architectural Design* 35, No. 1, January 1965, 29–34.
- AMOUROUX, Dominique, *André Wogenscky, Carnets D'architectes 11*, Paris, Editions du Patrimoine, Centre des Monuments Nationaux, 2012.
- BARRÉ, François, *André Wogenscky, Marta Pan: L'œuvre Croisée*, Paris, Cercle d'art, 2007.
- BLOCH-CHAMFORT, Guy, "Chez André Wogenscky et Marta Pan: Histoire D'un Lieu", *Connaissance Des Arts*, No. 638, 2006, 118–123.
- LAMBERT, Jean-Clarence, *Marta Pan: De La Sculpture Au Paysage. Grands Créateurs Contemporains*, Paris, Editions Cercle d'art, 1994. Martine Dassault, "L'esprit D'un Sage", *Décoration Internationale*, n.d., 78–83.
- MISINO, Paola, *André Wogenscky: Raisons Profondes de La Forme*, Paris, Collection Architectes 10, Moniteur, 2000.
- RAGON, Michel, *Marta Pan. L'art Se Raconte*, Weber, 1974.
- WOGENSCKY, André, *Architecture Active*, Paris, Casterman, 1972.
- WOGENSCKY, André, *Les Mains de Le Corbusier*, Paris, Questions D'architecture, Moniteur, 2006.

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(b. 1990, France). Architect, *Ecole Polytechnique Fédérale de Lausanne*, Switzerland. The case study of preservation of the house/workshop designed by André Wogenscky and Marta Pan was part of her master thesis directed by Professor Franz Graf and his co-worker Giulia Marino. Dominique Amouroux the director of Fondation Marta Pan-André Wogenscky took part as an expert.

MoMove: The docomomo Virtual Exhibition

docomomo International has launched the **docomomo** Virtual Exhibition (MoMove) on the 23rd November 2015 in Técnico-University of Lisbon. The original concept was developed by Ana Tostões and Yoshiyuki Yamana in September 2013 as an online exhibition to disseminate and to foster buildings, sites and neighbourhoods of the Modern Movement throughout the (online) world, under the scope of **docomomo**. The website exhibition.docomomo.com is a great achievement in the pursuit of the **docomomo** mission that could not be set up without the generous support of the Lisbon Municipality and Técnico-University of Lisbon. MoMove was launched with the work of the research of 482 contributors¹, from 36 Working Parties through the upload of information on 3247 buildings and sites.

Converting the Registers into a web-based platform

In recent years, the development of databases of digitized contents opened new fields of research concerning the future of web-based documentation. A number of online databases of buildings and sites were released worldwide such as the *Phaidon Atlas*² or *SAH Archipedia*³. **docomomo** has been researching new documentation strategies linked to the current digital tools. The 13th **docomomo** Council Meeting (Seoul, 2014) decided that **docomomo** International would work together with the International Scientific Committee on Registers (ISC/R) in order to build a **docomomo** web-based database. The first step, prior to the Council Meeting, was to ask the Working Parties to make a selection of 100 modern buildings. Each item on the list had to be illustrated by a picture and include the basic information (name of the architects, building name, site or neighborhood, city/place and years of the design and construction completion). As it is well known, documentation has been a central concern to **docomomo** owing to the fragility of the 20th century architecture, as it is possible to see by the number of buildings threatened or already demolished. The standard method to index buildings to the **docomomo** archives is to fill in a “register fiche” with detailed information, together with a

collection of photographs and drawings. The fiches, in its two versions, — minimum and maximum fiche — synthesize data that take quite an effort to collect. However, with the 100 buildings list simple method — it would be possible to enlarge the selection promptly and then gradually research every building over time according to the Working Party availability. To sum up, the challenge faced by the MoMove curatorial team and production team⁴ was to convert all these registers composed of fiches, pictures and lists into a user-friendly website, including also some new information, such as the current condition of the buildings and precise geo-location by means of address and of GPS coordinates.

Technical aspects

Exported from a basic Excel table the program used in the creation of the **docomomo** Virtual Exhibition was based on Omeka⁵ with the support of a professional web-developer⁶.

From the user's view, while browsing in MoMove it is possible to search buildings in three different ways: by dragging the map, inserting a name on the browse field or

by clicking on the pictures and tags in the homepage. Furthermore, MoMove is provided with a tagging system that filters the buildings by: architect, city, country, type and decade. Multiple filters can be selected, refining the list of results. Each entry has the basic information regarding the name, dates, address, use, state of protection, type of building, visitor information and GPS coordinates.

From the contributor's view, all the Working Parties have a private account to enter the MoMove back office. In the back office it is possible to edit, update and expand its contributions. The *MoMove Guidelines* is a manual produced by **docomomo** International to help the Working Parties to work within the back office.

Selection criteria

In order to make cross references to the more detailed information about a building, it is possible to link a building to the local **docomomo** Working Parties websites and to upload any kind of information in order to complement the information about a building and to open new fields of research.

The **docomomo** Virtual Exhibition is intended to be a global database, not exhaustive, as is an inventory, but selective, dedicated to all the people interested in modern architecture. Its selective character will contribute to add significance to the selected examples. The selection is inexorably





The International House of Japan

Junzo Sakakura (1901-1969), Kurio MADKAWA (1905-1966), Junzo YOSHIMURA (1908-1997)
Tokyo - Japan

type Education

date of completion 1955

listing/protection Registered Tangible Cultural Property

current use Hotel convention

current condition Restored (anti-seismic system), 2008 anti-seismic

visitor information limited access

address 5-11-16 Roppongi Minato-ku 106-0031 Tokyo
gps 35° 39' 30.6" N 139° 44' 0.24" E

Submitted by H. Matsukuma, K. Watanabe, Y. Yamano in 2015, docomomo Japan



Papapanagiotou Vacation House

Aris Konstandinidis (1913-1993)
Anavyssos - Greece

type Housing

date of commission 1961

date of completion 1962

current condition Neglected, Abandoned

address 48th km on the Athens-Sounion Avenue, 190 13 Anavyssos
gps 37° 43' 28.56" N 23° 54' 26.28" E

Submitted by Panayotis Tournikidis in 2006, docomomo Greece



Salk Institute for Biological Research

Louis L. Kohn
La Jolla CA - United States of America

type Education

date of commission 15 March 1960

date of completion 1967

current use Neuroscience Research, Molecular and Cellular Biology Research

visitor information Daily individual and group tours available Monday through Friday

address 10010 N Torrey Pines Road
gps 32° 53' 14.609" N 117° 14' 43.234" W

Submitted by Liz waykus in 17 August 2012, docomomo USA

Learn More



Sydney Opera House

Jørn Utzon (1917-2008), Hall, Todd & Littlemore
Sydney - Australia

type Recreation

date of commission 1957

date of completion 1973

address Bennelong Point Sydney NSW

gps 33° 51' 25.643" S 151° 12' 53.927" E

Submitted by Scott Robertson, Louise Cox, et. al. in 2014, docomomo Australia

Learn More

Sydney Opera House on Vimeo

docomomo Australia > <http://www.docomomoaustralia.com.au>



a subjective decision taken by the **docomomo** Working Parties, it is not a matter of importance but to an interpretation of the significance, meaning and influence of certain buildings in a geographical context.

MoMove was the result of the work of 482 **docomomo** members around the world. It is important to mention that **docomomo** International has an open understanding of the Modern Movement, which admits very different architectural expressions in accordance to local interpretation.

docomomo is responsible for curating the exhibition, verifying all the new entries and making them public, as well as uploading information that can complete the entries. **docomomo** International checks the information inserted in the back-office by the **docomomo** experts, before becoming public, in terms of form and not in terms of content. In order to guarantee that trustworthy information is provided and authorship is respected, every contribution needs to have the signature of a rapporteur. The individual contributors and their Working Parties are responsible for the content they submit.

An open platform in constant evolution

Predictably, MoMove will grow with the help of **docomomo** members who can upload short films, sound tracks and images and provide links to other web resources. **docomomo** Working Parties are free to

create their own collections, to feature short texts and to update data. MoMove also works as a linking platform between all the Working Parties **docomomo** websites and museums, houses, monuments and institutions websites worldwide. As the name suggests, MoMove is an invitation to travel and visit a selection of buildings and sites, also through the recommended tours. This web-based platform and database tool serves as a mapping resource for Modern Movement architecture around the globe.

Users can interact with the exhibition by making comments, sending material to **docomomo** International or sharing buildings on the social networks such as Twitter or Facebook. In this way, users provide constant feedback, improving the exhibition.

As a consequence, the innovative character of MoMove lays on the fact it is a living platform, being in constant evolution as the database can be constantly updated and expanded by the worldwide **docomomo** community.

Conclusions

The MoMove is an effective step to accomplish the **docomomo** mission, as it was defined in the Eindhoven-Seoul Statement (2014)⁶ which updated the Eindhoven Statement (1989). **docomomo** endeavors to increase public awareness of the Modern Movement, to preserve and promote the study, interpretation and protection of its buildings, sites and neighbourhoods.

docomomo has been a leading global organization in the field of documentation and conservation, devoted to the safeguard and reuse of the Modern Movement architectural heritage. For the first time in the history of **docomomo**, all the work developed by the **docomomo** groups is being gathered in one single virtual interactive space. This web-based platform represents a major breakthrough in architectural research by applying the latest technologies to the documentation and registers of the Modern Movement heritage. As a powerful tool, user-friendly, that allows the universal use, not only by experts but also by a wide audience, MoMove is always interested in hearing feedback from all the users. Your help will be what keeps MoMove growing and evolving. ■

Ana Tostões

Chair of **docomomo** International

Zara Ferreira

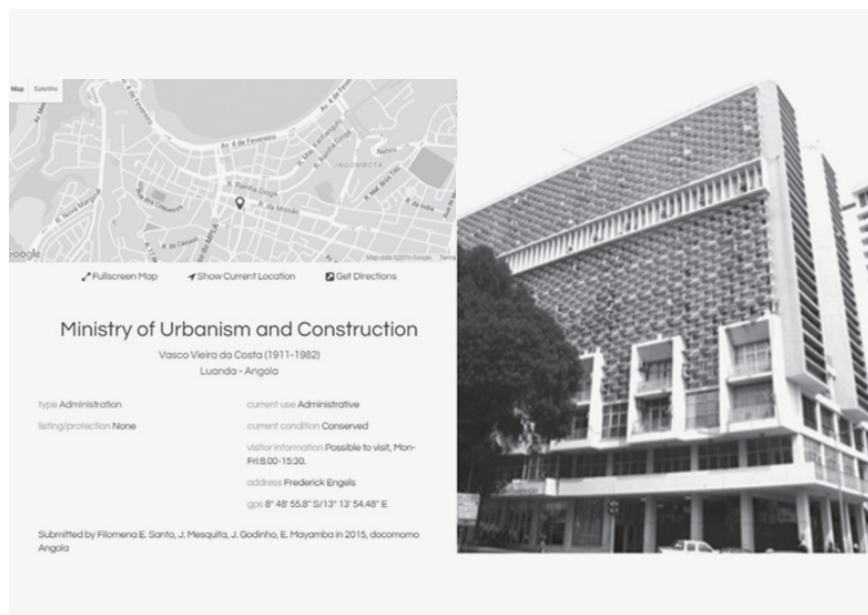
Secretary-General of **docomomo** International

Joana Gouveia Alves

Coordinator of the MoMove Production Team

Notes

- 1 More information about the contributors at <http://exhibition.docomomo.com/credits>.
- 2 Phaidon Atlas: <http://phaidonatlas.com>.
- 3 Society of Architectural Historians Archipedia: <http://sah-archipedia.org>.
- 4 Curatorial Team: Original Concept — Ana Tostões, Yoshiyuki Yamana; Curators — Ana Tostões, Joana Gouveia Alves, Zara Ferreira; Assistant curator — José Pedro Cardoso. Production Team: Coordination - Joana Gouveia Alves, José Pedro Cardoso; Web developer — Sérgio Almeida; Production — Zara Ferreira, Catarina Teles, Cristina Alonso, Leandro Arez, Beatriz Olmos; Logotype — Luís Moreira (TVM); Website background design — Beatriz Olmos.
- 5 Omeka: <http://omeka.org>. "Omeka is a free, flexible, and open source web-publishing platform for the display of library, museum, archives, and scholarly collections and exhibitions." The use of the open source platform permitted to reduce costs in comparison to developing a database from scratch. As a result of volunteer work, the use of the platform is non-commercial, free of advertisements and free of any charge. All open source software that was used is available to the public with the same license of use.
- 6 Sérgio Almeida.
- 7 Eindhoven-Seoul Statement: <http://www.docomomo.com/Eindhoven>.



The Early Years of Schokbeton

Exhibition. December 2015–24 April 2016
Zwijndrecht, The Netherlands

Schokbeton is an architectural concrete precasting system, which was developed in the early 30s in the Netherlands. The shock system was invented by two concrete workers who converted a washing machine into a “shock table” on which concrete during the casting process was “shocked” for a few minutes to consolidate the material. The founders obtained an international patent for this technology in 1935. Over the almost 50 years that the “shock” process was used by the company, it was exported from the Netherlands to 30 countries around the world, from Japan to USA.

The initial goal of founders, G. Lieve and M. Leeuwrik, was to make low-cost, custom-made artificial stone elements intended to replace natural stone in buildings. In the artificially acquired land that constitutes the majority of the Netherlands, natural stone was rarely available, and was, therefore, very expensive to import in the interwar years. The idea of “shocked” concrete was derived from the knowledge that vibration was necessary to reduce the water content of the concrete mixture while achieving good compaction and high strength with less cement. Cement was also a product that was less available in the Low Lands and difficult to obtain from neighboring countries.

The first products made on “shock tables” were sills, thresholds, window frames and lamp posts. Noted Dutch architects Van der Steur and Van Ravenstein were the first to use the Schokbeton process to produce architectural precast concrete elements for facade architecture in Rotterdam. Van Ravenstein was the architect of several animal enclosures and the watchtower of Blijdorp Zoo in Rotterdam (1938–1941). It's the first project where Schokbeton was applied at a large architectural scale (Figure 02).

Due to the ability to consistently produce a desired uniform finish and the durability of the material, architectural precast concrete, and the Schokbeton process that produced it, became popular for the post-war generation of modern architects. Because of the large building task, especially in the bombed city center of Rotterdam, the Schokbeton company grew to have three branches in the Netherlands and produced complete

façades for very large projects such as more than 1000 farm barns in the Noordoostpolder (1947–1953) area reclaimed from the sea and the immense Trade Center in Rotterdam by architect Maaskant (1953, Figure 03). In the early 60s half of the European countries had Schokbeton precasting plants producing standard products and customized building elements. Schokbeton was the favorite building material of architect Marcel Breuer, who, like the architect John M. Johansen for the US embassy in Dublin (1964, Figure 01), preferred the unique qualities of concrete at the center of a new architectural language.

Due to economic and technical developments after the 1980s, the economic competitiveness of the “shock” system was diminished by the advent of admixtures such

as plasticizers. The Schokbeton Company however, continued to produce concrete façade elements until 2005 and the name is still used in some international locations, which are still using the name to symbolize the quality architectural concrete.

The original Schokbeton plant in Zwijndrecht, constructed in the 1930s, was, until 2015, in use by the Loveld concrete company. It was in this plant the first “shock” machines were invented and the casting process perfected.

From December 2015 to March 2016 *De Vergulden Swaen*, the city museum of Zwijndrecht told the history of the firm Schokbeton, exhibiting the first “wooden shock machine”, models of buildings made with the patented “shocking” process, and drawings and photographs of international iconic projects from the 20th century. ■

Lucas van Zuijlen
docomomo Netherlands

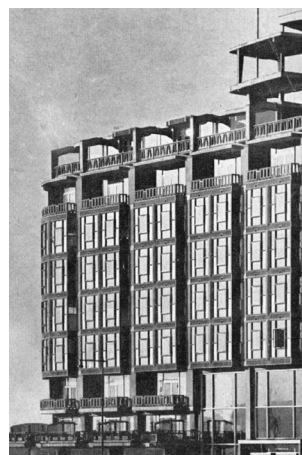
More information: www.schokbeton.info;
www.swaen.org



01 John M. Johansen, US Embassy, Dublin, Ireland, 1964.
© **docomomo** US.

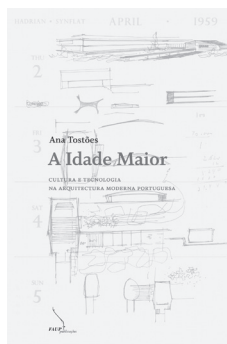


02 Van der Steur and Van Ravenstein, Blijdorp zoo, Rotterdam, Netherlands, 1938–1941. © Archives Royal Zoo Rotterdam.



03 Maaskant, Trade Center, Rotterdam, Netherlands, 1953. © City Archive of Rotterdam.

BOOK REVIEWS



Idade Maior. Cultura e Tecnologia na Arquitetura Moderna Portuguesa

Author: Ana Tostões

Publisher: FAUP

ISBN: 9789898527042

Language: Portuguese

Year: 2015

Idade Maior. Cultura e Tecnologia na Arquitetura Moderna Portuguesa [The Greater Age: Culture and Technology in Portuguese Modern Architecture] by Ana Tostões is a great work — not only because of its size — which, I believe, will remain as one of the most important moments of architectural culture and Portuguese architecture. With no room for doubts, Ana Tostões is the most important protagonist of contemporary Portuguese research into modern Portuguese architecture. In a country like Portugal, where, until not long ago and with few exceptions, there were few architects writing, and even less researching, outside the scope of design project; where, except for half a dozen studies, there were very few on the history of Portuguese architecture of the 20th century. Even rarer were the professionals developing a broad, reliable, well-grounded and well-researched narrative on architectural production; and where such studies came primarily from fields other than architecture. It is important to highlight the extraordinary dimension of the author's work as an architect-historian, not only because of being a precursor, but because it is consistent, persistent and fruitful in the way she has progressed since completing her Master's degree in History of Art at the *Universidade Nova de Lisboa*, in 1995. Two years later she published *Arquitetura Moderna Portuguesa dos anos 50. Os Verdes Anos ou o Movimento Moderno em Portugal* [Modern Portuguese architecture of the 50s, the green years or the Modern Movement in Portugal], which is now a classic reference in the historiography of Portuguese architecture. Not to mention the many initiatives and projects

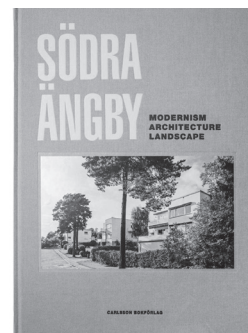
in which she has been involved ever since. In short, with regard to the place that Ana Tostões occupies in the 20th century architectural history in Portugal, I must just say the following: there is a before and an after. In this sense, with *Idade Maior*, a cycle is closed and another one is opened. A cycle is closed because this work, the result of the author's doctoral thesis at *Instituto Superior Técnico* in 2003, supervised by Professors Nuno Portas and António Canha Piedade, keeps the “goal of studying Modern Movement architecture in Portugal”, covering now not only the key moment of “Modern Portuguese architecture of the 50s”, but also entering in the 60s, as well as in the other key moment that is “the first modernist experiments of the 1930s”. She “focuses on the relationship between form and construction”, or rather, focuses much of the research in materiality and construction systems, something so unusual in Portuguese historiography, as indispensable as it is for a full understanding of architectural development.

It is not surprising that Professor José Augusto França, in its preface to this book, states that it “brings to the understanding of the historical discourse of the national architecture of the 20th century an essential contribution in information and reflection”. And being so, for the first time we witness the implementation of a *Grand Récit* of 632 pages about Portuguese modern architecture of much of the 20th century which is crucial to be noted as being unique among us and, not least, by being conducted at a very difficult time in which the comfort of fragmentation and deconstruction is privileged over the ambition of great syntheses. So with this work is also opened a new cycle because, as a first major synthesis, it will serve as a central reference for study and future investigations, both from the perspective of developing larger views, or perhaps to contradict it. One way or the other, or both, *Idade Maior* runs the positive risk of confirming itself as a unique piece of architectural history of the 20th century in Portugal. Again, I believe that there will be, a before and an after it.

It is also beautiful, both in its content, of words and images, and it is carefully designed, to which we have become accustomed to from the editor of the Architecture Faculty of the University of Porto.

João Belo Rodeia

docomomo international



Södra Ängby - Modernism, Architecture, Landscape

Edited by Thorbjörn Andersson, Sören Johansson, Paul Källenius, Anders Lindunger

Publisher: Carlsson Bokförlag

ISBN: 978 91 7331 737 5

Language: English

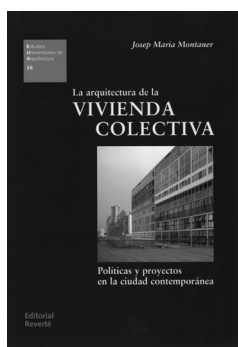
Year: 2015

In the summer of 1930 the so-called *Stockholm Exhibition* burst onto the scene. The exhibition was a huge success in terms of both its form and its content, and attracted as many as four million visitors. In Sweden the event marked the breakthrough of modernist architecture. It was inspired by European precedents, with the Bauhaus School in Dessau serving as a kind of ideological center and the work of architects like Walter Gropius and Le Corbusier leading the way. In Sweden these ideas were given a distinctive regional interpretation that is sometimes known as Nordic Functionalism. The functionalist breakthrough happened in the midst of a period of intense development, with new garden cities springing up around Stockholm's periphery. One of these, and in fact the last of them, was Södra Ängby. The community was located directly west of Stockholm, and built between 1934 and 1940. Södra Ängby is a suburban development of over five hundred single-family homes strewn across two hills on the north shore of Lake Mälaren, one of the largest collections in Europe of single-family homes in modernist style. It quickly earned the nickname of the White City.

This book is about Södra Ängby — about the ideas that developed among Stockholm's urban planners, how international precedents from places like France and Germany influenced them, who the architects were that designed the houses, how they were built, where the first residents came from, and how we can preserve this national cultural heritage site for future generations. But Södra Ängby has even more to tell us. It captures

the emergence of a new, modern society built on new values of democracy, progress, public health, and community. Södra Ängby became a reflection of the new Sweden that was being born, the political push to construct a “home for the people,” and of the Swedish model of compromise between capitalism and socialism that would be studied internationally as “the Middle Way.” It was a time when Sweden was the most modern country in the world.

From the Publisher.



La Arquitectura de la Vivienda Colectiva

Author: Josep Maria Montaner
 Publisher: Editorial Reverte
 ISBN: 978 84 291 2126 1
 Language: Spanish
 Year: 2015

This book presents a story that had not yet been written with a broad and interpretive vision. This history is exposed from a contemporary perspective addressing the reality complexity, describing experiences that are model examples of housing policy and architectural typology. The case studies are interpreted not only on its original time, but also in its later use. Emphasis is placed on cases that have focused on community and urban issues.

In the first part of the book it is exposed the long tradition that have began with the *Existenzminimum* experiments, with the Viennese *Hofe* and the German *Siedlungen*, followed by the British new towns and the French grands *ensembles*.

The second part explains the answers to the crisis on modern urbanism and functionalist housing, with the alternatives offered by the organicism, by participatory processes, the typological criticism and the theory and practice of media.

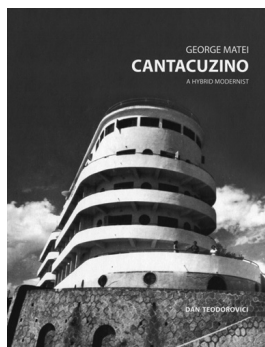
The third part deals with contemporary systems: the organization in plan, modular combination systems, urban integration,

neighborhood development and the superposition of layers.

Finally, the fourth part discusses alternatives to the dominant systems: rehabilitation, environmental architecture, forecasting the periphery, the redevelopment of marginal neighborhoods and of responses to catastrophe situations.

To give a broader view of the above, the conventional Eurocentrism and the exclusive presentation of works carried out in developed countries was renounced. Therefore, the book includes a numerous experiments carried out in developing countries. Also, it is not only presented conventional examples of new plan but also rehabilitation and recycling, sustainable architecture and emergency housing are studied.

Translated from the Publisher.



George Matei Cantacuzino: A Hybrid Modernist

Author: Dan Teodorovici
 Publisher: Ernst Wasmuth Verlag Tubingen
 ISBN: 978 3 8030 0767 4
 Language: English
 Year: 2014

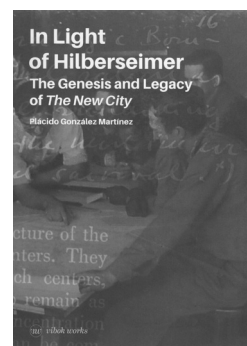
The Romanian cosmopolitan George Matei Cantacuzino (1899–1960) is one of the least known polymaths of the 20th century. In view of that age of extremes, both his *classical attitude*, which links modernism to tradition and aesthetics to ethics, and his intellectual integrity are remarkable.

He was born in Vienna to aristocratic parentes, and was educated in Switzerland, Bucharest and Paris. In Romania he became the unchallenged integrative figure of the moderate modernism; he still is the most prolific architectural theorist of that country. He was also professor of architectural history and theory in Bucharest, painter and curator, the first Romanian correspondent of *L'Architecture d'Aujourd'hui*, honorary citizen of New York, and much more. With his liberal political attitude being disapproved of by

both fascists and communists, he experiences imprisonment and social exclusion and ultimately an untimely death.

Offering a journey through Cantacuzino's *momentos* life and work, this study tries to place it into a wide architectural, cultural, economic and political context. It also seeks to reveal the cornerstones of his *classical attitude* and to discern the “the springs which feed the river of his thought” — from Vitruvius via Palladio and Schinkel to Loos and Perret, from Wolfllin via Wittkower to Gombrich, from Plotinus via Bergson to Camus, from Montaigne via Goethe to Rilke, Valéry and T.S. Eliot.

From the Publisher.



In Light of Hilberseimer. The Genesis and Legacy of the New City

Author: Plácido González Martínez
 Publisher: Vibok Works
 ISBN: 978 84 939058 6 6
 Language: English
 Year: 2015

With clear and elegant writing, González Martínez unravels an important paradox in this book: the unexpected emotional intensity hidden within this figure who was commonly described as cold, dull and stubborn; his tragic love story with Otti Berger, a student he met in Bauhaus de Dessau; his close relationship with students at the Illinois Institute of Technology in Chicago (IIT), who suffered from the daunting arrogance of a certain Mies van der Rohe... In short, this book reveals the profound human dimension behind the leader of urban and architectural rationalism in the 20th century.

From the Publisher.



Irmãos Roberto, Arquitetos

Author: Luiz Felipe Machado
Coelho de Souza
Publisher: Rio Books
ISBN: 9788561556327
Language: Portuguese
Year: 2014

One of the biggest gaps in Brazilian modern historiography is the absence of a profound and exclusive architecture study on the trajectory of the Roberto brothers' office and its importance for 20th century architecture. The architect brothers Marcelo, Milton and Mauricio associated themselves and together, over the decades from 1930 to 1960, at the office called MMM Roberto, they brought forth a rationalist architecture which became a reference in quality for all the young Brazilians architects of the that era. Marcelo, the oldest one who graduated in 1930, joined with his brother Milton, the middle one, in the competition for the new head office of the Brazilian Press Association, ABI, in 1935. They won the competition with an unusual corner building that had its two façades covered with vertical *brises-soleil*. A few years later, Mauricio, the youngest brother, joined them and the new office was created. The exciting feeling in 1939 caused by its opening went beyond Brazil's borders. In December of the following year, the North American magazine *Architectural Record* published articles about the then newly opened building in Rio de Janeiro. ABI was praised for its fixed sun-baffles, which give the building's exterior its form and ornament, had never before been used in tall buildings. The projects of MMM Roberto were published in national and international architecture magazines of the decades between 1940 and 1960; even appearing in specialist magazines and mentioned with great fanfare as a part of Brazilian Modern Movement architecture. However, MMM Roberto was never covered in a comprehensive book about the firm's projects.

Authored by the architect and professor, Luiz Felipe Machado Coelho de Souza, the book *Irmãos Roberto, Arquitetos* was a result of his thesis defended at the University of Paris

I, Panthéon-Sorbonne. In it, the author identifies the creativity and singularity of the brothers and sought to contextualize it within the social and cultural environment of the Rio de Janeiro of the mid-20th century, which gave birth to a charming rationalist architecture, and to other cultural phenomena, such as the *Bossa Nova* in music. The book also analyses the trajectory of each of the Roberto brothers inside the office and how the singularity of each one of them was reflected in the final production of the office.

Outlining a panorama of the production of the office between 1935 and 1996, it is clear the transformations of Brazilian architecture at the time. The first project built by the partnership of the brothers, the ABI, was the first tall building built in Brazil that has followed the rational functionalism aesthetic of the 20th century. Its conception and construction predates the edifice of the Ministry of Education and Health, the collective work by the leading figures of the first generation of modern Brazilian architects — Lucio Costa, Oscar Niemeyer, Afonso Eduardo Reidy, Jorge Moreira, Carlos Leão and Ernani Vasconcellos —, and which was consecrated by historiography as the inaugural symbol of the Brazilian Modern Movement, relegating the ABI building to a secondary role.

Perhaps, the explanation of this phenomenon is found in the trajectory of the office MMM Roberto which produced a fairly autonomous work in parallel with the legacy of the architect Oscar Niemeyer, the almost hegemonic influencer of Brazilian architecture at that time.

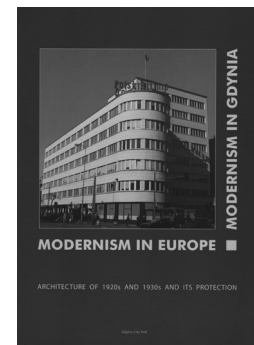
The main platform for disseminating Brazilian Modern Movement architecture were the widely publicized public works. In contrast, the MMM Roberto office had as its main customer the private sector, producing spaces that were built in dialogue with society's desire for the modern Rio and Brazil of the decades from 1940 to 1970. In the housing projects the brothers designed with high spatial and constructive quality, as well as commercial profitability.

Roberto's workmanship is known for its great contrivance. Designing all elements of the building, making the most of new techniques and engaged in control of its construction sites, the Roberto brothers already said in their first project: "In ABI, there was not a screw that had not been designed by us". In addition, it was an architecture that provided a rich dialogue with public space. Subverting existing regulations that prohibited the free pillars of modern architectural design, they projected a series of institutional and commercial buildings in which elevators and stairs gave access directly onto the street, and the city floor of Rio de Janeiro, in its traditional mosaic of white and black stones, so

that people entered into the building via the hall of elevators. The façades were objects of a constant volumetric and compositional experimentation, in which the sun protection of *brise soleil* had a key role that took on varied solutions designed to meet the uniqueness of each project. Their residential projects offers a constant discussion about modern housing, especially in the use of duplex apartments, in terms of constructive rationalization, and the spatial quality qualification of housing. They were open to the influences of Le Corbusier's rationalism to Wright's organic nature, even though without ignoring several good projects of compositional from traditional scholarship. For all of this, this book is an excellent opportunity to reassess the role that brothers Roberto had in the dissemination of modern Brazilian architecture.

José Pessôa

docomomo Brasil



Modernism in Europe. Modernism in Gdynia. Architecture of the 1920s and 1930s and its Protection

Edited by Maria Jolanta Sołtysik
and Robert Hirsch
Publisher: The City of Gdynia
ISBN: 978-83-907114-4-7
Language: English
Year: 2009

The book *Modernism in Europe. Modernism in Gdynia. Architecture of the 1920s and 1930s and its Protection* is a result of the international conference on Modern Movement architecture held in Gdynia in 2007. The conference has inaugurated the series *Modernism in Europe. Modernism in Gdynia* which, since then, has gained significant international importance. The concept of the event was to discuss the current state of protection of pre-war European built heritage, examining both the general approach to, and methodology of, preservation, as well as presenting practical examples of completed heritage conservation

projects. The success of the first conference has resulted not only in the rapid growth of interest, but also has led to the organization of three more iterations. This year will bring the fifth of the series, titled *20th Century Architecture — Preservation — Conservation*.

Undoubtedly, the choice of Gdynia as the place of the inaugural conference was not random. This Polish city seems to be a perfect location for such activities and studies, as it is the only Modern Movement creation of that scale in Poland. Its homogeneous and well-thought-out architectural concept was designed mainly in the 1920s and 1930s and is still clearly visible today, the Polish “White City” is preserved almost in its original form.

The book, documenting this prominent event, is as important as the conference itself. Although it does not aspire to be a monograph, it does present a vast spectrum of information about work carried out in various European cities. The material has been split into two parts, first of which serves as a presentation of icons and models of modernist architecture from the period between the World Wars, while the second part deals both with theoretical and practical issues connected with the preservation of 20th century heritage. Despite noticeable differences in the authors' views and opinions, the book clearly stresses two issues: the different character of Modern Movement architecture compared with historical monuments, giving rise to the inability to use the same methodology of conservation in both cases, and the unquestionable need of creating a separate and coherent procedure when dealing with 20th century heritage. Authors of the thoughtfully illustrated articles included in the book document individual problems in a detailed manner; the separate issues are connected with respective buildings, the relationships between ideas and forms of all the European flavors of Modern Movement heritage are thoroughly explored.

Although the need to create new conservation methodology for modern architecture in Poland is still urgent, the situation looks to be a lot better nearly a decade after the first *Modernism in Europe. Modernism in Gdynia* conference. The book *Modernism in Europe. Modernism in Gdynia. Architecture of the 1920s and 1930s and its Protection* is still relevant as a document of the former state of affairs and also as a reminder that, although a great deal of work has been done since 2007, several questions about Modern Movement architecture's future still have to be answered.

Piotr Tomaszewski

docomomo International Collaborator



En el Sítio Roberto Burle Marx

Author: Patricio Vélaz

Publisher: Libros del Vórtice

ISBN: 978-84-617-3314-9

Language: Spanish, Portuguese and English

Year: 2015

En el Sítio Roberto Burle Marx is a descriptive essay about the place where the famous landscape designer had his gardening and landscaping laboratory. Eighteen photographs in black and white, twenty two in color, and eight pages of text, describe the different environments and most characteristic elements, whilst, at the same time, highlighting the importance of the *Sítio* in the artist's life and in the experimental process that provided new concepts on, and shapes to, the modern Brazilian garden.

Translated from the Publisher.



Reconstruire La France. L'Aventure du Béton Assemblé. 1940-1955

Author: Yvan Delemontey

Publisher: Editions de la Villette

ISBN: 978-2915456882

Language: French

Year: 2015

The reader is invited on a journey through the emergent building industry and the resulting architecture. He is provided with a reasoned inventory of a multitude of inventions,

improved from one building site to another, contributing to the accelerated modernisation of a sector deemed backward in a time of repairing the damages of the war. The urgency and the challenge that the recovery of the country represents impose the implementation of innovative operational processes, all of this led by the Government. In this context, the explosive growth of prefabrication paves the way for innovative technical performances and formal achievements around a leading material, the concrete.

Even if it doesn't summarize itself the building industrialization policy, prefabrication is the result of an unprecedented technical adventure, an adventure defined by the wealth of new proceedings and by the remarkable inventiveness of the concept that testifies the richness and the vitality of the French constructive culture back then.

In this effervescence where most of the players think about the procedures, manufacture and construction, the architect, which sees his role redefined, the engineer, the building contractor, the technician and the worker, experience an unlimited fascination before the process of fabrication and assembly, the movement of cranes, the back and forth of trucks, disassembly and reassembly of the formwork, the pace of the molding. Nevertheless, beyond the reeling aroused by this “mechanical ballet”, some architects are worried about the possible excess of an absolute rationalization.

Translated from the Publisher.



El Paris de Le Corbusier

Author: José Ramón Alonso Pereira

Publisher: Editorial Reverté

ISBN: 978 84 291 2098 1

Language: Spanish

Year: 2015

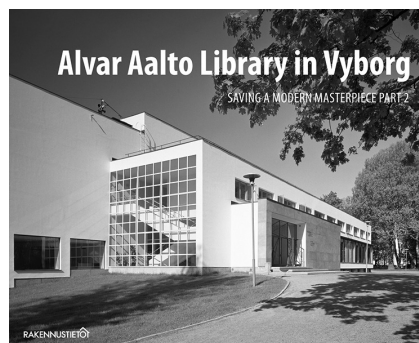
El Paris de Le Corbusier analyzes the dual relationships between the city and the architect: the dialectic between the real city — Paris, where he lived — and the ideal city — the abstract Paris that he was projecting. *El Paris*

de Le Corbusier tries to confront both worlds to understand them better. Paris is an opportunity to understand Le Corbusier and Le Corbusier is the occasion to study Paris. None of the factors wants to take precedence over the other.

Le Corbusier embodied the dynamics of the 20th century in Paris. It was there that he lived most of his life: where he thought, where he wrote, where he designed. The city of Le Corbusier was both place of reality and utopia. His proposals for *La Ville Contemporaine* and *Ville Radieuse* are both a prophetic gesture and a poetic image.

The intersection between his ideals and the reality of Paris is presented in this book through a rich and sequential speech — Édouard, Jeanneret and Le Corbusier: the discovery of Paris by Édouard, the dialectic that Paris, with its provocative energies, established with Jeanneret, and the proposals for Paris developed by Le Corbusier, making them a poetic journey and a vital encounter.

Translated from the Publisher.



**Alvar Aalto Library in Vyborg:
Saving a Modern Masterpiece,
Part 2**

Edited by Eric Adlercreutz, Maija Kairamo
and Tapani Mustonen

Publisher: Rakennustieto Oy

ISBN: 978 952 267 101 1

Language: English

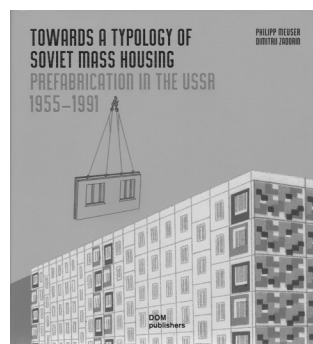
Year: 2015

On its completion in 1935, Alvar Aalto's library in Vyborg was regarded as one of the most significant functionalist buildings of its time. The restoration of the library, which had been in a state of neglect for a long time, began in 1994 and was completed in 2013. The restoration work has since received several awards for the exceptionally high-quality result and the laudable international cooperation.

Alvar Aalto Library in Vyborg Saving a Modern Masterpiece, Part 2 takes off from where the previous book ended and presents in detail,

through texts, photos and drawings, the individual renovation projects that were completed in 2010–2013: the lecture hall, the lending and reading halls, the children's library, the main entrance and lobby, the basement floors, the book storage and technical systems as well as the external walls and roofs. The book's viewpoint is very much set in the present, in presenting the recently restored library, its pure white surface, the soft grey soapstone on the main entrance façade, and the carefully finished details of the windows, doors and staircases. The photos taken specially for the book beautifully show Aalto's masterpiece in all its new splendor.

From the Publisher.



**Towards a Typology of Soviet
Mass Housing: prefabrication
in the USSR 1955–1991**

Authors: Philipp Meuser
and Dimitru Zadorin

Publisher: DOM publishers

ISBN: 978 3 86922 446 6

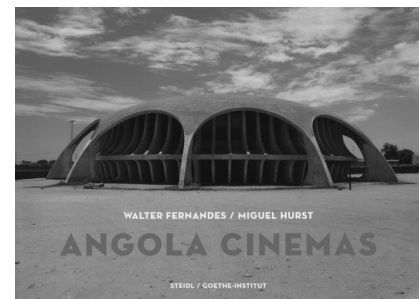
Language: English

Year: 2015

Soviet mass housing is a contradictory but unique phenomenon. It is usually blamed for creating the most monotonous built environment in the history of mankind, thus constituting a symbol of individual suppression and dejection. The construction programme launched in the post-Stalinist era was the largest undertaken in modern architectural history worldwide. At the same time, Soviet mass housing fulfilled a colossal social role, providing tens of millions of families with their own apartments. It shaped the culture and everyday life of nearly all Soviet citizens. Yet, due to the very scale of construction, it managed to evolve into a complex world denoting an abundance of myths and secrets, achievements and failures. Soviet mass housing is indisputably intriguing, but nevertheless it is still neglected as a theme of research.

Therefore, the time is ripe for a critical appraisal of this ambitious project. The authors aim to identify the most significant mass housing series designed and engineered from Kaliningrad to Vladivostok.

From the Publisher.



**Angola Cinemas.
A Fiction of Freedom**

Authors: Walter Fernandes
and Miguel Hurst

Edited by Christiane Schulte, Gabriele
Stiller-Kern and Miguel Hurst.

Publisher: Steidl / Goethe-Institut

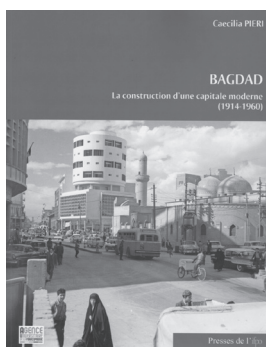
ISBN: 978-3-86930-794-7

Languages: German, Portuguese
and English

Year: 2015

Angola Cinema honors the unique, fantastic and unknown architecture of movie theaters in Angola, built in the decades before the end of Portuguese colonial rule in 1975. Initially designed as traditional closed spaces, open-air cinemas with terrace bars became the order of the day, better suited as they were to a tropical climate. The arrival of these cinemas in the 1960s brought atmosphere and elegance to the experience of going to the movies; but these urban cathedrals were also, importantly, a place where social barriers dissolved and where liberation from colonialism was possible. Walter Fernandes (born 1979) photographs offer not only an examination of the architectural history of these buildings, but also an important document of urban organization in the 20th century, as well as the changing mentalities of a society living with the prospect of its independence.

From the Publisher.



BAGDAD: La Construction d'une Capitale Moderne (1914-1960)

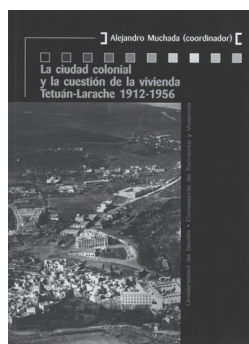
Author: Caecilia Pieri
 Publisher: Presses de l'Ifpo
 ISBN: 978-2-35159-399-8
 Language: French
 Year: 2015

With the Orientalist imagery casting Baghdad as a vanished mirage, that of wars tending to transform it into a foil, and a regime which functioned for thirty years as a screen between Iraq and the rest of the world, how can a clear perception of the modern city of Baghdad be achieved now?

This book identifies the main stages of transformation of Baghdad's urban and architectural landscape between the First World War and the establishment of the first Iraqi Republic. It assesses what is at stake in the building of a modern capital. It envisions the interaction between architectural forms and urban practices as a paradigm of a complex identity and intertwines various approaches: studying the historical and political context, unravelling shaping patterns and processes, and analyzing the societal modernization.

Its largely unpublished iconography is rich with more than 800 illustrations: old and recent photographs, drawings, plans, maps, autograph documents, archives.

From the Publisher.

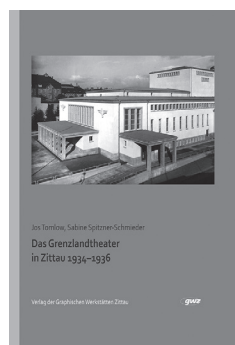


La ciudad colonial y la cuestión de la vivienda. Tetuán-Larache 1912-1956

Author: Alejandro Muchada
 Publisher: Universidad de Sevilla —
 Consejería de Fomento y Vivienda
 ISBN: 978-84-8095-573-7
 Language: Spanish
 Year: 2015

This collective work about the urban transformation of the cities of Tetouan and Larache during the colonial period (1912-1956), contains an interdisciplinary approach about the origin of the modern city in northern Morocco and about the issue of habitat, especially on the urban peripheries, and public housing production based on an analysis of unpublished documentary sources. A diverse group of professionals and Spanish-Moroccan researchers at the <www.tetouanmodernchallenge.com> initiative has reached a complex and critical view of this unknown period for Spanish and Moroccan historiography.

Translated from the Publisher



Das Grenzlandtheater in Zittau 1934-1936

Authors: Jos Tomlow
 and Sabine Spitzner-Schmieder
 Publisher: Graphische Werkstätten Zittau
 ISBN: 978 3 929744 96 5
 Language: German
 Year: 2015

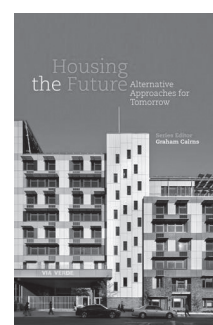
The construction of Grenzlandtheater was caused by the fire of the previous bourgeois theater in 1932. Of the three theaters in the service of National Socialism it was the highest among them to achieve active participation by the political parties in the years from 1934 to 1936 (the Reichsgauleitung, the propaganda and interior ministries, and the broadcasting corporations).

It was considered to be an exemplar implementation of the idea of the Thing-Place.

The Dresden architect Alfred Hopp and Prof. Dr. Hermann Alker from Karlsruhe, and the builder OB Zwingenberger followed modern conceptions even against the intrigue of political adversaries. The architecture shows a careful handling of building science thanks to high-level specialist advice.

The book details the planning activities for a theater that was a building type of the highest relevance to ideological Nazism. Sociologically, a more revealing insight into everyday Nazism is offered.

Translated from the Publisher.



Housing the Future — Alternative Approaches for Tomorrow

Edited by Graham Potts
 and Rachel Isaac-Menard
 Publisher: Green Frigate Books
 ISBN: 978 0 9933706 0 1
 Language: English
 Year: 2015

Housing the Future — Alternative Approaches for Tomorrow offers three perspectives on the problems of housing today with an eye on tomorrow. It brings together world-leading practising architects with academics from even countries and teams of international students. World leaders in the field of residential design such as UN Habitat Award winner Avi Friedman present built projects whose design criteria and aims they lay out in text. Academics from the UK, the USA, Spain, Germany and elsewhere follow these project descriptions with extended essays from a more theoretical perspective but remain focused on the realities of practice. Finally, ideas on current housing problems from the next generation of designers are brought together in student projects from Europe and North America. With an introduction by Dr. Graham Cairns, this book highlights the practice of residential design internationally at a time when affordable housing provision is seen as a critical issue by designers, planners and policy makers alike.

From the Publisher.