

LEARNING TO REUSE MODERNITY: THE EDUCATIONAL CHALLENGE

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ABSTRACT

After three decades since the founding of DOCOMOMO, education continues to be an essential matter when thinking about the future of modern heritage, but today it requires a critical reflection on the conceptual and methodological changes we need to face in the present context of complexity. Modern Architecture is now crossing a paradigmatic time not only because of its inevitable degradation but because of the impact of these new scenarios that force us to rethink their conservation and reuse, considering both their special constructive condition and specific functionality and the role in the collective memory as recent heritage.

Architectural design education must address these critical issues as a strategic content that anticipates a more appropriate practice. The conservation and the reuse of modern buildings are still out of most schools of architecture. This paper presents three different and complementary didactic experiences developed in Europe and South-America: Mindful design for updating mass housing neighbourhoods (Politecnico di Milano, Italy), Experimental re-design to integrate modern single housing to contemporary life (University of Belgrano, Argentina) and Participatory design to open up a modern school building to the neighbourhood (University of Coimbra, Portugal). They highlight the relevance of confronting the students with issues like history and memory, and their importance even for apparently ordinary buildings, not only for modern iconic monuments. The results also prove the relevance of an interdisciplinary approach and the relevance of the social dimension of conservation, because it implies to deal with the value of modernity for the memory of the community that can be involved in keeping the values of the modernity they are inhabiting.

INTRODUCTION

After three decades since the founding of DOCOMOMO, education continues to be a crucial element for the future of modern heritage.

Education means learning what we do not know and unlearning what we suppose to know. In the educational processes we foster our critical thinking on what could belong to our cultural heritage. The conceptual and methodological changes, coming from our current context of complexity, challenge our established beliefs on what is heritage and how to deal with it.

Modern Architecture is crossing a paradigmatic time because of its inevitable degradation and because of the new scenarios that drive any intervention in the built environment: changing of urban dynamics, environmental requirements, new social behaviours, technological advancement, users' expectations.

As we know, its special constructive condition imposes a pertinent research on technological systems and solutions. At the same time also its specific rational/functional nature demands creative and appropriate strategies for adaptive re-use and asks for mindful design methodologies.

Architectural design education must address these critical issues as a strategic content of any professional practice, because the built environment of the last century will be more and more the field of practice of the contemporary architects, but the reuse of modern buildings is still not present in most schools of architecture. Thus, this paper presents three different didactic experiences, in three different countries and University courses, to reflect about the new educational challenges involved in the reuse of modern heritage.

1. MINDFUL DESIGN FOR UPDATING MASS HOUSING NEIGHBOURHOODS

At Politecnico di Milano we have been experiencing the educational potentialities connected with the modern heritage in one of the three Architectural Preservation Studios in the first year of the Architectural Master's course. The course gathers international students with very different bachelor backgrounds.

One of the latest case studies is the Harar-Dessìè neighbourhood in Milano, part of *INA Casa* program of reconstruction after the Second World War, designed and built between

1950 and 1955 by some of the best Italian architects of that period, namely Luigi Figini, Gino Pollini, Gio Ponti, with P. Bottoni, M. Tevarotto, P. Chessa, V. Latis, G. Latis, G. Reggio, A. Rosselli, M. Tedeschi, T. V. Bassanesi, L. Ghò, M. Morini, C. Villa. (fig.1)

The conservation of modernist neighbourhoods is a very effective subject because it deals with some of the most difficult questions that modern heritage is offering, both to theory and practice.

First of all, we are facing the need of conserving something that is not so well defined. Are we sure about what a neighbourhood is made of? Let's think about thresholds: where is the border of a neighbourhood? It is made by buildings, of course, but also by open spaces and distribution spaces like the streets, that belong at the same time to the city around it. Let's think about the reception: it does not deal with some old iconic architecture, but with a recent one, that is worthy, but that has usually lost newness and has lowered its architectural qualities. So students have to face the spatial and temporal boundaries of modern heritage.

Besides, a neighbourhood is also made of people. It's a community in relation with an urban and social context, as an anthropologist and urban sociologist would tell us. Of course as architects we can only work on the tangible material part, but we are aware that if the intervention does not consider all those intangible aspect of living, probably our conservation plan will be condemned to failure.

Moreover, the "greater numbers" -i.e. the large scale- make the application of any trivial equation between restoration and musealisation impossible. As for the neighbourhoods, the conservation challenge is controlling the evolution, something like establishing a governance for the equilibrium between the heritage arguments and the ever changing living necessities, so that the musealisation or any fundamentalist conservation practice is not applicable. The acknowledgment of such a nature doesn't mean that we are forced to accept every change, unless we are going to accept that the sum of many small changes, due to the most diverse and (sometimes) very legitimate needs, will destroy step-by-step the heritage that we want to preserve.

The educational challenge for the teaching staff is to help in developing all the useful knowledge - theoretical frame of restoration, contemporary debate on modern heritage, historical research on the case studies - in a very short time: a semester ranging from 132 to 185 hours.

The main assignment of Architectural Preservation is integrated by an Advanced Survey to analyse the building and a Restoration Criticism to understand theoretical issues. Moreover, two workshops (video and photo), directed by external professionals, are the tools for collecting information on expressed needs - by video interviews - and unexpressed needs - by photo survey of homes and living spaces. Most of the classroom time is devoted to collective reviews. The idea is that the design phase can be very effective if students are giv-

Fig 1. Mindful design. HararDessìè Neighbourhood, INA Casa Program (masterplan L. Figini; G. Pollini Gino; G. Ponti, 1950-55).

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en the time to move back and forth between preservation theory and practice. During this process, they have an opportunity to test and re-evaluate the solutions they designed: it is reflection in action, as in Donald Shon's "reflective practitioner". Such a mindful design process invites students to think while acting and to continuously modify their interventions by looking at the consequences of their actions. The theoretical texts are used as a support during the studio, using the so-called flipped classroom method: no lectures on texts, but collective discussions after the study of the text at home. The educational challenge for the student is designing an adaptive reuse project for a modernist neighbourhood, driven by various assumptions: What will happen if we are considering an entire neighbourhood as being listed? What will happen if the retrofitting must deal with very important historical heritage? How far can we head for radical design changes, like e.g. Lacaton and Vassal's famous interventions on mass housing? Can we bring back the lost architectural qualities and will it be enough? Unfortunately, it is the first encounter of the students with built heritage and they easily forget cultural needs. Their concerns must be diverted away from stereotypical and false users' needs, recognizing them as such and proposing redefinition of users' expectation. The didactic experience demonstrates that the more and closer the students look at the architecture and know its historical background, the more they value it and they are able to develop sound proposals also in a short time.

2. EXPERIMENTAL RE-DESIGN TO INTEGRATE SINGLE MODERN HOUSING TO CONTEMPORARY LIFE

A second didactic experience highlights another key issue: the experimental design as a required approach to the reuse project to reflect and operate in complex contemporary scenarios. The Conservation and Re-use course at the Faculty of Architecture and Urbanism of Belgrano University (Buenos Aires, Argentina) has been the first local course focused on training undergraduate architecture students to intervene with modern heritage since 2008. It is worth mentioning that since 2016 the course has gone from being an elective to being part of the curricula of the architecture career representing a great contribution to the conservation of Modern Movement heritage. Modernity implies a new perspective for urbanism and architecture to improve individual and collective life. The same

experimental spirit today can guide pedagogical strategies to teach their assessment and conservation. In this sense, the course is conceived as a laboratory of experimentation, that is, based on the notion of opening to new fields of knowledge promoting creativity as the research that requires intervention in pre-existing types of architecture. Modern houses are one of the topics of study that demonstrates this educational need. Since the 1930's, many neighbourhoods of Buenos Aires have defined their identity from the single-family houses of simple and pure forms built by renowned as well as anonymous architects. In the last decades, these areas were transformed by growing in scale, increasing density or changing their residential character. As a consequence many valuable examples were demolished and others reconverted, usually with inappropriate interventions. Despite this, they are still part of the neighbourhoods townscape and keep alive the memory of what modernity means for domestic life. One of these cases worked on by the students is the house for Dr. Ramón Columba, a recognized cartoonist and writer, designed by engineer Antonio U. Vilar in 1940. It is a good example of the application of the modern design concepts: a pure and clear-cut volume with a rational concrete structure and metal and glass facades. It is also functionally innovative by representing a new style of life where the traditional program of housing is combined with working spaces. Vilar makes good use of the conditions of the sloping corner site by leaning the volume of the house along the largest side of the plot and placing public areas in the upper levels, thus achieving a suitable orientation and a better relation with outer spaces. Located in the Belgrano neighbourhood, the urban fragment of the house underwent great transformations. Due to real estate pressure, most of the academic and modern single houses on the block were replaced by residential towers. Other functions were also incorporated in the area: a large number of embassies, educational institutions and services to supply the growing population. In 1976 the house was transformed to host an architecture office. In order to adapt to the new use some changes were introduced, altering some concepts of the original project: the open galleries were closed and new partitions and air conditioning systems were included, which strongly modified the interior spaces. This conflictive situation provided space to investigate new concepts of programmatic networks to integrate this valuable architecture example to the current urban and social dynamics. On the architectural scale, the exercise allows us to ex-

plore the articulation between modern and contemporary design concepts. This implied maintaining the spatial and organizational structure of the building and, simultaneously, operating with new design criteria such as flexibility, adaptation and mutation. A particularity in teaching how to intervene in these houses is their good constructive condition. Modernity arose late in

Argentina yet with construction companies with great experience in new materials, unlike in Europe where many early modern buildings were technological tests. However, the material experimentation must be confronted with present environmental demands and resource scarcity as far as criteria of energy self-sufficiency, reuse of materials, greening, low maintenance, among others are concerned. (Fig. 2)

Fig. 2. Experimental design. Columba House (Antonio U. Vilar, 1940). © Original state: Revista Nuestra Arquitectura, Noviembre 1943. Current state: Carolina Quiroga.



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During the process, the didactic strategies were based on the feedback of the theoretical, historical and technical corpus of the conservation with the skills inherent to the architectural learning -coherence between concept, operation and materialization, formal and spatial management- grounded in the notion of learning by doing and its potential to reflect in and on action (Schön, Cunningham). Thus, students can understand the patrimonial field and the architectural design not as antagonistic pairs but as a same dimension that address memory values, current challenges and future opportunities for the legacy of the Modern Movement.

3. PARTICIPATORY DESIGN TO OPEN MODERN SCHOOL BUILDING TO THE NEIGHBOURHOOD

The reuse of modern buildings has to take the original building in consideration and also the community that used it. The use is essential to understand the reuse and its potential for the urban regeneration. If modern architecture was designed within the framework of the modern city, its reuse is an opportunity to rethink its relation with the urban and social context. This reuse will offer a new opportunity for the building and for the city, that should look, like Janus, to the past, in order to integrate the collective memories, and to the future, promoting new opportunities for the life of the community.

At the University of Coimbra, the Design Studio 1C on Re-use of Modern Buildings of the Master's programme in Architecture is focused on the social approach to architecture in articulation with the courses on Anthropology, to dialogue with people; on Geography, to understand the territory; on Construction to analyse the buildings. This interdisciplinary process opens the possibility of using social methods in the design process, enabling architects to combine the architectural design methods with the social ones, such as photo elicitation, design thinking or participatory workshops. The implementation of this pedagogical methodology of training architecture students with social skills is based on the reuse of educational buildings due to their social and urban potential. School buildings have been key facilities in the construction of modern neighbourhoods, stressing the social commitment of the modern society and the city. The cities' expansion was designed through neighbourhood units in order to function as small cities. Nevertheless, most of the schools buildings end as closed structures, to answer to the security obsession that is taking control of our society. Taking Herman Hertzberger's (2008) ideas and practices as reference, the great challenge for our modern schools is to open them up to the com-

munity, either sharing their facilities with the neighbours and the parents, or using other urban facilities for the students' activities. Thus, we have been challenging the architecture students and the primary school pupils to think the school as a small city, but also to think the city as a big school.

This approach requires an open mind to explore new possibilities, but also to develop other ways of designing a building in order to promote solutions that are designed together, starting with the living experience and the contact with the intangible aspects until the technical knowledge. The design methods are no longer the architectural ones, but mixtures of methods that are also imported from the social and human sciences, considering the necessity to engage the stakeholders in the design process.

In the academic year 2017-18, students have been working in the Norton de Matos neighbourhood that was planned and built in the 1940s to receive the population that was taken out from the city centre due to the construction of the new university campus. This urban project was also part of the urban plan designed by Étienne de Gröer and Januário Godinho for Coimbra modern city, where new neighbourhoods for housing, industry and services were placed around the city centre. Norton de Matos was built in two moments, firstly as a garden city with private houses, in the 1940s, and secondly as a modern city with housing blocks, in the 1960s. An urban avenue with a church, a social centre and a primary school should link these two environments.

The school was designed by José Plácido dos Santos and built in 1970 at the top of the avenue, taking the place of the church, putting in evidence its social role for the community. The modern block was implemented in the centre of the plot opening the yard to the city, but soon it became limited by a fence, protecting the pupils from the community. The pedagogical activities are organized in rows of classrooms divided between male and female, according to the fascist regime, Estado Novo, that governed Portugal until 1974. The schools facilities were completed with a canteen and a library, organized recently in one of the vacant classrooms.

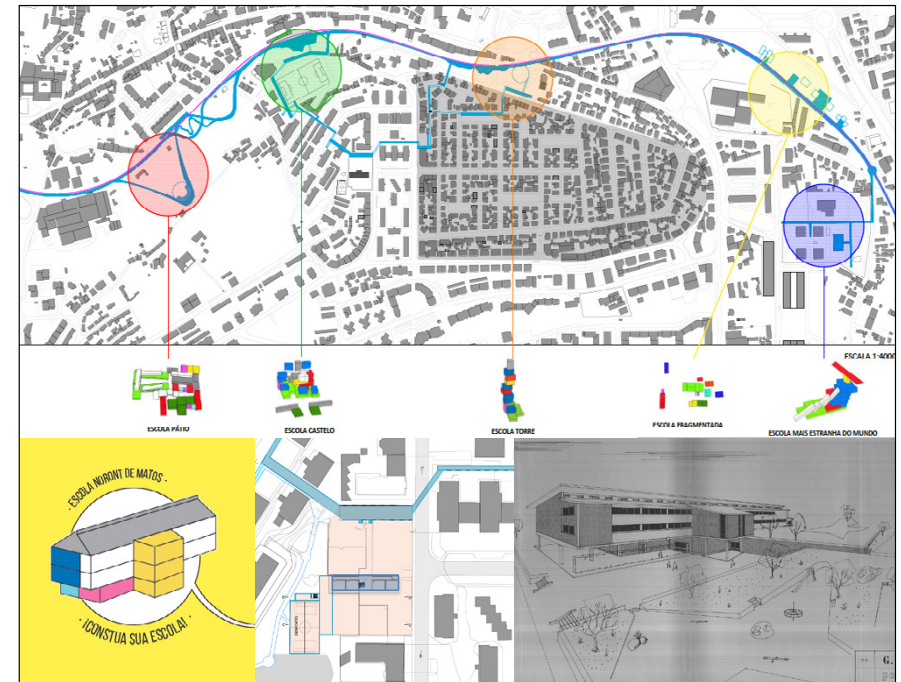
Students were challenged to rethink the school not only in physical and pedagogical terms, but also in urban ones, exploring the relation with the community. Organized in groups of four, students prepared a session to dialogue with primary schools pupils in order to understand their relation with the community, about five themes – History, Participation, Programme, Pedagogy, and Educational Spaces. The activities were developed under supervision of the Anthropol-

ogy teacher who introduced student to participatory issues and methods, namely the one that activates their memories. The activities were also prepared with the main goal of generating products that could be assimilated in the design process. The history group brought images of the urban spaces and asked students to draw the activities they used to or could do there and to write about them. From the workshop merged the idea that there is a strong unity in the 1970s urban area, namely on the relation between the housing blocks and the school. So the group explored the idea of a continuous public space

that should create a new topography for the neighbourhood. The participatory group developed a toy, associating the school spaces to wood blocks, and asked the students to build a school with those blocks on an aerial photograph of the neighbourhood. Students proposed several schools that were reinvented in strategic points, along the train line that defines the north limit of "Bairro" Norton de Matos. (fig.3) The educational spaces group promoted activities in the public squares of the neighbourhood, where students could talk about their relation with the squares and draw new activities

Fig 3. Participatory design. Norton do Matos Neighbourhood (Januário Godinho, 1940) and Primary School (João Plácido dos Santos, 1970).

© Original drawing: Coimbra Municipality Archive. Recent drawings: students of the Design Studio 1C on Reuse of Modern Buildings, University of Coimbra.



to do there. Architecture students proposed an infrastructure to articulate all the squares and the school through an “educational” pathway.

Memories and experiences of the pupils became design themes to reinvent the city as school, as an informal pedagogical space that crosses the fences of the school walls in close relation to the community.

CONCLUSION

The example of these three programmes, developed autonomously in different contexts, with different students’ backgrounds, highlighted the common relevance of confronting the students with issues like: Which is the social and cultural contribution of the architectural heritage? What can we learn from the Modern Movement ideals of equality and progress, nowadays still perceivable through its built legacy? Are we allowed to erase those values only because sometimes we deal with ordinary buildings and not with intentional monuments? How can we reuse a building without losing its modern character? How is this modernity itself a design tool?

For example, a significant issue lies in the expansion of the concept of heritage. Education in adaptive re-use must confront students with neighbourhoods, urban fragments and apparently ordinary buildings, not only with modern iconic monuments. That implies to leave any idea of musealisation and understand that the patrimonial field and architectural design are not antagonistic pairs. The presented experiences spotlight the relevance to debate the role of memory in the transformation process and, therefore, in the educational process. These questions today represent very crucial didactic challenges for the architectural education. The students can learn from that, partly based on their previous knowledge of topics related to history and heritage, and partly by developing these topics - or by learning them from scratch - depending on the amount of time they have in the course. Therefore, short courses of one semester are less effective than the ones of a full academic year.

A very important goal for the effectiveness of the didactic experience and its relationship with reality is the expansion of the traditional topics of teaching to anticipate social, technological and managerial variables that are involved in the practice of conservation. That implies in didactic terms, to promote teamwork and interdisciplinary, to manage the different social actors involved in the project, to understand the design as a space for critical reflection and experimentation, among others. The students learn to deal with the social dimension

of conservation, another key educational challenge, as it implies dealing on the one hand with the value of modernity for the history and for the communities’ memory and, on the other hand, with the unaware expectations of users. Likewise, social participation needs to be addressed not only for the dissemination of knowledge, but also for integrating the inhabitants as conscious and sensible participatory actors in the processes of conservation.

Education for the conservation of the legacy of modernity is still a subject open to explore new strategies that assume current social, environmental and technological changes. To accept this challenge of dealing with modern heritage’s values at the different levels of architectural education may allow professionals to better understand the social role of the discipline both for a sustainable development of the built environment and for reflecting on identity, memory and culture.

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