JOELHO

#09

REUSE OF MODERNIST BUILDINGS: PEDAGOGY AND PROFESSION

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REUSE OF MODERNIST BUILDING V

CONTENTS

Editors' note

Gonçalo Canto Moniz, Jorge Figueira

Joelho 9 integrates a set of events organized in the frame of the European Erasmus Project, 'Reuse of Modernist Buildings' (RMB), where scholars and students develop new pedagogical and hands on methodologies to take the challenge of adapting the huge building stock produced in the 20th century.

The educational research on the Reuse of Modernist Buildings will support the design of a new curriculum to train architects on the methods and tools on how to transform buildings and urban areas that were planned according to the modern concepts. To frame the pedagogical approach, Joelho presents and discusses the professional production that offers the best practices on RMB.

The call for full papers opened Joelho to international contributions on the topic that give interesting scenarios on projects and pedagogies in different regions. These contributions were balanced with invited authors that presented their well-known proposals. This was only possible, due to the collaboration of several reviewers that supported the selection of the papers.

Special thanks to Michel Melenhorst, the coordinator of the RMB project, and Paulo Providência our collegue, for the coordination of this outstanding issue, that in not only a theoretical reflection but also an operative tool.

Joelho 9 also presents the 2nd RMB Workshop "Coimbra Modern City today: from functional buildings to community spaces" that joined students and teachers from five European schools in Coimbra during one week, April 2018, in the Santa-Clara-a-Nova Convent

The Reuse of Modernist Buildings dialogues with the artistic approach of Miguel Palma, an inspiring reuse of images of modernist objects (cars, airplanes, boats, bridges) in provoking collages.

Illustration of Miguel Palma.

Michel Melenhorst (OWL) /
Paulo Providência (DARQ, CES, UC) /
Gonçalo Canto Moniz (DARQ, CES, UC)

Reuse of Modernist Buildings: pedagogy and profession

As the story goes, the once-famous Dutch architect Piet Blom liked to take an evening stroll around the sites of buildings of his under construction to critically reflect on the day's results. If dissatisfied with some beam, column or other part, he would not hesitate to write an instruction in oil crayon on the offending component for the workers, such as 'perhaps better not' (a euphemism for remove!). For Blom, the architect who had coined the term of structuralism, to design was to solve a puzzle, in which all the pieces should fit regardless of style. Later on in his career especially, the decisions he took had nothing to do with fashion; he crafted, planed and sliced on his own half-finished buildings. Whether new or existing, finished or unfinished, it made no difference to him.

When designing new constructions, architects tend to blithely go their own way with regard to style. When working as a designer with building stock, however, you have to take a stance on dealing with the style of your predecessor(s). For a very long time, the correct 'stock attitude' was shaped by methodologies developed in the late 19th century. Until recently, within the German-speaking context, the debate was strongly coloured by opinions developed by the art historian Georg Dehio (don't restore,

preserve!) and interpretations of the standpoints of the Austrian Alois Riegl, who was also an art historian, and his pleas for a cautious, respectful interaction with different style epochs without favouring one over the others. This was in fact all very modernist, honest and clear, and provided a counterbalance to the 19th-century eclecticism. Similar discourses and attitudes dating from this time can be found in most European countries. Two well-known representatives of this school are Heinz Döllgast (restoration of the Alte Pinakothek in Munich) and Carlo Scarpa.

The huge number of interventions and the increasing importance of reusing buildings together with the changing nature of the type of interventions in building stock call for a broader repertoire and perhaps more effective approaches, particularly when working with modernist buildings from the post WW2 era. Architects need a multiform repertoire of tools and methods to deal with themes such as substance, originality, honesty, and identity.

Of course, many architects have already adopted a critical position towards overly reverent interaction in handling our building stock, especially when the building to be transformed falls under the majority category of 'everyday modernism'. Jacques Herzog and Pierre de

Meuron, for instance, refer to Eugène Viollet-le-Duc, representing the opposite camp of 19th-century thinkers on preservation. They describe their method as 'non-dialectic' with regard to juxtaposing the new with the old, proposing 'a pinch of Asian martial arts, the Aikido strategy of using the opponent's energy to gain the upper hand' (Ursprung, 2003). In their opinion, these tactics should 'lead to something new which, ideally is twice as effective.' In his publication entitled ′Preservation is overtaking us′ (Koolhaas, Otero-Pailos, & Carver, op. 2016), Rem Koolhaas warned against too much protection and preservation. The collage technique as practised by OMA in many of its transformation projects is a powerful architectural tool for dealing with reuse.

These two examples, which could be supplemented with many more comparable attitudes, show how the obligatory beautiful-not beautiful question can be avoided in decisions on reuse, restoration or demolition of our younger building stock as well as an excessively reverent dialogue with this younger heritage, which can easily frustrate or block successful reuse.

The works of Bernard Tschumi, especially his writing and works from the 1970s, offer a more theoretical background that could support innovation in architectural tools and

methods – especially when applied to the reuse of building stock – and also play a role as a catalyst in the debate on the role and function of architecture related to reuse.

In the preface to his book Architecture and Disjunction (Tschumi, 1996), Tschumi reflects on his essays from the early 1970s until the early '90s, concluding that what retroactively binds these essays is that *'While their common starting point is today's disjunction between use, form, and social values, they argue that this condition, instead of being a pejorative one, is highly "architectural".* Architecture is 'a sometimes violent confrontation between spaces and activities'. This is of great interest to those who are constantly working on the changing relationship between the use and form of a building.

Tschumi goes on to examine the role of the architect. One conclusion drawn at the end of the 1960s concerned: 'the adaptation of space to the existing socio-economic structure'. Thirty years later, for many, this might not have changed all that much. Of course, this was, and still is not very satisfying. Tschumi, alongside many others, kept on searching to find out how architecture can function in other ways, and how to understand the issue of architectural change and the effect it might have on society and vice versa.

To do so, it is necessary to go beyond the obvious and the known, because ′Education and "the advice of experts" are means of maintaining the traditional structures, and questioning them is a necessary step towards any new approach′. One should bypass these limitations and avoid the trap of developing a new architectural language because: ′If it is doubtful that the development of a new formal language ever had an effect on the structure of society, it is clear that the destruction of the old language had.′

In his 1975 text ′Architecture and transgression′ (Tschumi, 1976), Tschumi takes a term from Georges Bataille – ′transgression′– and places it in an architectural context.

> *Transgression opens the door into what lies beyond the limits usually observed, but it maintains these limits all the same. Transgression is complementary to the profane world, exceeding its limits but not destroying it.* (Georges Bataille, *Eroticism) (Bataille & DALWOOD, 1962).*

To transgress these rules, we need to find tools to do so. According to Tschumi, there is a paradox in how architecture works. There is the experience of space. This space is real, it can be touched, we can move through it, but that can never

be at the forefront of architectural development. Then there is a concept of space. This space is in our mind, in words and drawings on paper. These are experiments in thought and form like the experimental and speculative spaces by Piranesi, Ledoux or Lebbeus Woods. Architecture misses either the 'reality or the concept'. But instead of accepting, as an alternative to the paradox, 'silence, a final nihilistic statement that would provide modern architectural history with its ultimate punchline, its self-annihilation', Tschumi, however, suggests taking 'another way around this paradox, to refute the silence the paradox seems to imply, even if this alternative proves intolerable.'

He does so in three `correspondences'.

The first correspondence is on eroticism. 'Architecture is the ultimate erotic object, because an architectural act, brought to the level of excess, is the only way to reveal both the traces of history and its own immediate experiential truth.'

In the second correspondence, he writes, *'In the paradox of architecture, the contradiction between architectural concept and sensual experience of space resolves itself at one point of tangency: the rotten point, the*

very point that taboos and culture have always rejected. This metaphorical rot is where architecture lies. Rot bridges sensory pleasure and reason.'

Tschumi illustrated his ideas on this part of transgression very convincingly in his famous Ads for Architecture (Tschumi 1975), showing a photo of Le Corbusier's Villa Savoye in a ruinous state, accompanied by the text: 'The most architectural thing about this building is the state of decay in which it is in. Architecture only survives where it negates the form that society expects of it. Where it negates itself by transgressing the limits that history has set for it.'

In the third correspondence called, 'Part Three: The Transgression', he recaptures the essentials from the first two in seven steps. Tschumi concludes that at the point where a building has collected traces over time, where it shows life and death, this is where concept and real space might join; he repeats and explains the text used in the 'Advertisement for architecture: *'it negates itself, where it transcends its paradoxical nature by negating the form that society expects of it. In other words, it is not a matter of destruction or avant-garde subversion but of transgression'*. This is even followed by concrete examples from the early seventies on how transgression can work: *'While recently the*

rules called for the rejection of ornament, today's sensibility has changed, and purity is under attack. In a similar way, while the crowded street of the turn of the century was criticised by CIAM's theories of urban fragmentation, today the ruling status of the social and conceptual mechanisms eroding urban life is already the next to be transgressed.

Whether through literal or phenomenal transgression, architecture is seen here as the momentary and sacrilegious convergence of real space and ideal space. Limits remain, for transgression does not mean the methodical destruction of any code or rule that concerns space or architecture. On the contrary, it introduces new articulations between inside and outside, between concept and experience. Very simply it means overcoming unacceptable prevalences.'

It may not be precisely how Tschumi meant it, but working in existing buildings, on-site, in participation processes, working directly on a 1.1 scale, experimenting with them to the max is working with transgression in real time. They could be opened up for new uses, including temporary use, occupation with guerrilla actions – such as Tschumi himself once practised – while constantly developing new tools and methods for transgressing the existing state of buildings. In fact, a perfect way to fuse, to merge concept

and reality, thus challenging the rules and nature of architecture and its role in society.

We need the down-to-earth 'Piet Blom Style', together with a (large) pinch of Tschumi. Exploration and experimentation in existing buildings can open up new possibilities, new qualities in architectural space, in technology, and a sustainability impossible to achieve in new constructions and with traditional tools and methods. In the great diversity of contributions to this 9th Joelho, the authors all describe, contemplate, propose, provoke and thereby transgress the limits that society, history and architecture has set for them.

Reuse of modernist buildings, chapter by chapter

This Joelho No. 9 consists of a combination of contributions from three different sources: the 2nd RMB Conference, the 2nd RMB Students' Workshop, and a Joelho 9 Call for Papers, which challenged participants to explore pedagogical or professional practices. The proposals focus on one of four themes - Tools, Methods, Interdisciplinarity and Research – all with a link to the reuse of buildings, enabling a discussion of the contributions regarding the reuse of modernist buildings.

The journal is structured around four chapters, offering the reader a clear and comprehensible journey through the texts. The 'Projects' chapter includes articles by ZUS and Corvo, both of which are linked to the keynote talks on professional practice that they gave at the 2nd RMB Conference in Coimbra. Here we have two collective ateliers working in completely different contexts – ZUS in the north of Europe, in Rotterdam, a truly modernist city; Corvo in the south, in Miranda do Corvo, a village close to Coimbra, a truly traditional city. Both are transgressing the status quo of architectural practice, either with citizen engagement processes or with design tools, as diagrams or large scale models. The third text in this chapter is a careful and critical reflection by Tilemachos Adrianopoulos on the renovation of an outstanding project – The Athens Conservatory (1959–1978) – originating from former Bauhaus student Jan Despo.

The chapter on 'Methodologies' offers a transversal approach to the reuse issue, stressing the methodology of research in and on design and reuse. Albena Yaneva conducts an almost anthropological survey on the ins and outs of OMA and the design history of the extensions of the Whitney Museum in New York, Carlos Fortuna discusses the role of the old in the new through the story of

Brasilia and Kurokava's tower, Christian Gaenshirt focuses on the fixed and changing design tools of the architect, and Dieter Leyssen´s contribution look at temporality, ´the meanwhile´ and the (re)use of buildings. These approaches are complemented by the chapter entitled 'Case Studies', in which the authors explore and describe their respective approaches in research and design through analyses of modernist urban projects: António Carvalho with Alvalade in Lisbon, Marta Peixoto on the changing positions of Brazilian modernism, and Carolina Coelho on students' use of the modernist José Falcão school in Coimbra. This chapter also includes two other types of case studies, pedagogical experiences, that show methods that architecture students can use to work with the challenges of the reuse of modernist buildings: Els de Vos describes the transnational RMB project on reuse of modernist buildings, while Anna Giovanelli shows how students work with innovative concepts for reuse in her design studio at Sapienza University in Rome.

Joelho dedicates the last chapter, 'Exhibition', to students' projects and their contributions to the themes. Within the framework of the RMB project, the 2nd Workshop took place in the abandoned Santa-Clara-a-Nova convent

to spark a dialogue with the surprising modernity of structures that were built for the everyday life of 16th-century nuns. In a 5-day workshop, the students' projects challenged the preconceived ideas of the city for its modern neighbourhoods, and proposed transgressive strategies.

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PARA

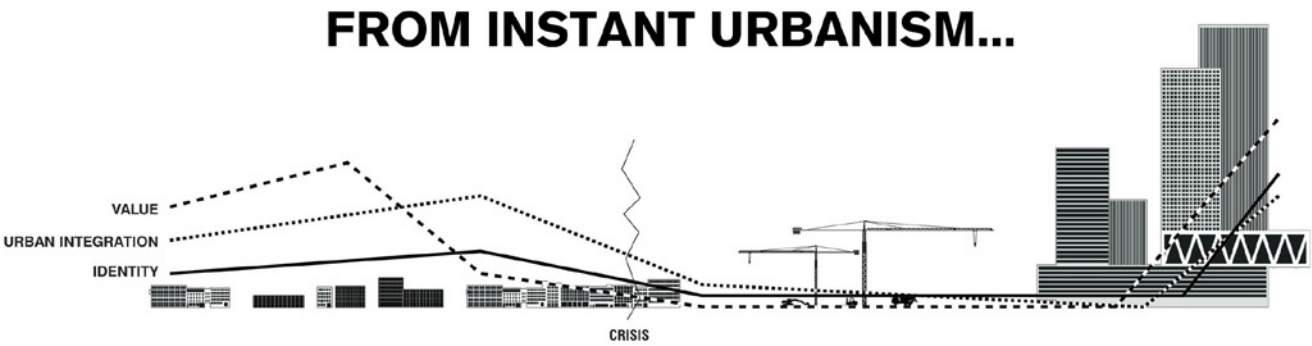
Section 1

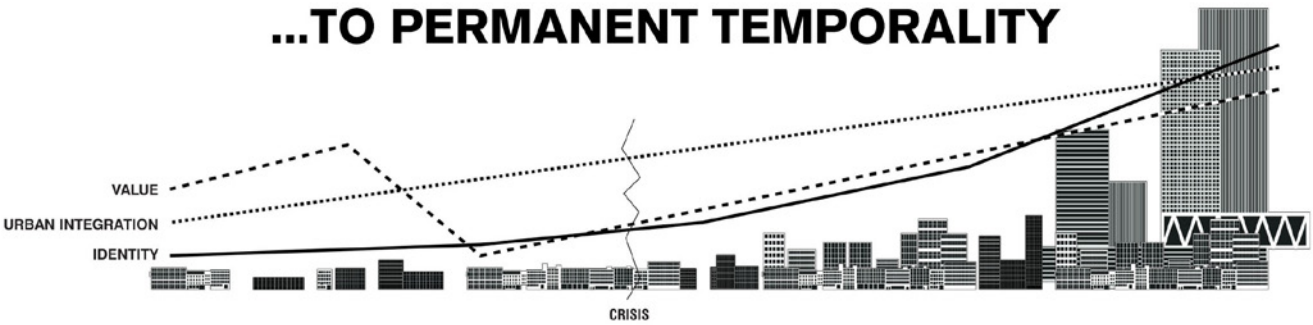
RMB projects

ZUS / Elma van Boxel / Kristian Koreman

Founding partners of ZUS
[Zones Urbaines Sensibles]

City of Permanent Temporality: incomplete & unfinished





Act one: Rotterdam is many cities 2001–2008

On July 22nd, 2001, there was the third shooting in a month. The municipality of Rotterdam declared the area around Rotterdam Centraal Station a zero-tolerance zone, installed 360º security cameras, and imposed the umpteenth ban on disreputable bars and clubs; thus, another twenty meters of boarded-up shop fronts. It was 2001; a strange year in which the rise of the right-wing populist politician Pim Fortuyn coincided with Rotterdam's celebration of cultural diversity as the Cultural Capital of Europe and the announcement that multiculturalism was a failure in the Netherlands. And finally, there was 9/11. On the Hofplein, a major traffic junction in Rotterdam's city center, these expressions of hope and hopelessness came into sharp focus. Citizens, in search of an appropriate city square, took to occupying the Hofplein roundabout to celebrate or to mourn. The administrative nervousness that arose in this confused period was repeatedly expressed in even stricter policies to keep the city and especially its streets 'clean, well maintained, and safe.' Ensuring a lively atmosphere on Rotterdam's streets was difficult enough, never mind the additional measures being deployed to systematically remove the last traces of the informal use of the public domain.

While the newly implemented policy for public space increasingly established itself under the motto 'Livable Rotterdam,' behind the scenes the city's development continued unabated. Since the eighties, Rotterdam was the mecca for investors and developers because enough space and opportunities were given for building large-scale offices and apartments. The surging capital market easily found its way into the city, which took no time in adopting the label 'Manhattan on the Maas'. In keeping with this, the Rotterdam Central District (RCD) around Centraal Station was identified as an attractive business location – a VIP area – and one ambitious plan after another was developed. Multinationals including Shell, Unilever, Nationale Nederlanden/ING, and Fortis were already established on the Weena, a broad city-center avenue. The planned arrival of the High-Speed Line (HSL) railway to connect the Randstad – a megalopolis in the Netherlands comprising its four largest Dutch cities (Amsterdam, Rotterdam, The Hague, and Utrecht) – with Paris and London, gave further impetus to these ambitions.

A third development began to emerge in the wake of this real estate speculation. With the newly developed urban areas, such as the Kop van Zuid and Stadshavens, there was a need for interesting cultural programs to inject these areas with the appropriate vibrancy. Within a few years, several cultural institutions relocated Kop van Zuid from the city center: the Fotomuseum, LantarenVenster cinema, and the Rotterdam Academy of Architecture. The already limited cultural infrastructure was thus further diluted, which did not benefit the city center's quality of life.

This paradox of frenetic control over the public sphere on the one hand and unbridled real estate speculation on the other led to

Frontispiece **From Instant Urbanism to the City of Permanent Temporality. Moving away from the conventional way of urban development allows a city to build up its identity, urban integration and (social-cultural) value gradually. This results in a more ingrained way of city making.**

an implosion of the city center's development and a cannibalistic restructuring program. The first plans for the RCD were developed behind closed doors, and when they were announced in 2006, the first signs of a lack of occupancy were already becoming apparent. In the area around the Weena and the railway, a number of office buildings stood empty because companies were lured with 'smart' structures to brain parks, post-war buildings had been abandoned since the early nineties, and the area was literally deleted from urban management plans.

This paradox was the result of the blind belief in a master plan to transform the area into a vibrant 'Glocal City District' within twenty years.

How can a city be made in a neo-liberal climate where only economic value seems to be of significance? How could we relate to this as architects and urban planners? Silently sail on the flow of capital and build for lack of occupancy? Continue to agitate from the sidelines for a change in direction? Continue entering international competitions when the assignments and opportunities were already under our noses?

In 2007, we decided to make the leap from our secure position behind our drawing and writing tables into this unruly and paradoxical situation. Without knowing what the repercussions would be, we chose to traverse the tightrope between an independent architect-urbanist practice and a heteronomous position that mixes our approach with other disciplines. Acutely aware that this could go horribly wrong, we took the risk of being dismissed as naive and perhaps opportunistic activists who, in fact, participated in gentrification. We chose the ambition of developing the city in the RCD area to effectively bring it a step further by trying to connect the world of planning to the urban situation in new ways.

Act two: First tests of transformation 2008–2010

In 2008, the first rumors began circulating about concrete plans for the area's development, including the demolition of many properties located in the RCD area, including the Schieblock: a vacant and derelict office building. Meanwhile, Lehman Brothers fell, and the problem of a lack of occupancy began penetrating political agendas. The question was whether to demolish, or whether to build and run the risk of creating more unoccupied space? The demolition plans enabled us to point out alternatives, such as moving away from instant urban design and deploying a more gradual transformation. In this period, three events opened the gates for new opportunities.

In 2008, in protest against the city's cultural impoverishment, we developed the concept Dépendance – Podium for City Culture. Since cultural institutions are often focused on their own domain, and some high-profile institutions had allowed themselves to be moved into new developments beyond the city center, there was a need for the establishment of an annex where they and many other initiatives could maintain a focal point within the city. The idea galvanized when the Rotterdam Academy of Architecture wanted to organize an exhibition.

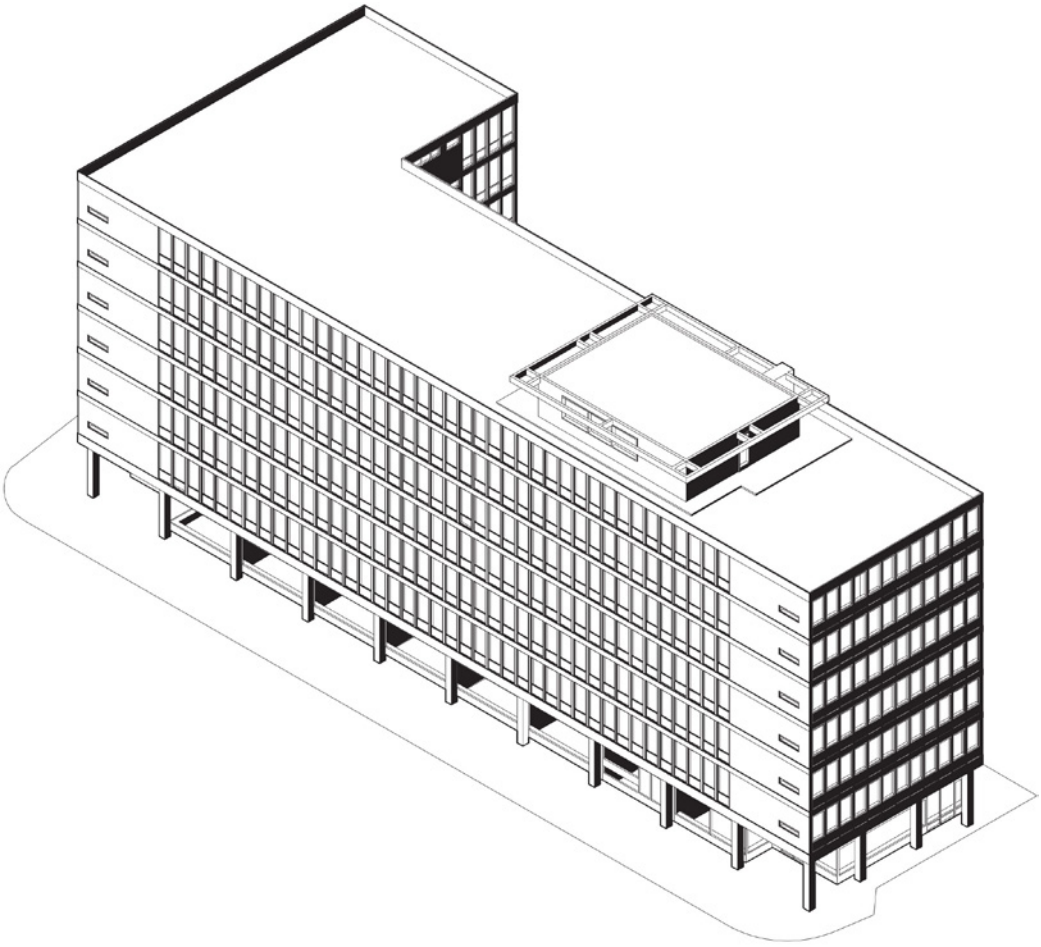


Fig. 1 The Schieblock

Fig. 2 Corner location for the future Dépendance at the Schieblock

Fig. 3 Schieblock: the Dépendance – Podium for City Culture

Fig. 4 Schieblock: the 'Dépendance'

In spring 2009, in just three weeks, the Schieblock's hitherto lifeless ground floor was converted into a cultural platform. This was the start of transforming a building already earmarked for demolition. Importantly, the event saw the first fruitful alliance between ZUS, the municipality of Rotterdam, and the building's owner, LSI.

In June 2009, we received an invitation to participate in Maakbaarheid (English: Make-ability), the main exhibition of the 4th International Architecture Biennale Rotterdam (IABR). The RCD area was our starting point and, together with the LSI, and the municipality of Rotterdam as our client, we began investigating the possibilities for better connecting the RCD to its environment. Using routing, circuits, and programmatic studies, we saw opportunities for a multi-layered linking of the area with surrounding networks. From this, the Plan des Circuits emerged, which forms the foundation for the subsequent routing network for the RCD. It was the first time that the various alternatives were discussed informally.

During this period, we met Codum, a new developer, with whom we developed an alternative business plan to revitalize the Schieblock. The financing model was built on direct and substantive involvement. Within a short time, a network of entrepreneurs filled the entire 8000 m^2 complex, occupying units from 10 to 700 m^2. The partnership that

we signed with IABR, one of the first parties committing itself and moving to Schieblock, enabled the building's rebranding as a city laboratory. Motivated by the temporary nature of the Schieblock, it was possible to experiment with new types of city making.

One building does not make a city, and a city is not made with just three stakeholders. To effectively demonstrate the gradual transformation of the RCD, it was necessary to develop a comprehensive strategy. Firstly, it required establishing a broad alliance with the municipality, proprietors, entrepreneurs, cultural institutions, and universities.

We expected a complicated process. Nevertheless, a reality check was also long overdue. The biggest challenge was developing new tools to bridge the gap between privately funded, market-driven development and a retreating government. Could we convert the idea of 'Permanent Temporality' into an actual strategy? What role would we serve: pro-activist, facilitator, or practitioner?

Act three: The area becomes the Test Site 2010–2012

During a public presentation in early 2008, new plans for the RCD were first announced by the municipality of Rotterdam. A regional vision was established, the Glocal City District, whose ambition was 'to adapt a universal place, such as a station area, according to the local milieu.' However, the urban plan that followed proved to be an instant plan without empathy for the physical and economic context. The criticism, partly fueled by the ever-deepening financial crisis, was that the plans were very far removed from the urban reality. What was missing was a development strategy in which the area can be transformed for the next thirty years. New financing structures, new alliances, and specific references were also missing. Here was an opportunity to experiment using urban curatorship to examine and reflect on the distinguishable space between towering ambitions and stubborn reality. In the fall of 2009, IABR and ZUS decided, therefore, to officially declare the RCD as Test Site Rotterdam.

The implementation of specific projects revealed that the economic engine behind three decades of flourishing urban development was beginning to falter. The most notable incident was that the entire municipal service would be moving from the Marconi Towers for a yet to be realized building – De Rotterdam – on the Kop van Zuid. But there appeared to be no plans for the 60,000 m^2 of vacated office space. During this period, the Weena's boulevard of metropolitan offices became synonymous with 'To Let' signs. The optimistically planned brain parks on the city's ring rapidly had to contend with a lack of occupancy. Was this just a symptom of the economic crisis? Slowly a new sense of reality set in. Apparently, investors and developers were not only shortsighted, but policymakers and planners were unable to anticipate that these mono-functional and large-scale real estate developments would be the new ghettos of the city. The short-term

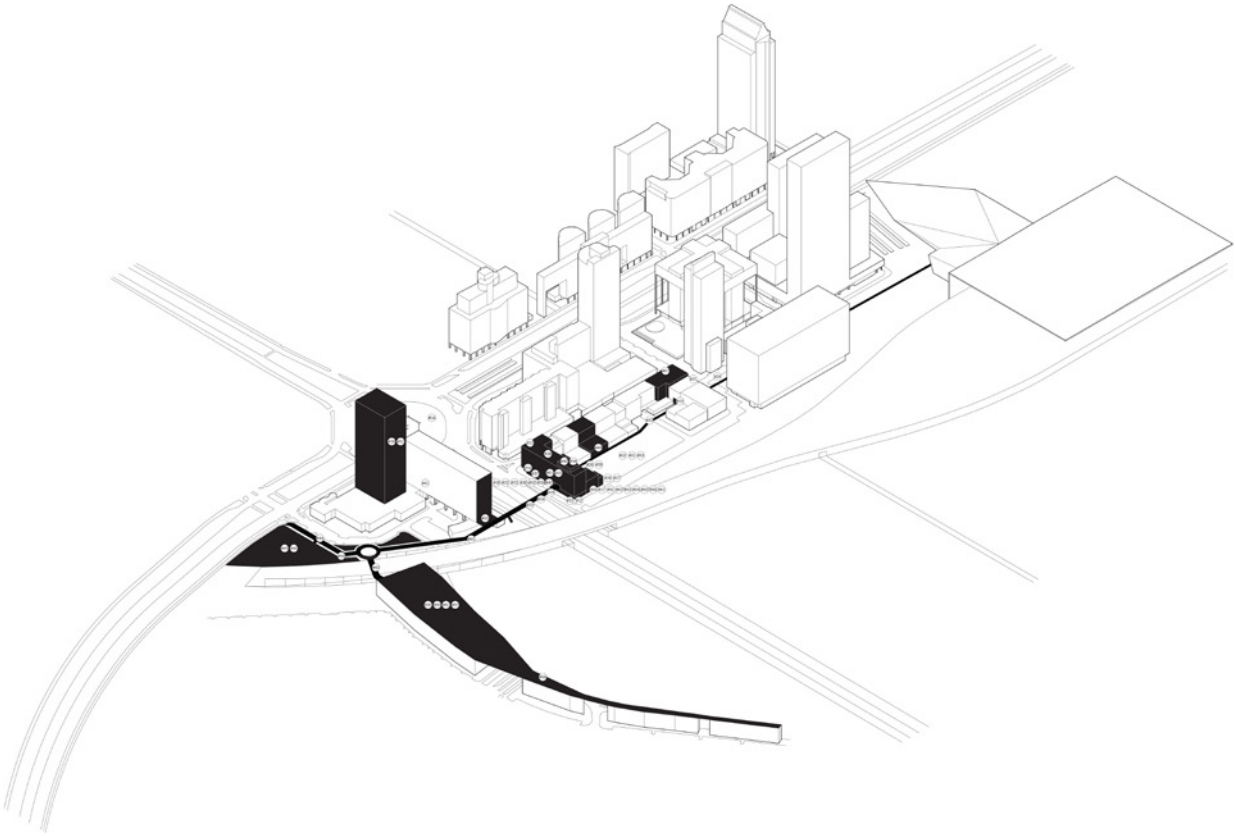
Fig. 5 Test site overview

thinking and the emphasis on economic gain created a city full of urban phantoms, and the question was whether it could be brought back to life. How could the Western-European city, faced with stagnating economic growth and an aging population, shift the agenda from new construction to transformation? How do we make a city in times of crisis and stagnation?

The RCD and surrounding areas, such as Pompenburg, were plagued by a lack of occupancy and the rear sides of buildings, but they still had prospects. There were many relatively small-scale developments such as the MiniMall, Central Post, the Creative Cube, DS 25, and the Schieblock, which were beacons for transformation in the area. The Test Site focused on the places and buildings that could provide guidance for a new development strategy. There were plenty of determined stakeholders with whom the alliance could take shape. It was about distilling what was workable in existing projects. For example, public space can develop without depending on procuring real estate. This implies researching new revenue models, alternative alliances, and spatial solutions. The research and alternative developments required a *sabbatical detour*. This is a methodology developed by the IABR in 2007 both with and for the city of São Paulo. It seeks new and different ways of connecting to the urban situation via the launching of a test site, which involves a particular period of design, planning, (international) reflection, and knowledge exchange.

The Test Site Alliance is defined through three themes: Permanent Temporality, Urban Tissue, and New Economy. These themes were informed by five strategies: Routing, Place Making, Transformation, Density, and Local Economy. In practice, it meant examining how long-term ambitions could be 'temporarily' realized in the short term through specific projects and alliances. Thus, one of the projects, the Luchtsingel – a slow-traffic connection from RCD to Pompenburg – was a direct translation of the 'Mixone' idea, part of an existing urban plan by Maxwan Architects + Urbanists. Seen strategically, the big difference was creating a shared commitment ahead of the real estate development instead of treating is as a tailpiece. By using crowdfunding as a financing model, direct results can be achieved. This proactive project opened the door for future projects along the new route formed by the Luchtsingel. A building's rear becomes the facade, vacancy is reallocated, and passive actors are activated.

The Test Site is simultaneously a city that exhibits itself and an exhibition as city making, showing how a city works through best practices. In doing so, one can directly test whether an individual strategy makes sense, without questioning the entire planning process. Research by designers and universities and the testing of programming for the area led to alternatives and reflection. Moreover, the direct involvement of policy makers, planners, and citizens increase: all parties gradually see more opportunities to bring the area and its economy to life slowly.



#01 Unit 303
#02 Discoforum
#04 Hofpodium
#10 De dépendance 1.0
#12 Infocentrum schieblock
#13 Summer school
#14 Schieblock werkhotel
#15 Schieblock
#16 Fabrique urbaine
#17 Crate furniture
#18 Making city – test site rotterdam
#19 Delftse passage
#20 Super zebra
#21 Space frame
#22 De dépendance 2.0
#23 Indoor gym
#24 Mi have een droom
#26 Luchtsingel phase 1
#27 Biergarten
#28 Dakakker
#29 Luchtsingel phase 2
#30 Vrijdagmiddagkaffee
#31 Delftsehof
#32 Bar
#33 Luchtsingel phase 3
#34 06-Restaurant
#35 The new forest – wunderbaum
#36 Luchtsingel debate
#37 Groos
#38 24Hofpoort
#39 World food festival
#41 Luchtsingel infoshop
#42 Op 't dak
#43 Luchtsingel phase 4
#44 Luchtsingel phase 5, 6, 7, 8, 9
#45 Pompenburg park
#46 Pompenburg pavilions (wunderbaum's the house)
#47 Amsterdam-rotterdam city embassy
#49 Annabel
#50 Mi have een droom
#51 Urban picnic
#52 De dépendance 3.0
#53 Three models for delftsehof
#54 Slimdak
#55 Hofplein 19
#57 Luchtpark hofbogen
#58 'S zomers botanical warehouse
#59 Dj booth
#60 Luchtsingel painting day
#61 Incomplete unfinished gallery
#62 Elevator door
#63 City vision
#64 Nieuw delftsehof
#65 Schieblocktoren
#66 Culture wall
#67 The independent school for the city

2012 was the Test Site's moment of truth because the strategy was visibly developed and experienced for the first time. Due to time constraints, there was a strong emphasis on spatial interventions and the economic model. Part of the testing, which occurred on site and through public debate, reflected on whether the area's performance met expected goals. But how could we assess the initiated projects? Through what criteria could we adapt and evolve? Was there sufficient involvement of citizens, entrepreneurs, and the area's current and future users to continue the strategy? Do the precarious intentions of the stakeholders remain? Is the structure of strategies and projects robust enough to trigger a different form of urban development?

In 2012, the 5th International Architecture Biennale of Rotterdam (IABR) provided a platform to initiate meaningful discussions and make vital connections. It is striking that this kind of culmination point introduced a new focus regarding how the different parties work together. To ensure the Test Site's necessary continuity, it was extended and connected to the 6th IABR, so that the methodology of Permanent Temporality employed in 2014 could fully come to fruition.

Act four: A new agenda for the city of tomorrow 2012

Through the decentralization of governance and transition of the government's role from active to facilitating, the citizen was seen as providing new promise for urban development. Governments consider the citizen's role as 'public development,' 'the neighborhood takes control' and a new policy — the city initiative — was created: 1% of the municipality budget was reserved for the best citizen's initiative of Rotterdam. There was a fundamental transition from policy production to co-production.

At the start of 2012, it appeared that the alliance of stakeholders were almost all swimming in the same direction. The process for a new way of city making was rapidly accelerating. We were no longer talking about fancy designs or possible strategies. The alliance was professionalized into project teams that manage licensing procedures, develop funding models, and expedite the realization of the first projects.

The continuation of the economic crisis meant capitalizing on even the smallest possibilities. Through the Test Site's design study, we slowly managed to convince the alliance and the government to participate in a different form of city making.

During the IABR in 2012, the design research was shown to the city. Together with economists, architects, artists, policymakers, Stichting Fonds Architectenbureaus, Architectuur Instituut Rotterdam, and the municipality of Rotterdam, an agenda for the Test Site was formulated. Through workshops, lectures, conversations in the Test Site café, mini-festivals, tours, and screenings, we committed to action and reflection on city making.

Act five: City Initiative 2013–2014

As part of Rotterdam's coalition government accord, the D66 party ensured that 1% of the annual public budget, four million Euros, would be applied to a citizens' initiative. To realize this ambition, the Rotterdam City Initiative was launched. In 2012, we were approached by one of the ambassadors who wanted to persuade us to submit the Luchtsingel project. At one minute before midnight on New Year's Eve, 2012, we delivered the proposal, which explained the motive, idea, and process. A few weeks later, we were invited to present our plan to the jury. Armed with the first planks for the Luchtsingel bridge that we had

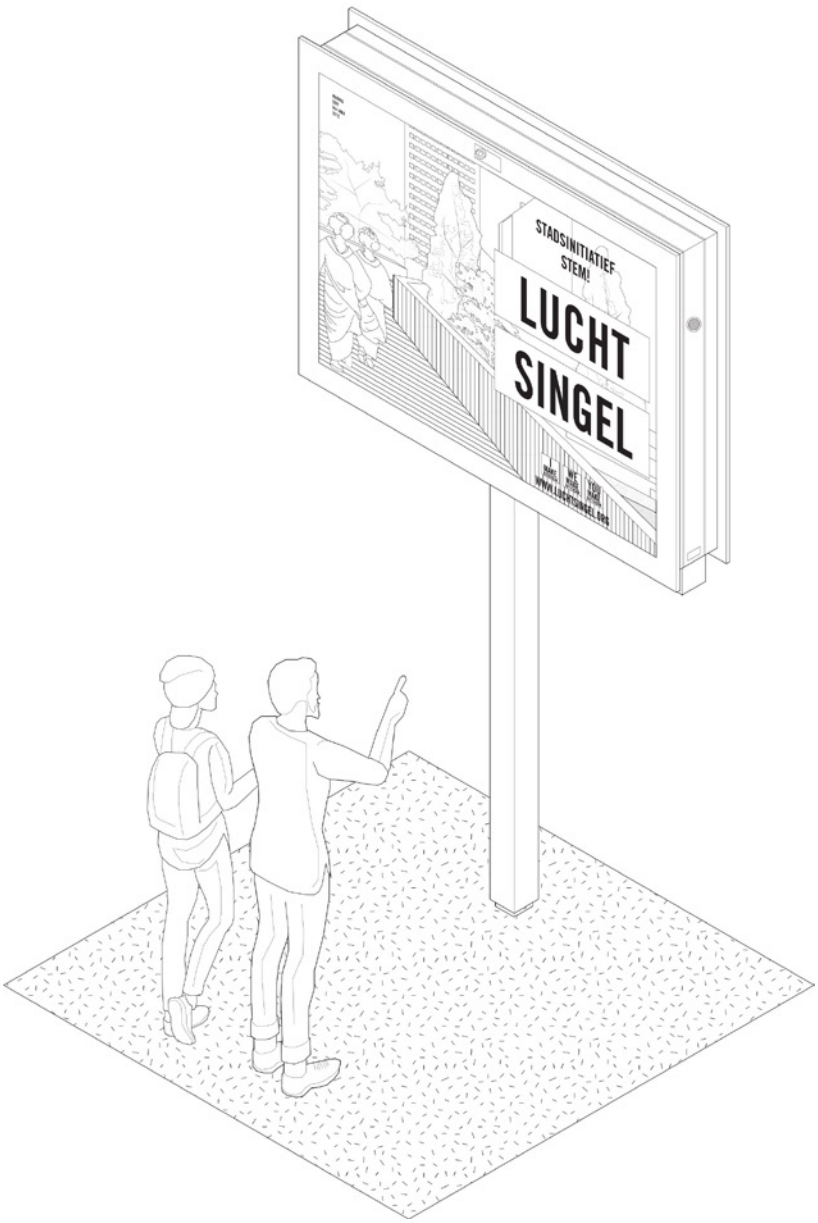


Fig. 6 Luchtsingel campaign

sold to Rotterdam citizens as part of our crowdfunding strategy, we justified our plan. We were immediately informed we were on the short list of five proposals. Our competitors were Stadsboeren (City Farmers), Yoga op School (School Yoga), De Hef, and a music festival.

The challenge was to convince Rotterdam residents of our plan within a three weeks period because they were the ones who voted for the best City Initiative. For this, two weeks of frenzied preparation began immediately: poster campaigns, a temporary polling station, Luchtsingel ambassadors, TV commercials, and lots of talking. Since we had to convince ordinary citizens, there was no room for our usual jargon. With simple slogans, we tried to make it clear that the former city center deserved a boost, and one would again be able to saunter on foot through the RCD area.

Five grueling weeks of negotiation and campaign preparation paid off with us receiving 48% of the votes, and we could immediately begin implementing our plans. The next morning, we set the first piece of the bridge against the Schieblock as a measure of our intent. The Schieblock passage was soon cut through the Schieblock building, and the construction of the Dakakker began – a rooftop farm garden for the Schieblock as one of the Test Site's interventions. These were the first two major statements announcing a new style of area development had started.

Fig. 7 The Schieblock is cut through by the Luchtsingel. Photo: Frank Hanswijk

Fig. 8 Dakakker on top of the Schieblock

Fig. 9 Dakakker; rooftop urban farm. Photo by Ossip van Duivenbode

Fig. 10 Luchtsingel Birdseye view. Photo by Ossip van Duivenbode

Fig. 11 Luchtsingel

Fig. 12 Luchtsingel roundabout. Photo by Ossip van Duivenbode

Fig. 13 Luchtsingel roundabout. Photo by Ossip van Duivenbode

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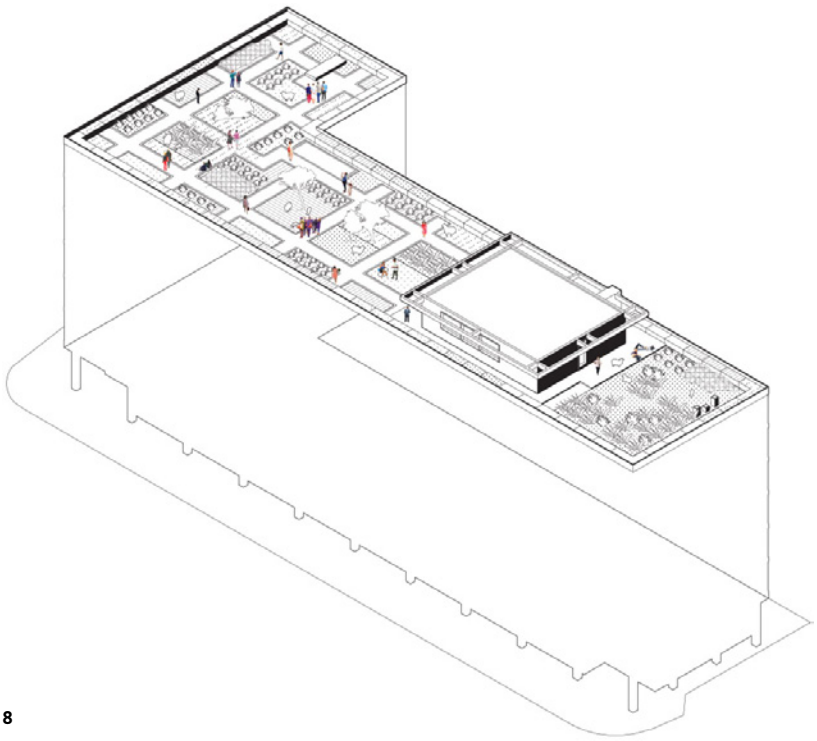

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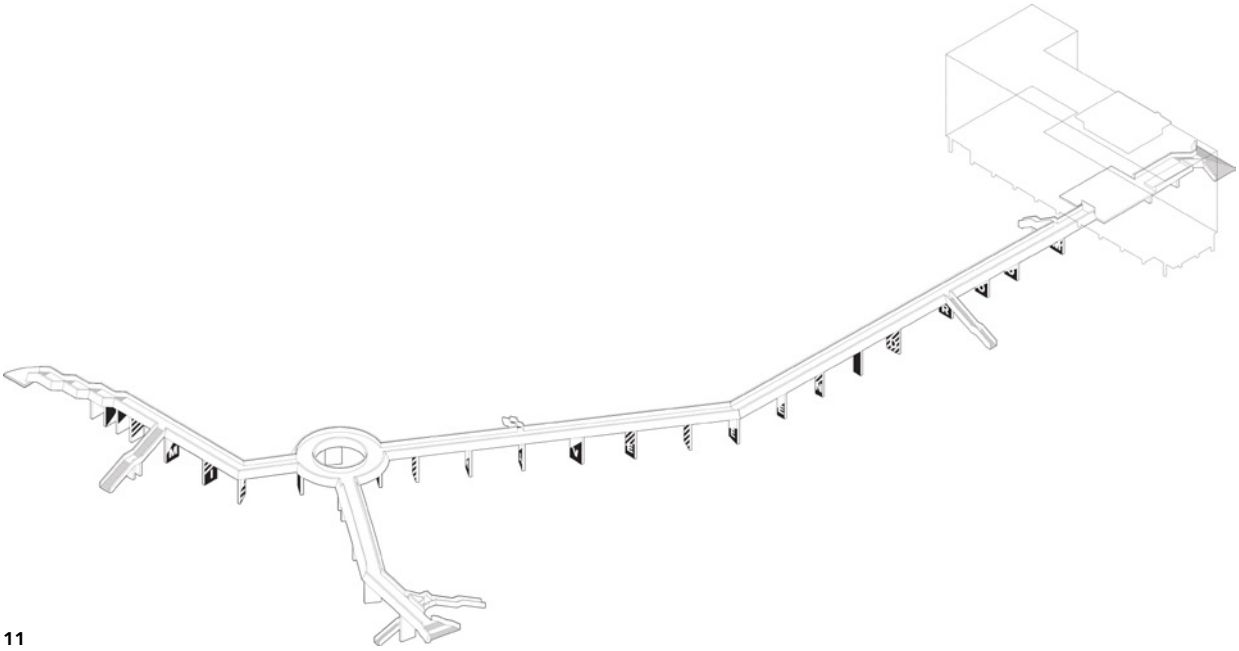

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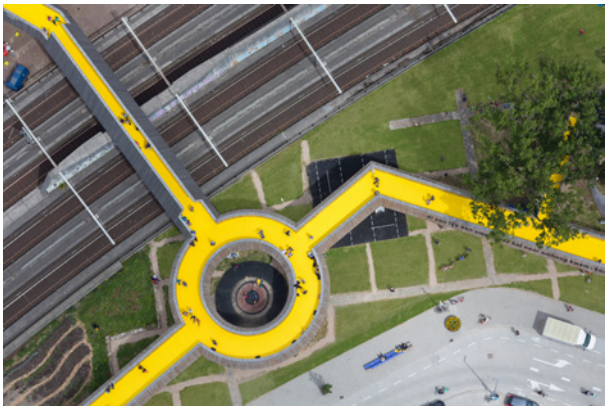

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Fig. 14 Dinner at the Luchtsingel roundabout

Fig. 15 Luchtsingel train bridge.
Photo by Ossip van Duivenbode

Fig. 16 Luchtsingel – Schieblock – Dakakker.
Photo by Ossip van Duivenbode

Fig. 17 Yellow Super Zebra as part of the Routing strategy at the Delftsehof side of the Schieblock. Photo by Ossip van Duivenbode

Fig. 18 Location for the Delftse Passage before the intervention

Fig. 19 Yellow passage cut through to create an unimpeded walking route from Rotterdam Central Station. Photo by Ossip van Duivenbode

Fig. 20 Delftse Passage, seen from Delftsehof/ Schieblock. Photo by Ossip van Duivenbode

Alongside the project's realization, an organization taking care of its implementation and monitoring was established. We worked very effectively to realize the bridge with a core team consisting of the municipality, ZUS, and different specialists. A supervisory board for the City Initiative was formed. It advised six times a year on the steps to be taken. A team was assembled within ZUS to be responsible for the design of all components and for communicating with all crowd-funders and stakeholders.

Since the Luchtsingel makes its course over different types of property, we were very dependent on the willingness of the various partners. Strikingly, Prorail was the most resolute of all, and the process of getting the bridge over the rail track went very smoothly. We could piggyback on the decommissioning of tracks as part of the final reconstruction work for Rotterdam Central Station. November 20th was an exciting night. We had to install the bridge parts from midnight to six in the morning. It was not possible to work on the railway line because the power could not be removed from the overhead cables. At five a.m. the power went off, and at seven a.m. the bridge was placed.

The other parts followed culminating in the final piece being installed alongside the Hofplein 19 office building, which had long been refused building permission by the FGH Bank due to potential risks.

The entire Luchtsingel was designed and realized within two years. The construction of the Dakakker and Pompenburg Park – a park for urban agriculture and recreation – was also set into motion. These two spots were realized in collaboration with many volunteers, the Rotterdam Environmental Center, and Stichting Vredestuin (Peace Garden Foundation). The ultimate goal of the Luchtsingel was always to enable a stroll from the HSL station into the polder, without encountering a car, using the Luchtsingel and the former train line leading from the Hofplein to walk out of the city. Indeed, another long-term ambition was the design and construction of a meadow on the roof of the former Hofplein Station. The roof offers one of the most beautiful views of the city skyline, bookended by the Laurens Church and the newly reconstructed Centraal Station. This place offers space for reflection on the former city heart of Rotterdam.

The final component of the development is the Management Plan. Since the Luchtsingel is a temporary bridge, its demolition is written into the budget. A budget has also been reserved for a lasting activation and stimulation of the surroundings. A part thereof is the management of the public space, such as combating graffiti and neglect. Together with the municipality, the Luchtsingel Management Plan was established, ensuring its effective management for the coming years. To support the idea of developing management, it was decided to appoint a Bridge Master, who is responsible for the daily management of the area and, more importantly, indicates where the opportunities for improvement are.

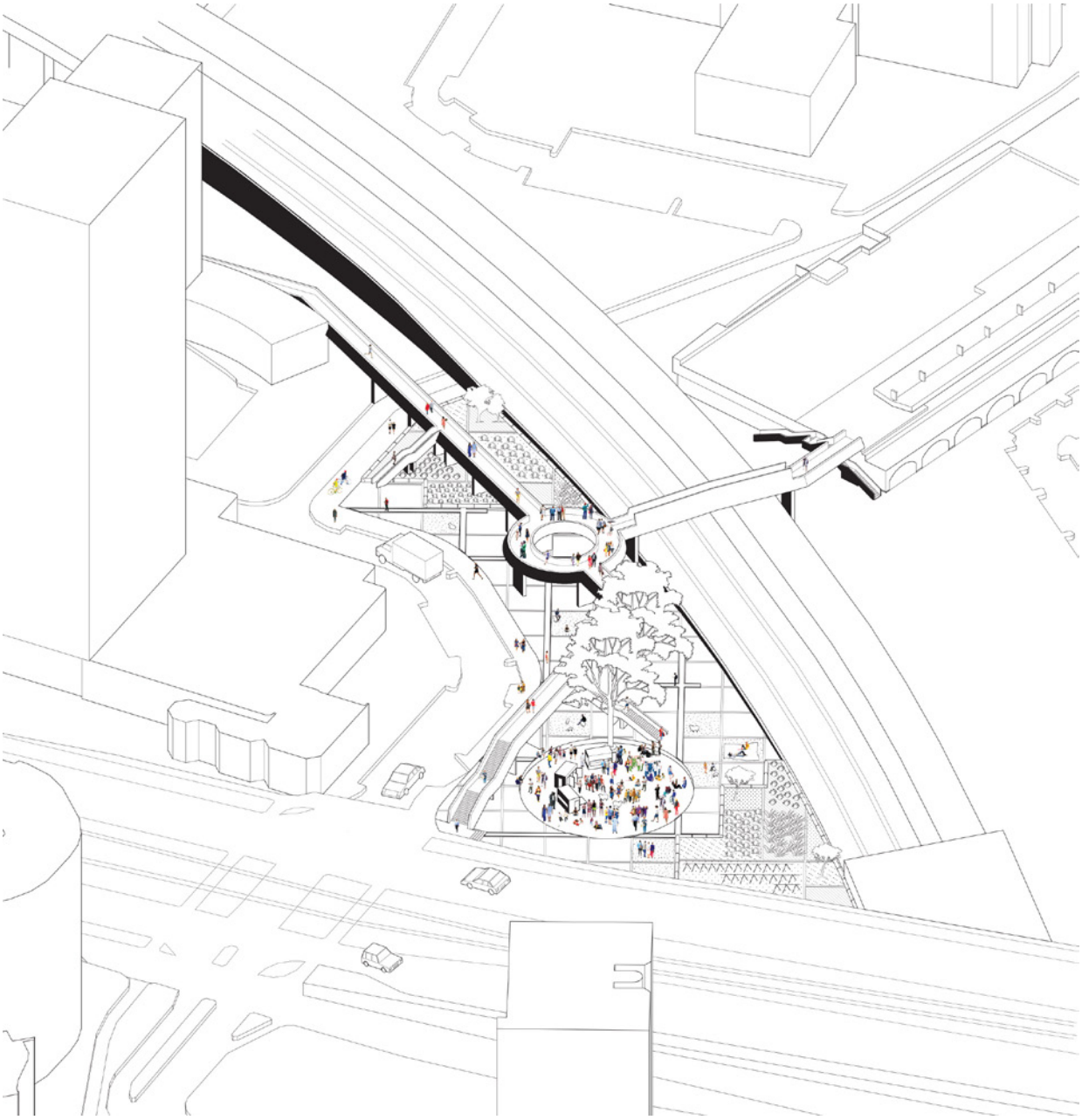


Fig. 21 Pompenburg park

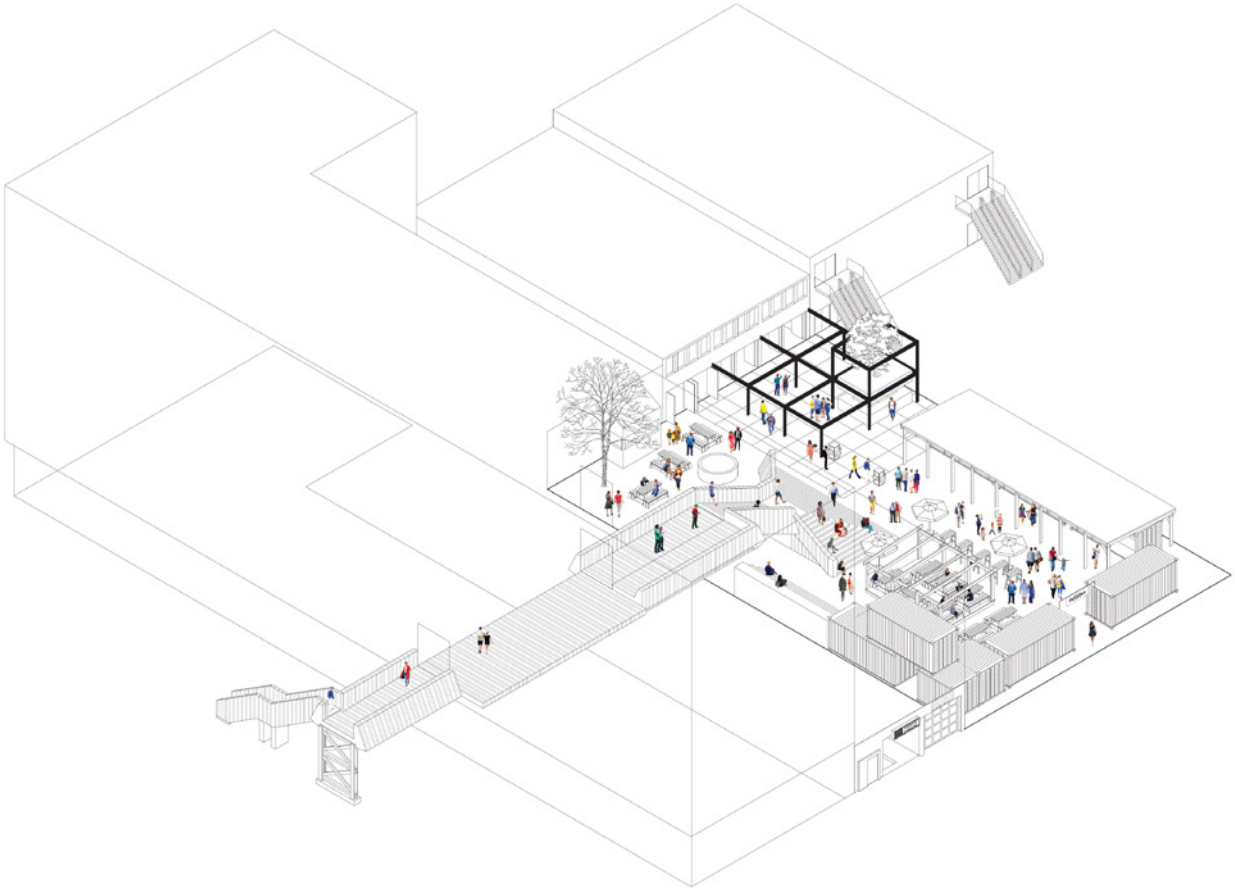


Fig. 22 **Biergarten**

Over the past three years, we have learned that listening to and being open to all kinds of initiatives leads to a substantial agglomeration effect. Through enabling small activities, they can become key drivers for an attractive public space. Thus, the Biergarten started as a shipping container in a deserted parking lot and within three years has grown into a nationally known, fully-fledged catering establishment that gave the Delftsehof area behind the Schieblock an identity. Small interventions in public space can also lead to its better use. Attaching a temporary swing to the Luchtsingel proved successful because many children suddenly started visiting Pompenburg Park. The Bridge Master will continue this approach to allow the area to flourish further.

Act six: Beyond temporality 2015–2016

One of the objectives of the Luchtsingel City Initiative was to reduce the lack of occupancy and boost developments in the area. The belief was that proactive investment in public space would lead to investment in private real estate.

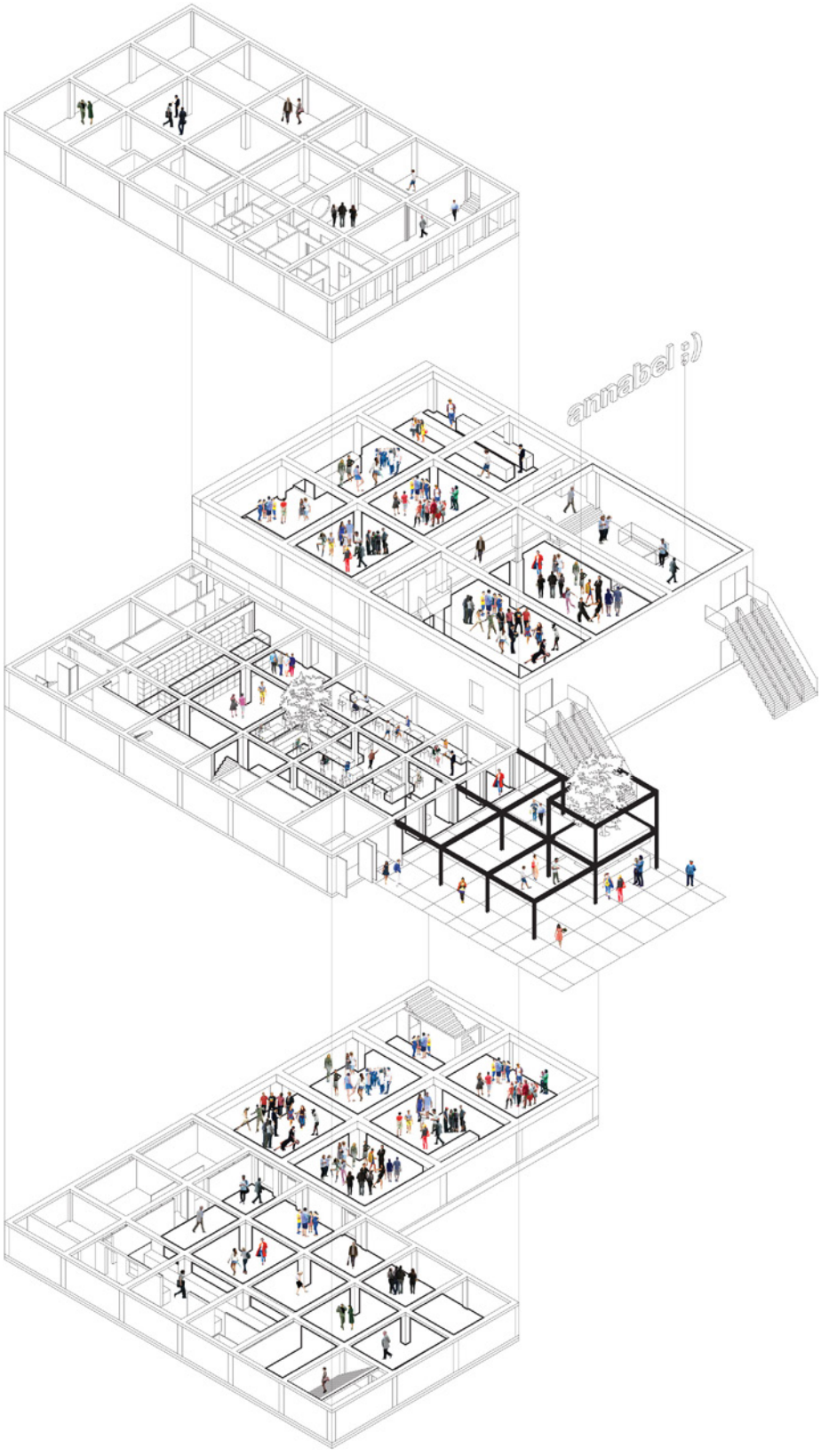
The first test of this approach is certainly the extension of Schieblock's contract. Originally intended as a temporary experiment

to provide an alternative to demolition, it suddenly became a serious business case, boosting the local economy. The owner, LSI, therefore had plans to upgrade the building and to seek a higher segment tenant. However, we convinced LSI that the investment needed to enable this would deliver the same yield over five to ten years as leaving the current business model intact. Moreover, Schieblock resulted in more than a collection of tenants in a transformed building; it is a living ecosystem of companies, institutions, and individuals that lead to increased activities and the area's vibrancy. Schieblock is like an incubator for businesses that grow slowly and can develop further elsewhere in the area. The fact that the Luchtsingel runs through the building contributes to the belief that, for the time being, it should not be demolished. After nearly a year of negotiations, we managed to get an extension of five to ten years. A temporary experiment that contributes to the continuous development of the RCD.

The Biergarten began as an experiment where once stood the De Klerk dance school. The original idea was to create parking spaces, but fortunately, the municipality agreed to a temporary experiment, which we christened the Biergarten. The idea was to place containers and wooden furniture made in the adjacent Fabrique Urbaine on this sunny spot next to the railway, thus attracting people to come and drink a beer. It soon became apparent that the combination of beer, sun and the Luchtsingel's grand staircase was a successful formula. Weather permitting; lots of people came down on Thursdays and Fridays. The terrace's informality attracted many people to this place. In 2015, in consultation with LSI, the Biergarten was extended toward the parking lot and doubled in capacity. The Biergarten is equipped with a full kitchen and substantial beer tanks to cope with the expected influx. The set-up was also fitted with roof structures, allowing for a longer opening season. This again exemplified how temporality slowly developed into a more permanent condition.

Like the Biergarten, Club Hollywood always tried to plug into to the attention the area received and the subsequent inflows of people. But their target was the weekend youth that visited nightclubs and consumed copious amounts of alcohol. With the introduction of stricter licensing laws, raising the legal drinking age to eighteen, their approach became their downfall. After more than 20 years in the area, Club Hollywood closed its doors in 2014. The owners of Perron, Aziz Yagoub and Marc Zee, acquired a lease on the property to establish, no less, a cafe and music venue. Averse to subsidies, Aziz Yagoub and Marc Zee wanted to create an economically independent venue through wide-ranging programming, thus maximizing the location's use. The venue was called Annabel. The first thing the licensing regulators deemed wise was moving the entrance to the Delftsehof. That was good news because it aligned with the Luchtsingel's route and placed more emphasis on the Delftsehof as a place. Annabel asked ZUS to develop a design for the venue, thus boosting the area's attractiveness. This gave

Fig. 23 Annabel



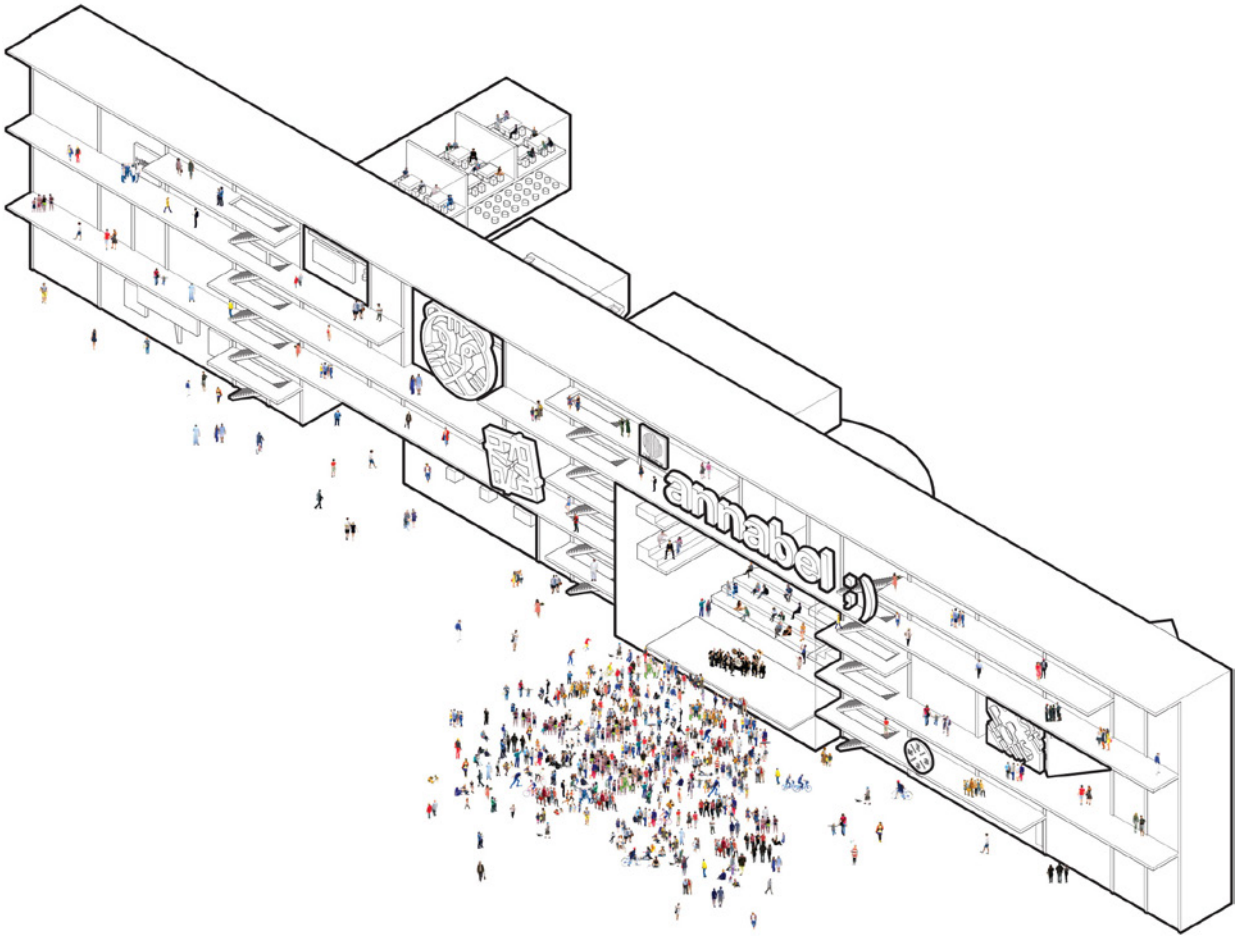


Fig. 24 Culture wall and Annabel

us further opportunity to intertwine the public and private to a higher level. Therefore, a frame structure extended Annabel's interior into the public space and included an outdoor bar. The route of the Luchtsingel crosses this outdoor terrace. In April 2015, the Petit Café and the terrace opened. A month later, the club opened in the basement and in September the large main room opened with an international act. This will permanently change this area's prestige.

Through the further development of the Schieblock, the Biergarten's continuity, and the arrival of Annabel, LSI gained a new perspective on the development of the Delftsehof or the Schiekadeblok, as it is known in real estate terms. Instead of the instant model that was planned in response to the 2008 economic crisis, LSI started thinking about a gradual transition model; plot-to-plot development that retains the urban structure, rather than demolishing the whole courtyard for underground parking. The parking problem is instead addressed through a modular car park, which can gradually transform into a permanent parking garage as part of a building volume. Through their

knowledge of the area, LSI asked ZUS to conduct a study to research a gradual transition model for the Delfstehof area. Moreover, ZUS will act as an intermediary between LSI and the municipality.

The Delftsehof can, therefore, be an example of Permanent Temporality. Thus, the focus on the relationship between building and public space will continue.

One of the biggest thorns in the side of the city center's urban development is the former Shell headquarters. Built in the seventies, it was already vacated in the early nineties for other locations. Although Shell returned in 2009 to occupy premises opposite on the Weena, the former Shell office buildings at the Hofpoort and Hofplein 19 remained empty. To make matters worse, these buildings were cunningly built on the site of the old heart of the city, meaning they are now representative for the area's failure. The Luchtsingel was especially intended to breathe new life into those buildings, despite the fact that we were entirely dependent on the properties' owners. We asked each property owner: we are building a bridge and investing in the public space, what are you doing for the area? AXA, then the Hofpoort's owner, represented a group of German investors for whom the building accounted for a lot of money on the books. It was not possible for them to do something about the rent or financially contribute to the area's development. AXA's contribution was, therefore, giving us the key to the Hofpoort so we could use temporary resources to breathe life into the tower. A whirlwind of programming culminated in 24Hofpoort, where we transformed the entire building into a vertical city for 24 hours. These and other activities have contributed to the tower being sold to a Czech investor for half of the book value. As a result, new redevelopment opportunities arose, including Spaces, the transformation of the building's lower seven floors into flex-work offices. This will shake things up in a currently lifeless building. We are also busy talking to what was formerly the Dépendance, which over the years grew into an independent entity, to establish a center for urban culture in the Hofpoort, thus providing a cultural boost to the Hofplein. The redevelopment of Hofplein 19 won't be long in coming.

The Hofpleintrace, a three-kilometer stretch of disused elevated railway on a monumental archway starting at the former Hofplein station is beginning to develop further. The first part is completely renovated and fully rented to a variety of shops and restaurants. The arrival of the Dakweide or Dakpolder (English: Roof Meadow) on top of the former train station gives rise to further reflection on the rest of the Hofpleintrace. Until recently, none of the parties concerned took responsibility for the roof of the former train station, but recently, an agreement was signed between the developers and the municipality to initiate a sustainable design for the roof. This can mean that the dream of walking from the HST to the polder will become a reality within a few years.

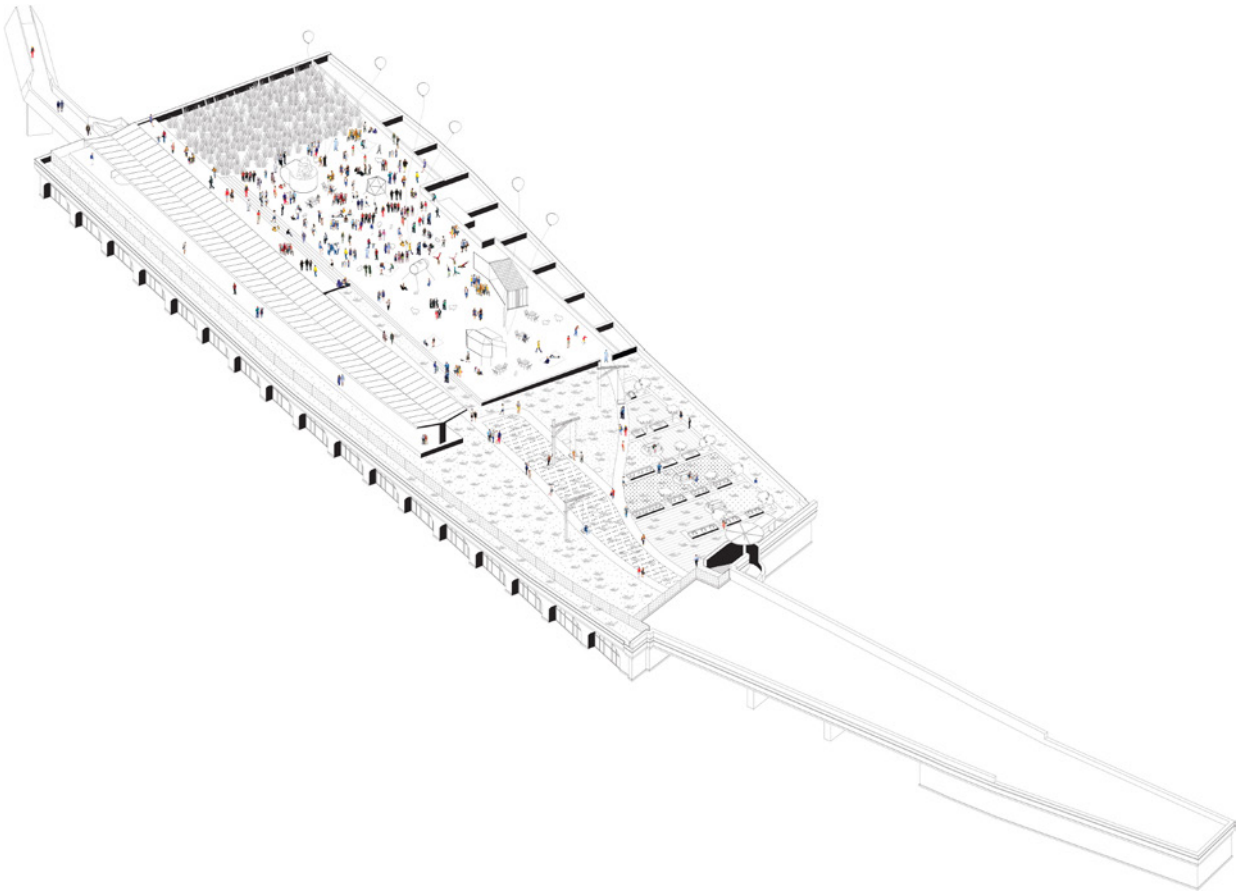


Fig. 25 Birdseye view Dakpark, Hofbogen and Luchtsingel. Photo by Ossip van Duivenbode

Fig. 26 Hofpleintrace; from the Dakpark the trace leads into the polder. Photo by Walter Herfst

Fig. 27 Dakpark Hofbogen

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Fig. 28 Luchtpark Hofbogen. Photo by Ossip van Duivenbode

Fig. 29 Luchtpark Hofbogen. Photo by Walter Herfst

Fig. 30 Open air cinema at Luchtpark Hofbogen. Photo by Walter Herfst

The area's various developments require all stakeholders to revisit the plans. The Glocal City District vision may be still relevant, but the urban plan certainly isn't. The Central District Association, are therefore urging for a reassessment of the plans. It must be established whether the goals are realistic and how the ambitions should be formulated. What actual exchanges will take place between the area's small and large players? In what way will public space be invested in for the time being? And what organizational form is needed to guide the process of permanent temporality? These will be the biggest challenges for the coming years. The City Initiative has at least contributed to setting a new course; its continuation will have to be addressed by all the different parties together.

Act seven: Incomplete & Unfinished 2017-2018

"Break up that old thing," reads a headline in the local newspaper. This time it is the populist Leefbaar Rotterdam political party stirring up a storm in a teacup. Their statement implies that the municipality cannot take a loss on the area's redevelopment. No matter what, new towers must be built for the development to be cost-effective. Through the local newspaper and Twitter, the other right-wing party, the VDD, announces a desire to "demolish and rebuild the Delftsehof."

A few months earlier, the municipality's City Development Department had called with an invitation to cooperate on an urban development modeling study for the area. "It should take the insights gained from recent years into account. This means examining whether the current buildings can be renovated, whether a number of the existing functions, such as Annabel and the Biergarten, can have a place in the new plans, and whether the area's accessibility and liveliness can be strengthened. We expect the brief to provide 110,000 square meters of new functions in the area."

Together with the municipality, an intensive investigation is started, from which 23 different options initially arise. These are whittled down to three models, each based on a different definition of the public space: a street model, a court model, and a three-dimensional landscape. With absolute precision, it is investigated how to add volume to the existing buildings without completely blocking out the sun at street level. If there's one thing ZUS has learned in recent years, it's that this is the source of the location's public capital. The fact that one can enjoy a sun-kissed, city-center courtyard here, with music in the background and passing train traffic, make this spot unique in Rotterdam. Partly because of this, the court model emerges as the favorite option.

With the political debate in the back, it seems that ZUS' endeavors on urban models seem hopeless. If the decisionmakers don't know the whole story behind the district they can never approve a model that saves some of its value. Therefore, it is concluded the real problem is the line of communication between citizens and them as representatives. So far, communication has gone through Twitter or the local newspaper which is a mere exchange of statements, no dialogue. ZUS' insists on having a good conversation and decide to invite all the council members one by one.

"Dear Council Members,

The protracted discussions concerning the Schiekadeblok, in Rotterdam Central District, are currently being conducted in very black and white terms. Plans for new towers are in direct opposition to the transformation of existing activity and Rotterdam culture. It is clear there is a substantial need for densification, but there are many conceivable scenarios for achieving this. In order to broaden the

debate, which is mainly taking place in the media, there needs to be an open dialogue about future visions that can lead to a complete, integrated, and broadly supported approach to the area.
ZUS has initiated and organized New Delftsehof, *a series of discussions, workshops, expert meetings, and debates, to expose, discuss, and capture divergent interests in a realistic and well-founded scenario for the future. For this series, we are inviting Rotterdam policymakers and politicians, as well as local and international thinkers and doers, to ensure the widest possible cross-fertilization of knowledge, insight, and experience.*
During the next three months, the talks will take place in a dedicated space at the Delftsehof: Incomplete & Unfinished Gallery. *Past, present, and future scale models, accompanied by projected imagery, shall enrich the conversations, with knowledge, experiences, and ideas from the area itself. The outcome of the discussions will feed into a further design and thinking process.*
In the spring, the exhibition will open to the public along with the publishing of a book about the area.
We should like to invite you to an informative and inspiring dialogue, on 14, 15, or 16 February, *at* Incomplete & Unfinished Gallery *at* Schiestraat 14.
We look forward to hearing from you and should be happy to know which day would best suit you.

With Warm Regards,
Elma van Boxel and Kristian Koreman"

After years of distant dialogue, ZUS sends an invite directly to the political world. To a great surprise, all parties react positively within a few weeks, despite the forthcoming municipal elections and consequently overfull diaries. A tight schedule is made and invite every party for a two-hour slot. ZUS wants to highlight the area's vitality as well as listening to the motives of the various political parties. To properly prepare, all the election programs are examined to discover which political statements can apply to the developments in the Delftsehof. The statements range from the very general, "we advocate more green spaces in the city center," to the specific, "keep the area between Delftsestraat and Schiestraat [Schieblock and surroundings] as a 'Rotterdam Creative District.'" During the conversations, the most important statements are projected on the wall, to confront our interlocutors with their viewpoints and to encourage discussion.

Days of intense dialogue later there is a shift in the tone of voice. The council members seem to appreciate the fact that this area has self-regenerated over the last decades and is now full of life. After leaving their statements in the gallery they exit. We now have to wait how this has influenced their opinion on this matter.

Fig. 31 Incomplete and unfinished gallery

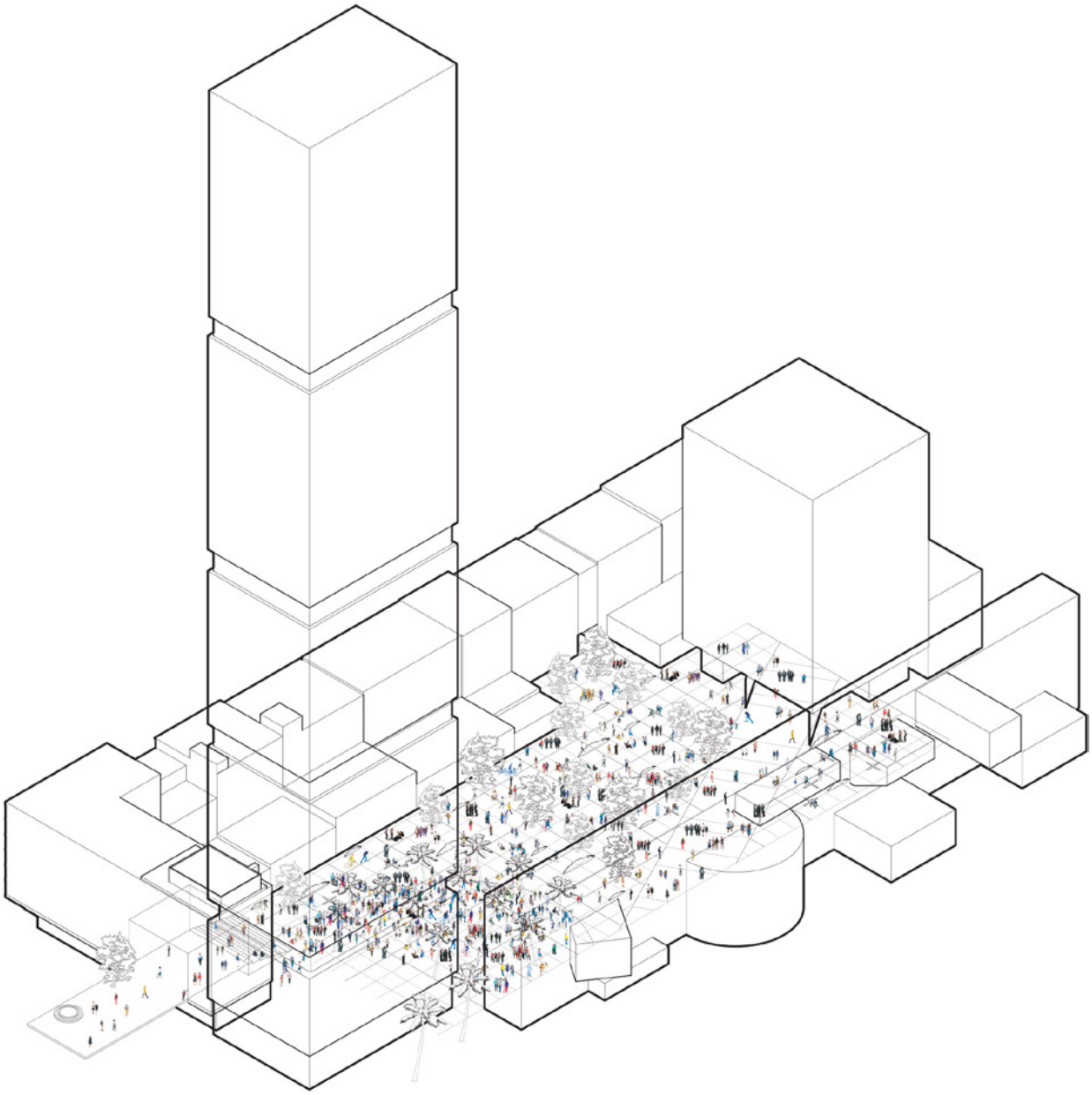


Fig. 32 New Delftsehof

Fig. 33 Open air cinema at Luchtpark Hofbogen. Photo by Walter Herfs

Recently new plans for the area have been issued and remarkably show a lot of similarities with the proposals ZUS has done so far: there are courtyards, most of the existing fabric is kept and a high-rise is connected to the Schieblock. It seems the strategy has worked, and we now have to wait for the next phase of development. The moment were fluid ideas and plans have to become solid.

It has been 18 years since ZUS has been involved in the story and yet it feels only half way. To register the happenings and to reflect on the lessons learned 'City of Permanent Temporality – Incomplete & Unifinished' is published. It covers all the years with journals, project descriptions and guest critics, such as Michael Speaks, Rory Hyde, Michelle Provoost, Wouter Vanstiphout, René Boer and Mark Minkjan. It reflects the drive, frustrations, sheer utopia and blunt reality of a city in the making. The district and ZUS' involvement have reached the age of maturity; it has been taken care of, stimulated, and enriched it from the ground up. The area has progressed through adolescence and flirted with ideas of giving up. But now it is older and wise enough to make decisions about its future. Choices are no longer solely dependent on others or the context, and it is evident which direction the area wants to go.

Things will remain restless for a long time in the polis: the city as politics, and the politics as a city. The city will always be in a state of permanent temporality, remaining incomplete and never finished.

Atelier do Corvo

Reuse of Modern Schools: Public space as a linker

Introduction

The two projects selected for the Reuse of Modernist Buildings are examples of our way of understanding this subject. These projects are neither typical rehabilitations, nor refurbishment, but an intense exchange between the diverse existing layers and the new ones required.

The aims of these projects focused on giving clarity to the existing facilities and removing the ambiguities which resulted from the successive additions and uses to which the building has been subjected to over time, thus enabling a clear proposal for new buildings. In these projects, the renovation and remodelling of existing structures, as well as the proposal for new constructions, was grounded on the principle of a dialogue between the existing and the new, between the past and the present.

Frontispiece Batalha School, Frames of the model workshop session.

These projects even though having dissimilar context, were able to respond to the new functional programmes without loosing their identity, although they have become more complex and dense. They both have in common the public space as a linker between the internal organization of the several blocks of each school and between each school block and the city. In one school the link is a square, in the other it's a street. These two structural elements are also essential in the internal reorganization of each school, allowing us to understand them as a city were they gave coherence to sum blocks throughout decades. On the border between the exterior and the interior, visual connections were essential to establish and accentuate the continuity of one another.

In both projects the skin is used as a technical, formal and symbolic element. The phenomenological approach of the skin as a surface was not our main goal, but it is not possible to deny the importance of the skin/cloth of Joseph Beuys that protects and heats the sick body. This metaphor was present in the material selected for each school, that allows the buildings to have new infrastructure that is able to increase their response to the energetic efficiency of the entire construction system, without loosing their specific features.

The engagement of the school community in the design process was different in each school. In Pombal the briefing was made by the school board, that had collected all the functional needs before. Each meeting was more to show the work-in-progress than to dialogue about it with the representatives of the school community. In Batalha, the briefing was the result of a proper adjustment of several meetings that were an intense dialogue between architects and the school community.

In both cases, the models had an important role in all the meetings because they triggered more complex responses from both sides.

In our design process, the models at scale, at real scale or without scale, have being central. This specificity expresses itself materialized in the model, that sometimes happens before forms and programmes appears. Sometimes form and function are defined by the first model, because models are not only reproduction or anticipation,

but already the synthesis of a work, or to say in other words, the real and its representation stand in suspension. The model is not only a representation of something. It is also a statement about the very essence of architecture. Space and form, absence and presence translated to reallity in a more abstract language.

In these projects, once again, the models allowed us to work in the representation of the space to be.

The similarities, previously said, between these two projects can be synthesized as a result of a design process that considers the physical and social context in which these buildings exists.

Modernization of Pombal Secondary School, Former Industrial and Commercial School

1. Context and background

Pombal Secondary School was inaugurated in 1958, a project of the Ministry of Public Works (Board of Constructions for Technical and Secondary Education) which was formalised in June 1950. It was initially designed as an Industrial and Commercial School, and nowadays functions as a Secondary School.

It was part of the general construction of the school estate designated phase 2, implemented between 1936 and 1968. Construction was carried out according to a plan implemented by the *Ministry of Public Works through the Board of Constructions for Technical and Secondary Education (JCETS-MOP)* which aimed to structure the country with teaching facilities which could meet the younger population's real learning needs.

After a 50-year life cycle with notable quality, the whole facility needed renovation both for conservation purposes and also to enable it to adapt to the needs of the programmes demanded in the new education plans and to the current socio-cultural circumstances.

Fig. 1 Pombal Secondary School photo archive. Date and author unknown.

The school is composed of autonomous blocks, which extend longitudinally west to east, with a length of 160 m, from which two wings extend to the south. In the south-east is the cafeteria and gymnasium body, and the workshops body is in the north-east.

In terms of construction, the school is a porticoed structure of reinforced concrete with exterior walls of masonry in 15 cm hollow brick. The structural portico is clear from the outside.

2. Proposal

This is a complex intervention, the essence of which can be summarized as follow:

- Reorganization of the functions of the school
- Demolition of obsolete structures
- Optimizing the use of the existing area and increasing the useable area to allow new programmes to be introduced.
- Increasing the passive and active energy efficiency of the entire construction system.

Reorganization of the functions of the school

The issues related to the reorganization of the functions of the school are of two different orders. The first has to do with the relationship of the school as institution – its buildings and its programme – with the social and urban fabric in where it is placed. The second is internal in nature and has to do with the proper functioning of the school and the relationship between its organic units.

Connecting the building to the city

One of the main objectives of the programme defined for the renovation of the School Estate was to reintroduce the social importance of the

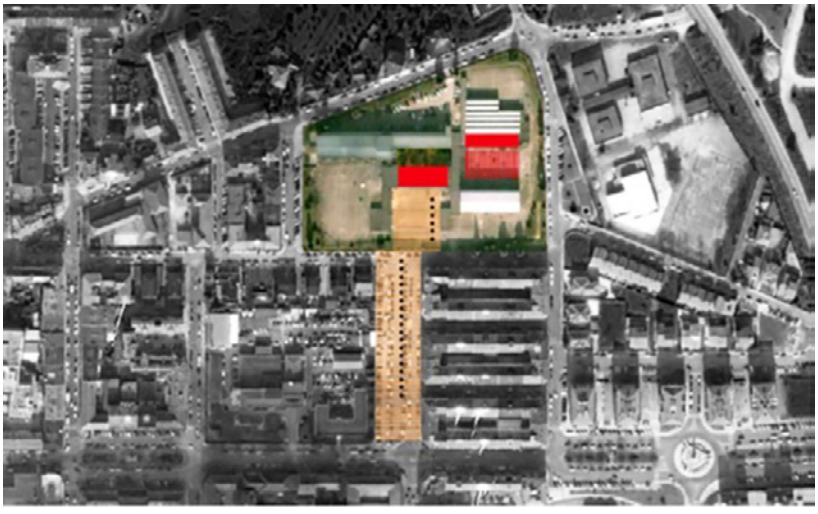


Fig. 2 Photomontage over image taken from Google Earth
@ Atelier do Corvo

school in the functioning of the social fabric where it was placed, and that the school facilities should be used by the general community. We considered this condition to be an essential support for our proposal for a new entrance to the school, with better coordination and a better relation to the surrounding urban fabric. We proposed moving it from the extreme west of the building to a more central position between the two wings which extend south, also considering that this option allows a reduction in internal movement and a more effective spatial relation between the different constituent parts of the curricular programme.

This space is defined by the building which extends longitudinally, the two perpendicular arms and the south side of the building, in continuity with an open large space used as a car park. We felt that it had unique conditions to give greater clarity and urban effectiveness to the relationship between school and city. Thus, we proposed the creation of two directly coordinating squares: one belonging to the city, instead of the current car park which would then be under this new public space, and another inside the school grounds. The flooring plan for these new squares should be the same so that the spaces could be considered continuous. However, the outer square was not approved due to a lack of political resolve on the part of municipal officials.

The new square inside the school precinct created an outdoor atrium for school users. In the visual finishing of this square, we proposed a new building that would extend this function of welcoming and receiving the users inside. We believed it essential to design the atrium in accordance with the institutional aspect that a school with this size and importance to the local social fabric should represent. In addition to this function, the new library, which, according to the prerequisites defined by the School Estate project should be understood as the heart of the school, a place of great centrality and representativeness, is also located here, alongside the mini auditorium. These spaces can also be used by the non-school community which is another reason for placing them here, as it allows them to be used autonomously from the normal functioning of the institution.

Reorganization of the functions and internal organization

This school was used over a long period of 50 years and was managed by various personalities responding to very different educational programmes. It is for this reason that the solutions for functional problems that had arisen were made on a case-by-case basis, without a vision for the whole school. This use resulted in a dispersal of the school's curricular programmes and functions that we aimed to correct.

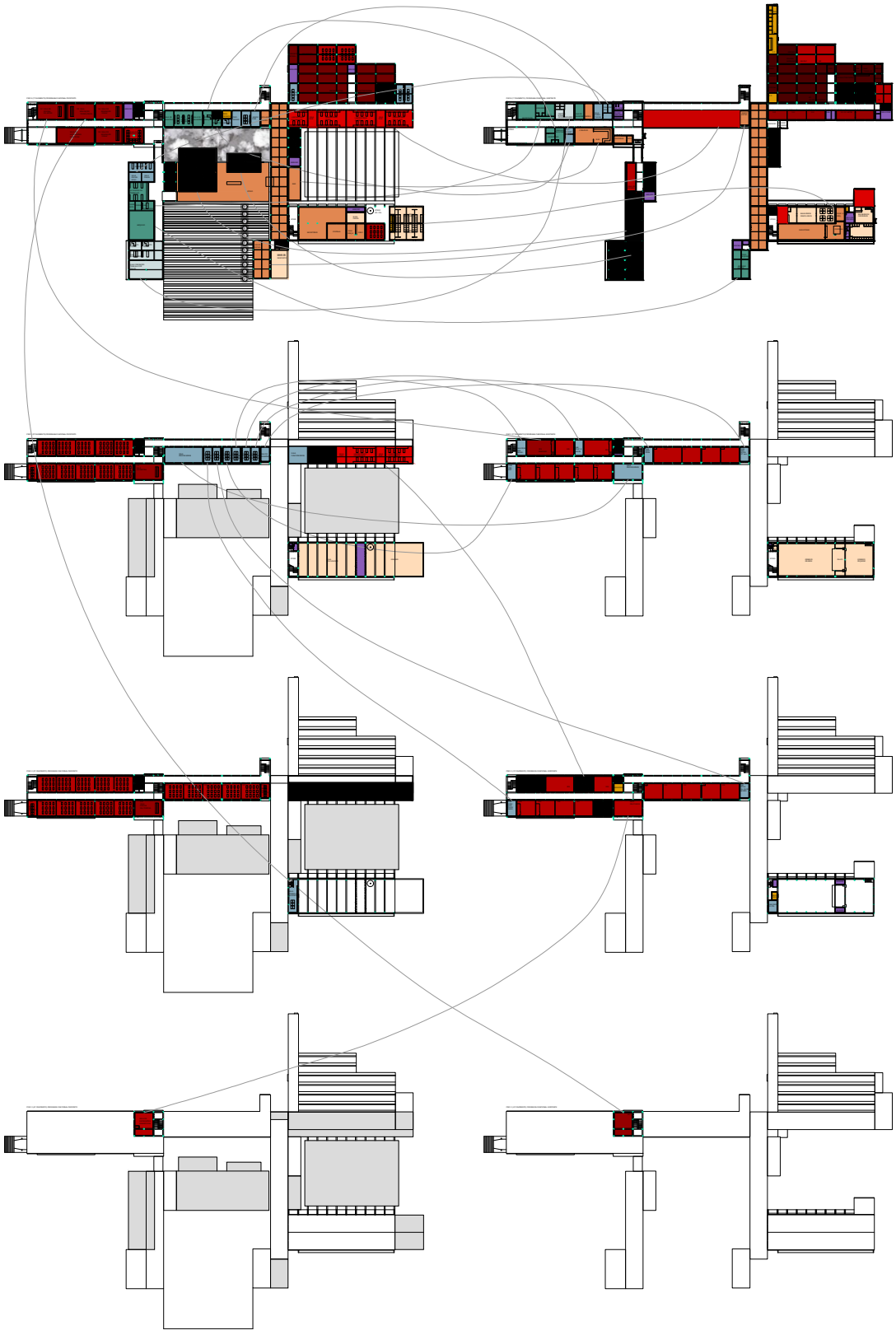
The new organization of the building's functions was designed in conjunction with the school's directors and faculty and the student and employee representatives. This organization sought to concentrate curricular programmes into organic and functional units.

Fig. 3 New entrance @ José Menezes

Fig. 4 School square @ José Menezes

Fig. 5 e 6 Library @ José Menezes

Fig. 7 New proposal for the distribution of functions
@ Atelier do Corvo



As previously mentioned, the atrium, the library and informal study room and the mini auditorium are located in the new central body. It is this block that allowed the distribution to the diverse functional units to be organized.

Included in more significant interventions, we should also mention the complete reformulation of the workshop block, the creation and installation of infrastructures of the laboratories, the rehabilitation of the gymnasium, along with a total reformulation of the canteen and the enlargement of the small gymnasium area and roofing for the sports fields to the east. The entire two-storey north-east wing, next to the workshops, was replaced by a new building as it lacked sufficient area, making the classrooms small and inadequate.

Demolition of obsolete structures

It was necessary to carry out a series of demolitions in order to implement the architectural solution. Some of them were made to ensure the energy efficiency of the building, others were the result of

Fig. 8 New entrance, gymnasium area @ Atelier do Corvo

claryfing the new uses of existing blocks, achieve the requirements of regulations and also the need to increase the area of classrooms, gymnasium, cafetaria and refectory.

Altering the main entrance of the school no longer made it necessary to have walls and railings by the entrance, and thus this space can now be part of the interior of the school. This option enables a physical education circuit training route to be created around the whole school.

Optimizing the use of the existing area and increasing the net area to allow the introduction of new programmes

The Knowledge and Memory Space, a museum area at the end of the distribution corridor, was slated to be in the former atrium. This body brings together all spaces linked to teaching of the arts and other classrooms which need no special logistics or equipment.

The tympana that close the east portico was demolished, thus making a direct relationship with the new square, separated only by a glass panel with aluminium frame.

The administration department, attendance for parents/guardians and training courses for the non-school community are located in this building. Despite its unusual location, it is central to the school's functions, a "learning street", due to the curricular programmes it houses.

A new block was added to increase the gymnasium area, restructure the changing rooms and give the kitchen and dining room the technical areas which they needed to function properly.

The exisiting workshops block was completely reworked, with no significant changes in volume being made.

Basically, the aim was to clarify the space of the building by concentrating the workshop rooms into nuclei, separating them from the classrooms or design rooms.

The aim was to establish a visual relationship between the workshops body and the rest of the school buildings, replacing the existing wall with glass panes in a steel frame.

New reception atrium with distributes to the various working areas of the school to create a cadenced sequence between the outside and the inside, between the ground level and the upper gallery. This was done through different ceiling heights and measurements of structure and fenestration. The use of the concrete inside, along with iroko wood, gives it the institutional aspect that a place of this nature merits.

The covered sports fields, with a structure of prefabricated concrete beams supported on four pillars in the same material, executed in situ, and a canopy of polycarbonate honeycomb panels, fulfilled the purpose making their use possible regardless of the weather conditions.

A new gatehouse next to the main south entrance to the school does the transition between the two squares, the city and the school ones.

The outside areas were physically enclosed by railings that delimited the plot and by the existing buildings.

Fig. 9 GFRC pannel @ Atelier do Corvo

Fig. 10 Library, mini auditorium and informal study room atrium @ Atelier do Corvo

Fig. 11 New gatehouse @ José Menezes

The interior garden was designed in conjunction with the school community, to be enjoyed for both leisure and education. It was planted with garden species and small vegetable plots for research. However, this project is not complete, and has not been implemented yet.

Improved passive and active energy efficiency of the whole construction system and renovation of all infrastructures

The building had deficiencies in its structural behaviour, particularly serious regarding its energy efficiency.

In this new intervention, the building was equipped with all the technical infrastructures necessary for excellent energy efficiency and compliance with current standards of comfort.

The proposal catered for two generic solutions for facades:

For the facades of pre-existing buildings, the option was to clad the walls with the ETICS system on the higher floors and with GFRC on the ground floor. The application of the two coating systems proposed ensured a level surface.

The use of GFRC on the ground floor of pre-existing buildings, but also in the full cladding of the new constructions around the square, creating a regular cadence for the system of construction and infrastructure, provided a strong and striking image, simultaneously representative and austere, in an attempt to reinterpret the formal message that this school originally transmitted.

Fig. 12 Covered sports fields @ José Menezes

Fig. 13 Study for library, mini auditorium and informal study room atrium @ Atelier do Corvo

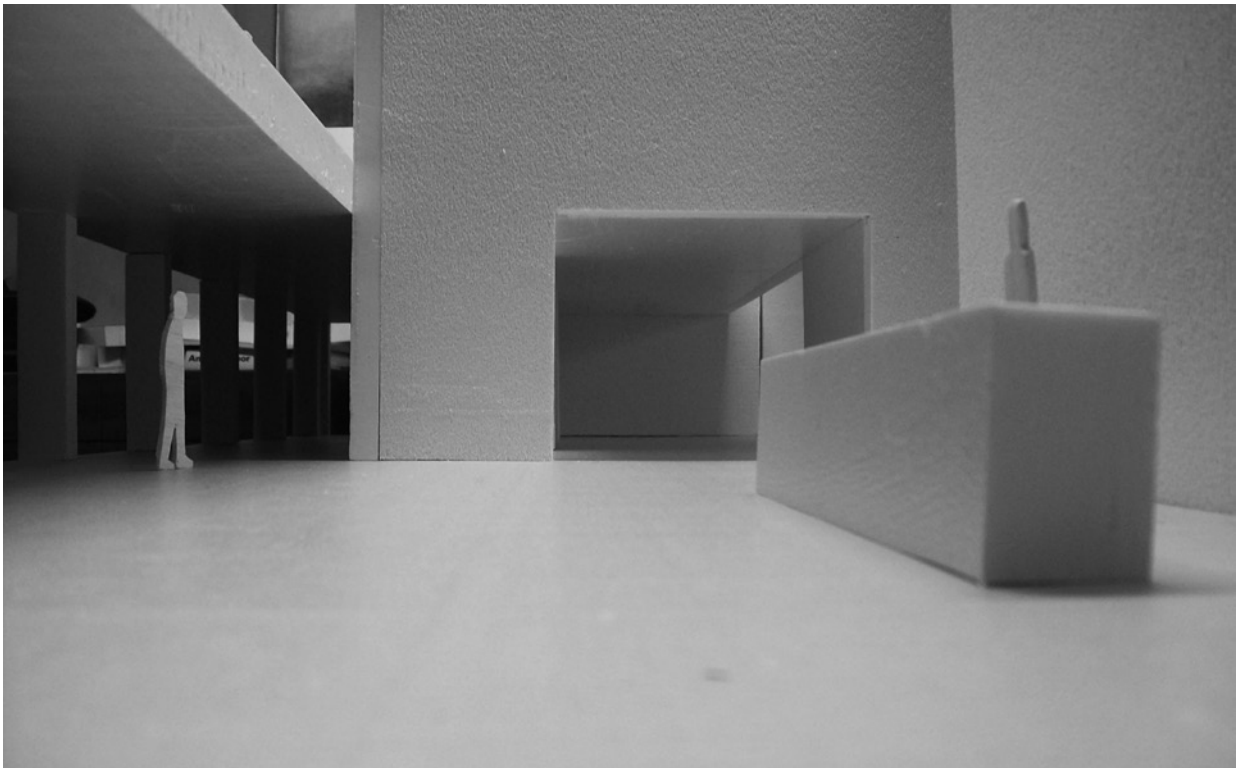


Fig. 14 1:500 model general view
@ Atelier do Corvo

Modernization of the Batalha Basic and Secondary School and the Professional School of Arts and Crafts

1. Typological profile

Batalha's Secondary and "Preparatory" schools, 1st and 2nd cycles, consist of a set of autonomous blocks connected by covered exterior walkways. They have buildings from the 70s, 80s and 90s, which are based on the "type project" models.

At the end of the 1960s, a limited set of "type projects" was developed for high schools, technical schools and preparatory schools. The projects were highly pragmatic in order to ensure speed and economy of execution and were designated Standard Type Projects. The construction strategies dictated an image for the buildings devoid of all ornamentation.

These type projects were constructed from a set of autonomous blocks, allowing the building to be adapted to plots of land with very

diverse characteristics of geomorphology, exposure and access which were unknown a priori. The different blocks were connected by covered exterior walkways, the layout of which depended on the morphology of the land. This flexibility in adapting to the terrain allowed work to be done on the inner space of the blocks, by means of the unevenness of the various areas that constitute them, leading to a more complete adaptation to the local characteristics.

The Standardized Study of the preparatory school consisted of a block with one and a half storeys where the administration, reception, cafeteria, library and multipurpose hall were located. There were also blocks of classrooms with a single quadrangular floor and an open central quadrangle. Internal movement took place via the teaching spaces.

These solutions were reproduced in various parts of the country, specifically adapted to the size of the school and the plot where it was placed.

In the 80s, a new type project was developed that maintained the structure of pavilions with outside connections via walkways. This project, called "3x3", consisted of two types of blocks:

1) a two-storey square block with a staircase located in the centre and natural light from skylights, intended for educational and administrative activities;
2) a single-storey rectangular block for the cafeteria, kitchen and student room.

In terms of construction, they are modular buildings with a porticoed structure of reinforced concrete and slabs of the same material, with the walls built in brick masonry, plastered and painted with some apparent concrete features. The roofing is flat and not intended for access or sloped with skylights and lined with fibre cement boards. The windows have wooden or aluminium frames and have a single-glazing pane with aluminium.

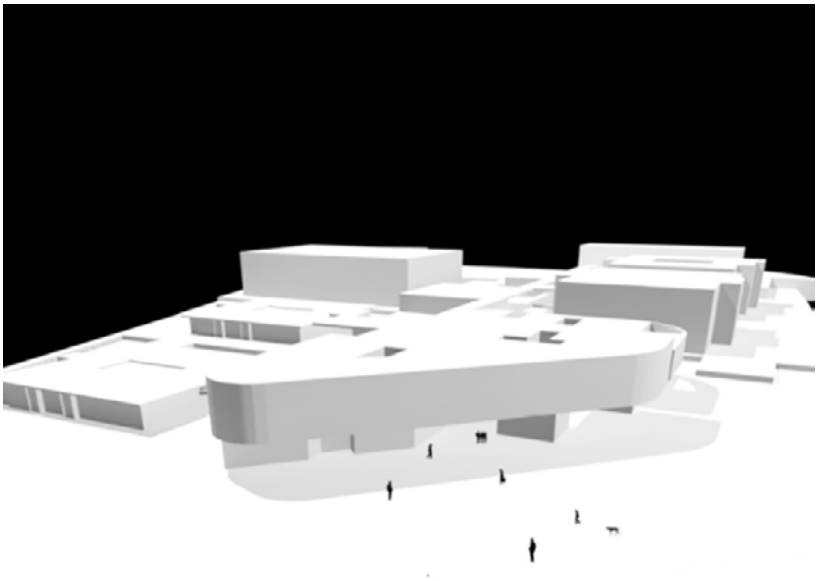
2. Project proposal

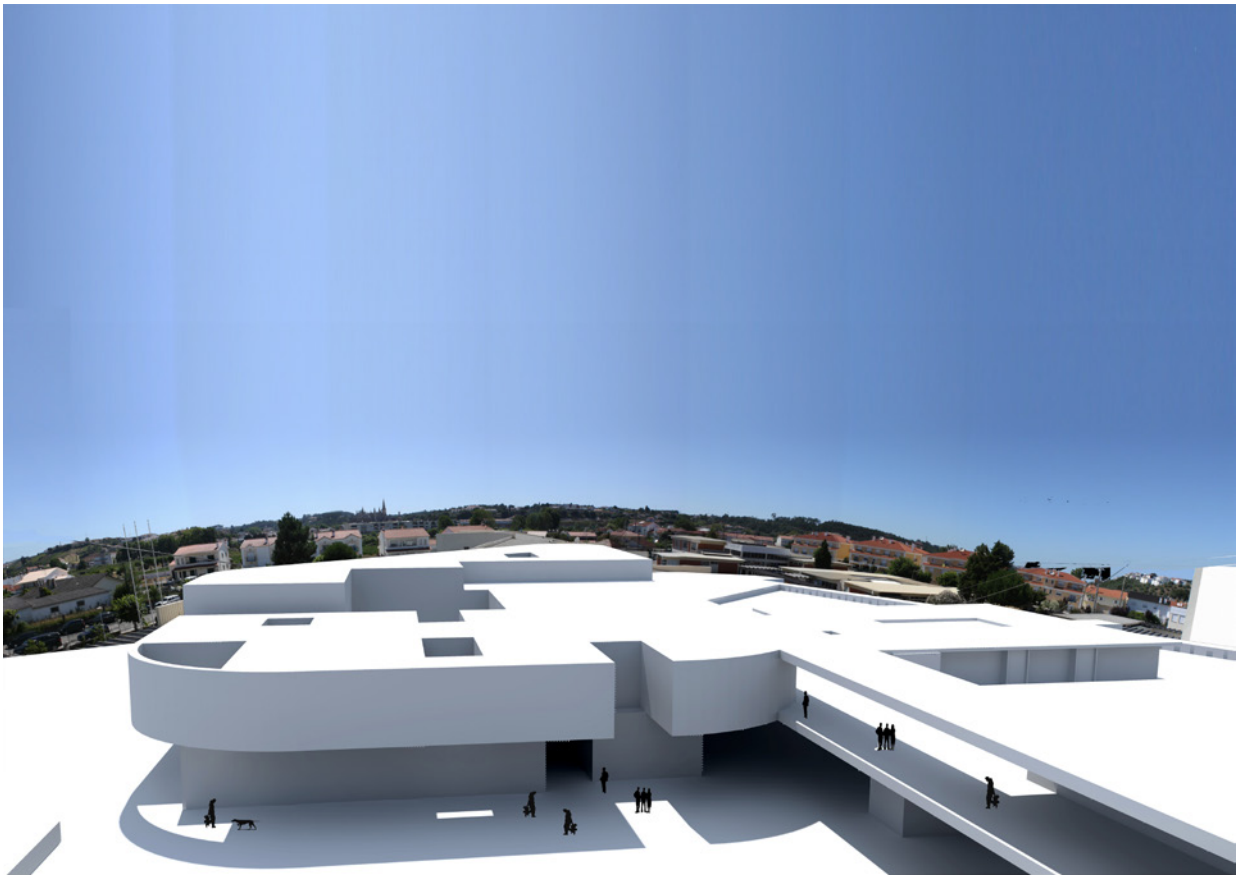
The main prerequisites of the proposal were:

– Defining the plot of land for intervention by opening up the street north of Rua do Freire and connecting it with the street parallel to Estrada do Casal Novo. This will make space for a road with clear distribution. To this end, the current 1st cycle block will be demolished.
– Creating a square parallel to Rua do Freire, giving visual continuity with the outside space of the school. This act will allow the street to be balanced by the creation of an outside reception atrium for school users.

Fig. 15 Render west view @ Atelier do Corvo

Fig. 16 Render east view @ Atelier do Corvo



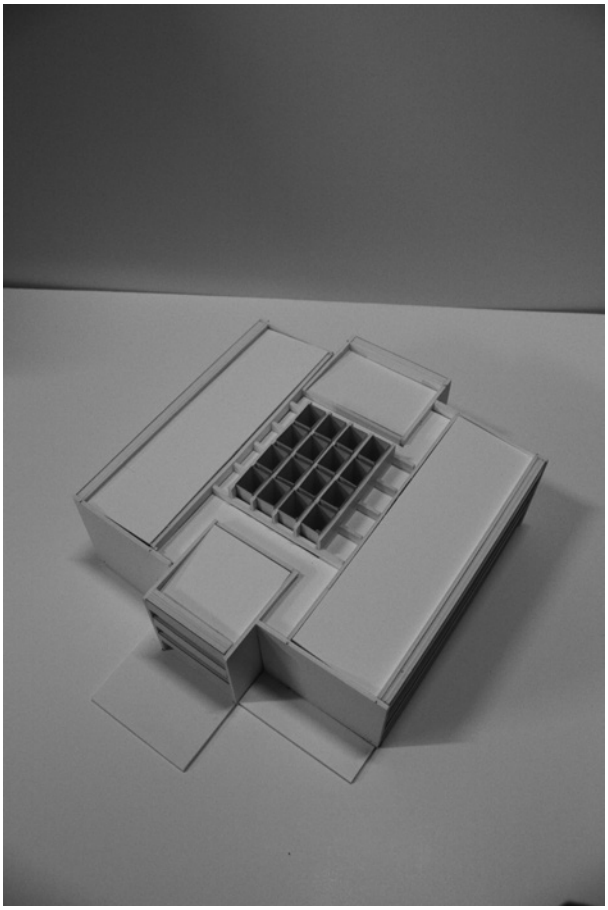


– A central body in the square, unusual in its location with the remaining buildings but, when formalized, will be a representative feature, where the gatehouse and other parts of the programme for common use will be located.
– Another body coordinated with the previous one, a learning street, which will allow a connection between the other spaces of the school. Next to this, several organic and functional units are distributed, which constitute formal units.
– A new block where specific curricular rooms and design rooms and laboratories will be located, adjacent to a quadrangle facing the east slope.
– A covered multipurpose pavilion installed halfway between the current gymnasium and the workshops.
– A 1st cycle school with autonomous access, strategically located in relation to the new proposed road distribution network. It will have designated play areas which integrate with and become part of the building itself.
– Outside spaces associated with themes, which will be related to their target age groups.

Fig. 17 Informal auditorium @ Atelier do Corvo

Fig. 18 1:100 model of the 2nd learning cycle module @ Atelier do Corvo

Fig. 19 1:100 model of the 2nd learning cycle module, interior view @ Atelier do Corvo



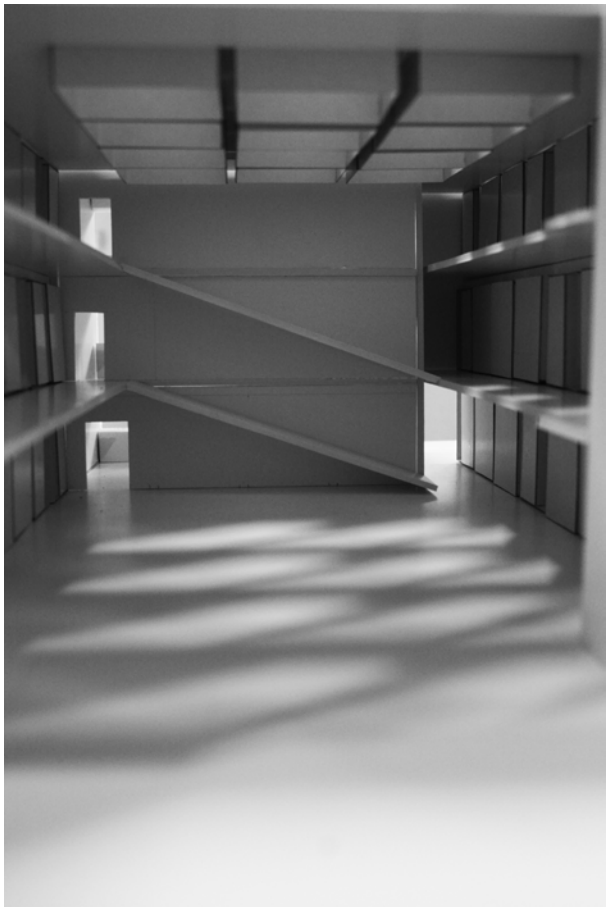


Fig. 20 **Brick model @ Atelier do Corvo**

The reception body represents the school community. It is through this body that students, teachers and staff will access the school. The building extends over two storeys with its main feature being the connection with the multipurpose hall. This space, a learning street placed at the hub of the large distribution corridor between the different bodies that make up the school complex, would function as a straightforward connection between the school community and the school library, but also as a space for breaks and a meeting place for students.

The building will be in white facing brick with lattices and tracery on the exterior walls that will provide illumination for different spaces with filtered light.

This body leads onto the learning street, which also extends over two storeys and allows access to the other blocks. On the ground floor, this movement always takes place inside, while on the first floor, movement is via a covered walkway. Throughout this body other parts of the curricular programme for common use can be found, which allows the limits of the spaces to be blurred and gives fluidity.

The quadrangle of the existing blocks of the 2nd cycle will be covered and will become a generous atrium leading to the rooms, but above all will allow the rooms to be more versatile and will enable new pedagogies.

In the blocks of the 3rd cycle and the secondary school, the main restructuring will be to recess the limit masonry walls of the rooms in order to mark the pre-existent structure of the buildings. This recess will house lockers.

The central triple-height atrium will be given skylights that will characterize and illuminate these two bodies, like those of the 2nd cycle, making them appropriate as break areas.

The laboratories and the design rooms will be located in another body, opposite the existing gym-sports pavilion in the school for renovation. This will undergo a thorough remodelling so as to enable it to have new uses.

There will also be two sports fields on two different levels, covered by a structure made of metallic components and covered in galvanized steel sheeting.

The service transformer and the water tank were placed together and are located in the south-west of the plot.

The 1st cycle school is located in the south-east going from the slope to the street. The entire building has one storey in which the functional programme takes place around small squares. The roofed area will also be used for ludic activities and as a playground, as well as sports. This will be the only building that will use red facing brick in order to unambiguously mark the stage of the curricular programme as having the specific characteristics for the age group for which it is intended.

1 → External Thermal Insulation Composite System
2 → Glass Fibre Reinforced Concrete

Fig. 21, 22, 23 1:50 Foam model @ Atelier do Corvo

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Tilemachos Andrianopoulos

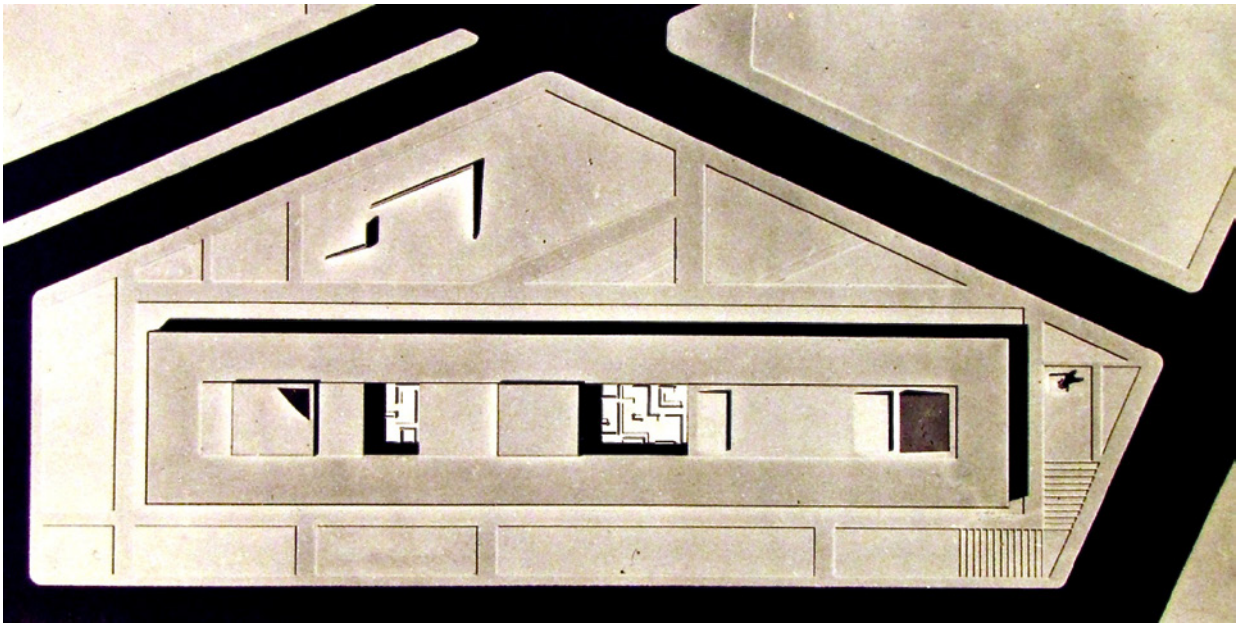
The Athens Conservatory Concert Hall by Jan Despo: Restoration, Reuse, Research.

1. OPUS

Architect, theorist, and professor Jan Despo or Ioannis Despotopoulos (1903–1992), the only Greek student of the Bauhaus, a second-generation militant modernist, a socialist, and a founding member of the Greek CIAM team – produced an extensive but relatively unknown oeuvre. Numerous urban design and planning projects in Greece and Sweden – where he stayed in self-exile for a period of 15 years – witnesses the centrality of the urban condition in his thought. In 1959 he was awarded the first prize in a competition for the Athens Cultural Center. As modified in 1966, the Athens Cultural Center comprised of a large square, a concert, dance and conference theatre, a lyric and drama theatre, a conference hotel, a library, a museum, and the Athens Conservatory. This complex urban design project remained unrealized with the exception of the music academy (1969–1978). The building of the Athens Conservatory is 160 meters long and has only one above-ground floor. Its bold proportions host two atrium spaces as well as two open galleries of a skillfully austere structure, reminiscent of ancient Greek stoae. Despite its obvious, dynamic linearity the modernist prism's section reveals an elaborate interior that also expands in two underground levels. Two main spaces for music performances were created: a uncompleted amphitheater of 800 seats on the ground floor and a Hall of 200 seats on the upper floor.

Frontispiece The Athens Conservatory, Restored Upper Concert Hall, 2018. Source:T.Andrianopoulos.

Fig. 1 The Athens Conservatory, model, c.1970. Source: The Neohellenic Architectural Archives (ANA), Benaki Museum.



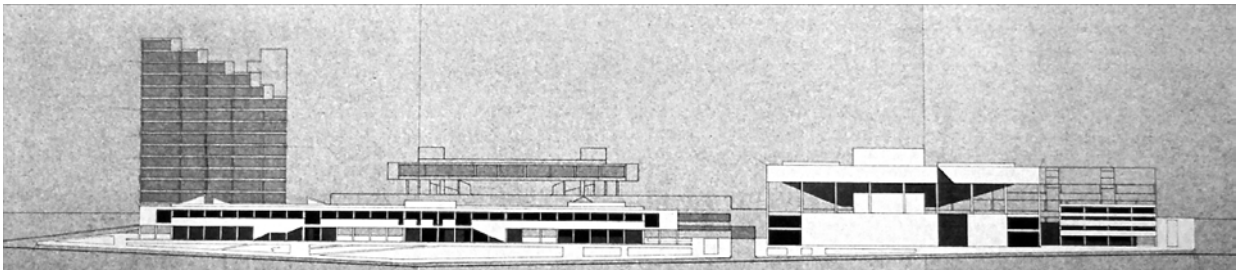


Fig. 2 The Athens Cultural Center, Elevation, 1966. Source: The Neohellenic Architectural Archives (ANA), Benaki Museum.

Fig. 3 The Athens Conservatory, model, c.1970. Source: The Neohellenic Architectural Archives (ANA), Benaki Museum.

Fig. 4 The Athens Conservatory, Restored Upper Concert Hall, 2018. Source: T.Andrianopoulos.

Fig. 5 The Athens Conservatory, Northern Elevation, 2009. Source: T.Andrianopoulos

2. FRAGMENT

The latter served as the Conservatory's space for the teaching of lyric art as well as its main music venue for 40 years, though it also remained in an incomplete, decadent state due to lack of funding. The Concert Hall forms a whole with a more closed, quadrate space for theater performances – separated by common supporting facilities. A grid of concrete beams runs through both roofs, though the one of the music hall is dramatically different: an almost 4 meters-high twin beam of a length of 15 meters divides the space in two areas, forming an impressive non symmetric skylight. The roof is constructed by exposed reinforced concrete while one of the white-plastered lateral walls conceals another unique 5 meters pre-tensed beam that spans a length of 35 meters and permits the circular-like set up of the subjacent amphitheater. The gradual wear of time, the additive arbitrary interventions in terms of furnishing and decoration, and the unfinished state of the mechanical equipment urged for a restoration which was furthermore demanded, according to the School's decision to present a more extrovert public activity. The restoration was commissioned to tense architecture network, led by the writer, and atelier66, led by Dimitris and Suzanna Antonakakis. The restoration's main aim was to retrieve the splendor of the Hall's structure while removing the dull interventions of almost half a century.

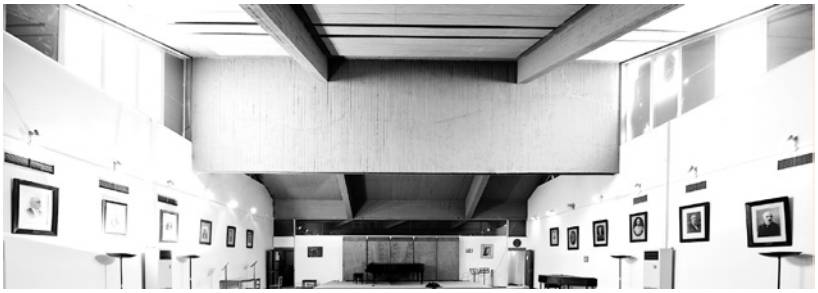
Fig. 6 The Athens Conservatory, Upper Concert Hall before restoration, 2017. Source: T.Andrianopoulos.

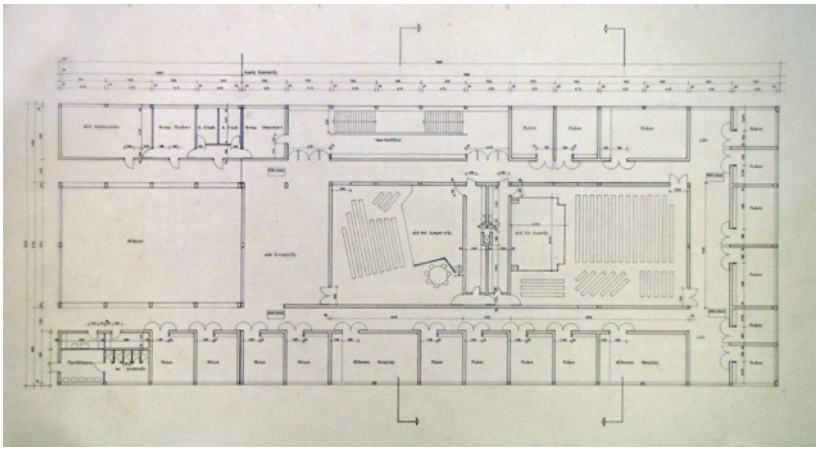
Fig. 7 The Athens Conservatory, Upper Concert Hall before restoration, 2017. Source: T.Andrianopoulos.

Fig. 8 The Athens Conservatory, restored Upper Concert Hall, 2018. Source: T.Andrianopoulos.

Fig. 9 The Athens Conservatory, floor plan (detail). Source: The Neohellenic Architectural Archives (ANA), Benaki Museum.

Fig. 10 The Athens Conservatory, Upper Concert Hall section (detail), 2018. Source: atelier66 and tense architecture network.





3. REUSE

The disposition of the seats in Jan Despo's plan is non symmetrical, remaining subordinated to the equally non-symmetrical longitudinal beams. Since the space was mainly used for academic purposes and the School wanted to open up the Hall to the public, it was decided that the stage should be wider in order to be able to host bigger music ensembles and that the new symmetrical seats should be comfortable enough, but at the same time moveable. The new pedestal occupied therefore the maximum width but also extended to the limit of the transversal beam, furthermore in order to improve the way music would reach the audience. Two main new spatial elements were inserted: the new wooden flooring and a composition of acoustic panels on the lateral walls. Replacing the timeworn moquette, the deep red-brownish iroco flooring extends also to the pedestal which defines a central zone of paving perpendicular to the one of the corridors. The silent operation of the floor heating reduced the air-conditioning load and consequently ensured better acoustics which were studied by Gottfried Schubert – who demanded a combination of new reflective, absorbing and diffusing surfaces. Completely altering the appearance of the Hall, the composition of acoustic panels replaced a series of miserable portraits of important tutors and famous composers that had gradually covered their unprotected, receptive surface. This imposing composition of panels was essentially not our own.

Fig. 11 The Athens Conservatory, restored Upper Concert Hall, 2018. Source: T.Andrianopoulos.

Fig. 12 The Athens Conservatory, restored Upper Concert Hall, 2018. Source: T.Andrianopoulos.

Fig. 13 The Athens Conservatory, Floor plan (detail). Source: The Neohellenic ArchitecturalArchives (ANA), Benaki Museum.

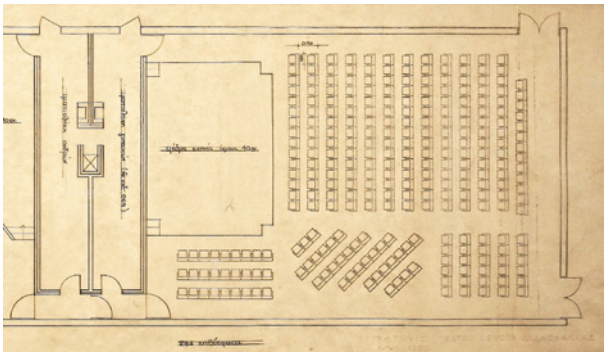


Fig. 14 The Athens Conservatory, Upper floor Concert Hall-Acoustic panels, northern elevation. Source: The Neohellenic ArchitecturalArchives (ANA), Benaki Museum.

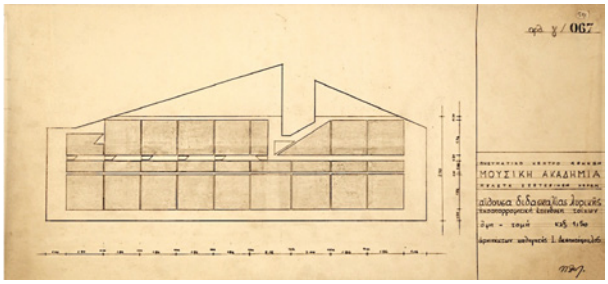
Fig. 15 The Athens Conservatory, Upper floor Concert Hall-Acoustic panels, southern elevation. Source: The Neohellenic ArchitecturalArchives (ANA), Benaki Museum.

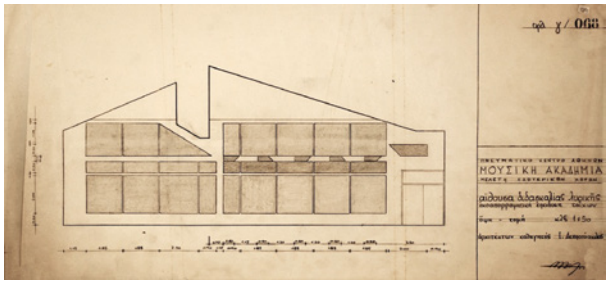
Fig. 16 The Athens Conservatory, restored Upper Concert Hall, 2018. Source: T.Andrianopoulos.

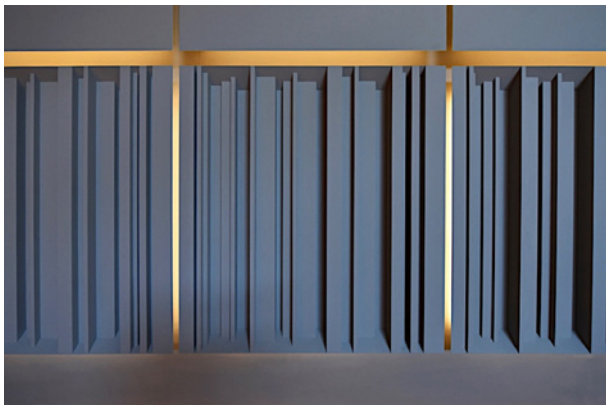
Fig. 17 The Athens Conservatory, restored Upper Concert Hall, acoustic panels detail, 2018. Source: T.Andrianopoulos.

4. RESEARCH

Jan Despo's archive comprises of 15.000 drawings, 2.000 of which were made for the Athens Conservatory; its execution's study is extraordinarily meticulous – comprising hundreds of details and furnishings. Before attempting the restoration, a thorough research of the archived drawings was considered necessary: It revealed a series of elevations of a promising composition of acoustic panels – that was never realized. The fact that the two long sides are different, since the one hosts the main entrance, led Despo to different dispositions of the panels – especially obvious at the point of contact with the transversal twin beam – an artistic, visually intense synthesis. The construction drawings indicate that the panels' acoustic operation was mainly reflective. Apart from the necessary adaptation of their dimensions to the real dimensions of the Hall, that led to a 95% shrinkage of their surface, an important change was made to their geometry: following a decision to incorporate at the perimeter of each panel a led lighting strip, their 15cm width was chamfered at 45 degrees, thus achieving an optical dissolution of their mass – that is further accentuated by the warm, indirect lighting. To restore (verb), c.1300 is "to give back", also "to build up again, repair", from old French restorer. Through a series of radiant, dimmed lighting scenarios, these newly constructed panels are 'given back' to the Concert Hall, as restored according to those original, forgotten drawings.







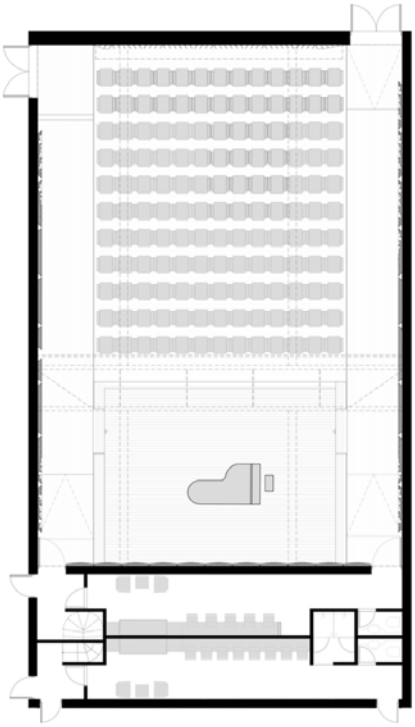
5. RESTORATION

Changes and design interventions were necessary in terms of lighting, stage design and furnishings. By enlarging the scene's pedestal and consequently by moving the sound source forward, a suspended glass surface was required in order to optimize the sound's reflection towards the audience. Through its trapezoid shape, the latter's edges are appropriately refined in order not to derange the composition of the lateral panels. The dark tinted glass at the side of the backstage facilities was replaced by a sound-proof one – now operating as the semi-transparent diaphragm of the sound control room, created on a new mezzanine above the dressers. In order to amplify the sound diffusing capacity of the exposed brick wall, vertical narrow wooden elements following the brick's width and are complemented by a new wooden reclining bench in 8 pieces. The skylights were restored to the original framing of only two pieces for the small and three pieces for the large one, as found in the drawings – replacing the smaller, recent subdivisions. Four linear lighting fixtures at the lower level of the beams achieve adjustable, general lighting – without contact with the roof. Stage sound reflecting panels, flooring and exposed bricks were similarly tinted aiming at introducing a sharp polarity between the impressive roof and the new floor. The brick wall's color is consequently not the original one. Restoration was approached in a non-conservative manner: vigilant restoration as adaptive reuse.

Fig. 18 The Athens Conservatory, Upper Concert Hall, Plan.
Source: atelier66 and tense architecture network.

Fig. 19 The Athens Conservatory, restored Upper Concert Hall, 2018.
Source: T.Andrianopoulos.

Fig. 20 The Athens Conservatory, Upper Concert Hall, Section.
Source: atelier66 and tense architecture network.



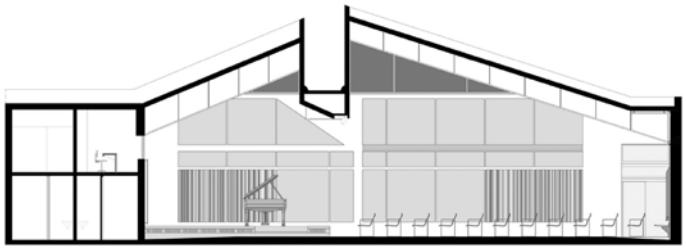


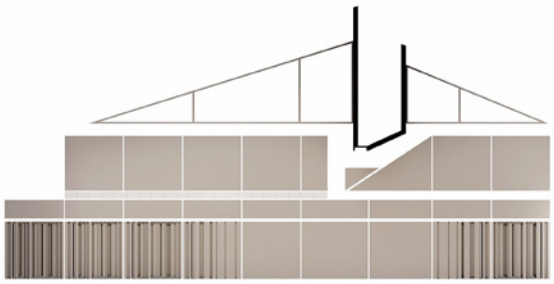
Fig. 21 The Athens Conservatory, restored Upper Concert Hall, 2018. Source: T.Andrianopoulos.

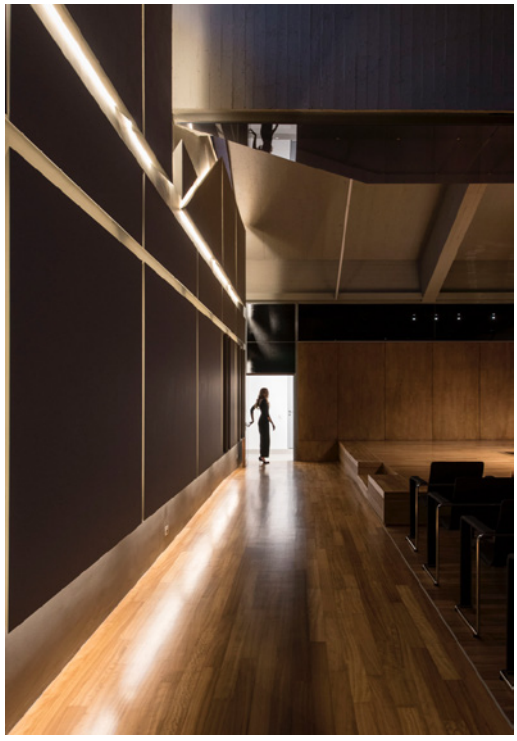
Fig. 22 The Athens Conservatory, Upper Concert Hall, Elevation drawing (detail). Source: atelier66 and tense architecture network.

Fig. 23 The Athens Conservatory, restored Upper Concert Hall, 2018. Source: T.Andrianopoulos.

6. FRAGMENT_II

The transformation of the Hall into a contemporary space for music asked for the adaptation of Despo's sculptural composition to current acoustic requirements: The panels should simultaneously deal with specifications of sound reflection, sound absorption and sound diffusion. Depending on their distance from the stage, the reflecting or absorbing requirement of the panels could easily be achieved by changing both their interior filling and their surface – the sound diffusing requirement though posed an important problem: How to make the lower panels of the edges diffusing while retaining their square geometry and respecting the sculptural integrity of the whole? Vertical, uneven carving of their surface and retaining of the overall framing was the only valid solution, as it achieved a gradual dissolution of their mass and their surface. Continuous linear slots for the air-conditioning replaced the original trapezoid ones, while the sound boxes were incorporated in two of the narrow panels, one for each side. The side walls were not kept white: panels and walls were painted in a concrete-grey in order to be unified with the roof, that along with the golden flooring act as complementary U-shaped surfaces that interconnect. The realization of this omitted design fragment, decades after its conception, is what finally makes the Hall alive, what makes it breathe: It's nature is inherently decorative, born from within, necessary, expressive of the spirit of the whole. A beautiful surface, allusive of its depth, as according to F.Nietzsche: "There are no beautiful surfaces without a terrible depth."





7. OPUS_II

What characterizes an opus is unity. And unity is what essentially is emerging through depth. Depth is the consistent interweaving of scales – let us consider their usual proceeding: urban design, to building design, to interior design. The Athens Cultural Center, to the Athens Conservatory, to the Concert Hall. The Athens Cultural Center was not realized, though it was passionately studied over a course of 15 years. The Athens Conservatory is a fragment of this greater vision, though it was also not completed – over a course of 40 years. The upper Concert Hall is a realized fragment of the fragment, fragment of a greater crystal – and the intensity of its restored vitality gives an idea of the vitality of the whole. Even closer, the omitted composition of the acoustic panels is like a crystal in a crystal, in a crystal, a necessary musical theme that was omitted – a materialization of design depth. For an opus to breathe, nothing can be omitted, and the interpenetration of scales is never a linear one – at least in Despo's mind. The rehabilitation of a lucent fragment of an emblematic building of Greek modernism called for the interweaving of both modern, adaptive reuse and careful, respectful restoration. None of these two essential notions would be of a finally valid spatial result if those original drawings by Jan Despo had never been discovered, shifting the importance of the whole venture to the central, crucial one: Research.

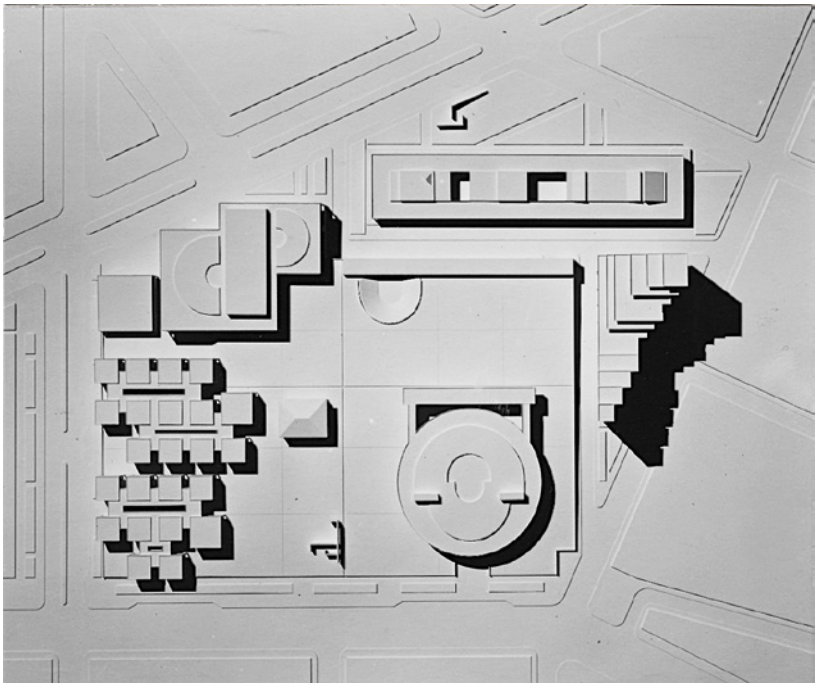
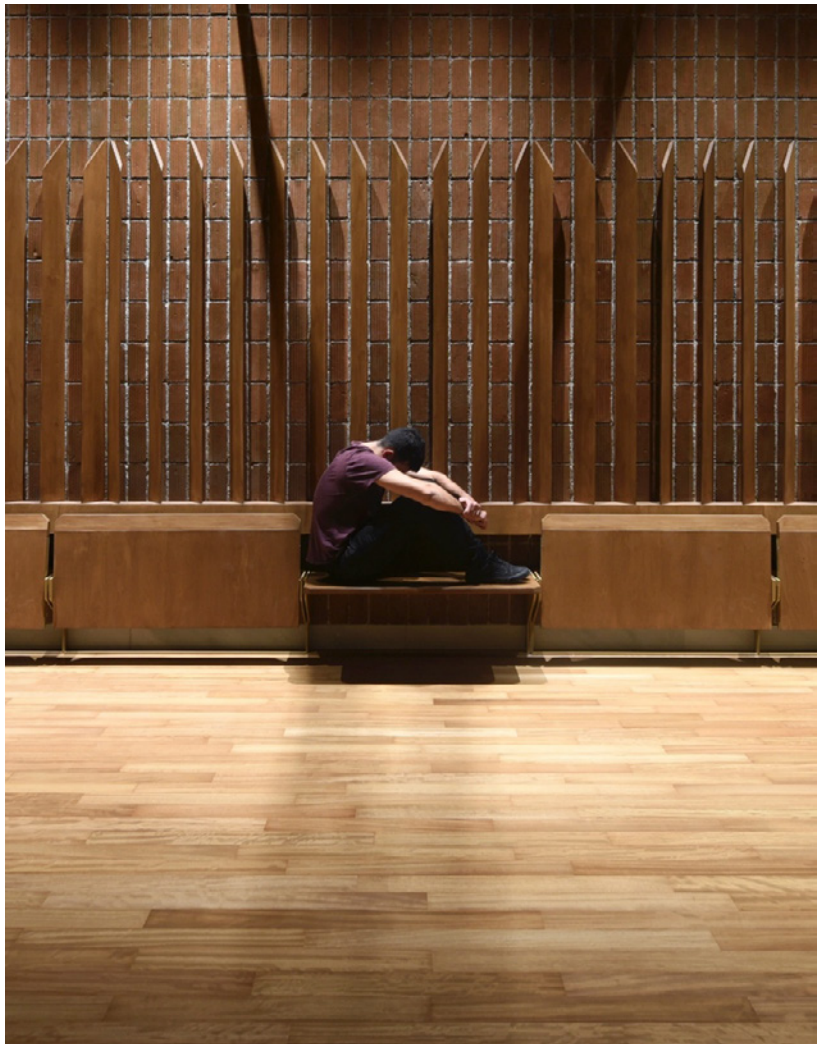


Fig. 24 The Athens Cultural Center, model, 1966. Source: The Neohellenic Architectural Archives (ANA), Benaki Museum.

Fig. 25 The Athens Conservatory, Restored Upper Concert Hall, 2018. Source: T.Andrianopoulos.

Fig. 26 The Athens Conservatory, Restored Upper Concert Hall, 2018. Source: T.Andrianopoulos.



1 → Jan Despo studied in the Weimar Bauhaus for one year and a half and in order to obtain a diploma that was recognized in Greece continued his studies in Technische Universität Hannover (1924–28).
2 → Following his dismissal from his professorship in the NTUA due to his political convinctions, Despotopoulos left in self-exile for 12 years in Sweden (1947–1959) where he adopted his abbreviated name: Jan Despo. He returned as a professor at the School of Architecture in Athens just after winning the ’59 competition for the Cultural Center.
3 → At the end of the 1950’s, Jan Despo worked in both Sweden and Greece. A series of civic centers in the former country laid the groundwork for his only corresponding composition in Greece, the Athens Cultural Centre. See also his article Jan Despo, “Die Agora, das neuzeitliche Kulturzentrum”. Bauen + Wohnen, 17:2/1963, 49–61.
4 → This version was briefly presented at the end of a lecture for the Berlin Academy of the Arts: Despo, J. (1966) Die Ideologische Struktur der Städte. Berlin: Akademie der Künste, 164–167.
5 → Constructed between 1969–1976, though incomplete.
6 → Atelier 66 (architects: Dimitris and Suzanna Antonakakis, collaborator Efi Iliadou) and tense architecture network (architect: Tilemachos Andrianopoulos, collaborators: Konstantinos Kosmas, Nestoras Skantzouris).
7 → Nietszche Friedrich, Διόνυσος Κατά Εσταυρωμένου, Δοκίμια και Σημειωματάρια (1869–1873), Κατάρτι, Athens 2009, p.232, my translation. Nietszche uses the word “schreckliche” for terrible in the original text.
8 → 1959–1974. The last building that Despo designed for the Athens Cultural Center to an almost execution-study level was the Lyric and Drama theater (The Neohellenic Architectural Archives (ANA), Benaki Museum.)
9 → This constant interpenetration of scales is particularly proven in his urban design projects, especially for Cultural Centers in Sweden, whose preliminary versions were elaborated in diagrammatic form through numerous comparative tables (scale 1/400) for which he also prepared at the same time close-up sketches of decorations, as well as structural diagrams.

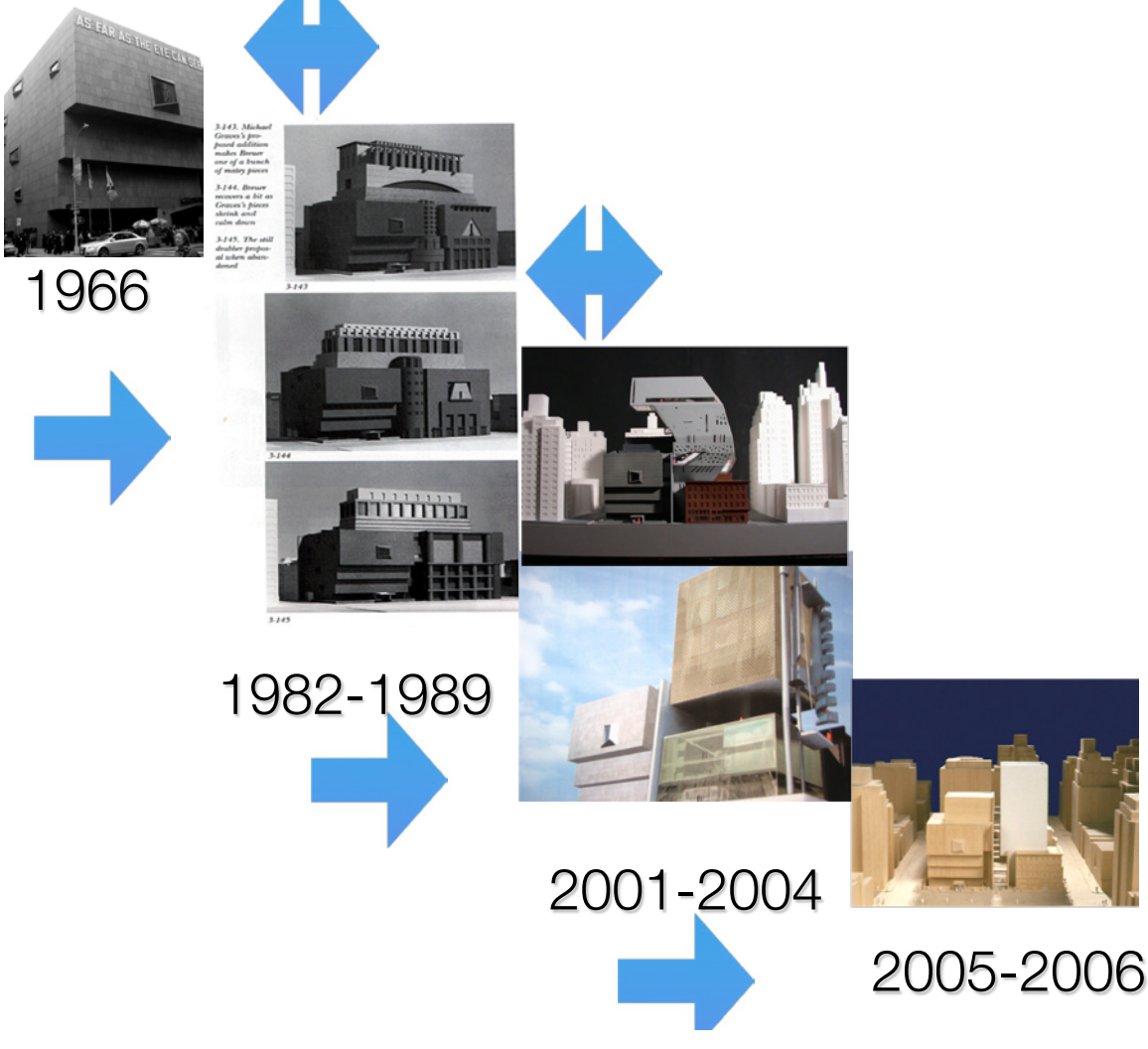
Section 2

Methodological Papers

Albena Yaneva

University of Manchester

Modern Architecture as Inextensible An Actor-Network Theory Account of Contested Design



I will begin with this provocative, and quite unusual image, of an iconic building that we all know – the Eiffel Tower. Some of you might have heard about the media debates surrounding the "new design for the restructuring of the public spaces of the Eiffel Tower" announced by the French architect David Serero in March 2008. He suggested doubling the size of the tower's highest observational platform. The architect claimed that "his firm's proposal was accepted after an open call, and that the structure is expected to be assembled for the 120th anniversary of the tower construction." But shortly after that, the government-contracted firm that manages the tower – *la Société d'Exploitation de la Tour Eiffel* – stated that the claims of the architect are a "hoax." The communication chief denied that there was ever any call for architects regarding plans to redevelop the top of the monument and that Serero Architects never presented themselves as candidates for such a competition. The media outlets that ran with the story included: *The Guardian, The New York Times, Architect, Bustler, The Daily Telegraph* and *Belfast Telegraph*.

In an interview with me in May 2008, Serero argued: I wanted to do with the Eiffel tower, what Christo did with Pont Neuf some years ago (Yaneva, 2008, May 30). Commenting on this media controversy, he argued: "We had no idea that our project would create such an excitement and will provoke reactions from Parisians and people around the world... Most of the people in Paris ignore the tower. They don't look at it and often cannot really notice it as the city fabric is very dense... It is just a strategy to give attention to this monument" (Yaneva, 2008, May 30).

The suggested alteration of a building with such historical and cultural importance for Parisians provoked a lot of reactions indeed, and provoked a huge amount of criticism within the architectural community and the journalist community, among Parisians and visitors to Paris. Many architectural blogs discussed the suggested extension, journalists wrote numerous articles, and those who were impatient to break the story were later accused of failing to verify the facts. We cannot say if there was a competition or not (or if Serero is simply a PR genius); we cannot say who is telling the truth – is it architect Serero or the La Tour Eiffel society. But the fact is that a lot of groups felt *concerned* by the tower alteration and expressed their reactions as they began gathering on internet blogs and on the pages of various newspapers expressing agreement or disagreement. Whatever the accuracy of the story, it had a positive impact, because it made us rethink the importance of the Tower for Parisians, it made us go back to Gustave Eiffel's biography and revisit the history of the Tower's construction and in particular the controversy surrounding its design in 1889; it made us realize how many actors are involved in its maintenance today; it challenged impact of this building. As a result of the controversy the tower gained new allies and critics.

My interest in architectural controversies began earlier, and more precisely in 2001 when I started working at the Office for Metropolitan Architecture (OMA), headed by Rem Koolhaas, in Rotterdam as an anthropologist/sociologist coming from Bruno Latour's school. Rem guided me in the office and the first thing he showed to me was the Whitney table: "This is the project of the extension of the Whitney Museum of American Art in New York... this is a table of democracy," said Rem. That was the most important project for him at the time, as he was dreaming to build in "delirious" New York. Later, I found out that the table of models contained not only scenarios for the future development of the building but also bits of history and traces of past controversies surrounding the building. I was eventually to spend two years "living" in this office just like the anthropologist Malinowski spent years on the Trobriand islands, studying the cultural and the specific rituals of an unknown tribe.

The Practice of Koolhaas: the method of observation

On my first day at OMA, I discussed my project with Rem Koolhaas, and he said: *"Tu veux* être *la 'femme invisible'* à OMA? How would you like to observe us? Would you need a room full of cameras to do so?" I was embarrassed, because he tried to translate immediately my intention to do an observation of their everyday practices into architectural terms. He tried to 'architecture' my presence at OMA. Of course it was a joke, a Foucauldian if you wish, because I imagined, just for a second, the panoptical horror of sitting in an office full of monitors overseeing the architectural practices. Then, interrupting me again, Rem added, "It is not a question of offices here." It took weeks of on-going participant observation until I was finally able to unravel the meaning of his joke. They were all invisible at OMA: Objects and architects, foam cutters, sketches and maps, moved together and changed their positions in relation to each other according to the dynamics of the on-going architectural projects.

In observing the specific routines that distinguished the OMA from other architectural practices I had no intention to grasp the general rules of the design process; I just wanted to be able to see the details of their day-to-day activities. I wanted to watch the architects draw and handle the models, to see them smoke and discuss the latest development of their projects on the terrace, to listen to their jokes in the kitchen, to feel the pressure in the air when the tall silhouette of Rem appeared in the office; to see all these tiny fragments from the daily routine, and to be part of it. And that is what I did as a participant observer at the OMA, i.e. I followed and described meticulous the design process. To capture this rhythm I used various techniques of observation, which allowed me to stay at two different distances: close to the actors and the course of their actions, intervening and participating in little tasks; and at a greater distance so as to be able to translate and inscribe traces of actions and speech acts.

For many historians and theorists of architecture who had the chance to interview Koolhaas and spend time in his office, lingering more than a day in the practice would be considered a waste of time. For them to explain Koolhaas's design approach or a project like the NEWhitney, it would suffice to refer to the larger theoretical influences upon his design: for instance the impact of Surrealism (Koolhaas, 1978; Vidler, 1992; Hill, 2003) on his early works, or the influence of the Modern Movement, or his rapport with functionalism, or the theoretical influence of Mies van der Rohe or le Corbusier or Russian constructivism (Lucan, *et al*, 1991). Another storyline would be to follow his childhood in Indonesia and his background as a journalist for the Haagse Post and screenwriter, connecting it with his architectural approach and trying to explicate its distinctive features. His fascination with Manhattan and his theory of the skyscraper, of density and congestion would then be explained by his Dutch-ness and the fact that the first settlers of Manhattan were Dutch, recreating their land with nostalgia (Damisch, 1991). And the list of interpretations can be continued; they all revolve around these lines. I find it surprising to see architectural theorists desperately trying to understand Koolhaas's style, idiosyncrasy and strengths by simply referring to his singularity and individuality as a "creator," as if we were to judge him as a seventeenth – century unique genius or to factors outside the realm of architecture – society, culture, class, and gender. Why is it that theorists of architecture are more interested in his big ideas, in the powerful insights, often leaving the design process apart, and even excluding his office practice as being significant for the understanding of his buildings? Why is it that realistic accounts of contemporary architectural practices, of the design worlds, are missing?[1] Why is it that in the prevailing analyses, buildings are interpreted as separated from both the conditions of their making and the design experience of the makers?

A different way to look at the architecture of Rem Koolhaas, a pragmatist one, would aim at understanding the practices rather than the theories and the ideologies, the actions rather than the discourses, architecture in the making rather than architecture made (Yaneva, 2009). That is why I engaged in an ethnography of design. I followed designers at work just like the sociologist of science Bruno Latour did in the 1970s, following scientists at work to understand the production of scientific facts. To understand the meaning of OMA buildings and Koolhaas's architecture, I needed to forget (and to put on hold) the official interpretations and to look instead at the ordinary conditions of experience, to follow the way architects make sense of their world-building activities, to look at the routines, mistakes, and workaday choices. I also accounted for the cooperative activity of both architects and support personnel, humans and models, paints and pixels, material samples and plans, that all constitute the *design world* (Becker, 1974, 1982)[2]. I assumed design was accountable, i.e., that it is pragmatically knowable, not merely symbolic.

The NEWhitney

The particular case I have worked on at the OMA was the project for the extension of the Whitney museum of American Art in New York – the NEWhitney. The Whitney museum is a small museum in Manhattan located on Madison Avenue between 74th and 75th streets. It was designed by the Bauhaus-trained architect Marcel Breuer together with Hamilton Smith and built in 1966. The building was discussed on the pages of various newspapers and specialist art journals in the 1960s, and the protagonists in the architectural debates included: architectural critics, the museum's neighbours, museum professionals, architects and ordinary New Yorkers, artists, passers-by, neighbours, non-human actors, American art, and from 1966 on, visitors. They gathered around the scaffolding of the building during its construction, and its barely visible granite grey fabric provoked controversial reactions *in situ*. The protagonists in the controversy were concerned by two aspects of the building: "its upside-down structure" and its "windowless character." Hated and debated in the 1960s, once built, the Breuer building became a beloved modernist icon.

In the 1980s Michael Graves was commissioned to design an extension of the Whitney museum. He suggested demolishing the brownstones adjacent to the Breuer building and building a replica of the Breuer and a huge structure overarching the two buildings. Graves presented three different schemes (in 1982, 1987, 1989), but they were all controversial and failed. A decade of controversy accompanied the post-modernist proposals of Graves. The controversies were labelled by the *New York Times* as being "the biggest battle in the architectural galaxy." They enrolled a large number of heterogeneous actors and re-connected them differently through its trajectory: community groups, gravitation laws, clients, museum professionals, historical buildings, architects, zoning requirements, street walls, museum philosophy, preservationists, American artists, the architectural community (divided in two camps), neighbours association, city planning commission, and the city board of estimate.

Twenty years later, another star architect – Rem Koolhaas – was commissioned to design the long awaited extension. The proposal by Koolhaas, called NEWhitney, grows out of the small footprint into the zoning envelope, keeping a distance from the existing buildings, and that is what gives it an unusual shape, a shape reminiscent to a "dinosaur," according to architects from OMA. In this ensemble, each of its three parts would be subject to modifications and would become to a certain extent renewed: the Breuer building would be restored; the five Madison Avenue brownstones would be altered comprehensively, and the domestic space re-configured for the purpose of displaying art. Also, there would be an entirely new Tower Building. Therefore, the Whitney extension was viewed as a means of reconfiguring and reorganising the existing museum and the adjacent buildings, rearranging the extant spaces and reinventing the museum's program,

instead of creating e*x nihilo* an entirely new museum building. Yet, in the Koolhaas design, the Whitney extension would re-conceive entirely the existing Whitney building.

What was it about the Whitney building that provoked so many reactions, good and bad, at the time of its construction and at the time of its extension plans? Why did those extension plans repeatedly fail? What kind of actors responded to the museum's actions and claimed to speak on its behalf? We cannot answer these questions along the traditional three planes: the aesthetic plane of architectural practice, the institutional plane, and the plane of societal context. On the aesthetic plane, in spite of the fact that the Whitney building has its own aesthetic strength and logic, we cannot continue to argue that it simply reflects the specificities and the challenges of the Modernist style, and in particular the International movement. In planning for its expansion, three architects painstakingly struggled to answer clients' briefs and communities' concerns by a set of distinctive design moves. We cannot ignore these design struggles and simply explain the building as mirroring the differences in their individual creative approaches, backgrounds, styles and visual languages. Yet even though the design process of extending the Whitney museum unfolded according to its proper logic in each case, architectural critics still try to explain the reasons for the final rejections of the Whitney addition projects by referring to the chronic identity crisis of the cultural institution itself – the institutional plane – and engage in causal explanations relating to the museum's history. This plane is to be avoided as well. While architectural projects develop according to their own competitive logic, they can also be associated with their political contexts – the societal plane – in this case, the cultural and the political climates of the 1960s, 1980s and the first years of the 21st century, and accordingly the extension plans can be interpreted as mirroring shifts in politics. Yet, the analysis of the Whitney projects resisted blatant causal explanation of design with social and political factors.

Entering the office of Koolhaas to learn about the on-going process of design, I was gradually led, together with the designing architects, to open the black box of the design of Graves and the black box of the Breuer Whitney. As OMA architects found out by tracing its historical complexities, the Whitney has an amazing "career," rich in controversies. To gain access to the repertoire of actions accompanying the Breuer and the Graves plans, they studied the building's history, the variegated attempts of architects and urban planners to extend it in a particular way, and how various actors talked on behalf of the building. Instead of providing a linear account of the Whitney's architecture from Bauhaus to Koolhaas, based on a comprehensive historical investigation, the OMA architects thus embarked on a retrospective analysis of the past, engaging in a process of interpretation of the Whitney museum, and its performance, and recollecting the Whitney trajectory, or its *building career* (to use another expression popularized

by anthropologists) (Appadurai, 1986; Tamen, 2001). Put another way, in order to understand the NEWhitney, I also had to unravel its history of design controversies.

Following the process in which the NEWhitney models are made one can witness three major requirements that conditioned the design experimentation on its shape: (1) "not to neglect the Breuer Landmark," (2) "not to demolish the adjacent 'historically valuable' brownstones," and (3) "not to exceed the zoning envelope." The same "not to..." requirements had been in place for the offices of Breuer and Graves, and subsequently shaped their design. Going back in history, to the time of Breuer and Graves, to see how these architects answered these questions and interpreted the Whitney, and, then, coming back to the Koolhaas office, will allow us to follow a nonlinear time vector, moving gradually through back-and-forward steps. Recollecting the Whitney of Breuer and the Whitney of Graves against the backdrop of the recent design schemes of Koolhaas, one must rely on the assumption, shared by designing architects, that buildings are pragmatically knowable.

As had been the case in the alleged extension of the Eiffel tower, the controversy triggered by the extension of the Whitney involved a staggering number of actors and resources (even of actors and resources that are not concerned with matters of design, nor educated to judge design issues), and new associations can be traced among them. Compelling both allies and critics to write letters of support and complain about the design, the Whitney building became a full-blown actor in its own right, as various parties spoke on its behalf and interpreted its "inner" needs and nature. The more people spoke against and in support of this building, the bigger the crowds of visitors and passers-by; the more the resources and allies locally available increased, the more of a *social* did the design become.

Following the controversies, and the many detours in the architects' intentions to extend this building, we are no longer confronted with merely one static modernist object, but an object plus its anticipated extensions presented as design plans, plus a variety of other actors: museum professionals, artists, New Yorkers, passers-by, critics, planning commissions, zoning regulations, etc. The Whitney building thus turned into a multiple object, an assembly of contested issues: the brownstones' destructibility, the zoning rules, the neighbours' vulnerability, the narrowness of the site, the museum professionals' fears, the perennial Breuer building's intractable presence. At first sight a simple technical, or aesthetic object, the Whitney became a socio-technical, socio-aesthetic, socio-political issue; from a built (and then largely forgotten) monument to modernism, it became potentially extendable; if originally taken for granted, it became contested. In the end, the Whitney must be seen NOT as an autonomous, emancipated, or coherent modernist object standing "out there" on Madison Avenue, but as a complex ecology, a network of connections. Every extension project, every design plan, is a trail that makes us reconsider what a

building really is, recognizing that many factors combine to produce it. Even though it displays all the attributes of a self-contained entity, the Whitney also shows that sometimes the "social" evolves from the panoply of mobilizing actors implicated in the "drama" of a building's contested architectural history, rather than residing outside and above the institution.

Thus, I argue that a building cannot be defined by what it is and what it means (a number of structural and programmatic features or symbolic meanings), but only by what it does: what kind of disputes it provokes and how it resists attempts to transform it in different periods of time. To understand the Whitney, it is not enough to question the specific figurative languages of its architects, or the social contexts of its design plans. One should consider the whole process of transformations of the building in design: how it acts, resists, affords, compels, challenges, mobilizes, and gathers different communities of actors. Such an understanding of buildings can bring more awareness of the ways architecture is made and how it takes part in the making of the social.

1 → For sociological analyses of architectural firms see the research of Judith Blau (1984).
2 → I am following here Becker's (1974, 1982) understanding of the world of art as a cooperative activity.

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Reapproaching Old Buildings within the City

Suddenly for some reason I thought of Brasilia. The city of Brasilia was inaugurated in 1960. It was a perfect multidisciplinary exercise of harmonization between the urban planner (Lúcio Costa), the architect Óscar Niemeyer), and the landscape artist-architect (Roberto Burle Marx). Moreover, Brasilia was a typical construction of a city by the conquest of the open space made of sheer optimism, the triumph of talent over doubt and of the audacity over pessimism (Gorelik, 2005).

This reference to Brasilia serves as a sort of epigraph with which I will unravel some of my loose topics about the role of old buildings in reapproaching the contemporary city. I have never addressed specifically a journal for architects, city planners, or urban designers. On the contrary, I am far more used to deal with urban issues for groups of social scientists, sociologists, like myself, historians, anthropologists, geographers, and so forth. Here I am anyway, trying to address the issue of buildings and their possible reuses upon an interdisciplinary view, counting on your benevolence.

Frontispiece **Marcel Gautherot, "Vista aérea da Praça dos Três Poderes", Brasília, 1960. Instituto Moreira Salles**

I organized the paper as a set of topics relatively autonomous. The first topic is precisely the interdisciplinary standpoint that I believe should prevail in such inquiry. Not exactly, the one mentioned above concerning the close relationship between the creators of Brasilia, but one that involves other not so obvious disciplinary proximities such as those with the social sciences.

In a recent paper, I have made a plea for "other views" concerning the interpretation of the city and the urban environment (Fortuna, 2012). It was a plea for scholars of the city to open the boundaries of their disciplines to other contributions. My argument was double-edged: on the one hand, the need to look at the city's historical culture and tradition to better understand its changes over time; on the other hand, the need to recognize how it is transformed every day as a result of infrastructural interventions, especially led by urban architects and city planners.

Learning how to work together with others is the basis of any interdisciplinary work. However, for interdisciplinarity to be efficient, one cannot surrender the philosophical principles, theories and methods of our own discipline. In other words, disciplines remain essential to delineate a problem and try to design a possible response to it. That is so say disciplines are essential to ask the starting questions. When it comes to try to answer those questions and take action, each discipline needs to know the extension to which it could possibly combine and incorporate contributions coming from adjacent areas of thought and reflection. That is the above-mentioned audacity present upon the original design of Brasilia. In short, the discipline helps to ask the questions whereas interdisciplinarity becomes critical to provide adequate answers and encompass wider solutions.

Another way to deal with interdisciplinarity is to continuously expanding the original premises of our major area. Take the example of urban sociology. Broadly speaking, such discipline remains largely

dependent on canonical considerations made at the end of the 19th century derived from the experiences of the great industrial metropoles of the Western world, i.e. mostly London, Manchester, Paris, and Berlin. Today, the discipline faces the need to renew itself in order to avoid analyzing the contemporary city in the light of those traditional, say conventional and outmoded visions. This affects the accuracy of the disciplinary work as a whole. For instance, there is still no suitable set of concepts or body of theories adequate to understand autonomously and not as a sort of mirror-like metropolitan theories the workings of small – and medium-sized cities, which account for over 2/3 of the world's population. Similarly, urban sociologists are largely unprepared to grasp fully the postcolonial city, as little do we know of the so-called "other cities" located in the non-Western contexts of Africa, Asia, and even Latin America. The interdisciplinary calls for an ever-present recreation of our basic modes of inquiry and the ability to trespassing disciplinary boundaries (Mendieta, 2001; Amin & Graham, 1997; Bell & Jayne, 2006).

I believe that both in practice and in teaching architecture and urbanism are in a similar situation and are ready to open their views to outside readings and contributions. In fact, these disciplines are quite willing to dialogue with other narratives such as the arts, engineering, environmental sciences as well as social and human sciences, without, however, losing the bulk of their body of disciplinary knowledge and methods and enter a wider archipelago of correlate areas of knowledge.

A second topic that I would like to bring about when considering the role of old buildings in the urban fabric has to do with the relation of cities to history. Coming back to Brasilia, this city is often viewed as a city without history. Nevertheless, the history of this city takes the form of the national history of Brazil, which, somehow, appears repeatedly in the daily workings of such tropical metropolis.

Let me clarify this by mentioning two different ways to look at urban history of locales. One sees history primarily as a tool to help understand the present and the future of urban settings. In this sense, buildings, especially old buildings, become crucial to grasp the current local urban environment as well as to think of the cities yet to come. As a well-known Malaysian architect has argued, "a city without old buildings is like a man without memory" (Biswas, 2000, p. 131).

The other way to see the city in relation to history records people, events and places of value for their own sake and calls for the local history to be read, or taken care of, by the trajectories of these very same people's actions and events. In this sense, neither places nor buildings alone nor the action going *in between* them, cannot remain off the architectural concern.

Let me go a further in this. Claude Lévi-Strauss (1955, p. 157), writing about the cities of the so-called "New World", made some remarks about the way the *new* cities of southern Brazil were totally devoid of memory and moved swiftly from their unusual "freshness" to

an inescapable "decrepitude". To the well-known Belgian ethnologist, everything happened as if cities had been submitted forcefully to a speedy outward rhythm of evolution, imposed upon their growth and mode of organization. Lévi-Strauss's description reminds another narrative on how New York City appears to be the least loved of any of the North-American cities. "Why should it be loved as a city?" asks the commentators who make their point by saying,

> A man born in New York forty years ago finds nothing, absolutely nothing of the New York he knew. If he has the chance to stumble upon a few old houses, not yet leveled, he is fortunate. But the landmarks, the objects, which marked the city to him, as a city, are gone. (Burns, Sanders and Ades, 1999, p. 71).

Both the built environment and the human action are decisive for the New York ever-changing trajectories and physical arrangements. So, the question remains, do we have to keep old buildings to love cities, understand their past memories, and to figure out their possible futures? Or else, is it the case that "old buildings must die", as asked in a recent intriguing book (Cairns and Jacobs, 2014)?

In this line of reasoning let me briefly refer to old buildings within the urban landscape, by mentioning the famous American journalist and critic Jane Jacobs who gave a straightforward answer to maintenance/conservation of old city buildings. She was very much in favor of the preservation of (some) old buildings and the antique neighborhoods. Jane Jacobs did not mean the preservation of old buildings as museum-like structures. To her robust support for policies that would enable neighborhoods to mingle buildings of various ages and conditions, Jane Jacobs associated policies for the preservation and rehabilitation of the inner city social dynamics, namely the social life of streets and the enjoyable sights of neighbourhoods. "Cities, she wrote, need old buildings so badly it is probably impossible for vigorous streets and districts to grow without them" (Jacobs, 2000 [1961], p. 200).

This was part of Jacobs' well-known battle against what she took as the menace of destruction inscribed in Robert Moses' plan for her beloved Greenwich Village and Hudson Street, in downtown Manhattan. For Jacobs (2000 [1961], p. 207), buildings are seldom insulated entities and hence should be an integrative part of whatever "ingenious adaptation of old quarters", to keep their palimpsest-like historical structure.

Working as insulated entities are the typical iconic constructions of star architecture. As a rule, iconic buildings emerge as structures separated from the surrounding spatial context and obey to other principles of creation. Landmark structures are instrumental to promote an image of urban success or recovery from urban decline. Many cities experience some version of such "edifice complex" (Sudjic, 2016), as a strategy for exuberance and international promotion worldwide. Iconic

buildings function as metaphorical aspects of architecture and their atypical form stands for a narrative of difference and urban creativity, which provides meaning to the whole city.

Designed to celebrate prestigious political occasions or events, such as the European Cultural Capital or the Olympics, these singular constructions seem to be built forever. Moreover, due to their representational and symbolic role, they seldom follow the traditional pre-modernist relationship that subordinated the urban form to the spatial context. Disconnected from space those buildings are not properly part of the urban stuff (streets, transportation systems, sidewalks, subterranean passages, fountains, street trees, etc.) and stay apart. Iconic buildings supplant then the contextual materiality of space to create a singular aesthetical landscape vital for contemporary urban societies (Glaeser, 2011; Livesey, 2004, pp. 17–23).

Aside this unique city markers, the exceptionalism of some renowned architects is also lent to other projects, such as prestigious corporate offices, conference centers, conspicuous cultural ensembles of art galleries, opera houses and so on (Short, 2004, pp.72–3). Ever since their American origin in 1889, skyscrapers are also a token within the unfolding of this symbolic architecture. Just as the impressive West European medieval cathedrals and palaces were to show the wealth and power of religion and of the elites, skyscrapers today are emblematic of a glassy architectural lure and suggest the power of global finance as the driving force of present-day capitalism. The emblematical architecture is a crucial dimension of what Deyan Sudjic (2016) calls *The Language of Cities*.

The fact, however, is that buildings are not artifacts similar to other disposable goods. As they fall out of time, buildings remain tenaciously present in the place, and cannot be put away like any other outdated object (Scalan, 2005, p. 111). Leaving aside time-specific and ephemeral constructions such as exposition edifices, buildings – especially those intended for working classes housing as in Friedrich Engels' Manchester lasting in average only some forty years (Engels, 1968, pp. 69–71) – deal with time limits and are "not built with longevity in mind" (Cairns and Jacobs, 2014, p. 111).

I would like to argue that the issue of the possible re-uses and rehabilitation or destruction only marginally concerns iconic buildings of whatever nature and is more adequate to think of the future of typically residential buildings or administrative structures and industrial complexes.

Some examples of the construction of poor quality and ruinous residential clusters, located in general in the outskirts of large cities, led to environmental and planning atrocities whose solution has pointed to irremediable implosion. The 1956 Pruitt-Igoe project, in St. Louis (Missouri – USA), designed by the celebrated architect Minoru Yamasaki, who also designed the New York World Trade Center, is an archetypal case in point. Its demolition occurred only one and a half

decades after the construction of the 33 identical towers of 11 stories each, remains hitherto an impressive denunciation of the urban fiasco to which the city building process is subject (idem, 23). Other similar cases are the Cabrini-Green Homes (Chicago), the Ballymun Tower blocks (Dublin), or the Bijlmermeer borough (Amsterdam).

Many other no less famous inconsistencies have been accurately labelled real planning disasters (Hall, 1980). It should be mentioned here the attempts being made to supposedly overcome this preservation-demolition dichotomy and escape the logic of "programmed obsolescence" of low and middle-class buildings. I am thinking of some quite sensitive attempts to overcome the highly precarious housing of shadow cities, shantytowns, slums and *favelas* that punctuate the peripheries of the great majority of global South metropoles brought about by the uncontrolled expansion of colonial and post-colonial capitalism.

The most recent speculative investment towards the built environment in these regions brings private international capital, often in coalition with public investment, to build entirely new cities not to rehabilitate old ones and still less to vanish deprived slums. Examples include the African experiences of Appolonia City of Light (Ghana), Kilamba (Angola), Eko Atlantic (Nigeria), or New Cairo City (Egypt). The messy problems associated with the urban and social landscapes gets a still messier would-be solution as they turn to these new urban enclaves for the urban middle-classes. The "double cities", as Robin Murray calls them, are ready-made cities or, as I see them, sordid placeless places with no social content, nor urban history or memory whatsoever. They are supposed to become "urban" and function as "platforms for experiments in the production, ordering, and marketing of global excess in the midst of urban neglect and deprivation" (Murray, 2015, p. 93).

This is a sort of anticipated future disasters inflicted upon the environment and the urban. In fact, the "double cities" remind the "obsolete futures" and "ruins in reverse" enunciated by the legendary land artist Robert Smithson (1967, p. 54-55) when pointing to any "zero panorama" in which

> buildings don't *fall* into ruin *after* they are built but rather *rise* into ruin before they are built. This anti-romantic *mise-en-scène*, he continues, suggests the discredited idea of *time* and many other "out of time" things".

Such incongruent and cynical urbanism is exactly what sustains the critique addressed to city builders, architects included, for aggravating the city's preexisting sociocultural discontinuities. A possible line of action is brought to us by Richard Sennett's (2018) recent *Building and Dwelling*. For the sociologist and urbanist the whole issue should link, on the one hand, the city's physical structure of the city (the *ville*) and, on the other hand, its sociopolitical dynamics (the *cité*). The author

relates the former to the technical arrangements of the city spaces and infrastructures and involves architects and other "city makers" (urbanists, urban planners, engineers and so on), who act selectively, with no claim for global harmony. The latter points towards the mix of urban life, social rights and the citizens' social uses of space, and their professional action is a powerful dispositive to accomplish historical and cultural cohesion.

What is at issue for Sennett is the need to articulate these two colliding dimensions so that an "open" and democratic city can be envisaged. Along his review of various conflicting one-sided views of the problem throughout the modern urban thought, Sennett's uneasiness turns towards to the responsibility of architects and urbanists, whenever they privilege the *ville* and completely ignore the *cité*. On the other hand, the disconnected city can also be fruit of the insistence on the public social dimension without taking into account the constraints or the possibilities resulting from the materiality of the urban space. All in all, Sennett despises the mutual marginalization of perspectives: either the political and social vision or the architectural and urbanistic view. Both architects and town planners have been judged severely by Sennett to whom practitioners of unilateral visions of the urban should prevent themselves of working for the dominant international building lobbies and cause extreme damages do built environment.

Insofar the old buildings reuses or demolition is concerned my reading of Sennett goes along with Jane Jacobs' arguments, as well as with other writers of the sociocultural realm as Sharon Zukin (2010) or Suzanne Hall (2012). They all link buildings to the whole historical and cultural urban settings, always avoiding their utmost dis-affiliation with the historical and social urban atmosphere.

This may sound very much an old-school debate. It almost brings back to the late nineteenth century dispute between John Ruskin and Viollet-le-Duc. That is not my intention at all. I would rather go further on this point by opening up a final topic about the relationship of architecture to the reinvention or the imagination of a new urban environment.

By 1911, the German sociologist Georg Simmel (1911), whose death occurred exactly 100 years ago in 1918, wrote a curious text about the ruins. There he made very kind considerations about what he named the "art of architecture" and the architects themselves as holders of the supreme ability of leaving profound marks in nature, something that other artistic expressions (painting, music, dance...) are unable to do. I want to point out this ability of architecture to draw and redraw the (physical/structural) future of our cities.

To me, the "art of architecture" shows no obsession with the past whatsoever and appears very much future oriented. Nowadays, after the disappearance of the modernist fantasies, architects share with social

scientists the ability to help read buildings and cities as transformable and transitory in nature, just like Simmel's ruins are continuously submitted to the vicissitudes of the passing time.

I'll be giving an example. I use to bring students of my *cities and citizenship course* to get acquainted with Kischo Kurokawa's Capsular Tower in Tokyo as one example of would-be architecture for future cities, that is, a mobile and flexible architecture, largely dependent upon the prefabrication modular processes of the late fifties.

The Capsular Tower works as metabolist architecture, aimed at the configuration of buildings totally adapted to current individualism. As such, the building functions as a biological analogy meant to replace the orthodox modern architecture, and to permit buildings and cities together to be subject to normal biological process of cycles of change, constant renewal and simultaneous ruination of organic tissues.

For Kurokawa, the capsular architecture contributes to a freer society, moving around the single individual and his/her mobility. He sees continuous migration and single-persons families as a symptom of the disintegration of the modern society. Hence, for Kurokawa the new city – which he calls the *metapolis* – works as a sort of anchorage of moving isolated individuals looking for temporary shelter. That is the bottom-line philosophy of the capsule, i.e., the future "dwelling of the *Homo Movens*". In the *metapolis*, the public space as such is to be replaced by a multitude of capsular spaces (homes, hotels, universities, department stores, terminals, automobiles). No more dense and crowded streets, as the streets are somehow brought inside the capsules.

I cannot avoid thinking provocatively of the possible similarity of this Kurokawa's imagined post-urban world with some other famous attempts to redesign the urban in a way that barely resembled anything that would normally be termed "city". So this allows asking for any possible resemblances between this capsule world and Fourier's *phalanstery*? Or with Ebenezer Howard's *Garden city*? Or Arturo Soria's *Linear City*? Or Frank Lloyd Wright's *Disappearing City* and *Broadacre City*, or, finally, Le Corbusier's *Ville Radieuse*?

I believe Kurokawa was reacting to the very negative visions of the post-modern city, just like Frank Lloyd Wright reacted to the negative views of the American city of the early 1930's. In the literature concerning the 1930's typical American city was evoked as

> ... too big, too noisy, too dusky, too dirty, too smelly, too commercial, too crowded, too full of immigrants... too pushy, too mobile, too fast, too artificial... (White and White, 1962, p. 222).

By and large these characteristics apply to Kurokawa' Tokyo to which he wanted the Tower model to provide redemption. As a metabolic object, however, the Tower soon entered a process of "natural" aging and obsolescence. It is quite thought demanding the evaluation of

Kurokawa's Tower made by Rem Koolhaas and Hans Ulrich Obrist. For these commentators, the building is actually in a very bad shape and its vulnerability intensifies by the obsolescence effect of the then novel materials used in the construction (Koolhaas and Obrist, 2011, *apud* Cairns and Jacobs, 2014, p. 121). Such evaluation goes along with the comments made by a New York Times journalist who wrote about the Capsular Tower

> Corridors smelled of mildew. Some tenants had taped plastic bags to their door frames to catch leaks, and many of them were bulging with gray water. At a point – he continues – a tenant [showed me] ... chunks of concrete off from the corner of one of the capsules. (Ouroussof, 2009, cited in Cairns and Jacobs, 2014, p. 121).

Apparently, Kurokawa's Tower remains standing only because "financial malaise" has meant the residents are, as yet, unable to find a developer to demolish the building and redevelop the site. To be sure, the splendor announced by the futuristic Tower gave way to a deceiving vision. Whether it should be demolished or rehabilitated and preserved is a question that remains to be answered.

From a socio-political standpoint, demolishing a building, in a democratic society, takes a long time to decide. We are not living in Mussolini's regime and the dictator most-celebrated passion for "his majesty the pick" (Kostov, 1992, p. 270). Today, such decisions are not taken in isolation and, time and again, what appears to be the end of a given building story may in fact turn into a larger brand-new urban redevelopment and regeneration matter.

Demolishing or imploding a building may at first seem to be a handy single solution. However, it usually becomes quite a complex decision, involving various social actors. Take the *Coutinhos* building (a specific local case in the northern city of Viana do Castelo, Portugal) and we certainly agree that more than taking too much time to implode, this building deemed to be levelled, continues to be used regularly and engender a variety of emotions. It is seen as the *home* by some, or is resentfully *tolerated* by others, whereas still others (actual tenants) *complain* bitterly about the drain of their economies.

Demolishing, imploding or, for that matter, rehabilitating a building remains a rather good example of a complex decision about the city and what to do about old or decaying buildings, to not to say old and decaying neighborhoods altogether. Yet, the nicest side of it is that it suggests a possible challenging subject matter for an interdisciplinary research, bringing together architecture and sociology and other social sciences.

My conclusion then goes as to argue that we are willing to live side by side with obsolescence and decadency. This is quite a challenge for those living in an old country like Portugal. We are learning how to live with buildings and cities that remain in place to be sure, although often out of their social time. To think about the complexity of their possible

futures is, doubtless, one of the best contributions to hopefully expect from the architects... and the social scientists as well.

As with the construction of Brasilia, such interdisciplinary common research needs to be sustained with much optimism, hope and audacity above all.

Fig. 2 Coutinho building in Viana do Castelo, photo by the author

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Drawing is Not Enough. Design Tools for the Reuse of Modernist Buildings

Introduction

The question of what design tools are, how they work and how they can be used for architectural design was introduced in two papers. One was presented by Christof Ehrlich and another one by myself, at a conference on "*Design - Creativity and Materialization*" which took place at the Brandenburg University of Technology in 1999 (Ehrlich, 1999; Gänshirt, 1999). Motivated by the search for better ways of discussing, explaining and teaching architectural design, these questions became a research focus for the following years, eventually resulting in a doctoral dissertation (Gänshirt, 2008) and a book which had already been printed the year before (Gänshirt, 2007). Whilst the two papers went largely unnoticed, in the years following the book publication research on design tools became, at least in German speaking academia, a major topic. By surveying the body of research published over these years, we now can formulate new answers regarding the initial question.

Background

Looking at the drawing or drafting tools on an architects work place (fig. 1), we see orderly arranged on the white desktop, wooden and plastic triangles, a set of French curves, one two-sided and two triangular architect's scale rulers, a wooden proportional scissors circle, a small broom, pencil, rubber, pencil leads, ink bottle, technical or construction drawings on transparent paper, a lamp and a desk top telephone. Albeit these objects are presented in a museum-like setting and certainly do not represent the historic working situation accurately, we can accept them as being roughly representative of architects typical workplace equipment around the middle of 20th century. Even as a student in the 1980s in Germany, or a young architect in Porto at the beginning of the 1990s, my own desks and the tools on them still looked quite similar.

Nevertheless, when I started my research on design tools, these objects did not seem too revealing (an assumption that was proven wrong soon after). Most architects at that time were probably using the same or very similar drafting tools, but still they produced quite different works. Therefore it seemed preferable to take one step back and instead look into the objects architects produced with the help of these physical tools. In Alvar Aalto's home office for example (fig. 2) we see paintings, sketches, scale drawings, models, prototypes, photographs and so on. These objects could be considered the main media or design tools architects used to find their ideas and develop their projects. Most of the research in my doctoral dissertation was dedicated to these design tools/media.

The methodology of this research was based on the concept of the design cycle (fig. 3), which in certain ways can be related to Donald A. Schön's theory of reflective practice (Schön, 1893). Assuming a design process starts with thinking about something (it actually can start at any point of the design cycle), which then can be expressed by the use of

Frontispiece Architect's office.
Partial view of the drawing space in the studio building Alvar Aalto designed 1954–1955 to expand his practice,
Helsinki Munkkiniemi, photo cg. 2018

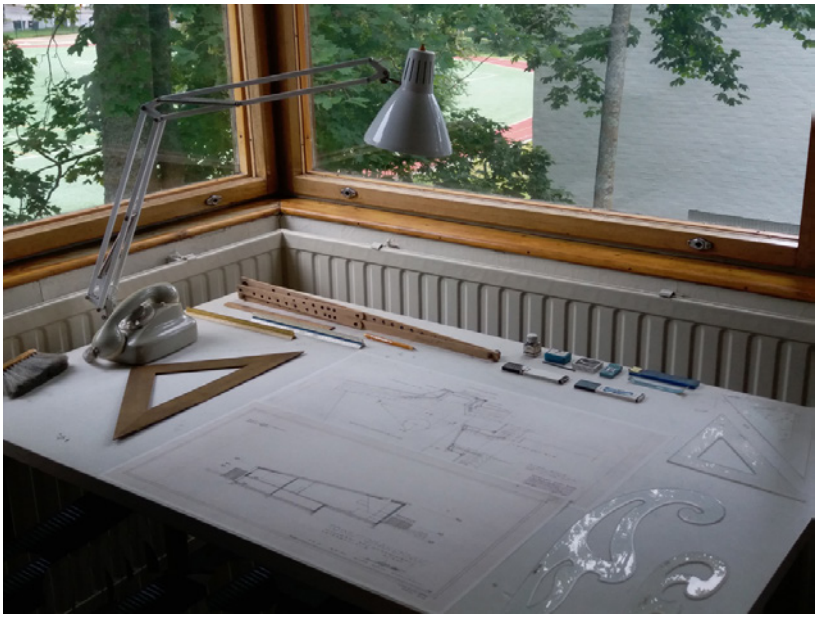


Fig. 1 Architects workplace around the middle of 20th century, working desk in the house of Alvar Aalto, Helsinki, photo cg, 2017

Fig. 2 Architects office around the middle of 20th century, in the house of Alvar Aalto, as exhibited in 2017, Helsinki, photo cg, 2017

different visual or verbal design tools (the media used to express and develop design projects), then it will subsequently be perceived by the same person, or others, to be critically analyzed. Depending on the result of this analysis, the idea will be approved, rejected, or changed for improvement. The improved version can then be expressed again, using the same or other design tools, thus starting the next design cycle. The diagram illustrates that the design tools are essential to the process. Without those, no architectural idea can be expressed, perceived, nor can communication with others or communal reflection take place.

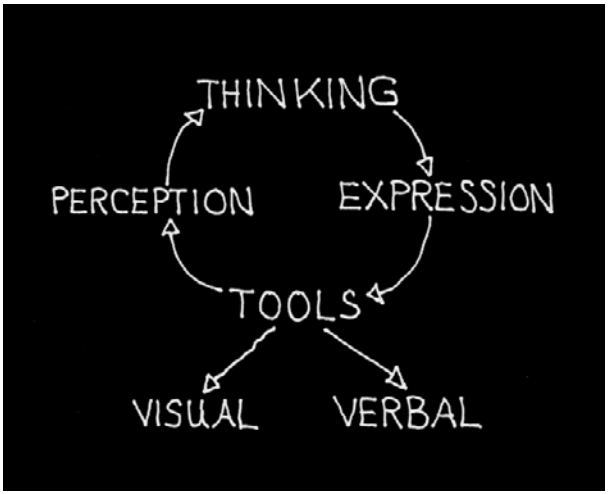


Fig. 3 Design cycle diagram, illustrating the importance of design tools for the process (Gänshirt 2007, p. 79)

Fig. 4 Table of visual and verbal design tools (Gänshirt, 2007, p. 102)

Systematically analyzing the media used to express and develop design ideas resulted in a table of design tools (fig. 4). Consisting of two columns of visual and verbal design tools the diagram is organized according to complexity, by using Marshall McLuhans thesis that the newer and more complex media always contain the older and simpler ones (McLuhan, 1964, p. 22). Each of the media listed was then studied, combining the phenomenological approach to media theory developed by Vilém Flusser (Flusser, 1991) with Otl Aicher's descriptions of his design activities (Aicher, 1991), and historic analysis. Using my own practical experience as background knowledge, the research also looked into published statements by outstanding expert practitioners, as well as architectural and design theory. Starting research into design tools more or less from scratch, it resulted in an overview, without the possibility of going too much in depth. Because of this, the list of further research on this subject included at the end of the book wasn't modest.

Through research on design tools that was published over the following years, my understanding of design tools in the sense of *media used to express and develop design* was questioned in various ways. So much so that it was no longer tenable and it needed to be revised. In order to do this I will discuss research developed in the years following the publication of *Tools for Ideas* in June 2007.

Research on Design Tools, 2007–2018

In November 2007 an exhibition opened that was prepared by architecture students and teachers from TU Dortmund on the theme *Die Medien der Architektur* [*The Media of Architecture*]. The following year the same exhibition was shown again at the *House of the Architects* of the AKNW Düsseldorf. A 3-day symposium accompanied the first exhibition, as well as a catalogue (Hnilica, Sonne, Wittmann, 2007). Four years later a book with the same title, containing the conference proceedings, was published (Sonne, 2011).

About 15 months later, on October 15th 2008, a large exhibition entitled *The Force Is in the Mind – The Making of Architecture* opened at the *Architectural Centre* (Az W) in Vienna, Austria.[2] The beautifully presented show (fig.5) displayed a broad range of objects and artifacts. Cultural theorist Elke Krasny, in cooperation with Gudrun Hausegger and Robert Temel, collected these artifacts in contemporary architecture practices, and from the archives of renowned architects. Accompanied by a richly illustrated exhibition catalogue with the same title (Krasny, 2008), the exhibition showed an amazing variety of things architects used for design purposes. Ranging from the drafting tools and design media (mainly sketches, drawings, models) mentioned above all the way to the most unexpected items, for example entire beds, or shotguns used to transform clay bricks. Krasny explains: *"Photographs document what it actually looks like in the studios during the work process. The work process itself is shown on the basis of one specific project from each office, by showing the means used for the design involved to provide unusual insights into the working world of architecture."*[3]

This research demonstrated two things: Firstly, from an empirical point of view, it is much more revealing than assumed to do actual field research about design tools and their use. Going directly into the offices and archives to study how architectural design is done in contemporary

Fig. 5 View of the exhibition at the Architectural Centre (Az W) in Vienna, Austria, photo © Peter Kubelka, 2008

practice, and which physical tools and processes are actually being used reveals the liberties architects take to stimulate their design. Secondly, the tools and processes used in advanced architectural practices are much more diverse (and therefore interesting) than expected.

Krasny's descriptive approach made me understand how much my own research was rather based on methodologies from architectural history and theory, aiming towards theory building, than on straightforward field research. Over the following years, Krasny conducted similar research projects in Canada, the results of which were used to expand the exhibition. It eventually was shown in Halifax, Nova Scotia, Canada,[4] and in Montréal, Canada.[5] In Graz, Austria, it was shown for the last time in 2011, and discussed at a symposium[6]. These exhibitions and the catalogue/book published with the first of them (Krasny, 2008) revealed, that besides the standard design tools that have been common to architecture practice since the Renaissance period, architects at times can be quite creative in finding or producing highly specific tools. Some of these tools, nevertheless, might be used only once for a particular design task (fig. 6).

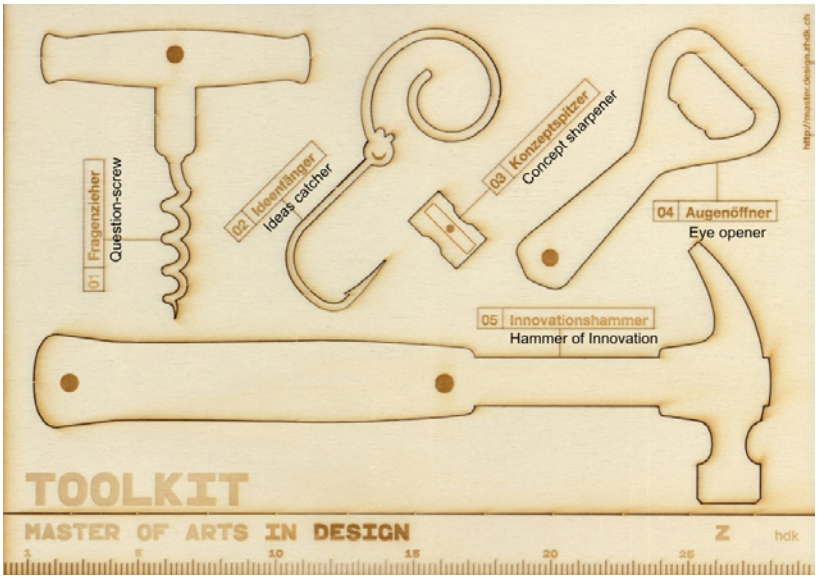
One of the most charming responses to the question of what *design tools* could be is a piece of thin plywood, of about A4 sheet size, covered with laser-ray drawings, outlining a series of common objects, represented in roughly 1:1 scale, which are numbered from 1 to 5 and combined with uncommon names. We see a *question-screw* (what looks like a simple corkscrew), an *ideas-catcher* (metal fish hook), a *concept sharpener* (commonly used for pencils), an *eye-opener* (actually opens beer bottles), and the largest, a standard claw hammer named *hammer of innovation*. A metric ruler on the lower edge of the sheet supports

Fig. 6 Shotgun and clay blocks used as design tools by R&Sie(n), Paris, exhibition at the Architectural Centre (Az W) in Vienna, Austria, photo © Peter Kubelka, 2008

the sense of craftsmanship and objectivity. This object is called "Toolkit" and was distributed in 2010 by the Zurich University of the Arts (ZHdK) to promote their Master of Arts in Design program (fig.7).

The implicit messages are plenty. The program demonstrates sustainability by using basic natural materials like wood, instead of plastics. Nevertheless the program teaches how to apply advanced digital technology like laser cutting, being quite recent at the time. Studying in the program will be fun, using party utensils such as wine and beer bottle openers as design tools. Being hands-on and practice-oriented, it will by no means become too theoretical or intellectual.

Most interesting is the design process the toolkit suggest, by numbering the tools and arranging them accordingly. Starting with (1) good questions one might (2) catch an idea, the concept of which then



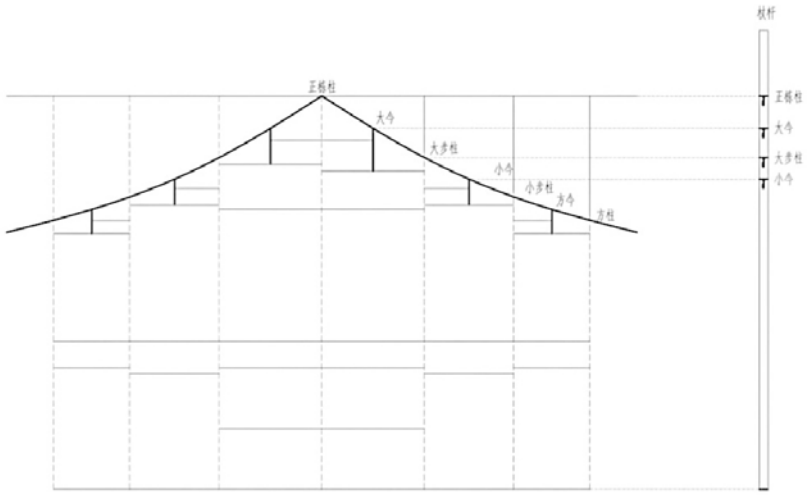


Fig. 7 Toolkit, Zurich University of the Arts, photo and translations cg 2010

Fig. 8 Single-line drawing and the related Zhàng Gān (video still from Lu 2014)

can be (3) sharpened and that way will help to (4) open your eyes. It finally needs to be (5) hammered or forged with a powerful innovation. Later on, all outcomes of the process can be measured precisely and compared by using the metric ruler printed on the lower edge of the sheet. Obviously, the depicted objects are not directly design tools, they are rather symbolizing larger categories of tools which represent a sequence of fundamental activities in a design process.

Research on the history of physical design tools used by carpenters working in traditional ways dating back to Imperial China is more hands-on. This research has recently been undertaken by Adam Brillhart, a PhD student of Wang Shu at the Architecture Department of the China Academy of Arts in Hangzhou (Brillhart, 2018)[7]. As part of their traditional design and building process, each time a building is designed, these carpenters produce a four-sided wooden measuring stick termed "Zhàng Gān" (丈杆, literally: measuring stick) in Zhejiang province, which has all the measurements needed for the construction of a traditional wooden house structure (fig. 8). Markings are distributed on each face of the stick according to systematic knowledge. The stick with these measurements represents all the construction drawings that would be needed to construct any wooden structure (with the exception of animal shelters) consisting of columns, brackets, beams as well as a roof. It is used across the rural parts of Zhejiang and Fujian provinces. Measurements expressing the basic relationships of each transverse frame are transferred to the stick on the basis of a quickly constructed single-line drawing. The operation of the stick during the construction process establishes all the measurements needed to produce every structural element of the building. "*The* Zhàng Gān *is essentially a preliminary full scale realization of the drawing (whether imagined or materialized) in one dimension. Each structural frame is "projected" onto a face of the* Zhàng Gān." (Brillhart, 2018, p. 77) According to Brillhart, these measuring sticks are still in use today. The carpenters continue to dismiss the reduced-scale drawings used in modern architecture for being not reliable enough for their purposes. This design tool epitomizes an interesting link between the purely physical tools used by craftsmen, and the drawings as well as other media produced by architects working in the European tradition.

Other doctoral dissertations were dedicated to "*Designing (tools (for designing (tools (for...))))*" (Fischer, 2008), or to design tools like models (Wendler, 2013 and Couto Duarte, 2016), color and drawing (Moutinho, 2016), concept and diagram (Stapenhorst, 2016), or a data-based design instrument for floor plans named *Space Index* (Dillenburger, 2016). Further titles are *"Recurrence and Ambiguity, Design Tools of Architecture"* (Hartmann, 2016), "*Theorie der Städtebaumetaphern. Peter Eisenman und Stadt als Text*" (Gerber, 2012), *"Design Things – Collecting as a Tool for Modern Architecture"* (Froschauer, 2019, forthcoming), or, surprisingly, "*Hiking as a Method of Cognition for Large-scale Landscape Design*" (Schultz, 2014). Richly

illustrated monographs on design tools were published with titles like *"The Working Drawing – Tool of the Architect"* (Spiro, Ganzoni, 2013), "*The Architectural Model – Tool, Fetish, Small Utopia*" (Schmal, Elser, 2012), "*Planbilder: Medien der Architekturgestaltung*" (Hillnhütter, 2015). Frei Otto's many ways of *Thinking in Models* was presented in an exhibition and a catalogue publication (Vrachliotis, Kleinmanns, Kunz, Kurz, 2017). Architectural photography as a design tool was discussed in *"Architectural Photography and Its Uses" (Fitz, Lenz, 2015),* and partly also in *"Architektur Fotografie. Darstellung – Verwendung – Gestaltung" (*Locher, Sachsse, 2016). Writing as an architectural design tool was examined in *"Archiscripts"*, the 11th edition of the Graz Architecture Magazine GAM (Gethmann, Eckhard, Wagner, 2015). Looking into traditional tools, not in the sense of design tools but as an inspiration for design is *"The Hard Life",* a book on the things and objects of everyday rural life in Portugal (Morrison, 2017). They were collected and presented by British designer Jasper Morrison. In autumn 2011, even the catalogue cover of an architecture editorial house read: "Birkhäuser/tools"[8].

As a minimum twelve symposia related to the topic of architectural design and its tools were held in Europe over the last twelve years:

1. "*Kulturtechnik Entwerfen*", June 2006, TU Graz, joined with
2. *"Kulturtechnik Entwerfen",* October 2007, University of the Arts, Berlin, with a book published in 2009 (Gethmann, Hauser, 2009)
3. *"The Media of Architecture",* TU Dortmund, November 2007, with a book published in 2011 (Sonne, 2011)
4. *"Metaphors in/on Architecture and Urbanism",* November 2009, Ecole Spéciale d'Architecture (ESA), Paris, with a book published in 2013 (Gerber, Patterson, 2013)
5. *"Working / Thinking Tools. Manual Intelligence and Transmediality of Creative Processes"*, 2011, RWTH Aachen, with a book published in 2012 (Schmitz, Groninger, 2012)
6. *"Wissenschaft Entwerfen" ("The Science of Design"),* November 2011, Universität Basel, with a book published in 2013 (Ammon, Froschauer, 2013)
7. *"Diagrammatic of Architecture"*, 2011, Cologne University, with a book published in 2013 (Boschung, Jachmann, 2013)
8. *"Raumfinden – Werkzeuge des Entwerfens – 17 Positionen aus Kanada und Österreich"*,[9] 2011, Haus der Architektur, Graz
9. *"Imagery in the Age of Modeling. Operative Artifacts in the Design Process in Architecture and Engineering",* May 2013, Basle University[10], with a book published in 2017 (Ammon, Hinterwaldner, 2017)
10. *"Reflexives Entwerfen. Entwerfen und Forschen in der Architektur,"* June 2013, Hanover University, with a book published in 2014 (Buchert, 2014)

11. *"Skizzieren, Zeichnen, Skripten, Modellieren. Artefakte des Entwerfens und ihre Wissenspraktiken,"* November 2017, Institut für Architektur, TU Berlin, with an exhibition held at the Architecture Museum of TU Berlin
12. *"Design Tools"*, 2012, Bauhaus-University Weimar, with a book published in 2018 (Wittmann, 2018)

Almost fully recognized was the topic of design tools in German-speaking academia with a Junior-Professorship and a chair named *Tool Cultures,* which was established in 2014 at the Architecture Faculty of RWTH Aachen and offered to Carolin Stapenhorst.

The last symposium listed above was part of the most wide-ranging research program on design tools so far. This was undertaken from 2010 to 2013 at the Bauhaus-University in Weimar. Directed by art historian Barbara Wittmann, the *Internationales Kolleg für Kulturtechnikforschung und Medienphilosophie* (IKKM, *International College for Cultural Technique Research and Media Philosophy*) conducted a research fellowship program named *Werkzeuge des Entwerfens (Design Tools),* which comprised of 8 researchers in total, i.e. 7 research fellows[11] and a junior professor leading the group. A number of additional external researchers were affiliated and contributed to the symposia and publications produced[12]. One of the goals of this program was to invite research from disciplines other than architecture, including philosophy, art and architecture history, and cultural studies. The final outcome has recently been published as a collection of 13 essays covering a wide and somewhat varying range of topics related to architectural design: "*Thinking and Making Tools, Animation, Diagrams, Experiment, Creativity Techniques, Model, Drawing the New, Notations, Parallel Projections, Participation, Grids, Reconstruction, Collecting*" (Wittmann, 2018, p. 5, transl. cg).

Probably the most all-inclusive list of design tools so far is to be found in a book first published in 1985, titled *Sun Wind and Light, architectural design strategies (DeKay and Brown, 1985, 2000, 2014).* Even though the concept of design tools is not discussed in the book, its third edition contains a *Design Tool Index* of 15 pages (pp. 399-413), indicating all sorts of tables, graphs, design guidelines, building elements and so on. It seems that in the eyes of these authors, almost anything related to building and design can be called a design tool. With the book's background in the US counterculture environmentalism of the 1960ies, and its broad understanding of the term tool, it could be influenced by the famous *Whole Earth Catalogue*, published by Stewart Brand (Brand, 1968). The cover displayed the first photograph of the whole earth and the slogan "*access to tools*"[13]. The broad interpretation of the term tool this catalogue represents includes everything from books (mostly) to claw hammers.

In Search of a Design Tool Taxonomy

The research discussed above represents very different perspectives of design tools; still, all of them are somehow valid. In the end, it seems it is rather the use we make of something, more than the things we use, that defines design tools. The term "design tool" is, linguistically speaking, at times a metaphor without any binding scientific definition, and sometimes it can literally be a physical tool used for design purposes.[14] Its openness emphasizes the potential instrumentality of all things regarding all sorts of design activities. Over the last decade, it has been used for things as different as simple objects, media used for design purposes, cultural techniques, materials, artifacts, computer programs, design activities, or more abstractly, formal principles or thinking strategies. With this in mind, does a term still make sense if it can be used for virtually anything? It certainly challenges our understanding of the term if it is used for activities like collecting or hiking. Nevertheless we can maintain that it does make sense, because it provides us with the very specific perspective of someone who is actively engaged in designing. In addition, it implies the challenge to better understand and represent the large range of possible design tools and uses.

Theoretically, we must conclude, anything can become a design tool, and in many different modes. Already a simple piece of stone, picked up from the border of a street, can be used in so many different ways: For sketching, drawing, in a gesture, throwing (to pro-ject...), hammering (i.e. as a medium transmitting an energetic impulse), cutting (depending on it's shape), as a model (or part of), as a symbol, for aesthetic contemplation (like a Chinese scholar's rock, Gōngshí, 供石, or a Chinese dream stone from Dali), as a color, material or texture sample, a stepping stone, to combine into a mosaic pattern, a stone garden, a street paving, a wall, an arc, a building, a city, etc. In practice, certainly there is more liberty in the choice and use of design tools than most of us previously imagined, but still many limitations and constraints are to be observed: practical, pragmatic, moral, legal, ethic, aesthetic, economic, intellectual ones.

If anything can be used for design, the next question is how the design tools available can be ordered, categorized, or classified, if we can imagine something like a design tool taxonomy. One of the main difficulties of the body of research produced over the last decade is the apparent randomness of themes and topics addressed. Now the only design tools that seem to be missing are the ones "drawn with a very fine camelhair brush", or "that from a long way off look like flies", or those "belonging to the emperor", to quote from the arbitrary taxonomy of animals Jorge Luis Borges referred to an "unknown (or false) Chinese encyclopedia writer", when discussing the ambiguities, redundancies and deficiencies of existing classifications (Borges, 1942). This randomness makes it difficult not only to accept and fully understand the concept of design tools, but also to see which areas might have

been overlooked, where contradictions or overlaps occur, and what importance in the larger field of design research should be given to single or groups of design tools, and if there are things currently called tools we should, for the sake of clarity, rather use other terms for.

What this research has demonstrated is that the initial table published in 2007, consisting of two columns, one of visual and one of verbal design tools (see fig. 4), can be expanded in several ways. The design cycle now becomes the core of a map of design tools, but besides the visual and the verbal ones, other groups should address the other senses: haptic, acoustic, olfactory and even gustatory groups could be defined (the latter being of no relevance for architecture though). Overarching all senses would be the group of synesthetic design tools, addressing the comprehensive architectural and atmospheric experience. The most important synesthetic design tool would be the human body, which carries the organs to perceive a situation simultaneously with the five Aristotelian senses, plus all the others, which have been identified since. Each one of these sensory design media/tool groups (A) can be used in many ways, most importantly the two fundamental modes of design thinking: creative and critical, the outcomes of which can be expressed and perceived. These columns become a matrix when combined with the spectrum of possible design use/tool categories (B), ranging from the immaterial through the medial to the most basic material uses of design tools. Without implying a hierarchy, the continuum would start on the immaterial side with philosophies (including ethics and aesthetics), theories, concepts, ideas and narratives, producing or influencing, next ways of design thinking like creative and critical, visual and verbal thinking. Then there would be the ways of design acting, on a more abstract level the cultural techniques and more concretely the media uses those are based on, which always are means of perception as much as means of expression, then all sorts of apparatuses, machines and physical tools. The works and artworks produced by these means would be the next category, followed by the simple objects (like for example bricks, boards or beams) and raw materials available for design uses.

In conclusion, we can propose to order design tools in a matrix where the columns are defined by groups of design media/tools (group A), grouped regarding the senses they address, and the rows by design use/tool categories (group B), according to the possible, observed or imagined uses we can make of them (fig.9). The media/tools (group A) are mostly the ones closer to the project and the manifold ways of representing it, the use/tools (group B) are nearer to the designing individuals and the things available to them. Theoretically, each design medium/tool has the potential to address all senses (but would have a tendency towards one or two of them) and to be used or reflected in all the different design use/tool categories mentioned above, from the most basic material ones to the most philosophical. Addressing these ambiguities might help us to be a little clearer and more explicit in the

many ways design tools are currently discussed. Even though this matrix needs to be considered as an open one, and one that theoretically has infinite numbers of columns and rows, and each column could also become a row and vice versa, the grouping of design tools according to (A) the senses they address and (B) the uses we make of them would allow us to better understand the structure of the research field and it's inherent ambiguities**.**

Design Tools for the Reuse of Modernist Buildings

Even though some still maintain that, *"the drawing is the architect's tool,"*[15] it is obvious that the complexity of contemporary architecture practice requires more design tools than just one. Even nowadays, the way the term drawing is used encompasses everything from sketch, scale drawing, axonometric or perspective views to photorealistic renderings created by the latest software. Besides that, architects produce different types of scale models and write all sorts of texts, ranging from project descriptions to entire books, to develop and convey their ideas. They routinely rely on the calculations of engineers and the work of professional photographers. Discussing the use of drawings, models, sketches and computers, Álvaro Siza for example explains that those design tools have to be used in complementary ways, because each of them can be misleading (Couto Duarte, 2016, Anexos p. 34, 36).[16] The contents of his archive at the Serralves Foundation in Porto reveal the instrumentality of *"correspondence with his clients, the photographic record of the places where the works are to be built, relations with regulatory authorities and the opinions of the multiple actors involved in the construction processes, the models that support the perception of the proposals, the minutes of meetings and reports of the tensions arising at the building sites"*[17] for Siza's architectural production (Tavares, 2017).

The research discussed above reveals a broad, at times confusing, range of design tools and practices used today. Here an important question comes up: How can we find the right design tool for a given task?[18] The open matrix described above might be useful for that purpose, besides from providing a more coherent way of ordering and categorizing design tools (fig. 9). Mapping the spectrum of tools/uses on the categories of tools/media and vice versa allows one to search systematically for the most promising combinations. Showing only the larger or more general categories of tools, the matrix already adds up to 36 rows for tools/uses and 40 columns for tools/media, which combined result in more than a thousand different possibilities. Rows and columns left without text are indicating the openness of the matrix; they can be filled in as needed. The matrix would endlessly expand by going deeper into detail within the categories (for example the category of 2D drawing would then split up into plan, section, elevation, details, in different scales...).

Now we can use this matrix to tentatively map those combinations of design tools/media with design tools/uses we consider most interesting or especially useful for design tasks related to the reuse of modernist buildings. In the matrix diagram (fig. 9), those are marked with blue color. Red areas indicate combinations that are more conventionally used in architecture practice. Because of their availability, the habits and conventions of our profession they are often the first choice. Those "standard tools" are mostly in the group of visual design tools, used in many different ways, plus verbal descriptions and calculations. They represent a mindset that usually develops ideas for structures that do not exist yet, because of that it has to rely on rather abstract and reduced ways of representation. On the other hand, with a design for the reuse of an existing building, a whole range of other design media and uses comes into reach, which is much more concrete, complex, and closer to multidimensional reality. Obviously, the existing building itself is not only a challenge but also a great opportunity.

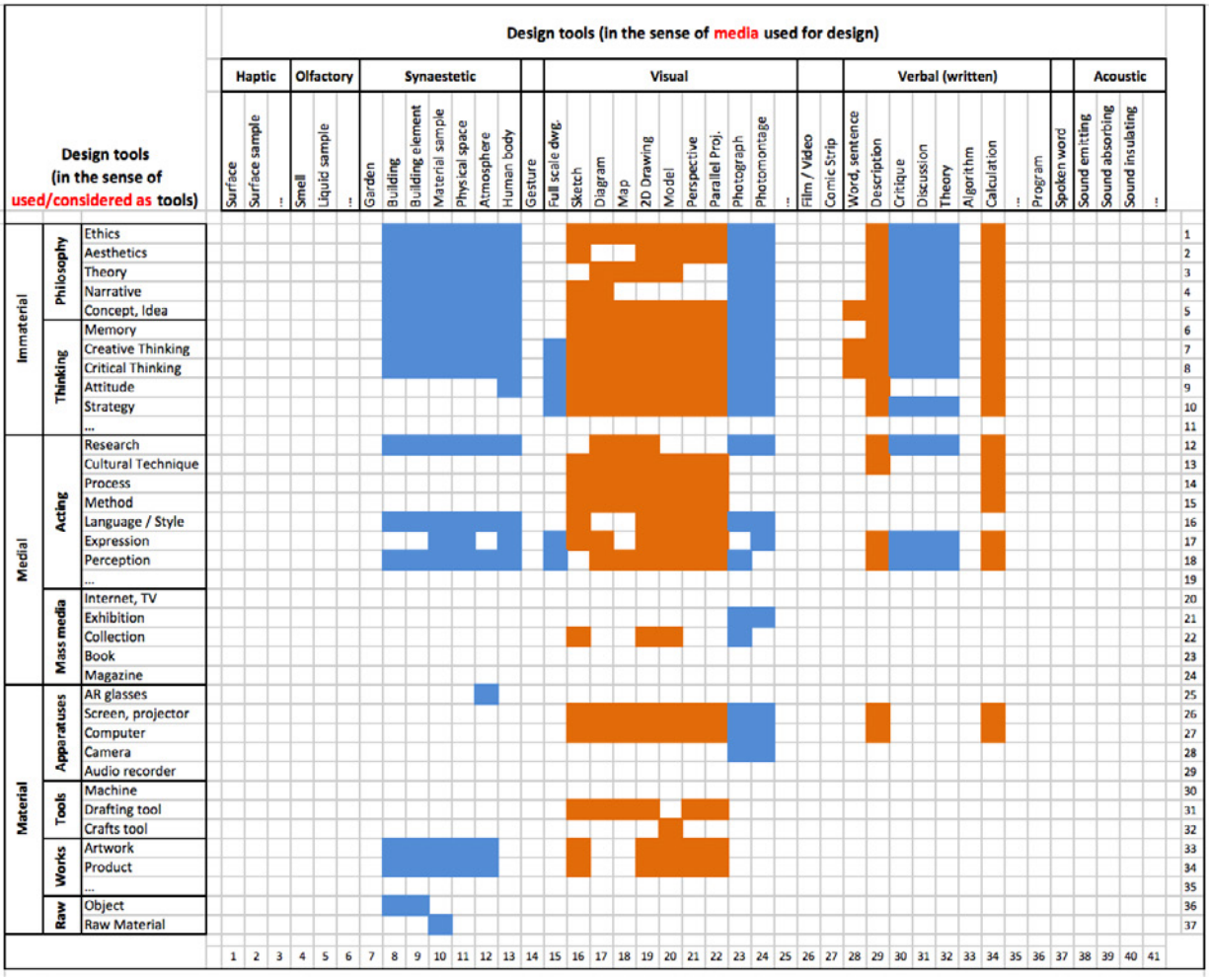


Fig. 9 Open Matrix of Design Tools. Red: design tools use/media combinations which are conventionally used in architecture practice; Blue: combinations which are of additional/special interest for the reuse of modernist buildings (cg, 2018)

It represents both, a wealth of information and possibilities, to be explored in combination with a series other than "standard" design tools. The most unavoidable constraints are represented by the existing structure, it's history and pretended future uses.

To understand an existing building as a design tool requires adopting a different mindset, one that embraces the experience of immersing oneself in the built space and the atmosphere it creates, using one's own body with all its senses as an exploratory device for synesthetic data collection. The existing building, which at the same time is the *representation* of an architectural project (awaiting improvement) and the project itself (demanding respect), invites the practice of design in close contact to a given spatial reality. A building also is an invaluable source of information, to be experienced, discussed, criticized, sketched, drawn, photographed, or 3D-Laser-scanned and transferred into BIM software. What is specific in modernist buildings are the modern, and sometimes problematic materials used (often in minimalized dimensions), a design narrowly conditioned by previously given functions, which makes a change of functions more difficult, and aesthetics that at times can be perceived as problematic.

On top of that, the existing building comes with a history, with (maybe forgotten) narratives based on it's creation, and initial uses, which later on became obsolete. Because it is modernist, the building must also have some kind of relation (which might be strong of weak, positive or negative) to the architectural theory of the time it was created. This immaterial part of the building can become an important resource for the reuse-project to develop. It offers the possibility to use the verbal design tools in order to create a narrative based not only on it's history and previous uses, but on the discussion, critique and theory of modernist architecture itself. A narrative, which then could become instrumental to establish the direction and the meaning of the reuse project.

Conclusion

Over the last decade, the question of what design tools are, how they work and how they can be used for architectural design has been responded to in many ways. Research on design tools since 2007 sums up to more than 25 books published, most of them doctoral dissertations, conference proceedings or exhibition catalogues (individual papers were not considered here)[19]. An evaluation of these publications led to the conclusion that the term *design tool* is mainly understood in two ways: Firstly, the visual, verbal, combined and synesthetic *media* used for design, and secondly the broad range of material, medial and immaterial *uses* made of them. An open matrix based on these categories has been proposed which can now be used to map, and identify promising combinations of design media and uses. Applied to a reflection on tools for the reuse of modernist buildings, the matrix shows that besides the usual visual and verbal design tools,

synesthetic media like the building itself, the atmosphere it produces, and the human body exploring it are additional design tools to utilize, as much as critique, discussion and theory of modernist architecture. A narrative rising from the buildings history set in relation to modernist theory could become a strong conceptual basis for a design process.

For further research, the proposed matrix still needs to be tested, refined, and probably expanded.[20] It can be used to map and compare existing design tools, or to identify areas for future research. Used within a design process, it may help to map the ongoing activities, and to identify the next steps to take. The matrix will hopefully raise the awareness for and facilitate positioning within the large range of available possibilities of design.

1 → The author would like to thank Xi'an Jiaotong-Liverpool University, in Suzhou, China, for generously founding his work on this research, as well as his travel to participate in the RMB conference in April 2018 at the University of Coimbra, Portugal. He also would like to thank Shayne Jones for disucssing and revising earlier versions of this text.
2 → https://past.azw.at/page.php?node_id=3&page_id=538, accessed July 25, 2018
3 → Qouted from: https://past.azw.at/page.php?node_id=3&page_id=538&lang_id=en, accessed July 25, 2018
4 → Thinking out Loud. The Making of Architecture Exhibition, 10–28 January 2011, Dalhousie Faculty of Architecture and Planning, Halifax, Nova Scotia, Canada, from: http://www.elkekrasny.at/archives/689, accessed July 25, 2018
5 → See: https://salledepresse.uqam.ca/communiques-de-presse/general/10728-penser-tout-haut-faire-l-architecture-au-centre-de-design, 11 février au 18 avril 2010, accessed July 25, 2018
6 → See: https://hda-graz.at/programm/raumfinden-werkzeuge-des-entwerfens, accessed July 25, 2018
7 → The author would like to thank Dr. Adam Brillhart for his advice on this topic.
8 → See: https://issuu.com/birkhauser.ch/docs/birkhauser_tools, accessed July 21, 2018
9 → See: https://hda-graz.at/programm/raumfinden-werkzeuge-des-entwerfens, accessed July 25, 2018
10 → Call for Papers: "Imagery in the Age of Modelling. Operative Artifacts in the Design Process in Architecture and Engineering" (Basel). In: ArtHist.net, Jul 13, 2012, https://arthist.net/archive/3636, accessed July 25, 2018 (scroll down for English version)
11 → Namely: Eva Maria Froschauer (architecture history, 10/2011–12/2012), Stefanie Klamm (history, 11/2011–10/2012), Ana Ofak (media science, 2/2011–12/2012), Ulrich Richtmeyer (philosophy, media science, 1/2011–2/2012), Susanne Schregel (history, 2/2011–12/2012), Nicole Stöcklmayr (architecture, media science, 9/2010–3/2013), Franziska Uhlig (art history, 9/2010–3/2013), see https://www.ikkm-weimar.de/forschung/vergangen/werkzeuge-des-entwerfens/, accessed July 21, 2018
12 → Namely: Nathalie Bredella, Gert Hasenhütl, Peter Heinrich Jahn, Lutz Robbers, Wladimir Velminski, see https://www.ikkm-weimar.de/forschung/vergangen/werkzeuge-des-entwerfens/, accessed July 21, 2018
13 → The author would like to thank Professor Thomas Fischer for this suggestion.
14 → The author would like to thank Shayne Jones for this clarification.
15 → See for example Peichel, 2013

16 → Anexo B, Interview with Álvaro Siza Vieira, 2012, p. 34: "João Miguel Couto Duarte: Ao longo de um projecto, há fases em que utiliza mais a maqueta, outras em que utiliza mais o desenho, ou é indiferenciado? Álvaro Siza Vieira: Têm de ser complementares, assim como o esquisso tem de ser acompanhado, muito rapidamente, pelos primeiros esquemas [desenhados] à escala. Tem de haver um diálogo. Todos os meios que nós usamos são também meios de enganar, enganam muito." P. 36: "ASV: Têm de ser utilizados muitos meios. JMCD: No fundo, trabalha com o cruzamento de todos esses meios. ASV: É. E também com o computador (...) é imprescindível. (…) Alterou muito o trabalho de arquitectura."
17 → Quoted from: https://www.domusweb.it/en/news/2016/06/14/serralves_museum_raw_material.html, accessed August 22, 2018
18 → Question raised by Professor Gonçalo Canto Moniz during a discussion at the the RMB conference in Coimbra, April 2018
19 → Please see the references listed below.
20 → In case you would be interested in working with the matrix, please contact the author for a free copy of the Excel file.

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Meanwhile Use as an Act of Resistance

Introduction

In 2017, an open call was launched for temporary users of vacant office spaces in the Brussels North District. This business district characterised by office towers and large boulevards had recently fallen victim to increased vacancy and disinvestment. Following this call, one of the most emblematic vacant buildings of the district, the World Trade Centre is gradually opened up to over fifty small organisations, an architecture school's studio and various colloquial events. The modernist architecture of this tower stayed largely the same as designed 50 years ago. Only today, its marble-cladded hallway and globe-shaped entrance desk no longer welcome bankers and civil servants but students, artists, architects, cooks, and many others. Its elevator's polished steel walls are stuck with flyers for temporal exhibitions, healthy meals, 'body practice' or critical pamphlets with titles such as 'students as lure-hipsters!?' Whilst the contrasting aesthetics and creative atmosphere of the place are attractive, one wonders what this condition represents. Is this type of meanwhile use a symptom of post-crisis urbanism, embracing the aesthetics of scarcity and flexible live-work tendencies? Is it an interim use to test out programs that can later on be integrated in a new development? Or does it merely reflect a strategy to 'keep vacant sites warm while development capital is cool' (Tonkiss 2013, pp. 323).

Meanwhile use of buildings is not new. Buildings and entire districts have always housed temporary uses, different from those they were designed for. Today, we see increased interest in meanwhile use in the context of urban redevelopment projects. Examples can be found in cities all over the world: car parks are temporarily turned into artist studios, in-between spaces into vegetable gardens, vacant offices into galleries, etc. Within this growing collection of cases, important differences surface in terms of ideology, politics of space, activism and power relations. In each particular case, the question of who ultimately benefits from the meanwhile use can be raised.

Many authors have highlighted the catalyst role of practices of squatting and temporary use in processes of gentrification and of displacement of local communities (Metaal 2007; Suleiman 2011; Smith 1996; Zukin 2010). Margret Mayer (2013, pp. 11) highlights how practices of meanwhile use are being used as 'branding assets' by public authorities and the real estate market. This essay seeks to contribute to the discussion by looking at critical conditions that define cases of meanwhile use. It is an attempt to understand its more visceral registers, its empowering potential and its traps. Fran Tonkiss (2013, pp. 322) explains how meanwhile use is often simultaneously 'good and bad'. Good, because it materialises, even in ephemeral and temporal ways, principles that are critical to the 'business-as-usual'. Bad, because it enrols, consciously or not, in a culture of 'the low – or no-cost'. (Tonkiss 2013) Doing so, it remains a weak player in the high-risk high-reward game of urban development. Can this practice be an act of resistance affecting the further course of urban redevelopment projects? More

Frontispiece Student of KULeuven Faculty of Architecture, Sint-Lucas Brussels working on the 24th floor, while overlooking the central axis of the Brussels North District (copyright Alexis Gicart)

specifically, can it influence and inform the choices of citizens, policy makers, architects and developers in that project? I argue it can, when certain conditions are fulfilled.

I make this argument using literature from the tradition of critical urbanism, post-colonial theory, and actor-network theory. In the first part, I introduce the two main concepts that I use to sustain my argument: meanwhile use and resistance. Subsequently, I argue that meanwhile use can affect the future of urban sites during the 'unstable' moment of redevelopment. In the second part, I introduce a case study, by ways of a tour along three different practices part of the meanwhile use in the Brussels North District. In the third part, I crystallise from the case and the literature five conditions for meanwhile use to be an act of resistance. They tap into questions within meanwhile use, such as its method and approach, as well as questions of its context, such as its economical and temporal condition. I conclude by outlining how meanwhile use as an act of resistance can make a positive contribution to urban transformation in the context the neo-liberal city.

Meanwhile use as act of resistance, an actor-network approach

Meanwhile use is defined as the 'interim' use of a site while it is undergoing a transformation. Permanent use is the use of a site while it is, more or less, stable. Meanwhile use is often characterised by temporal spatial interventions and events, closely related to the concept of informal urbanism in post-colonial theory (Mehotra 2011). It is associated with ephemeral structures, cheap materials and contrasting aesthetics. Permanent use on the other hand is associated with formality and thus coherent structures that require large investments. While most literature on informal use relies on records from cities in the so-called Global South, Boudreau (2017) argues that forces of 'informalization' are also at stake in cities of the so-called Global North. She argues that an 'informalization of the state' is taking place, highlighting urban forms of organisation, use and distribution of power that 'exceeds formal institutions' (Boudreau 2017, pp. 171).

Another binary stance that is instructive in the definition of meanwhile use is Lefebvre's concept of representation of space and representational space. Let us take an example from the Brussels' case: a business district used 'permanently' by business people might be associated with the representation of space, i.e. it is planned, ordered and controlled, while a temporal short-term use by students and artists is associated with representational space, i.e. appropriated, lived and as space-in-use (Lefebvre 1991, cited in Mittchel 1995, pp. 115).

Though they are helpful in defining some characteristics, both theories do not explain the reciprocal relation between meanwhile use and the permanent use. I believe this relation lies in the potential for resistance.

Resistance is defined as the force that critically interrogates a certain process, intending to have an impact on its outcome. In urban

redevelopment projects, resistance takes various shapes, depending on the actors at stake. I focus on types of resistance 'from within.' Tonkiss (2013, pp. 317) points to the concept of 'crack capitalism', defined by John Holloway (2010) and further developed by Stuart Hodkinson (2012). They highlight a resistance to the increasing privatisation of urban land by practices that force 'open the cracks in these contexts' through 'identifying the weaknesses, the joins, the blind spots and inconsistencies in a given strategy or settlement, and working both against and within them' (Tonkiss 2013).

Actor-Network theory can help us understand how meanwhile use can exert such resistance. The theory recognises that objects, amongst which buildings and build environments, can have agency and are 'things' inside of networks, 'always in-the-making' (Latour et al. 2008). In this tradition, cities are studied not as 'organised and functional' but as 'complex entities of stakes, ideas, actors and practices' (Stengers 2000, as cited in Doucet 2015, pp. 19). In stable periods, these complex networks of actors and stakes are 'black-boxed' in the build form of the city (Gieryn 2002). During the redevelopment of an urban site, they can be more easily accessed. The disentangled stakes can subsequently be rewired to newly introduced agendas, leading in alternative results. Because meanwhile use takes place in this unstable period, it can have agency as a resisting force by opposing decisions and presenting alternatives. It can, for instance, develop and prove the viability of its program, actors or economic model so that, in the end, the temporal use is integrated in the final building program.

The Brussels North District

The Brussels North District is a 53 ha office district in the centre of Brussels. Its utopian modernist masterplan, infamously called 'the Manhattan-plan', imagined an international business district that would attract large multinationals to the city of Brussels. Several multi-story office towers would come to articulate the crossroad of two highways – connecting London to Istanbul and Stockholm to Lisbon – in the centre of the district. The construction of the district caused the eviction of 3000 families of two working class neighbourhoods (Martens 2009). Ultimately, the new highways never got build and the arrival of international corporations lingered on. For years, the area became a large wasteland in the middle of the city. Finally, the government salvaged the developers by taking long-term leases on the majority of offices in the district. Today, these leases are gradually ending, leaving the district with a prospect vacancy rate of 20% (Bogdan et al. 2013; Binst 2016).

The North District ranks as one of Brussels most 'traumatic' developments that shaped the city since the late 19th century (Doucet 2015, pp. 39). At daytime, commuters rush from their office to the train station. At night, it is characterised by petty criminality and prostitution. Joris Sleebus, a former city guide, saw the deconstruction

happening: '12,000 evicted, for which alternative housing facilities got delivered only 7 years later? (...) Until now I still feel the anger and outrage' (Interview 2017).

This negative stigma stimulates a strong asocial attitude of its users towards the district. One of the large banks located at the edge of the district even installed a shuttle service so that its employees could skip the 10-minute walk from the station to the office. Because of its central location, its large boulevards and over-sized public spaces, it became a prime location for protests and manifestations of all kinds. Finally, during the 2015 refugee crisis, the largest park in the district became a large encampment of people, waiting to access the immigration services.

Lately, the negative stigma is being countered by a series of interrelated events. First, and most importantly, the property owners were confronted by the increasing vacancy rate and started looking for alliances to safeguard the future of the district. Secondly, the increasingly vacant North District hit the radar of various citizen groups, mainly from an artistic and architectural milieu, claiming the spaces for temporal events and workshops. Thirdly, catalysed by the former two, the Brussels' Master Architect, a position installed in 2009 that aims to steer the architectural quality in the region, showed increased interest in the future of the district. Amid their different agendas, those three actor groups agreed that the upcoming redevelopment of the district required a broad, citywide discussion.

In this context an initiative called Lab North was launched. Grown out of an academic master class of the University of Hasselt by architecture agency 51N4E in February 2017, Lab North is a partnership

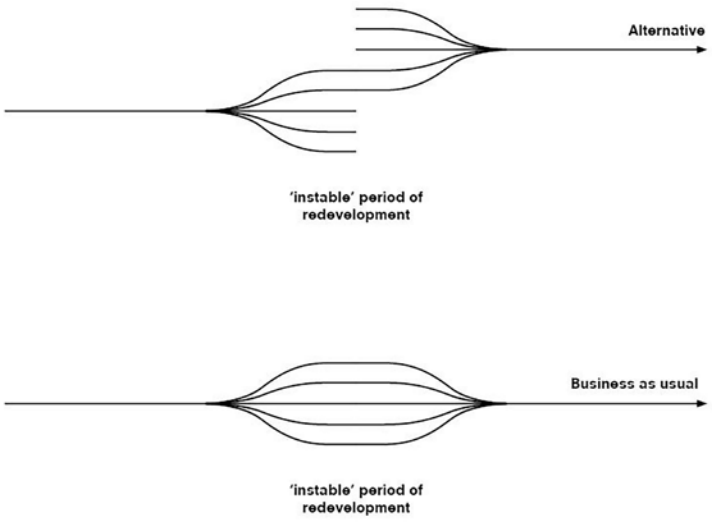


Fig. 1 Comparison of role of meanwhile use as an act of resistance (beneath) and without impact (above) in redevelopment projects

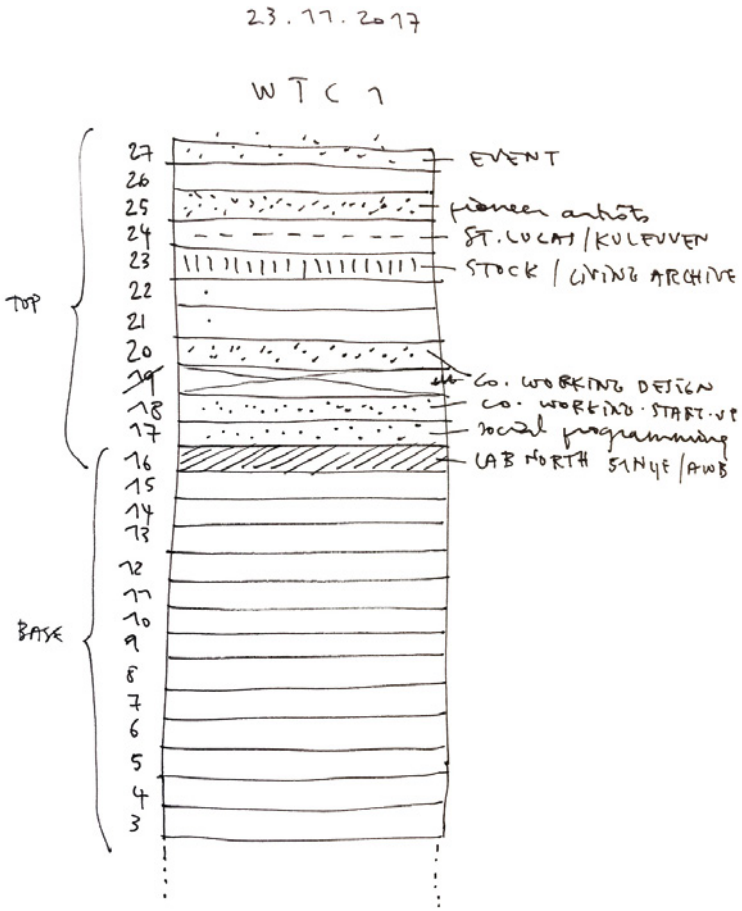
between 51N4E, urban think tank Architecture Workroom, design agency VraimentVraiment and a non-profit, Up4North, initiated by ten property owners in the district. Lab North's mission is to 're-imagine how the district can gain back an inclusive place in the city' (Lab North 2017). One of its first operations was an open call for meanwhile use of the vacant WTCI tower for a period of one year. The purpose of this call was to 'attract a variety of actors, small or big, that can contribute to activate the area,' (Lab North 2017). A more fundamental shift that Lab North wishes to initiate is the shift from large single tenants, often multinationals or governmental agencies, to multiple smaller users sharing space and resources. 70 candidates from out of various sectors responded the call, of which most will be moving in in January 2018. I will guide you alongside three practices that moved in from September until December 2017. By describing these 'pioneering' practices, I hope to expose the conditions under which the meanwhile has come into being and in what way they are acts of resistance.

We start the tour through the building with one of the practices that co-initiated meanwhile use, 51N4E, that decided to temporarily move to the WTC in September 2017.

Fig. 2 The world trade center In the 1970's surrounded by a wasteland (Copyright Collection AAM/CIVA Brussels)

Fig. 3 Sketch by Freek Persyn of 51N4E of meanwhile use of WTCI tower (Archive of 51N4E)

Fig. 4 Student Studio of Faculty of Architecture and Arts, UHasselt on 19th floor of WTC1 (Copyright Filip Dujardin)



According to Freek Persyn, founding partner, the move has to do with the fact that 'there was absolutely no vision for the area' (Interview 2017). In return for architectural expertise to co-construct this vision, the engaged property owner forgoes rent and communal cost for using a 1500 square meter space, formerly used by an international construction firm. 51N4E's practice entails the making of architectural and urban projects, meetings with developers, consultants, artists and others, teaching, and various everyday activities such as of shared lunches, chitchat at the coffee machine, internal presentations, late night working sessions etc. Persyn states: 'we are starting to use it (the north district) as a city again' (Interview 2017). In December 2017, 51N4E was granted with the commission for the design of the future redevelopment of the WTC into a new 140.000 m²mixed programme. Master Architect Kristiaan Borret, head in the jury for this commission, comments, 'Because 51N4E was working on the topic, it was a good candidate for this project. The added value is plural. There is knowledge production, knowledge exchange which raises the bar for all' (Interview 2017). The commission of such a project allows for a more structural influence on the actual architectural production in the district 'from within'. The brief for the commission prescribed to demolish and rebuild. With their competition design, the architects convinced the investor's team to rethink this decision and to keep and reuse parts of the building.

Let's move up, to the 23th floor, where the Brussels campus of the University of Leuven organises their design studio in what they call the 'WTC hub'. More than a hundred architecture students carry out architectural and urban proposals, often related to the district. Two different ideas prevail when analysing this meanwhile use as educational space.

Firstly, the students' agency in the process is questioned. Peter Swinnen, professor at University of Leuven, states, 'it is absolutely not evident that students are here' (Interview 2017). It would not be the first time that students are used to increase the 'coolness' of the area and are subsequently being pushed out. The students get to discuss their role in the process of meanwhile use in a course on 'criticism and ethics.' Van de Vloet states, 'in that course we are very conscious about our role here. It's out of these courses that the notion of 'lure-hipsters' derived. If I wouldn't have had that course, I would probably have had another stance regarding this situation' (Interview 2017).

The discussion on the 'gentrifying' role of the meanwhile use influences the students' studio work. Student Elena Verelst explains how their studio aims to develop 'an approach of "integrative gentrification", in which they investigate how new socio-economic dynamics between different actors can be established' (Interview 2017). Together with her group, Elena developed an ephemeral structure of sticks and flags on the central roundabout of the district in which they welcomed a diverse crowd of people with snacks and drinks. Many showed up, ranging from refugees waiting at the immigration office to

civil servants to local youth. One can rightfully doubt the impact this intervention will have on the relation between those groups in the long run. On the other hand, providing settings for new everyday activities does 'encourage "a habitude of use" which means something might stick', affecting the process of meanwhile use (Tonkiss 2013, pp. 320).

Secondly, several students mention the contrasts between their working space on the 23th floor and the reality on the ground floor. Anton Parys, architecture student, explains that, by working in a tower, he 'realised that things can seemingly 'work' from this height, but do not when examined downstairs. It increases your feeling of responsibility' (Interview 2017). He later states 'I never had had access to a 'private' space on such great height for such a long period of time. Being able to appropriate the space, affected me' (Interview 2017).

We finish our tour on the 24th floor. On haphazard weekdays, hand-written flyers in the elevators notify a 'Cantine' on this floor, from noon till 2:00 pm. All ingredients are local and prepared in-situ by Joris in his improvised kitchen in a former office room. He sells meals to students, professors, artists and professionals. His practice is fragile, but his agency might be large, stimulating encounters between different actors part of the meanwhile use. Similar projects in European and Northern American cities also show how food is often embedded within other agendas (Clausen 2012, pp. 11, cited in Tonkiss 2012, pp. 316). Joris says he understands his practice as a test: "Here we learn how we will work in the future. We organise ourselves. We stimulate each other' (Interview with Joris, 2017).

Conditions for resistance

Any conclusions on the impact of the meanwhile use in the Brussels North District on the long term are impossible to draw. However, we can analyse the agency of the above-described practices. Using Actor-Network theory, I argued that meanwhile use can be an act of resistance since it can influence choices made during the 'unstable' period of redevelopment. Five conditions can be distinguished that increase probability for this type of influencing. They represent the 'seed beds' for a meanwhile use that affects the future of the site (Tonkiss 2013, pp. 316).

Use as a design process

Meanwhile use entails testing out uses, different from those a building was designed for, as well as building new relations between the users and other stakeholders. For this testing to have impact on the result a design approach is required. A process in which design is central ensures that intentions and dreams for the future site can be expressed, negotiated and resisted, without being boxed by fixed expectations (Gieryn 2002). It also implies flexibility amongst the users: meanwhile use is unstable and changes rapidly. Such approach can be recognised in the voluntary haphazardness of Joris' lunches, as well as in the

Fig. 5 'Cantine' on the 25th floor of WTCI tower (Copyright Karine Dana)

ephemeral structures set up in public space by the students. Both show, in a 'learning-by-doing' approach, how things could be organised different without proposing a final solution.

A symbiotic relationship between agents

Those involved in the meanwhile use and those deciding over the development should establish interdependency. In the architecture studio, this interdependency is most clear. Architects using the building today 'in the meanwhile' are at the same time producing the design of the future development. This creates dependencies between the 'now' and the future, between the informal and the formal. Partnerships like Lab North can enable and sustain such relation. As intermediary agent, Lab North translates and 'rewires' stakes from one milieu to the other. In that way, everyday concerns of users can reach the ear of developing parties and policy makers. These new interdependencies might give rise to a 'symbiotic relationship' between the formal and informal as called for by Mehrotra (2011), or an 'informalization' of formal institutions as presented by Boudreau (2017).

Urban Futures of juxtaposed realities

Today's tensions between meanwhile and permanent use, between formal and informal, also need to be represented in the future redevelopment plans. For this, inconsistencies should be allowed; paradoxes should be part of, even stimulated in, the imagined future

(Holston 2008). Today however, many redevelopment projects tend to imagine utopian futures in which all inconsistencies are being erased. This is also the case for some projects in the North District proposed by developers. The studio by the architecture students involved in meanwhile use hint towards another approach. The visions produced for the long terms should themselves contain 'cracks' for future resistance. As rightly put by architecture student Parys, the existing contradictions in the district, call for 'a more responsible' design approach (Interview 2017). This condition can be summarised as imagining a radically urban future: a collection of juxtaposed everyday realities of different identities.

Critical mass

Meanwhile use can expand its agency when it reaches a critical mass of simultaneous practices. In our case, several practices are stacked in one building, resulting in an outreach to different networks of actors and stakes in the city. This condition recalls Howard Zinn's defence for the 'countless small actions of unknown people' that could provoke structural change. An idea Noam Chomsky (2011) repeated in the wake of the Occupy Wall Street Movement. A multitude of simultaneous experiments on new forms production and consumption, on learning and working, might spawn other experiments increases the chances to impact the future development.

Slowing down

Redevelopment projects are often bound to strict planning, phasing and investment schemes that eliminate the time necessary for any of the previous conditions to develop. The conditio sine qua non would thus be to 'slow down' (Stengers 2015). This condition calls in no way for indulging the status quo, but rather to take time to reach out, change mind-sets, evaluate results and measure impacts. In the case of the North District, this time was created by an adverse office real estate market; supply exceeds demand, resulting in a slow pace of redevelopment of existing offices. Redevelopment into housing, a safer sector, would require re-zoning the area. Development has thus been slowed down. Persyn states, 'we are not working in the margin, we're almost working in an empty field. Maybe that gives a lot of back-up to succeed' (Interview 2017).

Points of discussion

In response to rightful concerns about risks of meanwhile use as a catalyst for gentrification and displacement – meanwhile use might affect the outcome, but for whose benefit? – I posit two points of discussion.

The first concern deals with the policy framework for meanwhile use. Urban redevelopment is largely driven by mechanisms of spatial transformation, ranging from master plans till territorial visions. In many cases, the planning of use remains under-developed. In Brussels,

the government is piloting in a couple of projects with meanwhile use to anticipate on and test new programs and services. But as much as use should be stimulated, sometimes 'it should also be contained at a certain point' (Borret in Interview 2017). What kind of policy and planning approach can be developed that stimulate meanwhile use but also prevents pushing out other, sometimes vital part of our cities?

The second point of discussion considers the position of the activist urbanist. In many cases of meanwhile use, urban practitioners are involved. Architects, urban designers, urbanists that combine a professional with an activist role. This results in a shift in the discipline to self-organised, low – or unpaid work. Our case's example shows how a new economy of means can mediate this shift, by trading, for instance, expertise for space. What other mechanisms of such an economy of means can be developed? They will prove crucial in sustaining the 'countless small practices' who run meanwhile use and provide ideas, intelligence and energy (Chomsky, 2011).

Conclusion

Urban transformation has become a ubiquity in European and North American cities. Enclosed spaces, long-term vacancy, lock-down, and deconstruction are part of this process. In this essay, I argued that in this context, practices can unfold 'from within' that affect the future of those urban sites. Practices of meanwhile use that learn from modest, everyday experiences to imagine alternative urban futures. In order to have impact on the further course of the transformation, I advocated five conditions to be nurtured. The case revealed more in detail what shapes resistance can take. Parallel to their every-day activities, the users described push for other agendas, dealing with questions of health, more sustainable building methods and new forms of education.

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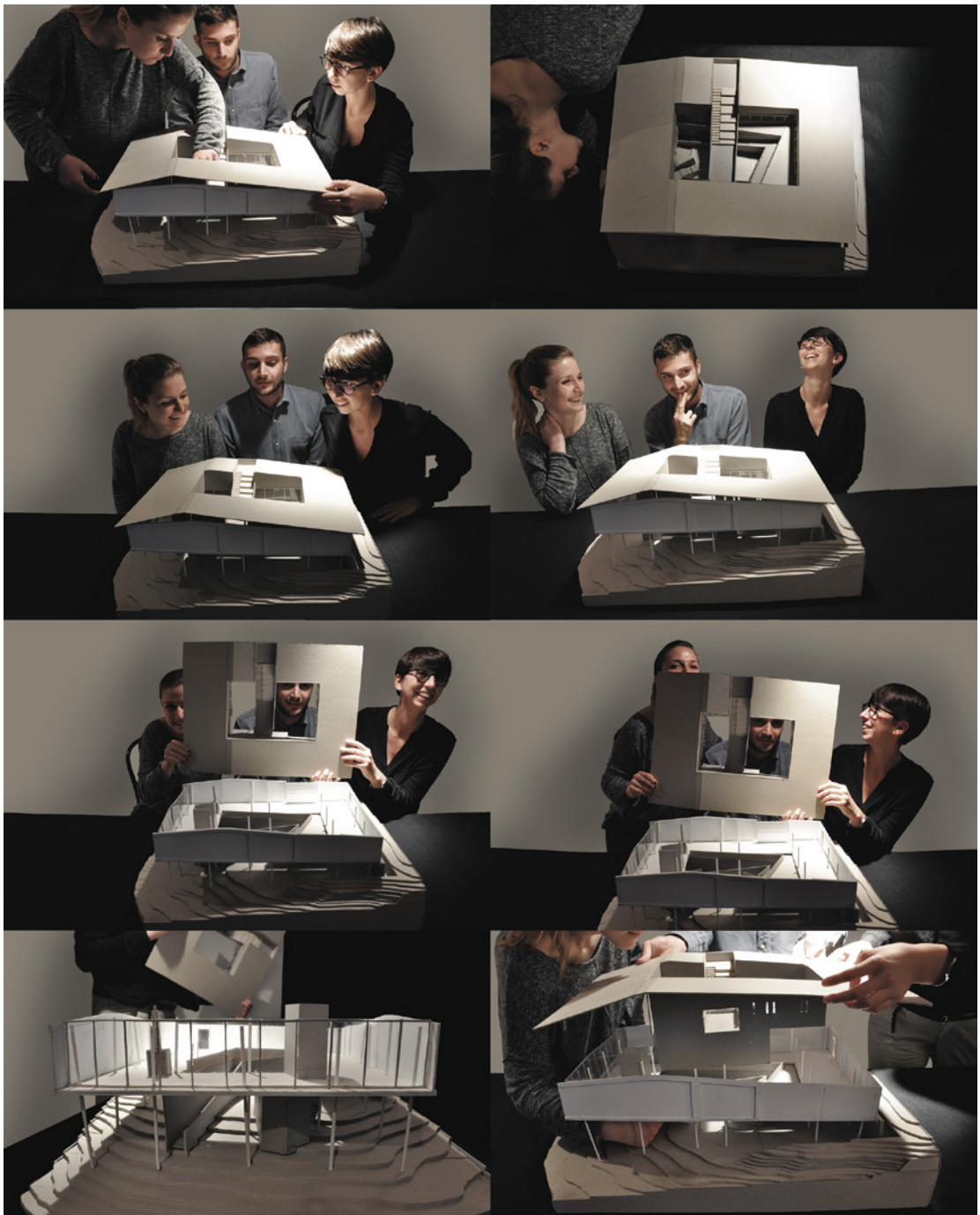
Section 3

Case study essays

Sapienza University
Rome,Italy

Anna Giovannelli

Reuse of the existing: teaching and theoretical investigations



Introduction

Design the contemporary city and architecture means, first of all, dealing with the existing, a huge amount of abandoned space, of uninhabited factories, of crumbling artefacts, of an entire territory which asks to be taken care of. After years of urban sprawl with soil consumption, it is necessary to rethink the way of planning in the existing contexts of the contemporary city and its environmental sustainability. The immediacy of new constructions is often preferred to the recycling of existing ones that work in the long term and return value to the places and their historical stratifications. This is why today the reuse of the existing represents the real emergency to face with a process of regeneration of cities and their territories, where the architectural project, with the contribution of other disciplines – such as archaeology and restoration, geography and landscape design – represents the only instrument able to offer an answer to the current problems of urban structures. Reuse is actually a necessity as well as an emergency; reuse is the ontological condition of architecture because every building has always recycled materials and spaces to reshape the new and we need to analyse past examples of reuse in order to create a methodology for the design reuse of existing structures. This paper aims to contribute to the definition of a teaching methodology of reuse through design and proposes an approach that interprets those characters of the different architectural forms of the existing modernist buildings.

Frontispiece "the manipulation of Casa De Vidro" (by Lina Bo Bardi): Students: A. Borreca, A. Lione, M. Dragoni by Sapienza Roma, 2016

Reuse in the past

The history of architecture provides us with many striking examples of how, before a new building is begun, the existing 'raw material' on the site has been taken into consideration. There are many examples: from the typological reuse of the basic building of historical urban structures through the evolutionary process, to the ancient reuse, that have converted the existing buildings by constructing the new forms above or around architecture: temples becomes cathedrals, monasteries become prisons and then again museums; these are some types of reuse that have produced famous examples of contamination between the old and the new layers, as the Palazzo Savelli[1] that is the reuse of the ancient *Teatro di Marcello* in Rome, by Baldassarre Peruzzi.

The Baroque structure of the Cathedral of Siracusa has an eclectic relationship with the *existent* temple of Athena, the *Athenaion*, in which the new outside shell of the church envelops the ancient building in a remarkable overlapping which leaves its Doric columns partially visible, so that they are re-contextualised into a new sacred order.[2]

Another outstanding example of reuse is Leon Battista Alberti's design for the Tempio Malatestiano in Rimini, where the new enveloping structure, based on the rules of classicism, encloses the existent 13th century church and establishes a substantial divergence between the interior space and the design of the side facades. Although clearly implied in Alberti's project, the outer sides of the Tempio Malatestiano

display a sizeable discrepancy between the continuity of the ancient building and the variations imposed by the Renaissance transformation.

In Vicenza, Palladio enclosed the medieval Palazzo della Ragione within an external supportive structure (using his famous *serliana* arches) so as to re-interpret one of what he calls in his *Quattro Libri dell'Architettura* "the Basilicas of our time"[3]

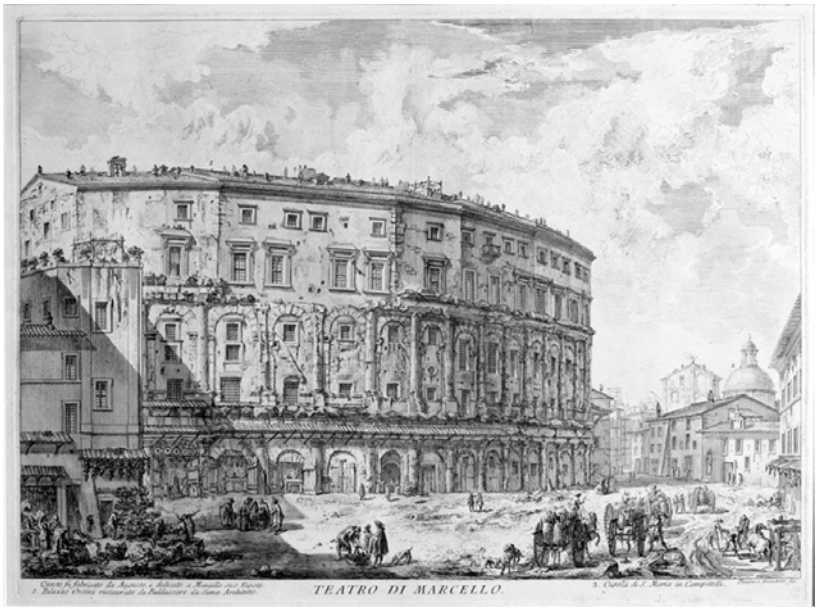


Fig. 1 Giovanni Battista Piranesi, *Teatro di Marcello*, Roma, 1774

Fig. 2 The Baroque Cathedral of Siracusa, side façade, Sicily

The original buildings then serve as the basis on which new architecture is raised as a continuation of what already exists. Reuse always happens in continuation with the past, even as it invokes the spirit of its own time, in which methods and techniques are employed that belong to the original form of the buildings. The continuation is discriminatory, however and does not impose a new ordering but re-interprets the existing in an updated form of language which is appropriate to each time period. Modernity subsequently interrupts this discriminating sense of continuity; it requires the *tabula rasa* of the existent and of all history, which it regards as an obstacle to new architecture. To concern oneself, therefore, with the reuse of the Modern seems like a contradiction in terms; if modern architecture implies a break with the past, how is it possible that the entire repertoire of modernity is now the field of research for reuse projects? The idea of modernity as a shared architectural and cultural heritage, allows us to make an informed assessment of the concept of reuse, not as restoration, but as refurbishment or architectural renovation; in other words, those design interventions aimed at re-appropriating the forms of the existing architecture, be it industrial, modernist, or whatever, re-evaluating its original features and re-creating them in the context of a modern city. Yet what are the conditions needed if we are to set in motion the reuse of such a vast number of buildings? Is reuse merely the 're-functionalising' of what already exists, or is it in fact the transformation of built structures which simultaneously reactivates a broader process of more extensive spatial organisms?

Fig. 3 Leon Battista Alberti, ***Tempio Malatestiano***, side façade, Rimini, XV century

Teaching reuse through design: manipulation of architectural form

In the absence of more effective and codified interpretative models, such as those used in the science of restoration, we need to investigate how the architectures of the past reuse material and structures in building the new, in order to create a methodology for projects involving the reuse of existing. Nowadays architectural design projects tend to focus on *refurbishment*, which often involves only the interior spaces of buildings, leaving the architecture itself relatively untouched. With this teaching experience we investigate the theme of the reuse of the architecture and the strategies of its transformation, both in the interior of existing buildings, and the spaces in-between surrounding them. The aim is that of identifying design techniques for intervention on the artefact assumed in its neglected condition. We want to experiment a compositional approach that operates through the *process of manipulation* of the form, choosing as a field of action some significant *architectural texts* of the twentieth century that are placed in specific contextual situations. Methodology in the design process related to the reuse of neglected buildings, both modernist and post industrial, consists of a "reading" of their architectural form, when the design actions work with additions, subtractions, manipulations of the building heritage. The existing becomes the conceptual framework of new architectural configurations generated by the necessary refurbishment of buildings.

The practical methodology of projects for the reuse of existing buildings is based on a selective examination of the structures concerned, an analysis of their original form on which to base plans for their transformation. This analysis sets up what are the basic components of its architectural form: five e*xempla* of modernist architecture, as Casa de Vidro by Lina Bo Bardi, or Casa Butanta, by Paulo Mendes da Rocha and other important modernist buildings were analysed; in the first stage, compositional diagrams and models were created in which a critical reading of the work was made, followed by a stage where each building went through a process of 'ruination' – the form of the ruin was the form of the original structure; this allowed the students to progress to a form of compositional manipulation, the transformation project in which new configurations of the existent building were constructed.

This exercise was ostensibly theoretical and had a considerable degree of abstraction that appeared to distance it from reality, but it turned out to be an effective project technique for examining the original resistant architecture of the building and understanding how it could be transformed, in other words, its future reuse. It attempts to adopt the same approach used by architects of the past, where the existing building was not only the receptacle of new functions, but the formal structure into which the new spatial, material and formal solutions could

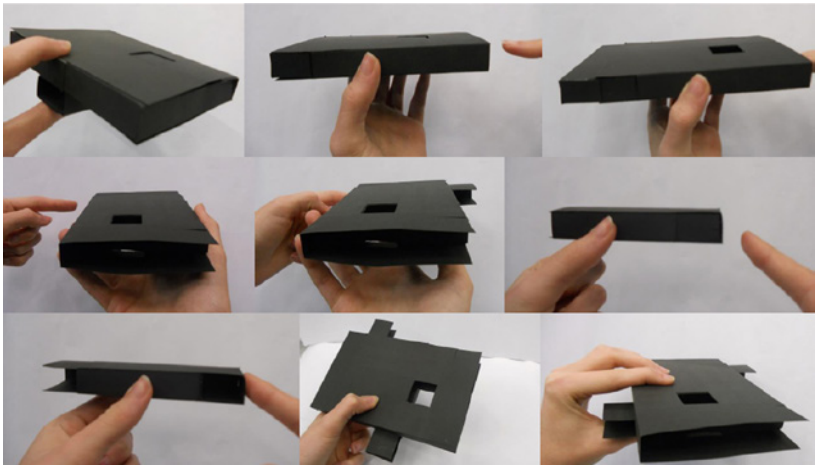
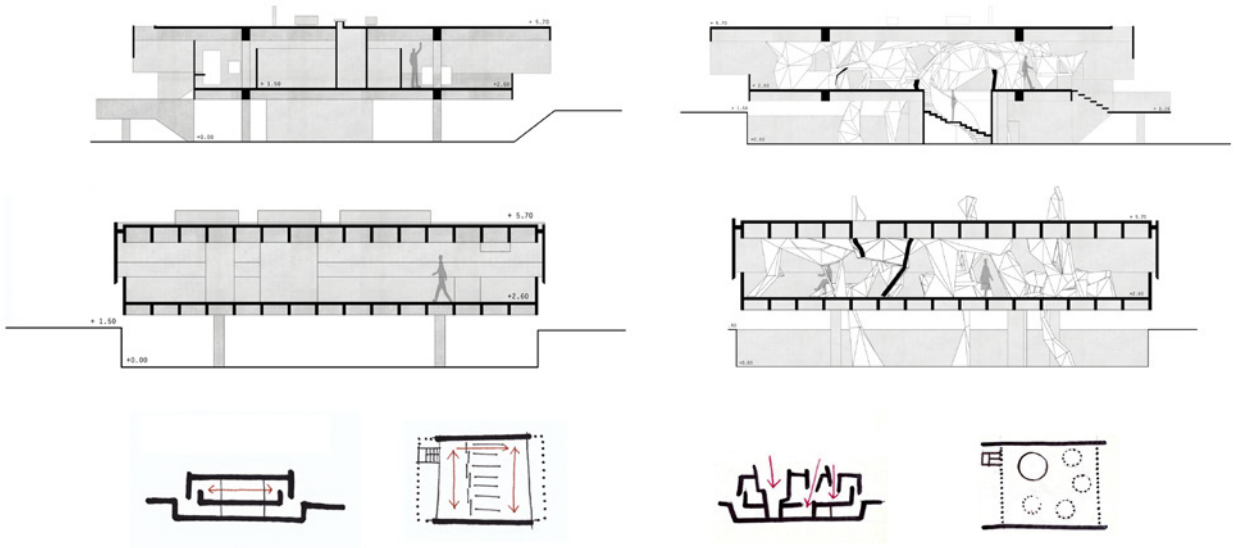
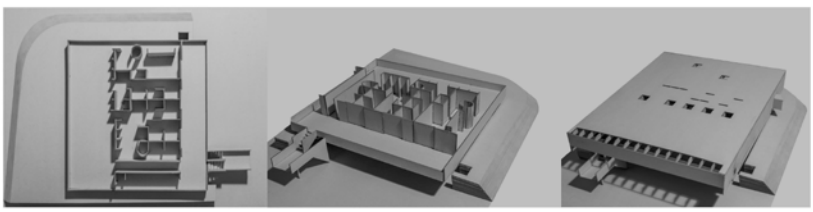


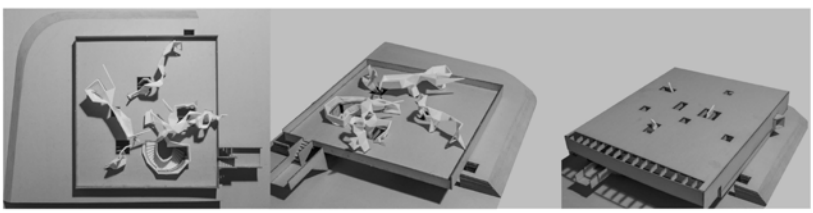
Fig. 4 Lina Bo Bardi, Casa de Vidro, *manipulation of form. Student's model*, Roma, faculty of Architecture, 2016

Fig. 5a Paulo Mendes da Rocha Casa Butanta, *manipulation of form. Student's comparative drawings*, Roma, Faculty of Architecture, 2016

Fig. 5b Paulo Mendes da Rocha Casa Butanta, *manipulation of form. Student's comparative models*, Roma, Faculty of Architecture, 2016







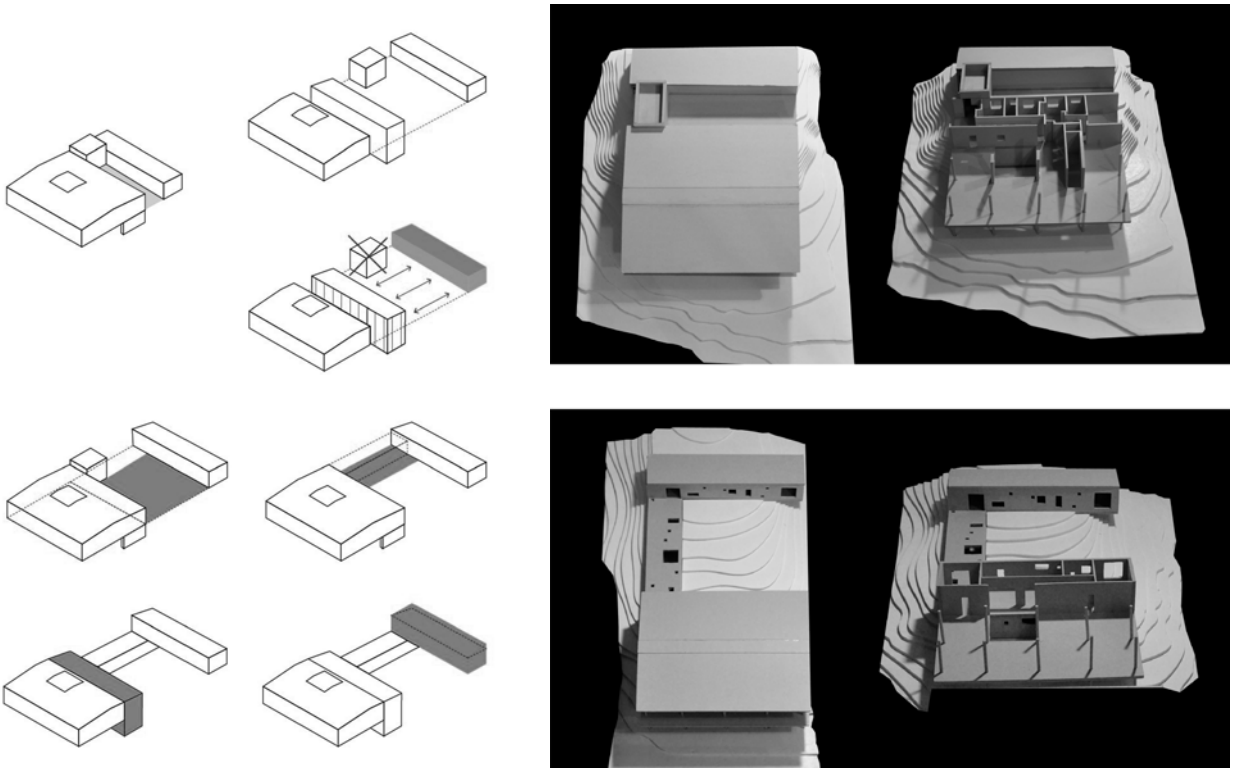


Fig. 6a Paulo Mendes da Rocha Casa Butanta, *manipulation of form. Student's design process*, Roma, Faculty of Architecture, 2016

Fig. 6b Lina Bo Bardi, Casa de Vidro, *manipulation of form. Student's comparative models*, Roma, Faculty of Architecture, 2016

be woven. At this point reuse becomes the point of interaction between two systems: one that exists, and the other that is grafted onto it to produce the complex set of elements that define the project.

Images of reuse: the architecture of re-discovered spaces

The experiments are carried out at different scales on single buildings, with architectural additions to existing buildings. All the projects operate by undertaking certain actions that elaborate the new forms of architectural reuse by reshaping some post industrial buildings, located in different places, or the abandoned structures of modernist architectures such as important public buildings from the XX century in Rome

New rooms

As Louis Kahn wrote *"The room is the beginning of architecture. It is the place of the mind"*. The room is thus the unit of measurement of the space that is constructed in the sequencing, repetition or uniqueness of the form. In these comparative exercises, the *room* is the form of the original structure and the figure of its reuse; it is the difference between the form of the container and the figure of the contents, between the existent and the project.

The first exercise in reuse takes place inside the huge open space of Soundstage 1, in the "Centro Sperimentale di Cinematografia" in Cinecittà, Rome, designed in the 1930's.

Fig. 7a **Centro Sperimentale di Cinematografia, *the old Soundstage 1*, Cinecittà, Roma**

The project involves creating a National Cinema School, a cultural and educational centre dedicated to the theory and practice of the cinematographic arts. The reuse project sets out to organize a multiple functional programme, divided into various specific activities inside a very large space. On the different floors a sequence of spaces will be constructed, with new relationships between solid structures and empty spaces, and between volumes and surfaces; a special correlation will be created between a new puntiform framework and the original structure, in a continuous dialogue with the existing container.

Two of these work on the idea of an analytical space, in which the order of the new structural spans quantifies the composition of volumes and internal partitions, where the positioning of the distributive elements determines the hierarchy of the spaces. Other projects put forward the idea of a plastic space, where, in some cases, the interior is conceived of as a large solid structure to be excavated; the huge open space is invaded by a system of floors that generate fluid spaces with open overhangs and suspended volumes.

Another *room* is the Africa Cinema, one of the many cinemas that the engineer Riccardo Morandi has designed in Rome since the 1930s. The cinema was built in the Fifties inside an irregular modernist urban block. It is an interesting structure because this *informality* is grafted into the voids with three infill faced on the road. The project proposes a new *urban room*, because create a new relationship with the interior

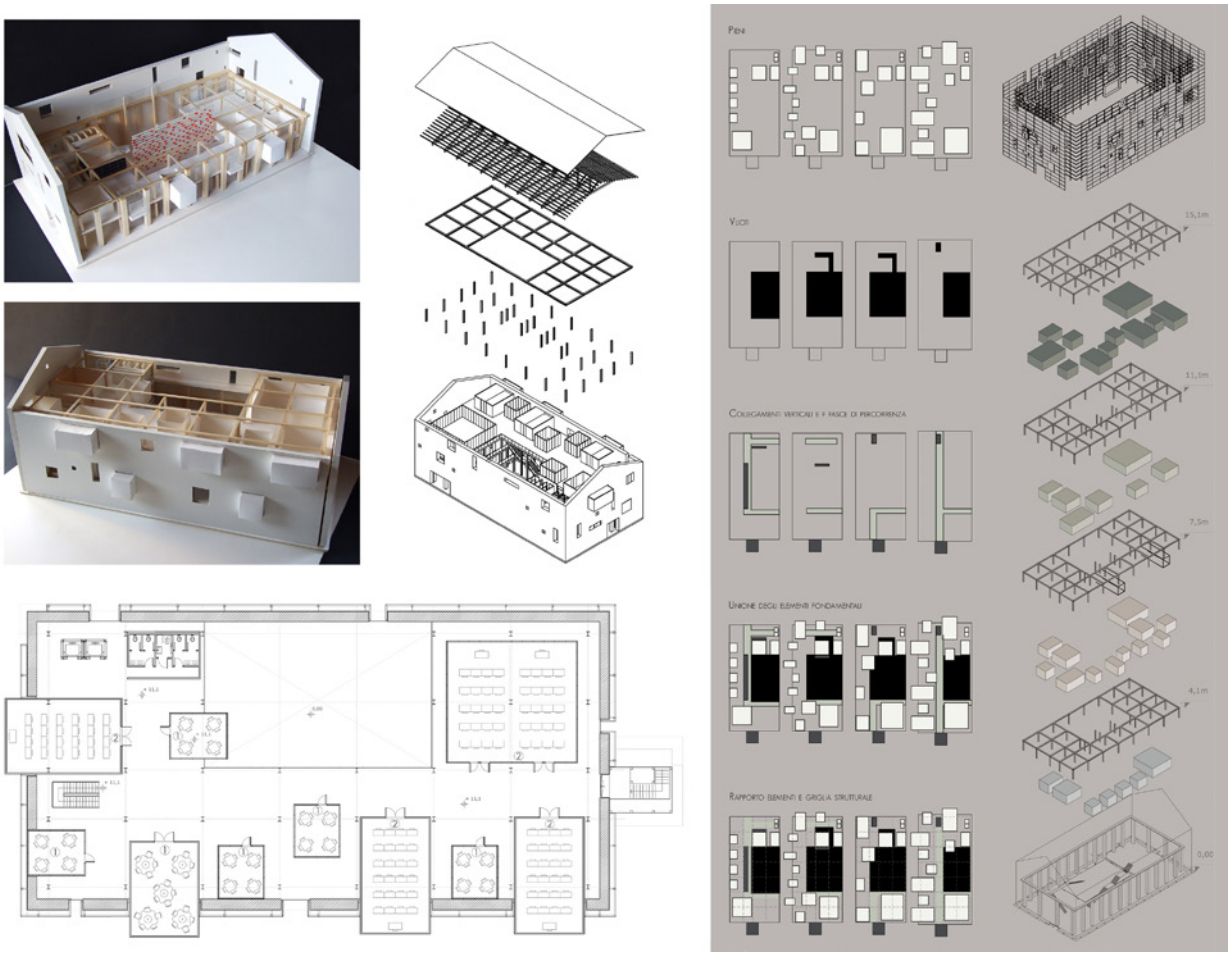
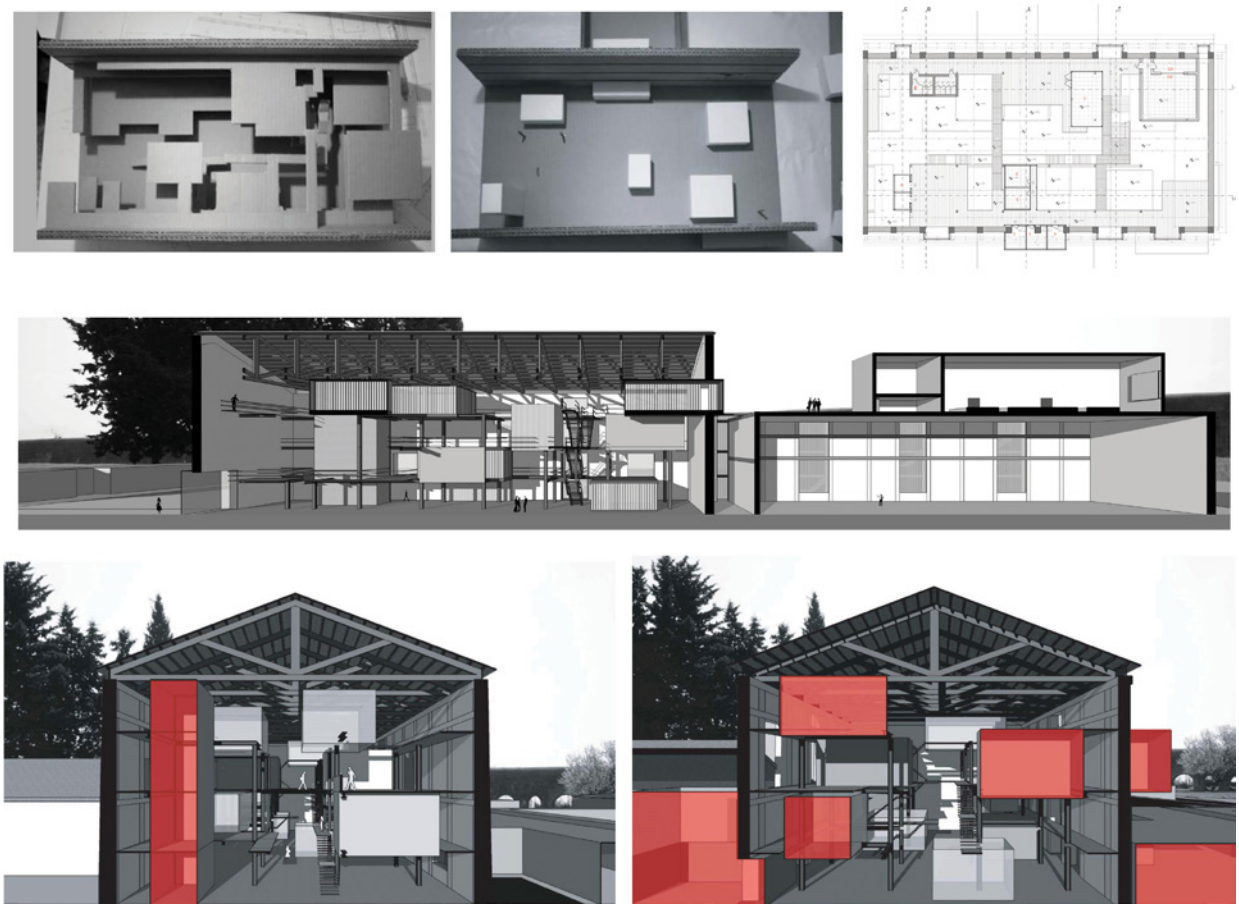


Fig. 7b The reuse of the empty space of the Soundstage 1: Ilaria Matano, *degree thesis* Roma, Faculty of Architecture, 2008

space of the block. The three infill become the new accesses to the public space and to the new use of the interior spaces, – Laboratories and offices – that are created with the lifting of a floor of the new hall. The *new rooms* are bounded by a system of structural partitions that support the new hall.

Grafting _cutting for reuse

The word 'grafting', as an implant is probably the most useful architectural term to help us appreciate the importance of an operation that rehabilitates the abandoned structure of a post-industrial building or a modern disused one. In the *second life of a building* there are new organised spaces that function as grafting with new perimeters in which recycled materials are assembled and abandoned artefacts are given a new lease of life. Or the regeneration takes place by removing parts of the building or by making partial dissections that remove certain parts of the structure and reveal new representational possibilities. This is what Gordon Matta Clark meant when he spoke of "creating metaphorical incisions in the space/place (...) to reuse the old, the



existing structure of thought, of imagination, and of understanding"[4]. In this sense, the project of reuse manages to graft new implants of form, which at times lie alongside the *lifeless organs*, and reinvigorate the space with new architectural transformations.

Factories, no longer inhabited by machinery or labour force, become the grammar of any future architectural grafting. These are often interstitial spaces, or surfaces resulting from partial demolitions or collapse of fabric, which opens up new potentials for reuse projects. The project has to pay strict attention to this *in between*, between the remaining fragments that are to be reused and the form of the new structure.

In Barcelona, the fragmentation and complexity of the factory Car Ricart are the focus of the project, that works with them in a layout that overlaps past and present structures. The project proposes to underline the resistance of the factory to the Plan Cerdà, virtually re-proposing the road that was superimposed to cross it, by means of a large ramp, a grafting that recreates the fragments that surround it.

Fig. 7c The reuse of the empty space of the Soundstage 1: Matteo Martini, *degree thesis* Polytechnic University of Milan, Faculty of Architecture, 2007

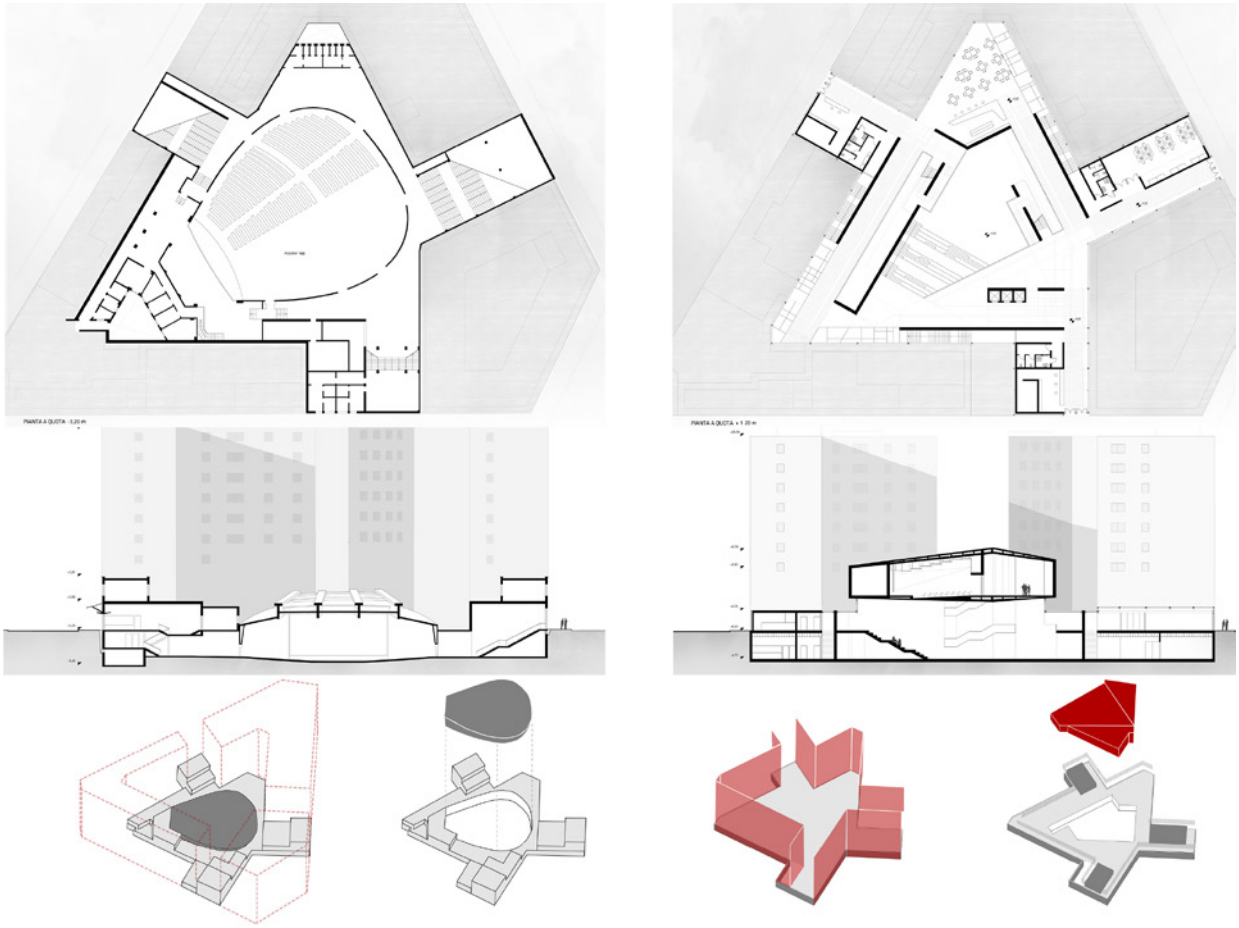


Fig. 8 The reuse of the Africa Cinema in Rom by R. Morandi: Jole Lutzu, *degree thesis* Roma, Faculty of Architecture, 2017

Fig. 9 Gordon Matta-Clark *Conical-Intersect*, 1975

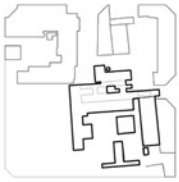
Fig. 10a The reuse of the Can Ricart factory in Barcelona, Spain. *Design process*. Flaminia Iacobini, *degree thesis* Roma, Faculty of Architecture, 2017

Fig. 10b The reuse of the Can Ricart factory in Barcelona, Spain. *Model study*. Flaminia Iacobini, *degree thesis* Roma, Faculty of Architecture, 2017

individuazione del vuoto tra i fabbricati

individuazione delle parti della fabbrica oggetto dell'intervento

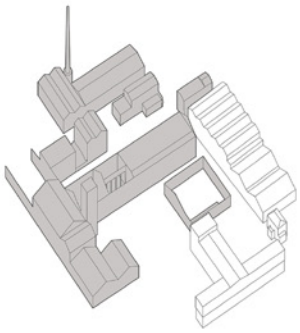
individuazione delle parti della fabbrica fatiscenti e di scarso valore architettonico



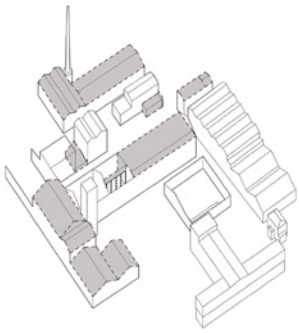
inglobare il complesso al livello funzionale con le parti della fabbrica già riabilitate (Mangar, Casal de jovenes) formando degli spazi espositivi e per attività di workshop

ridare un fronte alla fabbrica verso nord-est progettando su quel lato l'ingresso principale del complesso dal quale nasce la rampa che, secondo un percorso anulare, riproduce virtualmente la strada che doveva attraversare le quattro manzane

fornire un percorso veloce alternativo alla rampa attraverso una cordonata e un ascensore posto all'interno della torre dell'orologio che permette di raggiungere la quota della copertura



rovina industriale: la consistenza della fabbrica



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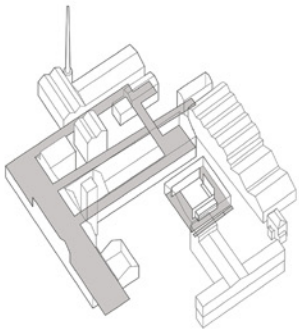

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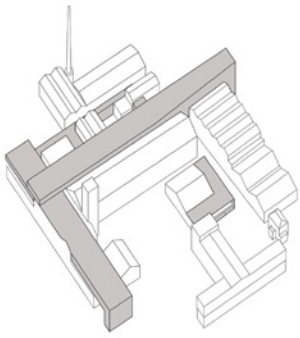
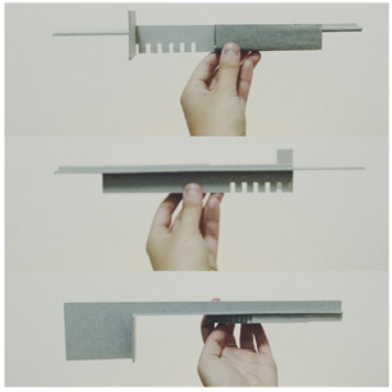
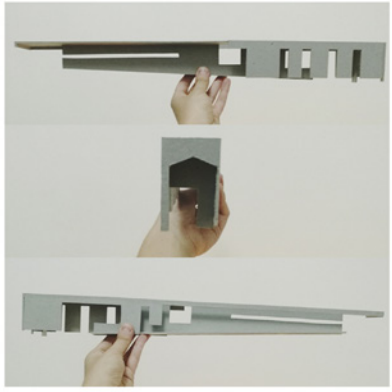
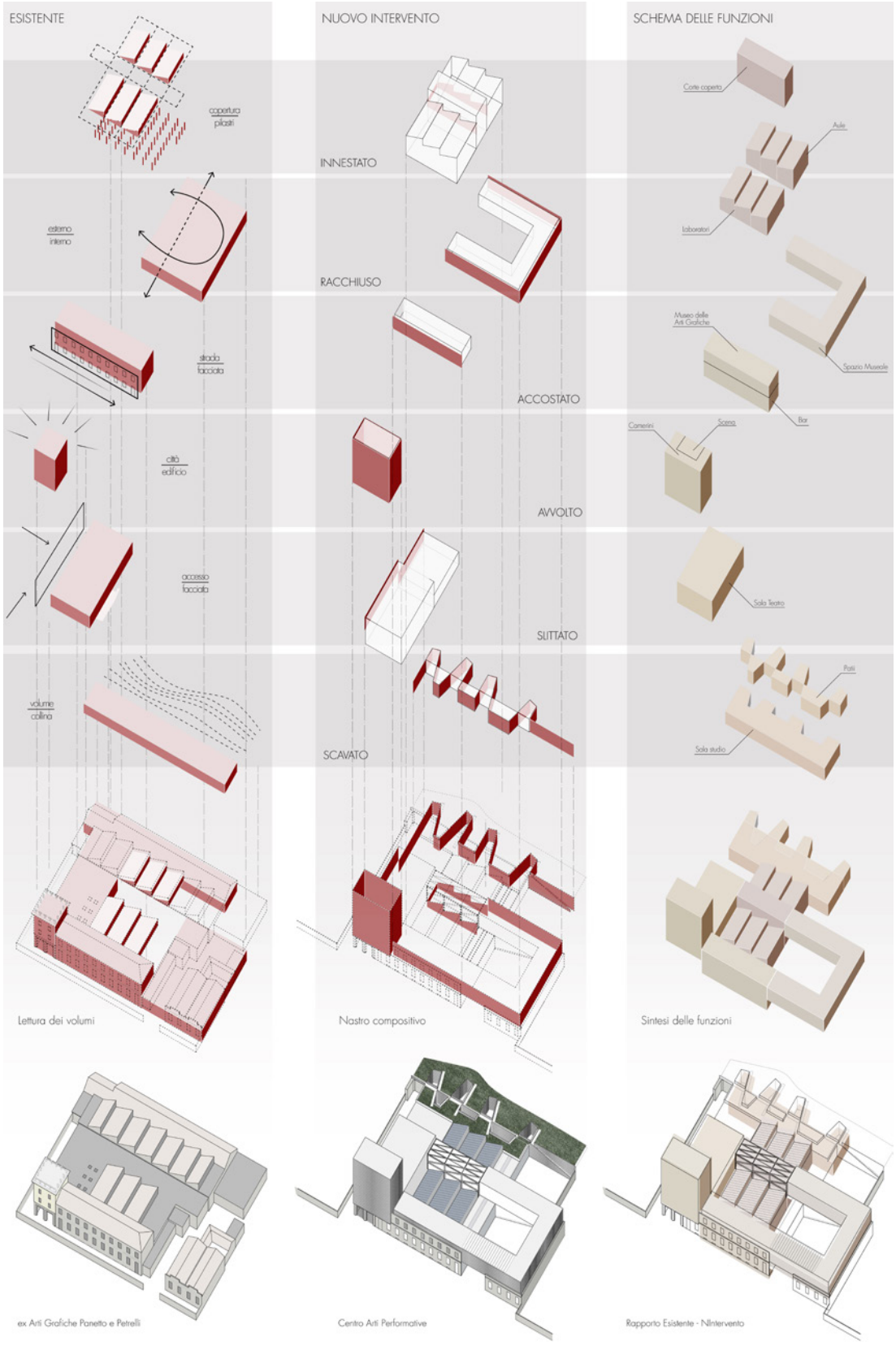


sovrapposizione: la rovina come basamento



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SCAVATO
SCHEMA DELLE FUNZIONI
Corte coperta
Aule
Laboratori
Museo delle Arti Grafiche
Spazio Museale
Camerini
Scena
Bar
Sala Teatro
Posti
Sala studio
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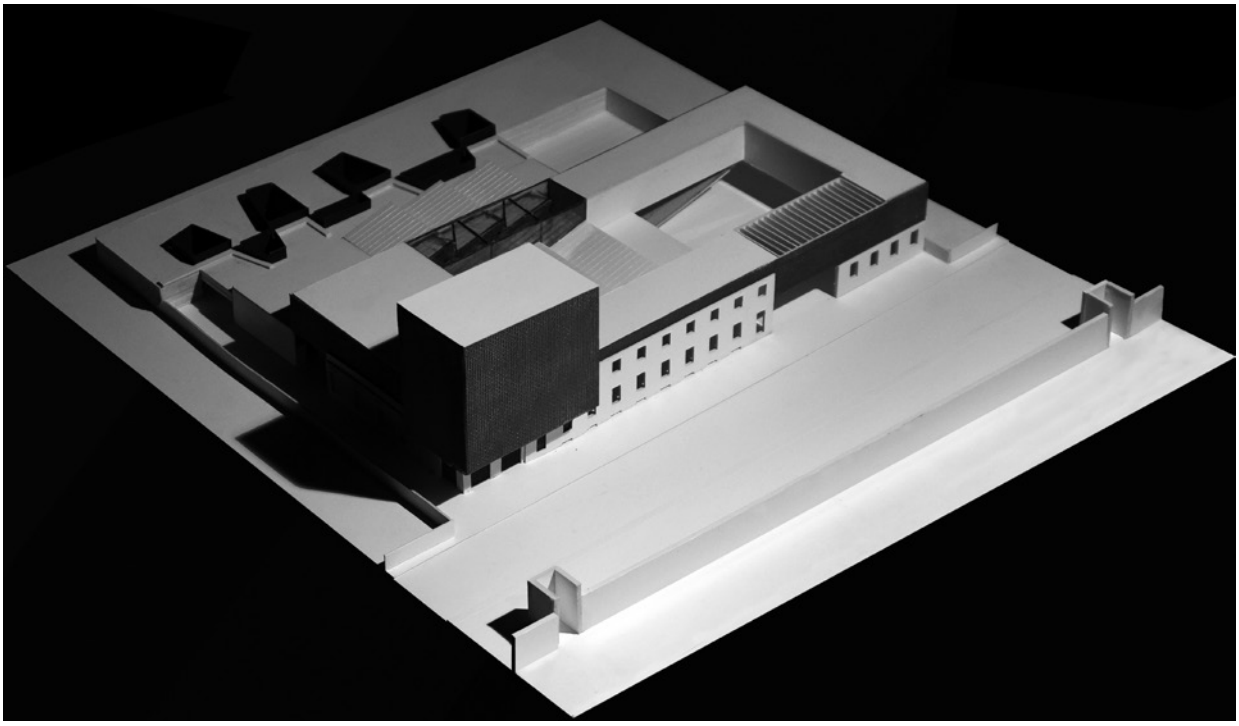


In Spoleto the *Performing Arts Centre* is the reuse of the Panetto & Petrelli typography, an important example of industrial architecture that began its activity in the early twentieth century in the Umbrian city with the building construction of a factory located along the walls. The project elaborates the idea of a re-convertible architecture through actions of transformation of the original factory starting from the partial deletion of some additions of the second half of the XX century: with a continuous formal device the project reconfigures the original juxtaposition of the volumes in a plan composition that organizes the new spaces of the building: a perforated metal strip is the element that wraps, grafts, digs and separates the various parts of the factory in the new spaces of a theatre, a museum and laboratories. The original façade as the front of the museum and the custodian's building, whose enlargement becomes the theatre's theatrical tower, in addition to the production spaces of the former printing house, relive in an unique sequence of interlocking spaces between inside and outside the new enclosure of the old factory.

Fig. 11a **The reuse of the Panetto&Petrelli factory in Spoleto, Italy. *Design process*. Pietro Romitelli, *degree thesis* Roma, Faculty of Architecture, 2016**

Fig. 11b **The reuse of the Panetto&Petrelli factory in Spoleto, Italy. *Model*. Pietro Romitelli, *degree thesis* Roma, Faculty of Architecture, 2016**

Additions of form

When the reuse space extends beyond the confines of the building and incorporates the surrounding context, at this point the forms of the architectural project assert themselves as supplementary objects that engage in a dialogue with the existing structure. The two projects create additions of form from the existing structure as

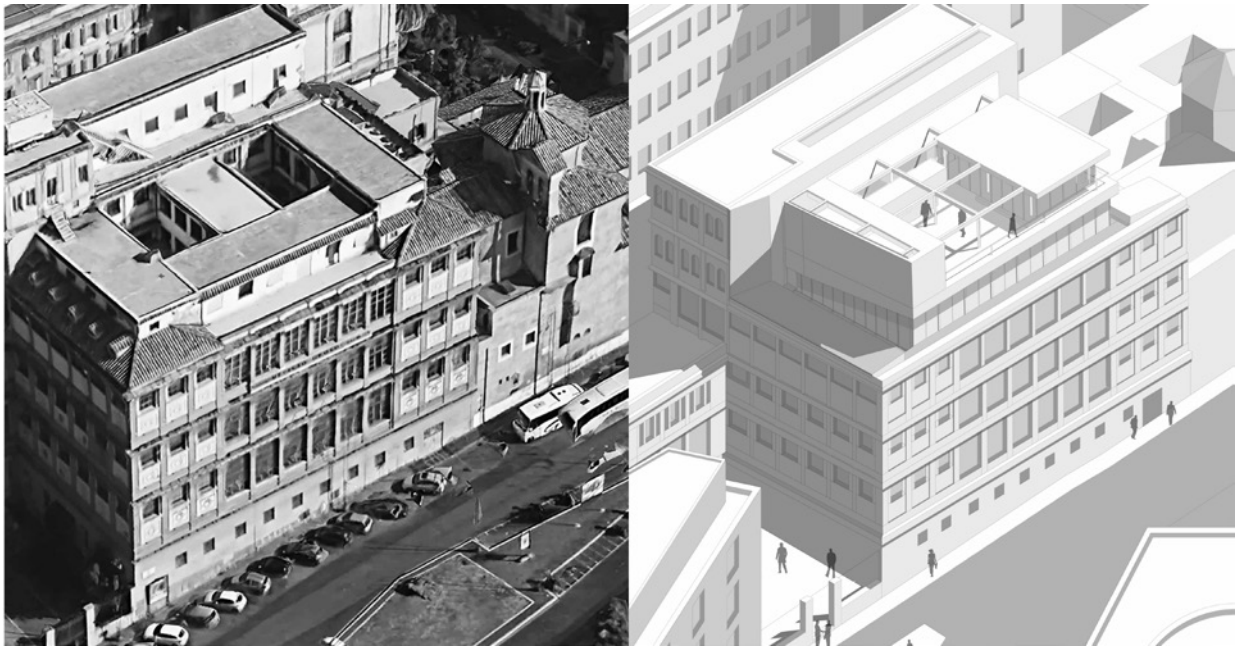


Fig. 12 The reuse of the Geological Institute by R. Canevari in Rome. *The top floor new addition*. Matteo Dragoni, *degree thesis* Roma, Faculty of Architecture, 2016

a re-interpretation of the original form, re-submitted in the language and materials of contemporary architecture, a kind of typological enhancement based on the idea of the existent form yet introduced as a new architectural image.

The first is the old *Geological Institute*, built in Rome in the end of the XIX century; it was settled in the historical city, rising on the foundations of an ancient convent of the *Santa Maria della Vittoria* church. The design process starts analyzing of the different phases of construction of the urban block, up to the modern building. It was built in a mixed masonry and steel structure. Recently, archaeological excavations have discovered an archaic temple. The building designed by Raffaele Canevari has been completed in several phases and some volumes in excess have altered the top floor. The reuse project re-defines the top floor as a new addition of form with a volume, which is inserted additionally in the extant structure creating a new relationship between the different spaces. The original structure and the new one are connected by the same size but they are different because the new order re-interprets the existing in an updated form of language.

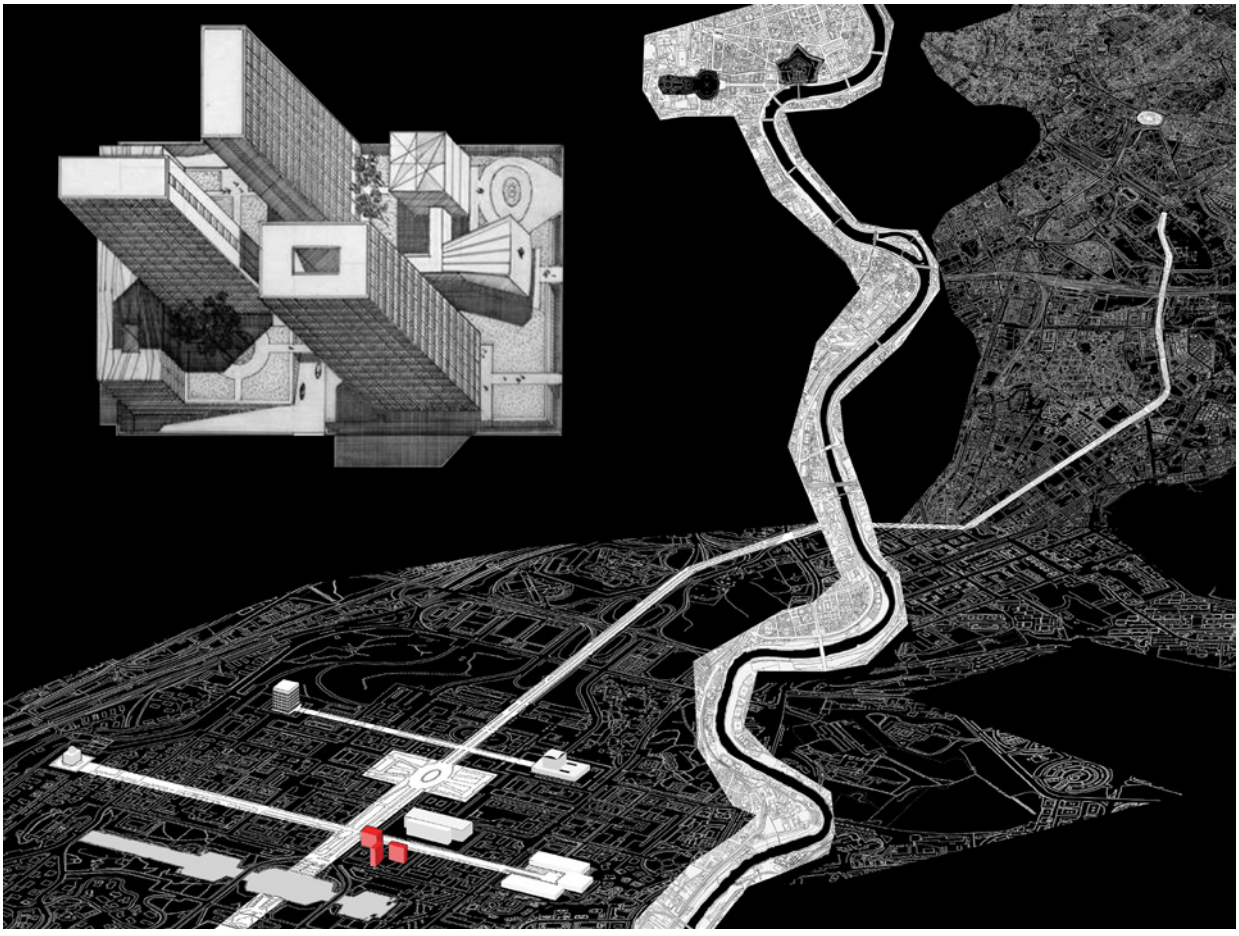
The second one is the building complex of the *Ministry of Finance*, designed in 1955 by Cesare Ligini, in Rome EUR, that consists of three towers and two lower buildings. The project moves from the functional program and the constraints imposed by an international competition that provided for a substantial refurbishment of the interiors without changing the structure and the number of floors. However, it was possible to intervene with a new connection between the buildings. The design process proposes a partial demolition of the base of the original structure, freeing up a new urban space that connects public

and private spaces. The new functions, offices and hotels are organized in the lower flats of the towers. Here the addition of form is the new connection between the houses, which are located at the top of the three towers. This connection system produces green areas that reduce CO_2 emissions on top of buildings. Furthermore, in this architectural proposal the new double-sided facades contribute to the reduction of energy consumption.

Conclusions

These teaching experiences explain the challenge of our methodology that aims to make a contribution to defining the discipline of re-use of the existing, proposing a design process to study the formal structure of the abandoned modernist buildings, that are often completely canceled by the progressive autonomy of the individual parts in ruin. And so, the main task that educational experimentation has to face through design is *learning from the existing* with the aim of creating a language of reuse of the existing in which the architectural figures reinterpret the memory of the lost building, which reappears in a new forms.

Fig. 13a The reuse of the Ministry of Finance, by Cesare Ligini, in Rome EUR. Roberto Amatori, Davide De Santis, *degree thesis* Roma, Faculty of Architecture, 2015



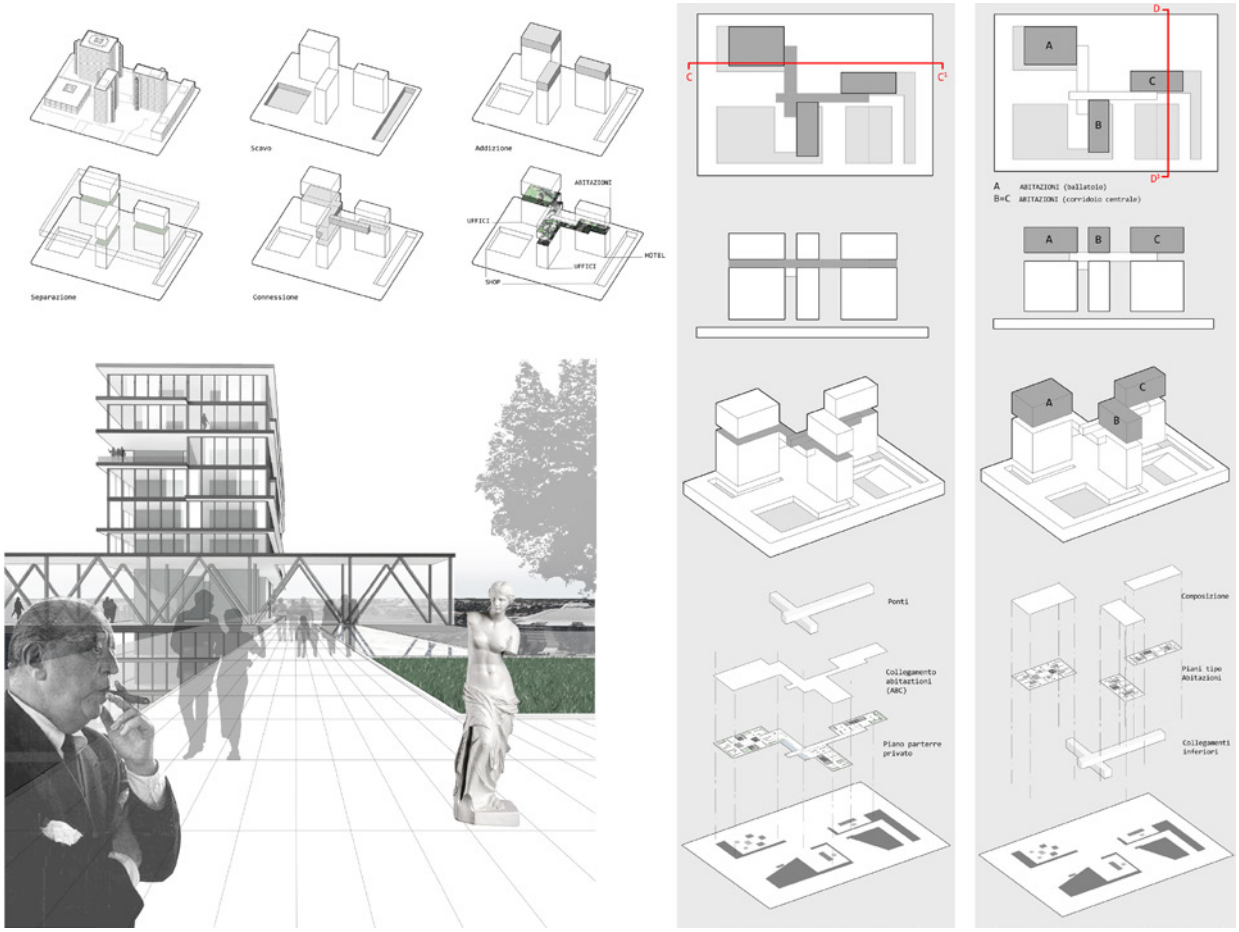


Fig. 13b The reuse of the Ministry of Finance, by Cesare Ligini, in Rome EUR. *Model*. Roberto Amatori, Davide De Santis, *degree thesis* Roma, Faculty of Architecture, 2015

Fig. 13c The reuse of the Ministry of Finance, by Cesare Ligini, in Rome EUR. *Model*. Roberto Amatori, Davide De Santis, *degree thesis* Roma, Faculty of Architecture, 2015

1 → The Theatrum Marcelli is a theatre of ancient Rome, still partially preserved, built by the Empereor Augustus in the southern area of Campo Marzio between the Tiber River and the Campidoglio. In the Middle Ages had been used as a place of shops and for the construction of small houses, and in the XIV century it became the property of the Savelli's, a family of merchants that partly restored according to order and on which it took a further construction just to build its own building. In 1500 the Savelli's commissioned Baldassarre Peruzzi who made an architectural addition above the two orders of the ancient theatre. The new plan system adapts itself to the structural spans of the ancient architectural forms

2 → The Athenaion temple in Syracuse, built in 570–560 a. C. in the Ortigia island is one of the most significant examples of the architecture of the Greek colonies where, on one hand, the construction according to the archaic style survives and, on the other, the severe and powerful appearance of the composition announces the rule of the growing Doric order, which expresses a particular magnificence in the more peripheral regions of Magna Graecia

3 → "Et un'altra ve n'è in Vicenza, della quale solamente ho posto i disegni, perché i portichi, ch'èlla hà intorno sono di mia intenzione: e perché non dubito che questa fabbrica non possa esser comparata à gli edificij antichi", "And there is another one in Vicenza, of which I have only placed the drawings, because the porticoes, which are around me, are of my intention: and because I do not doubt that this building can not be compared to the ancient buildings" A. Palladio, I Quattro Libri del'Architettura, Libro Terzo Cap. XX, Venezia, 1570, printed in Milan by U. Hoepli, 1980

4 → Gordon Matta-Clark, Gordon Matta-Clark's Building Dissections, typewritten statement by the author, undated (ca. 1970), published in Lotus International, n.133, Milano, 2008

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Alvalade Neighbourhood: once modern never old (but age-friendly)

Introduction

The ageing of societies is a global concern, especially in Europe. Portugal, the sixth most aged country in the world (UN, 2017), is already facing this new reality, namely, in its capital, Lisbon. The district of Alvalade, a *modernist* (MOD) neighbourhood built after 1945, is today a *Naturally Occurring Retirement Community* (NORC), therefore a good case study to analyse in which way modernist housing can cope with the ageing of its inhabitants. Besides, Alvalade was mostly built upon the strategic policy of repetition of architectural projects, to save money and build faster, resulting in dozens of similar buildings and hundreds of equal apartments. For us, this means ideal conditions to test ideas of reuse of modernist housing because of the many possibilities of location and replication throughout the neighbourhood.

This paper aims therefore at providing ideas and solutions for the transformation of existing apartment buildings into Assisted Living (AL) units for their older residents. These design proposals are the result of a previous research (Carvalho, 2010) in which a thorough literature review for concepts and survey of all existing AL facilities in the Greater Lisbon area was conducted, including interviews and site visits. This allowed us to conclude which spaces and services were present at all facilities, thereby classified as fundamental (restaurant, kitchen, lounge, nurse office), which ones were present in half of them, thereby classified as important (reception, administration office, laundry), and which ones were randomly present and thereby superfluous (central corridor, veranda corridor, storage room, medical office, physiotherapy, winter garden, library, porch). Following this field research, we selected repetitive projects of buildings in Alvalade whose characteristics would allow the introduction of fundamental spaces and provision of services to function as Assisted Living. The original projects were located at the municipal archives to confirm the initial characteristics (since many of them have undergone different changes through the past six decades), resulting in the selected case studies.

The three case studies we selected for this paper correspond to three levels or possibilities of intervention that we consider fundamental for an age-friendly city: public space (Bairro das Estacas), interiors (Av. Estados Unidos da América) and buildings (Av. do Brasil). Besides, they all share quite similar main modernist concepts in their spatial conception, thereby allowing the extrapolation and intertwining of conclusions. In that sense, the transparent ground floors of most modernist buildings offer shelter from sun and rain, while providing continuous public pedestrian paths away from traffic, while the rational and functional organization of interiors spaces provide clear and straight paths for better mobility for someone on a wheel-chair or using other walking aid devices. Sometimes, it also offers the possibility of co-housing or shared living arrangements between different generations while keeping autonomy and privacy inside the same apartment. Last but not least, modernist flat roofs can be used for leisure and social

Frontispiece **Brasil Avenue, Alvalade, Lisbon, photo by the author**

interaction purposes, especially for the older age groups who feel too fragile to face the public space and yet need to do some soft exercise. The main issue we will therefore address in this article is how to reuse and adapt this modernist global environment (public spaces, buildings, and interiors), respecting its original design standards and yet turning it into an *age-friendly community*.

Alvalade in the 1950's: young and MOD

When the Alvalade neighbourhood was created, in the early 1950's, Portugal had quite a young population: the country had not been involved in the Second World War and the population pyramid was perfect, with a solid young base. Lisbon, as capital, attracted many people from smaller towns, especially from the countryside, and Alvalade represented the new expansion of the city northwards, where the city airport (a symbol of modernity) had been inaugurated in 1942. This new expansion (Fig. 1) was mainly intended to house the growing middle class, even though it also included the relocation of lower income families in "low rent" apartment buildings. Actually, for this emergency relocation reason, these were the first housing units to be built in compact corridor streets, in a clear hierarchy of main streets, secondary streets, *cul-de-sac* and pedestrian streets, following the *neighbourhood unit* concept (Perry, 1929), which the Alvalade Plan's author, Faria da Costa, named *urban cells* (CML, 1948). Among the eight urban cells into which the plan is organized, some parts would adopt a rather modernist layout, by influence of the architects who designed the buildings, with the urban designer's agreement– also as a lesson learned, since the common green spaces inside the urban blocks in the first built urban cells soon proved to be quite abandoned spaces (Costa, 2002), hidden from the street views. Three of these urban cells (Fig. 1) with modernist design will be our case studies in this paper: 1-Bairro das Estacas, 2-Avenida dos Estados Unidos da America, 3-Avenida do Brasil.

Bairro das Estacas, 1949

This housing ensemble got instant fame in the city being nicknamed "Bairro das Estacas" (which means literally "Stakes Neighbourhood"), a popular name that still remains today. But it also got official recognition in 1954, by winning the Municipal Architecture Award as well as the Biennial of São Paulo Award, in Brazil. Its image of modernist buildings all aligned on top of round pillars was indeed a revolutionary proposal for a traditional city such as Lisbon in the early 1950's. It is worth mentioning that it was not just a question of architectural imagery: the urban space presented a totally new approach, with a parallel sequence of housing blocks (Fig. 2) and a public open space concept, replacing the traditional rectangular urban blocks envisaged in the original plan (see oval 1 in Figure 1).

Indeed, architects Ruy d'Athouguia and Sebastião Formosinho Sanches offered the city a new urban atmosphere (Fig. 3), based on

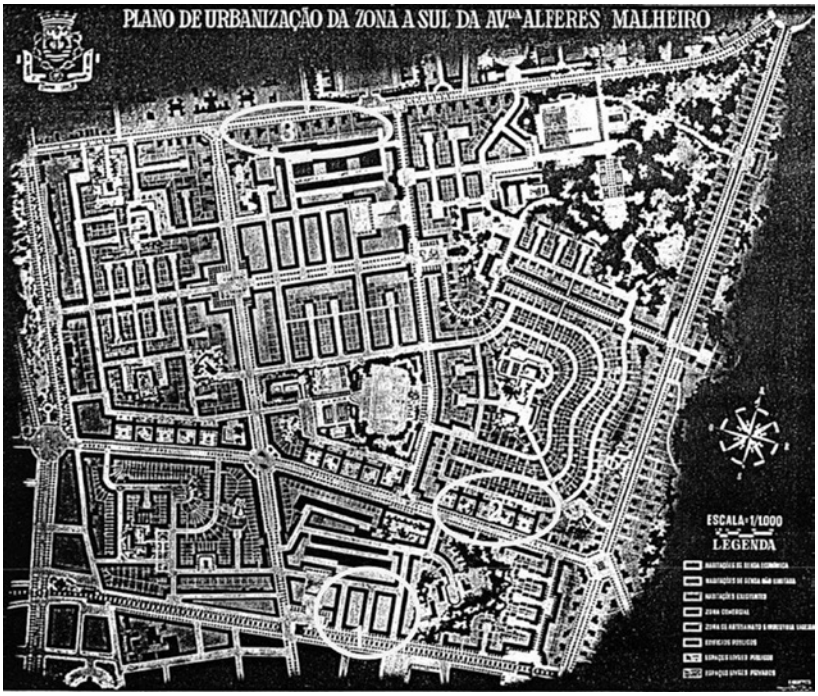


Fig. 1 "Alvalade Plan" designed by João Faria da Costa, 1945.

Fig. 2 Aerial view of Bairro das Estacas. Photo: unknown author, 1950's.
The contrast is clear between Bairro das Estacas and the traditional fabric of the recent surrounding city. The modernist urban layout, by placing the buildings perpendicular to the train tracks, offers citizens the green space created in between and under the apartment buildings that hover on top of *piloti*.

Fig. 3 View of the buildings open to the public garden. Photo: António Carvalho, 2018. Architects: Ruy d'Athouguia, Formosinho Sanches, and Gonçalo Ribeiro Telles, 1949. The modernist transparency of the public garden: the scale and proximity of the buildings, with recessed balconies, provided a vicinity atmosphere as well as a feeling of protection and shadow.

new housing types in modernist buildings hovering above a continuous public green space designed by landscape architect Gonçalo Ribeiro Telles (Fig. 4). Lisbon had a new way of living the urban space: a clever mix of commercial spaces on the ground floors, along the peripheral streets, protected from sun and rain by the recess created by the modernist *piloti* colonnades (Fig. 4). This was an invitation and opportunity for comfortable window-shopping, while the central buildings' *pilotis* offered visual permeability and public space continuity. The three green spaces in between buildings were thereby connected together, creating a continuous public park where children could easily play, overlooked by mothers from the apartment balconies (Fig. 3). The intelligence and generosity of this urban layout will prove to be of great flexibility for new reuses, six decades after its first MOD[1] residents aged in place as we will see.

Avenida dos Estados Unidos da America, 1954

The avenue layout goes back to 1941 when the city planning department designed it to become the main outward traffic distributor in Lisbon, aiming to connect the forest park of Monsanto (on the western end) to the riverfront at Poço do Bispo (eastern end). Its construction was already in progress by the time Faria da Costa designed the Alvalade Plan, thereby incorporating its presence and influence. In fact, as we can see (Fig. 1), its northern side already presented a modernist layout of buildings standing perpendicularly to the avenue, creating public spaces in between them. By 1954, when the architecture team of Manuel Laginha, Vasconcelos Esteves and Pedro Cid designed the buildings in the north-eastern side of the avenue, they proposed a continuous green park on the ground level (much similar in design to the one at Bairro das Estacas), providing visual transparency and

physical continuity, thanks to the generous span of the large *piloti* of the buildings (Fig. 5). The direct influence of Le Corbusier's Unités d'Habitation was clearly assumed by the authors for the taller buildings: ground floor on *piloti*, east-west full depth apartments with recessed balconies, modulated façades with sun louvers, a communal rooftop terrace. But for this case study, it is the apartments' layout that we'll be analysing below in further detail: its rational and optimal organization was quite generous in space, thereby allowing future adaptations and reuses. In fact, each apartment accesses a central entrance hall distributing the domestic sectors: services (kitchen, laundry, maid's room), social (living and dining room with recessed balconies) and private areas (bedrooms and bathroom). A secondary service door, accessed from the stairs, allows a service circuit separate from the family spaces. All these features will be useful for new uses (Fig. 8).

Avenida do Brasil, 1958

This set of buildings was designed in 1958 by Jorge Segurado who proposed a deep change in the 1945 urban layout: instead of having the buildings facing the avenue, the architect proposed to rotate them perpendicularly, hence with the longer elevations facing East-West and offering the North elevation to the avenue instead, in a modernist sequence of slender volumes (Fig. 6). These eight housing blocks, with seven floors each, only have car access from the secondary

Fig. 4 Plan of the public garden at Bairro das Estacas. Architects: Ruy d'Athouguia, Formosinho Sanches, and Gonçalo Ribeiro Telles, 1949. This plan shows the important role of the piloti alignments on the street elevations, creating protected paths along the shop windows. Moreover, it shows the central role of the public gardens, connected by organic pedestrian paths that go under the hovering buildings, in different directions.

street, parallel to the avenue. The space in between the buildings was thereby liberated to become a sequence of small squares and gardens, interconnected by pedestrian paths that continue under the *piloti* buildings, framed on the South side by single-floor buildings for commercial activities – a clever design choice which permitted some urban mix of uses, thereby introducing flexibility into the modernist zoning criteria.

The whole ensemble was promoted by and still belongs to the Montepio Geral bank, thereby controlling more effectively the global image and avoiding individual interventions in the apartments or in the buildings. This fact also enables the possibility of considering each building as a global entity, like a residential facility subject to common rules making it easier to propose new uses for the whole urban ensemble, in a privileged location: the university campus is located on the western end of the avenue, while the city airport roundabout is at the eastern end of Avenida do Brasil, along which several public main facilities are located.

Fig. 5 The buildings along the avenue with the green public squares in between them. Photo: António Carvalho, 2018.
Architects: Manuel Laginha, Vasconcelos Esteves, Pedro Cid, 1954.

Alvalade in the 2000's: a NORC in the city

The predictions for the 21st century say the world population will keep growing (UN, 2017): by the year 2100, the population in all continents

will have grown to a total of 11184 million – with the only exception of Europe whose population will continuously decrease. In Portugal, by the year 2030, the psychological threshold of 10 million will not be reached (just 9877000 Portuguese inhabitants by then), continuing to fall until the year 2100 when the total population will be of just 6604000 citizens (UN, 2017). Nevertheless, the most significant factor common to all continents is the fast ageing of the still growing population: globally, population aged 60 or over is already growing faster than all younger age groups. We accordingly say that the future will be grey (haired...) worldwide – and we must prepare our environments for it. In Lisbon, we will use the Alvalade Neighbourhood as our case study to find how some modernist spaces (of different scales) can be reused in a new societal context, totally different from the original one they were conceived for. In fact, Alvalade is now a NORC, that is, a *Naturally Occurring Retirement Community*: in the 2011 Census, it was already the second most aged district in Lisbon.

Bairro das Estacas, today: public space for contemporary use

Almost seven decades later, the public space of Bairro das Estacas shows a quite remarkable resilience, keeping most of its original features, compared to the buildings that suffered individual changes made by the apartment owners (mainly the closing of the recessed balconies with diverse window types, thus affecting the visual atmosphere of the urban space and the visual-social interaction between balconies and public gardens below).

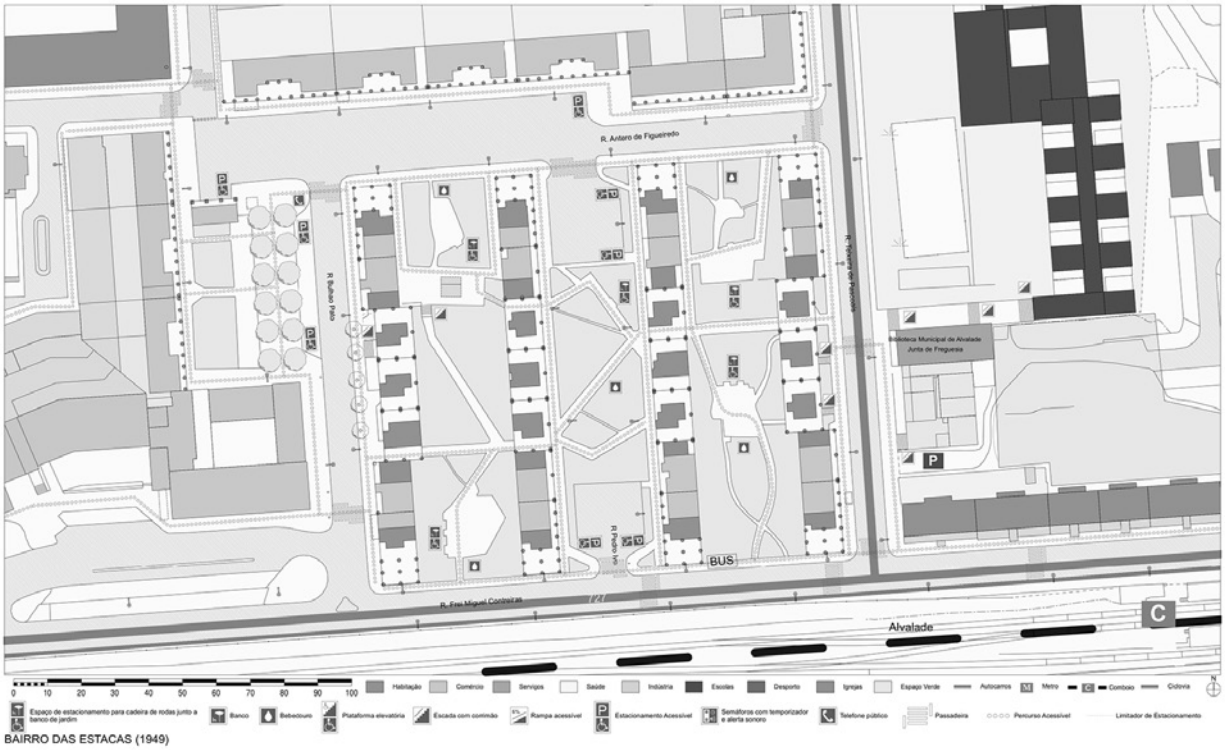
Then, how can the public urban space be readapted or transformed towards the new needs of the aged community in the 21st century, and yet keep its original design features and quality?

Based on observation, site visits, and application of an accessibility checklist (Dischinger, Bins Ely and Piardi, 2009), we concluded that most of the needs can be fulfilled with quite minimal changes. The promotion of active ageing (WHO, 2002) has been adopted by public health institutions as a major policy for contemporary societies, for

Fig. 6 Aerial view of the buildings along the avenue, seen from the South. Photo: Google, 2018. Architect: Jorge Segurado, 1958. We can see the modernist effect of the sequential volumes to be perceived from the traffic along the avenue. The housing blocks are connected by one-floor commercial buildings, recessed from the avenue and therefore creating small squares and gardens for public use.

which the use of public spaces is the main determinant. We therefore propose (Fig. 7): the transformation of some existing sidewalks into accessible pedestrian paths with smooth, levelled and non-slippery pavements (for wheelchair and all users); introduction of some ramps for accessibility; handrails on existing stairs for a more comfortable and safer use; maintenance of the vintage benches and introduction of new ones (in stronger materials, for obese people) under tree shadows, because it is an important asset for public space use since older people get easily tired and need to rest often; dedicated car parking places for people with impairments; some more zebra crossings; the introduction of traffic lights with sound timer at busier streets for safer crossing; drinking fountains in the park. The introduction of all these elements is totally compatible with the existing public space due to its clever original design, thus not requiring major changes in infrastructural works. But one essential public facility (Hanson, 2004) that is still missing is public toilets: its absence in public space restrains older people from going far away from home. To solve this problem, we propose to create this facility inside the existing market warehouse, therefore providing a free public alternative to private ones in existing cafés or restaurants.

Fig. 7 Proposed Reuse of Public Space at Bairro das Estacas – ground floor plan. Author: António Carvalho, 2013.
Location of the new urban elements that older people need for a comfortable and safe use of public space, such as: zebra crossings, smooth but anti-slippery accessible paths, wheelchair parking spot parallel to garden bench, garden bench, drinking fountain, handrails in stairs, accessible ramp, parking place for drivers with impairments.

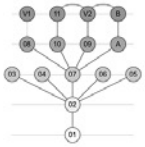


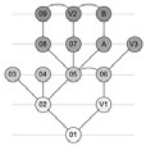
Avenida dos Estados Unidos da America, today: age-friendly apartments

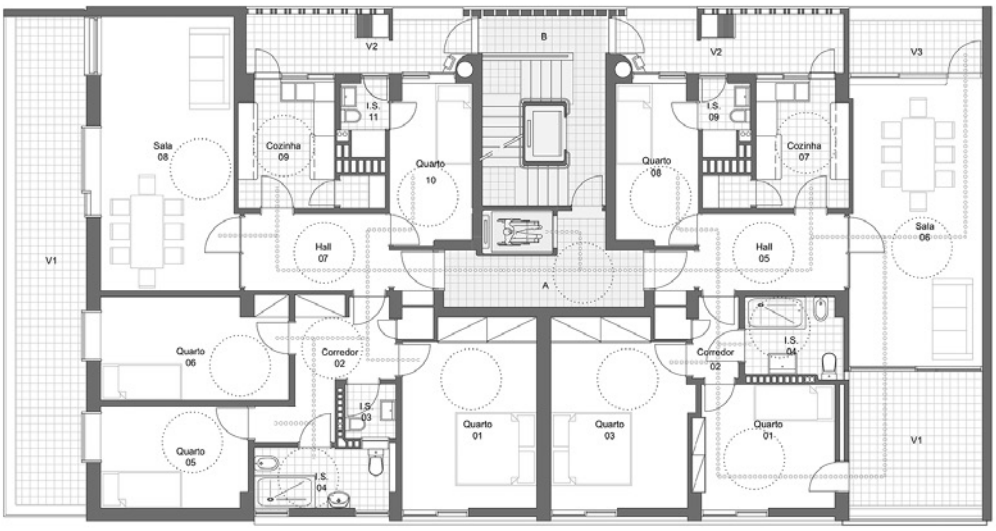
We will consider for the purpose of this paper just the apartments of the five taller buildings (10 floors each) that face the avenue perpendicularly. While, therefore, in the previous case study we considered the reuse of urban space, now we will analyse in which ways the interior spaces can be adapted for older residents.

The longer life expectancy that modern medicine, as well as new habits and lifestyles, have brought to all of us (WHO, 2002), means among other things that people will be able to live longer in their homes and apartments – that is, if their spatial features allow it. In fact, most people would rather remain in their homes (Machado, 2007; Moreira, 2008) instead of moving into elderly facilities, so it is important that the space layout allows that to happen. Looking at the plan of the apartments at Av. E.U.A. (Fig. 8), we can conclude that the rational organization of the (not so big) spaces allows the access (dotted lines) and rotation (circles) of wheelchairs, with no need for demolitions. The only spaces that would require major adaptations would be the bathrooms and kitchens. But even in these complex and technical spaces, the most important aspect is to have the infrastructures (sewage, drains, water) in the correct positions, considering the expensive implications it would bring to the ten floor vertical pipe system. Thus, taking that into consideration, we can see that minor adaptations would allow flexibility of use throughout time for different people, of different ages, with different needs (Fig. 9): opening the door outwards would be recommendable for better circulation and safety (in case of need to break in for help after an accident); the shower placed in the centre, with a pavement drain, could easily have the cabin removed to be turned into a *roll-in shower*, accessible on a wheelchair; the double washbasin could be turned into a single basin, thus providing space to park a wheelchair parallel to the toilet. All these changes would not require alterations in the main vertical sewage pipes of the building, so they could be done individually according to each resident's needs and decision. Actually, the proper positioning of each device would later require just the addition of supporting bars (Fig 10), easily removable later when not necessary anymore.

The kitchens, designed in a modernist "functional corridor" layout (Fig. 5), could be quite easily adapted (Maguire, M. et al, 2011) as well for the worst-case scenario, which will always be the wheelchair user needs (Fig. 11), without changing any walls. The solution would thus lie in the distribution and design of the kitchen cabinets, reminding us that the most important and basic need is to provide empty space under the counters so that a person sitting on a wheelchair can fit the legs and approach the counter, the stove, the taps. For that purpose, we think that movable cabinets on wheels could be used to fill the space under the counter and, whenever necessary to be used by someone on a wheelchair, they could be removed without changes in







Zona de manobra em cadeira de rodas | Plataforma elevatória | Pista de passeio | Percurso Acessível | Área Comum

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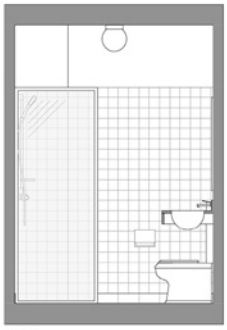
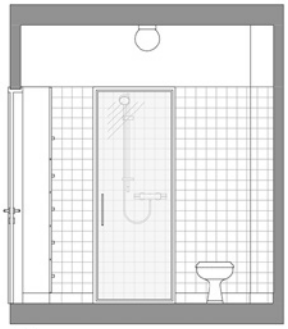
Proposta

Planta dos Pisos
AV. ESTADOS UNIDOS DA AMÉRICA (1954)



Corte A



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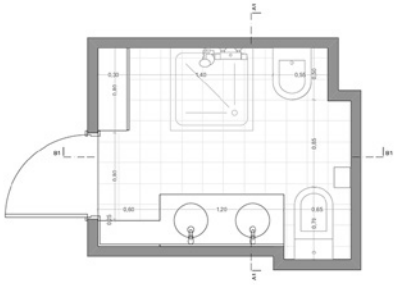


Planta

INSTALAÇÃO SANITÁRIA - NORMAL
(Av. Estados Unidos da América)

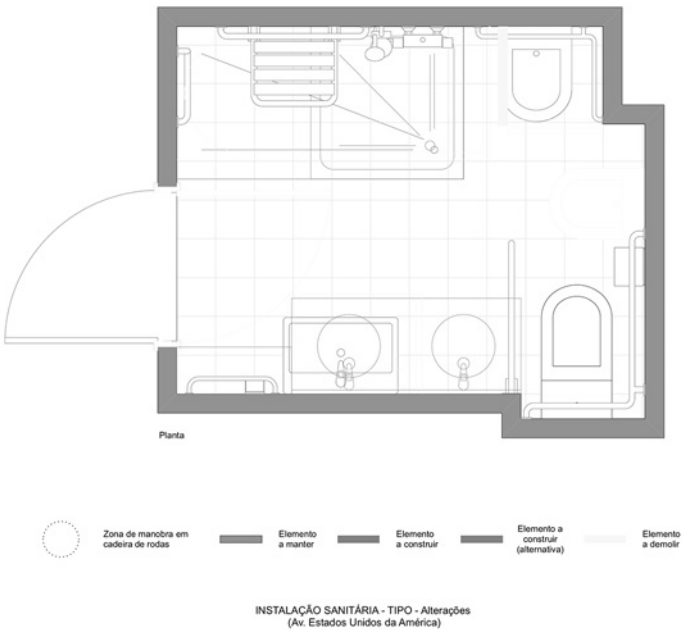


Fig. 8 Typical plan of the apartments with accessibility and simplified Space Syntax analysis. Author: António Carvalho, 2013 after architects Manuel Laginha, Vasconcelos Esteves, Pedro Cid, 1954.
Accessibility paths and rotation circles for wheelchairs are marked, proving that the apartments have easy accessibility. Kitchens and bathrooms would need some adjustments (see Figs. 9 and 10).

Fig. 9 Typical bathroom of the apartments – proposal. Author: António Carvalho, 2013.
If we compare this layout with the plan of the universal design bathroom solution (Fig. 10), the main conclusion is the importance of the correct location of the devices. Later, at an older age, or if special needs occur, the only thing necessary will be to add bars and choose a single washbasin.

Fig. 10 Typical bathroom of the apartments adapted for universal use. Author: António Carvalho, 2013.
Comparing with the plan of the typical bathroom solution (Fig. 9), we see the overlapping of washbasins as well as the added bars and shower seat. All these add-ons can easily be removed later again, with great flexibility, without changing the main infrastructures of the building.

the infrastructures. The lower cabinets should all be provided with drawers the person on a wheelchair can easily access (but also any other adult can, with the great advantage of not needing to kneel or bend over to catch something in the distant back of the low cabinet). The upper cabinets, if necessary, can also be articulated and provided with a suspension system that brings down the interior shelves. Anyway, the main purpose is to provide flexible solutions that everybody, even the most fragile persons, can use with autonomy, thereby allowing them to remain in their apartments for as long as they want or their health allows: apartments for life.

Avenida do Brasil, today: residential facilities for intergenerational living

This group of buildings has special features that would justify turning some of them into intergenerational residential facilities: its location, very close to the university campus, makes it very attractive for university students, while the vicinity of many urban facilities and trading places makes it very comfortable for older people (Fig. 12). Taking into consideration the lack of student housing in Lisbon and the very large dimensions of most of the apartments, which are now *empty nests* for lonely older people (whose children have grown and left home to start an adult life), matching both groups could be a good opportunity for urban and social renovation.

Considering that there are 8 apartment buildings (with 7 floors each) of two types, A (5 buildings) and B (3 buildings), and 7 commercial

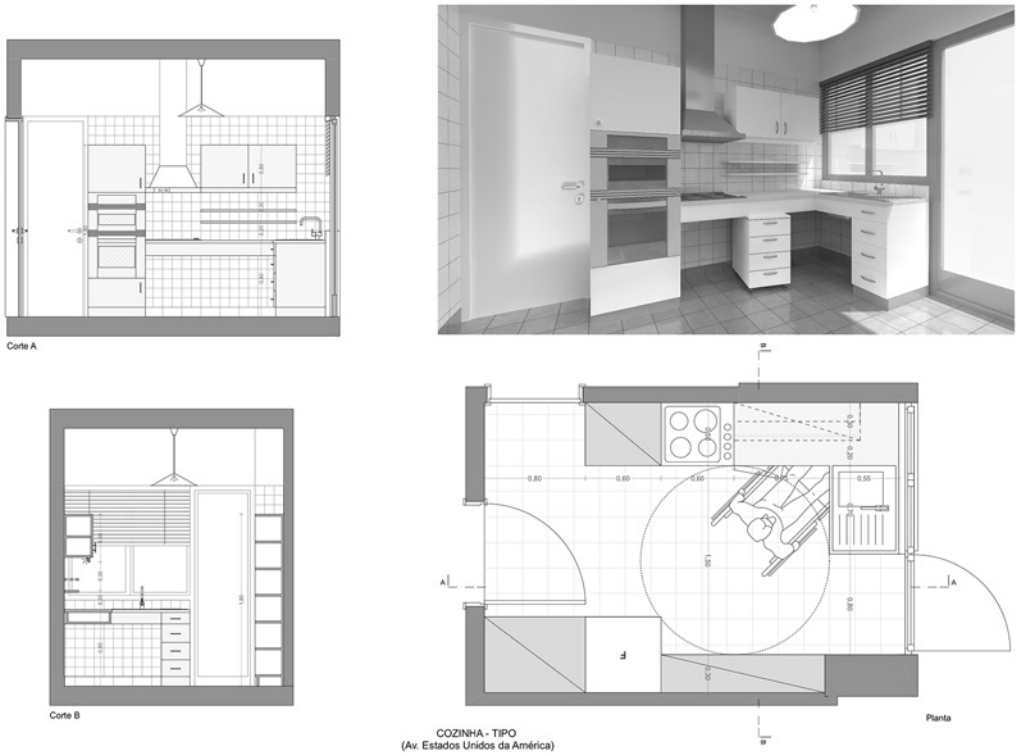


Fig. 11 Proposal: typical kitchen of the apartments adapted for universal use. Author: António Carvalho, 2013.
The use of removable cabinets under the counters would allow wheelchair users' autonomy.

buildings (with ground floor only), we will consider for this proposal the reuse of type A only because they have the largest apartments. Starting at ground floor (Fig. 13), therefore, all existing spaces would be preserved and reused: the main entrance, in its glass-box features, would become a waiting lounge where residents could sit while they wait for a taxi, a friend or a relative, comfortably watching life outside; the storage space on the left would become a parking place for bicycles and electric wheelchairs; the doorman's apartment, on the right, would become a small reception (with a window for visual control of the lounge) and office for the new service providers working in the building, with a nurse/treatment room/doctor's office connected to the sanitary facility. No demolitions would be required.

The existing typical floor clearly corresponds to other times (1958) and a society when families were big, with housemaid help: a domestic office at the entry (which could become an extra bedroom), a big living and dining room with a generous balcony, a transition hall connecting to the family dining room, and the corridor to the children's and parents' bedrooms and bathrooms; a service entrance door connected to the stairs was dedicated to the housemaid and deliveries, opening directly to the kitchen and pantry, to which the housemaid's bedroom and sanitary facility are connected. This bourgeois housing structure is demonstrated by the simplified *Space Syntax* (Hillier and Hanson, 1984) analysis map and graph that show a deep space (seven

Fig. 12 Aerial photo (Google, 2015). Author: António Carvalho, 2015.
Building ensemble (1) and the distances to important facilities: 2– Hospital (330m), 3– Nurse School (310m), 4– Park (780m), 5– University Campus (1100m), 6– Psychology College (1000m), 7– Traditional Market (300m), 8– Church (475m), 9– Park (950m), Supermarkets (120m or 220m), Metro Station (415m), Commercial Avenue (400m).

levels) and the maid's facilities quite segregated from the rest of the house. Nevertheless, this can become an advantage for contemporary intergenerational reuse: these large apartments could easily be shared by university students and its original older residents, who would become hosts, benefitting from younger people's company and help. This kind of experience, exchanging lodging for company and casual help, is not new and has proven to be successful (Fundação para o Desenvolvimento Social do Porto, 2003).

In our case, it would be a quite natural solution to organize the apartment into two sectors, eastern and western (Fig. 14). Students would have 3 individual bedrooms, sharing 2 sanitary facilities (the former corridor to the master bedroom is now reused for a shower space) and the big living room, good for group work and leisure, with the balcony. Older residents would use the western spaces: the master bedroom would gain a private bathroom (fully accessible with a roll-in shower for wheelchair use, in the worst-case scenario) and direct access to the smaller living-dining room and kitchen, therefore keeping within a short range the essential spaces for their daily living activities (Zimmerman, Sloane and Eckert, 2001), which we as architects must be attentive to (Buse et al., 2016). They would still keep for their own use the extra small room (the former housemaid's bedroom), quite ideal to host relatives overnight or even a nurse or another caregiver. Nevertheless, some spaces would be shared by all, older and younger: the entrance hall that can immediately distribute the two parallel paths with full autonomy, and also the kitchen, pantry, and the sanitary facility. With this distribution and very minimal interventions (just closing and opening doors to connect existing spaces in a different way),

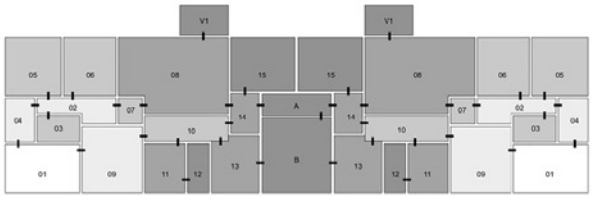
Fig. 13 Ground floor level. Photo: António Carvalho, 2018. Architect: Jorge Segurado, 1958.
Green square between the buildings. The central building is dedicated to commerce. On the right, the glass box of the apartment buildings entrance.

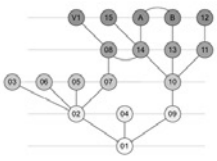
Fig. 14 Proposal for a typical floor plan of the apartment buildings, organized into Eastern and Western sectors. Author: António Carvalho, 2013.
Students would occupy and share the spaces in the Eastern side of the apartments: 3 individual bedrooms (05, 06, 15), the large living and dining room (08), the balcony (V1), and 2 sanitary facilities (03). The older residents would occupy the Western side: the master bedroom (01) with private accessible bathroom (04), the little living/dining room (09), the extra bedroom (11) and shared sanitary facility (12). The entrance hall (14), the pantry and the kitchen (13) would be shared by all. The simplified *Space Syntax* map and graph show a shallower (5 levels) and less segregated space than initially.

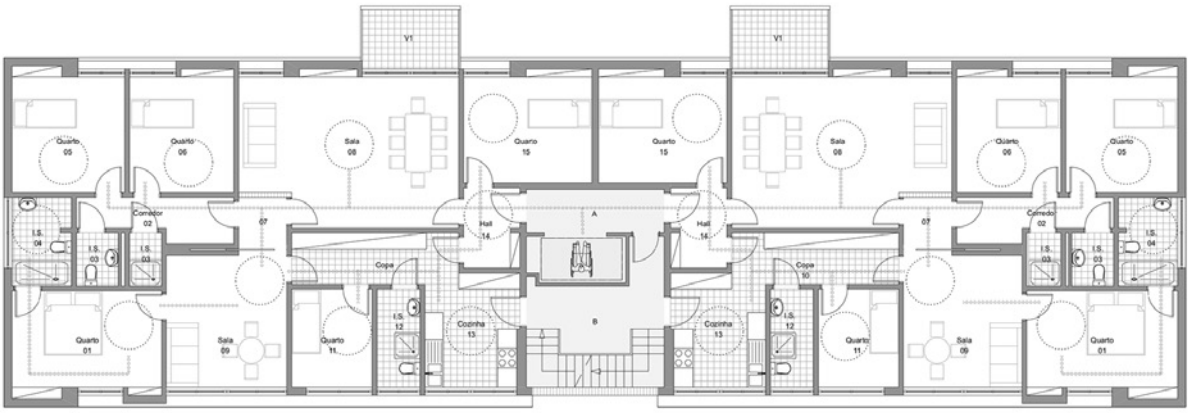
Fig. 15 Proposal of new spaces — rooftop plan. Author: António Carvalho, 2013.
From left to right: outside terrace, restaurant, gym, sanitary facility, kitchen, elevator and stairs, lounge, sanitary facility, laundry, clothes drying, outside terrace. All along the perimeter, there will be a walking path (approximately 75m long) which residents can use for daily exercise.

older and younger residents could have simultaneous activities without disturbing each other's privacy and yet keep company by sharing the same big apartment.

We have mentioned before the importance of active and healthy ageing (WHO, 2002), which implies that people should not remain indoors (both young and old) but rather keep active, going out and socializing (Carvalho, 2017). But for very old and fragile people, this could be a problem though, because very often the sidewalk pavements are uneven, slippery, or poorly maintained (Machado, 2007), thus going out becomes a hazard and a risk. Fortunately, these buildings have flat roofs, where we can create an alternative for that (Carvalho, 2013), at least for the days when people do not feel like going outside the building, but can still socialize and do some soft exercise (Fig. 15). Back in 1958, this flat roof was dedicated to individual laundry and drying spaces for each apartment (Fig. 6) which the housemaids used on a daily base, being totally abandoned nowadays. Our proposal is accordingly to demolish those small partitions of the laundries and create some common spaces for all residents, so that this top floor can become a service and leisure area. We propose the creation of outside terraces where residents (young and old) can sit and socialize while watching others exercising on the walking path (Fig. 16), as well as the creation of a restaurant (Fig. 17) where residents could come and eat whenever they did not feel like cooking or eating alone. A small gym (Fig. 18) would be an attraction for residents of different ages, for some in-house exercise and socialization. A lounge (Fig. 19) would also be an alternative space to the terraces for indoor socialization, internet browsing, book exchanges or just friendly talk. The restaurant and all the other facilities would be managed and maintained by a professional team based on the ground floor office (Fig. 13), taking care

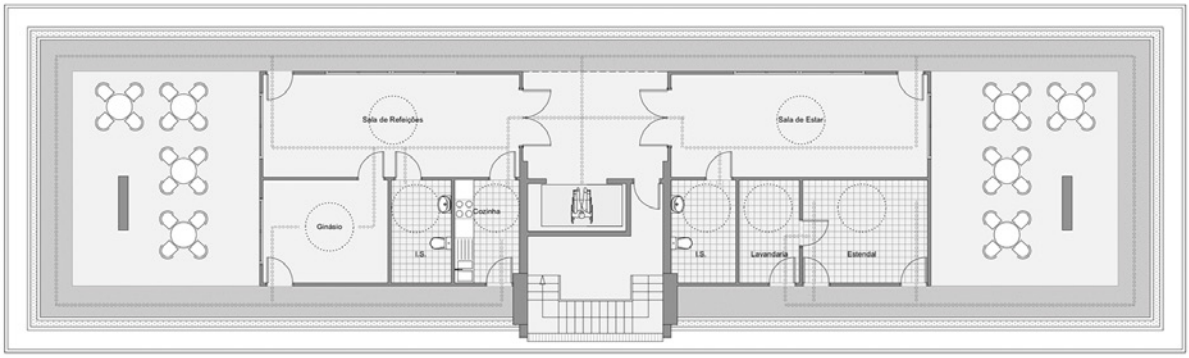






Proposta 2

Planta dos Pisos
AV. DO BRASIL (1958)



Proposta

Planta do Terraço
AV. DO BRASIL (1958)

of the whole building in an assisted living facility logic, also providing some healthcare and psychological support, for which the vicinity (Fig. 12) of the Nurse School and Psychology College is very convenient, facilitating internships and protocols to be celebrated with the residents' community.

Conclusion

In terms of reuse of modernist spaces, these three case studies can provide us some conclusions:

Urban space – the modernist option of wider and more visually transparent public spaces, with highly qualified landscape design, has proven to be a resilient solution, still used and appreciated today, almost seven decades later. In terms of reuse, the required elements and facilities can be easily added because the main asset exists already: public space. Therefore, it will be easy to add some more public benches, some dedicated car parking places for people with impairments, drinking fountains, ramps, handrails on stairs, traffic lights with sound timers, and zebra crossings. From the existing organic web of pedestrian paths, some should be selected to be repaved with smooth, even and non-slippery pavement connecting the main points of the neighbourhood. The existence of commercial spaces on the ground floor of the apartment buildings is a plus for urban life with the mix of functions, providing the possibility of new uses according to new needs.

Apartment layouts – the clear modernist organization of interior spaces makes it quite easy to adapt to new accessibility requirements, like wheelchair use (in the worst-case scenario) or walking aid devices (walkers, walking sticks, crutches, etc.) that older residents sometimes need even inside their homes. In fact, we can conclude that most spaces, even when not too big, are wide enough for accessibility, presenting a quite straightforward layout that helps older residents move around. The only spaces that will require deeper intervention will be bathrooms, where the doors should open to the outside (for safety reasons, in case of need to break-in for help) and bathtubs should be replaced by roll-in showers with pavement drains. The other sanitary devices, whenever correctly located, would just require the addition of supporting bars. Therefore, the strategic location of all sanitary devices is key for future flexibility of use. In the kitchens, accessibility has not only to do with wheelchairs, but also the simple reaching out to get something on a top shelf or lower cabin can be a daily strain. Therefore, ergonomics should be a key concern in kitchen design both for the free space and especially for the cabinets and furniture.

Residential facilities – modernist apartment buildings, whenever conceived for simple communal life, that is, having some shared spaces belonging to all residents, could be transformed into assisted living facilities because those common spaces are the basis to allocate the required services that will support the new needs of an ageing population. This way, some basic spaces such as a restaurant with

kitchen, a lounge, a laundry, and a treatment/nurse room, could be introduced in the existing spaces, reusing common areas such as the doorman's apartment, storage spaces, and flat rooftop spaces. Whenever the larger dimensions allow it, some intergenerational and cohousing experiences could also be introduced, provided that the previous match of younger and older residents is supervised by psychology experts who should follow up the new housing partnership.

Considering these different features, we would therefore conclude that the reuse of modernist spaces to be adapted to older residents is a promising future for our ageing societies, preserving in new ways a highly qualified modernist heritage.

Fig. 16 Proposal for rooftop: terrace and walking path. Author: António Carvalho, 2015.

Fig. 17 Proposal for rooftop: restaurant space. Author: António Carvalho, 2015.

Fig. 18 Proposal for rooftop: gym. Author: António Carvalho, 2015.
A small gym space would attract people of different ages, promoting interaction and socialization.

Fig. 19 Proposal for rooftop: lounge space. Author: António Carvalho, 2015.
A relaxing area to meet neighbours, chat, browse the internet, and exchange some books and ideas.

1 → MOD: 1–(adjective) modern; 2–(noun) especially in the early 1960s, a young person of a subculture characterized by stylish dress, the riding of motor scooters, and a liking for soul music; 3–(origin) abbreviation of Modern or Modernist. Source: New Oxford American Dictionary.

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Three times Modern: three projects, three different spheres, and scales; three different stories

This article intends, through the observation of three different projects of Brazilian architecture, to embrace broad and essential issues such as modern heritage and the reuse of modern buildings. The case studies are Casa de Vidro (Lina Bo Bardi, 1950–51), Prudência apartment (Andrade Morettin, 2001–02), and SESC 24 de Maio (Paulo Mendes da Rocha, 2000–17). An extraordinary modern house in its different phases, a recent renovation of an apartment from the 1950s, and the transformation of a commercial building that used to host a famous department store in the 1970s into a cultural and leisure center, all in São Paulo, Brazil. The text is about these projects, buildings and their interiors, the transformations they have gone through — or not — along with their natural aging process, and the actions that the specialized organs and the society have taken — or not — concerning these modifications. They were chosen more for their discrepancies than for their similarities, in order to create a broad representative picture of how modern heritage is treated in Brazil.

This observation does not reach definitive conclusions but allows to raise some critical issues for debate, such as the differences in the preservation and renovation of interiors and buildings, public or private, small or big ones, and the challenges to protect something alive and changeable like buildings and their interiors. Also, the difficulty of understanding interiors as an active part of the heritage to be preserved, as an integral part of the architectural design, and differences between maintenance and renovation design practices.

Frontispiece (Fig. 9) The water mirror on the eleventh floor. Photo taken by the author, 2017.

First case: Casa de Vidro

Casa de Vidro stands on slender *pilotis*, on a very steep slope, almost devoid of vegetation at the time of its conclusion. The place is Morumbi, then a new neighborhood, designed in 1948, in the southwest of the city center, resulting from the allotment of small farms, inspired by garden cities. The lots were very generous, and soon many of the wealthy families of São Paulo settled in the winding streets of the region.

The house is composed of a large suspended volume, letting the natural site practically intact. It is a rectangle composed of two parts nearly the same size: the social area, that is a spacious glassed-in room, and the private wing, consisting of two tracks of rooms separated by a courtyard. The access is from below, where an open and very light metal stairway leads to the first floor, where the house itself is.

The social area, where three of its four façades are made of glass, is the glass case itself, organized into four spaces, which are a library, a living room, a fireplace, and a dining area. The roof is a concrete slab divided into two plans slightly inclined, like a gable roof, and the glass façade is free from the *pilotis*, which are further inside the house perimeter. The framed windowpanes reach from the floor to the ceiling and slide like doors, yet there is not a balustrade.

When it was built, the house designed by Lina Bo Bardi for her and her husband, the Marchand Pietro Maria Bardi, revealed an eclectic

Fig. 1 Casa de Vidro from the outside at the time of its conclusion. Photo was taken by Francisco Albuquerque. Retrieved in the book *Modern Architecture in Brazil*, written by Henrique Mindlin.

sensibility, combining contemporary furniture with valuable antiques inside the glass box. It displayed a stripped-down, balanced and restrained interior, even if somewhat diverse. The ambiance was naked, with a low density of objects and furnishing.

Over time, a gradual process of accumulation led to another arrangement in the social areas – the transparent box indeed. The images showing the collection of furniture and objects without concern for the formation of specific sets, placed on floral rugs arranged without much relation to the general layout, is from the 1990s when the house was 40 years old. Then the Baroque statues and the original Renaissance Cassoni began to live side by side with everyday crafts, colonial artifacts, Art Nouveau vases, contemporary design furniture, ordinary furniture, and even some knick-knackery.

The casing was the same, although a little worn, but the internal settings changed a lot – this transformation is remarkable in the social sector of the house, even because the bedrooms area hardly appear in the published images and the services remain almost unchanged. There was a density of objects and furniture which was impressive, especially when compared to the original version. House and architect aged, and as a result, we had two different versions of the same house. There was a change in the original interior of Casa de Vidro; considering Architecture as a total design, even if made by the author, the project changed as a whole.

In 1990, forty years after the house opening, the couple founded an institution based there – Instituto Lina Bo e P.M. Bardi – to spread the knowledge of Brazilian art and culture internationally. Lina Bo Bardi died in 1992, and her widower donated Casa de Vidro to that institution in 1995. Although listed (in 1987 and 1991, by the state and the city, respectively) much of its content was taken by his descendants after

Pietro Maria's death, in 1999. Although protected as a national heritage in 2009, the house that is now the headquarters of the Instituto Lina Bo e P.M. Bardi is, in fact, the third version of Casa de Vidro, very different from the two previous ones. The building remains the same, but it is no longer a house and the museum in which it has turned into exhibits other things than its original content.

In 2016, Casa de Vidro received financial assistance from the Getty Foundation through "Keep it Modern," an international grant initiative which aims to support the preservation of modern architectural heritage. The money has been used to carry out management and preventive maintenance plan to avoid emergency interventions and constant repairs. The primary focus is the reinforced concrete structure. The interior does not even come into question.

By the end of June 2018, there was an exhibition called "The house as a home," which tried to reproduce the routine of the couple inside their home. Then, the interior of the house is now a memory, and no longer a reality. In Lina Bo Bardi's conception, Casa de Vidro – and architecture, in general – was a whole thing: the building and its interior. What is done here today is the preservation of the building itself, which means the conservation and maintenance of the box that housed Casa de Vidro in the past. This action is not the same thing as preserving the house designed – and lived – by Lina Bo Bardi.

The second case: Prudência apartment

Prudência building is a project by the architects Rino Levi and Roberto Cerqueira Cezar (1944-1948). It is on Higienópolis Avenue, in the neighborhood of the same name. The lot is in the middle of the block, and the building is a unique and loose volume in the shape of a "U," creating a patio oriented towards the courtyard. In the strip between the path and the hall, there is a garden designed by Burle Marx, with a couple of winding ramps that lead to the entrance, half a floor above street level. One at each end of the side parallel to the street, the ramps lead to two independent entrance halls, where Burle Marx also designed the facing tiles. Two other central slopes lead to the semi-buried garage. These spaces are the only closed volumes on the ground floor, marked by the fluidity of the *pilotis*. Above it, there are nine floors with four apartments each, and one more floor with two attics. The size of the apartments is very generous, between 315 and 360m2, and each axis of vertical circulation serves two flats on each floor. The social and private areas turn to the street or the sides of the lot, whereas the service areas open to the courtyard.

The original project consisted of a free floor, where the owner would receive an apartment without internal divisions, but the idea was not well accepted, and only one resident agreed with the proposal. Then, almost all the flats were the same, with four principal bedrooms, a dining room, and a living room. There were two entrances, one social and one service. The social door led to a hall, followed by a passage that

Fig. 2 Casa de Vidro from the outside at the time of its conclusion. Photo was taken by Francisco Albuquerque. Retrieved in the book ***Modern Architecture in Brazil***, written by Henrique Mindlin.

Fig. 3 Casa de Vidro interiors in the1980s. Photo was taken by Nelson Kon. Retrieved in the book ***Lina Bo Bardi. Obra construída. Built work***, written by Olívia de Oliveira.

divided two distinct parts: the social and private areas, and the service area. Instead of walls, the space of the corridor was composed of carpentry and already appeared in the original project. Likewise, on the internal façade that separated the rooms from the balcony, the furniture made the role of a balustrade, and above it was the glass window.

The solution of the structural system allowed flexibility in the use of all the spaces, but this capability was availed only in the social and private areas. In the area occupied by the services and oriented towards the inner part of the "U," there were a series of small rooms, such as bathrooms, servants and storage rooms, in an intricate setting.

Prudência was listed in 1994, but only its external envelope, as in most cases in Brazil – the building is considered worthy of protection, while the interior is not. Thus, the internal modifications do not require any control beyond the regular ones, applied to any ordinary renovation. In this context, in 2001, the office Andrade Morettin, from São Paulo, was hired to renovate one of these apartments of Prudência. The clients were a couple with only one daughter, and changes were made to adapt it to the family lifestyle. In addition to the central family nucleus, a nephew was going to live with them for a period. The requested program was a suite for the couple, three bedrooms (one for the daughter, one for the nephew and another one for guests), integrated living and dining rooms, a kitchen, a small office, and services connected to the social space, in addition to the modernization of the installations.

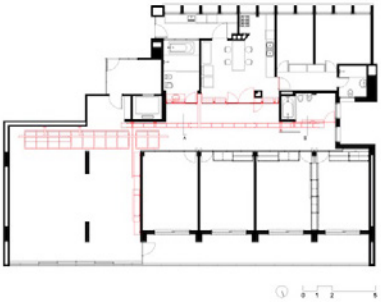


Fig. 4 The renovation plan. Source: retrieved July 08, 2018, from http://andrademorettin.com.br/projetos/reforma-prudencia/

The synthesis of the architect's proposal is the insertion of one large equipment in the corridor, to completely transform the relationship among the internal spaces, mainly between the services and the main areas. This relationship, previously rigid and insufficient, became fluid and changing. This element is composed of panels that move and allow the integration of all spaces. Also, it assumes different roles as infrastructure (support for technical installations such as electricity and plumbing), shelves, storage, and display of art and objects.

This large piece of furniture is made of bent and pre-painted steel sheets and tempered glass sheets. The idea is that it does not touch the original apartment. More than a layout solution, this piece identifies and makes clear what is designed by them and what is from the 1940s. The white floor in this area helps to mark the renovation work.

Prudência is an example of a much broader phenomenon that happens in many Brazilian cities, which is the renovation of apartments in Mid-twentieth century buildings. Regarding the internal space, these renovations convert the old apartments into even more modern ambiances than they were at the time of their construction. The integrated layouts and fluid spaces, visually connected to the outside that was idealized by Modern Architecture, appear in the works of the 2000s, and not in the original occupations. In the 1950s the box was much more "modern" than its content.

Fig. 5 The large equipment in the corridor. Source: retrieved July 08, 2018, from http://andrademorettin.com.br/projetos/reforma-prudencia/

In addition to the physical and structural transformations, the renewed apartments are characterized by producing modern internal environments, more homogeneous and stripped, with little density of objects and furniture, which are close to emblematic proposals such as those that emerged in Europe in the 1920s and 1930s. In these contemporary interventions, frequently the materials of the walls and the structure are left raw and insight; the curtains and much of the fabrics disappear, and most of the few loose pieces of furniture arranged internally are from the 1950s – the same age as the building.

It seems that these apartments were only completed in one unit in the years 2000s, when the interior tunes to the "envelope," and together they become a harmonious whole. Finally, they manage to be entirely modern. The irony is that the building itself is fifty years old.

The third case: SESC 24 de Maio

SESC (Serviço Social do Comércio) is a non-profit private Institution that has operated in Brazil since 1946, supported by mandatory contributions, made by commerce businessmen and focused primarily on the social well-being of its employees and family members. First (1976–86), Lina Bo Bardi recycled a red-brick building that had housed a drum factory in the Pompéia neighborhood, in the same city of São Paulo, that became the Centro de Lazer Fábrica da Pompéia (Pompéia Factory Leisure Centre), known just as SESC Pompéia, an architectural landmark. The complex became an undeniable success.

This one enterprise, SESC 24 de Maio, was inaugurated last year, in the heart of São Paulo downtown. Abandoned by the upper classes since the 1970s, the city center remains a highly vital and accessible area, punctuated by remarkable structures and significant cultural institutions.

The corner lot is about 40 meters along the pedestrian street D. José de Barros, and about 60 meters along 24 de Maio st., one block away from Praça da República and from Municipal Theater. Paulo Mendes da Rocha led the process of 17 years of design and construction (2000–17) assisted by MMBB Arquitetura e Urbanismo principals, Marta Moreira, and Milton Braga. They did not put down the 12-story building that occupied the lot, formerly a well-known – and already bankrupt – department store called Mesbla, but recycled it selectively,

Fig. 6 The open swimming pool at the terrace. Photo taken by the author, 2017.

emptied it to the bones and demolished lumps to create a U-shaped volume. In its center, he inserted four pillars that support a new terrace with a swimming pool, the capital gesture of the project.

The lateral clearance along the border of 24 de Maio street housed elevators, stairs, balconies, and lighting wells. The lateral clearance along the border of D. José de Barros street housed ramps that propose a vertical architectural walk, articulated with the circular route on the various pavements. On the other hand, the 8-story commercial building in the narrow adjacent lot was the Fasano Vertical Restaurant (1964), by Telesforo Cristofani (1929–2002), a fellow student of Mendes da Rocha; SESC bought it – a suggestion of the architects – and they replaced it by a service tower.

There is a theater in the underground, and just above it, on the street level, is the large access plaza designed as an urban lounge, a

welcoming space. The pallets created for this area respond well to its dimensions; like couches, they suggest reclining or lying positions. The perimeter of the building is permeable on this floor, ensuring the free transit of pedestrians. The reception is located in a chamfered triangular volume, painted in pink, that lead the public into the building interior. Above it is the administration.

Then, from there to the top, a rational zoning organizes the different sectors on the other twelve pavements. First is the restaurant, which is for public use. Then living spaces, culture (a library, exhibition room, and workshops), dental offices and sports (courts, exercise areas, and the pool). Some of these floors – like the exhibition room, and the workshops – are associated two by two to mark essential spaces with double height and avoid the monotony of simple overlapping type floors. However, the last two are the top ones. On the eleventh floor (christened the pool garden), conceived as a covered square or a hanging garden, without side closure, there is a reflecting water mirror which extends along the two façades and works like a vast cooling basin. At last, there is the swimming pool, open to the sky, crowded for most of the year.

The old reinforced concrete was scraped. The new concrete was poured into cardboard and plywood plates molds, ensuring a soft texture. The resulting set is a hybrid structure, partly original and partly

Fig. 7 **The ramps that propose a vertical *promenade*. Photo taken by the author, 2017.**

Fig. 8 The pallets lounge. Photo taken by the author, 2017.

added. The façade was shrouded by a curtain wall that reflects, in a distorted way, the nearby commercial galleries. Inside, everything is transparency, in the best modern tradition of the free plan and façade. Besides, there is the free sheet metal and tubular steel furniture, one of the highlights of the project.

Much more than the renovation of an ordinary modern building, SESC 24 de Maio recovers a memorable place of the city and promotes a renewal of a portion of São Paulo's downtown. Its predecessor, SESC Pompeia (listed as heritage in 2009) continues as a very successful enterprise since its opening and remains almost the same after thirty years. The same trajectory seems to be the destination of this new point.

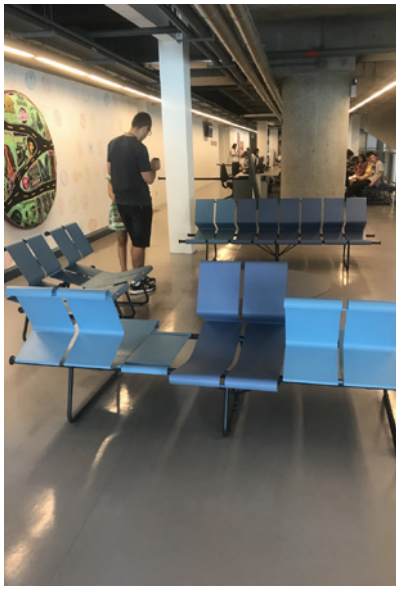
Starting to finish

The first example, Casa de Vidro, was born modern, almost like a manifesto, with its stripped, rarefied and practically homogeneous internal ambiance. Over time, it was somehow "demodernized" by the own hands of Lina Bo Bardi, accumulating various objects, densifying its interior and continuously being updated by its inhabitant author. Moreover, the external environment has also changed considerably, with the increase of the built density and growth of vegetation, as well as the much wear of the building, which suffered from the natural action of time.

After the death of the Bardi couple, however, Casa de Vidro changed its use, in addition to changing owners. Today, it is disfigured internally, although transformed into heritage. Its content has been significantly altered, and the house is no longer a house, unlike other works that have become museums of themselves, like Case Study

Fig. 9 The water mirror on the eleventh floor. Photo taken by the author, 2017.

Fig. 10 Sheet metal furniture in SESC 24 de Maio. Photo taken by the author, 2017.



House # 8, the Eames house, in the United States, which remains intact, as if in use. In the same way as Lina's house, the Eames house was made and inhabited by the author architect (in both cases with the vital participation of the partners, Ray Eames and Pietro Maria Bardi) and both couples tended to accumulate objects around the house. However, Case Study House is intact and shows precisely how its famous residents experienced it. The Eames House, as well as Casa de Vidro, also received support from the Getty Center; in fact, the action implemented in the house was the first of its kind developed by the Getty Conserving Initiative - GCI. The project addressed some interrelated conservation issues that focused on the building envelope and the development of an appropriate environment for the inner fabric of the house, which included its contents and collection, all part of the design legacy of Charles and Ray Eames.

In the North American case, from the beginning, the conception was to protect both: the shell, and everything from the inside. Unfortunately, this process was different in Casa de Vidro, since its internal ambiance has changed a lot as a result of losing much of its content. After all, one misses the dimension of the whole, building and its interiors, which was the author's conception. This is a loss. On the other hand, one has to ask about the real meaning of the maintenance of a frozen house, just as it was when built, restricted in its use for other purposes (perhaps more appropriate to the contemporary situation). After all, it was the wish of the owners, the Bardi couple, that the institute based in the house was a place of propagation of Brazilian culture. In this sense, the house as a cultural center is, undoubtedly, more flexible, and lends itself better to this purpose than if it were set as a home. Besides, 1990s version of the house was also no longer the same as the 1950s since its interiors have changed considerably, even though it was the author who produced the change. This behavior may reveal, somehow, how Lina felt about changes.

The academic criticism accepted the modifications made by her. Besides, the second version is even more Casa de Vidro than the first one. Finally, the version that survived the death of the owners is different from the two previous ones, reduced to little more than the building, even after the house was declared heritage.

One way or another, as a cultural building it suffers from the same lack of money sustained by most cultural institutions in Brazil. If on the one hand, it is interesting that the house is not treated as a private building – which prevents it from falling into the hands of anybody – on the other hand, it has severe conservation and maintenance problems. Fortunately, the Getty Center project provided essential help.

The apartments are a different case, as much as in scale, importance, and history. The buildings where such contemporary renovations take place are often exemplary, worthy of protection – in fact, many of them are listed by heritage, as Prudência. The upgrades currently carried out keep the same program, even if changed due

to the new demands. These are smaller-scale actions, private and restricted to the interior of the apartments. Although more ordinary and not necessarily as good as the original projects, they ensure the preservation and enhancement of the existing buildings through a small-scale action which has gained importance and attention because of the frequency in which it is made today.

As they happen in a private interior, there is no greater involvement of protective organs, and the original apartments can change deeply – the Andrade Morretin renovation, for example, happened after Prudência was listed. This proceeding is partly due to a general understanding of protection restricted to the building, as in the case of Casa de Vidro. On the other hand, it is clear that the preservation of a complete set of apartments, even in an extraordinary building, would not make sense.

Without changing the original program, these renovations are examples of good private practice, carried out with private resources, which value modern heritage and create contemporary products, instead of untouchable historical artifacts. They are daily works, even if existing in exceptional buildings. Buildings that were good in 1950, and maybe now, seventy years after their construction, they are even better because, finally, they are complete: the interior and exterior are in tune.

The result of this phenomenon – the renovation of a large number of apartments from the 1950s in the neighborhood of Higienópolis – is the appreciation of the region itself, as well as an update of residents and greater preservation of the buildings without the need for public money. However, there are already discussions about the possibility of controlling these renovation projects by specialized heritage organs. There are those who believe that it is forbidden to change the original plans, and materials or add new installations. Even if based on good intentions, this limitation can be quite dangerous. After all, disregarding the contemporary need for up-to-date facilities may make it unfeasible to use these buildings. Without altering the domestic use, there are considerable changes in these renovations. In return, the building is preserved.

Finally, there is the example of SESC 24 de Maio, evidently of another scale, involving other factors. From the starting point this is a different situation since in the example of SESC the original building is not the highest value work, but the renovation executed on it, and the urban appreciation. Actually, one of the existing modern buildings was destroyed, and the other one was quite transformed.

Besides, there is a powerful organization behind the action. Moreover, this entity often invests in Architecture as a distinction of its projects. SESC ventures, furthermore reaching countless associates, are maintained by excellent management, which conserves and directs their undertakings in a way that is always successful. This success ensures maintenance.

The institution SESC invests in architecture as a mark of its enterprises, no doubt. Moreover, many of these are carried out in lesser-known buildings – or that have value only to a small community – in less-valued land areas, not only in the recovery of built-up heritage and forgotten areas but also as an intelligent strategy, in the sense of financial assets. As a consequence, in addition to the facility itself, there is a return for the city, recovering the vitality of some of its spaces, and approaching ordinary citizens, which is the lower-middle class public, the typical member of SESC, to good architecture – something unfortunately uncommon in Brazil. It is a broad-spectrum gain, with no – or little – public money.

These are three very different cases, no doubt. However, despite their differences – or even because of them – they can draw an illustrative picture of how modern interiors, modern heritage, modern heritage maintenance, and modern heritage renovation are being carried out in Brazil. Also, point out some of the discussions and reflections that we have to take forward, such as the role and performance of heritage organs, private agents and architects in the process of reuse modern buildings. As in designing or creating new buildings, this is a scope where it is possible to observe some consensus guidelines, but no rigid pre-established rules or general strategies.

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Teaching Re-use Strategies for Modernist Buildings. A Case Study Handbook for a Joint European Master in Architecture

Introduction

In 2016 two ambitious objectives came together in the European Erasmus+ project *Re-use of Modernist Buildings* (RMB). This project is an educational collaboration between universities teaching architectural science, – involving partners from the Hochschule Ostwestfalen-Lippe (DEU), Istanbul Teknik Universitesi, Istanbul (TR), the University of Antwerp (BE), Universidade de Coimbra, Coimbra (PT) and the Universidade de Lisboa, Lisbon (PT), the architectural organisation DOCOMOMO International and the Energy and Resources Institute TERI (IN). The main objectives of this initiative are on the one hand, to enhance student and staff mobility through a shared educational programme on master degree level; on the other hand, to develop architectural transformation strategies for modernist buildings, its interiors and its surroundings (neighbourhood, landscape). RMB wants to develop an educational approach to this specific architectural heritage based on common approaches, definitions, and methodologies. It takes its point of departure in existing research, educational practices and reference projects in the partner countries (Deutscher Akademischer Austauschdienst, 2016). In this way, the programme will offer an international educational environment in which the issue of architectural modernist heritage, mainly from the post-war period, can be explored and knowledge across borders can be easily exchanged. In the framework of this project, a case study handbook was developed in collaboration with architectural students of the University of Antwerp (Belgium) for future students of the International Master working on the theme of Reuse of Modernist Buildings. This paper will shed light on the concept and process of developing a so-called Case Study Handbook of Modernist Buildings, illuminating its asset as an important research and design tool. However, before focusing on the handbook, we introduce the topic of re-use of modernist buildings as a teaching subject, define re-use strategies and shortly describe the RMB programme.

Frontispiece View of the high towers at Luchtbal designed by H. Van Kuyck, photo: Els De Vos.

Re-use of Modernist Buildings as a teaching subject

A common concern in many European countries, and for sure in the participating countries of the RMB project, is the presence of modernist buildings in the urban context. Many of these buildings echo the modernist ideology of functionality, mass production, affordability, as well as the intention of being human, hygienic and healthy. Unfortunately, many of these buildings have lost their original function, relevance and/or qualities. Moreover, all of these buildings lack contemporary standards of techniques. Confronted with this circumstance urban planners, architects, interior architects, owners, and users are facing a number of challenges relating to both architectural, urban, sustainable, programmatic, political and societal matters. Sometimes, this complex situation leads to surprising, authentic transformations; other times, interventions are accidental

and carried out without care and architectural vision. Furthermore, this development can cause the demolition of valuable buildings, which qualities maybe were misunderstood, mistreated or neglected. In any case, the present and increasing need for appropriate architectural transformations of modernist buildings is omnipresent.

Obviously, there is need of architects and interior architects who are able to identify the values of modern architecture, understand the problems related to its conservation, in addition to being able to intervene and manage change in buildings and districts, without compromising their integrity and authenticity. The RMB project takes a first step to address this topic on the level of a larger, international education framework. Its overall ambition is to improve knowledge about and understanding of the modernist architectural era in order to be able to develop design tools and transformation strategies appropriate for modernist buildings and their future purpose. The RMB project aims to enhance students' understanding of modernist architecture in order to develop an architectural vocabulary that can recalibrate and/or reinvent its assets in terms of function, materiality and visual expression.

Within the theme of transformation, the RMB curriculum focuses on the development of housing. This focus corresponds closely with the present and increasing problem characteristic of all larger cities worldwide: Influx of people into cities, demographic change (singles, extended families, population ageing), ecological imbalances (mobility, pollution, ...) and presence of an outdated, dysfunctional building stock often situated on vital zones, etc. With this occurrence in mind, the RMB curriculum aims at projects that address the need for housing in concert with transformation of modernist buildings.

The RMB curriculum focusses on issues that respectively depart from a *conceptual*, *tectonic* and *societal* level (Melenhorst, Pottgiesser, Dragutinovic, 2017). On a conceptual level, it will explore the specific qualities relating to modernist architecture's novel approaches to contextual and spatial configurations (implementation in urban fabric, circulation zones, split levels, open floor plans, etc.), natural light sources, interrelation inside-outside (large window planes, balconies), communal facilities (shared laundries, rooftops, gardens, playgrounds), mixed programs (shops and flats for instance), etc. A critical assessment of these features and their possible applicability to future transformation projects will take place.

On a tectonic level, students will become acquainted with the characteristics of modernist materials, structures and construction methods. Modernist tectonics were originally experimental, innovative and opened up a newfangled register of construction systems which for instance allowed free floor plans, horizontal windows and non-load bearing facades (Le Corbusier's Domino principle). However, as we know, other aspects of these modernist construction methods, such as concrete degradation and thermal bridges, brought many modernist

buildings into a condition of decay. The RMB curriculum will study the strengths and weaknesses of modernist tectonics and search for alternative construction methods that can answer contemporary norms and standards in the field of thermal and acoustical insulation, ventilation, fire safety measurements, accessibility etc.

Finally, on a societal level, the RMB curriculum pays attention to the fact that the public opinion, authorities, and investors do not fully consider the potential of modernist buildings as valuable objects for transformation. This perception can be explained by the evolution in the post-war period in which a one-sided use of modernist tectonics in the building production became dominant. Principles of mass production and prefabrication were greedily used as instruments in order to respond to cost constraints and housing shortage. Through this practice, significant modernist properties weakened – such as functionality, lay-outs following the concept of 'plan libre', a strive for social equality as well as hygienic, healthy living and working environments etc. – and gave rise to negative connotations. Indeed, the process of rationalization was reduced to cost efficiency and has led to an overgrown pragmatism, at the expense of architectural and social qualities. Subsequently, much of modernist architecture became associated with alienation and failure. (Turkington, van Kempen, Wassenberg, 2004). Modernist architecture poses numerous challenges for architects, interior architects and urbanists, such as the functional obsolescence of these buildings, the material degradation, the lack of a maintenance culture, the understanding of the patina as a dirty stain in modern buildings and the general lack of recognition of modern buildings and sites. As these buildings are relatively young but often already in a bad physical condition, they are often not perceived as valuable heritage, but as obsolete and outdated building. Through a profound study of the original modernist principles and the many challenges posed by modern architecture, the RMB curriculum wants to counteract biases and enable students to reassess and advocate the architectural qualities of modernist architecture and its relevance as a subject for transformation.

Creating a framework for re-use

As the development of transformation strategies for (post-) modernist buildings is elementary in the RMB programme, the exploration of the concept of *re-use* becomes central. During the programme, students will be confronted with many different sorts of modernist buildings, characterized by different scales, functions, state of maintenance and future possibilities.

In the process of formulating an appropriate transformation strategy for a particular building, the student should also become aware of the various ways of approaching and interpreting the term re-use. In recent years the term *adaptive reuse* is commonly used in the context of buildings. It encompasses several ways of dealing with buildings (Wong

2017, p. 10) and refers to various sorts of interventions, ranging from conservation, restoration, refurbishment, renovation, rehabilitation, conversion to retrofit. Common to these designations is that they go beyond mere maintenance and small repair.

While the majority of these terms shares the Latin prefix 're' that refers to 'repeat' or 'do again', each term signifies its own type of intervention. Each term can however differ in meaning, depending on its use in time and context. Some define adaptive reuse as the process that adapts buildings for new uses while retaining their historic features, others define it as the extension of a building's life cycle in relation to sustainability goals such as the imperative to sprawl minimization, preservation of virgin materials and energy conservation (Joachim, 2002). This makes the use of the terms confusing and discussions about reuse intervention approaches imprecise.

Based on an examination of the different terms and their definitions as they are introduced by Liam Wong in *Adaptive Reuse* (2017, pp. 13–28) and in the seminal work *Building Adaptation* by James Douglas (2015, pp. 583–594), we suggest a framework for categorization, comprised in the scheme below (fig. 1). The scheme illustrates the ranking of the different types of intervention according to the level of intensity and the level of alterations in relation to a building's original state.

The spectrum of intervention types starts with preservation and ends with the so-called retrofit, respectively representing the most subtle and the most profound level of intervention. Keeping the intentions of the RMB programme in mind, – which is to develop transformation strategies for modernist buildings into housing, the choice of architectural design cases for the RMB programme should tolerate some degree of intervention and, at the same time, preserve significant modernist features and properties. The choice of cases should therefore rely on an analysis based on an appropriate level of intervention. Cases in which preservation, conservation and restoration are imperative, necessary alterations suitable for the RMB programme will most probably not be possible, while all other types of intervention, in most cases, would.

Definitions of architectural reuse terms

According to the scheme, the terms preservation and conservation often are used as synonyms; nevertheless, they either encourage measures that will protect and maintain buildings in their current state – or will prevent further damage and deterioration of them.

Preservation implies the maintenance of a building in the physical condition as when it was received. Nothing is added to or subtracted. It is the sustain of existing form, integrity and materials and it focuses on the maintenance and repair of existing historic materials and retention of a building's form as it has evolved over time. It does though include protection and stabilization measures. (James Marston Fitch, 1990; James Douglas, 2015, p. 588; U. S. Dept. of the Interior, 2006).

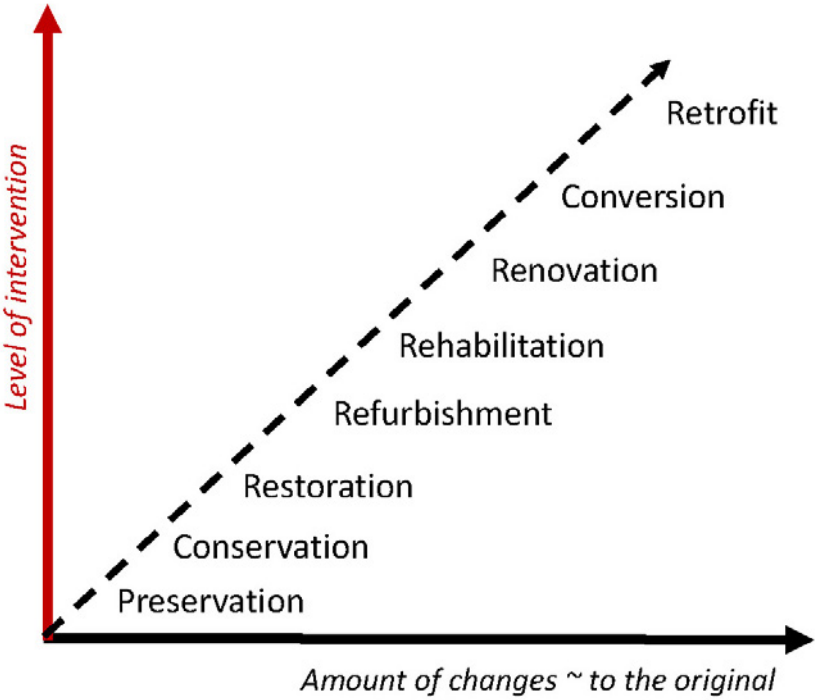

Fig. 1 Overview of building interventions in the spectrum of adaptive reuse.
Drawing: Els De Vos

The purpose of *conservation* shares the intention of preservation which is to safeguard architectural value and minimize decay. Conservation however, takes the level of intervention a step higher and includes in its treatment measurements that can prevent future deterioration.

Restoration is the continuation of conservation, when conservation treatment is insufficient. It brings back a building to its original appearance or state by reproducing original forms, elements and characteristics as they appeared at a particular period of time on the basis of a documentary of physical evidence. Restoration contains the removal of traits from other historical periods and the reconstruction of missing features, making a building conform again to its appearance at a previous date. Restoration is characterized by small alterations, but can at the same time comprise limited and sensitive upgrading of technical systems in order to make buildings functional (Series Editors, Elsevier/ Batterworth-Heinemann, 1999; Douglas, 2015, p. 590; British Standards Institution, BS 7913, 1999).

Refurbishment is a type of intervention that adapts to current standards in terms of change in user demands and technical regulations. It modernizes a building without involving changes in the interior layout and/or loadbearing structure and is mainly employed in public and commercial buildings. It may involve extensions. (Giebeler, 2009, p. 13; Douglas, 2015, p. 589)

According to James Douglas, *rehabilitation"* is normally confined to housing" as the term derives etymologically from the term habitation

(house) and may include important structural alterations to an existing dwelling. The act of rehabilitation makes it possible to transform a building through repair, alteration and additions, while preserving features that convey its historical, cultural and architectural values. (Douglas, 2015, p. 589; Weeks and Grimmer, 1995, pp. 60–61). However, the term is not allways restricted to housing. In the Icomos Appleton Charter (1989) for example, it is defined as "modification of a resource to contemporary functional standards which may involve adaptation for new use" (Wong, 2017, p. 21).

The term *renovation* refers to the process of returning something to a good state of repair. It does not add anything new, nor does it replace old with new. It maintains the value and the function of an older building through the act of upgrading and repairing to an acceptable condition, which may include works of conversion. (Giebeler, 2009, p. 12; Douglas, 2015, p. 589)

Conversion can be defined as something that is changed from one use, function or purpose to another. It is the act of making a building more suitable for similar or different type of function or use. Conversion always affects the structure of a building and can involve the loadbearing structure and the interior layout. (Giebeler, 2009, p. 14; Douglas, 2015, p. 584)

The last type of interventions which we have ranked as the most intensive of all types is the so-called *retrofit*. It indicates "the redesign and reconstruction of an existing facility or subsystem to incorporate new technology, to meet new requirements or to otherwise provide performance not foreseen in the original design" (Iselin and Lemer, 1993, in Douglas 2015, p. 590). This can for instance be the installation of new building systems and technologies such as heating systems, solar systems, insulation, double glazing etc. In recent years retrofit has been applied in order to make buildings more thermal-efficient and sustainable. The latter is an answer to a major, present concern "to make buildings resilient to the climatic changes that are already apparent and inevitably will become more severe in the future" (Burton, 2015, p. 1).

Intervention norms and conventions in architecture has changed strongly since 1964 when *The Venice Charter for the Conservation and Restoration of Monuments and Sites* set out the guidelines for the conservation and restoration of historic buildings. The charter stated that "the intention in conserving and restoring monuments is to safeguard them no less as works of art than as historical evidence (ICOMOS, 1964, art. 3) and that "the conservation of monuments is always facilitated by making use of them for some socially useful purpose. Such use is therefore desirable but it must not change the layout or decoration of the building. It is within these limits only that modifications demanded by a change of function should be envisaged and may be permitted" (art. 4). Moreover, the charter pleas for an investigation of the value of the elements of the building by experts, before taking decisions: "Evaluation of the importance of the elements

involved and the decision as to what may be destroyed cannot rest solely on the individual in charge of the work" (art. 11). Since then, the view on how to deal with historical monuments has broadened its scope. The Nara Document on Authenticity of 1994 has enabled a more dynamic understanding of authenticity and stressed the importance to maintain the "spirit of the building" and to illuminate the building as collective memory of humanity (ICOMOS, 1994). Eventually, the Burra Charter introduced a broad concept of place (urban, rural, industrial and modern areas) by establishing broad parameters (vernacular and everyday aspects, immaterial culture) and by admitting that cultural significance evolves over time (Australia ICOMOS, 2013). As a result, in current approaches, not solely buildings with a monumental and special architectural/cultural value can become classified, but also other sorts of buildings, such as mass housing, and even environments/landscapes, are considered worthwhile to protect as they act as the collective memory of a society.

The RMB programme operates within this broad framework of possible intervention levels and approaches with the special focus of the development of re-use strategies. For this reason, the implementation of heritage studies is an indispensable element in the RMB-curriculum. It gives students tools to classify and to determine a specific level of intervention.

The RMB curriculum

In its present structure, the curriculum consists of four semesters, in which three semesters encompass teaching and design modules and a fourth semester is devoted to the accomplishment of master theses. (see fig. 2) The first three semesters include courses of "History of Modernism", "Re-use of Modernist Heritage", "Energy and Climate", "Urbanism & Landscape", "User Related and Social Aspects", "Research and Methodology" and finally "Building and Construction Systems". Parallel to the courses, students will be working on design assignments dealing with modernist buildings and their environment. These form the backbone of each semester, and are supported by the other courses.

The different courses of the programme are divided between the partner universities, divided over three regions: Central Europe (Belgium-Germany), South-Europe (Portugal with IST and Coimbra) and East-Europe (Turkey). Each region is responsible for one semester. In this way each semester will be different from another, not only content wise but also region wise, each characterized by its own emphasis and expertise (more info about the program in: Melenhorst, Pottgiesser, Dragutinovic, 2017).

The aim of this schedule is to provide students with a set of skills that enable them to make design solutions that are based on viable concepts, – in concert with a distinguished understanding and recognition of the principles and particularities of modernist buildings. It should also prepare students to act in a situation in which the expert,

an experienced professional with academic high standards, is no longer the exclusive authority to interpret and to dictate actions to the heritage conservation. During the program, and especially in the design studio, the development of communication skills in order to facilitate the process among the many stakeholders involved in the conservation and re-use process will be developed. In the master thesis, taking place in the fourth semester, all the aims should come together.

Blended learning is an aspect of the RMB programme. It will make use of innovative ways of e-learning and teaching from a distance. The partners are experimenting with Adobe-connect and also started recording lectures that can be consulted by the students at any time from any place. At the same time, intensive workshop weeks will be part of the curriculum because meeting each' other and exchanging information in real-time, remain important.

Case Study Handbook of Modernist Buildings

Next to the development of course contents and various teaching methods, the RMB has moreover developed a template for a so-called *Case Study Handbook of Modernist Buildings*. Its purpose is to assemble and accumulate knowledge and information about relevant modernist buildings systematically, analytically and efficiently. This handbook should serve as a tool for students throughout the courses of the RMB-master. It aspires moreover to introduce, support and inspire students in the research of particular international modernist buildings and their suitability for adaptation into housing. Additionally, knowledge and information will accumulate through the course of the RMB-programme and in the end result in a work of reference, – not only relevant for RMB-students, but also for actors dealing with modernist heritage in other fields. In future perspective, the handbook will become a palpable and accessible means when communicating about and negotiating modernist heritage with authorities, promotors and others involved in transformations of modernist buildings.

At the first Transnational Project Meeting in Lisbon in Portugal (TPM 29-30/10/2016), the case study handbook was discussed. It was – and is – regarded as a significant asset for a successful development and accomplishment of the RMB curriculum. The purpose of the case study handbook is threefold: the included cases can be used as point of departure for further examination during theory and history lessons; cases listed in the handbook can be employed in the design studios, serving as subject for design assignments; additionally, it allows registration of new case study projects, being a work in continuously progress.

At the meeting, all partners agreed on a number of common guidelines that should be kept in mind when making the case study handbook and when selecting case studies (Heitor, a.o., 2016). First, case studies should focus on housing for the aforementioned reasons. The housing need of urban agglomerations is increasing and cannot,

and should not, according to the RMB-group, be solved by new constructions only. Having a focus on modernist architecture, the RMB-project aims to address the housing need in urban contexts by focusing on the refurbishment of the existing housing stock, as well as the conversion of other building typologies such as warehouses, schools, offices and public building into housing. Projects may include different scales and range from a focus on interiors to neighbourhoods. Second, case studies should exemplify successful as well as unsuccessful conversions and adaptation interventions. Best practices, as well as failures, may generate important insights and make it possible to develop strategies for dealing with modernist architectural patrimony. Third, the case study handbook should contain specific examples of projects, illustrating innovative conversion concepts and approaches as well as adaptive re-use possibilities that transcend mere physical phenomena. In other words, the selection and analysis of the cases should not be limited to pure physical transformations, but may also include social transformations of a building project or housing estate. An example could be a high-rise housing block in which certain units are transformed into dwellings for co-housing. As such, the project will attract another kind of dwellers. Fourth, selected case studies should, next to characterization of design and construction, emphasize various aspects and difficulties of conversion, conservation or adaptation in relation to current function, use, and status. Finally, the case study handbook may also include so-called 'theoretical cases', – projects which can shed light on good, exemplary and/or innovative technical and construction solutions. In addition, projects which for instance demonstrate original transformation concepts may also be considered.

The making of a general template for the case study handbook was initiated by the team from the University of Antwerp. Its Faculty of Design Science holds a long tradition of investigating Belgian modernist design and architecture, both through design studios as through research. Antwerp master students interior architecture and architecture have actively participated in the further development of the case study handbook. In this process, methodology issues were addressed, such as: How to select projects? What sort of information should be included? How to find information? How should the handbook be structured and laid out? Once the format of the handbook definitively is defined, each partner university should contribute with relevant case study projects.

Designing a Template

The team of the University of Antwerp created a template that allows all partners to add case studies in an adequate and uniform manner.

As a starting point, the template was based on the DOCOMOMO documentary record, *The Modern Movement in Architecture. Selections from the DOCOMOMO Registers* (Sharp, Cooke, 2000). This record from 2000 aimed to provide a global overview of

characteristic architecture of the Modern Movement – and to call attention to its significance worldwide in order to preserve it from obsolescence and demolition.

Much has happened since then. Now, almost 20 years later, the awareness and appreciation of modernist architecture have generally increased and many modernist architectural projects have been preserved, conversed or refurbished. The focus of the RMB Case Study Handbook is therefore also a different one than the record from 2000. Instead of focusing on canonical modernist architecture, depicting various periods within modernism, the RMB-group wants to concentrate on modernist projects that already have been conversed or refurbished successfully as well as projects that potentially could be subject for alternation and re-use. The scope of the RMB handbook embraces projects exemplifying 'best practices' as well as less known modernist buildings that have not yet been transformed. This approach allows us to consider the large amount of housing projects that were constructed in the aftermath of WW II and which takes in a substantial part of our urban housing stock.

While cases in the DOCOMOMO-edition only are introduced shortly, illustrated by one photograph, the RMB Case Study Handbook includes a more extensive description of selected cases. This asset provides students a rapid and thorough introduction to the cases, which will speed up further elaboration.

Besides evident parameters such as identification (name of the architect(s), date of design and building), status of protections, geographic coordinates of the sites, etcetera, other elements such as energy efficiency and environmental comfort, building-construction issues, maintenance, material and technology, as well as social aspects, are taken into account.

In consultation with DOCOMOMO International, which has experience in developing fiches for good conservation and restoration practices (Tostões, Ferreira, 2014, pp. 15–17; Tostões, Kecheng, 2014; Costa, Landrove, 1996), the case study handbook will include four phases for each case, describing the original project, the project before re-use, the project after renovation (upgrading and repairing an old building to an acceptable condition, which may include works of conversion (Douglas, 2015, p. 589)) and the present state of the project. In this way, each stage of the project can be documented in accordance with its changing character.

Selection and Recording of Cases

For pragmatic reasons, we decided mainly to focus on projects realized in Antwerp as we wanted to reassure that students easily could visit the projects, more than once if needed. In order to assure an instructive and interesting assembly of architecture, the case study handbook contains cases having various scales and deriving from different architects. In the first instance, we selected well-known buildings, such

as the progressive social housing projects Kiel (1951–56) (fig. 3), designed by architect Renaat Braem and Luchtbal (1951) (fig. 4) designed by architect Hugo Van Kuyck, that were recently renovated (De Vos, Geerinckx, 2016). For the selection of theoretical cases exceptions were made and the book includes cases from abroad. So for instance the apartment block Tour Bois-le-Prêtre (1959–61) in Paris, originally designed by the French architect Raymond Lopez, is added because its refurbishment by architects Frédéric Druot, Anne Lacaton and Jean Philippe Vassal can serve as an instructive example of how to renovate and refurbish large-scale housing.

At the time when the handbook was composed, a number of design studios within the Antwerp Faculty of Design Science were working on alterations of Antwerp modernist buildings. The material which was gathered by these studios was shared and subsequently prepared for the handbook. These cases we categorized as 'working cases'. Parallel to projects, which are obviously modernistic, the handbook contains furthermore high-rise mass housing projects that were built by private investors. These types of projects were part of the commercial housing in the city. These cases proved to be interesting as they share considerable similarities in stylistic features, organization, etcetera, while they at the same time also have their particularities.

After having prepared the selection, the cases were documented. In this process various material was recorded: plans (floor plans and sections), drawings, renders, publications on the building, photographs, etc. Besides this material documentation of the cases, the case study handbook furthermore aims to register social aspects of the buildings and their neighbourhoods. For this purpose site-visits are indispensable, as they connect students with the physical appearance of the buildings as well as their users.

Eventually, it turned out that the final assembly of material was too extensive to be entirely implemented in the templates. In order to solve this problem and to keep all material available, a system of files in the data sharing platform Novell-Fillr was set up. Through this device archival material and publications on the buildings and their renovation can be stored systematically.

Reflection on the Results

The making of the RMB Case Study Handbook was implemented in the curriculum at the Faculty of Design Science at the University of Antwerp as a semester course on architectural documentation methods for master students in architecture and interior architecture. The course has been conducted over two semesters and has resulted in the recording of 13 modernist case studies. Due to the relatively large number of applied cases, it has been possible to assure a variety in the type of cases which makes it easier for future contributors to get a clear picture of how and to what extent the templates can be completed. The structure of the case study handbook allows its content to expand

indefinitely. It becomes a work in continuous progress for and by students, and its content will in the course of the RMB programme accumulate and eventually become a reference book. – Not only for students but (hopefully) also for authorities that deal with housing. In other words, the handbook provides a shared platform where profound knowledge about modernist buildings, well – known as well as less known, can evolve, increase and be exchanged. It will, for sure, enhance the assumption of the RMB – group, that there are yet numerous modernist architectural works, which could and/or should be considered in terms of refurbishment and conversion.

Future contributions of cases from the other RMB-member countries will possibly show and add new insights regarding the process of recording modernist housing projects. Climatological, constructional, social and ideological conditions can be different and therefore require additions and/or adjustments to the template. The selection criteria and the definition of modernist architecture might also differ. In a later stage of the programme, the format of the current template should be evaluated and modified if necessary.

On a pedagogical level, the exercise of making the case study handbook has been rewarding in a number of ways. Through the encounter with very diverse material, originating from private and public archives, from publications (newspapers, reviews, architectural magazines, ...), interviews, personal observations, etcetera, students have, on the one hand, become aware of the many-sidedness of the architectural project as a product of complex, coinciding elements, shaped by its historical context, time, original and current architectural visions, adaptations, material condition, users, etcetera; on the other hand, because of the large amount of material, students have been

Fig. 2 View on the Kiel building designed by R. Braem in 1951. Photo: Els De Vos

trained in tracing the global picture of a particular project as well as developing a method of fast selecting and ordering.

On the level of content, the present selection of housing projects allows moreover to analyse the difference between social housing and private housing. It appears that housing experiments on a technological as well as on an artistic level took place in the sector of social housing. Once proven and approved, the private housing projects would implement identical properties. Another characterizing difference between social and private housing derives from the different profile of tenants. Contrary to the social housing projects, the private housing projects were provided with large parking garages.

For the making of the Case Study Handbook, two different main methods have been applied. One is based on the production of visual material and summaries of other materials, as mentioned above. Another is less tangible and takes its point of the departure in interviews with users/inhabitants and other related actors, for instance, the architect and developer, because the RMB-group considers a diverse, global and critical understanding of the projects as a necessity. Successful re-use of modernist housing projects depends,

Fig. 3 View on Long Blocks at Luchtbal designed by H. Van Kuyck in 1957. Photo: Els De Vos

Fig. 4 The Antwerp students preparing the case study handbook, photo: Paul Wauters, 2018.

not only on knowledge about functionality, construction methods and applied materials, but also on notions of the spatial and environmental experience of users, personal perceptions of architectural qualities and/or failures, etcetera.

Whereas the first mentioned method is a familiar one, the second method, interviewing, is new to most students. As an additional asset of doing interviews, students became aware of a discrepancy between ordinary people and architects when it comes down to the view on modernist architecture. Through interviews students realized that inhabitants of the visited modernist buildings not necessarily shared the same appreciation for modernist buildings as architects and architectural historians.

This opposition became specifically clear in the recording of the social housing estate Kiel from 1951, designed by architect Renaat Braem. It has recently been profoundly renovated with respect for its architectural qualities. In the Case Study Handbook it is categorised as a 'best practice' case. Despite its recognition and approval by architects and architectural historians, the project is in general not received positively by its inhabitants. While architects are recognizing Kiel for being an example of modernist ideology striving for social equality and social justice – and for implementing innovative modernists features like the outdoor galleries, the so-called 'streets in the air', inhabitants lament the current, heterogeneous group of tenants for creating insecurity as well as the problems with dirt and garbage in the shared areas. Students have, however, due to the obtained knowledge about the project, recording it in its totality, been able to point out the discrepancy in perception as a matter of different viewpoints, considering different criteria.

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In search of modernist adaptability
A systematic approach for discussing the adaptive reuse potential of José Falcão School

Introduction:
Contemporary learning practices and environments

Contemporary learning practices comprise the active creation of knowledge, surpassing passive lectures and reaching for the independent and critical thinker. This could be achieved either by construction, communication or evaluation moments, whose dynamics have to be spatially accommodated and fostered.

Some 20th century schools represent prominent moments of experimentation, whose focuses may vary, from the students' well-being and hygienist purposes of the Open-Air schools by modern architects like Duiker and Bijvoet (Amsterdam, 1927–30); to approaching the outdoors, as in Impington Village College by Walter Gropius and Maxwell Fry (Cambridgeshire, 1938–40); all in all reconsidering the students' immediate environment and the school's envelope in its regard between internal and external space.

Classroom configuration has also been subject of research, such as in Hans Scharoun's schools (Marl, 1960–71 and Darmstadt, 1951); or previously in Richard Neutra's Corona Avenue Elementary School (1934–35), or the Crow Island School by Eliel and Eero Saarinen with Perkins, Wheeler and Will (Winnetka, 1939–40).

Furthermore, the need for space growth and curricular change guided significant school building developments exemplified by the Hertfordshire post-war experience. Entitled as "a very great achievement" by Llewelyn-Davies and Weeks (1952, p. 368), it already fostered the possibilities of change in the school space.

Still, one of the most prominent spatial realisations of the contemporary schools is the acknowledgment of active learning environments, potentially decentralised from the educator or, primarily, from the traditional classroom. These can act as spaces where knowledge creation occurs amongst peers in informal moments with substantial learning potential. Recalling Herman Hertzberger: "learning has to be more than just absorbing basic knowledge" (Hertzberger, 2008, p. 8), recognising school in a more holistic manner and acknowledging its diverse spaces as a means to knowledge acquisition.

Even though these projects are not immediately associated with the concept of adaptability *per se*, these act as moments of research of alternative educational environments in regard to the school's multiple layers of analysis (Brand, 1994) and to its different scales of approaching the individual: either by its envelope, thresholds, partitioning, single classrooms or collective areas. This questioning of the learning spaces went along with the development of the learning practices, which cyclically implied the reconsideration of the spatial features to allocate them, acknowledging the concepts of "built pedagogies" (Monahan, 2002) and "educational tool" (Heitor, 2005) that bond school and learning.

Ultimately, and recognising both the spatial and pedagogical changes, adaptability is paramount to provide the schools with the

Frontispiece Socialisation and communication in the school's informal spaces
(Images credits: author's archive)

ability to cope with its practices, faculty and students' profile in the future. It is here assumed as "the ability of the built form to maintain compatibility between activities and spaces, as those vary" (Krüger, 1981, p. 1169), enabling the school to continue to allocate the broad range of contemporary learning activities within its preceding physical structure.

Already in the OECD's 1976 publication *Providing for future change: Adaptability and flexibility in school building*, it is pinpointed the advantages brought by adaptability, associated with the possible future changes on the learning practices and on the size of the learning spaces according to the demographics of the school community, and also the search for "the best match between environment and education" according to the design choices possible for architects to make early on (OECD, 1976, p. 9). There, the relevance of adaptability for schools is clear and understood as a quality factor, associated with change to which the schools would have to comply:

> "[...] the educational requirements which school buildings have to meet evolve rapidly and unless the buildings can be made to accommodate future change, they are liable to early and costly obsolescence." (OECD, 1976, p. 5)

Specifically, the approach to adaptive reuse has also been taken on by several authors in recent approaches like Kincaid's (2003) book *Adapting buildings for changing uses: Guidelines for change of use refurbishment*, where adaptive reuse is defined as: "a complex process which requires that the participants in the process have a clear understanding of how to determine what future uses will be most appropriate for a particular building in a particular location and for a given period in time." (Kincaid, 2003, p. 10). This is linked with changing needs and also to the building's feasibility to hold other uses different from the initially conceived ones.

Recent publications and conferences concerning this subject matter have also been prolific on this matter. Docomomo has played a very significant role on this subject matter: the 14th Docomomo International Conference (Docomomo, 2016) held in Lisbon was centred around *Adaptive reuse: The modern movement towards the future*, the 2015 *Docomomo Journal 52* was called 'Reuse, Renovation and Restoration' (Docomomo, 2015) and Docomomo Ibérico has also specifically approached modern movement architecture and education as proven by the proceedings from the 8th Iberian Docomomo Congress from 2013 (Docomomo Ibérico, 2015; Moniz, 2015.) All these have gathered a wide research community around this issue and consequently hold different perspectives and contributions towards knowledge advancement.

As the case study, this paper will focus on José Falcão Secondary School, in Coimbra, from 1930–1936, by Carlos Ramos, Jorge Segurado and Adelino Nunes, from the "Santa Cruz" design proposal (Moniz,

2003; Moniz, 2007, pp. 170–178). In spite of subsequent alterations from the original design, it is an acknowledged national built heritage and holds undisputable spatial quality and urban representativeness within the city of Coimbra (Fig. 1).

Nevertheless, its physical obsolescence is evident, and despite the recent Secondary School Modernisation Programme extensively set out in Portugal, it has not been rehabilitated. Hence, the latest news on the media related to the struggle for urgent rehabilitation of the school.

On this regard and according to this prior introduction, three questions can be placed:

– How can a modernist building accommodate the current learning practices, as wide as these can be?
– What are the school's active learning environments?
– What is the adaptability potential of a modernist learning space towards informality and socialisation as a means for learning?

Thus, this paper aims at analysing the collective spaces used for the students' informal activities and to critically reflect upon their potential as active learning environments according to their adaptability condition (Fawcett, 1978; Coelho, 2017) by identifying criteria for assessing contemporary adaptable school spaces. Hence, adaptability is particularly relevant for this school, which continues to be working and that has to allocate the current academic and non-academic activities perceived as part of its evolving pedagogical curriculum (Fig. 2).

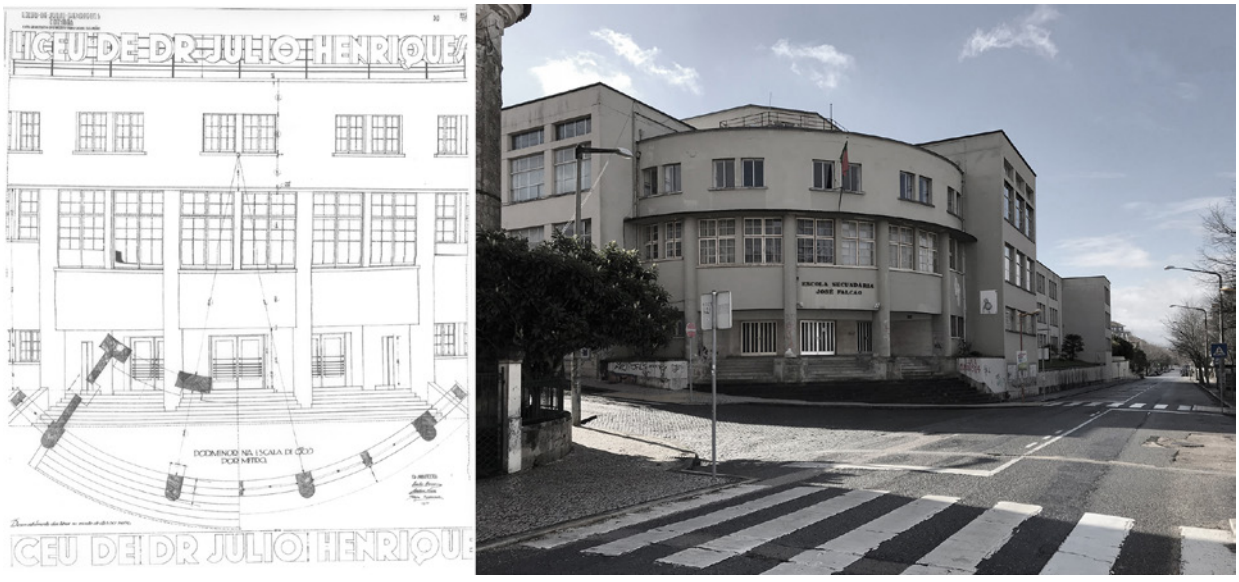
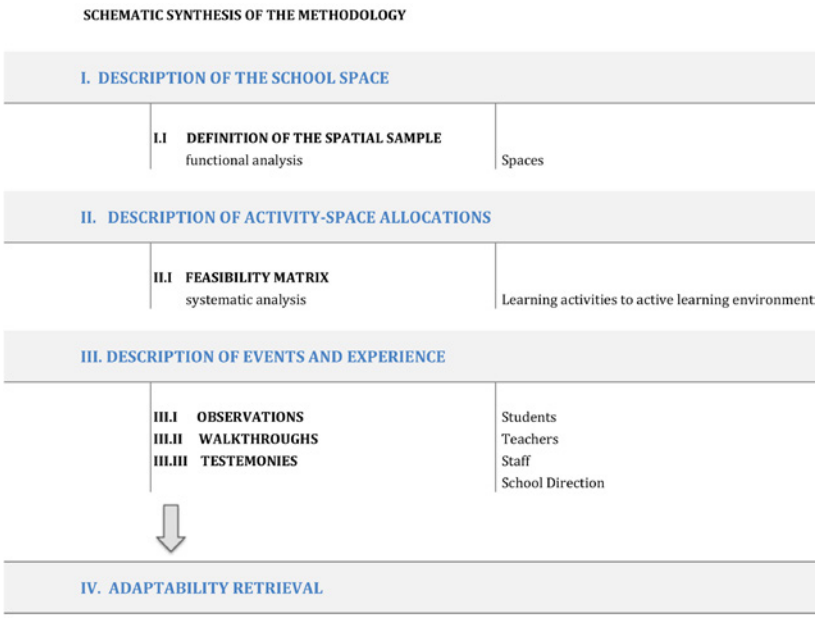


Fig. 1 José Falcão Secondary School. Drawing of the façade with the lettering (left); the school in 2018 (right) (Drawing credits: the school archive; Photo credits: author's archive)

Fig. 2 José Falcão School's classrooms (Images credits: the school archive)

Fig. 3 Schematic synthesis of the methodology (Image credits: author's archive)



Ultimately, it is intended to identify both the formal and informal spaces where adaptability can be higher and to provide a critical thinking on potential interventions to enhance them on this behalf, enabling the accommodation of current learning practices, as wide as these can be.

A methodology for assessing the school's adaptability

The methodological approach taken as the basis for this analysis is centred around three milestones:

– *description of the spatial sample* – consisting on the functional and morphological definition of the space;

– *description of activity-space allocations* – understanding how and where are the learning activities accommodated in space;
– *description of events and experience* – defining what is the actual living experience and spatial appropriation in the school, by means of observations of spatial usage, walkthroughs and the recollection of testimonies from the whole school community.

These, ultimately, can be correlated towards the *adaptability retrieval* that enables an overview of the space overall on the activities each space holds, either formally defined or informally appropriated, and generally their potential for widening these allocations to other learning practices (Fig. 3).

I. Description of the school space

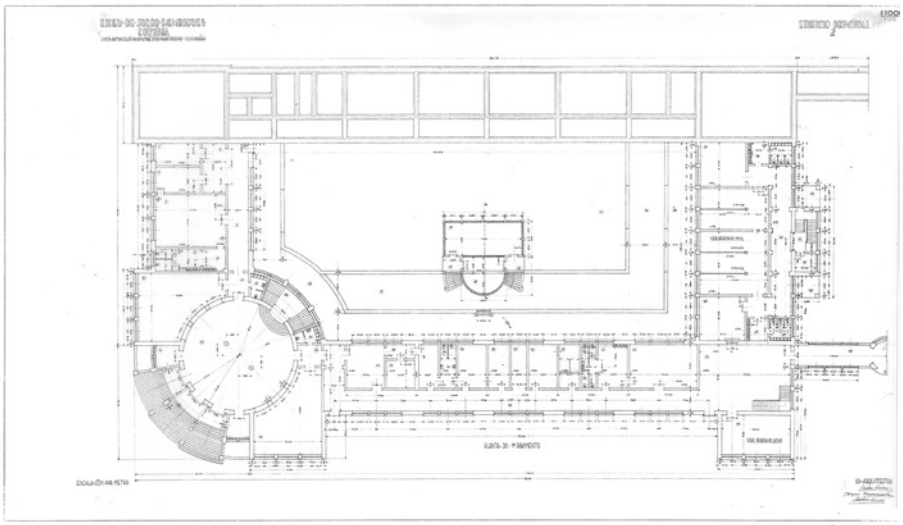
Initially, contemporary learning practices and spaces are addressed, realising the bond between the teaching and learning methods and the place to accommodate them, in the current manner perceived today, where socialisation and informality also imply knowledge communication and acquisition. Hence, the need to understand the whole school, for self-discovery, group work and formal and informal learning activities overall, both in its classrooms, as well as beyond them.

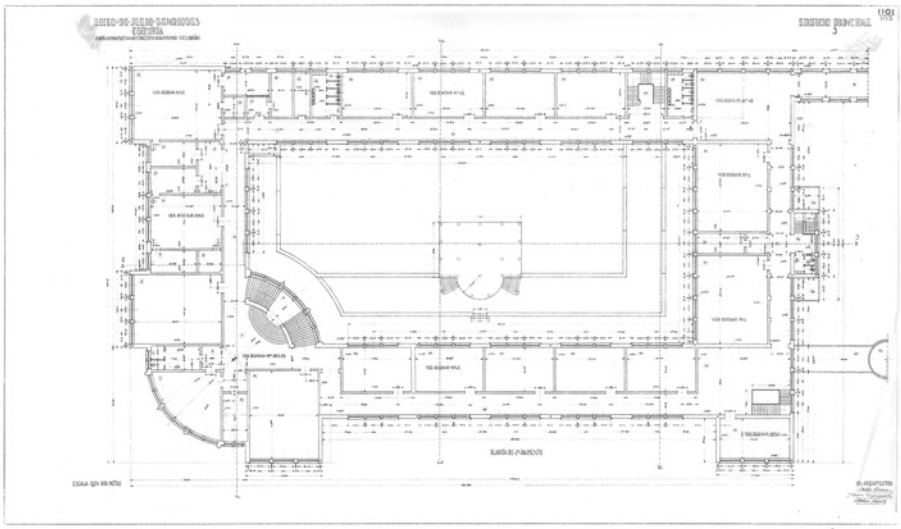
Naturally, these practices also involve the use of technological devices, both in and beyond class, spatially implying new spaces conceived for such purposes, or the inclusion of such devices in pre-existing spaces.

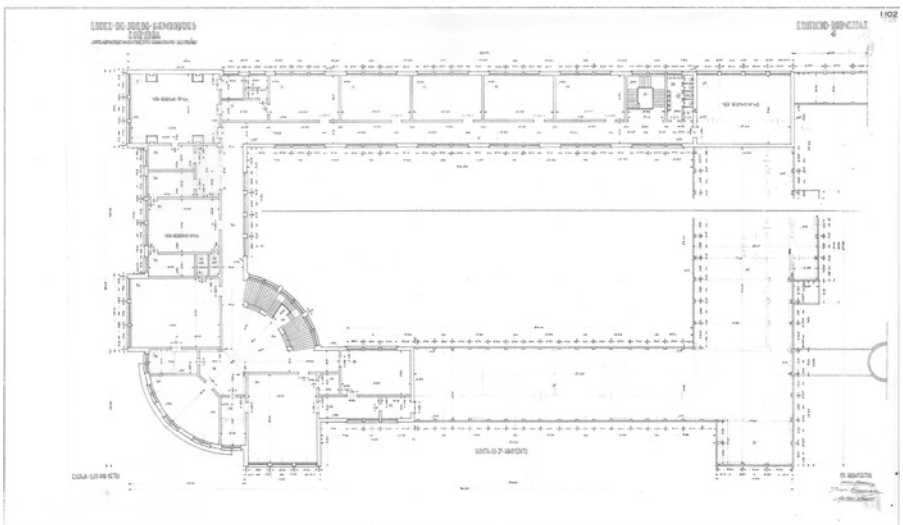
For the purposes of assessing the school space, the drawings of the school have been accessed, in its original proposal from 1936 signed by the architects, from the school's archives (Fig. 4), and also the ones that depict its actual situation, after the successive alterations the school has undertaken, namely the addition of an upper floor in 1938 (Rodrigues, 2003). The latter are the ones used as the basis for this analysis, as they report the school's effective usage today, according to the present spatial layout of the school.

Despite the perceivable physical obsolescence of the school, it has tried to cope with some eminent needs. So, some arrangements have been made recently, in specific spaces, such as: the multimedia room, a study room for accompanied learning, a reading room for individual study, an exhibition room for both an internal and external community, and spaces for group gathering particularly on wider niches opened onto the circulations. It is also visible that spatial appropriation has also been accepted and enabled, namely by artistic expression on the interior walls, as a demonstration of the students' curriculum, but also changing the spaces' interior coatings.

Hillier and Hanson (1984) in *The Social Logic of Space* have stressed the bond between spatial properties and social relations, in which space "constitutes" and also "represents" "social knowables" (Hillier and Hanson, 1984, p. 48; Heitor, 2001, p. 23):







> "By the assumption that what is to be sought is a relation between the 'social' subject (whether individual or group) and the 'spatial' object acting as distinct entities, space is desocialised at the same time as society is despatialised. This misrepresents the problem at a very deep level, since it makes unavailable the most fundamental fact of space: that through its ordering of space the man-made physical world is already a social behaviour. It constitutes (not merely represents) a form of order in itself: one which is created for social purposes, whether by design or accumulatively, and through which society is both constrained and recognisable. It must be the first task of theory to describe space as such a system." (Hillier and Hanson, 1984, p. 9)

So, the space syntax analysis, as defined by Hillier will be undertaken to further describe this spatial sample:

> "Space syntax is a method we have developed at the Bartlett Unit for Architectural Studies to describe and analyse patterns of architectural space both at the building and urban level. The idea is that, with an objective and precise method of description, we can investigate how well environments work, rigorously relating social variables to architectural forms." (Hillier, Hanson, Peponis, Hudson and Burdett, 1983, p. 49)

For such purposes the school plans were edited in Autocad and imported to DepthmapX in order to proceed with the axial and visibility analysis. This provides information on the overall system of spatial relations between those spaces and the social dynamics these enable, either when standing, moving or visually perceiving space. When transferring this analysis onto the school space, this holds a paramount significance, because social experiences and interaction involve learning potential as a means of knowledge acquisition amongst peers.

Axial lines comprise not only the secluded spaces but a set of connected spaces that are recognised as a whole active learning environment, which brings added information to this analysis. Moreover, these also consider movement and standing as learning moments, not solely acknowledged in formally defined spaces or by academic activities, but also by informal, social and spontaneous experiences held throughout the whole school.

Even though a more thorough analysis is possible, this is focused on integration HH *rn* as the global measure that describes the overall system: "Clearly the more a space is integrated, the more it may be able to exploit the existing pattern of movement of people caused by the arrangement of space." (Hillier et al., 1983, p. 59). Furthermore, the axial line map also brings additional input regarding the most and the least integrated axial lines, informing where the student "communities

Fig. 4 Plans of the main building signed by the architects _ ink on parchment paper (Images credits: the school archive)

of educational and social practices" (Woolner, 2015, p. 10)[1] displace the higher patterns of co-presence, encounters and movement conveyed by this school.

The axial line map (Fig. 5) reveals that the most integrated axial lines are located on the corridors and intersect several different programmatic areas of the school. These are identified in the warmest colours, whereas the axial lines with low integration are identified with the coolest colours, according to the traditional space syntax colour scheme.

As the school is scattered in a wide array of spaces displaced in several different hallways and floor plans, the integration might decrease. This is proven by the higher integration of the gym on the first floor, which displays numerous spaces around it, acting as a spatial, pedagogical and functional core of that part of the school. Opposite to this situation, the second floor plan, which does not have an horizontal circulation that connects these two parts of the school, implies a lower integration of each part, because of their lower centrality overall.

Even so, the openings on the main corridors, particularly near the library on the first floor and, even more clearly, upwards on the second floor near the amphitheatre, are highly integrated, coinciding with the location of the staircase that connects all three floor plans, functionally and collectively representing a meeting point for the student community for standing and also as a moving pathway.

On the contrary, spaces institutionally defined as spaces for the students to be, such as the cafeteria on the ground floor that is in a more segregated space, hold low axial integration. These correspond to a more time-consuming path to access them and a respective reduced frequency of stays there, hence, considered less engaging as opposed to spaces that are easier, quicker and more casually accessible for all.

The visibility analysis (Fig. 5) complements this information, identifying the spaces where the visual integration HH is higher and lower, assuming that high visibility enables more encounters and patterns of collective gathering, ultimately leading to interaction and learning, either amongst peers and also between students and educators. Similarly to the axial integration, the higher visual integration is again acknowledged on the main corridors.

The higher axial and visual integration values, identified in warmer colours in the axial lines and in the visual grid, are located where the two main buildings meet, which coincides with the students' entrance on the first floor; whereas the institutional entrance on the ground floor, which is the access point for the teachers, holds lower visual and axial integration towards the whole school. This segregation of the entrances between teachers and students potentially hinders interaction.

The study through isovists, as "the set of all points visible from a given vantage point in space and with respect to an environment." (Benedikt, 1979, p. 47), complements the previous analysis on spatial morphology for describing space, as: "Sets of isovists and isovist fields form an alternative description of environments." (p. 47). Thus, its study

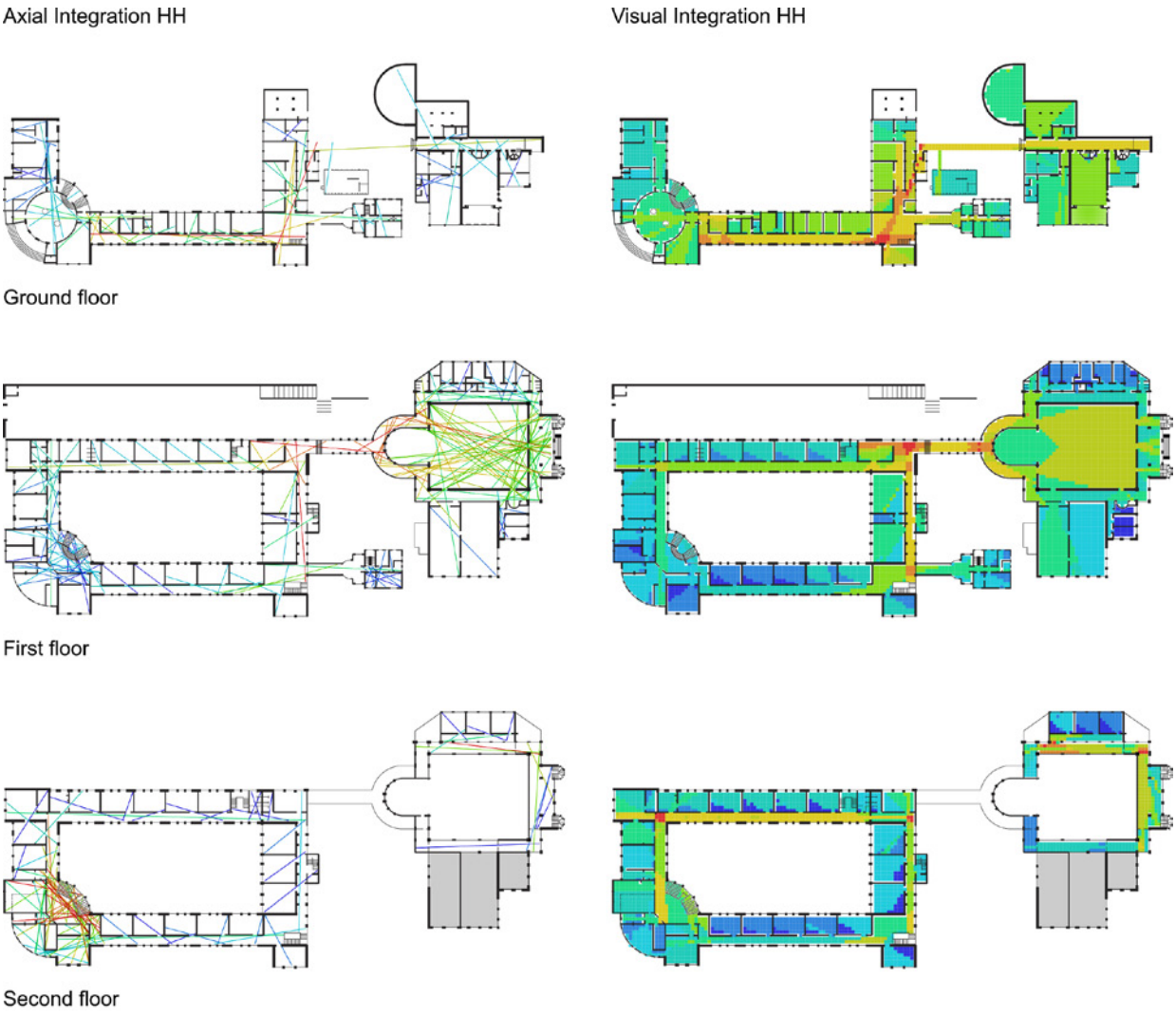


Fig. 5 Axial Integration HH (left); Visual Integration HH (right) (Images credits: author's archive)

also provides further input in regard to the visibility from several spots in space, where peer perception is higher, enabling also higher patterns of co-presence and encounters (Fig. 6). This occurs, particularly, on the students' entrance and on the four corners of the main building where the corridors meet. This can be articulated with the spaces where the students usually like to stand on their free time, which will be examined by milestone three of this methodology.

From the overall analysis, it is noteworthy the array of widespread spaces on the overall school and a lack of a more aggregating core of the school. Nevertheless, the morpho-syntactic analysis undertaken for the interior spaces of this school, proves that the main corridors are the spaces more prone to interaction, when moving from one space to another and by visually perceiving all the community.

II. Description of the activity-space allocations

After examining the spatial sample by means of a morphological approach, it is then possible to focus on its allocational potential towards contemporary learning activities, either group or/and individual, formal and/or informal.

Retrieving the initial questions, the school effectively holds active learning environments for the current learning activities, and these more recent rearrangements have aided on that behalf, namely with technological provision and the definition of social areas. However, these spaces are segregated between themselves by areas and nature of the events, and activities are site-specific and not widespread amongst the whole school. Generally, the exhibition room accommodates the displays from the school to the exterior community or vice-versa, the amphitheatre frequently holds the events for more than one class and the library shelters most of the remaining extra-curricular, formal and informal activities. Spaces such as the gym, the gym rooms, the canteen or the external spaces only occasionally accommodate some sporadic activities, as compared to the previous ones.

The systematisation of the activity-space allocations on a feasibility matrix aids to the visual perception of this situation. For such purposes, the learning activities can be divided in both: *formal* (academic and part of the schools' organisation and curriculum, e.g.: traditional lectures) and *informal* (social and often undertaken exclusively amongst the peers, e.g.: group gatherings); and each one could be acknowledged as: *programmed* (meaning of frequent usage or routinely occurrence, particularly within the school's weekly schedule, e.g.: formal study groups) and *non-programmed* (spontaneous or of occasional occurrence and not on a weekly based routine, e.g.: informal peer interaction) (Krüger, 1992).

The feasibility matrix is achieved by assigning the spaces to the effective learning activities they usually accommodate. This also confirms a segregation of spaces per type of activity and concludes on a low adaptability of the current spaces (Fig. 7). Even so, the most adaptable space is the library, which allocates the widest diversity of learning activities.

This can be overlapped to the concept of "looseness of fit" of activities to spaces that Fawcett parallels with the adaptability of that

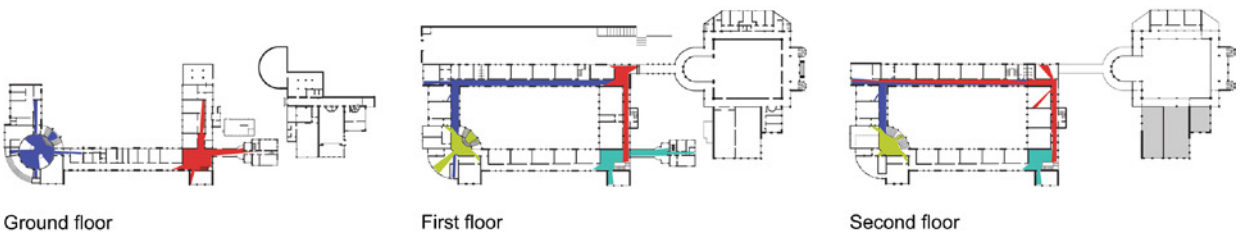


Fig. 6 Isovists
(Images credits: author's archive)

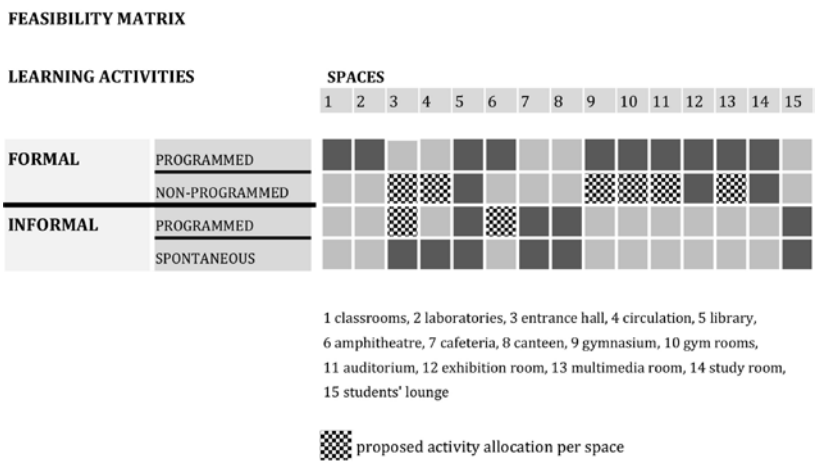


Fig. 7 Description of activity-space allocations: Feasibility matrix _ actual and enlarged (Image credits: author's archive)

space, as such: "The pursuit of adaptability can be seen as maximising the looseness of the fit of the known activity schedule into the first-build physical schedule." (Fawcett, 1976b, p. 7). Hence, this considers that the higher the activity mix in each space, the more adaptable that space is to cater for different activities with a diverse array of spatial constraints. Ultimately, if the feasibility matrix is divided in learning activities of different nature: formal/informal, programmed/spontaneous; the "looseness of fit" implies that the most adaptable spaces can hold activities from a wide range of learning practices, which is enriching for the students.

This could be overcome if spatial allocations were widened to activities of more diverse nature, gathering formal/informal, and programmed/spontaneous experiences in the same or adjacent spaces. This is perceived in the feasibility matrix by means of the chequer pattern squares that enlarge the allocation potential of some of the most social and collective spaces and that, ultimately, propose a higher activity mix and higher entropy spaces (Fig. 7). For example, the entrance hall could hold a more representative role as an extra-curricular learning space and occasional collective events could also be held in other spaces, such as the canteen for informal celebrations, or the auditorium that could be more extensively used for external and internal activities, as a way of disseminating the activities on the whole school space as a learning environment overall.

Hence, the results achieved on the library could be expanded towards other spaces, provided they can cope with them physically, and assuming that by management and spatial appropriation the school community uses them on other activities beyond the current ones.

III. Description of the effective events and experience

The last milestone of this research complements the previous findings on spatial fruition, for retrieving information on how the space is actually being appropriated and whether expected and effective use

overlap, enlarge or hinder the learning experience. This is undertaken by means of observations, walkthroughs and testimonies of the school's community.

Walkthroughs[2] imply a visit to the school guided by its community, potentially students, teachers and staff, that define the pathways taken and show the spaces according to an initially defined goal, that in this case was the spaces that could be considered more adaptable.

A walkthrough has been made with the school director, who showed us the recent school's rearrangements towards current learning practices. Another one has been made with the school staff coordinator, who knows the school for longer and is in charge of all the spaces and equipment, who has also commented on the most representative spaces and their uses. The plans indicate the course of this longer walkthrough on the entire school (Fig. 8).

Besides observations, specific testimonies from the school community have also been gathered, enquiring on each person's spatial usage and the spaces considered to be active learning environments. These have been asked to the teachers and staff, and the results are displayed on the plans, according to the formal and informal spaces they have considered (Fig. 9).

Other testimonies have also been collected from students that provided their regard on their respective spatial fruition, which, again, has been displayed on the plans (Fig. 10). As perceived, there are some spaces that are unanimously considered by all, whereas on other spaces, the commentaries do not overlap: teachers and staff consider that informal activities occur in defined spaces of the school, while students perceive leisure and socialisation on the school overall, namely loosely on the circulations.

In fact, and besides the previously defined spaces for students to lay, informal activities and socialisation are perceived throughout all the school's circulations, namely on the benches placed on the corridors and on the niches and openings, as well as on exterior spaces, which are appropriated by students for their leisure and considered as meeting points.

Despite the tables and seating areas provided near the library, few students usually stand in those spaces. Students generally perceive the library as a more formal space, even though it is considered the most adaptable space that gathers both formal and informal activities. Formal events are usually placed on defined spaces such as the amphitheatre and the library. According to the students' testimonies, the auditorium is seldom used and the cafeteria and the canteen are not spaces where the students prefer to spend their time other than needed. Moreover, students appreciate standing in the corridors on the benches near the classes and on the circulations overall, namely on the niches and alcoves. Overall, separate areas for learning, for entering the school and for formal and informal activities, enhance spatial segregation and low adaptability.

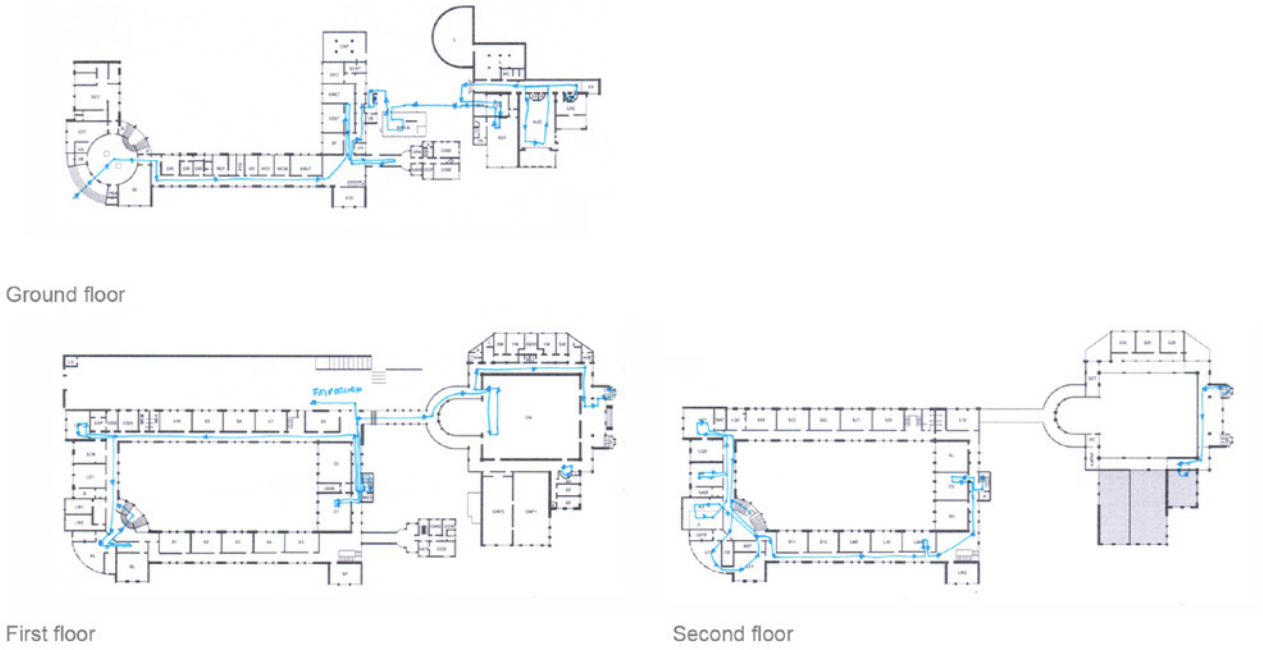


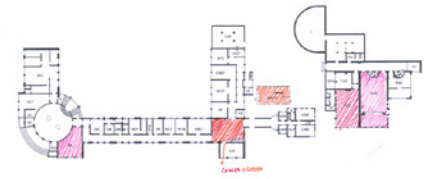
Fig. 8 Description of events and experience in the school: Walkthrough
(Images credits: School plans from the current building from José Falcão website: http://esjf.edu.pt, edited by the author)

Fig. 10 identifies the spaces considered by the students as spaces to stand informally on breaks of either long or short duration. These are clearly enlarged from the previous Fig. 9 related to the spaces afforded to them by the school faculty and staff. This leads to the conclusion that effective appropriation broadens the original expected usage of space and that there is a sense of belonging of the school by the students, which expands the overall adaptability of spaces from an originally more specific functionality as supportive spaces, to effectively productive spaces for learning.

Recalling Lynch (1977) on *Studies of the spatial environment of adolescence*, the sense of belonging by students can be associated with spatial appropriation, maintenance and fruition:

> "The children should be living in places that have a clear social and spatial identity, places they can understand and take pride in. They should have a role to play in community maintenance and community celebration – particular functions to perform, particular places for which they are at least in part responsible." (Lynch, 1977, p. 57)

Ultimately, this confirms the hypothesis that informal spaces, such as atriums, and moving areas, such as circulations, are places where peer interaction frequently occurs, laying the foundations for knowledge acquisition and recognising them as active learning environments, not bounded by walls nor institutional practices.

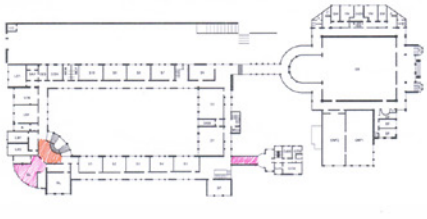


Informal activities of long duration

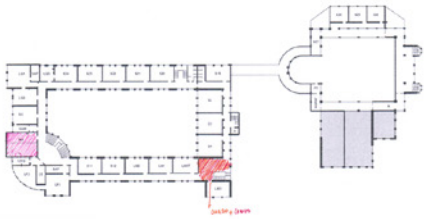
Informal activities of short duration

Formal activities

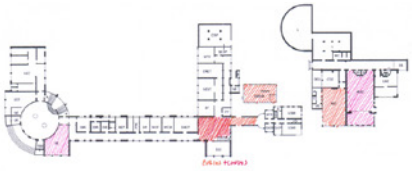
Ground floor



First floor



Second floor

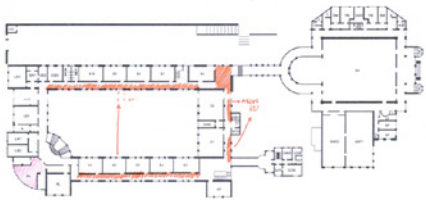


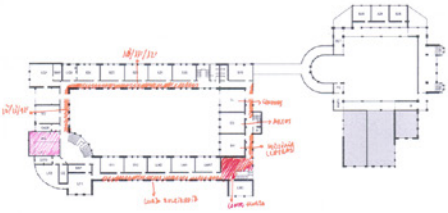
Informal activities of long duration

Informal activities of short duration

Formal activities

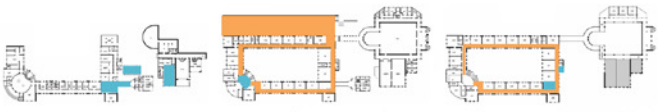
Ground floor





First floor

Second floor



Students' ***defined*** informal spaces

Students' ***appropriated*** spaces for socialisation

IV. Adaptability retrieval

Having understood this school space, activities and effective spatial fruition, a discussion can be undertaken to identify the spaces where adaptability can be higher when triangulated between the previous milestones in a systematic overview.

From the analysis on spatial morphology, it could be concluded that the school has the potential to hold "learning streets", due to its corridors' width, environmental conditions, high integration, connectivity and visibility to the several surrounding spaces. Nevertheless, the learning activities are mostly acknowledged on secluded spaces and not on the circulations or on mixed-use spaces. So, the potential of those circulations could be more acknowledged as both moving and standing spaces, where peer interaction and knowledge communication may occur (Fig. 11).

As prior seen, the gym is a highly integrated space, acting as a gathering space for its respective hallway on the school. Similarly, by analysing the school's morphology, it is noticeable that the interior courtyard is a central space for the main building, with high visual permeability. However, it is not currently used by the students on their daily routines. Still, it could provide the community with social and pedagogical experiences, visually perceived by its several surrounding corridors and classrooms and, hence, it could be socially and spatially engaging. Thus, the central courtyard could be acknowledged as an effective learning core of the school, gathering both formal and/or informal activities and programmed and/or spontaneous events. This could also be projected onto other exterior spaces, such as the cafeteria grounds or the students' entrance. The latter has been recognised as a space where the students enjoy staying, and so, it could be afforded with a design, maintenance and use consistent with an active learning environment.

Likewise, morphologically deep spaces, with low integration on the school and with low connectivity, imply few accesses towards them and are also less used by the students. Therefore, commonly used spaces (such as the cafeteria or the canteen) could be placed in more integrated and connected areas and be more accessible and comfortable to reach.

The analysis on activity-space allocation also provided conclusions on the low activity mix. Besides the library, other spaces could consider widening their activities, enabling higher learning diversity.

Moreover, more spaces for informal learning and social activities could be provided to the students, besides the niches on the circulations. Both the morpho-syntactic analysis and the students' testimonies and walkthroughs have proven that the students' entrance is a significant space for the overall spatial system, which gathers the two buildings and which holds very high visual and axial integration. As it is a space that enables a wider pattern of encounters and co-presence that holds high visibility within the school and that is effectively used

Fig. 9 Description of events and experience in the school: Teachers' and staff's testimonies (Images credits: School plans from the current building from José Falcão website: http://esjf.edu.pt, edited by the author. Photos credits: author's archive)

Fig. 10 Description of events and experience in the school: Students' testimonies (Images credits: School plans from the current building from José Falcão website: http://esjf.edu.pt, edited by the author. Photos credits: author's archive)

Fig. 11 School's circulations used for moving and standing (Images credits: author's archive)

with a corresponding significance by the students, its spatial and pedagogical centrality should be acknowledged. This would also imply future proofing these most preferred spaces by the students with furniture and physical comfort, from which the students' main hall is currently deprived.

Discussion:
Possible widening of modernist adaptability?

All in all, and despite its very assumed modernist matrix that constrains the adaptability of each space to a very specific functionality, this building has many assets, namely: facilities such as an amphitheatre, an auditorium with over 300 seats and a gym with a separate access used by an external community (Fig. 12); the previously referred wide, highly integrated and well-lit circulations; the wide provision of the laboratories and the library; the spatial quality of the building and its urban condition and location within the city.

A modernist spatial typology also needs to consider the spaces' syntactic connectivity and integration in regard to the pedagogical activities they accommodate, so that the learning processes can be more wide-ranging, encapsulating both formal and informal contexts, and also traditional face-to-face encounters, as well as the use of digital technologies and the respective viability of the non-face-to-face learning paradigm. Thus, for more insightful and thorough spatial recommendations on providing for high quality and adaptable spaces, the school should be perceived as a whole, and rearrangements should be thought as a conjoint design for a whole learning space, more than a piecemeal rearrangement of separate spaces according to the most pressing technological, pedagogical and physical demands.

Specifically, interior and exterior spaces when considered as a whole provide a more diverse learning ambiance. Circulations and standing spaces, when morphologically connected, gather more students together. Likewise, formal and informal spaces, when considered adjacently, enhance a wider array of interrelated learning activities and experiences (Fig. 13).

In 1969 Giancarlo De Carlo (1969)[3] writes to the *Harvard Educational Review*, the article 'Why/How to Build School Buildings', raising paramount questions on school spaces and proving a critical thinking on their answers. One of the questions proposed for discussion concerns the possible association of the learning activities to the buildings' quality:

> "Is there a direct and reciprocal relationship between educational activity and the quality of the buildings in which it goes on?" (De Carlo, 1969, p. 96)

This holds particular relevance because De Carlo argues for the evolving nature of the buildings according to its environmental

Fig. 12 School spaces: auditorium, gym and library archives
(Images credits: author's archive)

Fig. 13 Socialisation and communication in the school's informal spaces
(Images credits: author's archive)

surroundings, which disregards fixed settled forms and suggests the need for "unstable configuration continually re-created" for the still unforeseen future (p. 102). De Carlo goes against the strong institutional space, its fixedness in aesthetic intentions rather than its engagement with time and use (p. 103). The higher entropy within space would mean the accommodation of a broader and fuller experience and not limited to a sole "connotation" or "event" (p. 103).

On his final remarks De Carlo considers that the design of schools can no longer be bounded and strict, enabling an "intense education" by "multiple active experiences". Thus, the design is no longer finished by the architect, but "continually readjusted by those who appropriate it (the students, the teachers, the people who use it for other things as well" (p. 107). This is central for assuming the school as a lived space that comprises various activities facilitated by space and not bounded by it.

The considerations taken on by De Carlo, are embedded in the questioning of the school and its spatial environment. Change is acknowledged and discussed on the activities the school space may accommodate, but also on their possible unforeseeable variances:

> "The job of the architect who designs a school is to outline the organizational structure which should realize educational activities in space, whatever the complexity and the degree of contamination

> with other activities which they may take on with time. The organizational structure will contain within itself the seeds of the formal configuration to which it will give rise or the basic ingredients of which it will be composed, or completely defined fragments around which its future development will evolve according to the circumstances, the intentions, and the reactivity of the situation in which one is working. The most important thing is that structure and form leave the greatest possible space for future evolution, because the real and most important designer of the school should be the collectivity which uses it." (De Carlo, 1969, p. 107)

From De Carlo's assertions, first we focus on the need to provide for change by means of the space's "structure and form", which in the present case study has been recognised as both an asset of architectural and urban quality, despite its originally defined functionality and specificity that might have hampered its spatial progression onwards to broader pedagogical and social uses. Secondly, De Carlo highlights the role of the collectivity in regard to their appropriation and effective fruition. This might make way for the pace of change and for spatial alterations within the school's adaptive reuse process, according to the current contextual constraints and pedagogical practices.

Overall, it can be argued that this school's modernist grounds endows the space with environmental and constructive quality that needs to be rethought and retrofitted from a functionalist spatial profile to a mixed-used and adaptable overall learning environment. This will cater for both the present pedagogical situation, as for the still unforeseeable changes on the forthcoming academic curricula, school community and urban requirements, the school will need to cope with in the future.

Finally, this paper has intended to discuss the adaptive reuse potential of a modernist Portuguese school and, for such purpose, it has undertaken a hybrid methodology composed of several milestones and distinct qualitative and quantitative approaches, which are ultimately combined into a hybrid methodology that articulates outcomes from each approach towards space use assessment.

This methodological approach aimed at identifying and assessing the adaptability condition of the school building and has already been applied to other case studies with different typological matrices[4]. For this case study, the application of the methodology focused on concluding whether a modernist typological spatial structure can accommodate current pedagogical practices.

Hence, the structure of this paper has progressed throughout the application of each of the three milestones proposed by the methodology, in which each complements the previous and whose piecemeal outcomes are largely correlated at the last stage, entitled "adaptability retrieval".

Specifically, the *description of the spatial sample* analyses the spatial structure on which the teaching/learning process occurs, by means of a space syntax approach.

Subsequently, a *description of activity-space allocations* is undertaken to conclude whether the overall space's physical provision enables the activity allocation of the wide learning contexts considered nowadays. This is pursued by an analytical approach to space and use, by means of a feasibility matrix that pairs the school spaces with the activities they current hold. This leads to conclusions on the current allocation of the learning activities on the school, but could be developed even further, by proposing a feasibility matrix that maximises the "number of biunivocal corresponding matches between the sets of activities {ai} and spaces{ej}"[5] (Krüger, 1981, p. 1171), thus, taking full advantage of the allocational potential of the school's spaces.

A third milestone of this methodology consists on the *description of events and experience*, which comprises a qualitative approach to space use, by resorting to walkthroughs, observations of actual spatial occupancy, and the recollection of testimonies of the school community, for concluding on the effective spatial usage of the sample, analysed *per se* on stage one.

Finally, the *adaptability retrieval* triangulates information conveyed from both quantitative and qualitative outcomes, in order to provide a more thorough conclusion on: firstly, the adaptability potential of the school; secondly, whether there is an overall correlation between the spatial structure's potential and its effective occupancy; and thirdly, what can be proposed to enable a wider spatial adaptability towards contemporary learning practices.

Ultimately, the outputs presented can be both insightful as a theoretical research applied to a modernist case study, and can also inform the practice on this building's potential future rehabilitation according to the current pedagogical outlook. Furthermore, the methodology here presented is also acknowledged as a more general theoretical development, as well as an operative means of space use analysis that can be applied to other case studies of diverse typological structure in order to provide an analogous analysis on their adaptive reuse potential, or for future comparison between spatial school typologies on this behalf.

Acknowledgments

We kindly acknowledge all the community of José Falcão School: direction, teachers, staff and students, who have provided us with all the materials and a deep insight on both the school physical structure and the living and learning experience within. The photos from the author's archive have been taken with the support of Francisca Biscaia and Ana Bagulho, to whom we kindly thank.

1 → “[…] schools are both physical spaces and communities of educational and social practices. The relationship of these two aspects of school are vital for its success and are foundational for developing interdisciplinary understandings of school design.” (Woolner, 2015, p. 10).
2 → See also “participant-led tour of the school” (Duarte, Veloso, Marques and Sebastião, 2014, p. 15).
3 → Originally published in the Harvard Educational Review, Vol. 39, No. 4, 1969 and consulted in the reprint edition included in: Coates, G. (Ed.) (1974). Alternative learning environments. (pp. 96–108). Stroudsburg, Pa: Dowden, Hutchinson & Ross.
4 → For further reading on this methodology see: Coelho, C. (2017). Life within architecture from design process to space use. Adaptability in school buildings today – A methodological approach. PhD Thesis in Architecture. Departamento de Arquitetura da Faculdade de Ciências e Tecnologia. Universidade de Coimbra.
5 → Free translation of the original quote in Portuguese.

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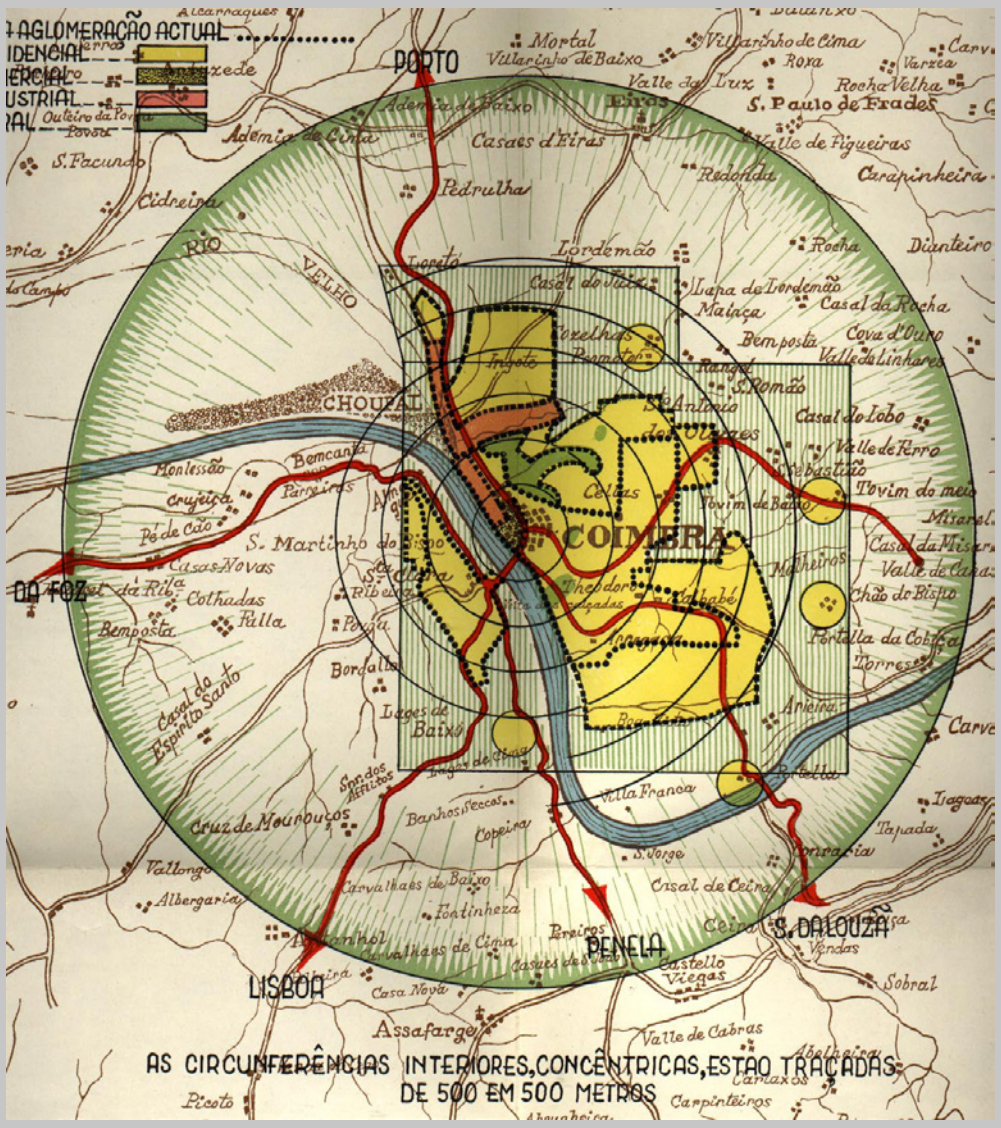
EXTINCTION

EXHIBITION

Exhibition

2nd Reuse of Modernist Buildings Workshop

Coimbra Modern City today: from functional buildings to community spaces



EXHIBITION

After the 1st RMB Student Workshop 2017 in the region of Marl (Germany), the 2nd edition worked in Coimbra, a historical university city in the centre of Portugal. In April 2018, the Reuse of Modernist Buildings (RMB) project, financed by ERASMUS+, organized the 2nd RMB Workshop to rethink the urban areas developed according to the De Groer Urban Plan of 1940.

De Groer and then Almeida Garrett, in 1955, proposed the expansion of Coimbra urban centre through the creation or consolidation of settlements in the first or second ring of the existing city. In this sense, Coimbra developed four neighbourhoods: 1) industrial activity and social housing in Pedrulha (north), 2) housing and medical services in Celas (east), 3) medium class housing, education and sports in Calhabé (south), 4) housing and third services in Fernão Magalhães avenue (west).

These modern plans established in 1940s and 1950s were built by a functional architecture for industrial, housing, educational and medical buildings and for complexes to install the third sector services. These architectures and public spaces sre either outdated, abandoned or in bad condition, or even in ruins, due to the political, economic, and social changes. More and more, it is needed that most of these housing, educational and industrial project typologies be reevaluated, in order to understand its capacity to be adapted to current demands, needs and aspirations of the people, from neighbours to institutions.

For this workshop a total of 40 Master students were selected, eight from each university, to form five different working groups. Each group was constituted by students from the five partner universities of RMB project and tutors that supported the team work. Each international team worked on a specific architectural typology and had a tutor from Coimbra, a second from one of the four other universities and one more from another field such as art photgraphy (José Maças de Carvalho), anthropology (Sandra Xavier) and sociology (Paulo Peixoto).

Workshop Themes

Fernão Magalhães Neighbourhood – urban block and avenue
SAAL Neighbourhood (Pedrulha) – community areas for SAAL Relvinha
Pediatric Hospital (Celas) – facilities for Ano Zero Art Bienal 2018
SOLUM Neighbourhood (Calhabé) – design the missing link –
"Fourth" Tower
Norton de Matos Neighbourhood (Calhabé) – community school

Organisation Team

Paulo Providência, Gonçalo Canto Moniz, Michel Melenhorst (Coord.),

José António Bandeirinha, José Fernando Gonçalves, Sandra Xavier, Paulo Peixoto,

Carolina Ferreira, Daniela Amaro, Noémi Loureiro, Mónica Oliveira

Maria Rita Veiga, Carolina Matos, Laura F. Gaspar, Marian Pereira, Rafaela Albuquerque, João Dias, Ivan Brito, Gonçalo Santos, Ines Cavadas, Ana Luisa Graça, António Moreno (technical support)

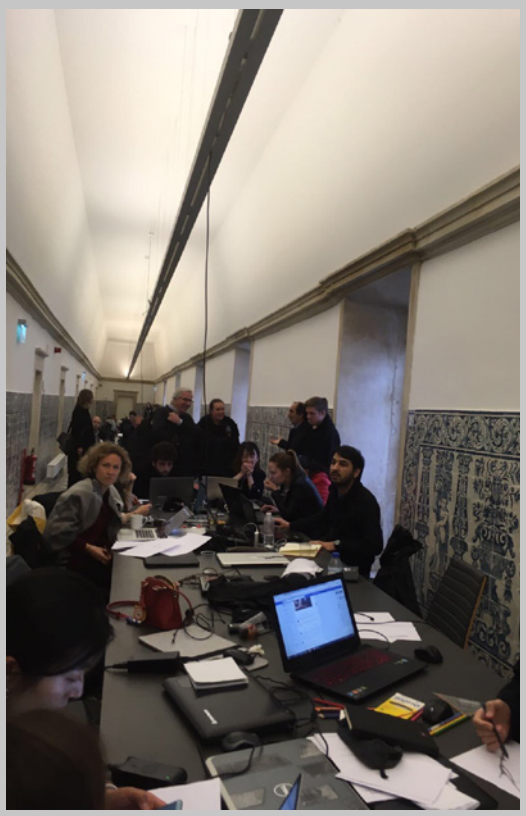
RMB Partners

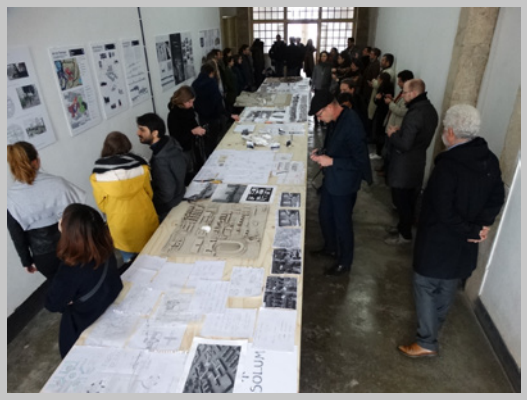
Universiteit Antwerpen (Belgium)
Universidade de Coimbra (Portugal)
Universidade de Lisboa – Instituto Superior Técnico (Portugal)
Istanbul Teknik Universitesi (Turky)
Hochschule Ostwestfalen-Lippe (Germany)
Docomomo International (Portugal)
The Energy and Resources Institute, TERI (India)

Support

Centre for Social Studies
Anozero
Exército
Delta
Sanitana

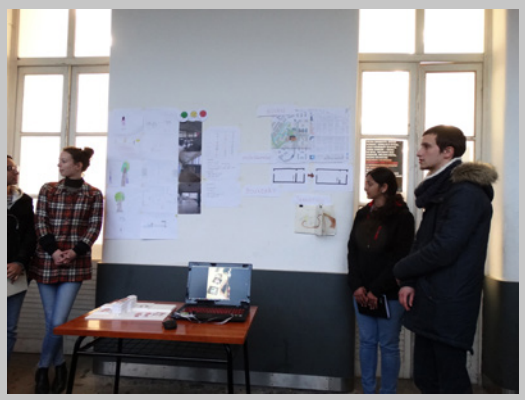
EXHIBITION





EXHIBITION


LAYER
CONNECTION



EXHIBITION

Reconnecting the modern urban plan

Fernão de Magalhães Avenue

Tutors

Francisco Teixeira Bastos (IST), Paulo Providência (UC)

Students

Manuel Alves de Campos (IST), João Dias (UC), Omkar Bhagwat (HOL), Ilayda Memiş (ITU), Kelly Pauwels (UA), Elaine Keet (UA), Mirian Pereira (UC), Anna Wisse (UA), Lara Schothors (UA)

Introduction

The idiosyncrasy of this theme of the RMB Workshop (Reuse of Modern Buildings) is in the focus of looking at *the architecture of the city*. The case study of Fernão Magalhães Avenue questions the design of a *lost modernity*, the partially constructed project for the Avenue by the architect Alberto Pessoa.

To intervene on this avenue, it was important first to realize how its present state fulfilled the city's desire enunciated in the original project, and secondly, what degree of inertia would that desire have in responding to the change to contemporary urban paradigms.

This fact triggered the need to identify what desire this would have been: a perfect vision of *modern city*. The ideas of urban design and of the constructive systems enunciated by the modern movement allowed distinct typologies of the antecedents and made the public space protagonist. Creating spaces with a wide urban profile, crossing, traffic, pedestrian circulation covered by buildings that are released from the ground in *pilotis*, allowed to free the pawn from the constraints of the unhealthy and monotonous corridor.

In the present case, Alberto Pessoa contrasted with the urban intentions of a restraint at the source (following the expansion line of Sofia and Figueira da Foz Streets), a transparency towards the west, towards the river Mondego, bringing other pedestrian complexities to the rectilinear path.

The realization of the plan, carried out by others, betrayed the initial intentions of the ground occupation of the volumetric suspension. The resulting space for the west, is a set of *cul-de-sac* enlargements, uncharacterized and without solutions of spatial continuity. To the east side, an ambitious model of an urban block that matched housing, services, and commerce, has never solved the high platform that would allow the collective spaces of housing, and the continuity of the south plan, in times of furious postmodernism, caricatured the modern dash.

As a working method, it was intended to put into dialogue the readings that the urban wanderer, the citizen, makes of urban space, between the current state and the initial aspiration. We explored an interview method that relies on the image as a means of elicitation, having elaborated a series of photographic assemblages of the elevations of the two street fronts in order to characterize the sets, allowing visual perception of the continuities and breaks on each side of the avenue. These images evidenced the result of land, commercial

and speculative pressures, most of which were expressed by the uncritical preservation of preexistences and embodiments loose objects, leading to a disordered image in time, scale, size, language and weak correspondence to urban structure.

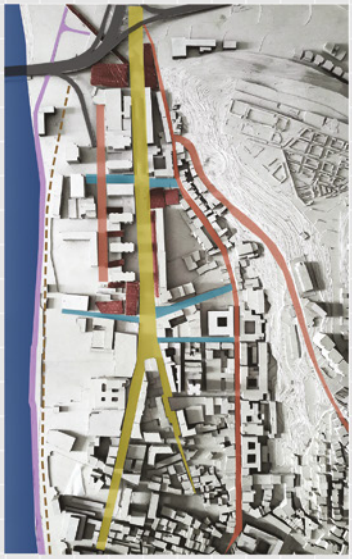
The proposal's strategy focused on the search for a *reality statement* to intervention by means of the definition of a temporal starting point. The project proposes, as a basis of work, a plan elaborated by Eduardo Souto Moura for a new surface metro line, in a new avenue between the riverside walk *City of Aeminium*, and the avenue Fernão Magalhães, injecting life in it and avoiding what would always be as the *Backs* of the riverside avenue, reinforcing the main north entrance in Coimbra.

The surrounding boundaries were worked in order to re-signify the core of the Av. Fernão Magalhães. Connections are made by drilling the basement of the building's spring band, taking advantage of the existing portico system. Connections are opened to this new avenue, which becomes main entrance ways, introducing transverse flows between the river and the avenue. These cuts cause a reflection in the edged western band, where the empty space between buildings has greater expression, completing the composition. It accentuates the entrance in the city with the score of new blocks at the beginning of the avenue. The modern geometric and formal lexicon is used as a *mote of composition* for the new environments of the avenue. It proposes a wooded and garden area between the avenue and the river.

This search for identity bets on the clarification and qualification of the public space. The spaces are humanized, and life and joy are enhanced in their enjoyment. Together, the interventions boost the dynamization of the avenue Fernão de Magalhães, seeking a frank integration in the city.

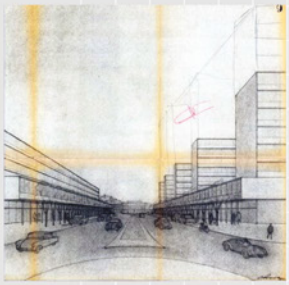
analysis

Existing Green Spaces

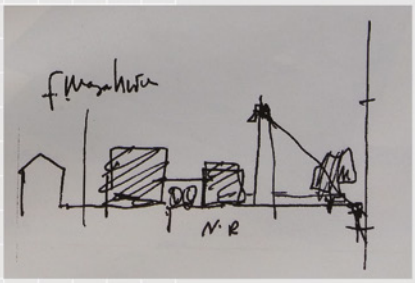


Road Connectivity

Open and Built Space



Visualisation of Av. Fernão Magalhães, Arq. Alberto Pessoa



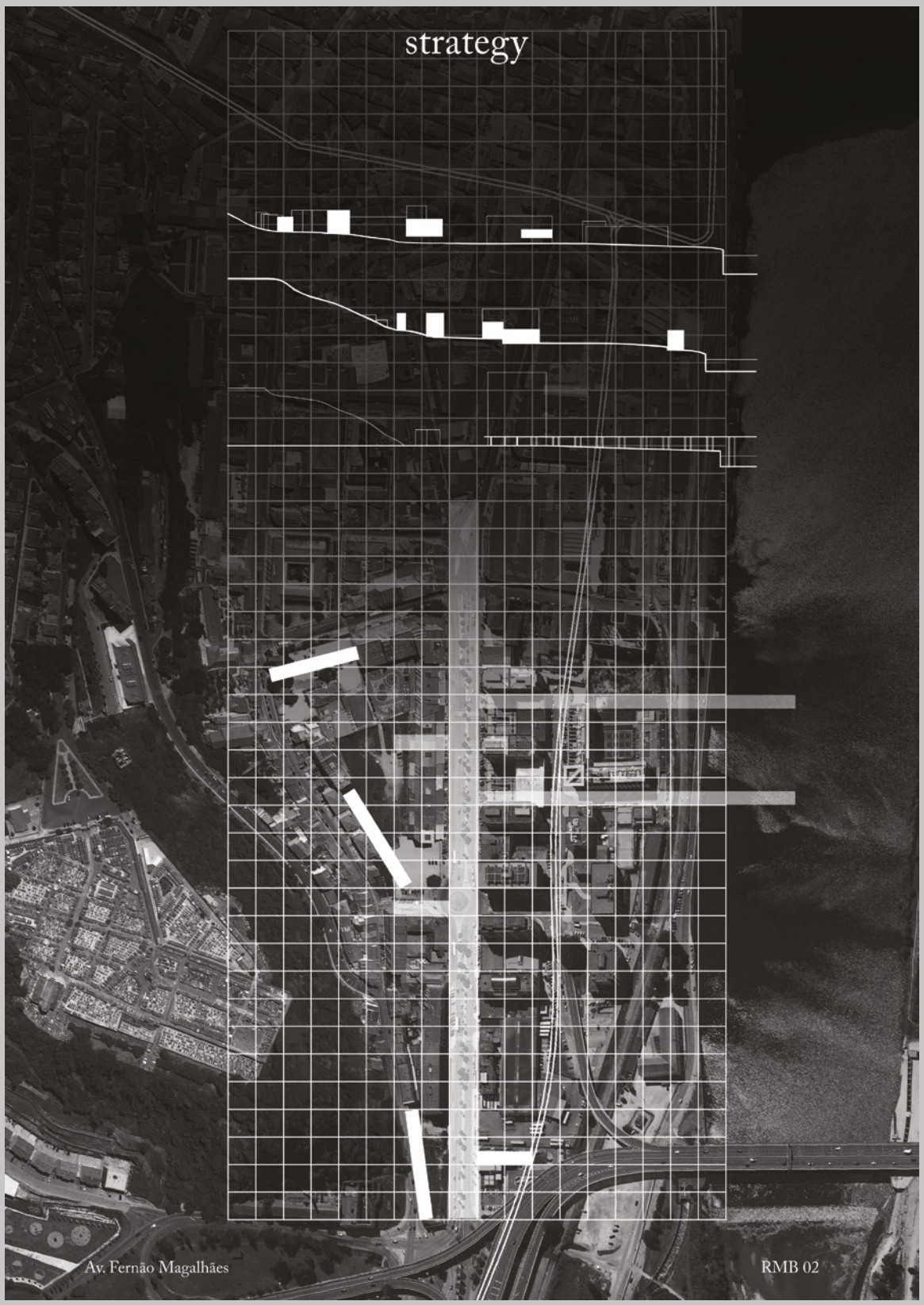
Section sketch Av. Fernão Magalhães, Arq Eduardo Souto de Moura

Throws the river, Street facade

Throws the hill, Street facade

Av. Fernão Magalhães

RMB 01



EXPLORATION

proposal

public space

identity

joy

Av. Fernão Magalhães

RMB 03

RELVINHA
Relvinha Neighbourhood

Tutors
Carolina Coelho, Els De Voos, José António Bandeirinha

Students
Pavel Furtsev (HSOWL), Sena Basgül (ITU), Hatice Yasemin Çakir (ITU), Lucas Nepomuceno (IST), Inês Cavadas (UC), Maria Rita Veiga (UC), Nathalie Casteels (UA), Pieternel Van Steenbrugge (UA)

Relvinha is a peripheral neighbourhood of Coimbra. It was a slum until the rise of Democracy in Portugal, in 1974, when it became part of a national rehabilitation process of slums, the SAAL process. This was an exemplary process, even in an international perspective, in terms of participation of neighbours, because all the options about the project were intensely discussed and all the decisions about the process were taken together. Then new housing begun to be programmed and built in two phases, single row houses from 1975 to 1978 and collective blocks from 1977 to c. 1980. In the surroundings there is an ancient industrial area, with some noteworthy modern factories, some in a process of re-use, some unfortunately still abandoned.

Nowadays since their dwelling needs are completely fulfilled, inhabitants seek for new facilities, such as a cultural meeting centre, which is already going on, and better quality for public space.

So the workshop team faced the challenge of responding to this new kind of inhabitants' needs, working the way they are used to, i. e., discussing the project since the beginning. The students began by visiting the site and understanding its topography, its programmatic uses and spatial arrangement, as well as its urban context. Besides, students became aware of its historical development and its participatory history, by means of a meeting with the actual community of this neighbourhood that welcomed the students and explained them their history, their current situation and their most pressing needs.

Students then identified core issues to be answered, namely: the need to design an infrastructure that would connect two levels of the site and that was thought in a cohesive manner with the remaining built space, the inhabitants' urge for a communal space that would address the lack of a centrality, and facilities that would provide for the uses needed by the current inhabitants. Furthermore, their proposal should provide higher urbanity to the neighbourhood, connecting it more tightly with the existing urban fabric, besides understanding the specific social and spatial heritage this neighbourhood comprises from its origin.

The final proposal gathered all these inputs, suggesting additional building and green areas that would resume the existing layout of the single row housing, an infrastructure that would answer functional requirements and that was also conceived as a green area, and a communal core that would provide interior and exterior space, for

reconnecting with the past as well as for providing a contemporary identity. This generated the design of a square defined by a library that consolidated the neighbourhood's limits, a polyvalent building for the inhabitants' social uses and a public space for collective appropriation.

" A population
A generation without HISTORY

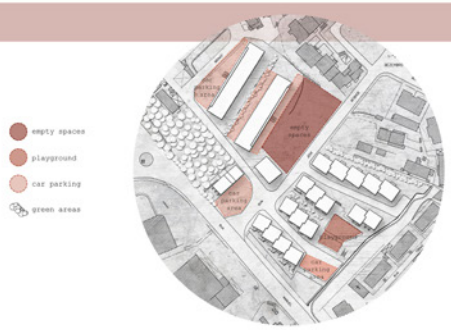
~~MEMORY~~
it is a generation without ~~BEGINNING~~ "
~~FUTURE~~

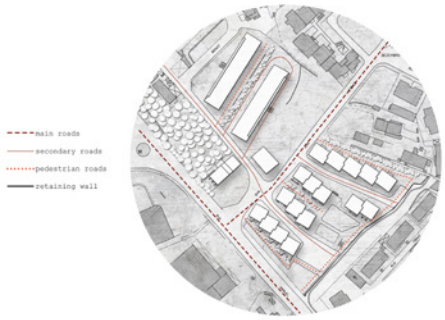
conversation with habitants

"We can't always be stuck in the past
but it shouldn't be forgotten."

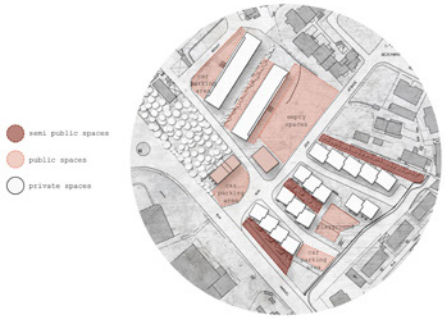
"Keep the fire of our fight alive!"

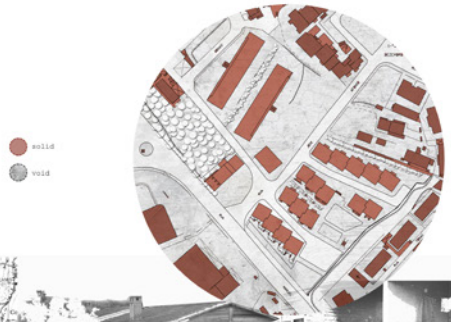
"We want to pass to our
kids and our grandkids
the fight of their fathers"





CURRENT SITUATION





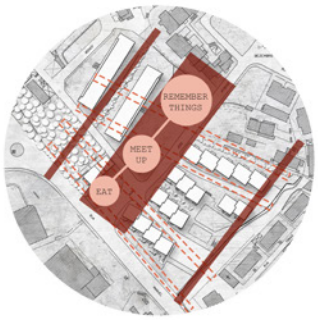
Due to the construction of Fernao Magalhaes Avenue, people are forced to move to Relvinha.

1900s 1950

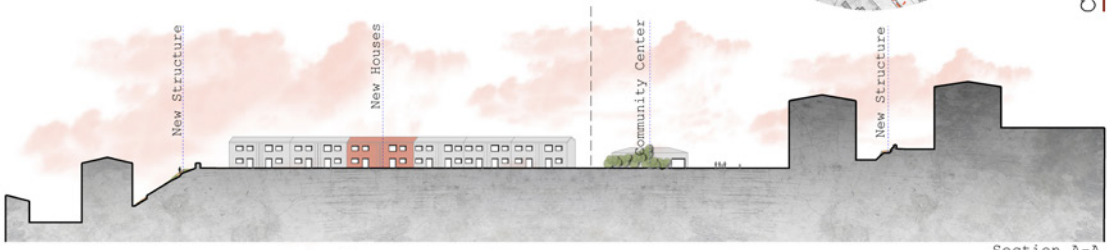
Protests began to strike for supporting the habitants of Relvinha

1964

Layout Plan
Scale:1/1000

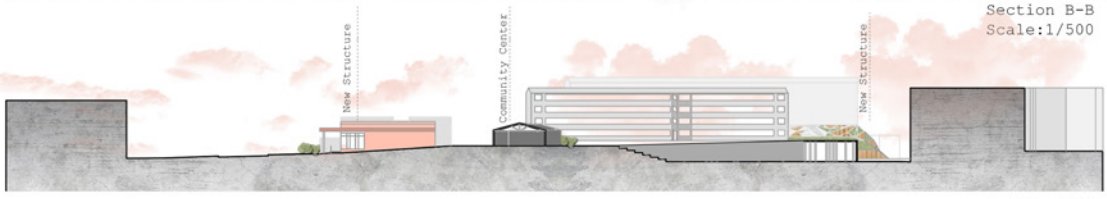


CONCEPT



Section A-A
Scale:1/500

Section B-B
Scale:1/500



Section C-C
Scale:1/500

25th of April - Revolution — 1974

SAAL — constructions started — 1975

2nd part of construction — 1980 1982

EXHIBITION

Pavel Furtsev (HSOWL)
Sena Basgül (ITU)
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Lucas Nepomuceno (IST)
Inês Cavadas (UC)
Maria Rita Veiga (UC)
Nathalie Casteels (UA)
Pieternel Van Steenbrugge (UA)

COMMUNITIY

MEMORIES

WORKING

IDENTITY

COLLECTIVITY

POLYVALENT

CENTRALITY

YOUNG&OLD

MUSEUM

EDUCATION

ATMOSPHERE

PARTICIPATION

SOCIAL SPOT

VISUALISATION

future

community weaken - decrase in numbers of habitants - unefficient public spaces

community center project

2003

2018

Art as Therapy: From Coimbra Pediatric Hospital to ANOZERO Art Biennale

Pediatric Hospital
Norton de Matos School

Tutors
Carlos Antunes (UC), Michel Melenhorst (HOL)

Students:
Arbi Sinoimeri (HOL), Cagdas Kaya (ITU), Denise Zwanenberg (UA), Helena Bossolan (UC), Huulya Yavas (ITU), Rafaela Albuquerque (UC), Sérgio Costa (IST), Shuangning Wei (HOL)

Introduction

> 'I speak of a complex and contradictory architecture based on the richness and ambiguity of modern experience, including that experience which is inherent in art' or ; 'I welcome the problems and exploit the uncertainties'; I like elements which are hybrid rather than "pure", compromising rather than "clean"; 'accommodating rather than excluding'; 'I am for messy vitality over obvious unity;' I prefer "both-and" to "either-or", black and white, and sometimes grey, to black or white'[1]

These are just a few quotes from Robert Venturi's Complexity and Contradiction in Architecture, they express clearly what he likes in architecture. He would probably also have very much liked the Pediatrico, the former Children's Hospital in Coimbra for it has all these aspects of complexity and contradiction in it. Around and in its centuries-old core, a former monastery, in numerous extensions it collected layers of time, adding, covering and intersecting with previous constructions. As with the building, also the context of the building changed over time. The Hospital itself and the adjacent church, both build in a walled garden, originally outside of the old city of Coimbra, became part of Coimbra's modern extension, a hortus conclused in the densified city.

In the RMB workshop, the students kept in spirit with this history of the site and buildings. They were not trying to favourite one period of the buildings history above the other, were not trying to clean. Instead of cleaning up by removing traces and layers, they brought clarity and new meaning by adding new layers instead to achieve one main goal: opening up the building and its garden to the city. They made new connections between building, it's garden and the city. They found ways to re-use the building, to read it and experience it in a new way, thus preparing it for its future role as a seat for the Coimbra Ano Zero Art Biennale.

1 → 'Complexity and Contradiction changed how we look at, think and talk about architecture' 22 December, 2016 By Martino Stierli in https://www.architectural-review.com/essays/reviews/complexity-and-contradiction-changed-how-we-look-at-think-and-talk-about-architecture/10015872.article 29.10.2018

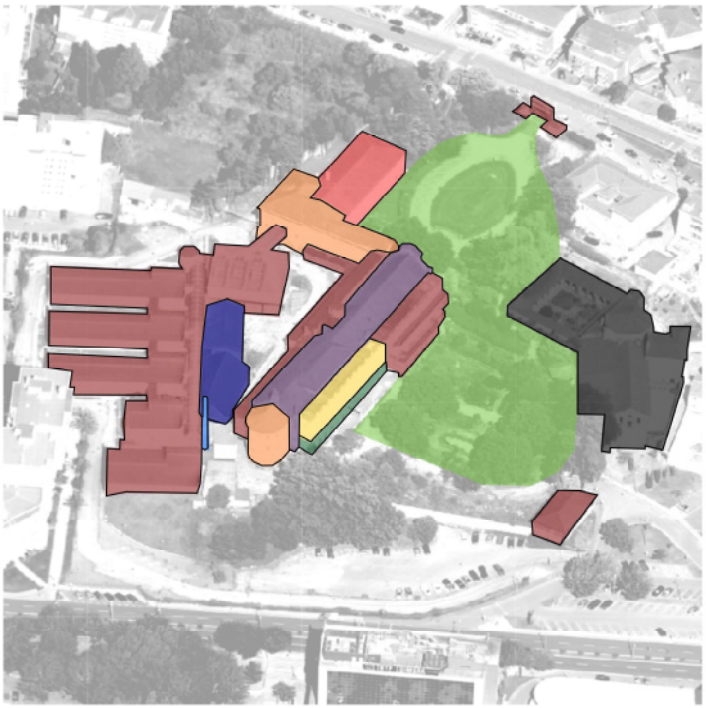
Art as Therapy

From Coimbra Pediatric Hospital to ANØZERØ Art Biennale

The Building's History 1

The bulding'surroundings

- Former Pediatric Hospital
- Hotel
- School Facilities
- Medical Facilities
- Residential Areas
- Road Network
- Parking



The bulding's history

XIII to XVII Centuries
Original Celas Monastery

1612
New Dormitory for the Monastery

1892
Assylum for the Disabled and the Blind: dining hall

1912
Minor improvements: kiln

1929
Women's Sanatorium: ground floor verandas´for sunbathing

1931
Classical-styled landscaping

1934
Upper floor verandas

1958
Semi-circular apsis and Children's Ward

1962
Children's Ward extension

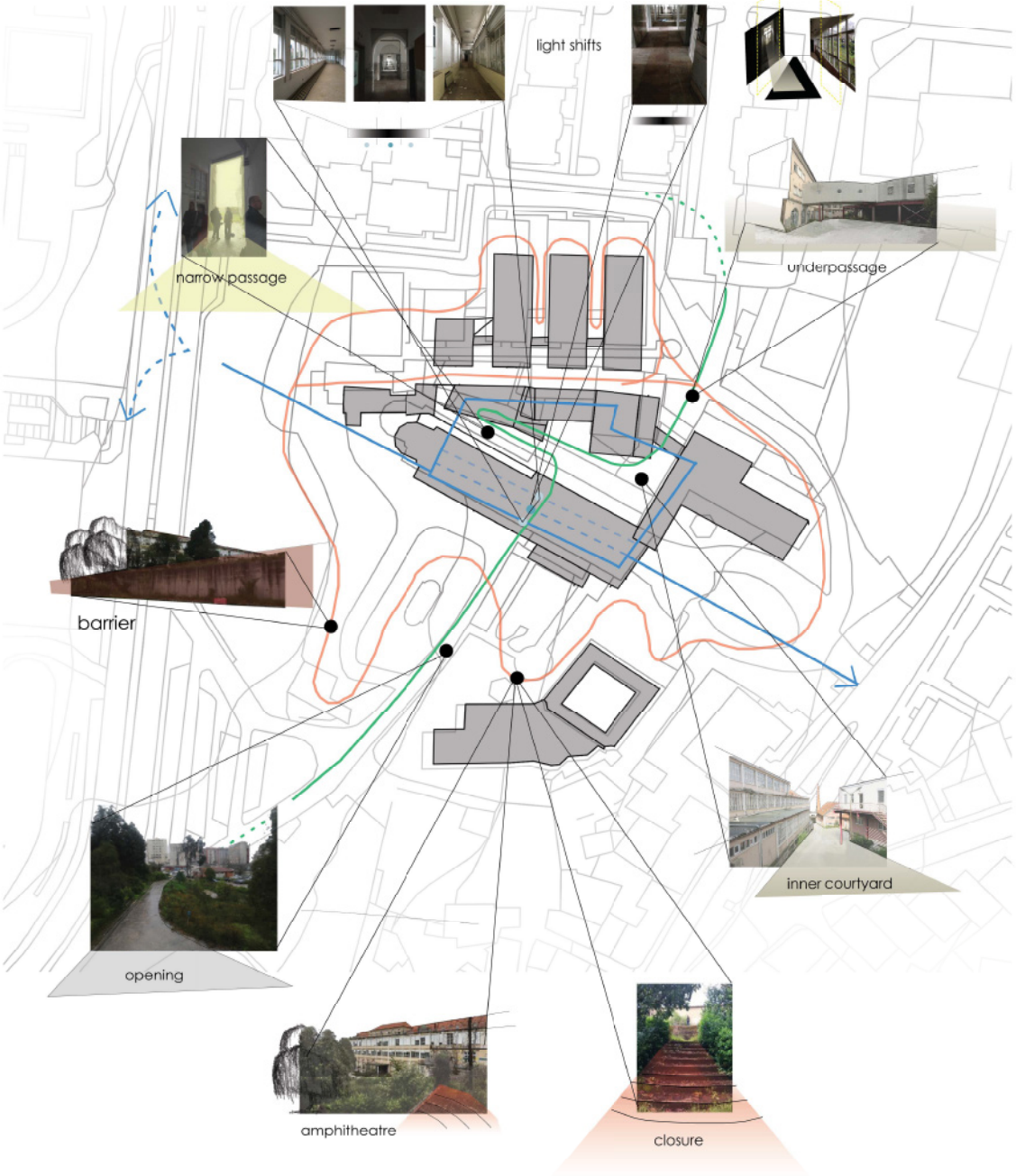
1970-1977
Conversion to Pediatric Hospital

An RMB Coimbra 2018 Project by: Arbi Sinoimeri, HOL I Cagdas Kaya, ITÜ I Denise Zwanenberg, UA I Helena Bossolan, UC I Hülya Yavas, ITÜ I Rafaela Albuquerque, UC I Sérgio Costa, IST I Shuangning Wei, HOL

Art as Therapy

From Coimbra Pediatric Hospital to ANØZERØ Art Biennale

The Site Analysis 2

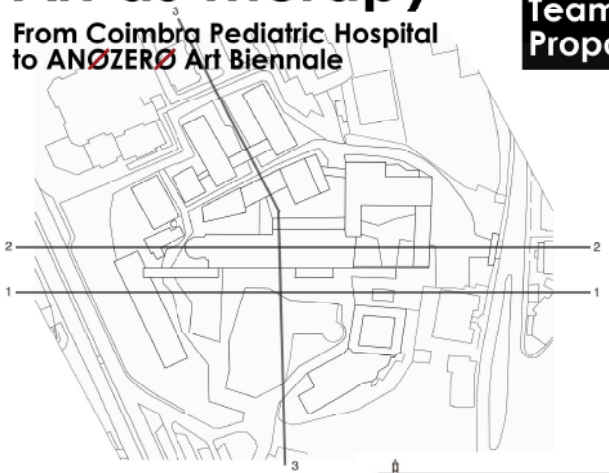


An RMB COimbra 2018 Project by: Arbi Sinoimeri, HOL I Cagdas Kaya, ITÜ I Denise Zwanenberg, UA I Helena Bossolan, UC I Hüulyo Yavas, ITÜ I Rafaela Albuquerque, UC I Sérgio Costa, IST I Shuangning Wei, HOL

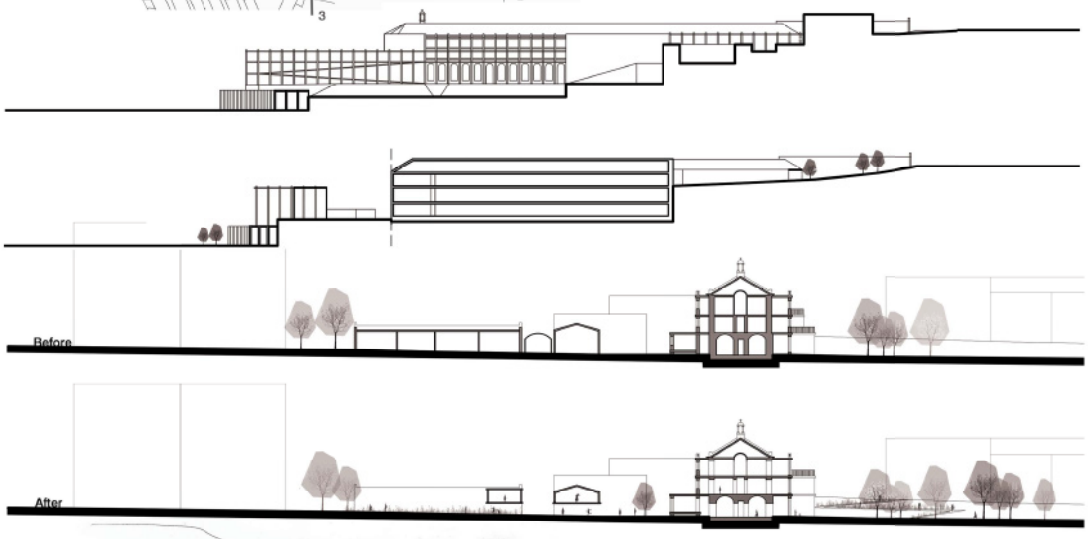
Art as Therapy

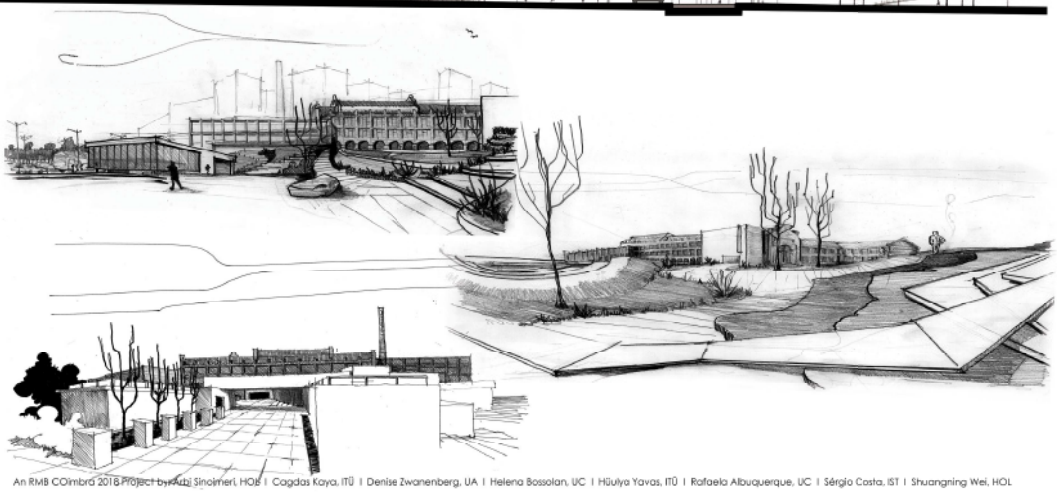
From Coimbra Pediatric Hospital to ANØZERØ Art Biennale

The Team's Proposal 3



Following concepts of connection and circulation, the strategy for this intervention on Coimbra's former pediatric hospital stands on creating the pathways that welcome the city into the precinct. On the outrside, the landscape is renovated as a 'healing garden'. Over that, the building's iconic gallery is extended in new materialities and volumes across the property so as to use the edifice itself as city connector.





An RMB COimbra 2018 Project by Atti Sinolmeri, HOL | Cagdas Kaya, ITÜ | Denise Zwanenberg, UA | Helena Bossolan, UC | Hülya Yavas, ITÜ | Rafaela Albuquerque, UC | Sérgio Costa, IST | Shuangning Wei, HOL

Missing Link

Solum Neighbourhood (Calhabé)

“Fourth” Tower

Tutors

Ecem Edis (ITU), José Fernando Gonçalves (UC), Paul Wauters (UA)

Students

Allesandro Grossi (HOL), Alex Noels (UA), Ellen Mollen (UA), Enes Serdar Yaltir (ITU), Jana De Borger (UA), Sofie Dascotte (UA), Veronika Phadtare (HOL), Yang Yang (HOL)

Introduction

In the context of the expansion and modernization of the urban structure of Coimbra, in 1955, the "Plano regulador da cidade de Coimbra" was set up and in its context the "Plan of the residential unit of Calhabé", both carried out by Antão de Almeida Garrett. Although modern urban plans do not have a great expression in Portugal, this plan presents a formal solution that replicates the principles of the Athens Charter, namely the creation of a "neighborhood unit" characterized by high-rise housing blocks set in a garden.

From 1956 on, the first study of one of the sectors of this plan was promoted by SOLUM, which only acquired its final design in 1962 (Rogério Alvarez Arq. And Castro Pita Eng.). The buildings constructed in their sequence will be designed by Rogério Alvarez, Melo and Matos and Carlos de Almeida at the end of the decade and the beginning of the next.

At one of the central points of this plan, which results from the intersection of two crossing streets of the neighborhood, a housing tower is proposed in each of the three adjacent lots. The fourth batch, already occupied by an educational institution, was not integrated into the process of modernization of the area, generating an incomplete urban process perception.

It is precisely this challenge that is proposed to the students:

1 — how to think the re-use of the modern city through the (re) qualification of its buildings and urban spaces?
2 — Does the design of the fourth tower make sense as a process to complete a urban plan that has never been completed and with it to create the dynamics of transformation of a place?

When researching the context and the current situation, the students decided at an early stage of the process to propose alternative solutions to the many difficulties instead of thinking about a design for this fourth missing tower. They discovered that the original modernist ambitions that form the basis of the design for this site are under great pressure in the current reality.

The busy traffic situation, the unrestrained parking pressure, the fencing of the open green areas around the buildings and the appropriation for private use of the public space are in direct opposition to the modernist principles to allocate the open space for communal use.

Instead of building a fourth tower on the terrain that was planned for it, they wanted to offer a concept that solves the parking problems for the residents and visitors in a sustainable way, providing a departure and arrival point for public transport and bicycle storage. By building partly underground and providing a faint green sloping roof, they make an expansion of the green public space that connects the campus of the nearest university buildings and the neighbourhood of the three towers.

Finally, the 'Missing link' want to provide a scenario for a long-term vision on the further sustainable development of the neighbourhood indicating this proposal as an intelligent answer for this interesting architectural issue.

Research

Portugal - Coimbra - Solum Area

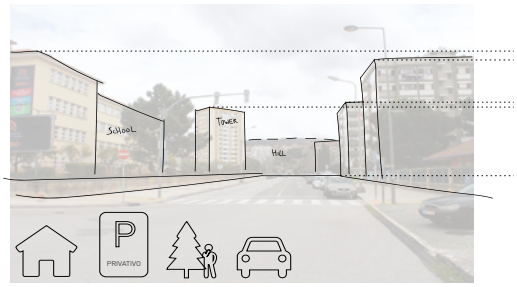
An exemplary modernist district in the heart of Portugal

The District of Solum is located in the Southeastern extension of the de Groër Plan in Coimbra, Portugal, also called the Calhabé Zone later on. The initiative to realise a modernist neighbourhood came from one of the landowners, Dr. Fernando Luís Mendes Silva, who associated the owners and presented a proposal for the revision of the Urbanisation Plan of the Residential Unit – Plano de Urbanização da Unidade Residencial – of Calhabé in November 1962. The plan drawn up defines new objectives and contents in the urban planning of a large area, and is an example of the application of Athens Charter principles. This neighbourhood, among equals in the country, is a source of inspiration that proves to be a successful example of modernist doctrines applied to intervention sites, not as static stylistic models that repeat themselves blindly, but as a method that establishes new relationships between form, content and location. Nevertheless, the realisation was subordinate to the urban policies that were in force, referring to the car routes, location of the complementary equipment to be built and their boundaries, and the programmatic contraints of the plan implemented by Antão de Almeida Garrett, Etienne de Groër's successor in city planning.

The urban planning was intended to guarantee a greater humanisation of the housing environments, a self-sufficiency of each residential district with respect to commercial, leisure, schools, in order to guarantee to the inhabitants a daily life of their own. In fact it should be noted that the residential district of Calhabé already had some of this facilities at the time it was accomplished, such as the Municipal Stadium, the Infanta Maria school, the Magistério Primário school, the Avelar Brotero school and the Sao José church. The Solum district has privileged physical characteristics due to the gentle north-south slope that favors solar exposure, as well as the presence of these important collective facilities mentioned above, that complement the housing area, and are today extended with a shopping centre and a sports centre.

The Charter of Athens described the functional logic that zonifies the city by functions: to inhabit, to work, to leisure and to circulate, determining a singular urban conception where "the housing districts occupy the best locations, taking advantage of the topography, having the most favorable sun exposure, and opportune green surfaces".

The proposal presented through a plan and model clearly shows a planning based on these principles. The buildings were placed on a large expanse of green without barriers or walls, suggesting a free layout, independent of the subdivision of the territory, favouring the sun exposure, the distance between buildings, the accesses and the privileged location points. The roadways are strict orthogonal axes, independent of the buildings, hierarchised by different types of circulation: passing pedestrians and cars, access to the building, to the garage, to a shop or other facility. The buildings are presented in the design model with the ground floor recessed from the plane of the facade, so it is assumed that it is the intention of the designer to suspend the buildings on pilotis, with different heights corresponding to the different social classes, separating the functions by buildings: shops, garages, social institutions and corporate bodies. The different typologies of volumes presuppose the existence of groups of buildings with the same typology of combination of housing units, that is, there are different groups of buildings with the same structure of housing units that are related in the same way to the urban space. The resulting interstitial public urban spaces were composed of landscaped green areas, car parks and access to housing units within the blocks and suggested to act as "extension of housing" and also contribute to the articulation between the different directions of deployment of the buildings.

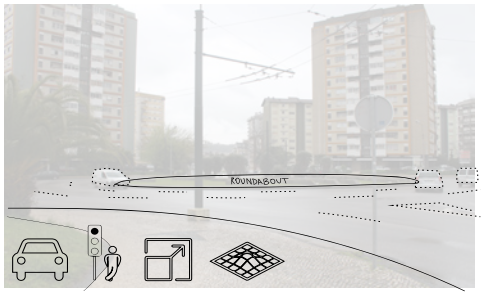


residential area - A missing fourth tower?

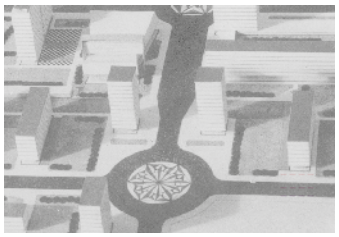
"You should't be here because its private."

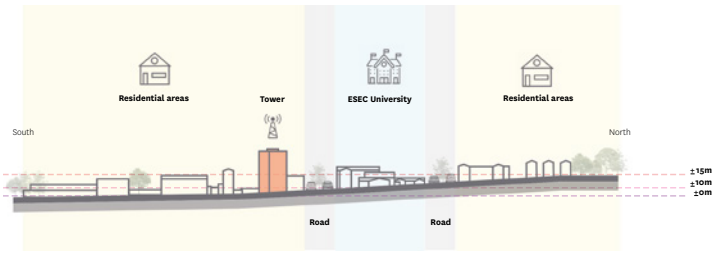
public facilities - opening up the area?

"Did you ask permission to be here?"



(road) **infrastructure** - shifting the usage?





An analysis by

Alessandro Grossi - Alex Noels - Ellen Mollen - Enes Serdar Yaltır - Jana De Borger - Sofie Dascotte - Veronika Phadtare - Yang Yang

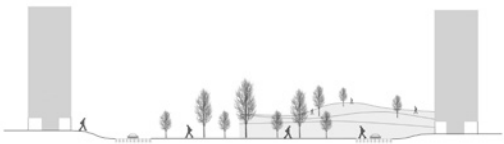
Design

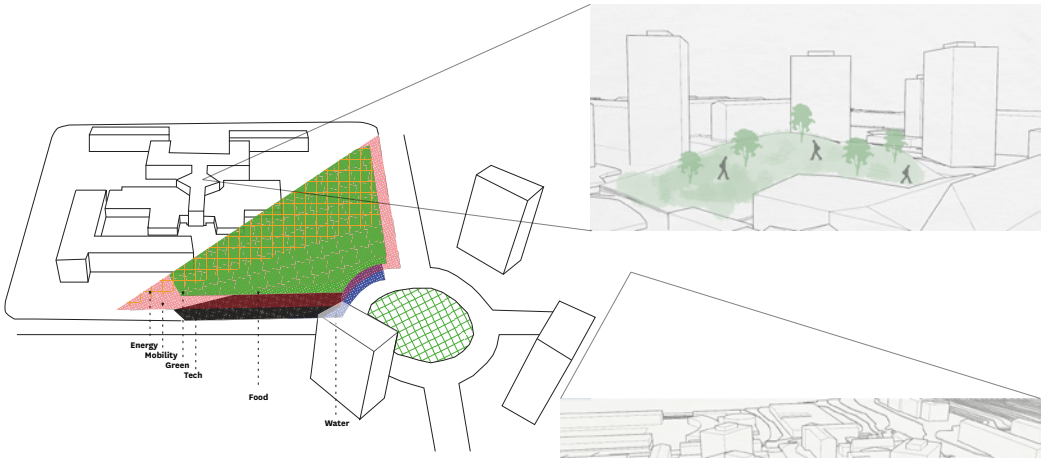
Negative

A negative visualisation of our area, shows how much open space there is in between the buildings. In reality almost no part of the area is public space. It is all privitised by the inhabitants of the building. What if we have the freedom to look at the space as a public area. Then there's the negative aspect that becomes an advantage of the area.

From open to restricted access modernism

Today cars rule the space between the buildings, once supposed to be green landscaped community space. This causes an inactive urban situation, in extremer terms a "dead spot". Residents lay hold on the outside space around the buildings as an automatically acquired property right. On the fourth quadrant of the roundabout, the urban issues are rather different. There is no connection between the residential area and the ESEC university, as was envisioned by the modernist city planners. A wall and fence border the school and its buildings are oriented to the centre of the building block. The university claims to be self-sustaining in a way it does not need facilities outside its campus. Parking spaces are provided for its professors, while students, who mostly live nearby, pay parking fees in the shopping centre. This towering mobility problem has its root in the lack of efficient public transport and entrenched habits.





A concept by

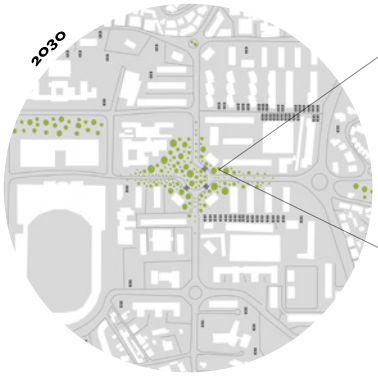
Alessandro Grossi - Alex Noels - Ellen Mollen - Enes Serdar Yaltır - Jana De Borger - Sofie Dascotte - Veronika Phadtare - Yang Yang

Vision

Making the city ready for the future

By participatory activities starting to create a feeling of community

"University shows the area the potential of a future"



The line between private and public spaces will be gone, creating a collective space which can be used by everyone.

"The campus becomes the hearth of the sustainable city center"

A urban campus can spread ideas, lifestile and improvements trough its citiy

A future by

Alessandro Grossi - Alex Noels - Ellen Mollen - Enes Serdar Yaltır - Jana De Borger - Sofie Dascotte - Veronika Phadtare - Yang Yang

Knowledge without bounderies

Norton de Matos School

Tutors

Ana Goes Monteiro (UNICAMP), Gonçalo Canto Moniz (UC)

Students

Gizem Mentese (ITU). Ivan Brito (UC), Jameele Eranpurwula (UA), Monika Tylutka (UC), Ruby Ingwersen (UA), Tildem Kırtak (ITU)

Introduction

Norton de Matos School is nowadays a unique facility in the urban grid of the Norton de Matos Neighbourhood, in Coimbra. Located on the top of a the avenue, it is, without any doubt, an important nodal point. Although, with the ageing of the resident population in its surroundings, the number of students has been continually decreasing.

In this context, the challenge proposed to the students was to consider the Norton de Matos School as an urban facility capable of establishing the articulation between different parts of the neighbourhood, and as so, making the urban transformation that is necessary. Transforming it in an open school, opened to the community, so it can fulfil again is nodal role, and with mixed programs, identifying itself as a singular object in a defining axis, is in the base of thought.

The project aimed to be the more participative as possible, facing the needs of the population, students and teachers. Therefore, visits to the School and the neighbourhood were performed in order to understand the building and the urban environment. The first idea was to work the relation between the school and Vasco da Gama street. In the next day, the team visited the school again. This time, to realize a series of activities with the students, children of 8 years old, which come from very different social realities. The first question made was: What would you change in your school? The answer was almost unanimous: we would reform the spaces related to leisure and sports.

The team of students could then realize a deeper diagnostic and identify the risen opportunities: school as a referential point; the existence of an open space; the use of school spaces by the citizens during the school counter-periods of classes. With these thoughts, the team could initiate the design proposal, where they prioritized the public space; the security of children; the leisure areas required by them; different scales for use by children and adults; the combination between public spaces, semi-public and of restrict usage to the School Norton de Matos community.

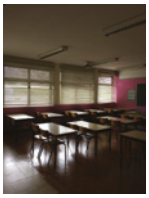
The walls, which usually, were seen as urban barriers, were in this case the boosters of the proposal, and upon which, the scheme unfold. The school walls define the frontier between the public/private and neighbourhood/school and the project explored the transition of spaces.

Since sport was an early concern to the School users, it had a preponderant role in the design decisions. The proposal made itself use of the altimetrical differences between the several interior levels, to guarantee diverse equipment and several ways of appropriation

of space. Considering that most users of Norton de Matos School are children, the project took in consideration the scale and space relations, that are quite different from adults. The entrance to the schools used as a transition between them. All spaces are (re)think to the children so they can have spaces to play and to stay.

The school, instead of surging in its context as a barrier, transforms itself in the connection point between spaces, instead of closing in itself, passes to belong to the children and to the neighbourhood.




Strengths
- Located at the end of an important street
- Large open space
- Open groundfloor

Weaknesses
- No facilities
- Separated staircase
- High windows in the corridors

Opportunities
- Possible reference point
- Wide space for a playground
- Only used during daytime, not in the evening

Threats
- Different scales for children and adults
- Safety for the children
- Combination of the semi-public school with a public surrounding

1. image elicitation

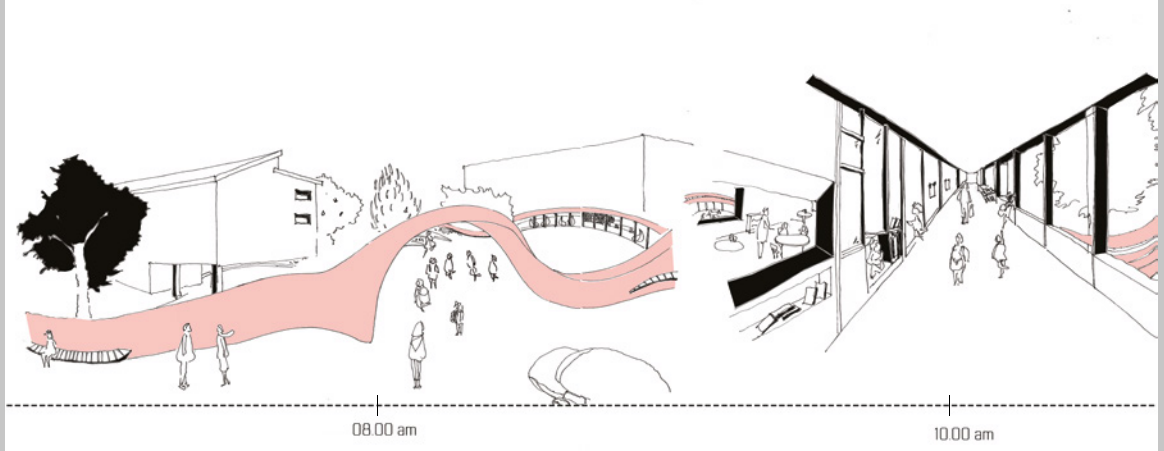
The children were given a model and icons of several activities, so they count point out where they like to do what. Not only did this give us visual data, but it was also a

2. student generated photo´s

Giving the children a camera was a great tool to make us see through their eyes. They were limited to take three pictures of what they like inside and around the building.

3. student generated drawings

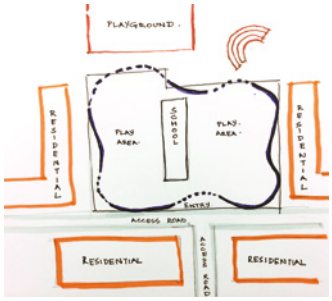
Furthermore, we asked the children to make a drawing of what they do when playing. This way we got a very extensive picture of their favorite acitivies. It was striking that on half of the drawings a football field was

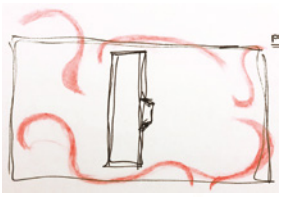


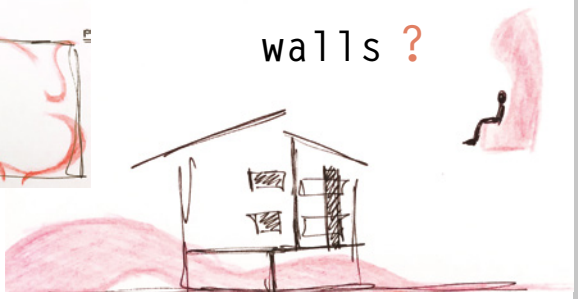
Aldo van Eyck

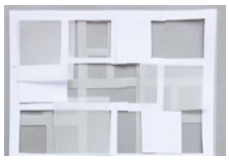
Tezuka Architects

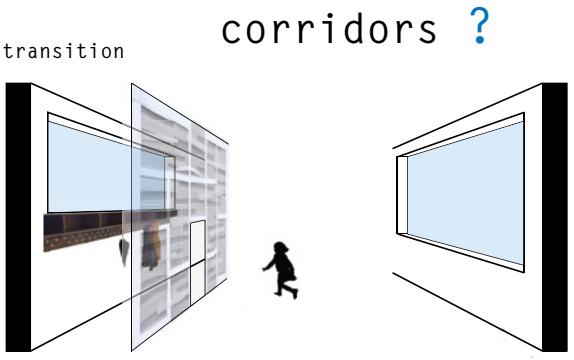
COR Arquitectos

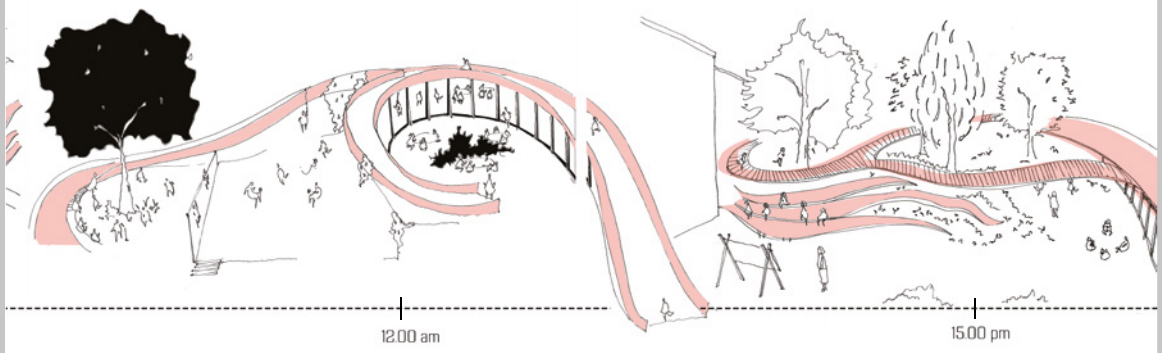


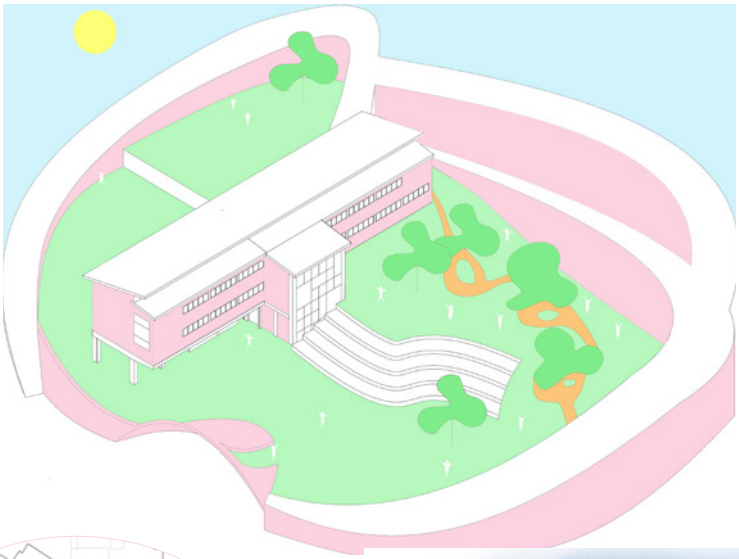






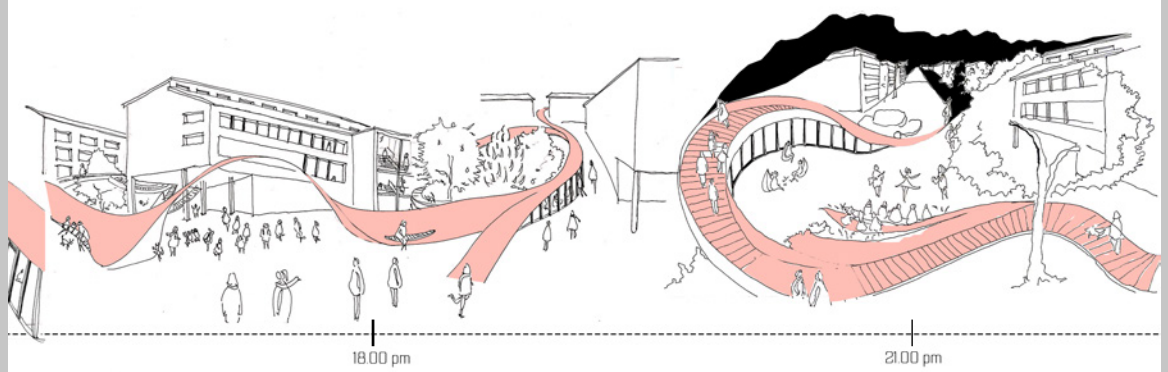






access

> An architects role is not to provide a complete solution, but to provide a spatial framework to be filled in by the users.
>
> *Herman Herzberger*



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