

Modifying the recent past

P. A. Val, M. De Miranda, P. Foraboschi, A. Lionello, V. Manfron, M. Rigo, F. Bertan
Faculty of Architecture, IUAV University, Venice, Italy

C. Alessi, V. Lucchiari, A. Petrone, A. Praolini
Tutors, Faculty of Architecture, IUAV University, Venice, Italy

S. Spiazzi
Ater of Venice, Italy

ABSTRACT: Five points to modify the recent past

- 1) increase housing and relationship density
- 2) rethinking the ground attack
- 3) innovative way to think roof
- 4) osmotic diaphragm
- 5) design the continuous transformation

The experience of Venice

1 INTRODUCTION

This is the outcome of a multifaceted joint effort carried out by the Faculty of Architecture of Venice from 2007 to now. The material is used in some courses of the second-level degree called 'Architecture for Building' – referring professors A. Villa, R. Di Marco – (now 'Conservation and Building Technology'). Notably, it originated during a series of workshops held in Conegliano between 2008 and 2009, made possible also thanks to the contribution and incentives by the local manufacturing sector and institutions.

The considerations developed as well as what we are illustrating therefore represents 'hybrid material', as it is a cross between teaching and mere research.

We believe that blending teaching and research is one of the cornerstones of University. Likewise, it is should be underlined that such intermediate condition makes its description difficult, because of the 'hybrid' character of the considerations and the product developed. In fact, this paper is aimed at answering specific questions, linked both to the subject and the application area, which represent the cornerstone of any kind of research. Also, the implicit teaching component leads the paper to pursuing parallel abstraction areas, in order to allow the experience (as well as the judgment on such experience) to be generalised and to reach a sufficient level of dissemination of the knowledge and expertise. In this perspective, certain features that are considered necessary for specific research, such as precision and extension, risk to be disregarded.

In spite of such awareness, because of the fluctuating character of our work (half way between teaching and research, intertwining subjects and disciplines) the hybrid feature of our endeavour has become a useful standpoint to assess the potential, scope and difficulty of the possible strategies of the project for the restoration of existing assets and to outline some methodological issues on the architectural level. Such methodological issues have been subdivided into five points. '*Five points to Modify the Recent Past*': that is the title of the panel presented, which summarises our work.

The decision to put together the issues on today's condition regarding the regeneration of the existing architectural heritage is based on the intention to illustrate a methodological orientation or approach rather than the forms. Discussing the method rather than the forms is a clear way of ensuring continuity with the best 'modern tradition'. In this perspective, the five-point layout also represents an analogy (hopefully not an irreverent one) with Le Corbusier's five points of architecture, which characterised the building shapes and strategies of the past century. Attempting to build a relation and a critical distance from such precepts is a way to measure the difference posed and/or imposed by the times.

2 FIELD OF APPLICATION OF RESEARCH AND OBJECTIVES

The field of application of the work was the area of Venice. The close collaboration with Venice's Ater in the past five years has allowed to tackle a considerable and diverse series of areas and housing types and to cope with a tangible and articulate request for transformation, directly made by Ater itself, and put forward thanks to the contribution of the architect Ms. Stefania Spiazzi within the institution.

The urban area of Mestre and Venice has witnessed tremendous building activity, especially in the post-war period. Suburban districts were built which now need to be urgently redeveloped. The sample can therefore be considered indicative to verify a large number of cases of intervention. The number of cases becomes even more articulate when dealing with low-cost areas and residential building interventions even within Venice's old city.

Today, public housing construction must fulfil the demand in a short space of time by respecting the environment and the individual, thus ensuring low rent and sales prices, and contributing to regenerate quality buildings integrated into their environment.

On the other hand, the virtuous relations set up with the construction world, originated during workshops, have allowed to outline the building strategies based on a list of innovative, usable and low-impact materials (see Table 1).

Table 1. List of usable low impact materials and components for low cost buildings

Bamtec	two-way bending monolithic core slabs
Cetris	curtain walls: 100% recyclable panels Concrete and wood panels.
Climaplast proterimex	air-conditioning systems
Edilfiber O.R.V.	wall insulation: 100% recycled PET
Ekofiber Ecoalpen srl	floor insulation, cellulose fibre (originated from the recycling of newspapers material that may be recycled indefinitely)
Halfen	use of frames for pillars, adjusting screw for pillars, better cls distribution
Profilumbra spa	curtain wall structure for steel dry walls
Suberite SERCOM	external fireproof and elastic resin/cork coating
INTERSUGHERI	granulated cork for floor insulation
Skydeck PERI	monolith cls core floor casting
Basso prefabricated	prefabricated structures
System REP, PTC	integrated system for pillars, beams and prefabricated slabs

The multidisciplinary research carried out by the students of the IUAV Degree Workshops and Research Unit has analysed and experimented modification strategies on multiple levels by making the most of the significant results of the Sate Selection 09 competition.

The process put into place began with the identification, along with ATER, of the problems of the buildings and contexts, and of the request for transformation and the social-economic premises to be implemented.

From there, we proceeded with the re-interpretation of the fixed existing structure of buildings for each context, verifying the earthquake-proof requirements and the possibility to implement such structure (horizontally and vertically).

On the distribution level, we took care of pinpointing the criteria allowing to increase the housing units, in view of the transformation of the household, while ensuring access to all users.

That entails a gradual modification through the 'emptying' by area, by unit or by staircase. The new housing units are therefore built on the inside by using technologies and prefabricated, mobile and flexible components, derived from recycled or reused materials. Such elements, optimized thanks to the companies' support, have significant advantages: high level of sustainability, possibility to be installed at different times and low cost.

The strategy adopted is based on an analysis of contemporary housing modalities and also takes into consideration the differentiated demand imposed by the presence of families of (either first or second-generation) extra-Community citizens. All that represents the scenario allowing to adjust the construction to the newly arisen needs by achieving a multi-faceted goal: innovative architectural quality needed to establish relations with the surrounding urban environment and the regeneration of the construction in terms of energy, by re-interpreting the role and potential of the enclosure and including the use of alternative energies. Subsequently, on the distribution level, plans try to propose consistent residential flexibility in the low-cost house, in order to fulfill the process of 'continuous transformation' imposed by today's condition.

The different examples try to experiment new and complex typologies of dwellings that may be enlarged, reorganized and customised in order to fulfil different needs.

To achieve the goal, each hypothesis has pinpointed precise intervention steps associated with distinct technologically advanced and sustainable units of intervention. In this way, not only the reduction of dwellings is again taken into account, but it is also possible to include functions other than the merely residential one (nurseries, etc.) even inside the existing construction, in order to ensure more integration between private and public area, which will be reorganized.

In some cases, in order to restore the whole area, it was necessary (or in other cases possible) to partially demolish the existing construction and introduce new portions of building with a higher volume, in compliance with the provisions of 'Piano Casa' (housing plan). About this, the set of projects may also be considered as a critical physical verification tool of the scope and aporias of this Italian act.

Our work originated, partly, with those goals ever since 2008.

All projects use different devices for the exploitation of renewable energy and comply with the certified sustainability requirements (LEED and ITACA) which are turned into opportunities for renewed architectural quality. Most projects using the ITACA certification, for instance, have a synthetic score evaluating the average of the relating performances, which is above four.

All the projects carried out in order to achieve such goals may identify, *a posteriori* and in a symptomatic way, a series of cases of recurrent intervention strategies.

In most projects, for instance, the coping of buildings, conceived to incorporate photovoltaic membranes and solar panels, become not only a technical place but also space. They represent a chance to include new public condominium areas or extensions of a dwelling. At the same time, envelopes, solar greenhouses and integrated loggias, besides minimising waste, typify and add quality to buildings and the life inside them. Within the same perspective, both innovation and collaboration between working subjects become additional requirements for efficient, quality buildings. Within this complex field, the project must not only give shape to the building but also interpret its management and energy strategies. In parallel, morphological choices may generate a new sociality and identity.

Method-wise, such set of recurrent goals and strategies, implemented in the different projects, have given the chance for a systematisation, thanks to their subdivision into five points.

3 FIVE POINTS TO MODIFY THE RECENT PAST

By working together, sharing know-how and disciplines, in terms of method, we have pinpointed, some recurrent conceptual conditions, in the different Venetian projects for the conversion of residential buildings, which may be fundamental discriminants for the assessment of the quality of transformation.

3.1 Increase housing and relationship density

Basically, all projects were facing the need to ensure, by means of the conversion project, a residential density. Such density takes multiple forms. They may be included (or included as much

as possible) in the volume and in the pre-existing shapes or may use the existing structure (see Figure 1). The scope of such enlargement is defined by the request, by technical-structural choices and by regulations (until the limit of 40%, according to 'Piano Casa'). In any case, the residential densification is facing the need to analyse the models and architectural shapes that may provide a rational answer, consistent with such process. On the other hand, the transformation process, whenever and wherever, requires a reconsideration of the whole relation system, both internal (between the parts of the complex or building) and most of all external (open spaces, interaction spaces). In this perspective, the need to analyse the context, to rethink through the project the need for a quality densification of the relations between the building, open spaces and urban situation arises.

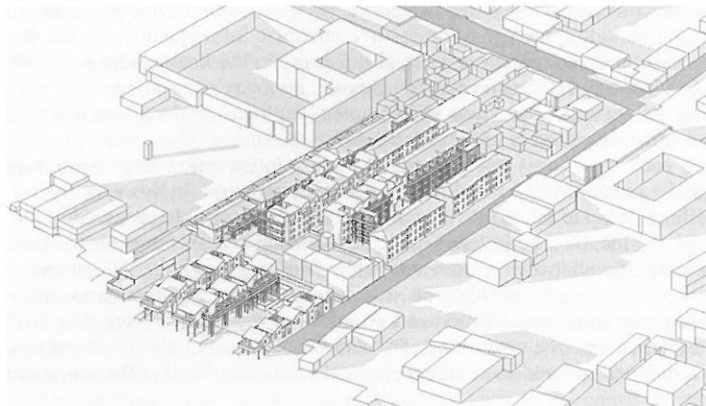


Fig 1: In-between requalification, Ater area, Giudecca, Venice

3.2 Rethinking the ground attack

The need to rethink the system of relations, both internal and external to the complex to be renovated, requires the project to face another recurrent strategic issue: the redesign of the way in which the project relates to the ground (see Figure 2). The redesigning of the attachment to the ground of the building is based both on the need to refunctionalise spaces (both residential and non-residential) on the ground level, and to rethink the access system (vertical and horizontal), as well as on the opportunity to renovate open spaces.



Fig 2: Requalification of Ater residential district in via del Bosco, Marghera, Venice

3.3 Innovative way to think roof

A third condition is present in all projects. Such condition seems to emerge from mere technical-plant engineering needs, aimed at the energy upgrade of the construction. Energy-wise, the roofing of buildings plays a fundamental strategic role for the use of renewable energies (solar thermal, photovoltaic, etc.). Within the architectural project, such set of needs may nonetheless - or better must - become an extraordinary opportunity to rethink the redesign of the building based on how it relates to the sky, on how to redesign, in terms of landscape, the skyline against the surrounding context (see Figure 3). The subject of the relation with the sky is a modern issue (green roof, etc.). The need to renovate the existing architectural heritage may be the chance for a contextualised re-interpretation of such subjects.

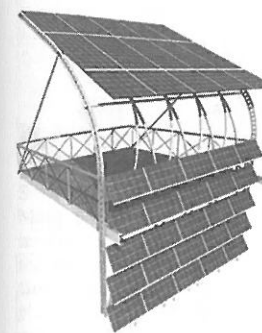


Fig 3: Abstract from students' workshops: photovoltaic 'altana', Sacca Fisola, Venice

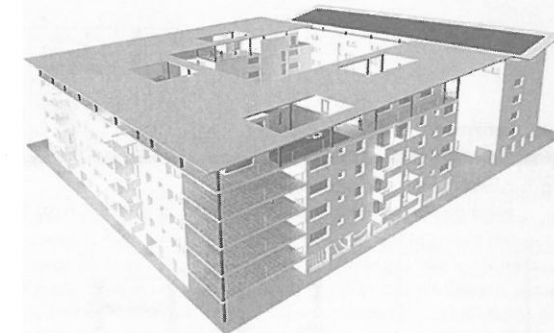


Fig 4: Roof plan extension, Ater building in vicolo Pineta, Mestre, Venice

3.4 Osmotic diaphragm

The fourth recurrent thematic condition concerns the envelope of the building. This issue appears to be a problem stemming solely from the coating of the building, both on the technological and morphological level. On these issues, technology has implemented its know-how in an extraordinary way, based on the market demand and offer. Nonetheless, the entire offer must necessarily be re-interpreted by the project in a critical way. Notably, in its choices it must take into account the duration factor, a fundamental prerequisite of the architectural project. In this case, the issue of the envelope must be re-interpreted in a more subtle and articulate way (see Figure 4). By considering the envelope as something thicker, more articulate and complex than the perimeter walls. The envelope must be seen as a sort of intermediate area, not waterproof yet osmotic, between the inside and outside of the building. The way of designing such osmosis is a fundamental element of the project.

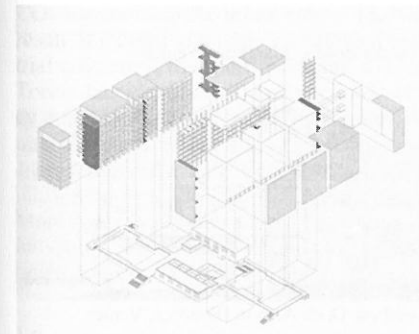


Fig 5: Osmotic requalification of Ater residential district in via del Bosco, Marghera, Venice

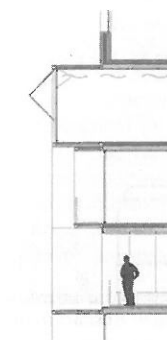


Fig 6: Re-configuration of Ater buildings in via del Bosco, Marghera, Venice

3.5 *Design the continuous transformation*

The last issue analysed, in terms of method, by the work on the renovation of the existing architectural heritage, concerns the essence itself of the transformation process. What is necessary for this project is the mass in the form of a process rather than the crystallisation of a new form. In fact, the transformation will have to take place over a long time span and may not always be completed, and it should allow and/or foster new transformations in the future (see Figure 5). This raises more general issues that may modify some essential conditions of the architectural thought. The relation between shape and time. This issue raises a multitude of subjects which cannot be dealt with here, which yet should be mentioned to highlight the importance that the issue of the modification of the recent past presents.

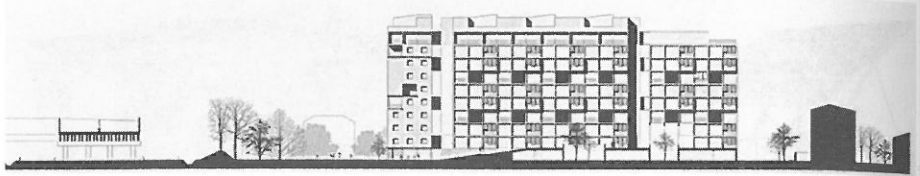


Fig 7: Abstract from students' workshops:
Requalification of Ater residential district in via del Bosco, Marghera, Venice



Fig 8: 'The growth of the building', Ater residential district in via del Bosco, Marghera, Venice

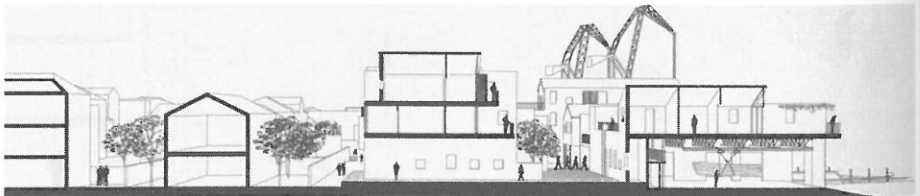


Fig 9: Abstract from students' workshops: Requalification of Luchese Dock Area in Giudecca, Venice