Between the World and the Earth: a necessary reconciliation. The role of the restoration project

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Enhancing of Heritage Awareness and Sustainability of Built Environment in Architectural and Urban Design Higher Education

HERSUS

HANDBOOK

INTERNATIONAL HANDBOOK FOR STUDENTS ON RESEARCH AND DESIGN FOR THE SUSTAINABILITY OF HERITAGE

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IMPRESUM

IO6 INTERNATIONAL HANDBOOK FOR STUDENTS ON RESEARCH AND DESIGN FOR THE SUSTAINABILITY OF HERITAGE

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HERSUS

Content

INTRODUCTION

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HERSUS IO6 - The International Handbook for Sustainable Heritage Management and Design: Notions, Methods and Techniques, is the last Intellectual Output of the European project HERSUS Enhancing of Heritage Awareness and Sustainability of Built Environment in Architectural and Urban Design Higher Education, an Erasmus+ project within the EU program for education, training, youth and sport, developed by a network of five universities. This last output has been designed and developed in a form of a publication in the field and it is expected to have an overall impact on different target groups in the academic environment, including the students, educators, and researchers, but also practitioners and institutional agents.

1. IO6 AIMS AND PURPOSE

The aim of this output is to develop didactic materials by professionals who are involved in the project, which should be used on new courses on master level. The International handbook for students on Research and Design for the Sustainability of Heritage aims to offer an innovative scope, combining global and holistic approach to heritage. International handbook for students is in English, and it is prepared in a digital version for dissemination.

IO6 main objectives deal with
(1) the design and development of the learning material
(2) the need to cooperate on Higher Education and to create research synergies across Europe in the specific field of sustainability and heritage.

Students are expected:
• to acquire skills in understanding the relevance of heritage as a pillar of sustainable urban development
• to acquire knowledge on concepts, types, methods, strategies and tools for the implementation of the Heritage and Sustainability approach at a professional level

In the case of educators and researchers, the handbook contributes in the broader context of HERSUS project:
• to enhance the cooperation between partner countries in the field of the scientific research
• to update their learning and teaching methodology and tool
• to deepen applied research within the Heritage and Sustainability approach
• to develop the academic curriculum where the approach to heritage and sustainability is encouraged.

Associated partner institutions are able:
• to seek synergies between European research groups for joint participation in research related work
• to promote the active participation of the Institutions working on heritage and sustainability research activities
• to create the proper channels so that the Institutions expertise can be transferred to university education and,
•to make the potential professional and research activity for architects more visible for students.

WHO

This handbook is coordinated by the UNESCO Chair on Built urban heritage in the digital era CREhAR (Creative Research and Education on heritage assessment and regeneration), at the School of Architecture, University of Seville (USE), as a member of the consortium partner. Seville University, its School of Architecture, its research groups, and the UNESCO Chair CREhAR constitute a reference on projects focused on cultural heritage and sustainability. These projects deal specifically with innovation on heritage methodologies for the identification, characterization, valoration and intervention of heritage.

USE is the leading partner for completing this sixth and last Intellectual Output, since it is actively committed to regional economic

and social development, with more than 500 research groups. USE ranks in the first 500 universities in Shanghai ranking and among the Top 8 Spanish research universities in terms of publications. Therefore, USE Seville University and specifically its School of Architecture has been through the IO6 aim to improve the students' capacities on heritage assessment, sustainability, and characterization in their learning process, stimulating their interest through the different Master programs. The handbook has been conceptualized as a joint work of seniors, intermediates, and juniors, of inside and outside HERSUS project.

Seville University and its School of Architecture has a particular commitment to developing the students' capacities on heritage assessment and sustainability. Also, it is devoted to characterization in their learning process, stimulating their interest since their undergraduate program and running through the different Master programs.

This commitment and expertise on cultural heritage are canalized in international agencies rooted at USE, such as the UNESCO Chair CREhAR, an academic unit within the University. The Chair focuses on those categories of heritage that are most vulnerable due to their low protection and appreciation by society and institutions and therefore are at risk of disappearance. Specifically, CREhAR is the first UNESCO Chair that works on Architecture, City and Landscape of the 19th and 20th century, named by UNESCO Modern Heritage. Within the latest trends in heritage studies, it integrates this more modest heritage into the interdisciplinary and stratified complexity of the territory. We approach Modern Heritage as a critical component of diversity: the safeguarding of cultural diversity as a fundamental element of Sustainable Urban Development. Although there have been improvements in higher education regarding this fragile heritage, there is a long way to go. In essence, the cross-Europe Higher Education System is the proper tool to share knowledge and innovative teaching experiences in the field. Specifically, the UNESCO Chair works on intercultural dialogue and participation in gender equality

in the field of conservation of contemporary urban heritage, based on the use of ICT technologies and the exploration and implementation on creative methodologies in both research and higher education.

The five university partners of the consortium actively worked on the design dialogue and development of this handbook. Specifically, the team members have contributed to the first part of the handbook. They have also promoted the collaboration of expert lecturers, who have participated in the second part of the handbook.

FOR WHOM. Contribution

The primary audience are the students of the school of architecture, but the handbook is developed as a guide for educators, researchers, institutions and practitioners on heritage and sustainability in the field of architecture. The publication includes both more conceptual and also specific didactic contents and materials.

Regarding its contribution to the literature in the field, this publication offers an international handbook in the field of heritage and sustainability. It looks for quality proceedings to project integrated actions on heritage assets, from a transdisciplinary perspective. This handbook promotes decision making on expert knowledge and cultural values; the proper use of methods, strategies and tools, and reaches agreements through participation of the different agents involved. The central innovation of this contribution rests on combining the processes and methods of the heritage studies with those of the project within the field of Architecture and Urban Planning.

2. IO6 METHODOLOGICAL OUTLINE

HOW
In order to so, it integrates on the one hand a more conceptual foundational knowledge on heritage notions, types, values and methods, with design strategies, actions and tools. It has a point of departure the previous results in the following intellectual outputs: IO3 Statements for Teaching through design for Sustainability of the Built Environment and

Heritage Awareness; and IO5 Book of courses The shared conceptualization process on the definition of the IO3 Statements, lead by Belgrade University resulted in a matrix where all the terms were grouped and organized. The CREhAR USE Team has reflected on these sections from a process perspective, reorganizing the preexistent ones and incorporating new sections: in this sense the five sections intend to follow the general intervention heritage methodology from the sustainable point of view, identifying the main steps to follow the process:

>The conceptualization of the field of heritage: notion and heritage types
>The relevance of the specific methodologies
>The knowledge and decisions making based on values
>The development of project: design strategies and actions
>The tools: technologies as sustainable tools for advancing knowledge and heritage management

These five process-based sections are put in dialogue with the three transversal perspectives which run through the university mission, specifically in the field of architecture: EDUCATION, PRACTICE AND RESEARCH.

On the other hand, the handbook incorporates the contributions of guest experts along the development of the project, taking advantage of the international networks of the five partners.

Specifically, their contributions were firstly integrated lectures series, in each of the three workshops, offered to the students of the five partners project: they were lead by IUAV, Cyprus and Thessaloniki Universities within the Learning, Training and Teaching Activities LTT. These LTT activities were preceded by a Seminar for Teachers lead by Belgrade University, to reflect on innovative methods for heritage and sustainable training. In order to offer their contributions to a wider and international audience, the present International Handbook revisited them and asked the project collaborators to work on them in the framework of this publication.

In this case, the expert contributions maintained the chapters of the central themes proposed within the LTT Activities: Teaching through design for sustainability of the built environment and heritage awareness; Sustainable reconstruction in urban areas; Adaptive reuse; and resilience and climate change. The HERSUS learning and teaching activities have been a valuable source of empirical data that is used in the different chapters included IO6.

The topics of the workshops were also structuring the fifth intellectual output IO5 Book of courses, becoming the framework of the proposed master semesters: REconstruction; REuse; REsilience. Finally, the last LTT Activity, lead by CREhAR Seville University, also assumed structure in expert group discussion groups in dialogue with the IO3 Statements.

In this way the 'International handbook for Sustainable heritage management and design is conceptualized in the form of learning material that integrated both (1) texts written by consortium leading professionals (teaching stuff) dealing with relevant topics, with (2) selected texts/papers of the world's leading experts on observed topics.

THE STRUCTURE OF THE HANDBOOK / TABLE OF CONTENTS

The publication entitled INTERNATIONAL HANDBOOK FOR SUSTAINABLE HERITAGE MANAGEMENT AND DESIGN: NOTIONS, METHODS AND TECHNIQUES, offers therefore an integral set of contents on the complex field of Heritage management and design from a sustainable approach.

Based on the method outline explained previously, the Handbook is organized in two PARTS:

The first part of the handbook, PART I, integrates the five HERSUS partners contributions in three chapters from the perspective of EDUCATION, the PRACTICE and the RESEARCH. Each of these chapters is structured in the five identified sections, insisting on the relevance the main steps of

the heritage process: (1) notion and heritage types, (2) methodologies, (3) values, (4) design strategies and actions and (5) tools.

The first one, the chapter related to EDUCATION, addresses the definition of historical sites and settlements from the sustainable point of view; the methodologies focusing on the intersection in between architectural heritage and ecological history; the innovative teaching methods in order to identify and reveal values; teaching experience on designing for heritage tourism; and finally, it addresses the development of teaching environmental aspects of built vernacular heritage.

The second one, from the perspective of PRACTICE, addresses the typification of Modernist rural landscape as heritage; the architectural competitions as one way of work for bioclimatic design in historic open space; the relevance of urban morphology for the identification of values; the environmental planification in archaeological sites (with an example in a World Heritage site in Greece); and the necessity to development Building technologies towards achieving sustainable heritage.

And the last one, RESEARCH, includes a reflection on Less-Represented Heritage Categories; the management methodologies;

the definition of criteria related to the content specified in the international chapters and texts of reference; the concept of unfinished to approach heritage intervention; and it closes with mapping as a tool to manage through cartographic narratives.

To organize the contents, a matrix was developed to define the 15 contributions, 3 for each partner.

The second part, PART II, develops the guest experts' contributions along the development of the project, offering their valuable knowledge in the context of HERSUS in this publication. These contributions are organized in four chapters:

The first one TEACHING THROUGH DESIGN FOR SUSTAINABILITY OF THE BUILT ENVIRONMENT AND HERITAGE AWARENESS was the title given to the Seminar for Teachers led by Belgrade University. It integrates a reflection of a strategy shaping dilemma in a historic site to open the discussion in between Heritage and Sustainability. Also integrates a conceptual review of reconstruction, which has been one of the most controversial terms throughout the HERSUS project. The chapter ends with some study cases related to the so-called emerging heritages: vernacular architecture and Modern Heritage.

SECTIONS SPECTIVES	NOTIONS AND HERITAGE TYPES	METHODOLOGIES	VALUES	DESIGN STRATEGIES & ACTIONS	TOOLS	
ICATION	* Partner text	* Partner text	* Partner text	* Partner text	* Partner text	IUAV UCY AUTH USE UB-FA
ACTICE	* Partner text	* Partner text	* Partner text	* Partner text	* Partner text	15 contributio 3 Per Partner to be proposed (10 pages)
SEARCH	* Partner text	* Partner text	* Partner text	* Partner text	* Partner text	

Figure 1. IO6 matrix

The second one, SUSTAINABLE RECONSTRUCTION IN URBAN AREAS, addresses the contributions presented in the workshop led by the IUAV University: a genealogical reading from the "Recupero to Reurbanism" through "Regeneration Urban Heritage" and the checking of the restoration project as a tool to intervene in a sustainable context. At the same time, the contributions implement the consideration of new technologies applied introducing, for example, the idea of a cyborg society. Finally, the chapter integrates alternative approaches focused on "Creative Heritage City".

The third chapter titled ADAPTATIVE REUSE, collects the contents of a workshop led by Cyprus University, is focused on an issue considered one of the most sustainable responses on heritage conservation. This approach is development as a process, applying a methodology of work from an interdisciplinary perspective with different examples: a district in Kavala (Greece) and the case of deconsecrated churches.

The fourth and last chapter focuses on resilience understood as the way to act against climate change: RESILIENCE AND CLIMATE CHANGE, was the title of the workshop led by Thessaloniki University. It integrates a reflection on the effects of climate change on the cultural heritage of Greece thinking about the future. Also includes references to the new tools and proceedings which are required to manage heritage at the present: governance, the importance of associative urban resilience and the significance of the resilience strategies for the intervention on heritage.

PART 1.1

EDUCATION

E01-NT

Historical sites and settlements: a sustainable regeneration.

✕

E02-M

Intersections of architectural heritage with ecological history. Education methodologies.

✕

E03-V

Innovative teaching methods on recording and documenting heritage buildings for identifying and revealing their values.

✕

E04-SA

Teaching experiences on designing for heritage tourism.

✕

E05-T

Teaching environmental aspects of built vernacular heritage through Massive Open Online Courses (MOOCs)

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E01-NT

education

handbook for students

HISTORICAL SITES AND SETTLEMENTS:
A SUSTAINABLE REGENERATION

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Introduction

The interest of the protection, conservation, and enhancement of historic ensembles, appears after the second World War. While the individual historical buildings and especially those designated as Monuments, were treated much earlier as objects in need of special protection. Historic urban complexes, parts of cities or even entire cities and settlements were completely ignored. These historic ensembles, until then, preserved their original urban structure, as well as their character. Not only were they not considered worthy of attention and preservation, but on the contrary, they became the target of new residential development programs.

Historical ensembles are considered for the first time as objects of special care with official recognition, contained in the Charter of Venice (1964), of their historical, cultural and aesthetic importance. A decade later, with the Amsterdam Declaration (1975), it is explicitly recognized that architectural heritage includes not only individual buildings of outstanding value and their surroundings, but also complexes, city districts and villages, of historical and cultural interest.
The Ensembles are also included in one of the most basic international conventions, the one for the "for the protection of the Architectural Heritage of Europe" (Granada 1985). This convention passed into Greek protection legislation with 2 the Law 2039/92, and after that the need for a policy to preserve the residential stock of historic ensembles in Greece begun.

This paper will focus on the issue of protection and regeneration of abandoned historic settlements. Of course, it will only touch on certain aspects of this important issue, through a general consideration.

Conceptual framework ///

Settlements in general are complex systems of build and open spaceς, where generations of people share their lives and experiences over time. Even though they are composed of rather permanent and solid material and natural elements (land geomorphology, natural environment, routes, land system, building shells), they are enlivened by the passage of people through them. Thus, space, which as a concept in itself has no character or physiognomy, with the presence of human turns into a "place". Settlements constantly evolve over time, reflecting the wider changes of the societies that live in them. In other words, Settlements are complex systems that are formed and evolve under the influence of political, cultural, social, economic forces, but also natural forces. Therefore, a settlement is the footprint in space of each society and era.

Vernacular settlements are a special category of monuments or better historical ensembles composed of the harmonious coexistence of man-made and natural environment. What therefore distinguishes a historical settlement is the presence of historical value and continuity over time. Historical settlements, apart from being carriers of historical, archaeological, artistic, scientific, social or technical values, are mainly carriers of collective memory. Collective memory is decisive for the evolution of society because it defines our past, determines our present and prescribes our future. It is therefore imperative to save the collective memory and tradition, to preserve and highlight the values of the past. This can be achieved through the protection and preservation of all the elements that carry these values, whether they are monuments or historic settlements, and constitute what we call "cultural heritage" or, in particular, "architectural heritage". Essentially, by the term architectural heritage "*we mean the irreplaceable heritage that was transmitted through previous generations and that has captured the ways of living and appropriating the space*" (Nomikos 2004, p.3).

Therefore, in summary, a historic settlement and its protection are about concepts such as place and environment, human and society, history, time and architecture at all scales, which includes in its material substance all the above mentioned.

The built environment of vernacular settlements is characterized by anonymous architecture, which, in fact, until relatively recently was considered subordinate and certainly not subject to special protection.

In the Encyclopedia of Vernacular Architecture of the World the anonymous architecture is produced to serve specific housing needs, incorporating the values, the economic situation and the ways of life of the societies that produce it. So, we can say that the anonymous architecture is based on the local social needs, the geomorphology of the place

and the available building materials, while it is based on climatic conditions of the place and cultural characteristics of each society. It evolves over time under the influence of environmental, cultural, technological, economic and historical factors. Paul Oliver, a historian of architecture who mainly dealt with anonymous architecture, points out that for its study it is necessary to refer to anthropological, historical and geographical elements at the same time (Oliver 1997), while Amos Rapoport examines it both as a product and as a process, with dominant human-environment interaction. In essence, it is the testimony of a past, in which buildings interact in a unique way with nature, topography and climate (Rapoport 2010). This dialogue with nature, expressed through volumetry and materiality of build space, is the simple expression of a complex thought: it is characterized by abstraction, an obsession with the essential and the necessary, not consuming the unnecessary.

Simplicity is presented as a way of life, but also as a moral dimension. The buildings, humble and honest, free from unnecessary decorations, exist solely to effectively fulfill the purpose for which they were created. These buildings are the result of long-term experience of builders and craftsmen, who gradually and over time improve the art of construction. The key feature we recognize in anonymous architecture is the repetition of the same unit or better the same architectural types with their variants. Thus, when we talk about an anonymous architecture, we are rarely referring to a single architectural monument. Usually, we are talking about building ensembles and settlements with a representative character, a special physiognomy and identity. Clusters of shells of similar dimensions, with slight variations of the basic types, are lined up on slopes, on steep cliffs or along the coastline.

Built from the same material as the ground or using the dominant shade of the environment, they become one with it and we can hardly distinguish them from a distance. The particular and continuous interaction of architecture with nature and the inclusion of man-made interventions in the landscape is perhaps the reason why historic settlements exude an earthly harmony and identity. The building units are the same and yet different, the historic settlements are shaped over time and not at the same time, reflecting the history of the place and the people who inhabit them.

Abandoned vernacular settlements //

A subset of historic settlements are the abandoned historic (rural) settlements. Special and multifaceted, once thriving and containers of life, that today stand at the limits of their material existence, deserted, without inhabitants, isolated from the contemporary context of life. The human presence is what keeps a settlement alive, therefore its non-existence implies its abandonment and desolation. An abandoned

historic settlement, while in an earlier era it played an important role in the political, cultural or economic life of a wider area, having - greater or lesser - historic value, today it is seriously degraded. The degradation mainly concerns the built environment and is mainly due to the demographic decline.

A settlement is a living organism, born with permanent residents, grows and develops under the influence of complex phenomena and, sometimes, suffers the consequences of abandonment, leading to desolation and "death". The factors that lead to the abandonment of a settlement by its inhabitants may be due to various causes such as geomorphological, social or economic, but also to natural disasters or emergency events. In general, we are referring to settlements that were abandoned because they are located in remote and inaccessible areas - mainly mountainous and therefore communication with the wider area was particularly difficult, i.e. settlements that were marginalized economically and socially and whose inhabitants moved to urban centres (Kotsopoulos 2015, p. 479). Finally, we are referring to settlements affected by some natural disaster or emergency events (earthquake, flood, landslide, fire or even war). In these last cases, we mean evacuation of settlements rather than abandonment (Coletta 2005, p.107-111).

Protection and reganaration of abandoned historic settlements ///

According to the UNESCO Recommendation concerning the Safeguarding and Contemporary Role of Historic Areas (1976), the protection of historic sites is equivalent, on the one hand, to their preservation, and on the other hand, to their adaptation to the demands of actual life. This double aim, which was already described as "active conservation" from 1966 and from 1975 until today as "integrated conservation", highlights two basic parameters, which are confirmed, sometimes directly and sometimes indirectly, in the main corpus of the international protection Charts. Therefore, through the international texts, the concept of the monument evolves into that of the cultural asset (Di Stefano 1979, p.40), which has a specific value (cultural and economic). Improving the stock itself by finding a suitable re-use, we increase its efficiency, producing a cultural and economic benefit for the society.

By the terms Regeneration, Vitalization, Reanimation of a monument or a historic ensemble we mean its restoration and the incorporation to a new form of life, if it has been interrupted, or its improvement, if it has been degraded. It is a form of active intervention, the result of implementing measures to actively protect the building potential in combination with the establishment of institutional measures to create economic, productive, social incentives, which will create the context of reganaration. Of course, this does

not imply a return to old forms of life, but the continuation of life within a traditional settlement, which can serve the contemporary needs of its users without altering its basic characteristics (Karadedos 2009, p.31).

Regeneration of an abandoned historic settlement means at fistrs the protection and mainly, the reintegration into the contemporary context of life. In essence, it is about integrating conservation into development patterns through spatial and urban planning. The process of reactivating all the multi-level and interdependent factors that constitute the abandoned historic settlement, must be the result of a coordinated efforts of research, planning, information, awareness and of course training of all involved people in the process. The scope that the policy of managing the existing building potential of historic settlements has acquired, the complexity of such interventions, but also the need to find feasible and sustainable solutions on a long-term basis, make it necessary to formulate and follow a certain methodology (Dousi & Kampouri, p.12-23).

Therefore regeneration of an abandoned historic settlement is basically the restoration to a new form of life. It is therefore the result of implementing measures to actively protect the historic building potential and the wider natural environment of the settlements in combination with the establishment of measures to create economic, productive and social incentives, which will create the context of regeneration. Of course, this does not imply a return to old ways of life, but a continuation of life within a historic settlement, which can serve the actual needs of its users, without altering its basic characteristics.

What is the way we will ensure the achievement of the protection and regeneration of an abandoned historic settlements? Primarily, a necessary condition is the recognition and understanding of the ensemble data that constitute the historic settlement and the causes that led to its abandonment, with the aim of evaluating them. A necessary condition is the formulation of proposals at all levels of study (spatial planning, urban planning, environmental, architectural, sociological, economic) and of course the establishment of incentives that will activate the interest of all the forces of intervention and make the project sustainable.

The regeneration project is multi-layered, depending on each case, answers should be given to specific questions, specific problems should be solved, and most importantly, risks that may lead to what we do not want, should be avoided, i.e. either to destruction of the identity of the settlements, or to lead in their second "death", if we do not take into account the viability of the intervention. Each settlement is a special case, so in a general approach only general remarks can be made regarding what we should aim for and what we should avoid.

Figure 1. Analysis and documentation of the historical settlement of Metaxochori in Tessaly - Greece. A student work of the course "Historical ensembles and sites: Redesign – Regeneration" (2022-23). Students: E.A. Kasioni, M. Kopanara, M. Pantelidou, D. Verikaki.

Figure 2. Restoration and Redesign of a street of the settlement of Metaxochori. A student work of the course "Historical ensembles and sites: Redesign – Regeneration" (2022-23). Students: Z. Chalkia, E. Kofidou, D. Nikandrou, I. Tsourlos.

In this general context, we should aim for the following:

• To ensure society's relationship with the historical and natural environment, i.e. raising awareness and activating social forces.

• The awakening of local forces (productive, cultural, environmental).

• To pursue the participatory process in decision-making with potential residents, settlers, or users in general and with stakeholders and local administration and bodies.

• To achieve a comprehensive and NOT piecemeal approach.

• To achieve a soft sustainable development.

• To reinterpret the existing historic characteristics and elements of each settlement in the present day by adapting all these data to the human factor, which is the most critical and dynamic element.

The risks, pitfalls and problems that lurk and must be avoided are summarized as follows:

• The non-integration of regeneration planning into a wider development context.

• The absence of contemporary sustainability conditions.

• The economic over-exploitation and development at the expense of conservation.

• The alteration of landscape/settlement/buildings identity.

• The scenographic restoration - museumization of the historic settlement.

From all of the above mentioned, is worth commenting on certain issues that are considered critical in the regeneration project. The protection of a historic settlement should not mean the interruption of its sustainable development. At the same time as protecting and preserving a historic settlement and its environment, we should seek its regeneration, which means the creation of a living cell and not a scenographic result only for cultural or touristic purposes. A preserved settlement should not be an uninhabited settlement. Any intervention planning for the regeneration of an abandoned historic settlement presupposes the systematic study and evaluation of its particular characteristics, with the aim of ascertaining its importance and protecting the values it contains, while at the same time answering the question of the possibility of its sustainable development. That is, to aim at the investigation and implementation of a strategy that would set the conditions and incentives for the ability of these settlements to once again be containers of life. In this context, new usage scenarios should be chosen, which could regenerate the abandoned historic settlements, without altering them. The international experience has given some successful examples of regeneration, which really provided a solution to existing problems and needs, with the integration of these settlements into the contemporary context.

Great attention must be paid to the preservation of the settlement's structure and boundaries, as well as to the relationship of the settlements with the landscape and nature, elements often overlooked. The preservation of the urban structure of a settlement mainly concerns the way the residential fabric is structured, and how it is inscribed in the natural relief. While the boundaries concern the definition of the historical core and its future extensions, as well as the definition of protection zones.

At the level of architectural elements, the new interventions must converse with the historically formed build environment and have a proportional relationship with it. In other words, to be inspired by the existing architecture and at the same time to reinterpret the meaning of the place. In most cases, the regeneration operation takes place in historic settlements shaped by anonymous or vernacular architecture, where the buildings interact in a unique way with nature, topography and climate. The dialogue with nature, expressed through materiality, is the simple expression of a complex thought: it is characterized by abstraction, an obsession with the essential and the necessary, not consuming the unnecessary. Therefore if we have to add a contemporary creation in this worthy of preservation context, we should add only what is absolutely necessary. In other words, the new architectural interventions in the historic context should correspond to the following:

• respect for the climatic conditions and the landscape,

• respect for natural resources,

• the economy of materials.
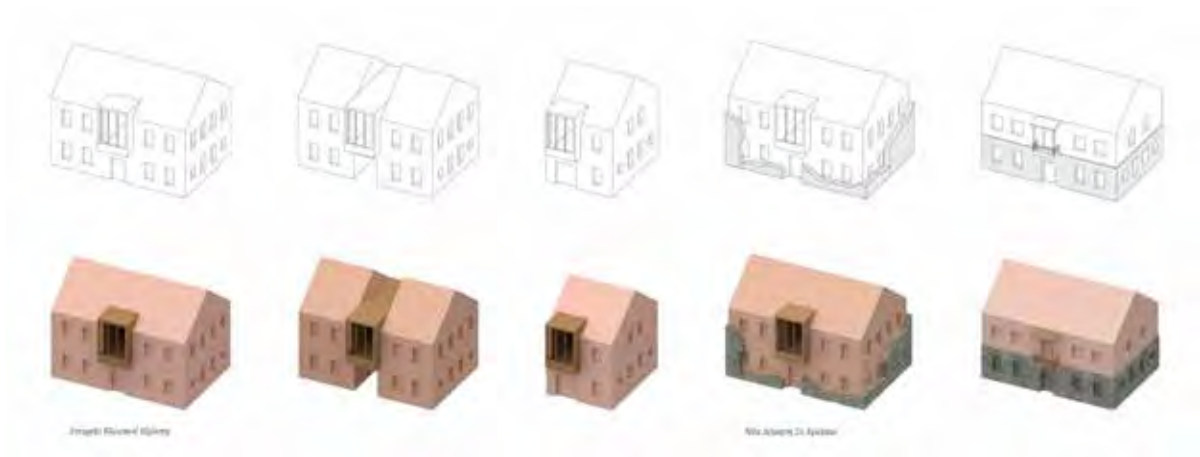
Figure 3. Approaches for new building for the historic settlement of Metaxochori. A student work of the course "Historical ensembles and sites: Redesign – Regeneration" (2022-23). Students: S. Anagnostou, O. Cekici, E. Matzoufa, S. Tasiopoulou.

Conclusions ///

Historic settlements, works of human and nature, were created and shaped gradually over time, assimilating a complex network of social, historical, economic and other influences. The reintroduction of new forms of life into an abandoned historic settlement requires a process of gradual transition from decay, abandonment and neglect, to the establishment of new uses and inhabitants, and finally to the reactivation of a community.

This process excludes in advance the abrupt, radical changes that could have adverse effects on the character of the historic settlement, on the landscape, but also on the social composition that will be called upon to repopulate them. The goal is not an immediate return to a completely different, conflicting reality with the past, but the restoration of the balances, on the basis of which the settlement once functioned and with which it can function today. A necessary condition is the respect of the identity of the place, which is also the main reason why the particular settlement deserves to be preserved.

The contact and reflection of young architects on the multifaceted approaches to the protection and regeneration of abandoned historic settlements must have a place in architectural education, since the architect has a decisive role in the issue of regeneration. It is the new generation of

architects who will be called upon to manage this historic stock in the light of regeneration, reuse, sustainable development and ultimately the protection of the historical and natural environment.

In the curriculum of the School of Architecture of Aristotle University is introduced the compulsory studio course "Introduction to restoration", in the 4th semester of studies, where students come into contact with the architectural heritage of vernacular settlements. In the context of this studio they are trained in the field, in order to identify, survey, document and evaluate the architectural heritage of a specific historic settlement. Then in the 9th semester of studies is introduced the elective studio course with the title: "Historical ensembles and sites: Redesign – Regeneration", in which students cultivate their sensitivity in terms of recognition and interpretation of a historically formed natural and man-made environment and its adaptation in the contemporary context. This elective studio course is of increased complexity, with the aim of approaching and understanding by the students the very important and decisive role and the corresponding responsibility of the architect during the redesign and management of the historical environment, as it is registered in the historical ensembles and sites. The didactic approach follows actual scientific methods of evaluation and management of historical ensembles and sites, through an interdisciplinary perspective. The elaboration of the studio includes all scales of design: from spatial and urban planning, to environmental and architectural design in historic sites, aiming to its regeneration and redesign, as well as their inclusion in the contemporary spatial context and life. Two of the subjects of the studio concerned the regeneration of the abandoned vernacular settlement of Milionas in the area of Prespa (northern Greece) and the settlement of Metaxochori in the Area of Larisa (central Greece).

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INTERSECTIONS OF ARCHITECTURAL HERITAGE WITH ECOLOGICAL HISTORY

Keywords

**Architectural Theory,
Environmental history,
Modern Heritage,
Critical Sustainability,**

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The architectural history and theory of sustainability has made great advances in interrogating cultural conceptions of nature, environment, and resources. This has exposed the complex relationship between the natural world and architectural design and practice. The new theorizations of nature that emerge from exchanges between architectural and environmental theory have exposed, among other things, how defining the 'natural' and the 'human-made' is not always straightforward, how nature is also a socio-cultural construct, and how viewing nature as a resource for human use or a resource to be conserved also encourages practices of consumption. From the perspective of architectural history and theory, these new critical perspectives have also shown how strategies that aim towards 'greening' architectural design can also be taken over by political or economic agendas, rather than environmental ones.

How can important critical theorizations of nature, environment, and resource conservation, inform a vital aspect of architectural practice; namely heritage conservation? What lessons can heritage practice draw from critiques that expose the political 'spinning' of ecological concerns? How can exposing darker sides of well-meaning green design strategies, or the 'hijacking' of sustainability by ecobranding and greenwashing (Parr 2009), also inform the way we think about the environmental responsibilities of heritage conservation practice?

Reflecting on precisely the above questions, this chapter examines how the architectural history and theory of sustainability intersects with the theory and practice of heritage conservation. To this end, an overview of the outcomes of the course titled 'Architecture and a Critical History of Ecology' is provided. This graduate seminar has been taught at the Department of Architecture at the University of Cyprus for several years, and examines the

history of environmental consciousness in architecture. This course's aim has been: to interrogate terms that are typically taken for granted in the currently widespread 'sustainability culture;' to vigilantly evaluate trendy notions of green; to carefully assess what we came to consider as environmental sensitivity, ecodevelopment or ecobranding in architectural production; to examine how what has been called simulations of nature affect architecture and conservation; and more importantly, to investigate the presumptions and possible blind spots of well-meaning design and heritage strategies.

Through this chapter, which provides an opportunity to reflect on the course, the designer and Instructor of the course (P. Pyla) and the Teaching Assistant for the course for the past 3 years (D. Zacharia) present selected student work. Let us explain this in more detail: After each class lecture on a specific topic, students were given a relevant text to read. Their weekly assignment was to consider the ideas introduced in the lectures and texts, and produce a collage in response to them. The work they produced, and sometimes the work produced in previous years, was then used to drive class discussion on the topic. Student assignments proved to provide a basis for unpacking the specific ways in which the historicization and theorization of environmental consciousness in architecture can also inform the way we understand the relationships of heritage conservation to contemporary environmental concerns. In some cases, the authors of this chapter further researched issues raised by student work, so as to build on students' initial instincts and concerns, and develop their ideas further when interpreting the collages. Some of these concerns are presented here, structured around key critical questions and student projects provoked by them.

The first critical question that was shaped by several readings on the conservation of modern heritage, contemplated the environmental costs that may be caused by the very act of building conservation. Inspired by a class reading on the toxicity of the copper elements of Frank Lloyd Wright's Price Tower (Swift 2011), several students produced posters that depicted real and imagined consequences of conservation, in order to explore the tensions that exist between material toxicity and esteemed architectural heritage. One particular student collage casted the spotlight on another Frank Lloyd Wright building, Fallingwater, and a hypothetical scenario that it too might require the management of toxic material or the tempering of its energy consumption. The collage provoked a lively class discussion on how the notoriety of a building can affect the path of otherwise straightforward environmentally-minded logic: If the removal or toxic materials, or upgrading the energy efficiency of a building, appears vital in terms of environmental criteria, it can also be anathema if one applies strict criteria of retaining/preserving its authenticity. Students

pondered which takes priority and who establishes such hierarchies between environmental concerns and heritage value, but also, how it may be possible for the conservation of architectural heritage to align with the goals of sustainability, without compromising the value of architectural artefacts.

Another student collage reversed the question of whether heritage conservation has environmental costs, to suggest that the environment also has a cost on heritage. The collage refers to Venice, Italy, as is a radical example of the complex intertwinement of human and nature, to highlight how nature such as underwater organisms are eroding Venice's built heritage. The lively discussion spurred by this provocative collage, also highlighted that Venice's pernicious seawater does not fit into a mere 'natural' category as it is a product of the human environment, and thus its polluted water adds a layer of complexity to the already ambiguous categories of 'natural' and 'man-made.' Through this example, the class unpacked context-specific antagonisms that arise from this ambiguity, since degradation is woven into Venice's significance as heritage.

Another critical line of questioning was inspired by readings that address the sometimes-contradictory reasoning behind the implementation of specific green strategies. Some class readings even pointed to specific flaws of evaluation criteria used to define green buildings as such. Inspired by these readings, student projects did not only highlight the need for diligently evaluating self-proclaimed 'green' projects, but they also investigated the ulterior motives to embracing 'green' strategies in architectural design. Several student collages exposed specific ironies presented by the implementation of green strategies and promotion of green buildings. One of these placed the renovation of the Secretariat Building in New York under scrutiny, to investigate whether the environmentally-conscious rhetoric that surrounded the celebrated renovation had considered particular environmental concerns, such as ensuring that the removed materials were appropriately reused or recycled (Figure 1).

Another question lurking behind many readings, was: What should the lifespan of architectural artefacts be? The course discussed 'architectural obsolescence' (Abramson 2016), and more specifically, strategies of the 40s that gave buildings a 40- or 50-year lifespan, juxtaposing them to more recent tendencies on conservation. Class discussion reflected on the possible impact of the radically opposite stance that demands that buildings live forever. This discussion inspired a student to produce a collage that likened a historic building to a milk carton, complete with its own expiration date (Figure 2). Her collage aimed to highlight the absurdity of definitive expiration dates for buildings, which have much more complex entwinements with their socio-cultural and economic context.
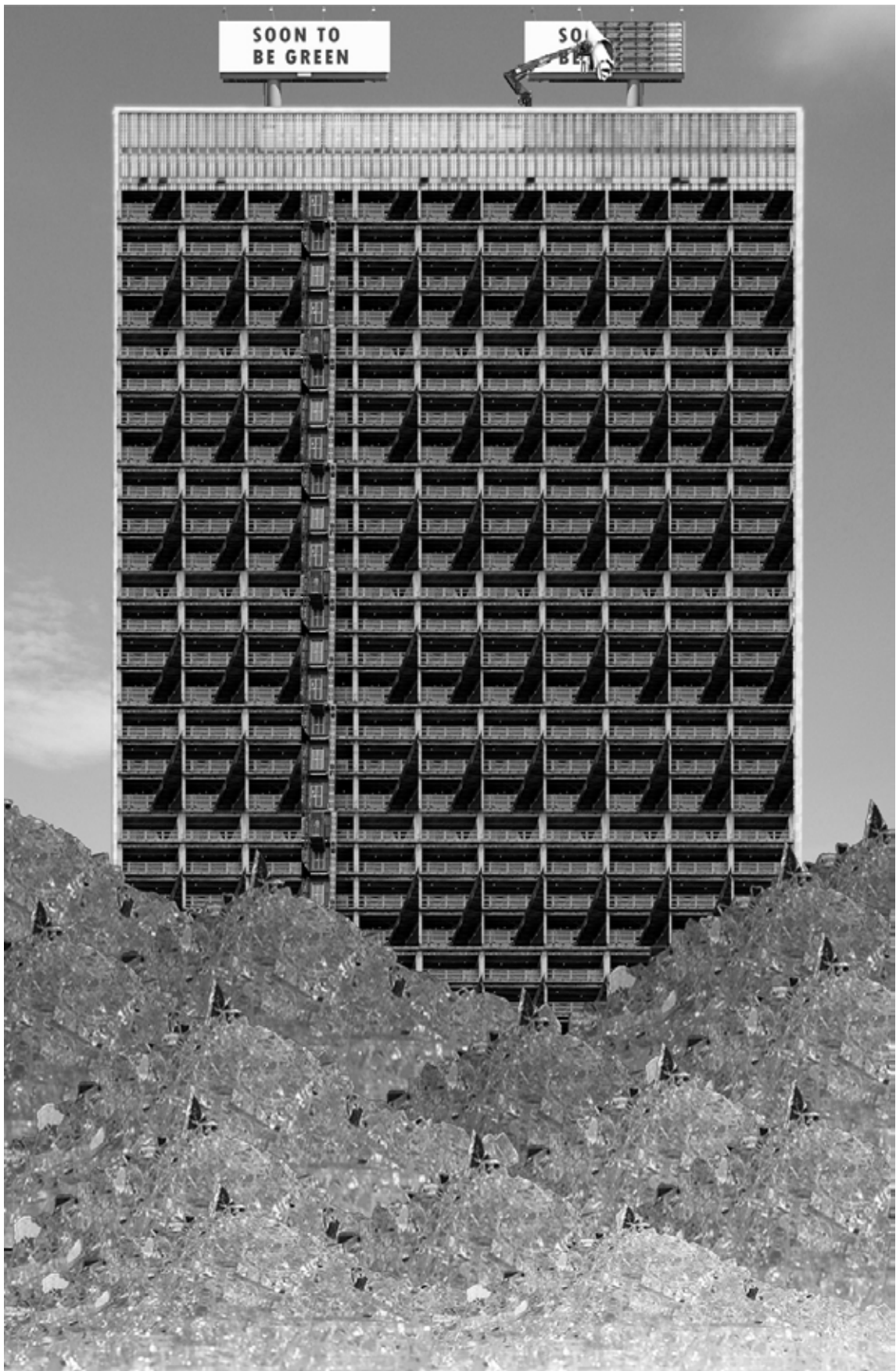
Figure 1. Student collage (E. Rousou and K. Kleitou) commenting on the hidden wastes of building renovation, 2021

Only a fraction of student work of the course 'Architecture and a Critical History of Ecology' is discussed here. The goal was to demonstrate how historically- and theoretically-minded questions, such as those contemplated in the course, are an important companion to the more technically-oriented practices that consider environmental technologies, because they enhance students' (and practitioners') theoretical knowledge and criticality.

Figure 2. Student collage (K. Nikoletti) commenting on the lifespan of buildings, 2019

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INNOVATIVE TEACHING METHODS ON RECORDING AND DOCUMENTING HERITAGE BUILDINGS FOR IDENTIFYING AND REVEALING THEIR VALUES

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Introduction

Recording and documenting architectural heritage is an essential process of gathering valuable information about various heritage buildings. This information is necessary for their historical and architectural study as well as for their conservation. The importance of documenting the existing situation of a structure before any intervention is also underlined in international charters on conservation such as Venice Charter, Faro Charter etc. (Smars 2008). At the same time the environmental monitoring of historic structures leads to their holistic view. This work presents a new graduate course on recording and documenting historic buildings using various methodologies and tools (traditional, digital, environmental). Through the course, students acquire theoretical and applied knowledge for the architectural and environmental documentation of heritage buildings, very essential for their future professional career.

A large number of courses on traditional methods of documentation of heritage buildings were incorporated in the past in undergraduate and graduate programs of architecture and conservation in many institutions, showing the importance of this field of work. Nowadays, the subject of recording and documenting cultural heritage (historic buildings) using advanced methods and technologies (laser-scanning and photogrammetric survey) is increasingly preoccupying the teaching of corresponding courses at university level. This is due to the ever-increasing impact that technology has on the cultural sector and the need for easy reproduction, display and dissemination of architectural heritage. In this context, a number of universities have established courses that integrate digital technologies in their curriculum. In the literature, the critical assessment of digital technologies in cultural heritage is discussed through an object-based teaching and learning module and through

the introduction of the concept of object-oriented solutions in digital technologies in heritage conservation (Hess et al., 2017, 2019). Although examples of the application of digital technology in the recording and documenting of historic buildings at the level of undergraduate or postgraduate programs are few in number, gradually they are introduced as modules within a wider teaching framework of architectural curriculums that refer to cultural heritage. Specifically, the aim of such courses is to offer the students through 'taught by doing' the possibility of implementing critical skills and operational tools in the case studies under investigation (Orario, 2015). In addition, through these courses students fully understand the advantage of technologies implementation with the integration of terrestrial and side techniques leading to the 3D documentation of heritage buildings. These courses offer an interdisciplinary approach where issues such as cultural heritage research, conservation, management and public engagement are examined through digital methods and applications.

Regarding the environmental perspective of cultural heritage, it is noted that only a limited number of courses have been introduced into higher education courses in architecture and conservation. The combination of environmental and architectural documentation is even more scarce in education programs of conservation. Courses covering environmental data mainly include strategies for supporting environmental sustainability of heritage buildings focusing on the sustainable adaptation and the retrofitting of historic buildings and do not usually involve environmental monitoring and tools.

The recent development of new digital techniques and tools for the architectural and environmental documentation of historic buildings led the University of Cyprus to the introduction in the graduate program of the course of Conservation and Restoration of Historic Buildings and Sites. An innovative element of this course is the combination of the environmental monitoring of the buildings with the architectural documentation, not found in other similar courses. This course provides basic and specialized knowledge of recording and documenting heritage buildings and ensembles the use of conventional and contemporary digital methods. It introduces technologies that refer to issues of recording the spatial organization, morphology and construction of buildings as well as their 3D representation and documentation in the digital environment. In addition, it refers to the recording and analysis of comfort conditions and energy efficiency of buildings and the recording of external and internal environmental data.

The major requirement of the course refers to the preparation of a project (Figure 1). Each group of students choose a historic church as a case study. Ecclesiastical buildings are

considered suitable for achieving the goals of the course as they follow some common typological characteristics, serve the same functional needs of the users and are easily accessible as they have a public use. The methodology followed in the preparation of the project includes three stages: a) preparation of floor plans using mainly traditional surveying methods, b) preparation of elevations, sections and 3D models using terrestrial laser scanning and photogrammetry and c) recording of environmental data.

The evaluation of the environmental perspective of churches allows the implementation of a research-based learning method, where students develop competencies and analysis, reflection, and argumentation skills along with their training. This learning tool combines the content of the teaching units with theoretical and practical information collected directly from the students, allowing them to participate in the development of knowledge by the method "learning by doing". The implementation of the research-based course, aims to promote and develop student competencies related to research practice, and to benefit students through activities linked to research. In addition, through project-based learning, the students investigate various aspects of the case study building, actively interacting with their co-workers in small teams, and with their teacher, exchanging ideas and discussing progress in each subject. The main outcomes of the students' work are in line with results of the literature. The field measurements carried out in the framework of this course showed that the lighting levels inside the ecclesiastical buildings were relatively low in all churches due to the small openings of these buildings. At the same time, churches with domes, provides higher lighting levels due to additional openings around dome. Higher internal temperature fluctuation, observed near the openings, can be related to the poor airtightness of openings allowing the external environment to influence the internal. The poor airtightness of openings was also confirmed by the use of thermography. The investigation of the temperature distribution showed that churches with domes presented slightly lower temperatures at the lower levels due to the transfer of heat on higher levels (level of the dome).

The incorporation of environmental monitoring with the architectural documentation of historic buildings, in the above course is an innovative element and at the same time essential for a holistic understanding of a heritage building. With the incorporation of environmental data in the course a multidisciplinary and integrative approach is ensured to the architecture education of conservation (Santamouris and Mumovic 2009). The environmental study of historic buildings in combination with their architectural and historic analysis and documentation is very important as it gives valuable and necessary information about their thermal and visual aspects (Kakoulli et al. 2022).
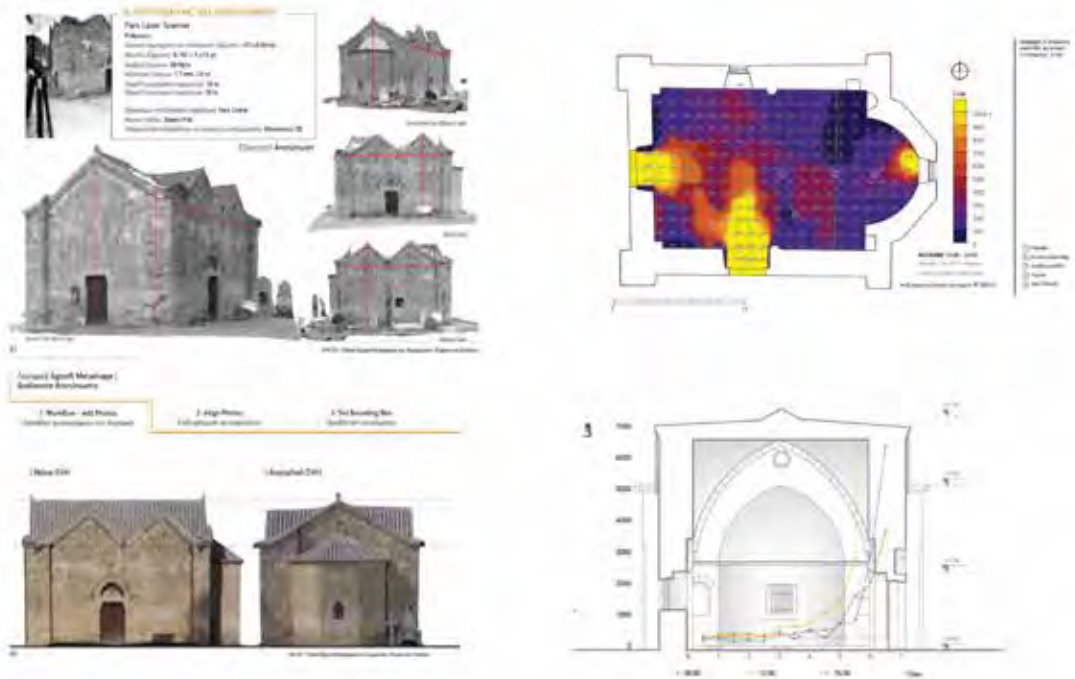
Figure 1. Church of Ayios Mamas, Dhali. Views of a students' project showing some of the survey methods followed, two elevations of the church (left) and the plan and one section of the building presenting the lighting levels inside the building (right), teamwork of 2020 Spring Term: M. Achilleos, I. Anastasiadou, S. Hadjipanteli, M. Theodoulides.

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TEACHING EXPERIENCES ON DESIGNING FOR HERITAGE TOURISM

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Introduction

That form of tourism which 'involves travelling to experience the current narrative of the tangible evidence of the past and its relevance today' (Kaminski et al. 2013, p. 6) is defined by scholars of one of the most important social, cultural, and economic contemporary phenomena as 'heritage tourism', which represents a specific section of the broader cultural tourism sector. The above statement, linking past and present in a network of relationships, responds to the most recent and consolidated definitions of heritage which 'is not simply the past, but the modern-day use of the element of the past' itself (Timothy and Boyd 2003, p. 4). History, as a discipline, produces knowledge about the past and records it, while heritage, being what 'contemporary society chooses to inherit and to pass on' (Tunbridge and Ashworth 1996, p. 6), consumes that knowledge. Therefore, although heritage deals with the past, a contemporary use of it is assumed and tourism is among its main forms of fruition. Between heritage and tourism there is a particular reciprocal relationship. Heritage places, in fact, 'are not simply 'found', nor do they simply 'exist', but rather they are constituted at one level by the management and conservation processes that occur at and around them and, at another level, by the acts of visiting and engagement that people perform at them' (Smith 2012, p. 213). On one side, heritage attracts visitors, whose presence contributes to touristification processes, and, on the other, the scopes and meanings of heritage are redefined through tourism (Gravari Barbas 2020). Scopes and meanings can change over time and in relation to geographical and social contexts.

If the dialectical relationship between heritage and tourism is unavoidable in the contemporary world, the broad and debated question of places identity seems to be essential. With respect to this issue, heritage tourism, like many other forms in which

tourism is articulated and differentiated, can play a double role. Indeed, it can help to appreciate the character of places and their specificity or, conversely, it can represent a risk factor for the conservation of those qualities that define the sense of places. Compared to this double condition, architecture design can offer an important contribution both in the processes of conservation and protection of heritage places, and in the enhancement of their characteristics, as well as in the definition of a framework of strategies and design actions aimed at responding to diversified needs expressed by inhabitants and tourists (Marzo 2016; Marzo 2020; Marzo et al. 2022).

Figure 1. Map of the schools joining the DHTL-Designing Heritage Tourism Landscapes Network [drawing by V. Bertini]

The "Designing Heritage Tourism Landscapes" network ///////////////////////////////////////

The activities of the international network of schools of architecture DHTL-Designing Heritage Tourism Landscapes – established in 2015 and led by Università Iuav di Venezia – are centred on these topics. The network is joined by 18 European and non-European schools of architecture which conduct together teaching and research programs focused on the relation between architecture, at its various scales, and heritage tourism[1]. Since its foundation, the network has promoted, internationally, 7 research seminars, 1 conference and 9 design workshops. The topics addressed in the workshops and seminars refer to some main thematic macro-areas: the architecture/tourism relationship in cities of art and in relation to iconic heritage places; the role of architecture design in tourist enhancement of marginal areas, rural landscapes, and historic centres subject to abandonment; the enrichment of archaeological areas.

The workshops represent an experiment in the field of education where the project is assumed as key to interpret the potentiality and critical issues associated with the tourist enhancement of territories and heritage assets, as well as a tool for understanding and interpreting places and their complexity, even before being the engine of their transformation. The workshops involve professors and students from the DHTL schools, focus on a specific design theme, often defined in collaboration with public administrations, and are hosted, from time to time, by the organising school. These pedagogical experiences are shaped as intensive educational ateliers in which, in a short period of time, normally between 8 and 15 days, students rapidly approach the design theme and the context's specificities, through discussion and dialogue between the participants. Although certainly not new, one of the most innovative aspects is the choice to form mixed groups of students and professors, diversified by school of origin and nationality. This working approach allows for the development of a discussion around the projects at multiple and intersecting levels: students-students, students-teacher, teacher-teacher, enriching the exchange of information and points of view both on the specific design topics and on more general objectives, that is the relationship between architecture and heritage tourism. So conceived, the transmission of knowledge takes place not only through ex cathedra lessons – held in the first days of the intensive workshops and with the contribution of representatives of the local government institutions and bodies for the protection and safeguarding of architectures and landscapes – but also through dialogue and induction.

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1   For information on the schools joining the DHTL network, scientific committee and professors, teaching and research activities see the website www.iuav.it/dhtl.

This ensures a transfer of knowledge both on the vertical axis (teacher-student) and on the horizontal one (student-student, teacher-teacher). The exchange of expertise, the comparison of design and theoretical approaches and the hybridization of the teaching methods used in the schools participating in the network are promoted.

The brevity generates conditions that deeply differentiate the workshops from other typical teaching courses. Among the main differences we can mention: the need to contract the preliminary phase to give as much space as possible to the design phase; the resulting opportunity for a rapid identification of the best strategies aimed at responding to the assigned program; the formative growth originated from the moments of debate and the contamination of different points of view (Marzo 2014 [1]; Marzo 2014 [2]).

Therefore, the workshops promoted by the DHTL network allow, on one side, to establish a field of comparison between the design approaches adopted in the involved schools; on the other, assuming the point of view of the design disciplines, to prepare students to face the complexities posed by the sustainable tourist use of heritage. The experimentation, albeit conducted in educational terms, in 9 experiences held until now, from Italy to Portugal, from France to Spain, from China to Cuba, has proved capable of providing innovative interpretations of the possible role of the architectural project in knowing, protecting, and enhancing the characters of heritage sites in relation to the complex issues posed by the tourism phenomenon.

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TEACHING ENVIRONMENTAL ASPECTS OF BUILT VERNACULAR HERITAGE THROUGH MASSIVE OPEN ONLINE COURSES (MOOCS)

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Vernacular architecture reveals the 'genius loci' of a place as it has been developed through an ongoing process of adaptation in response to social, economic and environmental challenges. A critical interdisciplinary re-evaluation of traditional settlements through the lens of resilience can enrich our understanding of sustainability. However, today's teaching methods and practices on the subjects of sustainability and heritage awareness are widely questioned and they often remain separated. Moreover, while digital and e-learning tools have proven particularly effective, especially during the recent COVID-19 pandemic, the introduction of these tools in higher education for cultural heritage conservation seems to be limited (Senevirathne et al. 2022; Otto et al. 2019).

This paper addresses the design of a Massive Online Open Course (MOOC) entitled "Conservation and environmental sustainability of vernacular architecture" (Philokyprou and Thravalou 2022). It is one out of four MOOCs on innovative techniques for heritage conservation, prepared in the framework of the Erasmus plus program "Smart Rehabilitation 3.0" (Onecha et al. 2022). The investigation of the environmental features of vernacular architecture is of great importance these days due to challenges with regards to climate change and the energy crisis. The preservation and reinforcement of the bioclimatic design elements during conservation, as well as the incorporation of these principles in new structures, in order to achieve improved energy efficiency may be considered as one of the key topics of sustainable development (Philokyprou 2011). The above-mentioned program aims to create a new innovative educational framework that can integrate vital educational challenges in the field of heritage conservation. Among the prime concerns of the project is the tackling of different types of problems, so as to generate sustainable based approaches and to create a homogeneous curriculum for experts in rehabilitation. More specifically, the above-mentioned MOOC includes five modules: the first module

provides an introduction; modules number two, three and four cover subjects on available tools, building materials and environmental strategies; while the fifth module introduces methods of environmental conservation of vernacular dwellings (Figure 1).

The first introductory module covers the notions and definitions of vernacular heritage, the sustainable aspects of vernacular heritage and finally the meaning and significance of environmental conservation of vernacular buildings. This module is structured in three parts. One of the main objectives of the first part is to answer the question "what is vernacular architecture". The various values – tangible and intangible – embraced by vernacular architecture are presented and analysed. In the second part of this module, the focus is on the sustainable aspects of vernacular architecture and the lessons derived from various international research programs, as well as local ones referring to Cyprus and the East Mediterranean region ('VERSUS' 2012; 'RIBuild' 2015; 'EFFESUS' 2016; 'BioVernacular' 2012; 'BioCultural' 2013). This theme includes the pillars of environment, economy and society. In the third part of this module international charters and declarations on conservation are presented and discussed. Through this module, the positive correlation between the adaptive reuse of vernacular architecture and society is shown. Reusing vernacular dwellings is associated with saving resources and enhancing the cultural identity of a place, therefore it covers the three parameters for a sustainable approach to development, i.e., the environmental, the economic and the social.

In the second module, the methodology and tools for assessing the environmental performance of vernacular dwellings are examined with an aim to assisting the decision-making process in terms of improving their energy performance. Specifically, in this module emphasis is placed on digital tools for climate analysis and on the evaluation of a building's environmental performance (environmental monitoring, modelling, energy simulation, BIM tools etc). In the third module, traditional materials used in vernacular architecture are analysed in terms of how these affect the morphology and environmental characteristics of anonymous architecture in relation to its environmental behaviour. More specifically, this module covers: a) an Introduction to climate parameters with an emphasis on the Mediterranean climate; and b) an overview of traditional building materials and construction techniques, such as earthen, stone and light weight timber constructions. In the fourth module, the passive strategies applied to vernacular architecture, at urban and building scale, are demonstrated. More specifically, the fourth module includes a) a brief introduction to the environmental principles in question and b) a detailed description of passive design strategies concerning the urban scale and the scale of the building. The focus is on outdoor public and private

spaces, as well as on the built environment (private dwellings – semi-open spaces, courtyards, etc.). More specifically, the environmental strategies concerning heating, cooling and the management of the microclimatic environment are presented.

The final module of this MOOC presents good practices for the environmental conservation of vernacular dwellings. More specifically, this module includes a) a detailed reference to the different strategies and principles of environmental conservation and b) examples of vernacular dwellings conserved preserving their bioclimatic characteristics. The aim of this module is to propose a sustainable approach to the conservation of vernacular dwellings by introducing environmental criteria into the conservation process. The investigation on the environmental features of vernacular dwellings reveals that although they may incorporate many environmental design principles, during conservation there is often a need to further enhance these principles so as to meet contemporary sustainability requirements. Through this module the importance of a multicriteria assessment during conservation is emphasized. This assessment allows for the establishment of a contemporary conservation methodology, by proposing alternative environmental retrofitting solutions. A very important step in this process is the achievement of a balance between the conservation of the authentic physical appearance of the dwellings and the retrofitting actions implemented. By completing this module participants will be able to understand the need to maintain and reinforce the bioclimatic strategies of vernacular dwellings, using mild means for energy upgrading.

By the end of this MOOC, it is expected that one will be able to identify vernacular dwellings and their sustainable aspects, as well as the significance of reusing such structures in an environmentally sustainable way. The theoretical and methodological approaches followed in the design of this MOOC demonstrate the great opportunities offered by e-learning in enabling both students' and experts' continuous education, even in a state of emergency (possibility for remote and asynchronous attendance). The discussion highlights that the implementation of such MOOCs on heritage and sustainability constitutes an effective method for broad knowledge sharing and scientific networking among the international community of conservation experts, scholars, practitioners and the wider public.

Figure 1. Print screens of the MOOC presentation video and of the two of the five modules of the MOOC developed by UCY.

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PART 1.2

PRACTICE

P01-NT
Modernist Rural Landscape as Heritage:
Challenging Value-based and Multiscale
Approach within Design Studio.

✕

P02-M
Bioclimatic design in historic open space
architectural competitions: Microclimate
simulations and critique through the
educational perspective.

✕

P03-V
Urban Morphology for Identification of In
Situ Values: Observation, Documentation and
Characterization.

✕

P04-SA
Archaeological Sites and Environmental
Planning: Sustainable conservation, protection
and enhancement of the natural setting of Aigai
World Heritage site, Macedonia, Greece.

✕

P05-T
Building technologies towards achieving
sustainable heritage.

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MODERNIST RURAL LANDSCAPE AS HERITAGE:
CHALLENGING VALUE-BASED AND MULTISCALE APPROACH WITHIN DESIGN STUDIO

Keywords

**Value-based approach,
design indicators,
education,
landscape as heritage**

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Cultural heritage studies are in the era of a new urban paradigm that focuses on holistic approaches shaped by the prominent initiative New European Bauhaus (NEB) (European Commission, 2021). NEB introduces cultural and creative dimension to the European Green Deal (European Commission, 2019) to enhance sustainable innovation, technology and economy. In this framework, the Baukultur concept (European Ministers of Culture, 2018), which represents the approach of perceiving the total human milieu, represents a significant research impetus. In order for such approaches to play an instrumental role in the long-term research agenda, it is necessary to initiate studies that strive to explain urban personalities of particular heritage types and to critically examine their characteristics through a multiscale and value-based research perspective. Types of built heritage differ in relation to numerous indicators that include not only physical characteristics but also ideological imperatives and cultural influences that contextualize them in the overall social order. In order to demonstrate the complexity of individual types of heritage, this contribution points to the emerging heritage type of modernist rural landscape and provides an overview of approaches that could be engaged in the function of its reprogramming into contemporary urban flows through a multiscale and value-based approach.

The modernist rural landscape represents an architectural construct of a wider spatial scope that was created as a product of (1) large-scale agricultural development and colonization schemes followed by the impact of (2) the modern movement on the rural landscape in the 20th century (Djokic, Milovanovic & Ristic Trajkovic, 2020) (Figure 1). In the contemporary moment, modernist rural landscapes represent specific legacy challenged by pool of dichotomies including - urbanity and rurality, modernity and tradition, local needs and global flows of economy, compact city and polycentric system. Within the scope of European Convention on Landscapes,

the landscape is considered as "an area, as viewed by the population, whose character is the result of actions and interactions of natural and/or cultural factors" (Council of Europe, 2000) which is a direct result of a new perspective on the construct of the landscape which is transferred from analysing visual aspects to understanding the landscape as an ideological representation. Following this line of reasoning, studies that look at the landscape through its textuality (Widgren, 2004) single out the following triad of research direction: (1) landscape as appearance—an idea, a way of seeing and representation, (2) landscape as institution—a mode of communication and social order, and (3) landscape as resource—capital, involving use and production. Accordingly, this contribution is built on the thesis that architecture is the establishment of the relationship between past and future, built and unbuilt, within the inherited and natural context and in direct connection with the overall culture and ideological implications. Unlike a traditional approach to heritage generally limited to considering only the visible values of the place, this contribution stands on the belief that, in the context of heritage, the implementation and application of value-based approach in architectural discourse contributes to the intensification and enhancement of these relations. In accordance with the need to re-examine existing and explore new forms of the reprogrammed heritage, modernist rural landscapes should be considered based on the framework of six 'Es' of landscape sustainability (Musacchio, 2009) — environment, economic, equity, aesthetics, experience, and ethics. Below is a brief review of the approaches that correspond to the mentioned 'Es' aspects.
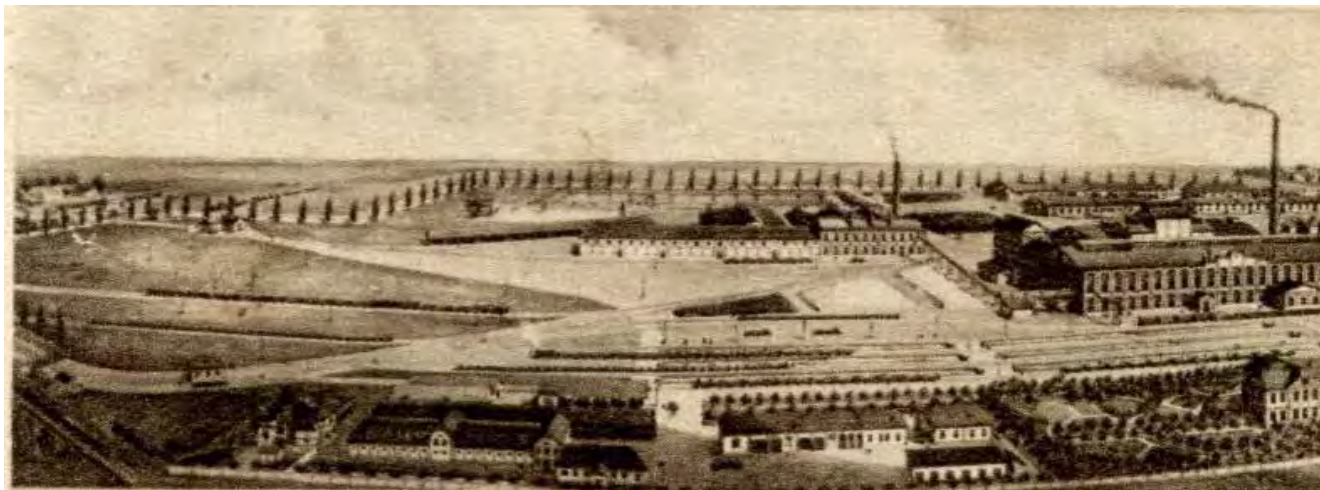
Figure 1. Zrenjanin sugar factory complex in Serbia. Source: Institute for the Protection of Cultural Monuments Zrenjanin.

Environmental approaches are a direct result of the challenges of climate change outlined in the European Green Deal framework (European Commission, 2020). In this framework, the general indicators of climate, urban context and location are discussed, representing (1) the concept of "zero emission buildings" for the improvement of building scale patterns of industrial heritage within the landscape, (2) the concept of "city of proximity" for networking of single entities of landscape into coherent system, and (3) ecosystem-based approaches such as green/blue infrastructure which could provide new order of values for landscapes. Economic approaches should be considered in the synergy of system indicators (including materials, technology, and processes), and time indicators (including growth, change, and constancy) in order to reach circular economy principles such as durability, designing for disassembly, etc. Approaches for equity in the narrowest sense are related to the issue of social values of the landscape, which is why their consideration is necessary in active correlation with ethics approaches. These two approaches are based on (1) culture-centred approaches which advocate needs-driven solutions and design in line with new sustainable lifestyles, (2) district and community-based approaches with the cooperative development methods, and (3) bottom- up participation and co-creation for creating a sense of togetherness. Aesthetic approaches should be considered in relation to the quadruple indicators – form, space, style and tradition. At the base of this group of approaches and their associated indicators is the concept of Baukultur with place-based approach which could contribute to the understanding of (1) local and regional identity, (2) distinctiveness and sense of place (fitting the local

context), as well as (3) quality of experience and style beyond functionality. Finally, experience approaches are manifested in relation to a group of human values that include physical, physiological, psychological, and functional indicators. These approaches are encouraged by overcoming the human-centred perspective towards a life-centred perspective that advocates responsive approaches such as approaches for social and functional mix, age- and gender-responsive approaches, and eco-design for better health indices and well-being standards improvement.
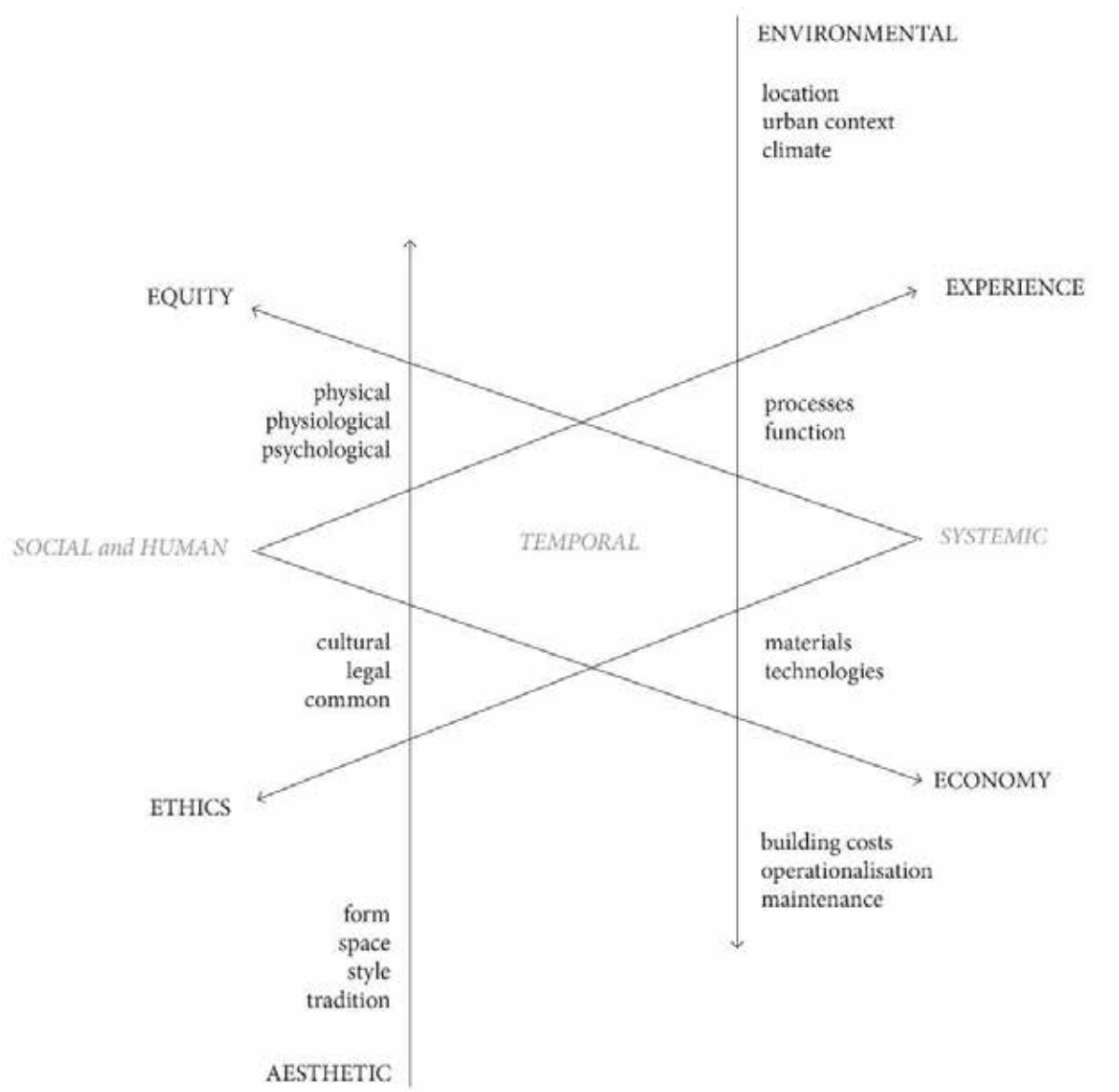
Figure 2. Design values related to the framework of six 'Es' of landscape sustainability. Source: Authors.

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BIOCLIMATIC DESIGN IN HISTORIC OPEN SPACE ARCHITECTURAL COMPETITIONS:
MICROCLIMATE SIMULATIONS AND CRITIQUE THROUGH THE EDUCATIONAL PERSPECTIVE

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Introduction

Greece's latest legal framework (Ministry of Environment and Energy 2021) for the procurement of national or international architectural/urban design competitions dictates that their undertaking is mandatory in the case of public works that are of significance and prominence. Hence, the Greek state upholds architectural competitions as a realistic best practice when dealing with historic open public spaces. The increasing attention given to outdoor environmental conditions, pedestrian comfort, and urban resilience in the light of ongoing climate change, has spurred a recent trend in the procurement of "bioclimatic design" competitions for such open spaces, which in most cases hold significant historic importance and built heritage.

The approach introduced here builds upon the recent legacy of such bioclimatic competitions, in Greece, using them in the context of a coordinated research practice that seeks to develop a critique on the objective, the framework, the processes and the outcome of such competitions while enquiring on both measurable/quantitative and qualitative aspects of the shortlisted designs. The text examines two such competitions for central locations, for the cities of Serres and Ioannina, as studied through Master's Thesis produced in the context of the MSc Program Environmental Design of the Hellenic Open University. The shortlisted designs are re-visited through computer simulation, evaluated and ranked according to environmental indicators, while the results are discussed in relation to the outcome of each competition.

Research study I: Emporiou Square Bioclimatic Design //
Competition, Serres

An architectural competition was announced in 2015 by the Municipality of Serres and the Technical Chamber of Greece, for the regeneration of Emporiou Square, at the city's center. The square has been a busy commercial hub of the city since the last century, today hosting multiple commercial activities, services and urban transport, surrounded by mid rise buildings and cultural monuments (such as Eski Hamam). Among 28 competition entries, the jury awarded three equal first prizes and three honorable mentions.

A retrospective study (Tarasi 2019) performed an evaluation of the three awarded proposals (Figure 1), on the basis of their environmental performance and their effect on pedestrian comfort conditions, using microclimate simulations, utilizing the ENVI-met software (Figure 2). The critical microclimate parameters estimated by simulations of each proposal (air temperature, wind speed, surface temperature and PMV indices) were compared to the initial conditions and also correlated with ground surface material proportions, vegetation cover and trees distribution in each case. Spatially averaged values of the results were used to assess the proposals' effects at noon and evening of a typically warm summer day. The daily fluctuations of the same parameters at four specified spots of the square were also compared among the proposals and the initial state of the square to assess the effects of different design, materials and vegetation.

The comparison revealed that the second awarded proposal had the greatest area averaged improvement, over the existing conditions case, in a typical summer day with a reduction of air and surface temperatures up to 2.2% and 15.8% respectively and a reduction of comfort indices up to 16.1%. The comparison of spot results also showed the impact of the amount and the arrangement of trees and of the ground surface shading on microclimate and pedestrian comfort.

Figure 1. Plans of the three prize-awarded proposals for the redevelopment of Emporiou square in Serres a. Proposal 1, b. Proposal 2, c. Proposal 3 (source: Tarasi 2019).
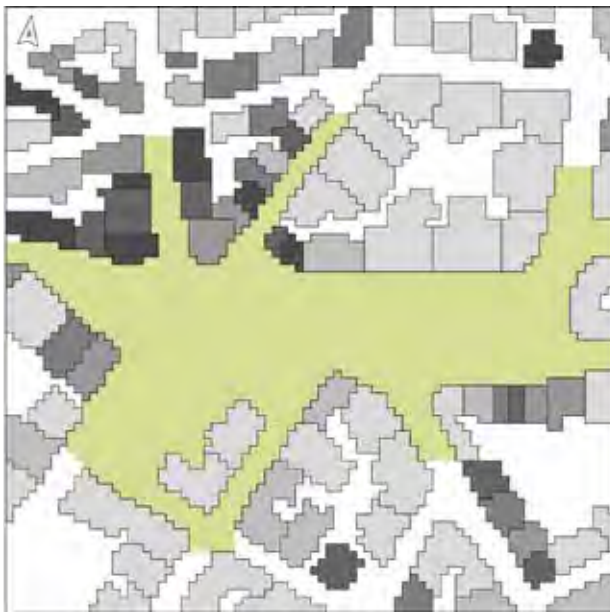
Figure 2. Digital model for the simulation of the study area indicating different building heights and the public open space (source: Tarasi 2019).

Research study II: Pyrros Square Bioclimatic Design Competition, Ionannina

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The intense public discourse following the announcement of the prizes awarded in the context of the panhellenic architectural competition for the redesign of the Pyrros square, in Ioannina, Greece, in March 2018, motivated the research (Solidaki, 2019). The competition was launched by the Municipality of Ioannina; It called for preliminary urban design proposals for a new identity for Ioannina's central square that would respect the historic context: the open space is flanked by civic functions such as the Law Courts, the Prefecture building and the Oasis café, a listed modernist building designed by A. Konstantinidis (1971). At the same time, the competition brief called for the application of a bioclimatic approach, while nevertheless neither setting specific quantifiable parameters/targets, nor defining a valid way for producing such documentation. The competition attracted proposals out of which three received 1st, 2nd and 3rd awards and other three proposals received honorable mentions.

As for Research study I, the current condition and the three winning proposals were simulated and evaluated as to the pedestrian comfort conditions that they enable, through the use of the Envi-met software. Air temperature (Figure 3), wind speed, surface temperature and PMV indices were correlated with ground surface material proportions, vegetation cover and trees distribution. The resulting mapping indicates once more discrepancies between what was claimed by designers and judged by the jury as bioclimatic features of the proposals and what could actually positively influence microclimatic conditions, as indicated through the simulation process.

Discussion and conclusions: Assessment methods and design evaluation through the educational perspective

The bioclimatic approach, in the context of architectural competitions for open public spaces, is currently not specified with particular quantitative requirements, and is present in design proposals in the form of environmentally friendly design intentions, technical applications and anticipated future improvements. The evaluation of entries with quantitative measures, such as those provided by simulation software results and environmental indicators similar to those utilized in the presented research studies can assist in the validated documentation of the environmental improvements, expected by the architectural proposals, and the objective evaluation of their quality in specified environmental and bioclimatic terms. Therefore, these assessment methods can become a useful tool for competition jury decision making and can also dictate the way to proclaim specific requirements in bioclimatic architectural competitions. Furthermore, the methodology outlined here has been used in several postgraduate research thesis (Kalaitzidou 2022, Moleiro Dale 2021, Gentsidis 2020, Atsalinou 2020, Tsigaki 2019) and has the added value of an educational perspective, facilitating a tool that can assist students in further developing scientific evaluation skills of environmental design.
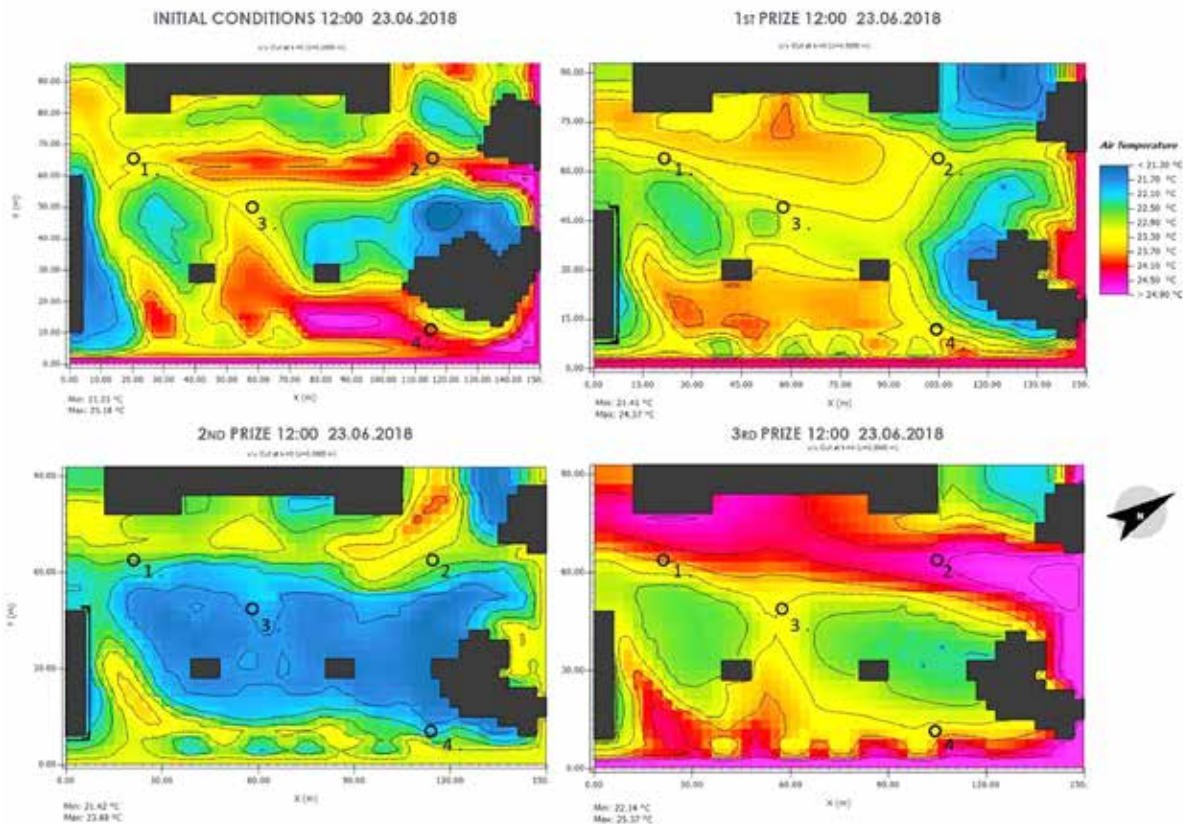
Figure 3. Color-maps of air temperature as calculated by the Envi-met software, corresponding to the existing conditions (top left), 1st award (top right), 2nd award (bottom left) 3rd award (bottom right), on 23rd June at 12:00 (noon) (source: Solidaki 2019).

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URBAN MORPHOLOGY FOR IDENTIFICATION OF IN SITU VALUES:
IDENTIFICATION, DOCUMENTATION AND CHARACTERIZATION

Keywords

**Urban morphology,
urban form,
education,
in situ values,
fieldwork**

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In situ values can be perceived as valuable assets one can found in a specific place – either as already present and recognized cultural values or patterns that can become values through identification, documentation, and characterization. Conscious of the cultural and historic value of the urban heritage, in-situ values are critical to the interpretation of the urban patterns, and, consequently, of the culture which formed them. This chapter explores relations between Heritage/ Sustainability, and Urban Morphology, by demonstrating possible uses of Urban Morphology in recognition of In situ values.

Urban morphology, as a concept, discipline, and method within research of urban form, is traditionally associated with research practices on tangible heritage. Additionally, the activities of identification, documentation and characterization of urban patterns are at the core of urban morphology. Consequently, urban morphology gives special attention to the values of urban heritage that one can find by researching "on the site", about values that are seen in relation to the groups of patterns rather than by observing individual buildings or artifacts, isolated and separated from the original environment (natural, social, cultural).

Urban heritage is a concept that refers to layers of historical, physical remains that constitute contemporary urban areas characterized by a constant balance between the need for change and development, and endeavour for protection and conservation due to its historical values (Karlstrom, 2014). Identification, documentation, and characterization are research activities undertaken in order to describe the found state of the built environment and build a normative framework on urban heritage and/or give prescriptions and predictions for the future state.

Following the year 2016, Springer has published 129 books within the Urban Book Series, four of them solely dealing with issues of Urban Morphology (Oliveira, 2016, 2018, 2019, 2021).

These books represent a long-term endeavour of the editor and key figures from the field to publish current viewpoints in the field, and thus present a possible starting point for elucidating the role of urban morphology in providing the basis for creating a normative framework for education, practice, and research. Bearing in mind that Landscape, Architectural, and Urban heritage are traditional research subjects of Urban Morphology, this paper points out the possibilities and importance of engaging this discipline in providing a relevant framework for addressing the future development of comprehensive study and education of future professionals to deal with heritage and sustainability through various aspects, relations, and scales.

In line with the contextually sensitive approach, the key questions that arise are what elements to identify, how to document them, and how should a description of the distinctive nature or features be provided through so-called characterization.

Identification in the discourse of urban morphology is exercised for understanding the values of local culture through experience and recognizing the cultural patterns that are loaded and read from the morphological characteristics of the urban heritage. Urban morphology can fill in the gap within current research in Heritage studies, by dealing with multiple spatial levels - from landscape to architectural detail (Figure 1). Accordingly, scholars act on (a) spatial components: identification of landscape, townscapes, morphological regions, character areas, urban tissues, plot dimension (b) configurational elements: types-building, street, building forms and architectural styles, (c) temporal components changes and transformation, (d) conditional/relational elements: boundaries, limits, divisions, features, factors and (e) functional-operational characteristics: agents, uses and planning zones, density, and land ownership.

To understand urban form, and assess documentation, there is a growing need for field-based learning or experiential learning, currently underrepresented topics within discourse of urban morphology (Larkham, 2005, 2018; Larkham and Morton, 2021). In the research conducted through the implementation of the HERSUS project, an insight was gained into the representation of field work in the education of architects in the domain of heritage and sustainability. Although the shortcomings and problems of organizing field research are known, both in education and in practice, this form of work is still present as desirable for transmitting and expanding knowledge about cultural heritage. Considering the changed conditions of research and the experience of the value of cultural heritage characterized by the increasing use of digital tools, the question of an alternative to field research arises. Bearing in mind the trend that personal experiences in the perception and presentation of values are

expanded and, in some circumstances, completely transferred from the analog to the virtual world, the question arises as to what is lost in that translation and what with new tools becomes visible to new generations. In addition, observation, mapping, and recording are perceived as crucial elements for documentation.

As a third element, characterization is advocated through urban morphology to inform decision-makers about the values of elements that are subject to protection, conservation, or transformation – values that are seen in relationships and patterns and city assemblages and not only in individual objects, and hence to make a reasoned decision about the determination of conservation areas, building rules, define policies for conservation, etc.

Three different approaches to urban morphology contain several tools and methods that can be used in phases of identification, documentation, and characterization: the historico-geographical approach, process-typological approach, and space-configurational.

Identification

documentation
· observation
· mapping
· recording
· selection
· field-based learning
· experiential learning

· morphological regions, areas
· boundaries/limits/divisions
· types (street, building...)
· agents
· land ownership
· landscapes, townscapes
· features (similarities, differences)
· urban tissues
· uses, planning zones
· density
· morphological periods,
· stages of transformation
· factors (environmental, social, spatial)
· plots dimension
· building forms and architectural styles
· changes

Figure 1. Urban morphology in relation to identification, documentation and characterization. Source: Authors of the paper

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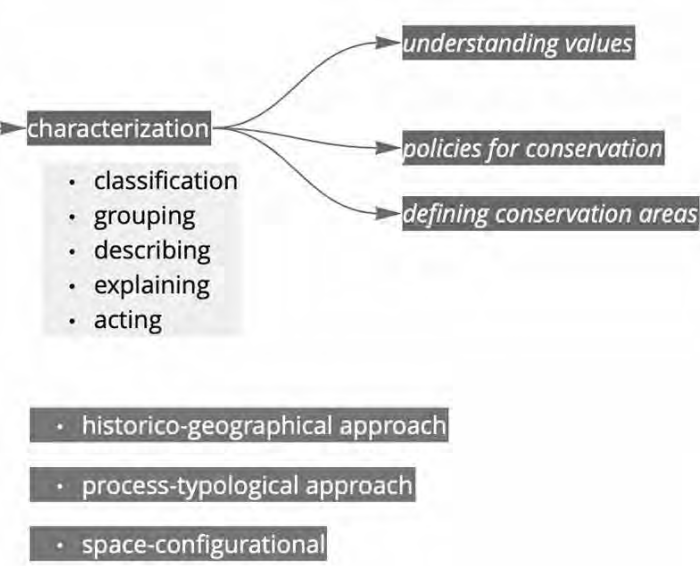
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ARCHAEOLOGICAL SITES AND ENVIRONMENTAL PLANNING:
SUSTAINABLE CONSERVATION, PROTECTION AND ENHANCEMENT OF THE NATURAL SETTING OF AIGAI WORLD HERITAGE SITE, MACEDONIA, GREECE.

Keywords

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The conservation and protection of the archaeological heritage has been a priority of the Greek state since its foundation in 1830. The current legislative framework Law No 3028-2022 (OGG of HR, 2002, p. 3003) for the protection of Greek cultural heritage, foresees the necessity of protecting the natural setting or "free environment that allows the surviving monuments to be composed in historical, aesthetic and functional unity" putting an emphasis on an integrated conservation approach where, especially for archaeological sites, their relationship to their natural landscape is of primary importance for the preservation of their historical value and meaning. Three years after the issuing of this law, in the ICOMOS "Xi'an declaration on the conservation of the setting of heritage structures, sites and areas" (ICOMOS, 2005, p. 2) it is stated that "heritage structures and sites also derive their significance and distinctive character from their meaningful relationships with their physical, visual, spiritual and other cultural context and settings".

In Greece conservation of natural landscapes has been proved inefficient due to uncontrolled construction outside the limits of existing settlements. Greece signed the European Landscape Convention 2000, ten years after its redaction, in 2010. But due to inefficient relevant administrative services and a complex planning legislation, the actual implementation of policies regarding the protection, management and planning of natural landscapes has been proven until today fragmentary and incoherent. In the European Landscape Convention (Council of Europe, 2008, p. 10) "Landscape management" is considered as "action, from a perspective of sustainable development, to ensure the regular upkeep of a landscape, so as to guide and harmonise changes which are brought about by social, economic and environmental processes". In accordance to the above mentioned official guidelines for the protection of heritage and natural sites, the Greek Law 3028-2002 (OGG of HR,2002, p. 3007-8) provides for the

designation of zones around archaeological sites in which construction activity is completely prohibited (Protection Zone A') and in cases, partially controlled, if the designated area is extensive (Protection Zone B'). The procedures provided by the legislative framework of the Greek Ministry of Culture have been proven the most effective regarding the protection of natural landscapes, while their management and planning provide, in most cases, an environmentally coherent heritage management combined with an integrated conservation approach.
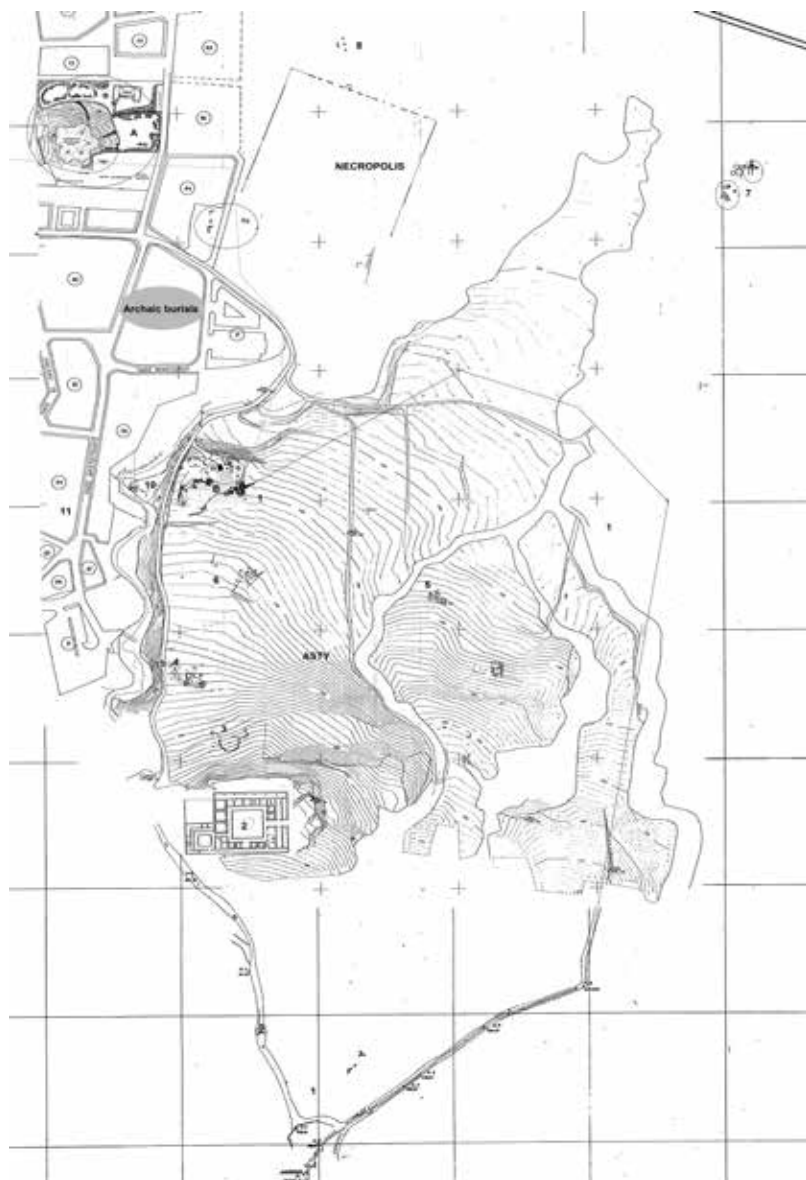
Figure 1. General plan of Aigai 2009: A. the burial cluster of Philip II, B the Burial cluster 'of the queens', Γ. the burial cluster 'of the Temenids', 1. The walls, 2.The palace, 3.The theatre, 4. The sanctuary of Eukleia, 5. The sanctuary of the Mother of Gods, 6. The north-western building, 7. The burial clusters of Hezey-Bellas, 8. The long tumulus.
© Greek Ministry of Culture, Ephorate of Antiquities of Hemathia

The recent project for the planning, management and protection of the Nekropolis of Aigai, as a public archaeological park, can be regarded as an exemplary case of integrated sustainable conservation.

The site of Aigai (UNESCO, WHL / 780), (A. Kottaridi, 2020, p. 22-26) the ancient first capital of the Kingdom of Macedonia, comprises a network of monuments dating from the 11th century BC until the early roman period, excavated in and around the modern settlements of Vergina and Palatitsia, in Northern Greece (Region of Hemathia). At Aigai was rooted the royal dynasty of the Temenids, the family of Philip II and Alexander the Great. The Archaeological Site of Aigai (fig. 1), containing an urban center – the oldest and most important in Northern Greece – and several surrounded settlements, is defined by the rivers Haliakmon (W and N), Askordos (E), and the Pierian Mountains (S). The most important, already excavated, archaeological remains of the site are: the monumental palace (ca 340 BC), the theatre, the sanctuaries of Eukleia and the Mother of the Gods, the city walls and the royal necropolis, containing more than 500 tumuli, dating from the 11th to 2nd century BC. Listed in the World Heritage List in 1996 (UNESCO, WHL / 780), Aigai is located inside a designated area of outstanding natural beauty (fig. 2). In order to preserve and enhance the site's integrity, the Greek Ministry of Culture has worked out a master plan aiming to maintain the Outstanding Universal Value of the site in the long term. In the master plan zones of absolute protection and control of new building construction have been designated (Protection Zone A': 1,420.81 ha / Protection Zone B': 4,811.73 ha) (UNESCO, WHL / 780), applying effectively national and international standards and regulations. The protection of the monuments and their natural setting as an ensemble, ensures the authentic context of the city and its cemeteries. The worldwide impact of the antiquities discovered in Aigai resulted in a massive turnout of visitors, for whom special facilities had to be provided, while the Archaeological Site has an ongoing systematic excavation.

The vast necropolis of Aigai (UNESCO, WHL / 780)(A. Kottaridi, 2020, p. 45-55), located in the plain to the north of the city, is centered on the Early Iron Age cemetery with the burial mounds (11th-7th centuries BC), expanded to the south in the Archaic years (6th-5th centuries BC), to the west in the Classical period (5th- 4th century BC) and to the east in the Hellenistic (3rd-1st century BC).

According to the master plan cited above, the Nekropolis was designated as a park occupying an area that exceeds 200 hectares, including 540 surviving, visible burial mounds, where only a few of the existing tumuli have been excavated until today. The project of the restoration, implantation and embellishment of the Royal Cemetery, funded by the EU (2012

-2015), is completed and the area is open to the public. The ongoing excavations, expected to continue during the next years, will enhance the educational role of this heritage site allowing the public to experience archaeological research in situ.

The project adopted environmental sustainable design tools focusing on the preservation of the local fauna and flora and the thermal and visual comfort of visitors. For providing shade and enhancing the biodiversity of the site, 7.500 trees of local species were planted. The entire area of the archaeological site was fenced (fig. 3) and the network of ancient lanes was preserved, while nowhere within the park hard impermeable materials were used for the circulation network of visitors. Streams and water elements were preserved, made accessible by small bridges and the herds of goats found within the site were allowed to circulate in a limited zone. Reversible steel framed protective canopies were placed on excavated mounds and in part of the royal burial cluster.

The services of the Greek Ministry of Culture protecting and managing heritage sites by implementing the strict legislative framework for the conservation of antiquities, succeed in providing efficient large scale landscape protection while adopting an integrated sustainable conservation approach through environmental planning for heritage sites.

Figure 2. Bird's eye view of the site of Aigai looking towards north, with the Nekropolis in the foreground,. © Greek Ministry of Culture, Ephorate of Antiquities of Hemathia

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Figure 3. The fenced archaeological site of the Nekropolis with the burial mounds (tumuli) © Greek Ministry of Culture, Ephorate of Antiquities of Hemathia

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BUILDING TECHNOLOGIES TOWARDS ACHIEVING SUSTAINABLE HERITAGE

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Introduction

Various aspects of building technologies are integrated into contemporary design approaches in sustainable heritage treatment. From the basic analysis of buildings, starting from applied materials and structural characteristics to the complex design interventions and their impact on future building performance, strategies, and tools related to technological issues are constantly being developed. These tools are used throughout the design process and serve for testing and validation of various concepts. On the other hand, many strategies and approaches integrate technological issues in the core steps of building design, starting from the initial concepts. Usually used as an adjective for the word design (environmentally responsive, energy conscious, climate-sensitive, carbon neutral, etc.) these numerous concepts carry an added value, which contributes to the qualities of environmental protection and/or comfort issues. While these diverse tendencies should be encouraged, there is also a raising need for all those values to become integral to the design process. This approach is being encouraged by legislation, and to a larger extent by market uptake (through labelling), but still, all the mentioned values are too often being regarded as an added feature, relying on technological solutions. **Mapping the overlaps** in the different approaches and actions which all have a similar technological background is the first step in defining a common methodology for sustainable heritage treatment.

Concepts //

Originating concepts dating from the mid-20th century have evolved from pioneering days of solar architecture all the way to contemporary ecological imperatives. The main theoretical approaches include **solar, bioclimatic, green, sustainable,** and **resilient** architecture (Figure 1). As professional knowledge and general awareness grew, the postulates become more complex: bioclimatic has added the climate and interaction with the environment to the basis of solar architecture (Olgyay, 1963; Herzog 1996); green architecture has expanded to the environmental issues in the wider sense as well as to human health and comfort (Klaus, 1997). Notion of sustainability has introduced socio-economic factors, while the ever-growing uncertainty has put the spotlight on the issues of resilience (Szokolay, 2008). Since the 1970s, growing energy demand has fostered resources depletion, excessive CO_2 emissions, and many geopolitical turbulences on a global and local scale, reflecting the environmental and social relevance of energy, so a few concepts that are focusing on the energy performance of buildings became dominant and continue to shape the current architectural practice (Hegger et al., 2008). Starting from energy-efficient through passive, nearly-zero, net-zero to energy positive, these energy-related concepts are becoming an integral part of contemporary practice, and buildings' energy performance is perceived as an important feature by legislation, the public, and consequently the real estate market.

Figure 1. Evolution and overlaps of design concepts (source: authors)

Design strategies //

Design strategies can be defined as paths that transfer concepts into tangible design features and technologies. Some are more relevant in the early design stages, as the consequences of design choices often cannot be reverted or remediation requires excessive amounts of time, money, and resources. Basic strategies in the preliminary design of new buildings refer to placement, orientation, and thermal zoning. When dealing with the existing buildings, this means that the initial site assessments and deep understanding of the relevant potentials and shortcomings present crucial input for the design basis. Aside from their cultural and historical values, the existing buildings are also a significant resource, considering the embedded materials, energy, and work, so preservation and refurbishment are imminent to the viable sustainable approach (Giebeler et al., 2009). The thorough understanding of building as a resource is best reflected in the schematic design phase introducing the postulates of (re) shaping and (re)materialization, followed by modernization and optimization of technical systems. In the last step, a building may even generate a positive environmental impact. Figure 2 presents design strategies for new and existing buildings.
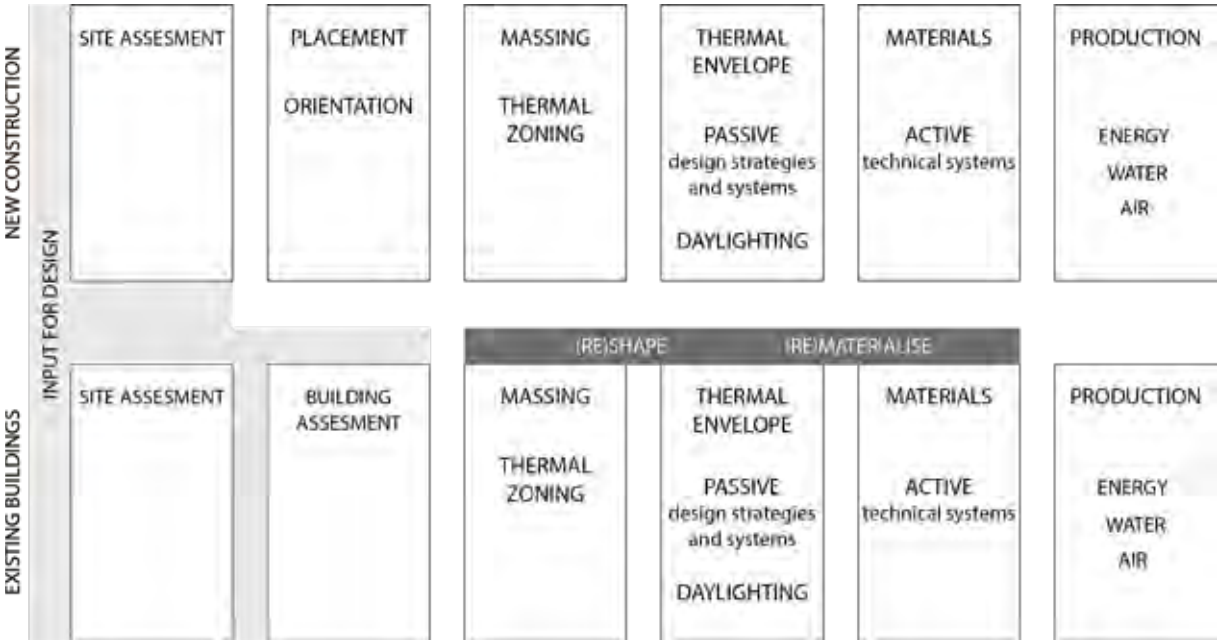
Figure 2. Design strategies for new and existing buildings (source: authors)

Design tools //

Technological tools for assessment of the achieved design qualities are being developed in parallel with the emergence of new concepts, and range from simple tools to complex systems. Those that could be considered appropriate from the building technology perspective are: building life cycle analysis, rating systems for green building assessment, building energy performance simulation, and in-situ measurements of building performance.

Building life cycle analysis can answer numerous questions and help reduce the impact building has on the environment during the various stages of a building's life: design, construction, operation, as well as demolition and disposal processes. This process identifies the flow of materials, energy, and waste originating from material or a building during its entire life cycle so that the impact on the environment can be predicted in advance **The rating systems for green building assessment** aim to quantify various aspects of a green building. They consider a comprehensive set of relevant building performance indicators (e.g., energy consumption, CO_2 emission, waste reduction, application of green materials, indoor air quality, etc.). **Building energy performance** simulation primarily takes place during the building design process and can be a valuable method of control of different building characteristics and their expected performance. Enormous potential for this type of analysis has been recognized due to the development and increasing application of BIM technologies. **In-situ measurements of building performance** are quantitative indicators that examine and verify different building characteristics. Different measurement tools can be used in different situations: a) after the building construction to make sure that intended performances are achieved, b) during the exploitation of the facility to determine whether the facility functions adequately, and c) during a renovation to determine whether and to what extent the conditions have improved.

Based on the type and characteristics of specific architectural heritage building appropriate design strategies should be considered and different available design tools applied in order to achieve a more sustainable and resilient design solution.

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PART 1.3

RESEARCH

R01-NT
Recognition of the Universal Value of Less-Represented Heritage Categories: The Case of Modern Heritage of our Built Environment.

✕

R02-M
Methodologies for approaching heritage management in the 21st century: The identification of cultural values and attributes.

✕

R03-V
Reconstruction. Reuse. Resilience. Notions through International Charters. Meanings, interpretations, evolutions.

✕

R04-SA
Ruin, Unfinished, Abandonment in Architecture. Incompiuta church as an experimental case study for a multilayering methodological approach in conservation.

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R05-T
Mapping stories Cartographic narratives of landscape approach.

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R01-NT

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RECOGNITION OF THE UNIVERSAL VALUE OF LESS-REPRESENTED HERITAGE CATEGORIES:
THE CASE OF MODERN HERITAGE OF OUR BUILT ENVIRONMENT

Keywords

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Modern Heritage in the Context of UNESCO

Under the UNESCO Global Strategy for a credible, balanced and representative World Heritage List (WHL), adopted by the World Heritage Committee in 1994, the World Heritage Centre (WHC) is engaged in assisting State Parties that have few or no World Heritage Sites (WHS) to protect, preserve and nominate their heritage of outstanding universal value. Together with this geographical balance, UNESCO also initiated a pro-active approach with regard to the identification and documentation of less-represented categories of heritage for inclusion on the WHL. One such category is Modern Heritage (MH), defined by UNESCO as the Architecture, Town Planning and Landscape Design of the 19th and 20th Century. In this context, in 2001 the WHC, together with ICOMOS and DoCoMOMO International started the Modern Heritage Program (WHP), with the goal of identifying and listing Modern Heritage (Loren-Méndez 2021).

In the context of such Program, it was pointed out the vulnerability of MH, due to weak legal protection and low appreciation among the general public and institutions (Van Oers and Haraguchi 2003). As Francesco Bandarin pointed out: "there should be a pro-active approach to identify and document those less-represented categories of heritage, such as Modern Heritage" (Van Oers and Haraguchi 2003, p. 4).

Despite the good intentions of the program, we have to wait until 2017 for the next UNESCO monographic publication, in which the director of the World Heritage Centre, Mechtild Rössler, acknowledges that this heritage type is still underrepresented and points to it as a field of opportunity (Aprile and Doubleday 2017).

The present study aims to unveil that this problem of underrepresentation of MH within UNESCO WHL still persists in 2023, in the 20th Anniversary of the MHP. It also aims

to contribute to raising awareness among researchers, students and faculty members of architecture of the need for commitment, but also of the opportunity that modern heritage represents.

In order to do so, and in the context of HERSUS Erasmus+ European Project focused precisely on enhancing of heritage awareness of the built environment, this research analyses the MH included in the WHL of the five European countries of HERSUS Consortium: Serbia, Italy, Cyprus, Greece, and Spain. While these countries represent a coherent regional group in the Mediterranean area, they also offer diverse realities in the consideration of MH. The fact that almost 50% of the world cultural heritage within the WHL is located in Europe, it makes this continent a proper case study for MH, which all properties are, with very few exceptions, under cultural heritage within the WHL.

Presence and Absence of Modern Heritage   //

In the first place, the study identifies the number of MH properties of each country. As shown in the following table, these five countries only add up to a dozen of properties: no MH properties are listed in Serbia or Cyprus; only one in Greece; and three in Italy and four in Spain, increasing to five in both countries when taking into account the transboundary properties.

Cultural heritage properties in the WHL in HERSUS consortium states					
	Cyprus	Greece	Italy	Serbia	Spain
National	3	16	49	4	42
Transboundary	0	0	4	1	1
MH	0	1	3	0	4
MH Transboundary	0	0	2	0	1

The absence or scarce MH declarations are more striking when we look at it in proportion to the rest of the declarations in each country, as we can see in the following figure 1: from the absence in countries such as Cyprus or Serbia, to just over 9% in Italy and 11% in Spain if we take into account the transboundary ones.
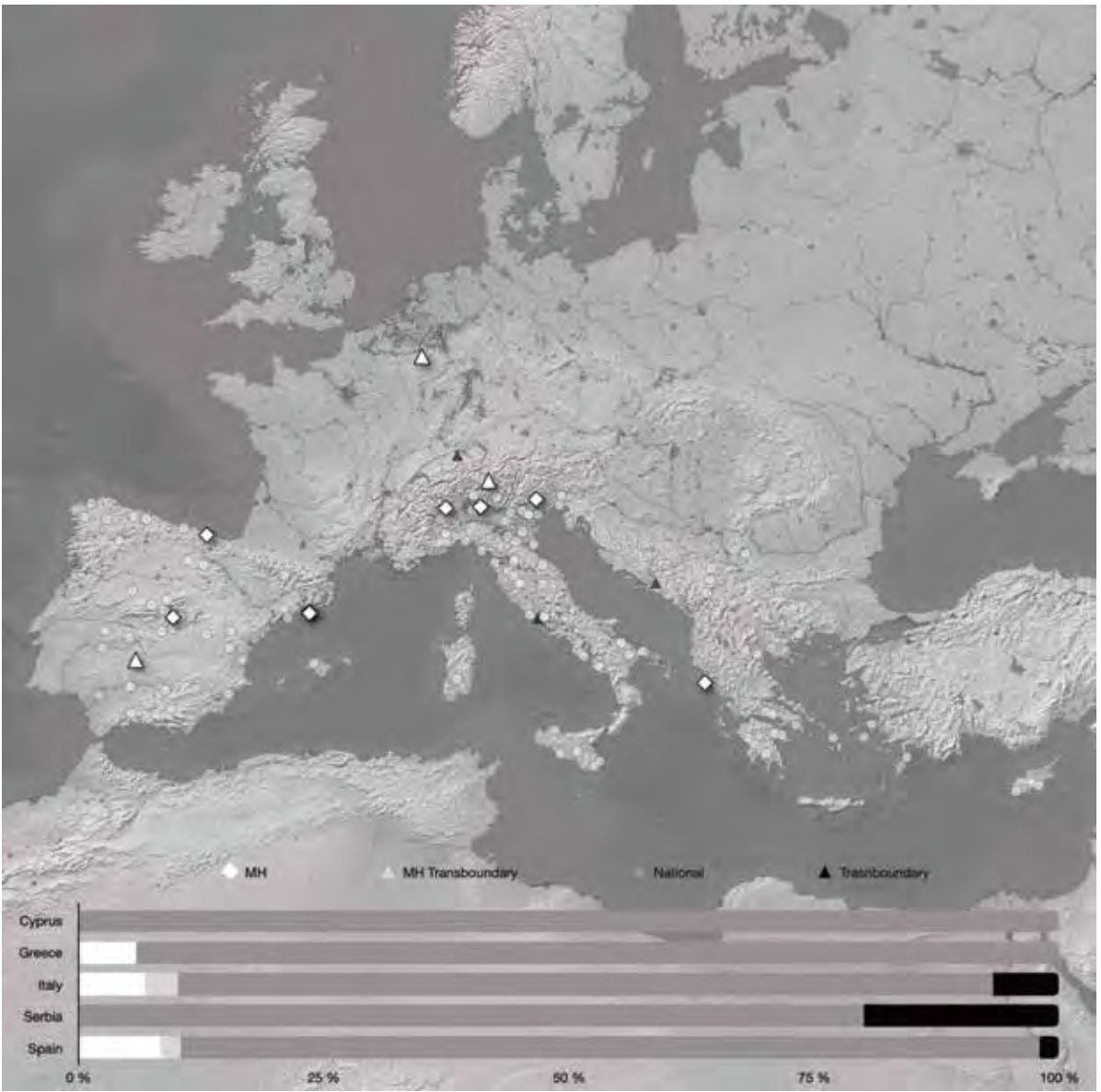
Figure 1. Map with location of Cultural Properties in the World Heritage List of HERSUS Consortium State, highlighting the Modern Heritage. Diagram with proportion of Modern Heritage per state.

Some of them belong entirely to the XIX or/and XX century. However, others have been built throughout different periods of time; in these cases, the Evaluation and Declaration documents have been reviewed in order to confirm their relevance during the XIX or/and XX centuries. Transboundary properties have also had been taken into account. It is the case of the only property in Greece, the Fortified City of Corfu. Although at a first glance of the ICOMOS Report, this urban heritage may not be identified with MH, the central relevance of the works of the XIX and XX century is explicit in the identification of its outstanding universal value (OUV), both in its integrity and authenticity. Regarding its Integrity, it is stated that: "The Old Town of Corfu is a fortified Mediterranean harbour retaining traces of Venetian occupation, including the Old Citadel and the New Fort, but primarily of the British period." (World Heritage Convention 2007, p. 167). Regarding its Authenticity: "The present form of the ensemble results from the works in the 19th and 20th centuries, even though based on the overall design of previous phases, particularly in the Venetian period" (World Heritage Convention 2007, p. 167).

Programs, Scale and Criteria of Modern Heritage in World Heritage List

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If we take a closer look at these 11 MH properties, we can identify the predominant programs and types and therefore their scale; their location; their declaration dates; which are the criteria supporting their OUV. Industrial heritage is indeed the most predominant one, with a total of 6 properties, more than 50% out of the ones identified in these five countries. It comprises different uses and scales, which range from elements such a bridge, to urban assembles, and landscape ensembles: 2 industrial towns, both in Italy; 1 industrial extractive complex, in Spain, transboundary; 1 rural landscape, also in Italy; 2 transport infrastructures, 1 in Spain and another in Italy, transboundary.

Summary of Modern Heritage Properties in HERSUS Consortium States					
Property Name	**Insc. Date**	**Criteria**	**HERSUS State**	**Trans-boundary**	**Other States**
Old Town of Corfu	2007	(IV)	Greece	No	
Crespi d'Adda	1995	(IV) (V)	Italy	No	
Rhaetian Railway in the Albula / Bernina Landscapes	2008	(II) (V)	Italy	Yes	Switzerland
Ivrea, industrial city of the 20th century	2018	(II) (IV)	Italy	No	
Le Colline del Prosecco di Conegliano e Valdobbiadene	2019	(V)	Italy	No	
The Great Spa Towns of Europe	2021	(II) (III)	Italy	Yes	Austria,Belgium,Czechia,France,Germany,United Kingdom of Great Britain and Northern Ireland
Works of Antoni Gaudí	1984	(I) (II) (III) (IV)	Spain	No	
Palau de la Música Catalana and Hospital de Sant Pau, Barcelona	1997	(I) (II) (III) (IV)	Spain	No	
Vizcaya Bridge	2006	(I) (II)	Spain	No	
Heritage of Mercury. Almadén and Idrija	2012	(II) (IV)	Spain	Yes	Slovenia
Paseo del Prado and Buen Retiro, a landscape of Arts and Sciences	2021	(I) (II) (III) (IV)	Spain	No	

Figure 2. Up-Left: Crespi d'Adda. Xiquinhosilva. 2015, https://flic.kr/p/KGxgAr. Accessed on 25th November 2022; Up-Right: Almaden Mining Site. Elvira Nimme. 2011, https://flic.kr/p/9tQXqW. Accessed on 14th January 2023; Bottom-Left: Vizcaya Bridge. Daniel Pinzón-Ayala. 2017. Botton-Right: Rhaetian Railway. Kecko. 2018. https://flic.kr/p/JPj4jP. Accessed on 14th January 2023.

However, this consideration of industrial heritage was exceptional fifteen years ago in the WHL: the dates of declaration of industrial heritage of these five countries, occur, with the exception of the Crespi d'Adda industrial town, from 2006, and therefore after the MHP.

After the research carried out, we can confirm that industrial heritage is no longer an emerging heritage, in a phase of claim by certain groups, and its consideration as heritage has been institutionalized at the international level in the UNESCO context. It has thus overcome a restrictive approach based solely on its ethnological value, and its valuation as cultural heritage has already been assumed.

Seven properties built by the architect Antoni Gaudí (1852–1926) in or near Barcelona testify to Gaudí's exceptional creative contribution to the development of architecture and building technology in the late 19th and early 20th centuries. These monuments represent an eclectic, as well as a very personal, style which was given free reign in the design of gardens, sculpture and all decorative arts, as well as architecture (World Heritage Convention. 2023).

In contrast, the first MH declaration in 1984 includes seven buildings by Antoni Gaudí in Barcelona, Spain. Although such declaration is valuing the technological innovation of his work and its subsequent influence, it still predominates the genius of the author, and above all the artistic and creative expression of progress. This declaration finally protects unique and unrepeatable works, which are referred as 'monuments' in the Declaration, and not so much as examples as technological, social and political processes and changes, within the definition of Modernization by Marshall Berman (1982) (Conti 2017, p. 8). It is symptomatic that the declaration includes an industrial settlement such as the Colonia Güell, of which it protects its crypt as a Gaudian work. The 1997 Declaration of two other works of Catalan Modernism - the Palau de la Música Catalana and the Hospital de Sant Pau by Domenech i Montaner, reoccurs in such artistic expression. "Improved qualities in life in cities by facilitating movement and providing green spaces and infrastructure was a key concern of positions linked to Modernity" (Conti 2017, p. 14).

The city as a space of Modernity, which responds to the new social conditions of quality of life that new developments are otherwise able to formalize, is finally incorporated to the WHL, and represented in the valuation of the Great Spa Towns of Europe, Italy, transboundary, and Paseo del Prado and Buen Retiro, in Madrid, Spain. This urban and landscape scale has very recently been incorporated into the WHL in these countries: both declarations take place in 2021.

Figure 3. Works of Antoni Gaudi, Left: Viewpoint of Park Güell; Right: Inside of Sagrada Familia. Roberto F Alonso-Jiménez. 2018.

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METHODOLOGIES FOR APPROACHING HERITAGE MANAGEMENT IN THE 21ST CENTURY:
THE IDENTIFICATION OF CULTURAL VALUES AND ATTRIBUTES

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Heritage management in the 21st century

The management of cultural heritage in the 21st century faces two key challenges: the response/adaptation to current urban problems and the incorporation of citizens in decision-making. The scale of these problems is wide-ranging: The impact of climate change and its critical environmental consequences, the deepening economic crisis, terrorist attacks and wars, the obsolescence of architectural heritage, touristification, the displacement of the local population, informal occupation, increased social and cultural vulnerability, in addition to the effects of the pandemic . All these threats have exacerbated urban problems in many countries, with visible effects on cultural heritage .

The challenge ahead of us lies in being able to manage this heritage in accordance with the above-mentioned difficulties and being aware that today heritage must be seen as a resource that improves the quality of life of citizens. In this sense, addressing heritage management from a sustainable approach implies considering heritage as another resource that contributes to strengthening urban development and the local economy, becoming a key part of urban, economic and social sustainability (Bandarin & Oers 2015; UNESCO 2015). This approach allows establishing strategies that bring about the linking of heritage with quality of life and belonging to a place (Bandarin 2011; UNESCO 1995), while contributing from roots, tradition and identity.

The combination of the current situation in which we find ourselves together with the responsibility acquired by heritage to provide a service to society, demands a heritage management with an integral vision, where both the heritage issues identified and the relationship between them are taken into account. Furthermore, the breadth of the concept of heritage considered as a system made up of natural and cultural, tangibles and intangibles components, which act

as referents of the cultural identity of a specific community, also requires the incorporation of a transdisciplinary team. Additionally, managing heritage from such a broad perspective involves working on different scales, being able to face a building with its surroundings, an area of the city or territory. Lastly, the updating of knowledge is essential and forces us to learn from other experiences, so the review of new models of heritage city management based on urban governance and the heritage-sustainability binomial, is also considered very valuable, as well as those that are aligned with the 2030 Agenda.

All these issues highlight the need to address the management of heritage in accordance with the challenges of the 21st century, going beyond its historical and heritage scope, resolving its relationship with the rest of the city and its territory, and where transdisciplinarity, new technologies and citizen participation are considered key. This approach enables acquiring an important ability in the study of cultural heritage in its multiple facets and dimensions, which fosters the critical capacity in relation to the identification of heritage values and attributes. This methodology of intervention in heritage, can be structured in three phases: heritage identification (research and documentation), cultural values, and conservation project.

Process to manage heritage //

In this context heritage management is understood as a set of planned actions that have the aim of preserving heritage. Actions are proposed from an inclusive consideration of the asset and from a transdisciplinary perspective that bases decision-making on knowledge and reaches agreements through the participation of the different stakeholders involved. Heritage management models have changed from a lineal conception of protecting action –structured in phases of knowledge, valuing and intervention – to its understanding as a transversal, relational and continuous process (Mosquera 2018). Preliminary studies and heritage characterisation, diagnosis and definition of values are developed in this way to lead to the project and its implementation, concluding with maintenance management and preventive conservation.

Check list to know if you are following the right process to manage heritage (Acosta Ibáñez et al. 2022, p. 65)		
	Yes/No	Description
Planning : phases, objectives, tasks		
Interdisciplinary team		
Preliminary studies		
Conservation diagnostic		
Identification of (cultural) values		
Monitoring values / new values proposal and transformations		
Identification of impacts and vulnerabilities		
Definition of strategic lines of action		
Maintenance Programme		
Identification of agents involved		
Participation of heritage communities		
Dissemination activities		

KNOWLEDGE   REFLECTION   INTERVENTION   MAINTENANCE

STUDIES / VALUES / PROJECTS / EXECUTION / VALORIZATION / MAINTENANCE

Documental management + Graphic representation

TRANSFERENCE

PARTICIPATION

SUSTAINABILITY

Heritage Project as a process
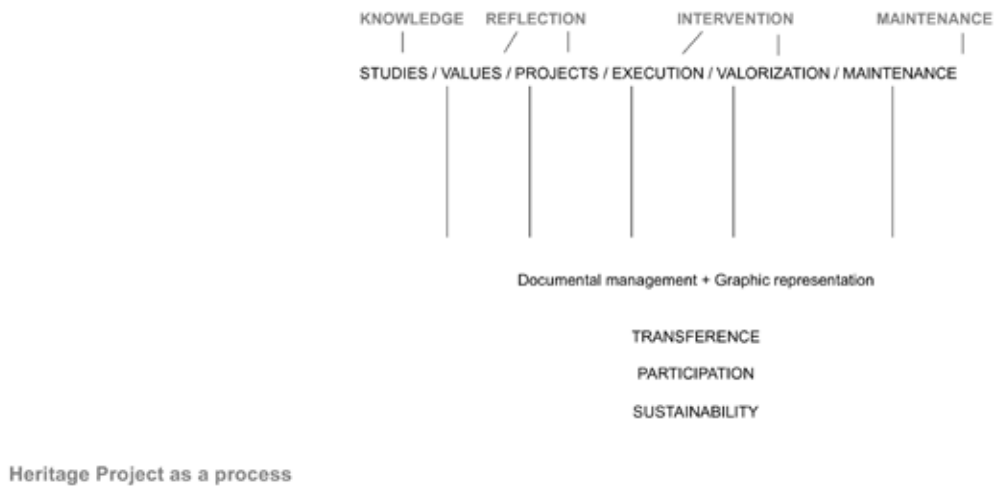
Figure 1. Heritage Project as a process (Source: Castellano-Bravo, B. Garcia-Casasola, M. in Gómez-Villa 2019, p. 81)

Conservation project to intervene on heritage //

To understand the application of the methodology, it needs to reflect on the concept of Heritage Project (also Conservation Project): it is understood as a process to preserve and generate values, developing analysis and proposals.

This methodology has been developed by the Andalusian Institute of Historical Heritage from the time it was created, based on the main topic that we need to know to intervene/ to act. We understand the heritage intervention as a planned critical process. The decisions are made from interdisciplinary knowledge and from an integral perspective: KNOWLEDGE, VALORISATION AND INTERVENTION are the main steps to preserve our heritage.

The Heritage Project as a process with different phases that never end is early on a circular process, the phase of knowledge never ends because we are always learning something new. (Figure 1)

The process starts with the development of interdisciplinary studies: archaeological studies, historical studies, material studies, anthropological studies, etc. The team must interpret the studies to characterise the asset, to identify the values, the

main characteristics of the building, the site, or the landscape we are working on. At the moment we have enough knowledge to start the proposals, we can develop the project to go through the intervention, a phase which has the objective of reinforcing/strengthening the original values and creating new ones. The last but not least important phase is maintenance. It is very important to create a system to manage the maintenance.

There are two important tools to work with heritage:

Documental Management: as we are going to collect a lot of documentation (images, plans, drawings, bibliography, etc.) we need to organise it very well to ensure a quick access to each document and to guarantee that in the future another team can access it without problems.

Graphic representation: As architects the language is graphic, and we know that in heritage it is very important to spatialise the information (maybe using GIS or BIM).

There are three cross-cutting processes:

TRANSFERENCE: we need to communicate the information, the knowledge, from the beginning of the process.

PARTICIPATION: we need to take the community which is part of the heritage we are working with into account. We need to try to reach a consensus, people can stand behind the main decisions, they should accept them.

SUSTAINABILITY: we understand sustainability to preserve our environment in which you can find heritage. As we are working with this methodology we are working from a sustainable point of view: recovering, rebuilding... And always working with communities.

Values and society: working with communities ///

The key is to recognise the importance of the aspects of heritage as they relate to human rights and democracy , expressed in the convention   on the Value of Cultural Heritage for Society (Council of Europe, 2005). Values and society are the main aspects of this convention which is still working in the field of heritage and from the sustainability point of view.

This in-depth knowledge of the heritage asset allows knowing all the possibilities of intervention that the cultural asset admits but aligned to two premises: the conservation of its authenticity and its commitment to local development. And it is this commitment materialised in the inclusion of local communities in the management/intervention of heritage that consolidates the sustainable approach.

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RECONSTRUCTION. REUSE. RESILIENCE. NOTIONS THROUGH INTERNATIONAL CHARTERS.

//

Introduction

In the post-war setting, the Venice Charter (ICOMOS 1964, Jokilehto, 1998, Petzet 2004) represented a founding moment for the codification of an effective system of collective protection of cultural heritage that could operate on an international scale. This codification had a first reference in the congress held in Athens in 1931, whose resolutions are universally known as the Athens Charter (Jokilehto 1986, 399-401, Jokilehto 2018). The post-war urgency arose from the awareness that there is a deep link between monuments, history and people, that the cultural heritage, as the 1972 UNESCO Convention (UNESCO 1972) later states, is a common heritage. Over the years, the original premise outlined in the preamble of the Charter has transformed, needing the adoption of a concise lexicon that encapsulates the synthesis of form, meaning, and action in a universal manner. This was prompted by the increasing number of International Charters, as noted by Jokilehto (2007) and ICOMOS (2004), to preserve the dual nature of connecting the international community while cultivating local roots, as emphasized by ICOMOS (2013). The terminology issue has been faced in various International Charters, such as the Venice Charter, by utilizing both a glossary of definitions and linguistic pluralism, as highlighted by ICOMOS (1994a) and the project Charta von Venedig (2014). In more recent Charters, starting with the Nara Charter (ICOMOS 1994b), the reliance on English and French as official linguistic references has been minimized. The field of investigation relating to the evolution of the concepts and definitions expressed in the Charters and their link with changing social, cultural and economic conditions (such as war conflicts, redefinition of geopolitical boundaries, and social changes) allows us to frame the Charters as privileged observers to investigate the relationship between cultural heritage and communities (Sorbo 2020, 664-671). Therefore, the Charters represent a potential archive on an international

scale of the changing role of cultural heritage conservation for contemporary society as they record, in international contexts - but also legitimate on a local scale - methodological efforts for a common language (Jokilheto 2018, 399-420; Battista and Sorbo 2020, 754-761).

Research //

Starting from this premise, the research undertook an interpretative reading of the actions characterizing the restoration project, i.e. excluding the key terms such as conservation, restoration and protection but using three terminological reference themes of Hersus Project: Reconstruction, Reuse, and Resilience as evaluation parameters of the project. This approach aimed to promote the view of the Charters as a monitoring system for tracking the evolving interpretations and subsequent actions associated with these terms over time.

Therefore, by associating the terminological reading with exemplary case studies, the intent was to reveal the gauge of the influence of the Charters within the practice of the project. The first step of the research was to evaluate the Charter selection method. The selected parameters were the promoters, the places connected to the issuing of the Charter, the topics dealt with and the historical period of reference. This operation made it possible to select 55 Charters within a century (from 1931 to 2021), taking into account those shared by International Bodies such as UNESCO, ICOMOS, and the European Communities [figure 1].

Figure 1. Matrix with the connection between Reconstruction, Reuse and Resilience statements and the chosen 55 International Charters.

INTERNATIONAL CHARTERS		Reconstruction	Reuse	Resilience
ATHENS 1931	Athens Charter For The Restoration Of Historic Monuments	Anastylosis	Use; Transformation	
PARIS 1962	Recommendation Concerning The Safeguarding Of Beauty And Character Of Landscapes And Sites			
VENICE 1964	The Venice Charter International Charter For The Conservation And Restoration Of Monuments And Sites		Use	
QUITO, ECUADOR 1967	The Norms Of Quito		Use; Function	
PARIS 1968	Recommendation Concerning The Preservation Of Cultural Property Endangered By Public Or Private Works		Use; Rehabilitation; Adapt - Adaptation; Revitalize - Revitalization	
BUDAPEST 1972	Resolutions Of The Symposium On The Introduction Of Contemporary Architecture Into Ancient Groups Of Buildings		Use; Function	
GERMAN 1975	Resolutions Of The International Symposium On The Conservation Of Smaller Historic Towns		Adapt - Adaptation	
AMSTERDAM 1975	Declaration Of Amsterdam		Rehabilitation; Adapt - Adaptation; Reintroduction	
NAIROBI 1976	Recommendation Concerning The Safeguarding And Contemporary Role Of Historic Areas		Use; Function; Activities; Adapt - Adaptation	
BURRA 1979	The Burra Charter, The Australia Icomos Charter For Places Of Cultural Significance		Adaptive Reuse; Use; Function; Activities; Adapt - Adaptation; Renovate - Renovation	
FLORENCE 1981	The Florence Charter	Integrity		
TLAXCALA, MEXICO 1982	Tlaxcala Declaration On The Revitalization Of Small Settlements		Reintroduction; Revitalize - Revitalization	
QUEBEC, CANADA 1982	Charter For The Preservation Of Quebec's Heritage		Use; Function; Activities; Adapt - Adaptation	
OTTAWA, CANADA 1983	Appleton Charter - For The Protection And Enhancement Of The Built Environment	Re-Creation		
DRESDEN 1982	The Declaration Of Dresden For The Reconstruction Of Monuments After The War	Recovering		
GRANADA 1985	Convention For The Protection Of The Architectural Heritage Of Europe		Use; Renovate - Renovation; Cultural Development	Risk
ITAIPAVA, BRAZIL 1987	First Brazilian Seminar About The Preservation And Revitalization Of Historic Centers		Use; Function; Activities	
WASHINGTON 1987	Charter For The Conservation Of Historic Towns And Urban Areas. Washington Charter		Function; Activities; Transformation	Disasters
COLOMBO 1993	Guidelines On Education And Training In The Conservation Of Monuments, Ensembles And Sites		Cultural Development	Sustainability; Change; Disasters
NARA (JAPAN) 1994	The Nara Document On Authenticity	Integrity	Use; Function	
SAN ANTONIO 1996	The Declaration Of San Antonio	Integrity	Use; Function	Sustainable Development
MEXICO 1999	Charter On The Built Vernacular Heritage	Integrity	Adapt - Adaptation	Sustainable Development
MEXICO 1999	Principles For The Preservation Of Historic Timber Structures	Integrity		Sustainability
CRACOW 2000	Charter Of Cracow	Integrity	Use; Rehabilitation; Adapt - Adaptation; Transformation	Sustainability; Change; Risk; Disasters
FLORENCE 2000	Council Of Europe Landscape Convention			Sustainability
CHINA 2002	Principles For The Conservation Of Heritage Sites In China	Rebuild - Rebuilding	Use; Function; Activities; Rehabilitation; Adapt - Adaptation	Disasters
CILOTO, INDONESIA 2003	Indonesia Charter For Heritage Conservation		Adaptive Reuse	Sustainability
FARO (PORTUGAL) 2005	Convention On The Value Of Cultural Heritage For Society (Faro Convention)	Integrity	Revitalize - Revitalization	Sustainability; Sustainable Development
XI'AN (CHINA) 2005	Xi'an Declaration On The Conservation Of The Setting Of Heritage Structures, Sites And Areas	Integrity		Sustainability; Change
QUEBEC 2008	The Icomos Charter For The Interpretation And Presentation Of Cultural Heritage Sites	Integrity	Adaptive Reuse; Function	Sustainability
QUEBEC 2008	Québec Declaration On The Preservation Of The Spirit Of Place			Sustainability
NEW ZEALAND 2010	Icomos New Zealand Charter For The Conservation Of Places Of Cultural Heritage Value	Rebuild - Rebuilding; Re-Creation	Adaptive Reuse; Use; Function; Adapt - Adaptation	Risk
LIMA 2010	Lima Declaration For Disaster Risk Management Of Cultural Heritage	Recovering; Integrity		Sustainability; Risk; Disasters
PARIS 2011	Principles For The Conservation Of Industrial Heritage Sites, Structures, Areas And Landscapes		Use; Function	Sustainability
LA VALLETTA 2011	The Valletta Principles For The Safeguarding And Management Of Historic Cities, Towns And Urban Areas		Adaptive Reuse; Use; Adapt - Adaptation; Revitalize - Revitalization	Sustainability; Sustainable Development
2011	Recommendation On The Historic Urban Landscape		Use	Sustainability; Sustainable Development
PARIS 2011	The Paris Declaration On Heritage As A Driver Of Development		Adaptive Reuse; Use; Function; Adapt - Adaptation	Sustainability; Sustainable Development
FLORENCE 2014	The Florence Declaration On Heritage And Landscape As Human Values	Recovering		Urban Resilience; Sustainability; Sustainable Development; Change; Risk; Disasters
DELHI 2017	Delhi Declaration On Heritage And Democracy	Integrity	Adapt - Adaptation	Sustainability; Change
NEW DELHI 2017	Principles Concerning Rural Landscapes As Heritage		Function; Adapt - Adaptation; Renovate - Renovation	Sustainability; Sustainable Development; Change
NEW DELHI 2017	Salalah Guidelines For The Management Of Public Archaeological Sites			Sustainability; Change
NEW DELHI 2017	Principles For The Conservation Of Wooden Built Heritage	Rebuild - Rebuilding; Re-Creation	Use; Function	Sustainability; Disasters
PARIS 2019	European Quality Principles For Eu-Funded Interventions With Potential Impact Upon Cultural Heritage			
	Icomos Guidelines On Fortifications And Military Heritage		Use; Function; Adapt - Adaptation	Sustainability; Sustainable Development; Change; Risk

Image elaboration by the Iuav HERSUS team who conducted the investigation (Sofia Tonello and Eleftherios Mantzouneas) supervised by Emanuela Sorbo.

Each of the three terms has therefore been investigated both in terms of its potential definition and as a reference to the concept expressed in them. With this method, it was possible to identify how other lemmas evolved and potentially associated with three matrix terms (Reconstruction, Reuse and Resilience). This condition of terminological evolution has made it possible to monitor some semantic and conceptual elements that gravitate around three main terms over time.

Therefore, the term Reconstruction takes on multiple connotations and facets of meaning, with more or less positive nuances, and it is associated with the terms Anastylosis, Rebuild-rebuilding, Replication-replicate, Re-creation, Replacement-Replace, Recovering, and Integrity; the term Reuse is explicitly mentioned only at article 5 of Charter on the Build Vernacular Heritage (1999) in its place is present in its expression of Adaptation, Use, Function, Rehabilitation, Refurbishment, Adaptation, Urban Regeneration, Reintroduction, Renovate-Renovation, New Work, almost never Adaptive Reuse. The expression Resilience is present in the Charters only occasionally (ICOMOS 2014, ICOMOS 2019). However, we can read some subcategories starting from some link-words such as Risk, which appears in the Convention for the Protection of the Architectural Heritage in Europe (Council of Europe 1985), Sustainability-Sustainable or Sustainable development which appears starting from the Declaration of San Antonio (ICOMOS 1996), or through the use of the word Change in different contexts such as Charter on the Build Vernacular Heritage (ICOMOS 1999) or Charter of Cracow (ICOMOS 2000).

The monitoring of words has therefore allowed the formulation of dynamic patterns using AI and allowing to understand how the pyramid formed by the terms Reconstruction, Reuse, and Resilience can be used to frame methods and techniques of restoration, following the method used by Hersus project for the proposed synthesis diagrams for IO3 (Hersus 2021 − IO3).

Research transference to learning processes //

From this assumption, the matrix composed of terminology, theoretical and evolutionary meaning over time has allowed its application to educational contexts as an educational experiment. Based on the preamble of the Venice Charter and the importance of transmitting methodological horizons to the new generations at an international level (Sorbo 2021, 125-134), the master's degree students of the Architecture Degree Course (taught in English) at the Università Iuav di Venezia were involved in an experimental teaching activity. The diverse background of the students, on a global scale, has allowed for verification of the multicultural and geographical approach on

the International Charters. The results offered a chronological, interdisciplinary vision of the same term through different International Charters applied to diverse case studies (for geographical context, historical location and cultural field) within a shared interpretation from multicultural roots. Accompanied in the theoretical aspects by the teachers' team, the students activated a reflection on the values and principles of the International Charters through the case studies they identified. As an illustration, analyzing the concept of reuse enabled an assessment of heritage value based on intangible factors such as cultural development. This approach was initially introduced in the Convention for the Protection of the Architectural Heritage of Europe (Council of Europe 1985). By applying this evaluation parameter to the Biblioteca Marciana in Venice (Italy), the study examined it as a cultural proposal that has evolved while maintaining its identity. This model has been linked with the city and local and international cultural promoters, emphasizing the relationship between heritage and cultural development.

The didactic experience has offered an opportunity to verify a tool for the horizontal sharing of widely concepts for a heterogeneous origin (cultural, geographical and personal) of students and teachers (which is a quite difficult task in international classes). (ICOMOS 1993; Di Biase, Albani 2019; Della Torre 2008; Sorbo 2021).

Transferring the research to the learning process involves adapting research findings to the specific educational settings and combining them into teaching materials. The process involves multiple activities by the research team that includes adapting the research findings to the specific educational setting, incorporating them into teaching materials, and using them to inform teaching practice. Futhermore reading International Charters through the lens of educational experience – therefore in comparison between different generations – can represent a method of innovative research to read the relationship between social contexts, communities' cultural and economic conditions, design and conservation theories, notions and strategies and actions, for education, practice and research on cultural built heritage.

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RUIN, UNFINISHED, ABANDONMENT IN ARCHITECTURE. INCOMPIUTA CHURCH AS AN EXPERIMENTAL CASE STUDY FOR A MULTILAYERING METHODOLOGICAL APPROACH IN CONSERVATION.

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The Ruin. Abandonment and Conservation.

The ruin represents a kaleidoscope of observation: it is an object both ancient and contemporary (Dillon 2011). This double life of ruin preserves an intangible dimension linked to time and a tangible dimension related to the matter. As Marc Augè (2003) pointed out, the contemporary production of architecture has radically changed the way buildings (and places) age, generating the well-known parallelism between "ruins" and "rubble".

Tracing this framework of tangible and intangible limit means following the border space between matter and history. Experimenting with this limit has led to the research determining thematic categories of architectural analysis that could offer a vision of the ruin in its contemporary meaning: the relationship between abandonment and conservation.

On this topic, Università Iuav di Venezia conducted (and is being conducted) an investigation on the case study of San Michele Arcangelo church in Brendola -today known as "Incompiuta" (unfinished) [Figure 1] - that crosses research with the tools of the third university mission and has a systemic approach to the reconnection between ruin and society through public actions engagement.
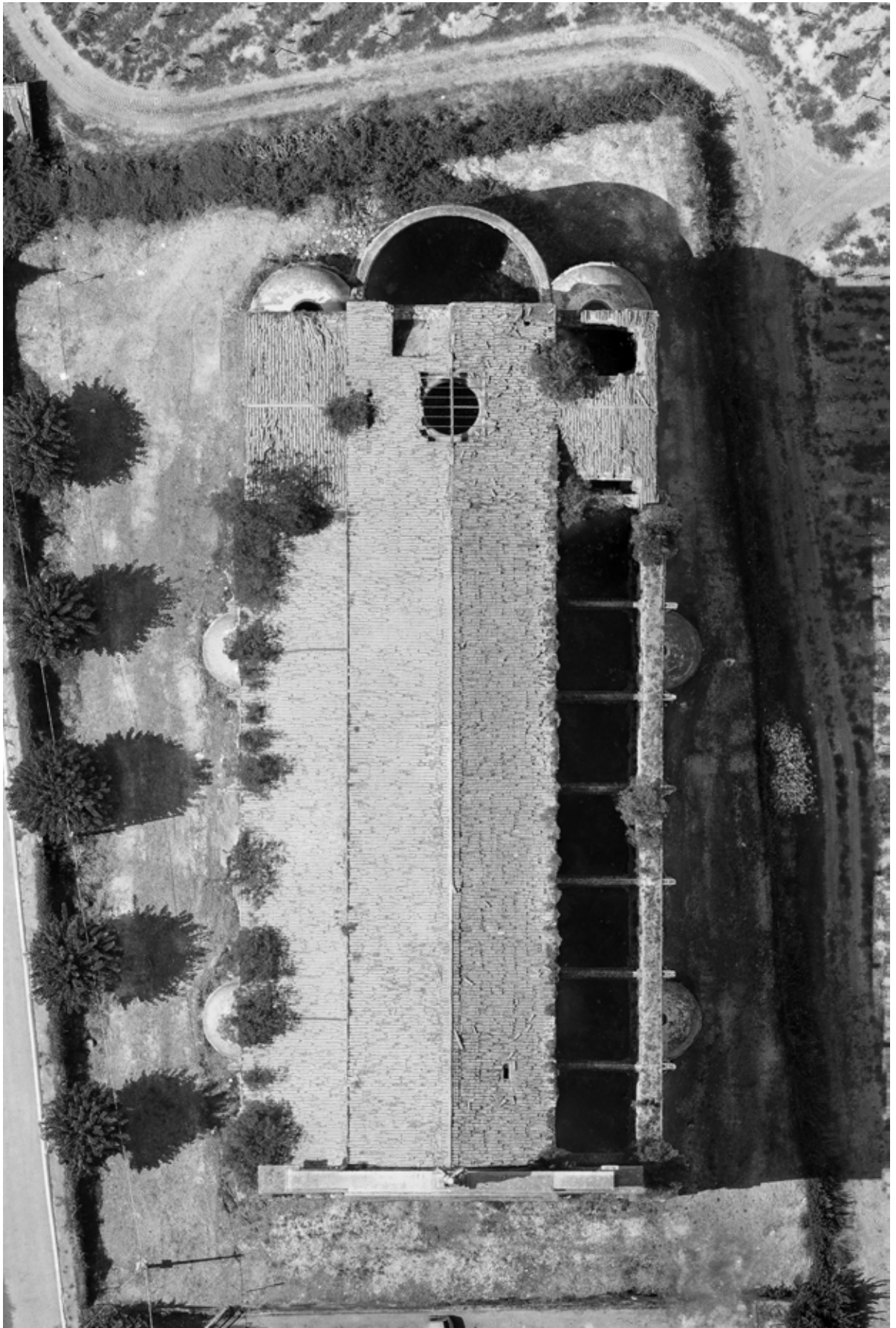
Figure 1. The unfinished San Michele Arcangelo church in Brendola. Ortophoto by Università Iuav di Venezia. Brendola 2021.

The unfinished. San Michele Arcangelo church in Brendola. //

Designed in the early 1930s by the engineer and architect Fausto Franco (Battista 2017), (Liguori 2011), (Spada 2017), the church has a social and collective value for the community: both concerning the relationship between the landscape image (consolidated over the years as an unfinished ruin) and the limit (theoretical and practical) of its conservation in a perspective of reuse and perception of the church between finished and unfinished (Sorbo, Spironelli 2021a).

The monumental architectural language of the church - located in the historical period between the wars and an inflexion point in the panorama of Italian constructions – is combined with a constructive hybridization hidden inside the architectural elements. The revealing action of time on materials made it possible to identify the use of "modern" materials, such as reinforced concrete elements ad patented SAP-type structures made up of reinforced bricks.

In the forties of the twentieth century, the lack of funds necessary to complete the church led to an interruption of the works and the halt of the construction site, leaving the work unfinished. The current precarious conservation status, determined by the presence of localized collapses and important phenomena of deterioration [Figure 2], raises theoretical questions in the cultural approach to the conservative project: on the one hand, the enhancement of material traces is compared with the functional needs of accessibility and safe use of the spaces, on the other hand, the intangible component linked to the social value and the collective memory of community imposes minimal intervention actions that highlight a stratigraphic reading between the history of the church and the historical events of the community.

In this sense, the study carried out by the research group of Università Iuav di Venezia, in collaboration with the Municipality of Brendola and the Superintendency of Archaeology, Fine Arts and Landscape for the provinces of Verona, Rovigo and Vicenza, promoted an operational and methodological approach based on an archaeological reading of the built environment through photogrammetric, laser scanning, topographic survey operations and scan-to-bim semantic discretization operations related to the historical construction phases of the building. This preliminary knowledge was the basis for identifying project actions aimed at preserving the tangible and intangible values associated with the architectural elements of the church (Sorbo, Spironelli 2021b), (Sorbo, Spironelli 2021c) arriving at the definition of a preliminary project approved by the local authorities in April 2022.

Figure 2. The unfinished San Michele Arcangelo church in Brendola. West aisle. Photo by Università Iuav di Venezia. Brendola 2022.

The objectives for the preservation and enhancement of the church were elaborated within a twofold polarity: on the one hand, with the purpose to preserve the collective social values (both tangible and intangible) that the church has assumed over time (Sorbo 2017) and, on the other hand, the need to return it to the community by ensuring its public fruition (in safety) without altering its authenticity. These objectives outlined the possibility of identifying a series of project action aimed to conserve the image of an unfinished ruin:

- to avoid demolition and substitution as a strategy of consolidation;

- to select vulnerable architectural elements to be reinforced in the project with light metallic structure in addition to the existing ones;

- to restore and enhance surfaces damaged during the years with a controlled cleaning operation, selected consolidation works, removals of vegetation and repairs of the rainwater disposal system;

- to improve the accessibility with new paths and flooring system.

In the idea of re-enforcing the community value of the Unfinished Church, the research group promoted a series of public engagement activities aimed at sharing the tools used, the methodologies, the research and the project actions with the local community.

Therefore, the outcomes of the research activities became the subject of a public seminar: «Il limite della rovina. Processi metodologici di condivisione per la conservazione e valorizzazione della Chiesa 'Incompiuta' di Brendola» (The limit of ruin. Shared methodological processes for the preservation of the 'Unfinished' Church of Brendola), and an exhibition «Lapis Memoriae. Scenari creativi per un non finito architettonico. Il caso studio della chiesa 'Incompiuta' di Brendola» (Lapis Memoriae. Creative scenarios for an unfinished architecture. The case study of the 'Unfinished' church in Brendola") which involved: the municipal administration, the local Superintendency, the Veneto region, the team of technicians designated by the municipality, experts in the field of European funding, the press and local broadcasters to present to the community the processes of material and immaterial restitution of the site.

Reveal memories. ///

Unlike the nineteenth-century experience of approaching the ruin where the aesthetic value is connected to the presence of nature in the ancient ruin (Simmel 1911), the perception of contemporary ruins after the Second World War is intimately linked to the evolution of society in the balance between an action capable of revealing memory, enhancing history and conserving/reintegrating matter. According to this premise, in the described path emerges the centrality of the preliminary knowledge process for the restoration project. The research, theoretically and practically, is drawn up as a "storytelling of the memory of the place" since, for ruin, the evocative capacity of memory could be opened only through the detailed study of the matter: an in-depth analysis of each relationship between the construction techniques and the symbolic value hidden behind the architectural elements.

This limit, the conservation of "ruined image", became a new field of research to experiment with a process, where the centrality of method (based on the cognitive tools to investigate and define the identity of the temporality) constituted a new horizon to redefine the link between the ruin and the society.

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R05-T

research

handbook for students

MAPPING STORIES
CARTOGRAPHIC NARRATIVES OF LANDSCAPE APPROACH

//

Methodological exploration

In the last two decades, landscape has firmly emerged as a support and cultural synthesis resulting from successive conceptual, thematic and territorial expansions that have territorial expansions that have affected the structure of cultural heritage management worldwide. It can be considered as a privileged observatory in which to discover, analyse and rethink the territorial, social and cultural conflicts that globalisation currently maintains with permanence and recycling in heritage contexts. Today, it is also a powerful resource for economic dynamism and social activity in many countries and a basis for action programmes in cooperation for integral and sustainable development (Loren Méndez, Pinzón Ayala, 2018).

From our research, teaching and professional experience, we propose this processual and collaborative itinerary, an experimental and creative space, as an instrument of mediation between acknowledgement, research and action in the landscape. It is a catalyst between an inactive reality, a latent activity and an emerging one, in an entropic heritage context. It is a narrative experience loaded with data and analogies; open to participation and discussion; relating contexts, facts and ideas; bearing in mind the aim of contributing to the scientific and cultural progress of the students we are addressing. This spirit of experimentation and curiosity is a central element of our work.

It is necessary to insist on the idea of the laboratory as a process and contemporary identity to foster new thoughts and attitudes and as an opportunity to show what technology is allowing us to achieve, especially in the elaboration of transversal narratives of approaching the landscape associated with the production of active data cartographies, connected to the already existing spatial data infrastructures.

This process of methodological approach to the landscape defines an operation of analysis, research and territorial prospection that aims to develop action strategies articulated in a more global methodology than the purely urbanistic or architectural. An approach that brings together the two realities, the inactive and the emergent; that activates dialogue with and between the contemplated landscape, the hidden landscape and the wounded landscape; establishing cooperation with the place, inviting experimentation, participation and functioning as an attractor of contemporary actions (Larive-López, Segura Raya, 2011).

Updated framework for approaching the landscape ///

From an updated framework for approaching the landscape, we propose to work from the operative integration of historical and heritage knowledge, and the specific ecosystemic support of each territory.

1. The first approaching is trans-scalar testing. The scalar mobility of the sample enriches the starting situation and allows the project or action to be interwoven with more complex and far-reaching results. The observation and study of differentiated scalar domains makes it possible to exercise analytical and project capacities at micro and macro scales. Geographic information systems (GIS) are tools that make it possible to establish this multiplicity of spatial relationships and a vast overlapping of data.

In research, the main objective is to deepen the trans-scalar characterisation of Historical Heritage. To this end, it is necessary to develop social competencies in training, with the specific objective being the communication of results and not only the final result but also the results of each phase. To reach this point of transfer through models, it is necessary to carry out a characterisation of the proposed support. Starting from the different scales; urban, intermediate or territorial, depending on the proposed theme, the initial studies take their own criteria that are transferred to layers or coverings that will be the keys around which a theoretical model will first be proposed and the possibility of materialising it in a model.

2. The second approaching is transversality. The samples present a fragmented and conflicting system of competences:

infrastructures, mobility, management, project, participation, governance. Therefore, they are systems that lose the capacity to operate in an integrated manner. Through visible and non-visible data obtained from cartographic and documentary sources and reconnaissance trips, direct contact with reality is established and the initial conditions are explored. This cartographic experiment addresses: ecology, lodging, incubation, grafting, fabrication, interrogates urbanisation, travel, temporalisation, ecotone, affectivities, emotions and uncertainties (Sobrino Simal, Larive-López, Andivia, 2015).

The individual construction of the image of the territory - through representation - forms part of the process of appropriation, participating at the same time in its transmission as a legacy. Through different ways, all of which are understood as knowledge, man has transmitted a particular vision of his environment and of the relationships which, as part of a specific culture, ascribe them to certain keys. In order to gain knowledge of this image, graphic expression is used, as in the case of the transfer of the main communication routes and towns: existing plans, superimpositions and hand drawings. In this way, the testimony of man's relationship with his environment can be classified in relation to its main function (Rodríguez Sanchís, 2018).

3. The third approaching is transdisciplinarity. We are committed to the need to abandon the currently consolidated methods of research and action in landscapes, identifying possible ways of doing so (Ábalos, 2005). This way of understanding heritage requires a reorientation of the different professional disciplines in order to provide a more effective response to scalar diversity and spatial transversality. It is necessary to strengthen disciplinary fields and generate alternative professional practices, which flow between project, management, political decision and long-term programmatic definitions.

In this way, from a disciplinary, scientific point of view, data collection is the basis for more elaborate cartographies. The advent of photography combined with the possibility of mapping the territory in a real way from a height allows us to observe major changes. On the other hand, the relationship of ownership of land to man has generated the need to resolve disputes and to delimit their properties. The social function of maps in each period becomes a source of documentation that is more than valuable. Finally, artistic expression aims to incorporate the more subjective and intangible aspects of the complex relationship between man and territory.

4. The fourth approaching is transference. The project feeds back on its activities in transit, experiments in awareness-raising, training and activation on landscapes. It aims to be in contact with citizens and stakeholders.

This instrumental approach operates in the tactics and therapies necessary to activate bottom-up processes of intervention in the landscape, developing new tools for citizen participation that facilitate cooperation, communication and the exchange of ideas. From this process, a wide range of strategies, management and projects are unleashed to make these landscapes viable as an active and sustainable support for new scenarios, contents and projects. Scenarios in which the research proposes possible places from which to extract the guidelines for intervention on the landscape. Contents on which to detonate the intrinsic creative force of these "landscapes in reclamation" resulting from the relationship between the new citizen dynamics and the place. Projects, from the bottom up, revealing the creative and destructive processes that human intervention generates, as instruments that bring together the proposals set out in places and by people who intervene at different times.

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Figure 1. Larive-Lopez E-cartographic derive. Production landscapes in the Marismas del Odiel Biosphere Reserve. 2015

PART 2.1

TEACHING THROUGH DESIGN

FOR SUSTAINABILITY OF THE BUILT ENVIRONMENT AND HERITAGE AWARENESS

TD01

Trees vs Heritage: Reflections of a strategy shaping dilemma in the case of the historic site of Pavlos Melas ex-military camp.

✕

TD02

Re-constructions: meanings and ways.

✕

TD03

Environmental Conservation of Vernacular Architecture. The case of Cyprus.

✕

TD04

Education for a Sustainable Future: The role of Modern Heritage Reuse

Paraskevi Kourti

Architect PhD

TD01
teaching through design
handbook for students

TREES VS HERITAGE:
REFLECTIONS OF A STRATEGY SHAPING DILEMMA IN THE CASE OF THE HISTORIC SITE OF PAVLOS MELAS EX-MILITARY CAMP

Keywords

**reuse of vacant land,
urban policies,
green interventions,
public participation**

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Introduction

The following article discusses the current dynamics between heritage restoration-reuse policies and policies of green development. The arguments are drawn from a specific case study, the reuse of the ex-military camp of Pavlos Melas in Thessaloniki, Greece. Data, analysis, and conclusions are derived from the author's experience as a municipal project manager for the reuse strategic planning and operations for almost a decade. The article is organized into four sections. Introduction comments on the broader theoretical discussion that the article contributes to. The next section is an outline of the multilayered history of the site of Pavlos Melas. The final section refers to the difficulties and conflicts that occurred through strategic planning for the integration of the camp into the urban fabric and social life of the city in recent years. A short section with the conclusions summarizes the arguments about the need for enhancing heritage restoration policies.

Pavlos Mela's ex-military camp is simultaneously a historic site and an urban void. It exists as a vacant land since its abandonment by the Greek armed forces. The reuse of former military camp sites became a common issue in the Western world since the end of the Cold War period. From the 1980s and onwards the military forces were greatly reduced and according to estimates more than 8,000 army installations that covered an area of about 1 million hectares could be allocated to new uses (GmbH, 1997). The phenomenon took huge dimensions in Europe and especially in Germany as well as the former communist Western European countries, where a wide range of administrative buildings, communication structures, training areas, and military bases were abandoned [1].

1   For example, in Germany, before the fall of the Berlin Wall, the military positions extended up to 453,000 hectares in the east and 500,000 hectares in the west (Szelinski, 2000). In the Netherlands, the Ministry of National Defense, based on its strategic plan, released until the year 2000 about 20,000 hectares for housing development or for the creation of public spaces

The policies of rehabilitation and reuse of the available ex-military land have taken different forms in different countries: in the Netherlands and Germany, special spatial-strategic management programs exist for the coordination of the process on a national scale. In the UK, a special organization was established to coordinate the actions of the gradual disposal of the army premises. In Italy, despite the significant reduction of the armed forces, the release of military sites encountered various difficulties and delays until 2014. That was when the Italian government announced the sale of approximately 1,000 facilities to secure revenue to balance the budget deficits of the country (Licata, 2015).

Policies of reappropriation and rehabilitation of vacant premises become more complicated as well as interesting for those areas that are historical sites or belong to national or supra-national cultural heritage. Characteristic cases that fall into this category are the - various in form and size - heritage remains of deindustrialization. The reuse of all these abandoned residues was and continues to be, part of the wider and pressing issue that Western urban agglomerations face from the 1970s onward: an issue related mainly to the loss of their previous economic and productive status quo and the process of their economic restructuring through globalization. Research about the way analogous interventions of reuse redefine the socio-spatial meaning and economic operation of the historical urban voids contributes to this broader discourse. The case of this article attempts a small contribution to this same discussion.

Reconstructing the past //

Pavlos Melas ex-military camp was established in 1895 by the Ottoman army while the city of Thessaloniki was still under Ottoman rule and in an area that at that time was a peri-urban, non-habituated site. The Ottomans acquired a piece of land that was nearly half of the size of today's camp and constructed a building complex consisting of (a) two very long, two-story barracks, (b) four horse stables, (c) a headquarters building, and (c) a small mosque (as noted in Fig.1). The construction was assigned to German architects and engineers and therefore the buildings bear western morphological characteristics as well as constructional excellence in their details. Pavlos Melas[2] project was part of a bigger developmental venture (of buildings and urban infrastructure) undertaken by the Ottomans who aimed in modernizing the city while they struggled to maintain what was left of their empire in the Balkans.

The Greek army succeeded the Ottoman after 1912 (which is

(EC, 2005). The British Ministry of Defense owns 240,000 hectares of available land which is managed by a special organization established for this purpose (Ministry of Defence, 2011), while the corresponding Italian ministry owned 170,100 hectares of available land (Gastaldi & Gamerin, 2012).

2   During the Ottoman era the camp was called *Topçu Kışlası* (artillery barracks). When the city of Thessaloniki was seized by the Greeks and until the interwar period the camp was known as the Barracks of *Agia Paraskevi*.

Figure 1. The ex-military camp of Pavlos Melas. The arrows mark the buildings of the Ottoman era. Source: www.pavlosmelas.gr

the year of the liberation of the city from Ottoman rule) and expanded the camp to nearly double its previous land area. During the inter-war period, the Greek army constructed a group of warehouses in the northwest part of the camp for functional reasons. They also put up a huge reconstruction plan for the two main barracks, replacing the internal wooded bearing system with columns and beams of concrete. The interwar era was also the period when the camp was renamed to its current name. Pavlos Melas is the name of a Greek artillery officer and a well-known hero who was amongst the first to join the Greek Struggle for Macedonia at the end of the 19th century[3]. The municipality to whose administrative area the camp belongs was also named in 2010 after the same national hero Pavlos Melas[4].

During the Second World War, the German army succeeded the Greek one in the camp's occupation status. And from here on begins the painful part of the site's history. A history connected with the most troubled and regretful decades of social and political history in Greece.

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3   The Macedonian Struggle was the conflict that occurred from 1893 until 1912 between Greeks and Bulgarians over the rule of what was then Ottoman Macedonia.
4   The municipality of Pavlos Melas is one out of seven administrational units that form the agglomeration of metropolitan Thessaloniki. It is situated in the northwest part of the city with approximately 100.000 inhabitants. In this article wherever there is a reference to "the municipality" it means the municipality of Pavlos Melas.

The German army divided the area in half and turned its southern part into a concentration camp for imprisonment, deportation, and extermination of various groups of people (Jews, fighters of the national resistance, hostages of foreign nationalities, etc). Its northern part was kept as a military camp for armed forces with the addition of an outdoor swimming pool. The Germans constructed this pool using the soldiers as workforce and Jewish marble tombstones that were extracted from the city's Jewish cemetery as construction material.

The Greek army re-occupied the area of the camp after world war two but many of its buildings continued to be used as prisons through the years of the Greek civil war and after that, until 1974 when the Junta was over and the 3rd Greek Republic was established. By 1975 the camp was then turned into a common military base for the armed forces. It was kept in that status until 2006 when abandoned by the troupes without a single thought of actions for the protection of the historical buildings. The municipality claimed the camp from 1997 until 2017 when a final agreement was set up with the Ministry of Defense. Through all those years the historical buildings suffered tremendous destruction from fires, thefts, and erosion. Pavlos Melas remained a military camp in all its history, and that means fenced in secrecy, excluding, and excluded from whatever happened around it and in the rest of the city area. As mentioned above, at the time of its establishment the area was a peri-urban uninhabited land. Throughout the years the city gradually expanded. The expansions were made mainly in an unplanned and abrupt manner due to Greece's lack of planning tradition and its housing policy deficit. Therefore, by the time of its abandonment by the army, the camp was surrounded by densely populated neighborhoods that lacked adequate open-air green spaces.

Shaping the future

Until very recently the history of the camp was not at all known. Its Ottoman origin was not obvious because the buildings had all those 'Western' morphological characteristics. The minaret of the mosque had been demolished sometime in the early years of the interwar period. Even less was known about the next important layer of its history that of being a concentration camp. Data about the camp's past started to enrich due to some of the student's bachelor's and master's theses done in 2010 and onwards in the Faculty of Architecture of Aristotle University of Thessaloniki. Some knowledge of what happened during the Second World War came also to light due to a research project that was funded by the German Consulate of Thessaloniki[5].

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5 The research program 'Places of detainment and memory: Nazi Concentration Camps in Greece, 1941 – 1944' began in 2017 under the supervision of George Antoniou, assistant professor of Jewish studies at the Aristotle University of Thessaloniki. The results are available in Greek at http://concentrationcampsgreece.web.auth.gr.

Through this last research, we can reconstruct the topography of the camp and the way it operated as well as identify the names of a small number of prisoners (about 2.000 people). This research managed also to estimate the number of prisoners that were deported to other camps for extermination and how many of those identified were killed on site.

The municipality took action to 'educate' the public about the site's heritage. Such actions included funding a documentary, performing educational visits and programs for schools and adults, organizing conferences, and ensuring adequate publicity through the local press. Despite those intense actions, a survey showed that residents in the neighborhoods surrounding the camp as well as the wider public of the municipality did not correlate to any of these fragments of history. There was a lack of any personal or family memories and there was also reluctance in reflecting any further on these issues. Except for a minority of senior citizens that bore vivid memories of the early post-war period.

Through almost two decades of vindication and rivalry between the municipality and the Ministry of Defense about the ownership of the vacant camp, a few proposals for its rehabilitation were produced. Proposals out of an architectural competition (1997), an in-house municipal draft plan (2003), as well a proposal from external partners (2006), where visualizing the possibilities if the city acquired the much-needed land. Those proposals had all one thing in common: they all included the addition of new buildings of various forms on the site. By the year 2017 though, when the municipality finally acquired the land of the ex-military camp of Pavlos Melas, a crucial change in viewing and acting on urban issues and challenges had occurred.

I am referring to what began as a wave of social action for the protection of the environment and gradually transformed theoretical knowledge, technical solutions, policies, and funding toward environmental awareness actions. In this context, previously dominant elements of architectural interventions in public or open-air spaces (like formalistic forms and rigorous uses) were replaced by what could enhance fluidity, changeability, and transitory or alternative uses. Landscape architecture was also gradually adopted as a dominant intervention practice in the most important and largest projects of shaping outdoor spaces. Green regenerations of abandoned industrial facilities or camps, inactive infrastructural networks, smaller or larger urban voids, and routes imposed with careful new plantings a 'new' or 'second' nature to the urban fabric. These phenomena are the effects of a major intellectual change that reframes city-nature dualism as supplementary and not opposing concepts (Lagopoulos, 2002). Some say that this new reality of nature and human civilization reconciliation came out of gradual steps of humanity's cognitive maturation and this is probably true. But if we examine and compare past ways of responding to city challenges it becomes obvious that

there is always a move in concepts and ideas and that 20 years from now people will probably be thinking very differently than we do today.

As soon as the municipality acquired the land in 2017, a small team of in-house experts started to elaborate on the strategic plan for its reuse. The strategic plan included research and analysis of various technical, social, environmental, and economic data about the camp and its surrounding area. The main decisions proposed out of this analysis included:

(a) the prioritization of a first phase project for the environmental upgrade of the open air, green, area of the camp to offer a 320 sq. meters park as a public space,

(b) demolishing around 10.000 sq. meters of poorly preserved warehouses that were of no historical value,

(c) leaving as a second stage project the restoration and reuse of the Ottoman-era buildings in which public uses would be installed. The remaining buildings of no historical value that were positioned in the northern part of the camp would be available for private uses of commerce and services to secure some strings of reciprocity against overall budget expenses.

The project was named Metropolitan Park of Pavlos Melas (MPPM) and its budget was estimated at around 62.000.000 Euros, 20 of which were needed for the green open-air intervention. Besides all the data and elements analyzed, they were two crucial factors that underlined all decisions. The first one had to do with the various formations in the municipality's civil society, groups, organizations, NGOs, etc. that were intensively active in environmental issues. Some of these groups played a crucial role in the negotiations with the army officials by putting pressure on the central Government of that time and with the public demand of having the vacant land of the camp turned into a much-needed park. The second factor was the pressure to ensure first-stage funding for the project.

Funding is the driving gear of all agendas and policy-making actions. Greece – and I guess other countries of the European

Figure 2. Analysis of building stock from the (source) Strategic Plan for the Regeneration of the former Pavlos Melas military camp into a metropolitan green area, p. 23

South – was always heavily dependent on the structural funding of the European Union (EU), especially at the municipal level. This problem became even more acute during the decade of Greece's economic crisis. Environmental policy priorities as well as the major change in the character of policies that serve convergence in the EU (that moved from redistribution towards enhancing competitiveness) transformed the funding framework across the EU. In more detail, from the Treaty of Lisbon (2007) and onwards 25% of all available EU funding is directed in support of social actions (against unemployment, poverty, exclusion, etc) and 50% (for countries in transition) up to 80% (for developed countries) of available funds are directed in actions like research, innovation, new technologies, renewable energy sources, leaving out of eligibility all infrastructure (buildings included). Furthermore, the recent European Green Deal policy and budget plan - a much-needed response to the grand challenges posed to our societies by climate change – does not mention actions for preserving cultural heritage at all (EC 2022, p. 5). Therefore I am concluding with the argument that policy priorities and funding scenery formulate a framework in which 'trees' (green interventions) are winning full ground over heritage protection and restoration actions. That was also the actual surrounding policy-making environment in which the Pavlos Melas reuse strategic plan had to make its primary decisions.

As soon as the strategic plan was finished the process of

Figure 3. Various meetings from the consultation process. Source: www.pavlosmelas.gr

consultation with the public and other institutional and private bodies of the city began. Through the discussions, one crucial point of discontent prevailed and had to do with the number of buildings that should be kept for restoration and reuse. The public was very persistent in asking for credentials that no new buildings would be built as (I quote) '*any new construction would devour the precious land for trees*". Some proposals asked for more buildings to be demolished. A group that I call "*environment extremists*'[6] because of their hardcore beliefs and actions over environmental issues asked for the demolition of all buildings (including the historical ones) so that the site could be a *pure*'[7] green deposit. Another group of citizens that were connected to the left end of the political spectrum proposed that the buildings which belonged to the mead war expansion of the camp could and should be demolished to make more space for vegetation and to inhibit permanent human activities and uses in the camp. Explanations about the importance of keeping a crucial phase of the camp's history were turned down as - I quote a characteristic phrase by the group's leader – '*Heritage talks of the past but trees are our children's future*'[8]. Other arguments pro to this opinion stated that '*historic buildings constantly need money while trees live out of nothing*" and that "*buildings are enjoyed by few even if they are of public use while parks are enjoyed by everyone*' [9].

Although municipal political and administrative personnel was affected by these claims, the strategic planning process concluded in keeping things as it was originally planned.

This decision was driven mainly by the argument that

6   Authors' notes from the 1st and 2nd consultation meetings that took place on 27.10.2017 and on 13.11.2017, respectively, in Thessaloniki. For a detailed discussion about people's participation in the strategic planning of Pavlos Melas see Chapter 10 of the Strategic Plan for the Regeneration of the former Pavlos Melas military camp into a metropolitan green area (in Greek) available at https://pavlosmelas.gr and in English language upon request.
7   Ibid.
8   Ibid.
9   Ibid.

demolishing buildings is a radical and nonreversible act. It's true though that through the public debate over core decisions for the reuse plan of the camp, a "fight" took place that can be represented as "trees versus heritage" and that the latter was losing.

Conclusions

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This final statement of 'trees' winning 'heritage' for being a priority to public policies might be true for the case of Palos Melas ex-military camp that includes an obnoxious and painful history as well as suppressed social memories. It is surely not applicable to all Greek cases and not of universal value. A valuable point that should be underlined in this case study is the underlining social claim or notion that heritage preservation speaks about the past while green interventions speak about the future. For academics and some policy officials, it is obvious that 'trees versus heritage' is a pseudo dilemma and that rehabilitating and reusing existing building stock is one of the most environmentally friendly solutions to analogous social needs. I am sure, though, that this knowledge is not at all embedded. Therefore, I conclude that it would be an important contribution if the discussion and outcomes of Hersus - and other analogous programs - escaped the academic environment and pursued diffusion of knowledge in a broader public and agenda-setting officials at the national and supranational level. Lobbing and supporting the idea that heritage reuse could and should be part of the new and promising European Green Deal and thus re-connected to the future of our societies.

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RE-CONSTRUCTIONS:
MEANINGS AND WAYS

Keywords

re-production,
replicas,
clones,
copies

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The paper proposes a critical reflection on the concept of reconstruction and its different meanings, past, present, and future. Starting from the work of the international ICOMOS experts' group about the post-hammer construction[1], I share here some critical thoughts on 'Reconstruction'. However, reconstruction has different meanings and can be supported by different reasons, directed towards various aims, leading to different outcomes. It's important, therefore, to investigate the meanings of the words we use. Referring to the definitions provided by the Oxford Dictionary online, Reconstruction can be:

"1.   The process of changing or improving the condition of something or the way it works; the process of putting something back into the state it was in before.

2.   The activity of building again something that has been damaged or destroyed.

3.   A copy of something that no longer exists.

4.   An act of acting out events that are known to have happened, to try and get more information or a better understanding of what happened, especially a crime" [2].

In the light of these definitions and recalling the text by Walter Benjamin "Work of art in the age of its technical reproducibility" [3], the presentation of the Barumen Brothers' multi-sensorial 'replica' of the Sistine Chapel is a meaningful example for our reflections about reconstruction.

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1   See: "The ICOMOS Recovery and Reconstruction Project – Its Aims and a Way Forward" - https://www.icomos.org/en/focus/reconstruction
2   https://www.oxfordlearnersdictionaries.com/definition/english/reconstruction?q=reconstruction
3   Walter Benjamin, Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit, in: Zeitschrift für Sozialforschung, 1936

The masterpiece of Renaissance Italian art, with the "Final Judgment" painted by Michelangelo Buonarroti, other frescoes from various 15th-century artists, and the great vault decorated by Michelangelo as well, were totally reproduced in Mexico City in 2016. The art installation created by Gabriel and Antonio Barumen (movie director and producer) consisted of temporary scaffolding covered on the outside with black fabric sheets that contain a copy of the internal decorated surfaces of the real Sistine Chapel. The reproduction was made by millions of pictures of the highest possible resolution at that time. It was also a multisensorial replica with smells, flavours, sounds, and lighting re-producing the atmosphere of the real chapel in Vatican City[4].

It was almost impossible, at a first glance, to distinguish the replica from the original Sistine Chapel, thanks to the abilities, capabilities, competencies of craftsmen and new technology possibilities. On the other hand, the replica was something acceptable because it offered to millions of people in Mexico to visit the chapel in some way, even if they didn't have the resources (economic, time) or the possibility to go to the real one in Rome. This example of reproduction of something existing, but in a different place, is for us very interesting and challenging because it poses some crucial questions about authenticity for itself.

Another relevant case study for understanding the multifaceted concept of reconstruction is that of the Bell Tower of San Marco Basilica in Venice, carried out at the beginning of the 20th century. The rebuilt of the original medieval collapsed Bell Tower was important because, on that occasion, architect Luca Beltrami convinced the main decision-makers of the city that the new Bell Tower should have been a new construction erected "where it was and as it was" the previous and collapsed one, even if in reality some changes were introduced. For example, a reinforced concrete structure for the cell of the bells was realized and the new bell tower is slightly different in shape and dimensions if compared with the original one[5].

The recurring challenges after great disasters, provoked by nature or by men, still characterise the contemporary debate in the field and pose some fundamental questions, such as:

•   should we immediately rebuild to compensate the damages caused by nature or by humans?

•   should we rebuild to preserve identity? Which identity? In which way?

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4   See the website: https://www.easyviaggio.com/vaticano/la-cappel-la-sistina
5   For the Bell Tower of San Marco and for the many other cases of reconstruction quoted in the following pages see: Glendenning Miles, The Conservation Movement: A History of Architectural Preservation: Antiquity to Modernity, Routledge, 2013

•   should we re-compose the surviving fragments and integrate the lost and missing parts? With what certainties? In what ways, with what forms, materials, and constructive techniques? How much?

•   what will be the difference (distance, alternative) between the lost authenticity of the destroyed-damaged monument and the newly reconstructed (or re-produced) one, at the end of the reconstruction process?

These questions emphasise the distance between the lost authenticity, that is the true authenticity of the destroyed/damaged monument at least for someone, and the new building. The quoted 'motto' according to which the lost monument must always be rebuilt 'where it was and as it was and' still strongly resonates in the face of painful and recurrent losses of parts or of entire architectural goods, in Italy and in the world. Therefore, the reasons behind this 'motto' are moral, ethical, psychological, emotional, social, or political, more than theoretical, as Renato Bonelli recognized in the case of the reconstruction of Warsaw after Second World War.

Figure 1. Warsaw reconstructed

In this way he overpassed the strong opposition to any form of mimesis that he considered demeaning to the fundamental need for authentic and sincere creativity as a product of the human universal spirit. But we must recognize that, the motivations expressed by Bonelli for the reconstruction of Warsaw, linked to the delicate themes of individual and collective memory, inevitably lose part of their power when reconstructions take place after a long period of time from the loss suffered[6].

We must also note that the concept of identity is very often recalled for justifying the reconstruction of a lost monument. Nevertheless, it is a delicate, challenging, and dynamic concept that is never fixed for a place, a building, or for a national and social community. Reconstruction projects, further on, can have various motivations and take different forms, as shown in several case studies, such as the Coventry Cathedral, the Church of Remembrance in Berlin, the Frauenkirche in Dresden, the Alte Pinakothek in Munich, the Neues Museum in Berlin, the Cathedral of Venzone, the Basilica of San Benedict in Norcia, the Fenice theatre in Venice or the Cathedral of Noto in Sicily. Reconstruction projects can thus have also different impacts on local communities, and external motivations may not always align with local needs.

Let's examine, for example, the cases of the Coventry Cathedral in the UK and that of the Church of Remembrance in Berlin. The first case demonstrates that reconstruction is not always mandatory but can be postponed or have an alternative with the construction of a new building aside the remains of the damaged or destroyed one. The Church of the Remembrance in Berlin shows as well that reconstruction can be avoided, as demonstrates E. Eiermann's project dated to 1961-63. In this case, the community decided not to rebuild the destroyed and damaged church, but to construct a new one close to it, giving the community a new place of worship and faith. The ruins of the previous church were kept as a sign of the memory of the terrible destruction provoked by the war.

The meaning of post-war ruins can nevertheless change for a community, as demonstrated by other relevant case studies. The Frauenkirche in Dresden, Germany, was also rebuilt, but with a long-time gap from the end of the war. This means that almost no one remembered the place and its past status and use. The church was nevertheless rebuilt, once again, "as it was where it was". In this case the meaning of the reconstruction profoundly changes, among nostalgia and the attempt to erase the traces of a dramatic historical event that someone want to forget recreating the lost image of the town perhaps also for other reasons (tourism attraction?).

6   Bonelli, Renato, Voce "Restauro - Restauro architettonico", in Enciclopedia Universale dell'Arte, vol. XI, col. 322 e sgg., Venezia-Roma 1963

The Alte Pinakothek in Munich, damaged from the bombing of the Second World War, was as well rebuilt by H. Doellgast in 1957, but with a different attitude and different results. The architect, in fact, respected the architectural syntax of the damaged building but not its formal lexicon, simplifying forms and details of the original survived parts in the newly built one. The reconstruction of the Neues Museum in Berlin, designed and realized by David Chipperfield, as well proposes a way to avoid imitating the lost monument, somehow remembering John Ruskin's condemnation of such a kind of interventions.

Reconstruction needs can then derive from different causes, as in the case of the Cathedral of Venzone in Friuli Venezia Giulia, which was destroyed by the earthquake in 1976. Surviving fragments of the collapsed church were saved and catalogued after the disaster to be reused within a new church that adopted the same forms and shapes of the destroyed one, but which was rebuilt with new materials, denouncing the additions by distinguishing them from the original survived parts. People, in fact, strongly desired the church to be reconstructed in its ancient forms to forget the tragedy of the earthquake.

Following the recent earthquake in Central Italy, similar problems were posed also in Norcia, where a debate about the reconstruction of the Basilica of San Benedict has arisen. The Ministry of Culture announced in this regard an international competition, which is now going to be realised, following as much as possible the idea of restoration/reconstruction by Viollet-le-Duc. The theater 'La Fenice' in Venice, built in 1792 and damaged by fire in the mid-19th century, was rebuilt in Rococo features in 1837, but it was destroyed again by fire in 1996. The night of the fire, the then Mayor of Venice, Massimo Cacciari, once again declared that 'La Fenice' would have been reconstructed 'as it was and where it was'. However, the motto was at least partly a lie, just as for the Bell tower of San Marco reconstruction.

The Cathedral of Noto is another relevant case study for our focus of interest. It is a famous Baroque example of urban planning in Sicily, near Siracusa, that collapsed in 1996 due to structural weakness, poor quality of materials, and past wrong interventions. Some parts of the church, in fact, were substituted in the past by reinforced concrete elements that, being rigid, provoked the destruction of the centre and lateral naves following the collapse of the dome. This event provoked a national and international debate which once again resulted in the decision of rebuilding the cathedral "as it was, and where it was." To achieve this result, unfortunately, new demolitions also of some survived parts were necessary to rebuild the church fulfilling new rules and regulations about safety, risk of earthquake, and accessibility. As a result, the Cathedral, apart from the facade, is completely new. Noto has again its historical landmark but, in the interior, the walls are completely white and this is a matter of debate still today since the bishop has proposed to decorate the interior again with new paintings.

An internationally relevant case in Nepal, on the other hand, demonstrates that sometimes reconstruction does not meet the real needs of the local community, but rather external motivations and solicitations. In the case of the collapsed scared sites in Kathmandu around Durbar Square, during the earthquake in 2015, people did not immediately ask the construction of new temples and buildings similar to the lost ones because for them the true meanings and values of the lost monuments were mainly linked to the place and not to the buildings in themselves. Therefore, they asked to remove first the ruins to have the chance to begin again their religious rituals and social life in the place.

In Syria, the troops of ISIS demolished the arch of the entrance gate of the Roman city of Palmyra, which was not the original one, but the result of a reconstruction carried out by archaeologists in previous decades. However, a 3D-printed replica of the gate was later produced through a laser survey of the site, which could be used also to survey other monuments at risk of around the world for their faithful reconstruction in case of a disaster.

At this point we can highlight that ICOMOS has recently recommended that EU-funded projects must respect EU values and treaties, and reconstruction should only be funded in exceptional circumstances if it complies with quality principles and selection criteria provided but its Quality Principles Document. According to this document, reconstruction should not be funded for economic, touristic, or ideological reasons, as this could lead at spectacularising heritage rather than to ensure its real protection[7].

The difference between reconstruction and reproduction of ancient monuments can in fact be difficult to perceive, as demonstrated for example by the Parthenon replica in Nashville and the several Eiffel Tower replicas now existing in China. The risk, in similar cases, is to shift from memory to simple appearance because we are not rebuilding a lost monument, but we are producing a spectacularising of heritage, like Marco Augè said in his interesting book entitled "The future"[8].

The copy of the Parthenon built in 1897 in Nashville, Tennessee, USA, it is thus a mix of two meanings of the term reconstruction according to the Oxford Dictionary. And the many Eiffel towers that you can find in China are re-productions of an existing building in a different place, sometimes including also the neighbourhood to give the idea to really be in Paris. Commercial and trivial use of important monuments, such as Venice's famous landmarks used for casino themes, can disappoint tourists who may prefer Las Vegas due to the lack of crowds

7   See the Document, entitled European Quality Principles for EU-funded Interventions with potential impact upon Cultural Heritage. The Document is downloadable from the site: http://openarchive.icomos.org/id/eprint/2436/
8   See: Augè Marc, The future, Verso Books, 2015 and Augé Marc, Ruins, Editions Galilée, Paris 2003

and mosquitoes if compared with the real Venice. In Dubai, many replicas of famous landmarks, like the Colosseum, Taj Mahal or the Winter Palace in St. Petersburg can be found, and right because they may be apparently faithful reproductions of the originals, they raise several and crucial questions about the distinction between virtual, fake, and true or real.

As to conclude, we must recognize that the re-construction of the Mostar Bridge, after the war in the Balkans, or that of some parts of Aleppo in Syria, after the fury of the fundamentalists, are different from that of the Dresden Frauenkirche, realized decades after the bombings of the Second World War. They are different also from the recent reconstruction of many orthodox cathedrals in Russia, destroyed during the soviet period and of which no living people maintain a direct and lacerating memory.

Furthermore, we must know that a re-construction is always a 'new construction', even if it has forms 'similar' to the lost ones.

Finally, we should remember that the cited 'motto' by Luca Beltrami hides an element of profound manipulation. In fact, considering the reconstruction of a lost monument there is often nothing to object apropos of the affirmation that it is going to be realized 'where it was'. On the contrary, several doubts and distinctions emerge about the assurance that it will be 'how it was' the lost one, since the copy can never fully replace the original, as Alois Riegl warned[9], but also because the differences between the re-constructions and the originals (lost and not comparable) are often intentional, not random or consequent to mere technical difficulties.

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TD03
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ENVIRONMENTAL CONSERVATION OF VERNACULAR ARCHITECTURE:
THE CASE OF CYPRUS

Keywords

Traditional Settlements,
Passive Strategies,
Sustainability,
Bioclimatic,
Materials,
Courtyards

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By general consensus, vernacular architecture bears the stamp of each place it is located. Within its design, it utilises and integrates elements of the natural environment, the geomorphology of each area, as well as the local climatic conditions. This in turn leads to the creation of remarkable examples, which exist in harmony with nature. At the same time, vernacular dwellings transform over time and reflect the way of life, as well as the functional needs of the users. They are invaluable historical records that are inextricably linked to culture and collective consciousness, forming a living link to the past. The sustainable character of vernacular houses is related to the satisfaction of the occupants' daily needs, as well as the use of local materials, the integration of a large number of environmental principles in their design, their potential for continuous use and reuse, and their adaptability to changing local conditions.

In this context, this chapter focuses on new aspects and perspectives for the environmental conservation of vernacular dwellings, considering the vernacular architecture of Cyprus as an appropriate case study. The research outputs reported here mainly come from recent interdisciplinary research projects carried out at the University of Cyprus (UCY). Specifically, UCY's Department of Architecture participated in two local research programmes with the acronyms BioVernacular (https://biovernacular.vernarch.ac.cy/) and Biocultural (https://biocultural. vernarch.ac.cy/) funded by the University of Cyprus, 2013-15 and by the Republic of Cyprus and the European Regional Development Fund, through the Cyprus Research Promotion Foundation's Framework Programme for Research, Technological Development and Innovation (2009-2010) resp ectively. These programmes investigate the various passive design features of traditional rural and urban settlements in Cyprus, proposing innovative new conservation approaches towards the preservation and revival of vernacular dwellings. At the same time, and within the broader context of heritage and

sustainable planning, the same department has participated in two European programmes (Erasmus plus): Smart Rehabilitation 3.0 (https://smart-rehabilitation.eu) and Hersus -which this Handbook is a result (https: //hersus.org), in collaboration with European Universities from Serbia, Italy, Spain, Greece and Lithuania. These programmes aim to create new educational methodologies, for architectural heritage and sustainable development, as well as to encourage further synergies between universities.

In the framework of the BioVernacular and BioCultural research programmes, various environmental aspects of the vernacular dwellings have been investigated. These include the urban scale to start, moving to the scale of the buildings, focusing on different spaces (such as central courtyards) and various passive strategies (cooling, heating), and ending with the detailed study of the thermal behaviour of local building materials.

The aim of the above-mentioned programmes is the adoption of new criteria for the proper maintenance of vernacular dwellings, by preserving and strengthening all their bioclimatic design principles. In addition, these programmes aim to highlight the environmental elements of vernacular architecture for their adoption in contemporary architectural design. More specifically,

qualitative and quantitative methods of recording, documenting and evaluating vernacular dwellings in the urban and rural centres of different climatic regions were applied.

The adoption of a large number of cooling strategies found especially in the island's lowland and coastal areas is linked to the warm Mediterranean climate of these climatic zones. On the other hand, the existence of heating strategies was rather limited, and was found mainly in semi-mountainous and mountainous areas, due to the colder winters in these parts of the island (Philokyprou et al. 2017).

On the urban scale, the continuous building system (Fig.1) – a common feature of almost all the island's traditional settlements – leads to a compact building layout (with dwellings attached to each other), which reduces the settlements' exposure to climatic conditions (Savvides et al. 2016). Underground vernacular dwellings, mainly found in mountainous areas and less in coastal areas, further reduce the exposure of the building envelope to environmental conditions, taking advantage of the thermal mass of the earth.

On the building scale, the presence of indoor courtyards (Fig.1) with deciduous trees, and the frequent use of south-facing, semi-outdoor spaces mainly in plain areas, have direct dependence on

Figure 1. Various views of rural and urban vernacular dwellings showing different environmental elements (such as narrow streets in rural and urban settlements, continuous building system, semi-open spaces, central yards and light weight projections towards the street) (source of photos: personal data)

the geomorphology and climate of each area. This is because they ensure shading and thus protection from solar radiation during the summer season, due to solar height. On the other hand, during the winter, when the solar azimuth is low, the sun penetrates through the semi-outdoor spaces, heating the main living spaces (Philokyprou et al. 2021). The cross arrangement of windows helps to cool the interior of the houses, while at the same time, the creation of small openings just below the roof helps to remove hot air. Moreover, small light weight projections (called sachnisi – Fig.1) found at the second level of many urban dwellings, improve ventilation and lighting levels of the interiors (Thravalou and Philokyprou 2021). Through on-site measurements of environmental data, the positive effect of night ventilation – including its contribution to ensuring thermal comfort inside the premises – was established. At the same time, the positive effect of the thermal mass of traditional materials in reducing temperature fluctuations and delaying heat transfer inside the houses, was studied in detail.

The investigation of the environmental features of vernacular dwellings has revealed the necessity of preserving and enhancing the above-mentioned bioclimatic elements during the conservation and reuse of these structures, in order to meet contemporary sustainable requirements (Philokyprou and Michael 2021). The preservation of the vernacular dwelling envelope is essential for the energy efficiency of these buildings, as it is related to the maintenance of the envelope's heat capacity. Insulation layers can be easily integrated in the roof structure without changing its appearance. At the same time, single glazed windows can be replaced by double glazed ones, in order to improve the energy efficiency of existing vernacular dwellings. The preservation of the courtyards' original layout, materiality and vegetation safeguards their environmental role. The preservation of the semi-open spaces in their original form is very important, as they offer shading protection and thus constitute important architectural and environmental characteristics.

The research highlights the importance of a qualitative and quantitative assessment of vernacular dwellings through a multicriteria process, in order to establish a contemporary, environmentally-friendly conservation approach (Philokyprou and Michael 2021). Linking the tangible and intangible values of heritage with aspects of environmental technology, gives this field of research a multidisciplinary character, offering opportunities for new in-depth research. In this process, it is important to achieve a balance between maintaining the original character of the vernacular dwellings and their energy upgrade. It is noted that the energy upgrade of vernacular dwellings has a positive impact on society. This is because it leads to a reduction in energy requirements and an improvement in the lifestyle and quality of life of inhabitants. In conclusion, the imperative need to maintain and strengthen the bioclimatic strategies and features of vernacular dwellings using moderate means of energy upgrading is underlined.

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EDUCATION FOR
A SUSTAINABLE FUTURE:
THE ROLE OF MODERN HERITAGE REUSE

Keywords

**modern architecture,
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Docomomo,
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Modern Heritage matters

By the moment that the first pioneering architects started to explore the symbiosis between new way of living and new constructive possibilities, they laid a path for the architecture of contemporary man, guided by visionary concepts of form, space, technique, and social responsibility (Tostões, 2011, 2022).   20th-century modern architecture meant contemporary technology, form, expression, and above all, a belief in the architect's social mission to create a new and better world. Nowadays, more than 100 years after the first Modern Movement built manifestations, many of these buildings faced already or are now facing the need of rehabilitation, either to adapt to the contemporary living standards and demands or to house new uses.

This being said, the question of education in broad terms is mandatory for keeping architectural heritage alive as it embodies a sustainable condition for the future of the world. It is all about the way construction, landscape and built environment are transformed. Architectural education is key in this process. Recently, a global survey on education and training was developed by Docomomo, namely its International Scientific Committee on Education and Training (ISC/E+T), in collaboration with the Conserving Modern Architecture Initiative (CMAI) of the Getty Conservation Institute, with the aim of understanding whether the subject of 20th-century built heritage conservation is being taught, and, if so, where and how. In the resulting report, the methodology and the findings of the survey are shared with the goal of helping other organizations, academic institutions, and professionals involved in teaching heritage conservation in order to develop an understanding of available resources and existing gaps in the field, as so far only few schools worldwide consider this in their curriculum (Pedroni et al., 2020)   .

Docomomo International acts in this scope as it stands for documentation and conservation of the Modern Movement buildings, sites and neighbourhoods, being its   main goals summarized in the Eindhoven statement, issued at the conclusion of the founding conference in 1990: bring the significance of the Modern Movement to the attention of the public, the authorities, the professionals and the educational community concerned with the built environment; identify and promote the recording of the works of the Modern Movement, including a register, drawings, photographs, archives and other documents; foster the development of appropriate techniques and methods of conservation and disseminate this knowledge throughout the professions; oppose destruction and disfigurement of significant works of the Modern Movement; identify and attract funding for documentation and conservation. Explore and develop the knowledge of the Modern Movement. Thus, if at the beginning, when Docomomo was founded in 1988, in the Netherlands, a great focus was set on the question of conservation, in order to act towards the preservation of threatened modern legacy which was not valued at all at that time – having as first major actions the advocacy for the preservation of the Zonnestraal Sanatorium and the Van Nelle Factory, both in the Netherlands –, since 2014 the need for sustainable practices in the preservation of modern architecture through adaptative reuse and renovation, along restoration and conservation are emphasized. This led namely to the update of its Statement, from 1990, in 2014 as turning it Eindhoven-Seoul Statement. To different demands, different approaches concerning 20th-century heritage have to be adopted. Heritage should be used, it is not just an object or an icon, it is something that is dynamic, must be active, and belongs to the society. Unfortunately, Modern Movement buildings are not yet much recognized as heritage. Hence, one of the tasks of Docomomo is to spread awareness on Modern Movement heritage worldwide.

With this in mind, in 2021 was launched the *Docomomo Rehabilitation Award* (DRAW), which winners were announced at the 16th International Docomomo Conference. Aiming to recognize and disseminate the best practices and efforts to preserve modern architecture while adapting it to contemporary standards, to raise awareness of the works' value, to inspire a conscious reflection on Modernity as living heritage, and to appeal for a global approach to modern architecture buildings, as nominated for the award were considered outstanding projects of adaptive reuse, renovation, restoration and maintenance undertaken on Modern Movement architecture all over the World, between 2010 and 2021. Thus, ten categories, nine of them with two awarded projects each, and one honouring a person committed to the preservation of Modern heritage, defined the inaugural edition of the *Docomomo Rehabilitation Award*: enhanced masterpieces – Neue Nationalgalerie (Berlin, Germany, David Chipperfield Architects Berlin), and Yoyogi National Gymnasium (Tokyo, Japan, Tange Associates and Kume Sekkei Co.); lasting heritage – Sydney

Opera House (Sydney, Australia, Alan Croker), and Yale Center for British Art (New Haven, USA, Peter Inskip and Stephen Gee and Knight Architecture); engaged societies – Cité du Lignon (Geneva, Switzerland, Franz Graf and Giulia Marino, TSAM-EPFL), and Serpentine House (Helsinki, Finland, Kati Salonen & Mona Schalin Architects);   metamorphosed functions – Municipal Orphanage Amsterdam (Amsterdam, Netherlands, WDJArchitecten), and Yamanashi Press and Broadcasting Center (Kofu, Japan, Tange Associates);   educating practices – Aiton Court (Johannesburg, South Africa, Mayat Hart Architects), and Casa Estudio para Artistas (Buenos Aires, Argentina, Dirección General de Regeneración Urbana Buenos Aires);   preserved vanguards – Casa O'Gorman (Mexico City, Mexico, Victor Jimenez), and Hipódromo de la Zarzuela (Madrid, Spain, Junquera Arquitectos);   sustained uses – Grand Auditorium of the Calouste Gulbenkian Foundation (Lisbon, Portugal, Teresa Nunes da Ponte, Arquitetura), and Cartiera Burgo (Mantua, Italy, Massimo Narduzzo and CREA. RE);   conservation through activism – Isokon and Isokon Gallery (London, Great Britain, Avanti Architects), and Trenton Bath House and Day Camp Pavilions (Ewing, USA, Mills + Schnoering Architects);   open house – Le Corbusier's Apartment-Studio (Paris, France, Chatillon Architectes), and Villa Tugendhat (Brno, Czech Republic, Association for Villa Tugendhat - OMNIA projekt, ARCHATT, ARCHTEAM, and Atelier RAW); and committed personality – Winfried Brenne[1].

Further, working much on classic diffusion forms, in-depth publications have been produced, such as the Docomomo International 1988-2012: Key Papers in Modern Architectural Heritage Conservation (2014), which brings together key papers in English and Chinese on Modern architectural heritage conservation. And namely the *Docomomo Journal* (https://docomomojournal.com/index.php/journal), published twice a year with a guest editor, is used as one of Docomomo's most important tools to discuss and explore a wide variety of subjects ranging from adaptive (re)use, new findings on built work, and contemporary methods of conservation technology, to new ideas for a sustainable built environment in the future, with an approach that consistently attempts to bridge theory and practice, stressing the question of how to conserve and take the modern legacy to the future? Some issues were devoted to the state of the art in terms of interventions of maintenance and transformation of the works of architects such as Le Corbusier, Ludwig Mies van der Rohe, and Louis Kahn; and in several issues, ideas on art and architecture are explored, highlighting the ability of art interventions to solicit transformative views of the world.

Moreover, to actively promote awareness on the Modern Movement and its preservation, a Modern Movement virtual exhibition (MOMOVE) through an application to be used on the mobile phone was created, where all countries participating

1   See more at: https://www.docomomo.pt/rehabilitation-award

in the Docomomo network are involved. Through this digital project very simple information is provided that is meant to reach a large public allowing them to discover, research, and visit the Modern Movement heritage (https://exhibition.docomomo.com/).

How to love mass housing complexes: the rehabilitation of Cité du Lignon

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One of the most successful cases of restoration and opposition to the eminent demolition was that of the satellite city of Lignon, in the outskirts of Geneva. This complex, of 10,000 inhabitants, was built between 1963 and 1971 by Georges Addor (1920–1982), Dominique Julliard, and Jacques Bolliger together with Louis Payot, and comprises housing, churches representing three different religions, equipment, and all the related commercial support, functioning similarly to a *unité d'habitation*.

Unfortunately, in the beginning of the 2000s, its destiny was to be destroyed as the authorities believed that it was impossible to restore or rehabilitate this huge complex in terms of all the thermal mandatory answers of the requirements of the current Swiss legislation. But the adoption of a site plan by a team headed by Franz Graf and Giulia Marino of the Laboratory of Techniques and Preservation of Modern Architecture (TSAM) of EPFL, in May 2009, clearly established, through a protective measure well suited to the size of the project, its heritage value, even its status as a Monument. Adopting a very objective approach, as part of their studies on techniques regarding modern architecture, their first aim was to quantify what reusing this building meant. Thus, different more or less invasive approaches were studied, realizing as the most suitable the adoption of an intervention based on the maintenance and renovation according to the use of the spaces.

Even being a quite expensive project as such, it can be seen as a happy ending example as the Canton of Geneva truly understood the meaning of this process, and realized that the maintenance and restoration of the complex was not so expensive after all, but cheaper than would be the demolition and new construction approach. Published firstly in 2011 in the *Docomomo Journal*[2], Franz Graf and Giulia Marino's reuse research on *Cité du Lignon* has been awarded with the *Europa Nostra Prize for Research* in 2013.

This dissemination of academic research has proved to be really important, thus, most recently, in 2021, the restoration was recognized with the *Docomomo Rehabilitation Award* in the category of educating practices (see: Tostões, 2022)

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A contemporary extension using the existing building's ////////////////////////////////////
expression: the German School of Lisbon

Likewise interesting on the matter of modern heritage renovation is the case of Otto Bartning's German School in Lisbon completed in 1961. Otto Bartning (1883-1959) was a German architect who worked actively on school projects. Having envisioned with Walter Gropius the concept of Bauhaus and contributed to its programme, by the time Bartning designed the German School of Lisbon, he had already developed a remarkable work that accompanied the rise of the Modern Movement.

With the increase of the school's students over the years, it became necessary to expand the original school building designed by Bartning by creating a new building for the primary school and the sports hall so as to respond to the new requirements of the national educational system. For this purpose, an international competition was created, having the winning proposition been interestingly the one that took care of the pre-existing Bartning's building. It was João Luís Carrilho da Graça's (1952-) project and it was based on modernizing the existing buildings in such a way to recover and reinterpret the formal and functional articulation of the previous structure, demolishing all the temporary interventions realized over the years and, at the same time, adapting the original structure to a new functioning of the school.

With this solution, which included locating the primary school within the limits of the plot, the sports hall near the entrance and creating a green belt as barrier to the highway, it was possible to retain the old school with a very interesting project. The interiors were reused in acoustic terms and were improved in climate terms while maintaining, for instance, all the original frames in wood, and, very important, spirit of the original project.

Seismic retrofit as key for preservation: the renovations ////////////////////////////////////
of Kagawa Prefectural Government Hall and Yamanashi
Press and Broadcasting Centre

When it comes to the maintenance of buildings lifespan a very important issue to be addressed in countries as Portugal, and Japan in particular, is that of seismic retrofit. How to deal with the danger of earthquakes when we wish to restore buildings which are not able to stand to the standards, anymore? Japan is perhaps the country where this work has been more developed.

A remarkable case on this topic is that of the Kagawa Prefectural Government Hall, a work by Kenzo Tange (1913-2005) completed in 1958 on the island of Shikoku. Singular in this case was that the municipality took the building as a symbol of the city, studying three different approaches with three different budgets, which resulted in the implementation of a mix of them to restore the building.

Another very interesting case in Japan is the Yamanashi Press and Broadcasting Centre (1964-66) in Kofu designed as well by Kenzo Tange, a building that belongs to a private owner, not a public one   [Figure 01]. In it, Tange further developed his ideas for expandable urban forms. This kind of Metabolist building, of a very brutalist style, has become the symbol of the city of Kofu, a community symbol, as the city was completely destroyed in World War II. So it was entirely rebuilt, creating very common buildings and, at its centre, standing akin to a sort of modern "cathedral" to the place, this broadcasting building was designed for three media companies: the radio, the TV headquarters and a newspaper printing company. To allow for future expansion, Tange grouped the similar functions of three offices together in three zones. The newspaper printing machinery was on the ground floor, sealed studios on the upper floors and offices on glass walled floors surrounded by balconies. The services, including stairs and lifts, are housed in 16 reinforced concrete columns that are of five-meter diameter. Space was left between the cluster of functional space to allow for future expansion, although these have been used for gardens and terraces. Faced with the risk of irreparable damages due to earthquakes a huge and exigent transformation based on a retrofitting intervention was undertaken in the 2010s. It was therefore recognized with the *Docomomo Rehabilitation Award* in the category of metamorphosed functions (See: Tostões, 2022).

Figure 1. Kenzo Tange & URTEC, Yamanashi Press and Broadcasting Centre, Kofu City, Japan, 1964-1966; Tange Associates, renovation, 2015-2016. Exterior view from south. © Ana Tostões, 2017.

The *avant-garde* reuse of an industrial building: the SESC Pompeia Factory leisure centre ///////////////////////////////////////

Impossible not to address is in Brazil the very avant-garde project proposed by the Italian-born Brazilian modernist architect Lina Bo Bardi (1914-1992) for the transformation of a former factory in São Paulo, the SESC Pompeia Factory (1977-86), into a community leisure centre [Figure 02]. Originally an industry specialized in music instruments, her proposal was not to destroy the existing structure but to use it for a new purpose, different from that of the industry. A key aspect of her project of reuse is that Lina was able to involve the community, especially the young generation. The community was constituted mainly by the former workers of the factory, and working together with these people it was possible to transform the factory into a wonderful cultural and sports centre – using spaces for galleries, theatres, happenings, as well as swimming pools, and sport activities.

A famous image of Lina portrays her during her involvement in this process working with a very young team of architects – one of which, in particular, would become very well-known, Marcelo Ferraz. So, by working with this very young and fresh team and all the community it was indeed possible for Lina to transform this factory which had been closed, and overturn the initial plan

Figure 2. Lina Bo Bardi, SESC Pompeia Factory Leisure, São Paulo, Brazil, 1977-1982. © Ana Tostões.

of the owners which was instead to destroy it and, of course, to build new buildings profiting from them.

Unique in its design this complex is iconic with all its tunnels, the tower with swimming pools, and the fields of sports, as well as all these wonderful spaces with art galleries and a library. Inviting references to the sensibility of the Arte Povera movement, Lina's intervention lends raw structures and poor materials the status of an artwork. This is a masterpiece, an avant-garde action towards topics that are on our nowadays agenda.

An invisible intervention: the renovation of Calouste Gulbenkian Foundation's museum and auditoriums ///

In Portugal, an outstanding renovation project result of a deep research of the building's architecture is the renovation and maintenance of Calouste Gulbenkian Foundation's museum and auditoriums by Teresa Nunes da Ponte (1955-) [Figure 03]. Designed by Alberto Pessoa (1919-1985), Pedro Cid (1925-1983) and Ruy d'Athouguia (1917-2006), along with landscape architects António Vianna Barreto (1924-2013) and Gonçalo Ribeiro Telles (1922-2020), the Calouste Gulbenkian Foundation Headquarters and Garden (1959-69) in Lisbon, are a classical Modern Movement building complex, which is not iconic but in contrary quite discrete. Leslie Martin (1908-2000) recognizes that "this building will be classical in the more fundamental sense that it arises from well-proportioned and logical solution to a very special problem".

So, intervening in such a building was a difficult task, which turned out just possible after the study of the building's construction and materiality, as well on the social and cultural aim of the complex. Over a period of 12 years a process of renovation and maintenance was undertaken, consisting the last one the renovation of the Grand Auditorium (2013-14). This was the most delicate one, as questions of security and safety, accessibility, acoustic had to be dealt with[3].

Being classified already as a National Monument was here a key fact as otherwise many disfiguration interventions would have happened, there won't have been such a respect of the architectural value and identity of the building. Nowadays candidate to the UNESCO world heritage list, and in 2021 recognized with the *Docomomo Rehabilitation Award* in the category of sustained uses (see: Tostões, 2022).

Concluding, three main topics should be pursued to raise awareness on the conservation of Modern Movement heritage: research, documentation, knowledge – keys for responsible intervention; research-based design as a work in progress: normative, safety, comfort requirements are always changing; education as a strategy for the heritage reservation.

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3   See: Tostões, Ana. 2015. Restauro e Renovação do Grande Au-ditório.   Lisboa, Fundação Calouste Gulbenkian.

Figure 3. Alberto Pessoa, Pedro Cid, and Ruy Jervis d'Athouguia, Calouste Gulbenkian Foundation Headquarters and Garden, Lisbon, Portugal, 1959–1969; Teresa Nunes da Ponte, renovation, 2002-2014. Garden terraces and building of the grand auditorium. © Ana Tostões, 2021.

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PART 2.2

SUSTAINABLE RECONSTRUCTION IN URBAN AREAS

SR01

From Recupero to ReUrbanism via Regeneration
Urban heritage within sustainable urban design
approaches.

✕

SR02

Between the World and the Earth. A necessary
reconciliation. The role of the restoration project.

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SR03

Contemporary urban ecologies: architecture for
the cyborg society.

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SR04

The role of the adaptive reuse of listed
settlements: A strategy for sustainable housing
(re)development.

✕

SR05

Creative Heritage Places: Alternative approaches
for an urban sustainable regeneration.

Athina Vitopoulou

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SR01
**sustainable
reconstruction**
handbook for students

FROM RECUPERO TO REURBANISM VIA REGENERATION URBAN HERITAGE WITHIN SUSTAINABLE URBAN DESIGN APPROACHES

Keywords

**urban regeneration,
urban sustainability,
urban rehabilitation,
brownfields and derelict urban areas regeneration,
urban strategies**

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Since the mid-1960s, approaches to existing urban fabric interventions have evolved mainly in relation with:

a) the shift from comprehensive rational urban planning to urban design that turned the attention back to three-dimensional urban space and its constitutive elements, took into consideration the local characteristics, the identity/ies of the place and its particularities, and redefined the importance of public space;

b) the enlargement of the cultural heritage concept from monuments to wider urban environments, and the shift from sterile preservation and restoration of monuments and historic centres emphasizing their historical and aesthetic value to their adaptive reuse in line with contemporary needs;

c) the urban sustainability and resilience issues and the need to cope with the climate change impacts, mainly by incorporating environmental design strategies and tools.

The aim of this chapter is to highlight the significance that urban heritage holds within urban design strategies for revitalizing post-industrial cities. First, it looks over the emergence and evolution of these strategies, mainly by revisiting some emblematic urban interventions: From the cultural and political approach of 'recupero' in Bologna, to the French approach of 'projet urbain' and the Berlin IBA interventions, which influenced urban rehabilitation strategies focused mainly on historic centres and inner-city residential districts all over Europe during the 1960s-1980s. Then, it discusses urban regeneration strategies developed from the mid-1980s onwards concerning mostly built-up but mainly underutilised or abandoned areas within the cities, which gradually incorporated sustainability issues and the return to the compact city. Last, it briefly refers to most recent approaches bringing together cultural heritage and urban planning and design to attain sustainability in the 21st century, such as 'ReUrbanism' and 'Heritage Urbanism'.

The chapter suggests that, despite the emergence of various concepts and terms and the indisputable enrichment of urban design approaches, strategies, and policies during the last six decades, tangible and intangible urban heritage in its broad sense constitute one of the enduring components of successful and sustainable urban interventions, although not through the same visions and objectives.

'Sustainable' urban interventions before sustainability: discovering and enhancing urban heritage

The approach of 'recupero' and the Italian influence in the 1960s-1970s

The term of urban design was introduced by Joseph Lluís Sert in the mid-1950s and gradually evolved to a new approach of urban space production and a distinct discipline. In Europe, an important role in this process was played by a number of research studies and approaches on the form and structure of the historical European city, held in the 1960s-1970s, first by Italian theorists and historians of architecture and the city and/or architects-urban planners (e.g. Saverio Muratori, Gianfranco Caniggia, Leonardo Benevolo, Carlo Ayomonimo, Aldo Rossi) and then French (e.g. Philippe Panerai, Jean Castex, Jean-Charles Depaule) and other Europeans (e.g. Rob Krier).

These theoretical approaches to the city were based on historical analysis, on typo-morphological analysis of the urban fabric and on the study of the dialectic relations established over time between monuments as unchanging/diachronic elements and the ever-changing fabric of housing and, more generally, between urban morphology and architectural typology (see for ex. Muratori 1960, Rossi 1966, Caniggia and Maffei 1979). It is essentially a return to the three-dimensional form of urban space, in contrast to the functionalist urbanism that was mainly concerned with the distribution and structure of urban land uses. These approaches subsequently influenced the urban space composition, but also the architectural design (postmodern architecture), as they recognised, at the city scale, peculiar and characteristic architectural typologies of a certain place (type of facades, number of storeys, materials, form of plot division, etc.) and of a particular population, which the interventions would then had to respect (Ingallina 2001, pp. 75-81; Vitopoulou 2004, p. 35). Hence, they brought to light the concept of urban heritage and the need for its preservation and restoration, ideas already developed by Gustavo Giovannoni in the first decades of the 20th century (Giovannoni 1931, 1998). Thus, understanding how the city has developed through time, the different urban forms and their evolution, and the relation between urban and social morphology emerged as extremely important for the development of a collective consciousness about urban heritage preservation (Ingallina 2001, pp. 78-79).

Among the best-known interventions in which these theoretical approaches were applied is the one implemented in Bologna from the mid-1960s to the mid-1970s that served as an example in other European countries, especially in France, and opened the discussion on the way to consider and intervene within historical centres of the European cities. Based on the concept of urban 'recupero', it promoted the idea that urban planning process had to consider the existing city as a 'whole', both in terms of scale and urban and social fabric, as well as the needs and opinion of its inhabitants. It highlighted the importance of preserving the meaning and identity of the city in any building reuse intervention so that it could be reappropriated by the inhabitants. It was also one of the first attempts to experiment with the participation of the inhabitants through district councils, thus introducing a more democratic planning process. The main objectives of the city plans were the rehabilitation and reuse of the existing housing stock from the centre to the periphery, part of which was allocated for social housing, as well as the reorganisation and increase of social facilities, through the creative reuse of buildings of different typologies (especially abandoned monastic complexes), and of public and green spaces both in the centre and the periphery (Bakirtzis 1975, Cervellati et al. 1981, Ingallina 2001, pp. 77-84).

The approach of 'projet urbain' and the French influence in the 1970s-1990s

During the first half of the 20th century, a considerable experience of centralised state and technocratic urban planning had been developed in France. Urban planning policies, following first the hygienist ideas of the 19th century and then the modern movement principles and the concept of tabula rasa, led to massive demolition and reconstruction of degraded housing blocks/areas especially after WWII.

In the late 1960s, a major intervention in the heart of Paris involving the redevelopment of the central market area, 'Les Halles' or the 'belly of Paris' according to Émile Zola, which was housed in the Baltard pavilions, was the occasion for the public to become aware of the emerging criticism against the way and process of urban development. The intervention has a long and adventurous history, from the first proposals in the late 1950s to its implementation by the mid-1980s. It was widely criticized, as it was marked by the failure of the public mobilization against the destruction of the Baltard pavilions, an example of the 19th century metal architecture, and their replacement with open public and green spaces and the shopping mall 'Forum des Halles' with extensive, mostly underground, commercial uses combined with sports and cultural activities. The intervention included also the construction of the main RER and metro transit hub of the entire Parisian region, the erection in the vicinity of the 'Centre Georges Pompidou', the then high-tech new cultural landmark of Paris, as well as the demolition and reconstruction of surrounding degraded urban blocks, following

to a certain extent the typology of the Parisian blocks and adopting a postmodern interpretation of the morphological and typological characteristics of the Parisian apartment building (Figure 1).

Figure 1. New urban blocs in the surroundings of the 'Centre Georges Pompidou' in the 'Les Halles' district in Paris [© A. Vitopoulou]

The social dialogue, mainly through various associations and cultural and ecological organizations, the discussion among architects and urban planners, the successive plans and projects, as well as the high visibility of the intervention in the press, resulted to its gradual adaptation both at the programmatic level and in terms of physical planning and design. The project also contributed to launching a wide-ranging dialogue on the historical, aesthetic, functional and symbolic values of the place, its importance and identity as a place destined for traffic - as the site was located at the junction of the oldest historic streets - and the exchange (Lemoine 1980; Ingalina 2001, pp. 85-97; Vitopoulou, 2004, pp. 37-39), that is on both tangible and intangible urban cultural values. Moreover, it stimulated the introduction of the typo-morphological urban analysis in France, by focusing on the urban fabric fundamental elements and the land structure to propose a new tool to facilitate the understanding of the urban organism anatomy (see for ex. Boudon et al. 1977, Panerai et al. 1977, Castex et al. 1979).

Ingalina (2001, pp. 87-90) suggests that this emblematic urban intervention opened the way to the new approach of 'projet urbain'. According to Mangin and Panerai (1999, p. 19), in France, 'projet urbain' emerged as a revendication to redefine the relationship between buildings and the city, between architecture and technocratic urban planning. A revendication which was both political as it presupposed a new role of the architects and planners, the inhabitants, and the local authorities in the urban space production process, and theoretical as it called for new conceptual tools and new project techniques.

At the early 1990s the approach had integrated the relativity of place, scale, and time as it had to account for different spatialities and temporalities. Focus was shifted from the ideal to the existing city, that is to 'sedimentary city' (Grumbach 1994, p. 140), and thus urban interventions should be inscribed in the local context, enhancing the spatial, functional, and social dynamics of the place. Grumbach (1997, p. 45) claimed that "within an urban form there is nothing to redesign that does not rely on the existing [...] everything is already there. It is enough to observe it, to represent it, to recompose it. The study of urban formations and the urban transformation project require an extreme humility in relation to the history and the existence of things that are 'already' there". As argued by Devilliers (1994, pp. 14, 17), 'projet urbain', lying between the memory and the future of a city, "is interested, whatever the scale of representation, in the form and dimension of places", and aims "to return space to use" by considering the memory of past uses that a place has accumulated over time. Time is therefore present both in the form of memory to be protected and enhanced, and in the form of the future (Ingalina 2001, p. 116). Grumbach's concept of the 'inachèvement perpétuel', that is the perpetual non-completion, of the city (Grumbach 1994, p. 141) expresses in a way the need to consider the long-term, negotiable, ever-changing and thus flexible nature of urban interventions while planning and designing urban space.

Nevertheless, context is not perceived in the same way within 'projet urbain' multiple approaches developed in the long run. Tsiomis and Ziegler (2007, p. 39) claimed that it is understood either in its diachronic dimension taking into consideration the history of the place or in its synchronic dimension, in which the existing spatial and social situation prevail relegating the historical dimension to the background. Moreover, 'projet urbain' gradually seemed to refer more to the way in which urban interventions are conceived, their characteristics, objectives and process, rather than being identified with a particular spatial scale. Eventually, French main contribution lies in the theorisation of urban design and its conception as an interdisciplinary approach of overall and long-term vision and strategy on the urban space.

The Berlin IBA interventions and the German influence in the 1980s-1990s

The interventions that took place in Berlin in the 1980s by activating the mechanism of IBA[1] constitute another major urban strategy attracting general interest and serving to a large extent as a model, as it included in a successful way the reflection on historical continuity and the respect for local characteristics and the existing urban and social fabric.

In fact, it was about a double strategy: on the one hand the new housing development in the Tiergarten and Friedrichstadt districts, which had suffered multiple war damages, and on the other hand an urban rehabilitation programme in the Kreuzberg district (Ferré-Lemaire 1991, p. 60). Concerning the new development, through a series of international architectural competitions on the theme of the 'critical reconstruction' of the city (Jaquand 1992, p. 38), the aim was to upgrade the quality of life in the historic centre by creating housing complexes, a significant proportion of which was social housing, combined with open and green spaces and social infrastructure (nurseries, schools, sports facilities, etc.), while reinforcing the specific identity of each district and the Berlin character in terms of materials (granite) and number of floors. The redesign of the streets and squares respected the precedent urban structure and characteristics of the various neighbourhoods: human scale, alignment of the buildings, emphasis on the boundaries of the urban blocks. In Friedrichstadt, inner courtyards, gardens, alleys, and green spaces usually communicate from one block to the next, creating a semi-public pedestrian system in which shops or workshops are often located on the ground floor of the buildings. The continuous facades of the enclosed blocks include large openings as needed to provide access to typical inner courtyards (Bédarida 1985, p. 12-15; Ferré-Lemaire 1991, p. 60-62; Vitopoulou 2004, p. 40-41) (Figure 2). The preservation of traces, road layouts or old buildings was meant to safeguard the memory of the city and its particularity, though not in a nostalgic way. Necessary modifications in practices and plot allocations or divisions were made, as it was therefore "a question of reconstructing the city with the help of the past while looking to the future" (Bédarida 1985, p. 12-13).

Regarding the Kreuzberg district, which presented severe social problems due to the demographics (elderly, refugees, marginalised population, etc.) and the high unemployment rate, the 'soft' rehabilitation programme (Bédarida 1985, p. 9; Jaquand 1992, p. 39) did not ignore the problems and

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1 IBA (International Bauaustellung) is a mechanism first used in post-war Germany, whereby a body is created, outside the existing urban planning structures, to undertake a major planning programme (after architectural competitions) and implement projects within a specific timeframe (usually 5 to 10 years). This IBA was created in 1979 with a target completion date of 1984, but was eventually postponed until 1987, the year that coincided with the city's 750th anniversary (Bédarida 1985, p. 6).

weaknesses of the area. Moreover, all available funds were used in cooperation with the inhabitants at every stage of the intervention. It was decided to preserve all the buildings and block the rents, while the restorations were also carried out with the personal work of the inhabitants that reduced the cost and accelerated the implementation. The programme also included the construction of new housing, cautious interventions inside the blocks, the maintain of land use mix within the same building (housing, crafts, and small industry), the creation of social facilities for young and elder people (day-care centres, sports facilities, etc.), and the redevelopment of open public or semi-public spaces (streets, squares, inner courtyards, green spaces). Through participation processes the social fabric of the district was largely preserved, although the most fragile population was driven away. However, it was considered a successful urban rehabilitation programme by activating the existing local dynamics and the participation of the local population (Bédarida 1985, p. 6-9; Ferré-Lemaire 1991, p. 62-63; Vitopoulou 2004, p. 41).

Since the early 1990s, the orientation of urban strategy in Berlin changed, as priority was given to redeveloping the vacant spaces that emerged after the fall of the wall and creating the image of the new capital through major and mostly large-scale urban projects, having to negotiate and articulate different urban heritages and even different urban cultures (Vitopoulou 2004, p. 42). Characteristic of this shift in urban policy is the intervention in the Potsdamer/Leipziger Platz area that attracted great international interest, as it essentially involved the development of a new city centre from scratch on a vacant site yet charged with the myth of interwar Berlin. In the non-open competition of 1991, which called for the creation of a 'metropolitan centre' with mixed uses of commerce, leisure, culture, office space and housing, the winning project of Hilmer & Sattler proposed a dense, mostly medium-height urban structure, with streets and alleys that reproduced the typical Berlin building block and the old form of the squares, in line with the strategy to keep in the city centre the traditional volume of the buildings and the form of the urban blocks. This strategy was however altered by the modifications made to the original plan, following the Richard Rogers's counterproposal financed by the investors who had in the meanwhile bought the land, and in particular the general doubling of the building heights (Jaquand 1992, p. 48-50; Vitopoulou 2004, pp. 42-43).

Figure 2. Inner courtyard in a Berlin IBA new housing complex, participating in a semi-public pedestrian system [© A. Vitopoulou]

Despite the different socio-economic and political contexts in which they were generated, the aforementioned urban interventions could be considered as emblematic, mainly because they served as references, shaping and evolving a new way of understanding and designing the existing city. From the 1970s to the early 1990s, many urban rehabilitation and requalification projects took place in European cities[2], which incorporated and implemented to a greater or lesser extent this approach. They included rehabilitation and/or selective reconstruction of the existing urban fabric and/or new construction with respect to basic local morphological and typological features. Generally promoted by public bodies but with a significant involvement of the private sector, and often the participation of the inhabitants, they mainly concerned the rehabilitation and reappropriation of historic centres, the requalification of degraded mostly central residential areas, with a mixture of commercial or business uses, social facilities and new or redesigned public spaces. This shift towards the existing city, the enhancement, rehabilitation and requalification of its urban and social morphology, the reuse of the building stock, the emphasis on the public space and its traditional role as a constitutive element of urbanity, with one of the main tools being extensive pedestrianisation and the reduction of private

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2   In Britain this type of interventions is referred as urban renewal projects. For their characteristics see Couch (1990) and Carmon (1999).

vehicles use in favour of public transport, laid the foundations for the drastic redefinition of precedent urban policies and the development of the concept of urban sustainability; even if the environmental factor was not yet that evident in the discourse of theorists and practitioners.

Urban regeneration projects and sustainability: leveraging urban heritage

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Since the mid-1980s and especially the early 1990s, there was on a global scale a shift from continuous urban development and expansion that assimilated natural and rural areas (greenfields) to a 'transformation urbanism' (Chaline 1999, p. 3), as most urban interventions henceforth concerned built-up but mostly underutilised or abandoned areas within the cities (brownfields, wastelands, derelict areas, drosscapes etc.). The size and generalised proliferation of such areas in most cities, caused by socio-economic and spatial processes of deindustrialization, technological innovation (in energy, communication, transport etc.) and former planning choices, has resulted in a widespread reflection and discussion on their destiny (see for ex. Avril et al. 1998, Chaline 1999, Dixon at al. 2007). Yet these 'vacant' urban areas contained interesting, even significant, building stock, infrastructure, and traces of mainly modern and industrial cultural heritage.

In view of the emerging concept of sustainable development, and while the long-term environmental benefits of maintaining and improving existing urban areas had already been recognised (Couch and Fraser 2003, p. 3), various terms and expressions saw the light to define the way to cope with the phenomenon: 'urban recycling', 'culture of transformation', 'remaking of the city', 'rebuilding the city on the city'[3] (Chaline 1987, p. 12; Grumbach 1994, p. 143; Avril et al. 1998). Eventually, this paradigm shift was captured by the globally adopted term 'urban regeneration' to describe policies and strategies that, according to Couch et al. (2003, p. xv), "attempt to return derelict and vacant land and buildings to beneficial use, create new forms of employment where jobs have been lost, improve the urban environment, and tackle an array of urban social problems"[4]. Urban regeneration evolved over time by integrating various practices and approaches and acquired diverse manifestations in different socio-economic contexts and local conditions, which explains the different, albeit similar, definitions that have been put forward (Kafkalas et al. 2015, pp. 123-124).

3   The terms and expressions in the original french language are: 're-cyclage urbain', 'reconstruire la ville sur la ville', 'culture de la transformation', 'refabrication de la ville'.
4   In countries where urban regeneration developed as a distinct and constitutive part of urban policy, other terms are used as well to feature urban interventions and development processes with this scope, such as 'revitaliza-tion', 'renaissance', 'renewal' (Talon 2010 in Kafkalas et al. 2015, p. 123).

Under this umbrella term, there was a remarkable proliferation of urban interventions to revitalise former and/or underutilised industrial, port, railway, military or other 'vacant' urban lands and facilities. The requirements involved in the process of their spatial and functional reintegration into the urban fabric, together with the need to tackle complex technical, environmental, and socio-economic problems, resulted in the reorientation of the objectives and the search for new programmatic and design approaches. Urban regeneration projects are usually long-term and large-scale with multi-dimensional targeting and complex implementation procedures, i.e. involving a number of technical, financial and management problems. Hence, new concepts, strategies, tools, and mechanisms were adopted, concerning both the programmatic and physical planning and design, and the project implementation and property management. In the context of the dominant neoliberal policies, another characteristic that distinguished urban regeneration projects from previous interventions was the increasing importance of the private sector role in the programming and implementation process, as attracting investment in 'vacant' urban lands became crucial. The role of the public sector, and in particular of the local government whose initiatives remain vital, is mainly coordinating. However, public involvement is important in terms of the costs of preparing land for new uses (e.g. land remediation and infrastructure costs) (Chaline 1999; Doak and Karadimitriou 2007; Karadimitriou et al. 2013; Vitopoulou and Karadimou-Yerolympos 2010, pp. 140-143; Kafkalas et al. 2015, pp. 124-144, 218-223).

The main objectives of urban regeneration strategies as highlighted by implemented projects could be summarized as follows (Roberts 2000, pp. 18-19; Vitopoulou and Karadimou-Yerolympos 2010, pp. 138-140; Kafkalas et al. 2015, pp. 216-218):

- Strengthening depressed local economies, often due to the loss of a basic urban function from which the 'vacant' land/buildings resulted, or even complete transformation of the city's economic functions. The aim is to attract economic activities mainly from the tertiary sector, i.e. business activities, administrative services, commercial, leisure and cultural activities often combined with public and green spaces, higher education and research facilities, tourist facilities and activities, usually combined with mixed housing. The secondary sector is often present, mainly in the form of clean tech industry.

- Creating a new city image able to fuel urban marketing, aiming to integrate the city into the international competition and thus attract new residents, tourists and especially investors. Hence the usual tactic of 'flagship projects', elaborated by famous architects, to ensure the visibility and promotion of the interventions.

- Developing a long-term, overall, and concrete strategy for the transformation of the city, within which one or multiple urban projects are integrated.

From the urban regeneration programme in London Docklands (1980s-2000s), one of the first and largest interventions on former port and waterfront lands and facilities that was heavily criticised to introduce the entrepreneurial approach to planning, to Hafen City project in Hamburg (1990s-2010s), a new city within the city with a strong environmental agenda and emphasis on innovation; from the creation of Parc de Bercy and Bercy-village (1980s-1990s) on the area of the abandoned wine warehouses in Paris (Figure 3) to Parco Dora (2000s-2010s) in Torino on former industrial lands; from the pioneering conversion of an abandoned railway line into a 'planted promenade', the Viaduc des Arts, in Paris (1980s-1990s) to the more famous example of High Line linear parc in New York (2000s-mid2010s), the list could go on forever highlighting the diversity of factors influencing the development potentials, and the variety of aspirations, objectives and involved stakeholders, thus explaining the heterogeneity of strategies and tools adopted within urban regeneration projects.

Regardless of the diversity of the approaches and the critique on the usually ambiguous socio-spatial impacts and the final urban and architectural product (see for ex. Porter and Shaw 2009), a set of common enduring characteristics can be identified in successfully implemented urban regeneration projects (Masbougni 2002, pp. 9-10; Roberts 2000, pp. 18-19; Vitopoulou 2004, p. 48; Kafkalas et al. 2015, p. 216):

- Resulting mainly from an urban design approach to planning, the quality of the design, the form, and the image of the produced urban landscape, and especially of the public space.

- Simultaneous revitalization of the urban and social fabric, economic activities, and environmental conditions.

- Enhancing and promoting the local characteristics, the dynamics and symbolic values of the place, the features of the preexisting built and unbuilt environment, the traces, the collective memory, to reinforce the existing or create new identity/ies and ensure spatial, functional, and symbolic connection with the surrounding urban environment.

- Valuing and enhancing the landscape and its characteristics, both from an ecological point of view and as part of the cultural heritage in the urban and peri-urban environment.

- Considering the time factor and ability to adapt to constant local and global spatial, socio-economic, and environmental changes and needs (flexible strategies, evolutionary projects, phasing of implementation etc.).

- Emphasis on sustainable mobility networks promoting public transport means, soft mobility (walking, cycling, running, roller skating etc.) and micro-mobility.

- Strong political will and policy continuity, mostly ensured by a coordination, implementation, and management body, which ensures consensus among the large number of stakeholders to define a common and widely accepted strategy through participation and consultation processes.

Figure 3. 'Bercy-village' in Paris (1980s-1990s) in the abandoned wine warehouses [© A. Vitopoulou]

Therefore, incorporating tangible and intangible urban heritage seem to be an inherent part of urban regeneration projects because of their nature and purpose. It acquires though a pivotal role in the so called 'heritage-led urban regeneration' interventions, which have been multiplied during the last two decades. This approach stands for the idea that leveraging urban heritage, that is targeted investment in the adaptive reuse of listed and abandoned heritage assets (buildings, sites, and neighbourhoods) with mixed commercial, residential and tourist uses, combined with the promotion of cultural events and creative industries that draw on the local heritage, can promote economic and social development, while also preserving the local character and identity. Thus, there is a strong interconnection of built heritage conservation with economic growth (Reeve and Shipley 2014; Fouseki and Nicolau 2018). Such interventions have been critised as market-led and

tourism-centred, including the risk of gentrification and leading to the displacement of local communities and the 'elitisation' of heritage, while environmental issues are also neglected as the focus is largely being placed on social and economic impacts emerging from heritage (Skoll and Korstanje, 2014; Labadi 2016; Fouseki and Nicolau 2018). This criticism, however, is not far from the one that has been developed for most urban renaissance interventions in general, whatever the emphasis may be (property-led, tourism-led or culture-led etc.).

Urban heritage as a key element for sustainable urban design in the 21st century

During the last six decades various concepts, terms and models have emerged enriching urban design approaches, strategies, and policies. Respectively, policies and practices for the protection and conservation of historic areas were introduced in most countries during the 1960s and early 1970s and evolved ever since, focusing on the conversion and reuse of the building stock and the adaptation of the historic fabric to contemporary requirements through various modes (e.g. partial demolition and redevelopment, refurbishment, rehabilitation, conversion). Thus, urban heritage conservation became an integral part of urban planning and development (Carmona et al. 2003, pp. 197, 201). However, even though tangible and intangible urban heritage constitute an enduring component of successful and sustainable urban interventions, different urban design approaches as evolved over time do not share common visions and objectives about its role.

Both the 2030 Agenda for Sustainable Development and the New Urban Agenda, adopted by the United Nations in 2015 and 2016 respectively, refer to the role of cultural heritage in the sustainable development of cities (Transforming Our World: The 2030 Agenda for Sustainable Development A/RES/70/1. United Nations; The New Urban Agenda. United Nations). Among the large number of approaches bringing together cultural heritage and urban planning and design to attain sustainability, two of the most recent are 'ReUrbanism' and 'Heritage Urbanism'.

The term 'ReUrbanism' emerged in the turn of the 21st century from American academic urban design discourse. Despite the different takes on the term, its mainstream understanding describes an approach for the redevelopment and revitalisation of American cities (Haas and Lock 2018, p. 7) as a response to the challenges facing urban areas, such as declining populations, disinvestment, and urban blight. It promotes new mixed-use development, historic preservation, and sustainable development practices, such as the use of green spaces, energy-efficient buildings, and transit-oriented development. USA National Trust for Historic Preservation defines 'ReUrbanism' as an initiative for the reuse, reinvestment, and revitalization of cities using new research, data, tools, and strategies. To do so, ten guiding principles have been

identified detailing how the reuse of historic buildings can bring human, social, ecological, and economic benefits to cities. The aim is to promote city branding and identity, to enhance walkability, and generate networks of social creativity to stimulate livable, vibrant and inclusive communities through reinvestment and adaptive reuse of existing places, i.e. older and historic buildings and neighborhoods (National Trust for Historic Preservation. Preservation Leadership Forum, Atlas of ReUrbanism. Buildings and Blocks in American Cities and Ten Principles for ReUrbanism: Reuse and Reinvestment in the 21st Century). According to Haas and Lock (2018, pp. 9, 11), 'ReUrbanism' is a place-making approach with contextualised understanding of historical precedents, focusing on the re-weaving of urban fabric, high density, compact city development, programmatic forms and compositions, and city branding on large scale market driven. Therefore, we could argue that it is a heritage-led urban regeneration approach or rather a market-led urban regeneration with an emphasis on urban heritage adaptive reuse.

Developed within a research project conducted at the Faculty of Architecture of the University of Zagreb from 2014 to 2018, 'Heritage Urbanism' considers the revitalization and enhancement of cultural heritage in spatial, urban, and landscape contexts, and it explores models for its inclusion in contemporary life. It primarily focuses on potential models for the revitalization and enhancement of different types of built heritage, not only historic cities, which have no long-term purpose or no purpose at all (Obad Šćitaroci and Bojanić Obad Šćitaroci 2019). Within this approach, Lock et al. (2018) propose urban heritage to be considered as a foundational infrastructure, comparable with other infrastructures within cities, which provides a helpful supportive framework and a set of structural limitations (e.g. historic plot boundaries) that can serve as a generative resource for urban planning and design, especially within the context of urban renewal and regeneration.

Beyond the proliferation of concepts and paradigms, urban design emerged from and evolved in parallel with the reflection on the way to intervene on the body of the existing city 'as a whole', and thus how to deal with both tangible and intangible elements of urban heritage and culture. Either aiming to rehabilitate and requalify, to revitalise and regenerate, or retrofit, refurbish, and repair existing urban development patterns, adaptive reuse of the building stock and repurposing all kinds of infrastructure (grey, green and blue), as well as establishing socio-spatial articulations between 'the old and the new', are critical to environmentally and socially sustainable urban design. Urban design is by definition a contextual process, hence urban space should never be seen again as a tabula rasa.

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SR02

sustainable
reconstruction
handbook for students

BETWEEN THE WORLD AND THE EARTH:
A NECESSARY RECONCILIATION.
THE ROLE OF THE RESTORATION PROJECT.

Keywords

Deterritorialisation/Territorialisation,
Recognition,
Things,
Movement,
Paths

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Introduction

The term construction is linked to the preservation of those stratified and multiple memories, which are the basis on which Architecture rests: its very *raison d'etre*. This chapter highlights that these themes can and must be brought out of the university classrooms to influence policies and culture at large.

We find ourselves in the middle of two macro trajectories. One sees the phenomena of the city and territory as generative phenomena of what has been called the "generic city", the city without history of Rem Koolhaas, created on a surface, a plane, in which the role of technology is central. The other trajectory is instead focused on the idea of the local, to the point of localism, with implications that André Corboz describes as "looking in the rearview mirror" (Corboz 1998, p. 218).

These trajectories seem to be at odds with each other, they should instead be read as undecidable, to use Jacques Derrida's notion, and therefore to have no connotation of judgment or position (Derrida 1972, p. 58). The generic city, programmatically free from its relationship with places, indifferent and global, must be built and, in reality, come to terms with the construction that binds it to the ground and which connects it to the Earth.

On the other hand, the limitations of the idea of the local, of exasperated identity, lie in its closed nature, monodimensional reference, and exclusion of the other and the diverse. It displays a negation of the refrains to which Deleuze and Guattari always return: they too are concerned with identity; however, as Francesco Remotti (Remotti 2010) explains so well, for them, identity is a phenomenon which regards relationships, whose openness is precisely that which guarantees its very possibility.

The hypothesis that I would like to support is that to contribute to the construction of our world, we must try to work within the aporia of undecidability.

I shall therefore reflect on how we can operate within those traces of the past that lie beyond what we accept as recognised Monumental Heritage. We need to imagine conceptual tools that can allow us to detect what we want to take care of. However, we must be conscious that in this new field of design action, it will not be possible to reproduce the "strong" categories traditionally-defined monuments.

It is a matter of different gaze that can identify things and choose among their infinite images, those that can be revealed and preserved.

My thesis is that the Earth, and its form, are the foundation to which all types of architecture refer and the foundation to which they can return.

At this point, I should add that I subscribe to Remo Bodei's thesis, which distinguishes between "thing" and "object" (Bodei 2009): in Italian, the word for "thing" is "cosa" - from the Latin causa − in English "cause" − means what one is willing to fight for, to take to the streets for, to commit oneself to, personally. Instead, the notion of "object" - from the Latin objectum − for Bodei signifies "that which opposes" and, therefore, that which must be overcome and, in some way, overwhelmed (Occelli 2023).

Assumptions //

"New York itself is natural like the Grand Canyon. We have to develop a different sense of nature; we have to develop a dialectic of nature that includes man." (Smithson 1996, p. 298)

In the dialectic between man and Nature-Earth, recent years have widely used terms such as sustainability or resilience. These call into question the model of development that our Western society has practised so far and continues to practice in the illusion of unlimited economic growth. Today this model is mimicked even by emerging countries, with devastating consequences and without recognising the mistakes that have already been made.

Recall Serge Latouche's theoretical work (Latouche 2009), his proposal of the new paradigm of degrowth, starting from the critique of the measurement of wealth in our countries based on Gross Domestic Product (GDP). Equally influential is the *contrat naturel* of which Michel Serres writes, a hymn to our relationship with things (Serre 1992). Yona Friedman also puts forward a counter-proposal of architecture of survival (Friedman 2006), not only concerning the design of new housing, but for all the reflections on the dwelling that allow us to think of alternative models even in the use of existing construction ("Build less, but learn to dwell in another way", is the disruptive proposal: to dwell in another way "means less unexploited surface area" (ivi, p. 139). The problem of how to use an area is becoming ever more relevant).

The contribution made by Alberto Magnaghi is undoubtedly of central importance (Magnaghi 2010). He describes sustainability through three approaches: a functionalist or eco-compatible approach to economic growth, an environmentalist biocentric approach, and finally, a territorialist or anthropo-biocentric approach, which is the one he proposes.

Magnaghi proposes the metaphor of territory as a donkey: the pack animal must not be loaded beyond its capacity, "or else it will die": however, the donkey is considered purely an instrument of man. In this vision, the damage caused by pollution, over-exploitation or exploitation contrary to the rules is monetized: according to this model, whoever pollutes, whoever defaces or damages, simply pays. The second approach sees the donkey-as-territory as a living subject, endowed with a soul, which must be respected "or else the anthropic system will decay" (Magnaghi 2010, 66). The environment thus becomes a resource, and environmental sustainability becomes the condition for economic development. The third and final approach is the one theorised by Magnaghi. This territorialist approach focuses on man instead of calling the Earth into question, which always regains its equilibrium. If humankind wants to continue living on this planet, we must seek "new co-evolutionary relationships between man and the environment" (Idem). Virtuous relationships between nature, culture and history must be sought. Rather than sector-specific problems that can be solved precisely, these problems concern relationships. These relationships must be examined where a project is configured as the activation of new balances between society and the environment, which challenge current economic and development models.

Magnaghi uses the terms deterritorialisation/territorialisation to echo the ideas of the French philosophers Gilles Deleuze and Félix Guattari. However, for Magnaghi, the two terms deterritorialisation/territorialisation appear to be a counterpoise of negative and positive values. This idea is not found in the writings of Deleuze and Guattari.

It is helpful to bear in mind Magnaghi's considerations, regarding the analysis of approaches to sustainability, his methodological indications relating to the interpretation of territorial identities, his definition of the "biographies of places" and his challenge to "re-live places" as a synonym of "taking care of place". In all those considerations, it is, however, essential to bear in mind the complex thought that the authors of *Mille plateaux* (Deleuze and Guattari 1980) direct us to[1].

1   To quote the philosophers, "Deterritorialisation always starts from territoriality and presents itself as a dynamic of decodification of a territory, which can lead to the re-territorialisation of a new codification, which is in turn occupied by instances of deterritorialisation" (Deleuze and Guattari 1980, p. 35).

Deterritorialisation caused by environmental degradation - the result of the very model that produced it - can only be resolved by promoting territorialising acts that can reconstruct these relations, but with new forms.

Understanding the reciprocal altercation of territorialisation/ deterritorialisation is fundamental to reflect on how we can carry out our projects. Re-territorialising the Earth means re-founding our relationship with it, building that relationship between Man and Earth that Deleuze and Guattari see between Spider and Fly: "It has often been noted that a spider's web implies, within the code of this animal, sequences of a fly's code. One might say that a spider has a fly in its brain, a fly 'motif', a fly 'refrain'" (Deleuze and Guattari 1980, p. 381).

Any project for dwelling involves finding strategies again, restoring and building methods which bring out the form of the Earth, a refrain of the Earth: this allows us to return to inhabit the Earth. Since we consider territorialisation to be already present within deterritorialisation, this means that the deterritorialised spaces of the global market, the contemporary architectural a-topia which has detached Architecture from the Earth and makes it such a monodimensional commodity: all this inhomogeneous material already envisions its capacity to be transformed, to be modified and therefore to be planned and to be restored. It seems, then, possible to look at our World as a system composed of things (See Gregotti 2000 and 2010) without trying to identify and refer to a territorialisation of its origin.

World and Earth. The revealing function of architecture.

In the mid-twentieth century, there was a philosophical debate around the undecidable pair of World/Earth: World here is what man builds and transforms to dwell in, and Earth is seen as the planet that hosts us, with all its delicate balances. A significant moment in this debate involved the participation of José Ortega y Gasset and of Martin Heidegger in the "Darmstädter Gespräche" - José Ortega y Gasset, with his contribution entitled *El mito del hombre allende la tecnica* (Ortega y Gasset, 1964, tomo IX, pp. 617-624) and Martin Heidegger with his *Bauen Wohnen Denken*. Both texts are very well known but it is necessary to emphasise that these symposiums were organised to discuss the theme "Mensh und Raum" in 1951 during the aftermath of a devastating war. This had caused a vast housing problem, but perhaps even more important was the connection between man's lack of rootedness and the problem of dwelling.

This is the theme around which Cesare Pavese's novel *La luna e i falò* (1950)[2] also revolves.

2   "We need a hometown, if only for the sake of leaving it. A town means not being alone, knowing that in the people, in the plants, in the land, there is something of you, that even when you are not there, it is still waiting for you. But it's not easy to stay calm. (...) These things can be understood with time and experience. Is it possible that at forty years old, and with all I've seen of the world, I still don't know what my hometown is?" (Pavese 1950)

It could be said that in his work *Meditación de la técnica* of 1939, Ortega y Gasset had initially seen this lack of rootedness as a constitutive element of man who does not have his own habitat. For Ortega y Gasset, technology could be a positive answer to this problem. Again, the 1947 work *La idea de principio en Leibniz y la evulución de la teoría deductiva* (Ortega y Gasset, 1964, tomo VIII, p. 86) has similar themes[3]. However, in *El mito dell'hombre*. ...trust is broken: man, by building the World, destroys the Earth. Technology has become "a gigantic orthopedic apparatus". And men increasingly build only to then demolish and once again rebuild: there is no clear goal, and this precludes the possibility of dwelling.

At the risk of being a little provocative, I could associate an image to this idea of technology as orthopaedics: great, but also dramatic.

Considering the intervention by Herzog & de Meuron at the Caixa Forum in Madrid. Detaching the building from the earth to which it belongs is more than just a challenging gesture: it demonstrates very clearly how ignorant we have become of the reasons behind the notion of architecture as the dwelling and the relationship between us and our planet.

Figure 1. Herzog & de Meuron, Caixa Forum, Madrid.

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3   "El nuevo mundo de la técnica es, por tanto, como un gigantesco aparato ortopédico que ustedes, los tecnicos, quieren crear, y toda técnica tiene esta maravillosa y -como todo en el hombre- dramática tendencia y cualidad de ser una fabulosa y grande ortopedia" (Ortega y Gasset, p. 618)

In the same "Darmstädter Gespräche" conferences Heidegger's vision is less negative. In *Being and Time*, he used the "fable of Hyginus" to recall that taking care of things is part of being human and that it is through looking after things that man dwells the Earth (to dwell in it means to save the Earth). To solve the aporia in which Ortega y Gasset found himself, it is necessary to understand the profound meaning of being-in-the-world, which is not "to be like water in glass or clothes in a closet" (Heidegger 2006, p. 283). World and Earth find their relationship through dwelling as taking care of things. In Heidegger's *The Origin of the Work of Art* (Heidegger 1968), the presence of the temple reveals not only the opening of a whole world but also that which hides and protects - which is the Earth. There is a struggle, the philosopher reminds us, between World and Earth: it is, however, a healthy struggle, and it originates from the coming to light and the concealment that are the characteristics of the Α-ληϑεια.

In *Building Dwelling Thinking*, Heidegger takes up the theme with variations: the example is the bridge, and here building means "to construct things". In this example, the bridge continues its function of revealing by making the banks of the river appear, and with them the territories beyond them; it brings the river, the banks and the territories together; the bridge determines the place named Or, which did not exist before. The idea suggests that spaces (Stellen) become places because of the bridge.

This reflection is new in comparison to the example of the temple. It shifts the attention not only to the birth of the historical world and to the revelation of the earth but also to the birth of the place in architecture: "the building, insofar as it erects places, is a founder and gives spaces their disposition" (Heidegger 1976, p. 106). This reflection is of interest because it tells us that it is the architecture that founds a place, but the reason that it can do so is that architecture has within itself the Earth, the trace of the Earth, the refrain of the Earth.

Problems arise when there is a detachment between the World and the Earth when their struggle is no longer in balance, and the World claims victory and the suppression of the Earth – in short, when we cannot read the relationship through the dwelling.

And so the only salvation can lie in memory, the act of remembering, and the memory of the trace. The task entrusted to us is precisely to re-found our relationship with the Earth as dwellers.

And to re-found our World we must learn to see what we have built up to now in a different way, and in the certainty that the time has come to build not more but to learn how to dwell in what we have already built.

Concerning this need to look differently at what surrounds us to re-found our way of dwelling, it may be interesting to remind of the experience of Ugo La Pietra (La Pietra 2011) and the Commutatore (1970). This instrument of knowledge is another alternative reading of urban space, which can reveal its deepest

structure. It is precisely a different way of seeing that can help us overcome that sense of not belonging and to return to live in the city, to dwell in it.

Figure 2. Ugo La Pietra, Sistema disequilibrante, il Commutatore, 1970 (in La Pietra 2011)

Looking at things in a different way is the key to restoration. Restoration means recognising what surrounds us not as objects but as things possessing multiple and stratified identities, which go far beyond the banality we usually look at them. Recognition, says Cesare Brandi, is already restoration, that epoché that causes the breaking-out of a thing from the objects surrounding it (Brandi 1977, p. 6).

There is a lovely and very well-known documentary by Pier Paolo Pasolini entitled "*La forma della città*" (The shape of the city), made in 1974[4]. The director, looking at the town of Orte (about sixty kilometres from Rome, in the province of Viterbo), describes the relationship between the shape of the city and the natural place in which it stands. This view of Pier Paolo Pasolini can already be considered restoration. But what I would like

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4   Pasolini, La forma della città, https://www.teche.rai.it/2015/01/pasolini-e-la-forma-della-citta-1974/. Looking at the bumpy ancient road with cobblestones that leads to the town, he says, "this is nothing, it's almost nothing, a humble thing. It cannot be compared to certain works of art by famous artists, stupendous works of the Italian tradition. And yet I think that this unassuming little road, so very humble, should be defended with the same fervour, with the same goodwill, with the same rigour as that with which a work of art by a great artist is defended".

to emphasise again is that Pasolini's cinematic gaze is a gaze in motion: from a fixed point towards the city that is looked at through the camera's mediated gaze, to the camera that follows Pasolini as he approaches, walking along the cobblestone street, to the city's front door.

Figure 3. Pier Paolo Pasolini, La forma della città, photograms.

Heidegger, in the passage on the bridge, underlines the fundamental role of movement: man can inhabit both by settling down and by going across places. Open space arranged by places is "made free, to be settled in colonies or used as a camp" (Heidegger, op. cit, p. 103) for both the more established and the more nomadic modes of dwelling.

I believe this movement theme is exciting, as it is extremely operative for designing a project. We know this well because restoration is almost always faced with the theme of distribution when we work on a building to which we want to give a new function while respecting its many stratified uses.

Therefore, if it is dwelling (in the extensive sense of the term) is the objective, I believe that we will have to go back to reconnecting our relationship with the Earth as inhabitants, like those who dwell in the Earth by making paths across it.

In various myths of foundation, walking through an area was how a foundation came about, a way of recognising and defining one's own living space and that of the community (for example, think of the sacred paths, the *pomerium*, etc.)[5].

Today as the relationship between housing and those who *dwell* in the houses seems to be breaking down, I believe in the important role that pathways and distribution can play in re-establishing the relationship between dwelling, architecture and the Earth, where each takes care of the other. The slow practice of making one's way along a route should be a design theme in restoration work.

And so we can turn our gaze and attention to roads and infrastructures (and here I am thinking in particular of canals, railways, etc.), but also natural geographical features such as rivers, lakes and seas. Historically, these features have linked inhabited centres together, for example, the access roads to small towns, to the internal road network and the succession of spaces that it is connected to.

Alongside the conservation of monuments, the conservation and rediscovery of the significance of these paths are also of the utmost importance (Occelli and Palma 2017).

Pathways build relationships because, as Paul Virilio says, "today we must not so much close our eyes as lower them, and not out of shyness, but on the contrary out of courage. We need to be able to look into the face, not of the End of History, but of that 'surface-support' whose basic boundary is visibly below us, in the static situation that has sustained us since the dawn of time" (Virilio, 2007).

5   The practice was reiterated annually, for instance, in Rome, during the Lupercalia ceremony (Cfr. Carandini 1997, 2003, 2006) or the *amburbium*.

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SR03

sustainable
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CONTEMPORARY URBAN ECOLOGIES:
ARCHITECTURE FOR THE CYBORG SOCIETY

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Eco-technological society

In the circumstances of digital and technologically advanced society, in the conditions of climate change and ecological crisis, the contemporary city has to reconsider the way in which it strategically approaches the processes of regeneration of inherited structures. The problem in the way our cities are thought, planned, designed and eventually constructed at the present time is that they form a barrier, dominate and therefore have detrimental effect on the environment (Alberti et al. 2003). The same stands for the process of regeneration. Current sustainable regeneration strategies are not solving the environmental issues because buildings still remain inert even with additional bolt of sustainable technologies. The already known approaches of a smart city, a city free of cars, nature-based solutions and alike, must be re-examined in order to include mechanisms and principles of ecology as a framework for obtaining a certificate of sustainability, i.e., a city that is able to follow the unforeseen spectrum of challenges through a technological and digital framework developing a healthy and responsible society (Nikezic, 2023). It this way, inspired by the sensibilities and dynamics of the natural systems new eco-technological strategies will engage directly with the surrounding environment and will go beyond the aspiration for neutrality with urban fabrics.

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Urban versus Natural

City and nature have always stood on the opposite sides of civilization. Victory over unpredictable changes and, above all, the once inexplicable currents of nature are the embodiment of modern civilization. The dichotomy between these two poles is even embedded, it seems, in our system of values and understanding of the ways in which we exist. Anthropocentrism as a product of this evaluation of progress is an obvious and well-known framework for today's architecture. The system set up in this way opposes "degeneration" versus "regeneration",

where the former presupposes declines and the latter assumes uplift, again referring to the man-made system of space production as finished images and spatial frames understood only from today's position and not from yesterdays nor tomorrows in which the reference system is no longer a product but a process.

John Dixon Hunt, a Landscape Historian, distinguishes three categories of nature. The wilderness, the agricultural and urban tissues and cultivated gardens and parks. (Hunt 1992) I would say the first untouched by man, the second a culprit of industrial civilization and the third a product of leisure consumeristic society. The relationship between them alters through the ages. When settlements turned into towns and cities and people changed their landscapes to suit what they found aesthetically appealing is when the third category was born. In time the collaboration between the three natures transformed. Today they all exist imbalanced in scale and scope. Hence, with a technological turn on one side and ecological on the other, the re-creation of urban landscape shifts towards reforming the planet so that it isn't overtaken by climate change, extinction and degradation. I believe that the focus has shifted to a futuristic technologically supported and ecologically awaken synchronization of the three landscapes. It is seen as regenerative hybrid of man-made things and natural systems where architects, ecologists, engineers, horticulturists, biologists etc. collaborate to understand the ecological network of regions and find solutions to bring about the best possible changes to create a balanced ecosystem where a rich web of species including humans thrive.

Architecture for the cyborg society ///

I argue for the formulation of an architectural approach that integrates biotic and abiotic systems to envision more dynamic interactions among built tissue, ecology, and society. Conceptualized as a creature of cyborg culture, this approach embraces notions of change, adaptation, and feedback to create hybrid architecture infrastructure of human and non-human systems, of living and non-living entities, across a range of spatial and temporal scales.

Today, the boundary between organic and inorganic is much less sharp and precise. It's blurred. The bodies of both architecture and nature are reshaped and penetrated from the inside by technology. This is not about the physical border, already destabilized and questioned, but about the ontological being in the aesthetic and ethical sense. Describing the current tendency of technologization and digitalization of society, a new relationship of architecture to its body is pointed out, in which the boundaries between natural and technological service so far determined through interaction become blurred to the level of non-recognition. They are internalized, domesticated and in the way they have been adopted and included in everyday life to

such an extent that they have become subconscious. This fact indicates the development of the "cyborg" relation, as in science fiction movies, which is not an automated and embellished robot, but a sophisticated creature that expands but also threatens to understand the limits of what an architecture, that is, what the urban environment is. Designed as co-dependent socioecological network in line with regeneration strategies, the actual formulation transforms and choreographs processes across multiple spatial and temporal scales. They promote an aesthetic that is predicated on relationships between things (buildings) and systems (ecology). By stressing co-evolutionary processes between human agency and ecological systems (Naess 2005), architecture aspires to create multifunctional urbanities that do not simply operate in the present, but learn from experiences in order to adapt and grow smarter.

So, what really is the Identity of future regeneration? Is it a rescaled technologically advanced reflection of past methods? Or is it a new system altogether, a cyborg of culture and nature where the process of design though wicked and inconsistent, forms a triangle of nature, culture and science as a possible solution for the urban landscape in the process of regeneration.

What is the future of the city in the light of cyborg society? How will it be built and what will be its meaning, its identity? What is certain is the fact that the house will certainly be architecture and that in some way everyday life will play a crucial role in its creation. The problem of the future is not insight, imagination, or the capacity to think about projection, but the fact that the future always stands in relation to the past and the present, and that the prediction of the future must always be understood as the state of the present. It is necessary to include nature in thinking about the future of the city, not only as a body and figure as bearers of a spatial event, but also to think about the way in which the "digital" relationship between architecture and nature changes the structure of the future urban space.
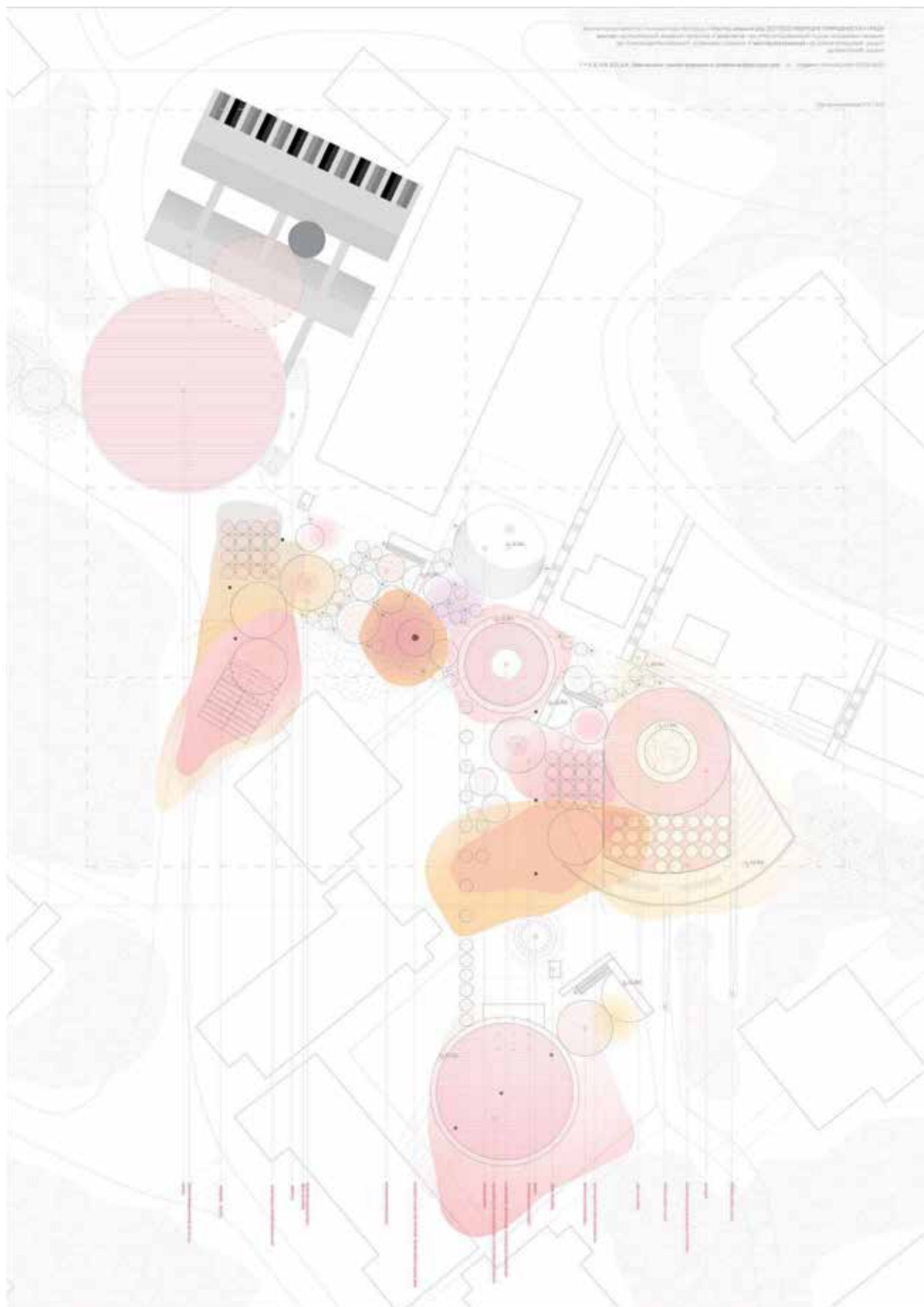
Figure 1-5. Architecture for Postcarbon Society. Source: Mina Vujović, Master Thesis (Mentorship: Ana Nikezić)
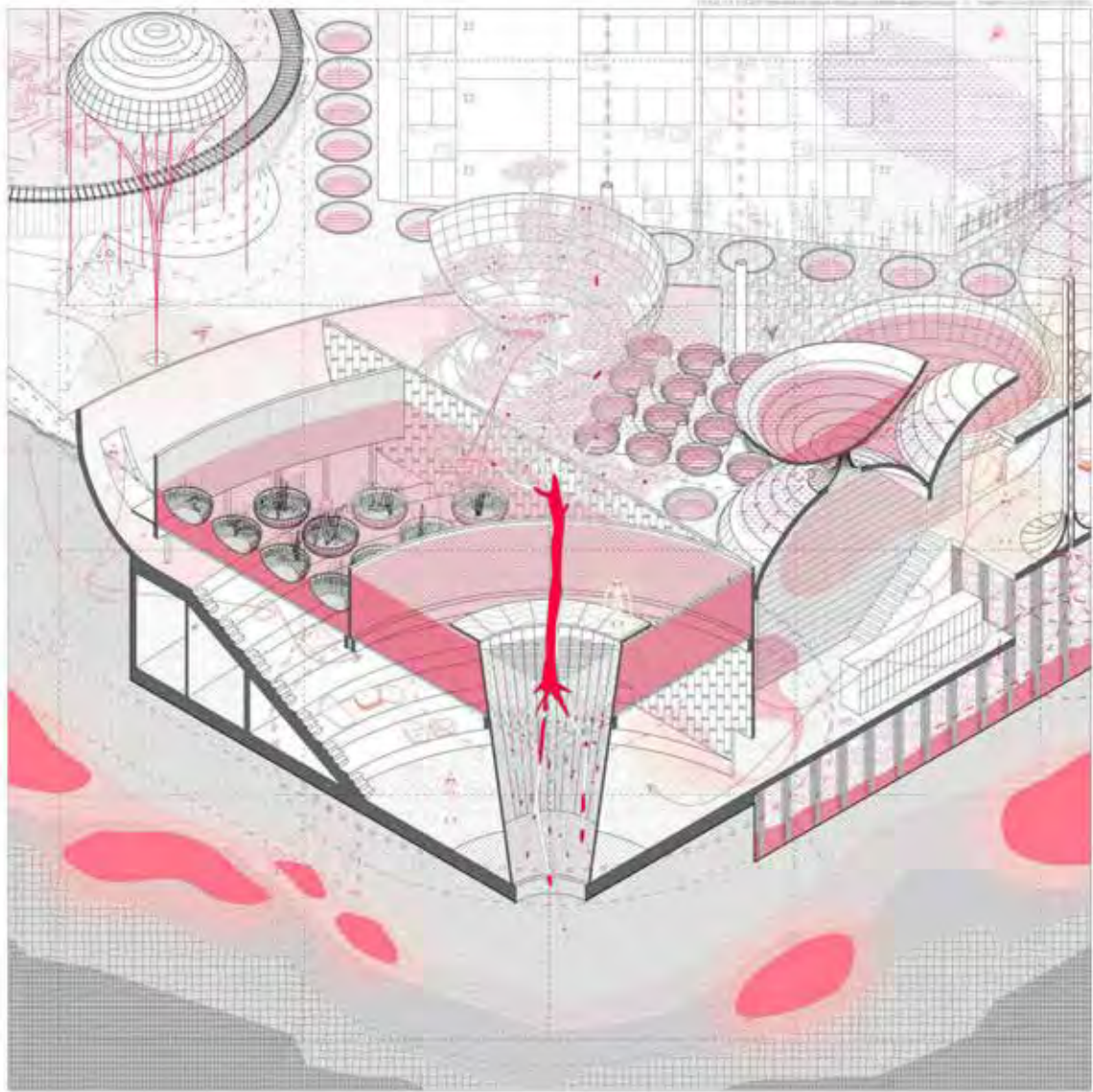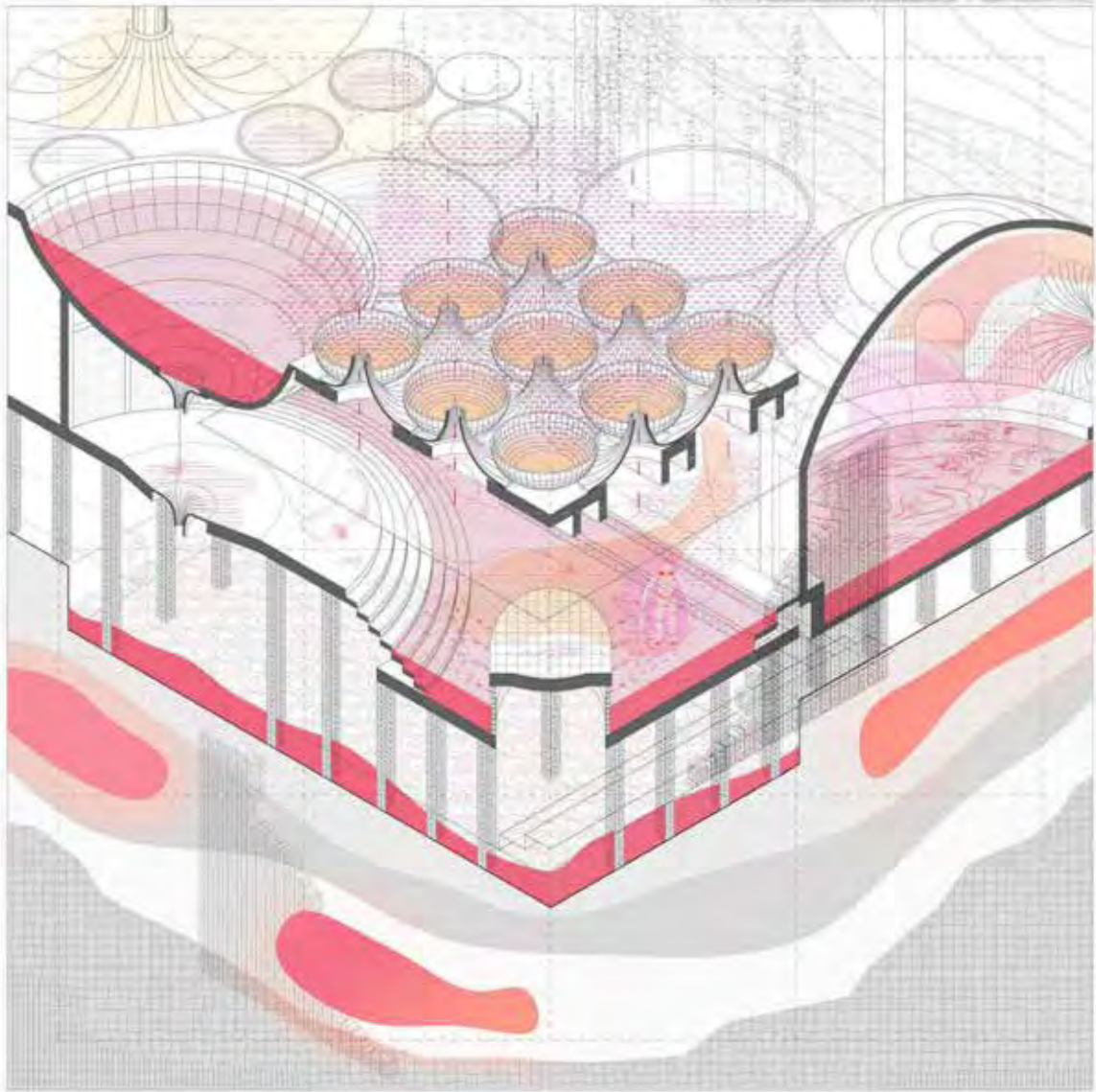
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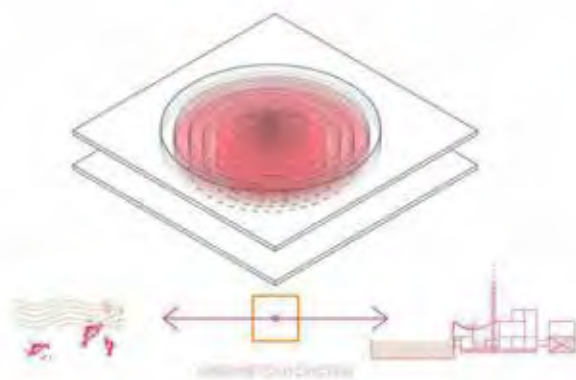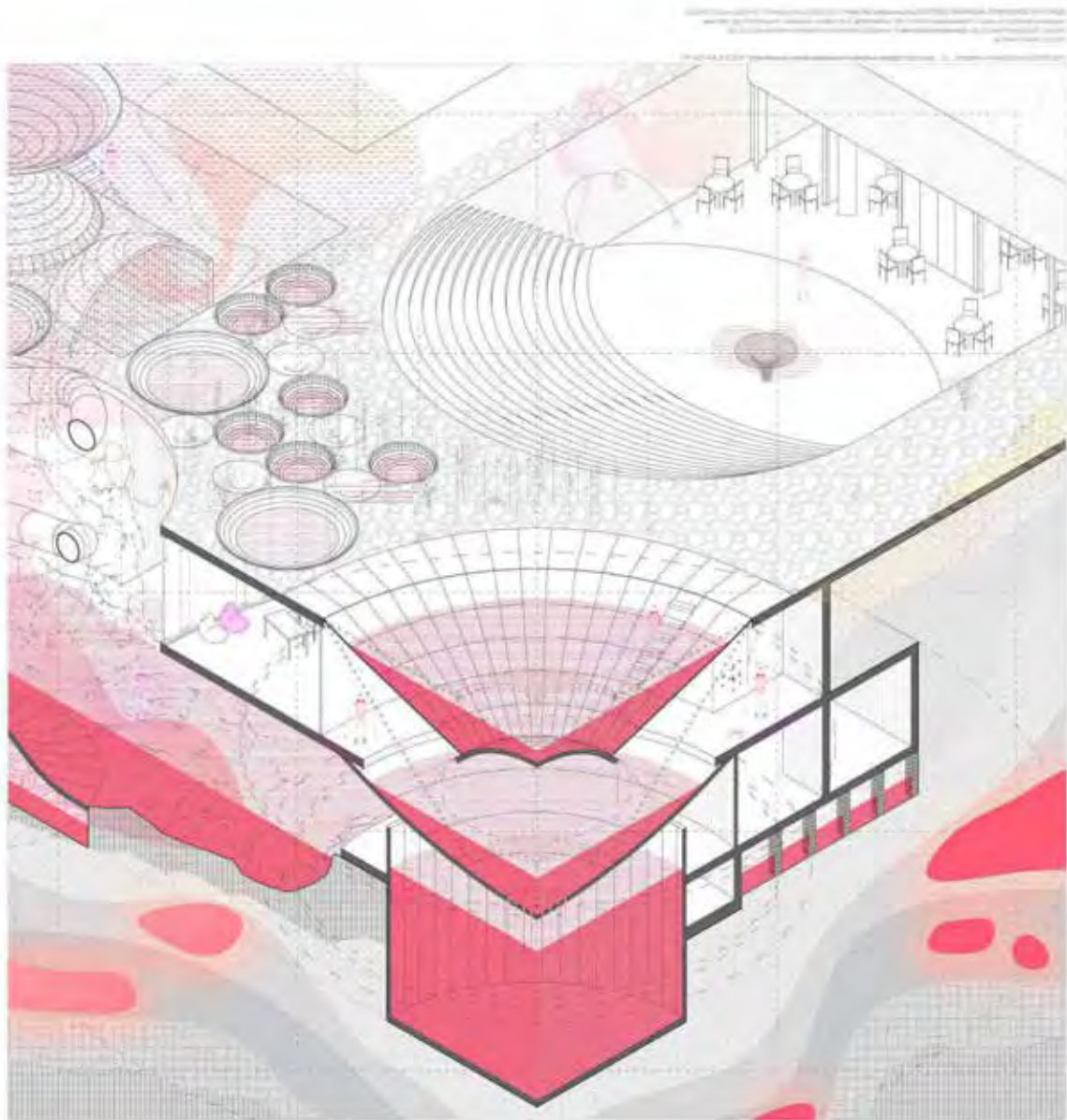
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SR04

**sustainable
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THE ROLE OF THE ADAPTIVE REUSE OF LISTED SETTLEMENTS:
A STRATEGY FOR SUSTAINABLE HOUSING (RE)DEVELOPMENT

Keywords

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Introduction

For general background, the correlation of cultural heritage is evaluated, with urban development, in the context of the role of the adaptive reuse of listed settlements as a strategy for sustainable housing (re)development in Cyprus (Savvides, 2012; 2013; 2017). This chapter focuses mainly on the principles of sustainable urban development considering strategies and policies that leverage cultural heritage as a lever for development. The following draft will put forward some questions:

- How and to what extent might cultural heritage be related to the sustainable development goals for metropolitan areas?

- What is necessary for the exploitation of the cultural heritage on the basis of sustainable urban development goals and strategies?

- Might cultural heritage associated with real estate assets in a city become a driving force for redevelopment and regeneration?

- What is the potential for rehabilitation and adaptive reuse of building stock – especially in culturally significant areas – to provide new housing units?

Culture and growth have always been interdependent; however, the correlation of sustainable development and cultural heritage is now clearly expressed in policy agendas, both international and European (Balderstone, 2009; UN, 2015; CoE, 2018; EC, 2019) [Figure 1 below].

Figure 1. Relationship(s) between Cultural Planning and Sustainable Development

Culture in sustainable development

Culture for sustainable development

Culture as sustainable development
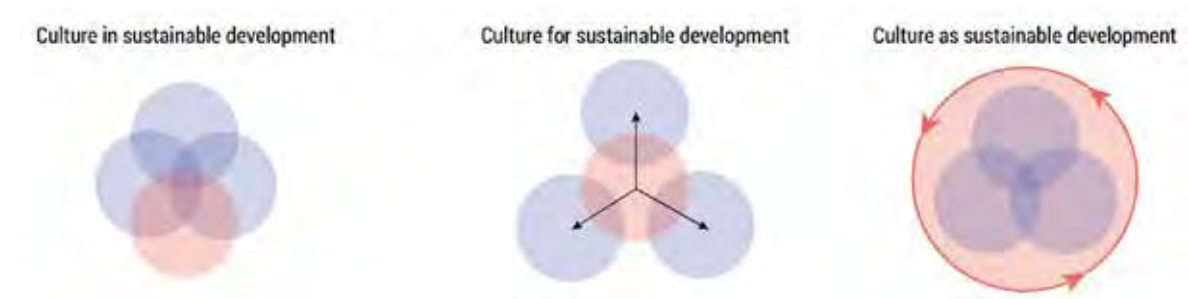
In this chapter it will be argued that cultural heritage can help to highlight the character and uniqueness (identity) of cities (Tselika, 2019), helping to maintain, strengthen and develop local identities and common values, as well as in creating a sense of 'belonging' in the context of listed refugee housing settlements. These were erected following the war in Cyprus in 1974, with the aim of housing the influx of a significant number of refugees (Stratis, 2013). The fact they are they are still around almost fifty years later – and way beyond their initially perceived and expected useful life cycle – has raised the question of what to do with them.

Their value straddles the boundaries of a pure accounting approach and indicates an enlightened cost-benefit analysis (Vardopoulos et. al., 2021) that is strategic in nature and involves tangible challenges of housing new immigrant populations together with intangible values that relate to their perceived worth in terms of their social and cultural significance.

Recognizing the above correlation between adaptive reuse as a strategic goal for urban regeneration today, there seems to be a significant change in the model of global urban development, with new targeting models being formed increasingly to enhance its human dimension, which is essentially at the core of the urban environment.

At the same time, changes are taking place in the field of cultural heritage precisely to 'serve' these new emerging relationships that incorporate a broader and holistic concept in terms of tangible and intangible properties. A contemporary concept in the consideration of cultural landscapes examines the historical layer of cultural and natural values and characteristics, in a field that extends beyond the concept of a 'historic center' or 'whole' to include the wider urban context. It also recognizes that the city is not static, but is subject to dynamic change, in economic, social and cultural level (UNESCO, 2011).

Intangible heritage, therefore, as the living component of urban heritage, is considered an integral part of the creation and shaping of the cultural identities of cities, while the built and natural environment nurtures these practices (UNESCO, 2016).

The legacy of the past as a resource for conservation ///

Dealing appropriately with the legacy of the past is a challenging problem. Alongside cultural and social explanations are a series of closely related economic arguments, as well as the notion that the efficient management of the built environment may lead to the legacy of the past as a resource for conservation.

This in turn requires patterns of development that minimize energy consumption, maintain the productivity of land and encourage the reuse of buildings (Protou, 2017; Blowers, 1993) and indeed, the conversion of buildings may be seen as a more sustainable approach than new build in that reuse constitutes the conversion

of scarce resources, a reduction in the consumption of energy and materials in construction and good resource management (Philokyprou et. al., 2015; Falk et al., 1995).

Another convincing argument for conserving old buildings is the idea of the minimization of waste, as old buildings represent past energy stored up able to be recycled and also reduce urban sprawl (Wright, 1997) and in this way public-private partnerships, such as the ones envisioned can accelerate planning and approval processes and help attract seed funding.

Rehabilitation and adaptive reuse of socially minded housing stock in Cyprus ///////////////////////////////////////

In recent years and within the Cypriot context, citizens' movements have come to light and created with the aim to declare historic examples of socially minded housing ranging from post WWII workers' residences to the refugee settlements from the late 1970's as historically important and in need of protection (Savvides, 2013), rehabilitation and even – at least in part – adaptively reused [Figures 2 & 3 below].
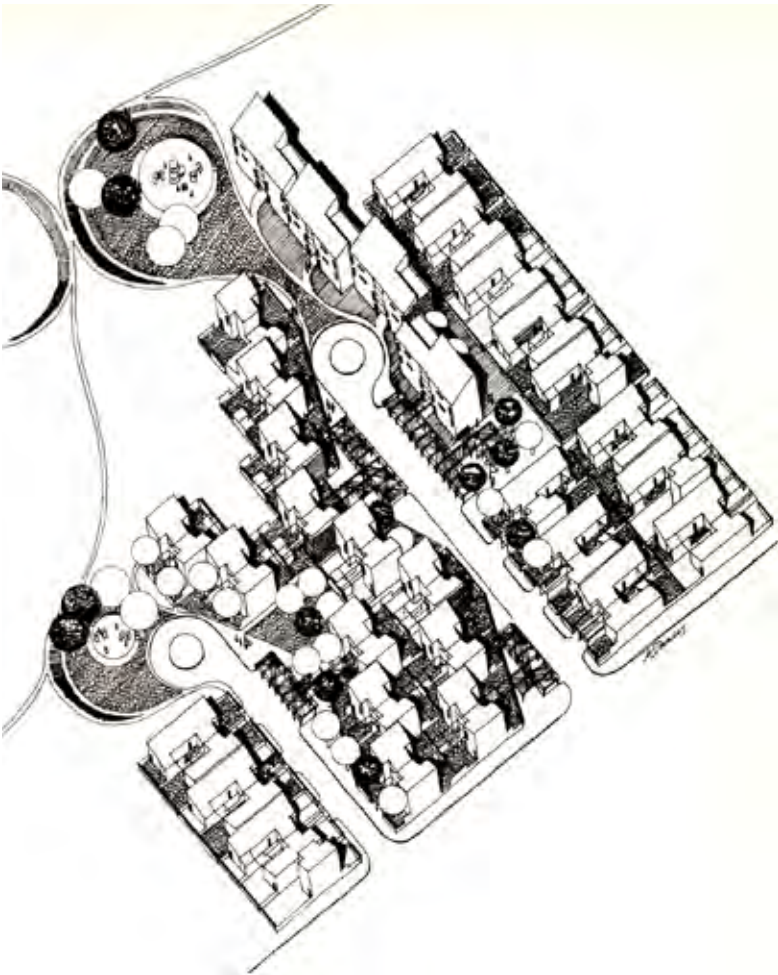
Figure 2. Axonometric of typical housing typology (this one from Strovolos II).

Figure 3. Typical deterioration of building stock as it exists today.

As these will be coming under the purview of local municipal authorities in an imminent restructuring of public administration, newly formed – and expanded – municipalities have promised to deal with the challenge of what to do with this fast eroding building stock.

As these settlements are no longer on the urban edge – as was the case when they were originally erected – they now find themselves as unique examples of collective and socially minded housing developments in areas of great value.

Their economic exploitation by the antecedent organizations of the Department of Town Planning's Housing Division that have taken up the role of housing development in Cyprus – namely the Cyprus Land Development Corporation and Housing Finance corporations – realize that there is benefit from the greater economic exploitation of these aging settlements (Savvides, 2017).

At the same time, they face a dilemma that seems to play out between the protection and preservation of this culturally and historically significant housing stock and the maximization of the economic benefit that may arise from their demolition and redevelopment.

The existing public policy and urban planning framework ///////////////////////////////////

In the Cypriot context the Universal Declaration of Human Rights 1948 (Article 25) formed the basis for subsequent housing actions in the immediate post WWII years. This ensured that . . .

> "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control."

In 1955, the Housing Branch was established with the aim of implementing a housing supply program for working or other classes of the population with the rental market system. The program was implemented and continued to be active in the newly formed Republic of Cyprus – until the first outbursts of intercommunal trouble in December 1963.

Subsequent institutional obligations in the evolution of this young island country – which has since joined the European Union in the 2004 expansion period – stem from the declaration of what constitutes Social Capital of the European Union 1961, 1996 (Article 31) and . . .

> "With a view to ensuring the effective exercise of the right to housing, the Parties undertake to take measures designed: 1. to promote access to housing of an adequate standard; 2. to prevent and reduce homelessness with a view to its gradual elimination; 3. to make the price of housing accessible to those without adequate resources."

In order to ensure the right to housing, the Parties undertook to take measures aimed at:

- Providing access to housing of satisfactory standards

- Preventing and reducing the homeless problem with the aim of gradual elimination

- creating affordable housing prices for those who do not have enough resources

Additionally, relevant rights are guaranteed by the Constitution of the Republic of Cyprus (Article 9), which states that:

> "Everyone has the right to a decent living and social security. The law will provide for the protection of workers, assistance to the poor and a social insurance system."

Additional legislations include:

- First law: On Housing, Chapter 222 of 1955, which was repealed by Law N.71(I)/1992,

  o   On Town Planning and Spatial Planning Law 90/1972, article 11,

  o   On Municipalities Law 111/1985, article 84

  o   On Cyprus Land Development Organization Law 42/1980, article 17

It is within this legislative framework (Hadjimichael, 2007) that this chapter has evolved.

The War of 1974 and the development of the settlements ///////////////////////////////////

That initial mandate to develop socially minded housing became infinitely more complex, pressing and taxing to the Republic of Cyprus in general and its Department of Town Planning and Housing following the Turkish invasion of Cyprus in the summer of 1974. Immediately thereafter, the Cypriot Government had to face the problem of housing Greek Cypriot refugees forcibly evicted from their homes in occupied areas, a condition which persists to this day.

Moreover, since 1975, the responsibility for the housing of displaced persons has been assumed by the Department. To date, 69 Government Settlements have been built with approximately 14,000 housing units. In addition, a special program envisages the construction of 402 residential units in empty spaces of the Government Settlements (Hadjimichael, 2007). In addition, the Department implements the Self-Housing program on Government plots in terms of plot planning.

The Department is responsible for the management and maintenance of the Government Settlements as well as for the landscaping of green areas and parks, the construction of parking areas and the repair of roads and sidewalks in them. An example of such an undertaking is the case of developing 20 housing estates, for approximately 20,000 people in 6096 housing units (2957, 1147, 656, 834 and 502, respectively) in the wider urban area of Nicosia, in 5 phases from 1974 – 1982 (Hadjimichael, 2007).

Main problems faced included, but were not limited to: the extensive maintenance required, including the subsequent addition of additional staircases and elevators to multi-story units; the development of extensions and additions of new units in vacant areas of the settlements; the securitization of residential units and unit maintenance responsibility, especially after the adoption of the social housing provision in the four major Local Plans amended in 2011 and finalized in 2013 (Savvides, 2012).

Defined as falling under the definition of socially minded housing this building stock has been described as affordable housing that will be made available for purchase, hire purchase and / or rent at prices or installments directly related to the socio-economic conditions of the place by beneficiaries based on the criteria defined from time to time.

The following decade saw the mandate of developing new socially minded housing passed on from the Housing Section of the Department of Town Planning to two newly minted organizations, the Cyprus Land Development and Housing Finance Corporations, respectively (Savvides, 2017; IUHF, 2011). Clear support for both of these institutional agencies to provide social housing was drafted as a relevant order sent to the Ministry of Interior, with the aim of offering incentives to attract entities – beyond the wider public sector – that could contribute to the production and provision of social housing, in the spirit of the Cyprus Architects / Engineers Cooperative (CAEC) formed in the immediate post-war years.

The Cyprus Architects / Engineers Cooperative (CAEC) – Testimonials

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Testimonials, such as the one presented below, attest to some of the tremendous challenges that were faced and subsequently overcome by this early group of design builders, whose entrepreneurial spirit formed the basis of subsequent "institutionalized" grass-roots initiatives.

> "Dear Andreas, Kali Chronia! My involvement in the design of Strovolos II which was in fact the first refugee project 1975-77 and after that Ayios Athanasios in Larnaca has interesting stories and had tough design challenges. Also, many lessons were learned.
>
> It must also be noted that the architects/engineers were CAEC (Cyprus Architects /Engineers Cooperative) which was formed by a group of out of work private architects and engineers, for the purpose of providing these services to the Cyprus government and giving us work to enable us to survive after the invasion etc.
>
> We as private offices became members of CAEC having invested 50 CY Pounds each for a share.!. I was a member of the Board which was headed by the late Pefkios Georgiades. Many of us were quite young and felt invigorated creatively during a period of great uncertainty and real economic hardship." Theo David, Member of the Board of the CAEC

The spirit of the work of the people involved in setting up the CAEC has been again called up for action (Konstanti, 2016), as a result of current challenges involving the housing of contemporary waves of refugees arriving in Cyprus not from within as in the past but from the outside as a result of deteriorating global social and economic conditions.

The European dimension //

The enlargement of the European Union in 2004 saw the number of member states increase from seventeen to twenty-seven with the addition of eight Eastern European nations and the island states of Malta and Cyprus. Since that time, Cyprus especially, due to its location in the Eastern Mediterranean has found itself at the crossroads of migration patterns from the Balkans and immigration routes from the Middle East and North Africa (Innes, 2021; ECR, 2001).

It has also become a gateway for people making their way to E.U. nations and to what they hope will be a more prosperous and secure future. As these populations funnel through Cyprus and other member states on the E.U., they often re-evaluate principal destinations and many times opt for either considerable stays or more permanent settlement choices in these front-line host nations (Kyriacou-Petrou et. al., 2018; CySS, 2017).

The role of contemporary migration and immigration patterns in the segmented city and its potential for urban revitalization and regeneration could be significant and catalytic in such locations (Savvides, 2012). The two main prongs of investigation as stated in the title – Adaptive Reuse for Sustainable Redevelopment – consider the effect of the existing and proposed changes in the physical infrastructure (Efstathiades et. al., 2007), as well as the catalytic effect of this recent wave of human capital (Innes, 2021; Balderstone, 2009).

This process indicates the potential for providing housing while jumpstarting cultural revitalization through the conservation, restoration, adaptive reuse and infill of its physical fabric. Opportunities to create mixed-use venues of housing and employment may well expedite the accommodation and integration of the migrant and immigrant communities that are settling down and the catalytic potential to convert the underutilized historic core to a culturally and socioeconomically diverse environment (CBCy, 2013).

Concluding thoughts ///

So, how is sustainable development linked to cultural heritage in a practical way and in the context of shifting priorities with regards to housing prompted by contemporary waves of immigration?

As a concept, the notion of sustainability has led to multiple interpretations and linking it to cultural heritage may be found in a range of topics. Starting from the most technical levels, such as adaptive reuse of buildings to save raw materials and maintain social cohesion, even the most theoretical levels, such as the preservation of memory and collectivity, cultural heritage can be linked to the sustainable development of cities.

For this reason, cultural heritage may be defined in a horizontal scope as the fourth dimension of sustainability, adding culture to environment, society and economy. The research related to this chapter has confirmed the growing interest from governments in general, to the government and the local communities and citizens of Cyprus in particular, to revisit the question of what to do with the deteriorating yet culturally significant building stock related to the refugee settlements from the 1970's.

Not only would this make sense in terms of the socioeconomic values assigned to these settlements by two generations of Cypriot refugees, but their conservation would help preserve a unique example of architectural and urban design of this typology, from a unique timeframe in the island's history. In view of the dire need to house the contemporary influx of yet a new wave of refugees the question of rehabilitation and adaptive reuse of these sparsely occupied apartments, exhibiting high vacancy rates, becomes even more pressing.

The social, cultural, economic and even environmental challenge faced as a result of these new migration waves, may yet present an opportunity for the social, cultural and economic integration of these new populations hosted in Cyprus that in the context of a broad and expanded definition of sustainable development, may lead to the preservation of historic sites – such as those mentioned above – and for strengthening the role of cultural production in urban regeneration.

The observations herein have emphasized the need to continue the investigation of this important and expanding field and professional development networks and to cooperate internationally for the promotion of culture and heritage, as key levers and actuators for contemporary sustainable urban development as mitigator for a complex and diverse set of new challenges facing not only Cyprus, but also societies abroad that may need to come up with answers to a comparable set of questions.

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SR05

sustainable
reconstruction
handbook for students

CREATIVE HERITAGE PLACES:
ALTERNATIVE APPROACHES FOR
A SUSTAINABLE URBAN REGENERATION

Keywords

**urban creativity,
artistic approaches,
adaptive reuse,
cooperative methods,
temporary planning**

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Introduction

After the chocking isolation and health emergency produced by COVID-19 and the further boost that this situation has given to the ongoing eco-social crisis, it follows a period of openness and a sustainable embracement of reality, which necessarily considers the particularities and uniqueness of existing environments.

This text builds up a panoramic on alternative artistic and creative approaches for the regeneration of the contemporary city, focusing on heritage sites and historic areas. It convokes several of the strategies and tools that Erasmus + research project HERSUS - Enhancing of Heritage Awareness and Sustainability of Built Environment in Architectural and Urban Design Higher Education - points out: collaborative interpretation and symbolism, artistic approaches, social participation, adaptive reuse, temporary planning, or cultural enhancement (Djokić et al. 2021).

The discussion is organized in two sections: the first one focuses on a period of the contemporary city in which artistic communities and agents pioneered an incipient urban ecology. It is illustrated in the paradigmatic City of New York and the prolific period of the 1970s, where cultural and countercultural movements stablished a particularly innovative relationship with the obsolete cityscape, advancing strategies on social participation, temporary planning, or emergent adaptive reuse. After this illustrative antecedent, the second part of this narrative will focus on the current context with current creative approaches to urban intervention and regeneration, soft urbanisms and creative tactics that recall the procedures of the original artistic communities. It will briefly explore few north American and European cases, to finish with several projects contextualized in the city of Seville, Spain.

Artistic communities, alternative art spaces and districts ///

Figure 1. Miscellaneous materials on visual narratives, from right to left: lower row, artist book: Harlem: The Unmaking Ghetto (1977-2011, 2013) by Camilo José Vergara; exhibition and catalogue: *Confrontación: Ambiente y Espacio* by Museo del Barrio (1977); upper row, catalogues: *Splitting* (1974) and *Wall Paper* (1972) by Gordon Matta-Clark.

In the context of contemporary heritage, especially emergent industrial heritage, the case of New York City stands out as an interesting arena where to find alternative creative processes of resignification and spatial appropriation.

In the 1950s and along the 60s, New York was a city under radical transformation experiencing, as the sociologist Marshall Berman stated, "a devastation of its forest of symbols" in the name of progress. The city underwent radical processes of urban renewal. Consolidated neighborhoods and communities were fractured, partially or totally erased, to give birth to new infrastructures, residential areas, and office towers (Berman 1990). Certain neighbors, journalists and urban specialists react to this situation, such as well-known figure Jane Jacobs. In such context, the Municipal Art Society (MAS) also lead the first attempt to catalogue New York significant architecture, publishing a book in 1957 entitled *New York Landmarks*. By 1967, 40% of that list have also disappeared, including Pennsylvania Station. In 1964, Fortune Magazine published an article entitled: *New York a City destroying itself*. In response to this context, MAS built the case for the creation of the first New York Landmark Preservation Law in 1965, although it would take years to be effective (Gilmartin 1995). Manhattan changed its physiognomy, prompting a quick shift from a horizontal industrial city to a vertical financial one. After the events of May '68, social agitation and associationism also

determined New York's life. The 1970s was also a time marked by a major economic crisis provoked by the Arab oil embargos, which resulted in a growing context of decadence and urban obsolescence.

In the meantime, contemporary art, as art usually does, dealt with this situation in an unprecedented way, detecting the symbolic crisis of this city and of the western capitals in transition. Artists and artistic communities became researchers of urban obsolescence, identifying the modern ruin and, subsequently, using it. Visual works, such as the artist book "The Destruction of Lower Manhattan" by Danny Lyon in 1969, highlighted it. His documentary photography shows empty buildings and processes of demolition within the area of Lower Manhattan for which the 1966 Lower Manhattan Plan had ambitious proposals. It portrayed the first cast-iron building in the city, which also, soon after, disappeared (Lyon 2020). Artist Camilo Vergara undertook a similar path in Harlem, keeping his camera lens fixed on one place and revealing its decaying process. The sequences of images captured a volatile reality, a scenario forced to be liquid, which, so ever, had a meaning for its inhabitants (Vergara and Gilfoyle 2013). The context after the Oil Embargos, in which abandoned industrial sites and other productive spaces proliferated, fed the work by *Anarchitecture group* and his leader, artist and architect Gordon Matta-Clark. He found plastic ways to refer the vacant and obsolete city, to emphasize its stage of rawness and dissolution as a stage of flexibility for new experimental opportunities (Juarranz Serrano 2020) (Wigley et al. 2014).

The **visual narratives** became a strategy to identified unnoticed architectural values of the historic New York. Conceptual photography, artist books, exhibitions on-site, site-specific actions were to be tools for heritage advocacy. Perhaps, in some cases and before disappearance, these works could transform tangible sites into intangible heritage by safeguarding their urban memory.

In such context, artists appropriate great number of valuable abandoned buildings, mainly industrial sites and warehouses, that would be designated contemporary heritage in the future. Guides were, indeed, created to boost the artistic invasion, which promoted the rise of what was to be called: the Alternative Art Space. Could has this been a germinal process of adaptive reuse for heritage sites? *Dealing with Space* was a particular guide created in 1975 in this context (National Endowments for the Arts 1975), which illustrated its cover with this very meaningful poem:

"A void

Once a store, a church, an old red barn, a hall

Gone—left only empty walls

Decaying light

A Dream

In search of space

Arms to spread

Life to share

A Void No More."

P.J. Gibson, Dealing with space, 1975.

To articulate the appropriation of such locations, to face their high rents or the need of loans, artists organized themselves into cooperatives. The 50s Coops of 10th Street were created to take ownership of the artwork, avoiding the abusive practices of art galleries and museums, and to allow inclusiveness, participation of all artists regardless their gender or context. Other cooperatives were also established to promote co-creative processes in old industrial or productive spaces: art workers in old working spaces. These alternative art spaces were for living and working, in an "art as life", favoring a mix of domestic uses and creative uses (Carrascal-Pérez 2018).

SoHo is a paradigmatic case in this regard. Artists and unusual cultural agents saw in the *wastelands of New York* extraordinary cultural uniqueness. First, they contribute to the identification and dissemination of the values of the site, creating works to illustrate the distinctiveness of the cast-iron architecture. It is relevant the documentary work of Margot Gayle, who found the Association of Friends of Cast-Iron Buildings, and Edmund Gillon (photographer) in this area. Artist George Maciunas, with the help of architect Shael Shapiro, particularly conceived an innovative cooperative system, the Flux Cooperatives. Through them, artists could associate to access these large properties and to collectively transform them into loft spaces with common and individual areas to live and work. They also considered domestic issues, family conciliation and caring aspects of daily life (Bernstein and Shapiro 2010).

These sites experienced a sort of **bottom-up adaptive reuse**. Cooperatives, by managing a collaborative maintenance of the spaces and by welcoming contemporary creative collectives, were slowly reinforcing the district identity and evidencing its architectural attributes. SoHo was, in fact, declared Historic District in 1973 after all these artistic processes took place. Hilary Anne Frost-Kumpf would write in 1989: "Cultural Districts: The Arts as a strategy for revitalizing our cities", highlighting the role of historic sites in these processes (Frost-Kumpf 1998).

After SoHo, a sort of systematization of the relationship between creators and available spaces was evidenced. The *Institute for Art and Urban Resources* (IAUR) was created by cultural agent and musician Alanna Heiss in 1971. It created specific programs for creative action in the city, such as: *20th Century Ruins/ The Built Environment, Street Museums, New Urban Landscape, Surplus Materials*, and its main program *Workspaces*. This institution searched for valuable and vacant spaces in the city of New York for artists, creators, and art projects. Heiss was trained in the Municipal Art Society, therefore, IAUR used that knowledge to carefully choose the locations where the works could specifically integrate and improve the context. There was an executive committee conformed by an external artist, a resident artist in the area, a tenant of the building or space itself, a representative for the building owner or authority, and a IAUR member (artists and architects were equally involved) (Carrascal-Pérez 2020). They outlined a **methodology for cooperation** in the creation of alternative art spaces.

IAUR projects spread over Manhattan, Brooklyn, and Queens and, also, involved the preservation of buildings that were later landmarked. Such was the case of the Clocktower Gallery, located on the top floor of a McKim, Mead and White building dating back to 1894, which had a singular clock facing the financial district. Similarly, this organization created the Idea Warehouse in a loft conversion at Ready Street. Its last and most popular project was PS1. The first school of Long Island City, abandoned in the 1960s, was transformed into an experimental art center for the creative community of SoHo. This is an unknown case of adaptive reconversion, which began with coordinated collective actions until it was architecturally intervened, consolidated, and institutionalized as a cultural building for the city (Biesenbach and Funcke 2019).

Raw and flexible spaces promoted creative attitudes and experimentation, also the **unfinished stage** of the architecture was a strategy to provoke innovative responses and to keep an open process of reutilization.

Creative Time was an organization founded by dancer Anita Contini which temporarily used vacant spaces in creative ways. It first occupied ground floors of new office towers, which were languishing with no use due to the downturn of the markets and the economic crisis. Creative time offered controlled doses of creative experiences to the sterile Financial District and its white-collar workers.

This entity also contributed with its activity to acknowledge the value of a number New York Landmarks, working in monumental spaces that had once provided a public function but that were empty after the government agencies moved to newer and more comfortable facilities. Such was the case of New York Custom House, an emblematic late 19th Century building (1899 -1907) by Cass Gilbert. Max Neuhaus and many

important artists as Tina Girouard, Laurie Anderson or Phillip Glass played with the acoustics of the large dome, showing its uniqueness. *Art in the Anchorage* was a program that acted in the anchorage of the Brooklyn Bridge, giving this unknown and astonishing space back to the citizenship. Another of its most popular projects was *Art on the Beach*. It took place in the area where Battery Park City was being built, a platform made from the debris from the excavation for the construction of the Twin Towers, which directly faced this space. It was a summer show that took advantage of this artificial beach and enrolled artists, choreographers, and architects to use it as platform for their creations. Creative Time is still active today, being responsible of the Light Tribute every year in this area (Peltason 2008).

Meanwhile actions were used to create awareness of the history and evolution of this city. These projects and organizations manifested an advanced understanding of the temporary city, its need for society and its role in the heritage processes. **Temporary planning** emerged as a way of bringing closer those forgotten sites to citizenship, of testing new uses and appropriation methods.

Additionally, local creators and communities were placed in the center of the processes as leaders of **heritage advocacy**, as sustainers of the existing cityscape. They worked around an emergent urban legacy with unprejudiced eyes, pointing out their symbolic value in an unprecedented way. When considering those sites and their soft reutilization, the 1970s' creative communities initiated the discourse of today's **urban ecology**.

Creative societies, urban innovators and the making of heritage places

Figure 2. Selection of books and projects on creativity and city, from right to left: lower row, Management Plan for the Historic Municipal Buildings of Seville - Actions on Creative Industries and Heritage, *Tactical Urbanism 2* (2012) by Mike Lydon, *The Temporary City* (2013) by Peter Bishop y Lesley Williams, *Places in the Making: how placemaking builds places and communities* (2013) by Susan Silberberg ; upper row, *Políticas para la creatividad. Guía para el desarrollo de las industrias culturales y creativas* (2010) by UNESCO, *The Creative City* (1995, 2008) by Charles Landry, Creative City (2008) by Maurizio Carta, *Cultural Districts: The Arts as a Strategy for Revitalizing our Cities* (1989, 1998) by Hilary Anne Frost-Kumpf.

The 1970s set the base for further discourses and urban models: culture was to be fully considered as an industry and identified with certain districts or urban areas. With the turn of the century, this productive connotation extended to other creative sectors and strengthened its connection with the city. In the early 2000s, the *Creative City* powerfully emerged as urban stereotype for economic growth (Carta 2007). It was mainly based on the development of the economic sector of cultural and creative industries, sometimes distancing itself from the existing city and prompting large-scale architectural and urban operations.

2008, however, marked the beginning of a critical period worldwide, affected first by a financial collapse and, in 2020, by an unprecedented health crisis caused by the COVID-19 pandemic. Such circumstances would question the sustainability of occidental ways of producing and living, as well as the traditional mechanisms of urban development, leading to an era focused on eco-social concerns and its actors. Citizens were considered creative agents interested in adaptive reuse processes rather than tabula rasa operations. There was an increasing number of operations of *Minor Architecture*, as Professor Jill Stoner conceptualized as a necessary movement in today's architectural scene, acting within the existing city (Stoner 2018). Indeed, recent reports, policies, international strategic plans, and local urban agendas further insist that culture, creativity, and an inclusive society motivate sustainable urban processes of regeneration (UNESCO 2010, 2022).

The effort to theorize the creative role of the society in the field of architecture and urbanism is more and more evident. An intentioned promotion of a specific culture of urban creativity is apparently taking place, which also motivates the involvement of ordinary people in solving urban problems, acting as urban innovators. Urban consultant Charles Landry would define the *creative city-making* as a way of approaching creatively, imaginatively, and innovatively urban challenges using the material and immaterial resources of the existing city to produce its regeneration, updating and improvement (Landry 2008).

Today's soft urbanisms, with their citizen-centered strategies, creatively approach the heritage regeneration, as in Feminist Urbanism and Urbanism of Care, Placemaking, Temporary Urbanism or Tactical Urbanism. Regarding **Feminist Urbanism**, for example, a particular concern on having an inclusive symbology in cities is detected. Aspern, as well as other locations in Vienna, face projects that creatively reverse the absence of women´s presence in street maps, square names, monuments, and in the public statuary. The city as learning public scenario plays an important role in the creations of references and the projection of a diverse and multicultural society. Additionally, in public and private common spaces, certain strategies seek for more space and representation

for girls in traditional playscapes, combining spaces of great and small freedom, and creatively ensure the security in internal paths and corridors implementing games and shared places (Col-Lectiu Punt6 2009). The regeneration of modern movement social housing is a field that greatly requires of this perspective. Additionally, the strengthening of care uses in the requalification of public heritage buildings is increasingly considered, spaces particularly focused on care at every stage of life, particularly on childhood and maturity, considering conciliation aspects and metal and physical health as well (Valdivia Gutiérrez 2018).

Methodologies of **Placemaking**, as the New York association Project for Public Space states, collectively re-imagine and reinvent public spaces and facilitates creative patterns of use, paying particular attention to the physical, cultural and social identities that define a place, and supporting its continued evolution. The case of the historic Bryant Park is illustrative from this approach. A rich and changeable program was created throughout participatory methods to promote different and creative patterns of use based on participation and the creation of employment. It is also connected with a network of projects in other parts of the city, so it could always be active and responding to social needs (Redaelli 2019). There are also specific Placemaking guides to boost participatory processes.

Academic and urban planners Perter Bishop and Lesley Williams particularly define **Temporary Urbanism** as generator of phased packages of small initiatives to unlock the potential of a site immediately and sequentially, rather than over the long term. It involves strategies and programs for temporary uses, which could either complement or lead to permanent urban development (Bishop and Williams 2012). There is a participatory process with local communities, experts, and public agencies to study the needs and potentials of the area. Specifically **Tactical Urbanism** is a city organized and citizen-led approach to neighborhood building using short-term, low cost and scalable interventions intended to catalyze long term change. It was very popular the project Mike Lydon, his founder, led for Times Square, first using floor painting, ephemeral designs that were to become a real living spaces and squares in the future. Play-street programs, gastronomy events, urban gardens and orchards, mobile and appropriable furniture are few of the temporary actions used in this regard. Due to its soft nature, they are particularly compatible with the fragility of heritage sites, since they focus, above all, on the construction of meaning and the rehabilitation of the forest of city symbols claimed by Berman (Lydon and Garcia 2015).

In this context, **southern European cities** with large historic centers, friendly weather conditions, strong sense of community and high concentration of creative activities become of particular interest. The city of Seville, in the very south of Spain, is a location that witnessed a very powerful merge of cultures along its history and its architecture is the

result of interesting processes of hybridization, therefore, in constant reuse. Its urban fabric is mainly organized throughout common space: courtyards, cloisters, patios, and plazas. Public life is very intense, although it faces the challenges of *touristification*. Unlike other European cities, municipality owns a great number of heritage assets spread out over the city. The safeguard, maintenance and dynamization of these sites is challenging the local urban agencies and their traditional management tools.

The economic crisis of 2008 highly impacted in the south of Spain, forcing a period of austerity, high unemployment rates and urban decadence. The research platform and network: *Laboratorio Q, for creative urban places* studied Seville´s creative dynamics before and after this period, detecting an awakening of alternative processes of this sort. Visual narratives, cooperative works, meanwhile actions, were recurrently used by a creative society empowered by a context of need (Carrascal Pérez 2022).

Years after, this creative alternative approach achieved another public dimension when the 2022 Management Plan for the Historic Municipal Buildings of Seville particularly include a pioneering program on creative industries for heritage sites, considering creative local communities and the productive past of this city. This program offers methods to detect locations with creative potential and establishes guidelines to connect them to Seville's Creative Industries, integrating existing craftsmen activities, local culture and traditions, as well as boosting complementary activities and industries (Hidalgo-Sánchez et al. 2022).

A main core of this program is the Magallanes Center for Cultural and Creative Industries, which will be the largest center of its kind in the south of Europe. This was the former Royal Artillery Factory, a 16th Century building that undergoes a difficult and long process of rehabilitation using European funds. While the recovery of this overwhelming structure is taking a long time, there are a number of meanwhile cultural projects and creative encounters that are, step by step, giving this great place back to the citizenship's imaginary. This eventual life, compatible with the preservation work, also serves to test uses, public dynamics and experiences that might be part of its near future. They are the trigger for a process of adaptive reuse.

This panorama evidences the interest of promoting a conceptualization and learning on artistic and creative tactics to approach heritage sites. Not just as innovative instrumental resources for identification and characterization but as promoters of social inclusion and civic economies, they have a relevant role in the making of contemporary "heritage places".

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PART 2.3

ADAPTIVE REUSE

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AR01
adaptive
reuse
handbook for students

THE INTERDISCIPLINARY APPROACH KEY TO ADAPTIVE REUSE - FROM DOCUMENTATION TO ADAPTIVE REUSE: THE CASE STUDY OF AGIOS IOANNIS' DISTRICT IN KAVALA.

Keywords

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The necessity for interdisciplinary collaboration and documentation

Lifestyle changes, dictated by the progress of technology and production methods, define new functional data and requirements from buildings, the latter being uncapable to meet the current needs in their present state. For this reason, the adaptive reuse of our architectural heritage, with parallel integration of the issue of sustainability, potentially comprises the unique alternative for their preservation and performance in future generations.

Nonetheless, merging the preservation of important architectural works character with their reuse, under new functional and energy standards, is a manifold issue and requires a multidisciplinary approach and documentation. This issue becomes even more complex in case the management of urban districts or even entire residential settlements is required. The complexity in architectural ensembles management, apart for their massiveness, is also associated with the difficulty of recognizing their special identity. Parts within residential complexes, built in different periods of time, using various construction technology, and designed to meet different needs, render a detailed documentation indispensable for their evaluation and ultimately for their restoration and reuse. Therefore, in such cases, the interscientific cooperation is necessary. Otherwise, piecemeal reuse management, out of a well-designed masterplan may result to the alteration of the character and a large number of functional problems during the subsequent re-operation of the buildings.

Through the presentation of the documentation study and restoration and reuse proposal for Agios Ioannis district in the city of Kavala, the need for an interdisciplinary approach, is easily understood.

The district of Agios Ioannis in Kavala //

The documentation and the first stage of the restoration and reuse study of the above-mentioned district was conducted in the context of the interdisciplinary collaboration workshop of the interdepartmental postgraduate program on Protection, Preservation and Restoration of Cultural Monuments, Faculty of Engineering, Aristotle University of Thessaloniki from 2020-2022. In this interdepartmental postgraduate program participate the school of Architecture, which manages it, and the Departments of Civil Engineering, Agricultural and Surveying Engineering, Mechanical Engineering, Electrical and Computer Engineering, Chemical Engineering and Spatial and Development Engineering.

During the conduction of the present documentation, restoration and reuse study, different specialties collaborated. The study team consisted of archaeologists, surveyor engineers, architect engineers, civil engineers, and mechanical engineers.

The initial mapping of the buildings was performed under collaboration of architects and surveyors. A combination of topographical and architectural surveying methods was used to trace the buildings and map the surrounding area of the district. In parallel, use of 3D laser scanning (Fig. 1) and photogrammetry (Fig. 2) were used to enrich the documentation.

The historical analysis of the complex by the team of archaeologists and the identification of the different construction phases of the complex, were based on their different construction methods, and elucidated the original form of the district and the importance of its different parts. At the same time, the structural adequacy analysis provided the proposal with essential data and determined the required reinforcements in order to ensure the durability of the buildings and their existence in the future. Additionally, the energy efficiency study of the complex, performed by the team of mechanical engineers, provided the necessary information so that these buildings could be adapted to present comfort and energy efficiency standards.

Figure 1. Agios Ioannis district in Kavala [3d laser scanner, interdepartmental postgraduate protection, conservation and restoration of cultural monuments A.U.Th.]

Figure 2. Agios Ioannis district in Kavala [interdepartmental postgraduate protection, conservation and restoration of cultural monuments A.U.Th.]

Agios Ioannis district is the first Christian quarter to be built outside the walls of Kavala. (Trasokopoulou 2005) However, given the expansion of the city, today the district is integrated into a dense urban residential plan. The place, once occupied by tobacco warehouses and low-rise houses, depicted in historical photographs surrounding the district, has been mostly taken by mass housing residential units (polikatoikia) with limited architectural importance, built en masse from 1951 to 1980. Of note, a small number of listed buildings is present, which, however, are not noticeable among the dense residential edifices.

The cross-sectional analysis of the character and uses dominating the ground and floor levels, the analysis of pedestrian and vehicular traffic in the area around the district and the recording and evaluation of characteristics such as the proximity of the district to central functions of the city of Kavala, the percentage of empty and unstructured spaces, the number and size of green spaces and the characteristics of the built space on the perimeter of the complex, articulate a regulatory framework that ultimately influenced the decisions at the proposal stage.

However, apart from the above-mentioned context formed by the characteristics of the area, the key element that determined the restoration and reuse proposal is the buildings of the district. The exceptional historical, morphological and construction characteristics (Stefanidou 1999) and their importance, played a major role in the organization of the restoration and reuse proposal. It is necessary to mention that the buildings were constructed at different time points, associated with hallmarks of the history of the city of Kavala. Moreover, various construction methods and all the available building materials known in the end of the 19th century were used. This fact complicates the restoration, reuse, and structural reinforcement proposal.

The first core of buildings was constructed around the end of the 19th century and includes a church devoted to Agios Ioannis, a residence for the priest, a tobacco warehouse and a shop. The first building constructed in the district was the church of Agios Ioannis. (N. Roudometof 1998, pp 79-80)

The original form of the floor plan was different from the current one and the size of the interior space of the temple was smaller. However, gradually, in order to serve the increasing needs, the perimeter portico was also integrated into the original interior space by blocking the openings. In order for this to be documented, the collaboration of archaeologists and architect-engineers was required. The documentation of this modification was confirmed by simultaneously examining the historical evidence (Boykov G 2016) and the construction structure. The discontinuities that existed in parts of the temple revealed different building phases. The study of the construction structure of the temple was of particular importance for the restoration and structural reinforcement proposal of the building. The continuous operation of the temple and the changes that have occurred in it over time have altered the image of the load-bearing structural system, in a way that the internal wooden load-bearing body is not distinguishable. Despite the current condition, the typological correlation of the structural system of this temple with corresponding churches of the same period led to appropriate investigative sections and clarified its structural system.

Lastly, the temple at its current state, does not feature an organized system to ensure thermal comfort. This was considered in the restoration project. In the context of the proposal, the use of the building as a church remains, while the original floor plan typology is restored, and suitable interventions are proposed for the energy efficiency upgrade of the building.

A second building belonging to the original core of the district is the residence for the priest, constructed almost simultaneously with the church. The priest's residence in question is a typical two-story house with a wooden

load-bearing frame and a wooden roof. Its poor state of preservation and the relatively small number of interventions, greatly contributed to get a definite overview of the structure.

Similarly to the above-mentioned priest's residence, a definite overview of the tobacco warehouse structural system was also obtained. The abandoned tobacco warehouse is located at the lower left corner of the district and was constructed contemporaneously with the building of the retail store that is located at the lower right end of the complex. These two buildings were constructed close after the church was built, around 1870. (Lalenis 2015) The historical analysis and the concurrent study of the tobacco warehouse structural system with the identification of construction joints, revealed the initial core of the building that was initially smaller and extended soon thereafter in length. The tobacco warehouse edifice mostly retains even today its original structure. Its structure consists on heavy-duty stonewall and a wooden internal load-bearing system with wooden pillars, beams and floors. Unfortunately, the old retail store-café has been significantly altered. A new reinforced concrete load-bearing system has been added in contact with the original stonewall. due to which significant problems have emerged.

Of a great interest is also the chronologically next group of buildings in the complex, constructed closely after the tobacco warehouse completion. This group includes residential buildings, organized into three modules which include four attached in-a-row houses, six attached in-a-row houses and the four attached in-a-row four-storey houses. During their study, in addition to the historical analysis and the structural analysis and documentation, the architects team compared the floor plan typology of the above-mentioned residential units with social houses that were constructed in central Europe at the same period. The typology similarities between those two building forms are extremely interesting and are rarely found in northern Greece. These buildings have load bearing masonries and plastered wooden interior walls in the case of the four-in-a-row houses and reed interior walls in the six-in-a-row houses. Finally, the roofs are made of wood and roofing tiles.

A detailed analysis of the four in-a-row four-storey terraced houses, which were built around 1905, was essential. The large number of interventions, with the addition of a load bearing reinforced concrete system, that was added lately, openings modifications and corrosion issues, formed an ambiguous overview of the original form and interventions dating of this residential unit. Moreover, in the original form of these houses, all the structural systems that were in use at their construction time, could be found, such as masonries, load-bearing brick walls, wooden and metal beams and wooden and concrete floors. Therefore, the collaboration of all the engineer groups was required. Architectural analysis

and documentation were combined with structural and bearing capacity analysis for all buildings of the district. The necessity for cooperation among all the study groups existed even after the end of the analysis-documentation. The stage of evaluation preceded the restoration and reuse proposal. At this stage, the interdisciplinary team recorded all the important elements that should be preserved and all these that corrupt the unique identity of the buildings and whole complex and that should be removed. With the completion of evaluation all required data for the restoration and reuse proposal, were available to the study team.

Key element for the reuse project of Agios Ioannis district in Kavala was its outdoor space design. (Fig.3) The main principal was to preserve and enhance the district identity, serve all the current and intended uses, and ensure the accessibility from the southern archway to the temple. Therefore, a new path is designed, that also includes an outdoor elevator to facilitate connection of the street to the church. Additionally, aiming to a general reform of the square in front of the west façade of the temple, demolition the existing building of the refectory is proposed to and a new building in the same place is designed, in a completely simple and contemporary form. Moreover, a new building is constructed to serve as a museum for the collections of the church. This addition is placed next to the old retail store - cafe replacing an existing derelict house using a modern architectural vocabulary.

According to the reuse proposal, the tobacco warehouse will be converted into a multi-purpose workshop that will serve the wider area. Flexibility and adaptability are the basic design principles in order the interior space to be easily adapted, according to the number of users. For this reason, the only fixed elements present in the floor plans are the stairs and the elevator. The proposed panels in the interior space of the tobacco warehouse are wooden and can be easily removed and so as the building can be restored to its original state.

Flexibility is also desired in the redesign of the old retail store-café which will be used as a play hall for the local child population. The proposal includes demolition of the current reinforced concrete load bearing structure, which was added, as part of maintenance works, about twenty years ago and has created many corrosion problems. Moreover, a new roof is being designed for the same building as well as due to the narrow interior space, new storage structures and seating benches parallel to the wall, so that wider space remains available for play.

The six in-a-row attached houses continue to be used as three-storey residences, having yet all the contemporary infrastructure for their occupants. There are two main levels of use and one with supplemental functions. An important element is the redesign of the south facade with the

integration of sunshades, which will improve the inhabitants' comfort.

The four in-a-row attached houses located next to the old tobacco warehouse are also redesigned in a way that the tenants' living conditions will be improved. Two of the four in-a-row houses remain residences, while the other two are designed to be converted into rent dwellings for temporary living. New sanitary rooms are planned, and the western facade of this building unit is completely redesigned. Restoration of the eastern facade at its original form is also proposed.
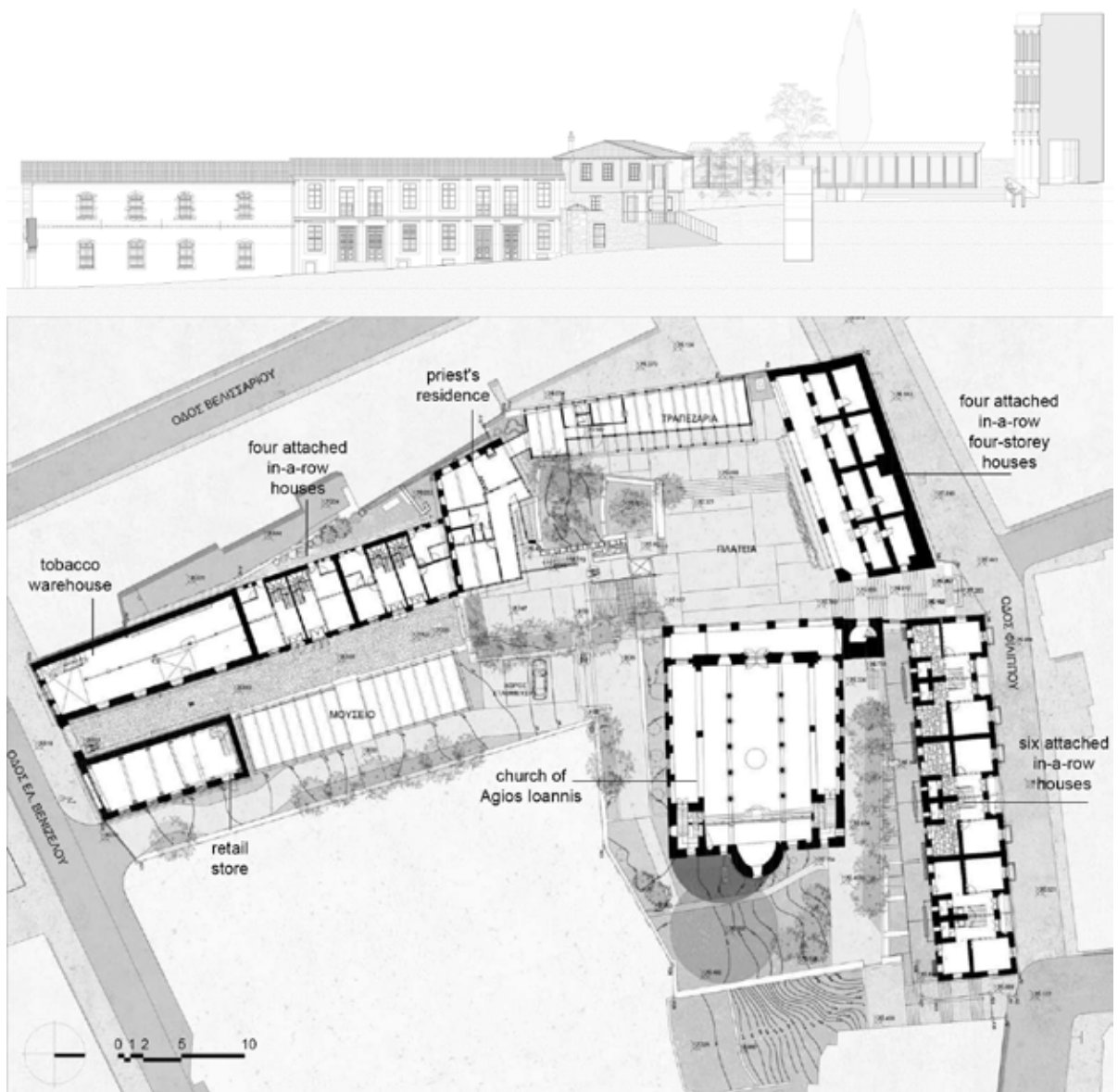
Figure 3. Agios Ioannis district restoration and reuse project [interdepartmental postgraduate protection, conservation and restoration of cultural monuments A.U.Th.]

The four attached four-storey houses remain as three-storey residences. The fourth and lower level continue to be used as adjuvant spaces for the church. Similarly, at the six in-a-row attached houses, the two upper levels contain the main living spaces while the lower one includes supplementary uses. An internal small lift ensures accessibility. Finally, the terraces of these residences are redesigned to function as a relaxation area. The facades are restored to their original form, as well as the structural system, by removing the reinforced concrete elements. At the same time, the necessary insulation and systems are added to ensure thermal comfort of the residents.

Finally, the church and the residence for the priest retain their uses but are upgraded in terms of energy efficiency. The temple is proposed to be restored at its original form, with the restoration of the western facade. This change was documented according to analysis of the construction phases of the building and the typology analysis that preceded. In the residence for the priest, which remains with the same use, mainly works of restoration, maintenance and modernization of the building are proposed and floor plans are redesigned to meet modern standards. On the first level there are some hospitality areas, a reception and dining area, a kitchen and the necessary wc. On the upper level, the use of which is modified, there is space for the priest's office, a small exhibition hall and a public gathering space.

A great attention was paid to the improvement of the building's energy efficiency. Achieving this goal together with ensuring that the special character of the whole complex is maintained, requires a close cooperation of the architects and mechanical engineers. With proper planning, the necessary insulation is added to the buildings and the mechanical equipment is modernized. Heating, cooling and domestic hot water are produced using heat pumps, while small fan coil units are recommended in suitable places in the interior spaces. The improvement of the building's energy performance after the restoration proposal is important, as well as the improvement of the users' thermal comfort conditions. For instance, it is stated that after the appropriate modifications, the church energy efficiency category rises from the last to the third category (c)while the six in a row attached houses go up to the second energy category (b) similarly to all the four four-storey houses. The residence for the priest goes up to the E class while the four in a row attached houses go up to the Third class (c) as well as the tobacco warehouse and the old retail store -cafe.

In conclusion, it is understood that with the restoration and reuse of this complex, an important part of the city of Kavala history is ensured. However, the complexity of the whole project makes it evident that interdisciplinary collaboration is required both for the analysis and documentation as well as for the reuse proposal. In order to limit the risk of altering

the special identity of a historical district, a multi-level study is necessary. That includes topographic and geometric documentation, historical research for each building and the wider area. Additionally, analyzing the characteristics of the area around the complex is required. Then, the detailed documentation of the structural system and the current condition of the buildings are essential before the proposal. This whole process of analysis requires the cooperation of different specialties.

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AR02
adaptive
reuse
handbook for students

CONSERVATION BEYOND REUSE AND ABUSE? NOTES ON THE CURRENT FATE OF DECONSECRATED CHURCHES.

Keywords

Agios Ioannis' district rehabilitation, postgraduate restoration interdisciplinary studio, housing complex in Kavala reuse

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What we talk about when we talk about architectural conservation (and use)

The change in use of Christian religious buildings raises various issues, and establishing a context for them means dealing with core conservation themes while at the same time examining the relationships between form and content in architecture.

For several decades, the debate around this subject was focused on the dichotomy between figurative and historical (material) values. Today, theoretical reflection vacillates between the pre-eminent attention paid to the architecture itself, and to the meanings that we can derive from it.

A quarter of a century ago in Italy, many academics focused on the developing role of changing meanings found in historical buildings, which progressed along two conservation paths, both of which were considered 'wrong'. Respectively, these were the 'neo-idealistic' approach, mainly attentive to the figurative characters of the architecture, and the 'realistic' approach, related to the care of material components and the various historical strata of the artefact.

The proposal to instead focus interest on architectural meanings helped – or even pushed – the field towards legitimate reconstructions and 'postponed realisations' (Manieri Elia 1990), but the shift of attention from the object to the subject has actually opened a wider gap. This gap can undermine the goals and tools of conservation and facilitate the realisation of heritage for external reasons unrelated to architecture[1].

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1   As this is an informative publication, for further information on the content of this contribution, please consult Fiorani, 2017.

The lack of interest with which 'existential' heritage subjects were historically considered has not been without consequences. This can be understood by looking at the evident disparity between theoretical elaboration and operational proposals, or in the recent difficulty of driving conservation strategy in the 'entrenched' fields of emergency response. This is especially obvious after earthquakes, characterised by the abandonment of historic town centres, and also in the case of the problems created by property speculation, which is becoming increasingly aggressive towards historic buildings.

Architectural forms gather together and transmit different concepts. These can be spatial, constructive, structural, technological, material; but also social, economic and, in general terms, cultural. If the first group of qualifications defines the properties of the architecture in itself, the second group refers purely to its functional and symbolic dimensions.

Symbols ///

In new architectural contexts, symbolic contents can relate to the specific shapes that architecture has passed to architecture over time, with differing levels of flexibility. Religious buildings, in particular, have undergone many symbolic variations. They have incorporated existing models that were already characterised by specific meanings: such as the paleo-Christian church, which itself echoed the plan of the Roman imperial basilica; or the ring crypt, which made reference to the tomb of St Peter. On the other hand, they have also borrowed significant symbols without any mediation, such as Byzantine and medieval cross-shaped plans. Finally, they have adopted pure forms, such as that of geometric perfection or of numeric interpretation – circular or polygonal – on which central systems were founded, used in paleo-Christian baptisteries or for the churches of the 15th and 16th centuries.

The original symbolism of a religious building can strengthen with the insertion of additional components, mostly related to decoration, liturgical furniture and light, in a complex approach that plays an important role in spatial configuration (Ferabegoli, Valentini 2013). This approach works for a space that is considered a place 'in which the cultural memory of an epiphany – or even a hierophany – is conserved, generally through religious rites' but also for a 'site that is interpreted by a specific culture as truly religious' (Filoramo 2011: 9).

The symbolic recognition of a building assumes great significance, affecting a host of meanings that cross cultures in terms of space and time, social class and other important issues. Historical and artistic quality is not necessarily connected to the symbolic status of the artefact, even if these two features are both understood intuitively by the human consciousness. In a way, if the Mona Lisa represents the Italian genius of the Renaissance, the Colosseum signifies Rome, and Notre Dame Cathedral is the emblem of the Middle Ages in

France, then every church – even the most modest and recent – testifies to the presence of the divine, while every mansion harks back to rural life.

The institution of a bivalent relationship between the historical/artistic and symbolic values of an object does not offer a useful tool for the purposes of conservation. Over time, symbolic implication can take on a polarised character, and transform itself via the vehicle of conservation into an engine of destruction. This is particularly evident in buildings that benefit from a special status – original or acquired – associating them with symbolic functions and commemorative features. In effect, the fluctuation of meanings transmitted by the building can guarantee their permanence, as has happened with Roman triumphal columns – or can bring about their destruction, as centuries of revolutions, wars, and recent disasters have demonstrated.

A similar phenomenon is found with other kinds of buildings: those with rigid typologies, where their symbolic meaning dictates their persistence, thanks to the strength of the links they have to special events. These links can be desired or unexpected, real or imaginary. The most fixed type of religious edifice, the Greco-Roman temple, did not adapt to the radical changes in attitude that happened in Western Europe between the 4th and 6th centuries, and quickly lost their raison d'être (Ward-Perkins 2003).

Only the slow maturation of a completely different cultural sensibility, more than a thousand years later, fostered renewed interest in this kind of architecture, and only within specific geographic and cultural contexts. This new interest, completely distilled from functional contents and mitigated by the specificity of symbolic references, looks at the buildings as archaeological texts.

Function //

The role of functional aspects in the creation of a building represents one of the recurring issues in modern architecture: in the 18th century, the correspondence between form and function became, with Carlo Lodoli, a clear theoretical statement. After that, it constituted a genuine 'topos' during the Eclecticism movement, with the idea of correspondence between style and typology and, later, under Rationalism, it focused on the relationship established between structure and building.

Many scholars have highlighted the contradictions and limits of similar theoretical postulates: the obsessive attention to function that is typical of rationalistic architecture has forced the conceptual references of the architects into the strict confines of direct correspondence with the tangible needs of the human being. This approach reveals an excess of positivism that seems to have been surpassed for some time in favour of

new theoretical and designer-based models (De Fusco 1967; Coppola Pignatelli 1975; Bellini 1990, particularly pp. 23–24).

The transformation of the relationship between shape and content is in fact a fundamental part of the history of art and literature. Erwin Panofsky, among the first to pay attention to this aspect of the discourse, defined a 'principle of disjunction': the dissociative mechanism that manages the change of meaning of classical subjects in medieval forms. This principle provides an important indicator for the rules that influence the means of transmitting cultural heritage (Panofsky 1960).

In keeping with this principle, some have observed that function, representing the specific 'content' of architecture, is a significant component of the semantic shifts that a building can endure over time. To summarise the birth of the concept of 'scientific detachment' – transmitted by philology and archaeology – and remembering the position (and its inherent ideological implications) of the 'breaking of modernity', it has been proposed that Panofsky's principle of disjunction be used as a tool for work on existing buildings. In this sense, the instruments of 'modification' and typological abstraction ('figurability') are the best ways to support such a project (Pedretti 2011).

In contrast to arguments from twenty-five years ago, current reflections about the significance of architecture seem to push interventions down the road of innovation rather than reconstruction, showing again the difficulty of building these kinds of propositions on unambiguous and stable theoretical foundations.

Changes in function – the outcome of technological and cultural transformations – happen over time and with changes in behaviour that alter depending on their historical and geographical contexts, and with the nature of the building. In this context a new organic project is generally required, something that is balanced between the priorities of function and those of the existing structure. These different possible orientations have essentially set the disciplinary borders in architecture.

In the field of conservation theories, the relationship between potential current use and the historical building itself was initially measured by looking at the historical distance between the present and the date of creation of the existing architecture. Later, many Charters for Restoration of the second half of the 20th century codified that the function should be a tool, not a goal, of conservation. With these bases, the principle of compatibility (Dalla reversibilità alla Compatibilità 2003) permanently safeguarded the new functional purposes of historic buildings, with ultimately preventive and encouraging results.

A separation of goals has therefore affected the character of functional choices, which in the field of conservation are subject to the main intent of respecting the existing architecture, while in the 'reuse' projects they assume a strong orienting role.

Effectively, if the subject of reuse also occasionally appears in the conservation field, especially with castles – just to highlight the importance that functional additions assume in the project – it mostly appears as a design matter. In this latter case, these choices cause a heterogeneity of purposes and means in a relatively wide span of topics, from historic centres to industrial buildings, and sometimes also tending to involve more important monuments.

Supporting the freedom to 'give new answers to historical answers that have passed into our time as questions' (Pedretti 2011), much criticism arose, in keeping with the theoretical tools formulated by the designers of contemporary architectures. These tools generally accompany an homage to the protagonists of the 19th century, and by a flaunted indifference – not exempt from ideological conditioning – towards 20th-century proposals for conservation.

Thus the practice of conservation and that of new architectural design met – and often collided – in the field, sometimes with a random allocation of buildings between the two practices, and sometimes with the creation of controversial compromises. These mostly arose from the removal of immutable parts from existing historical buildings – mainly on the exteriors – for restoration, and from the unbridled transformation of other parts.

Moreover, the polarising effect of interventions that result in the fragmentation of buildings betrays in depth the intrinsic logic of conservation. In this way, it fails to represent a comprehensive approach, based on knowledge, and oriented around the organic presentation of a building via each project.

Churches: aim of eternity in a transient world //

The compatibility/function pairing has mainly promoted the insertion of cultural services into historic buildings, including religious ones. For some time, choosing 'higher' cultural activities has helped to make such reconversions socially acceptable, but the economic crisis of the last few years has promoted a more inclusive pragmatism, one that legitimises almost any change of use in order to avoid possible demolitions.

In this climate, we must contextualise the present issue of the functional reconversion of the churches, in an era when religion – which was once the engine both of personal spirituality and of social aggregation – is being replaced by a more individual and 'liquid' secularisation.

The divestment of churches is not an unprecedented phenomenon, but in the past it was mainly linked to territorial depopulation, to building obsolescence, or to the occurrence of extraordinary and generally catastrophic events, either natural disasters (earthquakes, floods, etc.) or anthropogenic ones (suppressions of religious orders, military events, revolutions, etc.). These phenomena normally involved decay and abandonment, sometimes followed by revitalisations, reconstructions and transformations. The sequence of these events tends to have hidden, over many years, the original configuration of buildings.

Today churches become empty primarily because of the decrease in congregation size, and in these autonomous abandonments, symbolic tension – always present in the previous cycles of rise and fall – seems to be missing.

In a departure from past practice, therefore, the recognisability of religious buildings is rarely betrayed these days, particularly the external elements, while symbolic and functional contents are subverted in a way that is perhaps less strong than in prior years, but achieves the same depth of results.

This phenomenon is widely distributed and sometimes striking, but it assumes different characteristics in different parts of Europe, with more liberal tendencies evident in Protestant countries in the north of the continent, and less impressive results in central, southern and eastern countries, both Catholic and Orthodox.

Functional reconversion uses various strategies with different effects. It can predict, in ascending order of intrusiveness: (1) the creation of transitory, generally spontaneous adaptations; (2) the organised rearrangement of furniture; (3) the insertion of technological elements, mostly utilities; (4) actual conservation work, accompanied by new furniture; (5) the insertion of new functional architectural shapes; (6) the profound transformation of the buildings.

Following the order of these categories marks the passage from approaches similar in tools and strategies to the field of interior design towards more fully architectural processes. The 'glue' that allows these two contrasting philosophies of design practice to be kept together is the principle of reversibility. Conversely, the phenomenon that marks an insurmountable partition relates to the spatial and figurative identity of the existing building, which the design project sometimes seems to neglect, yet without the consideration of which the conservation project cannot proceed.

A short examination of the situation in Italy – which has one of the richest and most complex historical heritages in existence – will prove useful to understanding the distribution and results of practices for the functional reconversion of the churches, also from a statistical viewpoint.

From a sample of 100 churches along the Italian peninsula, we can recognise four different functional groups and the six categories of intervention that we described above. The four functional groups concern, respectively: new religious uses (for non-Christian denominations and rites), non-cultural uses (residences, offices, shops, restaurants, game centres, gyms, stores, hotels, etc.); 'light' cultural uses (reasonably flexible, such as museums, auditoria, polyvalent spaces, open theatres, artists' workshops, etc.), 'heavy' cultural uses – tied to precisely defined standards (such as theatres, libraries, multimedia centres, and cinemas).

More than half the buildings (58 per cent) host a 'light' cultural function, favoured for the less invasive and more reversible nature of transformation, but almost a third of them are intended for other uses. The largest proportion of major interventions (32 per cent) fall into the 'traditional' conservation category. In this case, the project starts with the intrinsic qualities of the existing architecture and works with different strategies, from reconstruction to integration, innovation, and the calibrated insertions that facilitate new functional inclusions.

If we link the architectural quality of buildings to the operational choices made about them, we can see that non-cultural uses prevail in minor buildings, while 'light' cultural functions are given to the more important edifices. A similarly predictable comparison concerns the greater magnitude of alterations to the former category, and the extent of conservation activities in the latter. In a third of cases, the conservative intervention pursued the recreation of original shapes and colours, while in the others situations the strategies were more elaborate, and did not avoid the inclusion of contemporary design.

The evaluation of 'traditional' conservation interventions revisits the issues usually found when discussing conservation theory, which will not be considered in this paper. Instead, we will deal with the insertion of 'working' shapes, which touches on the issues we already discussed in this paper. This kind of intervention sometimes occurs in important buildings (18 per cent), either through the insertion of elements that lack specific figurative identity, or with additions that stand in stark contrast to the existing building.

The ongoing debate about conservation has generally avoided discussing the latter practice for its unorthodox impacts; it is covered occasionally in a few design magazines, for which a few cases of this kind are superficially illustrated. Vice versa, Catholic countries often consider the insertion of new uses into the churches from a point of view of cultural opportunity, looking at 'extreme' modifications that are generally not significant from an architectural point of view.

The situation is different in other European states. Since the beginning of the 1980s the Netherlands, for example, started

to experiment with 'strong' modalities to change the function of unused churches. In continuity with these thirty-year-old experiences, various recent interventions have been extremely free in their functional choices – with a more commercial character than in the past. We will consider the plans and activities carried out on various disused churches in Maastricht.

In this sense, the 13th-century Selexyz Dominicanen church, was transformed into a bookshop and the 15th-century Kruisheren monastery, which is now a hotel, are especially significant. The insertion of mezzanine floors – which are structurally disconnected, but quite intrusive from a visual and sometimes material point of view – starkly weakens the spatial identity of the two buildings, reducing their role to that of a shell. The 'aura' of the monuments appears unstructured because of the exuberant character of the new insertions and the process of falsification of pre-existing symbolic values. This process follows a post-modern trend, inducing a sort of semantic detachment that aspires to the neutralisation of the symbolic focus – e.g. positioning the Chesterfield-like sofa at the Kruiserkerk's apse – or to sarcastic suggestion – such as the cross-shaped table at the centre of the Domenicanen Selexyz's apse.

By contrast, the relationship with symbolic values distinguishes the Italian interventions, which are instead oriented around insertions – as in the church of St Ponziano in Lucca, which is the location of a four-storey library in iron and glass, or in the church of St Paolo Converso in Milan, headquarters of an architectural studio articulated on a black metal structure. Where the Dutch disenchantment with religion is reflected by the bold level of the formal architectural choices, the Italian research into purity by using abstract shapes at least returns a deferential nod to remoteness, in the lost dialogue between pre-existence and insertion.

Regardless, both the Dutch and Italian cases described here – which could also be accompanied by other European examples – seem to treat the buildings' pre-existence as a matter of industrial design more than as an architectural problem, to be approached and developed in a detailed, organic and coherent way. In this sense, these projects seem to be based on the same modalities that inspire the organisation of contemporary furniture and installation, just on a bigger scale: functional effectiveness, lightness – at least in the selection of technologies – innovation, reversibility, irony and 'otherness'.

The reduction of architectural issues to mere matters of industrial design follows the trend seen in projects in some countries, and explains the occasional success of this approach in some heritage projects in such places. Furthermore, in religious architecture, the same trend explains the predisposition to interpret the addition of inner elements as a legitimate way to resolve conflicts between conservation and the insertion of new functional elements.

It is not by chance that in Italy too some proposals of antagonistic innovation have followed the twin paths of reconstruction and the insertion of contemporary elements. This strategy indicates the overlapping of contradictory logics, which are perhaps a product of misunderstanding, or perhaps the result of cynical negligence.

Researching the answers to the deepest conservation questions in the field of industrial design risks charging too high and permanent a price for our historical and artistic heritage, due to existing issues and for the effect on the possible results. Precarious functional efficacy combined with shallow symbolism does not compensate for these risks. If we think of applying this kind of modality to semi-abandoned monumental churches, such as the 14th-century Sante-Croix church in Liège, Belgium, we could face serious danger. We could in fact generate strategies that would seem again to allow such buildings into the vital flow of contemporaneity and its significance but substantially misrepresent their own identity, renouncing the transmission of their value and the profound essentials of their architecture.

Conversely, the interventions on St Filippo Neri in Bologna, which today hosts a concert hall, or in the Escuelas Pias de San Fernando in Madrid, location of a library, testify to the potential for theoretical and operative methods that are able to give coherence to the logic of integration and that of equipment and furniture. Confronting the issues arising from proposals that show new weak functions conflicting with strong ancient symbols, the solutions, yet again, must not derive from the uncertain path of extra-architectural significance, but in the potential for the building itself to show its own specific essence. If it is true that architectural questions from the past reach us as answers through their objectivisation, our answers, to retain credibility, should not avoid the need to build a deep relationship with that same physicality.

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The table shows the result of an investigation into a sample of 100 churches in Italy. We have distinguished six kinds of intervention, in ascending order of incisiveness: (1) the creation of transitory, generally spontaneous adaptations; (2) the organ- ised rearrangement of furniture; (3) the insertion of technological elements – mostly utilities; (4) actual conservation work, accompanied by new furniture; (5) the insertion of new functional architectural shapes; (6) the profound transformation of the buildings. New functions in the churches relate to four functional groups. They concern, respectively: new religious uses, non-cultural uses; 'light' cultural uses, 'heavy' cultural uses. We have excluded churches that are 'museum of themselves', abandoned churches (which are numerous: there are more than 100 in Naples alone) and those without sufficient data. The selected churches show clear historical and artistic value (white box) or are 'minor' architecture (grey box). In column 5 we distinguish mimetic interventions (green dot) from interventions that have a more conservational and distinct character (black dot). In column 6 we have distinguished function-oriented interventions (blue dot), functional-oriented interventions with mimetic characteris- tic (green dot) and interventions with clearer formal connotations (black dot)

Table 1. Illustration of the results of an investigation into a sample of 100 churches in Italy.

Church	1	2	3	4	5	6	Use
Ancona, S. Agostino						•	Museum
Asti, S. Giuseppe		•					Game centre
Bagno di Romagna, S. Lucia					•		Restaurant
Barbaresco, S. Donato		•					Wine shop
Barisciano, S. Colombo				•			Restaurant
Benevento, S. Ilario a Porta Aurea					•		Museum
Bergamo, S. Agostino				•			Multi-purpose hall
Bologna, S. Lucia				•			Auditorium
Bologna, S. Filippo Neri				•			Auditorium
Bologna, SS. Cosma e Damiano				•			Showroom
Brescia, chiesa	•						Restaurant
Brescia, S. Desiderio			•				Theatre
Brescia, S. Giorgio				•			Auditorium
Brescia, S. Giulia				•			Auditorium
Brescia, S. Mattia alle Grazie					•		School
Brescia, S. Maria della Mansione					•		Shop
Brescia, S. Salvatore				•			Museum
Bronte (Ct) S. Giovanni				•			Multi-purpose hall
Castellammare di Stabia (Na), Oratorio			•				Museum
Certaldo (Fi), SS. Tommaso e Prospero				•			Multi-purpose hall
Crema, S. Domenico			•				Theatre
Firenze, S. Pancrazio					•		Museum
Firenze, S. Carlo ai Barnabiti	•						Multi-purpose hall
Firenze, S. Cristoforo					•		Residence
Firenze, S. Jacopo in Campo Corbolini			•				Multi-purpose hall
Firenze, Oratorio della Madonna del Carro					•		Residence
Firenze, Oratorio dei Bini (o di S. Sebastiano)				•			Museum
Foligno (Pg), SS. Trinità				•			Multi-purpose hall
Gallipoli, S. Angelo				•			Library
Genova, S. Agostino				•			Auditorium
Genova, S. Sabina					•		Bank
Lodi, S. Giovanni e Ognissanti alle Vigne				•			Theatre
Lucca, Suffragio				•			Auditorium
Lucca, S. Francesco				•			Multi-purpose hall
Lucca, S. Romano				•			Auditorium
Lucca, S. Ponziano					•		Library
Lucca, Carmine					•		Market
Mantova, S. Cristoforo					•		Multi-purpose hall
Marghera (Ve), S. Maria	•						Mosque
Matera, S. Martino				•			Hotel room
Mazara del Vallo, S. Egidio			•				Museum
Milano, Besana				•			Museum
Milano, S. Carpoforo				•			Multi-purpose hall
Milano, S. Giuseppe della Pace			•				Discoteque
Milano, S. Paolo Converso					•		Office
Milano, SS. Filippo e Donato					•		Residence
Milano, S. Sisto					•		Atelier
Milano, SS. Simeone e Giuda					•		Theatre
Milano, S. Teresa					•		Mediateque
Montarolo (VE), SS. Pietro e Paolo	•						Warehouse
Napoli, Abbazia di Santa Maria a Cappella Vecchia					•		Gym
Napoli, chiesa di San Francesco delle Monache				•			Multi-purpose hall
Napoli, chiesa di S. Gennaro all'Olmo				•			Multi-purpose hall
Napoli, chiesa dell'Immacolata a Forcella					•		Shop
Napoli, S. Maria Assunta dei Pignatelli				•			Turist Information centre

Location	Use
Napoli, S. Severo al Pendino	Multi-purpose hall
Padova, S. Giorgio	Theatre
Palermo, S. Elena	Library
Palermo, Sant'Eulalia	School
Palermo, S. Maria dello Spasimo	Open Theatre
Palermo, S. San Paolino dei giardinieri, via del Celso	Mosque
Parma, oratorio di S. Quirino	Multi-purpose hall
Parma, S. Maria del Carmine	Auditorium
Perugia, S. Angelo della Pace	Multi-purpose hall
Perugia, S. Bevignate	Multi-purpose hall
Perugia, S. Francesco	Weaving company
Portichetto di Luisago (Co), S. Maria della Neve	Mechanic workshop
Prato (Fi), Oratorio della compagnia di S. Trinita	Shop
Ragusa, S. Vincenzo Ferreri	Multi-purpose hall
Ravenna, S. Nicolò	Museum
Reggio Emilia, SS. Carlo e Agata	Multi-purpose hall
Roma, S. Andrea de Vascellari	Atelier
Roma, S. Giovanni	Restaurant
Roma, S. Isidoro alle Terme	Multi-purpose hall
Roma, S. Maria della Clemenza	Restaurant
Roma, S. Maria in Tempulo	Multi-purpose hall
Roma, S. Marta	Multi-purpose hall
Roma, SS. Simeone e Giuda	Theatre
Salerno Sant'Apollonia	Multi-purpose hall
Salerno, S. Gregorio	Museum
San Miniato (Pi), Oratorio di S. Martino	Multi-purpose hall
Siena, S. Mustiola	Library
Siracusa, Ortigia, S. Pietro	Multi-purpose hall
Spoleto, S. Nicolò	Theatre
Teggiano (Sa), S. Pietro	Museum
Udine, S. Francesco	Multi-purpose hall
Ugento (Le), S. Filomena	Counsel Hall
Venezia, S. Barnaba	Multi-purpose hall
Venezia, S. Basso	Auditorium
Venezia, S. Leonardo	Multi-purpose hall
Venezia, S. Margherita	Auditorium
Venezia, S. Vidal	Auditorium
Verduno (Co), S. Rocco	Atelier
Verona, S. Maria in Chiavica	Auditorium
Verona, S. Matteo	Restaurant
Verona, S. Silvestro	Bank
Verona, S. Felicita	Restaurant
Verona, S. Sebastiano	Library
Vicenza, SS. Faustino e Giovita	Cinema
Villanova d'Asti (As), SS.ma Annunziata	Multi-purpose hall

Legend: new religious uses
non-cultural uses
'light' cultural uses
'heavy' cultural uses

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AR03
**adaptive
reuse**
handbook for students

ADAPTIVE REUSE: HOW SUCCESSFUL CAN A RECOVERY BE WITHIN THE CONTEMPORARY *SUSTAINABLE* ERA?

Keywords

Linear Regression Analysis, Empirical Research, Evaluation Systems

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Introduction

The practice of adaptive reuse is intertwined with sustainable development and although it is widely believed that mainly economic factors drive possible redevelopment schemes for successful recoveries, it was found that, in the case of adaptive reuse, there are some other participating criteria. But what is the essence of adaptive reuse? Is it possible to measure 'success' in Adaptive Reuse, and how is this process beneficial for development schemes today?

Adaptive Reuse

Adaptive reuse, semiotically, means to reuse in order to fit. However, what to fit is an interesting question; the new use; the changing needs of contemporary life, or climate, or context; the changing needs of the existing/ new occupant…

Some definitions for Adaptive Reuse include:

> • to re-use a building or structure for the purpose of giving it new life through a new function" (ODASA 2014)

> • "adaptive reuse is described as developing the potential of additional use and wear for functionally obsolete buildings – it is essentially the recycling of a building" (Ijla and Broström 2015)

> • Not necessarily implying a change of use but generally as works including "rehabilitation, renovation or restoration" (Bullen 2007)

Fundamentally adaptive reuse is a method of extending the useful life of buildings by a combination of improvement and conversion; it productively extends the empty shell's useful life. Moreover, adaptive reuse, as a practice, involves contemporary means and approaches and this enhances the inherited value and helps to build up the heritage being left for future generations.

Adaptive Reuse and its connection to sustainable development //

As mentioned above, adaptive reuse is considered to be a practice that falls under the so-called sustainable development; adaptive reuse has positive attributes to 1. socioeconomics, 2. the ecology and 3. cultural matters, and as these are considered to be constituting the pillars of sustainability, adaptive reuse can potentially fall under its scope, as well.

Adaptive reuse can benefit both the local communities and the existing built fabric. It is beneficial as it connects the new version of the building to its original character and the embedded narrative. Therefore, the sense of place can be retained, and certain values are conserved (social, cultural, historical). Relevant links to the past and significant memories are kept and historical or cultural landmarks are safekept.

Core social values such as pride and memory can be enhanced by careful consideration of adaptive reuse strategies which highlights that adaptive reuse contributes to maintaining the character and the vitality of the built fabric.

Furthermore, adaptive reuse preserves regional flavour while minimizing impacts on the environment. Recycling also participates in having an attitude towards more viable paths when it comes to materials and sources, and the grey energy associated with these.

Finally, by adaptively reusing an asset, the potential abandonment is minimized along with its adverse effects on both the social and built fabric. Therefore, it is evident that adaptive reuse succeeds in many aspects.

How can Success in Adaptive Reuse be measured: The empirical project

Recently, a research has been conducted in Cyprus (Parpas 2019) that established the most important criteria driving a successful recovery of derelict and abandoned buildings, using multiple regression analysis. The contributions included in the model derived from a multidisciplinary process, and more specifically, the realms of socioeconomics, culture, and the environment. These vital contributions are successful proponents of both the practice of adaptive reuse and sustainability-driven developments of the built environment.

Multiple Regression Analysis can illustrate the correlation between a selection of parameters with the "Degree of Success"[1] of adaptive reuse. It also allows for an assessment of a large number of built examples which leads to better results.

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1   The "Degree of Success" acted as the dependent variable of the model (Parpas 2019). The dependent variable in multiple regression analysis is explained in terms of several independent variables.

The data collected was cross-sectional which means the data concerns different built examples through a given timeframe. The information of all separate case studies was examined simultaneously through multiple regressions. More specifically the regression model had the following form:

$$DoSAR_{i=}\beta_0 + \beta_1 ConEra_1 + \beta_2 NuU_i + \beta_3 Lc_i + \beta_4 GdpG_i + \beta_5 CostM2_i + \beta_6 PiCm_i + \beta_7 Pcm_i + \beta_8 Tu_i + \beta_9 VScr_i + \beta_{10} Ext_i + \beta_{11} Cu_i +$$

Where "i" reflected each case study and "β"s reflected the relationship between the dependent variable with the independent ones. DoSAR was the degree of success in adaptive reuse, and the following variables explain all the independent variables that were chosen to participate in the model; "ConEra" was the construction era, "NuU" was the number of usual users, "Lc" was location, "GdpG" was the gross domestic product growth rate at the time of the adaptation, "CostM2" was the real cost per square meter, "PiCm" was price index of construction materials at the time of the adaptation, "Pcm" was the primary construction material, "Tu" was the type of the introduced use, "VScr" was each building's viability score[2], "Ext" was the existence of a built extension and "Cu" was whether there was a change in use.

With this model each case study was embraced in its uniqueness and participated with its unique data, facts, measurable quantities; all case studies were examined as objectively as possible.

The data was collected randomly from more than 100 cases within the premises of Cyprus, but attention was paid to examining dissimilar cases and not only museum pieces (Parpas 2019, Fig.1). A number of case studies from the existing built fabric in Cyprus were selected and assessed. Generally, the sample size should be significantly large in order for the coefficients to return valid results.

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2   A manufactured evaluation system aiming to evaluate a building's performance concerning the well-being of the users, socioeconomics, management, and matters of culture, history and the environment. In other words, an evaluation system towards the building's sustainable behaviour (Parpas 2019).

Figure 1. Some of the case studies examined for the model (©Despina Parpa)

In order for the assessment of each case study to be completed, preparational research was conducted, and then a personal encounter and discussion with the owners or users of the buildings had to take place. Eventually, all the crucial information for the analysis was collected based on the corresponding site-visits. Also, some data was obtained from architects or other parties. Statistical information was obtained from the Cypriot Statistical Service and the World Bank Open Database.

After all crucial information was collected and tabulated, the model could run; fundamentally, the success of each case's adaptation was examined through the beforementioned list of independent variables in order to establish which ones hold the most significant role in successful recoveries. The success itself (dependent variable) was a manufactured formula reflecting the aspect of futurity; the extension of an asset's useful life.

The Project's Outcome //

The empirical research (Parpas 2019) revealed that, for a successful adaptive reuse, economics, although important, is not the only driving force which is an important finding within the contemporary era that economics take the lead in development or redevelopment schemes. The two most important criteria driving successful recoveries in Cyprus are the original construction era of an asset and the price index of the construction materials.

The construction era of a building reflects specific approaches concerning the construction technologies and the legislative background meaning formal or more subtle developments. It was found that the buildings constructed during or after the British colonisation of the island, were more successful when adaptively reused.

The price index reflects the state of the market. Although it is not a rule, growth and cultural prosperity are noted when the market is at its best. This empirical project revealed that, in Cyprus, when the price index is high, the hardest it is to purchase construction materials, and less money is spent for quality construction works. Therefore, the success of adaptive reuse is positively correlated with good conditions in the construction market.

Recent events like the COVID pandemic and the war in Ukraine have led to a distressed situation in the construction sector; the market is not at its best, the price index of the materials is very high hence, it is not expected for newly adaptively reused assets to thrive.

On the other hand, the cost of the conversion, or in some cases the capital, does not hold a significant role in the model. Money taking the lead could be both limiting and intimidating, especially in the decision-making process of whether to reuse a unit or not.

Concerning the remaining criteria of the model, the project revealed that the prediction that the number of usual users, or the location would be statistically significant was overturned. Moreover, the general picture of a unit's viability expressed by the manufactured index is not proven to be statistically important, but it is significant enough not to be omitted from the model.

Also, it was interesting to see how the success of an adaptation correlates with each of the index's variables separately. The findings showed that the management of the property after the construction works of the adaptation and the actions towards the socioeconomic fabric and wellbeing gain more statistical significance, especially the variable management which becomes one of the best regressors.

Furthermore, it is proven that the use itself is irrelevant. To a successful adaptive reuse, the type of the introduced use holds a minor importance. However, as expected, introducing a public use, reflecting greater usability and movement within the existing built fabric, allows for more active years.

Changes to the operational aspects of the reuse, such as change of the old use, or a built extension of the unit to provide more options in operation or greater comfort, were proven to contribute little to the model. Although, the 'Change in Use' and the 'Type of Use' criteria can be omitted from the model entirely, the 'extension' variable should not.

Finally, according to the regression's results, it is 7% more possible for buildings built with non-organic materials to be successfully adaptively reused. This finding, although not very indicative due to the coefficient's low number, argues that non-organic materials have a minor advantage over the alternative when it comes to successfully implemented strategies, thus reflecting the better mechanical properties of these materials.

Conclusions ///

The aim of this project was to establish the most important variables to a successful adaptive reuse with the use of statistics which provides robust indications. There can be economic, physical, legislative and utilitarian variables that affect an adaptation positively, though their contributions to achieving viable practices are not equal. A vital matter emphasized through this project is that economic factors are not the sole drivers of adaptive reuse.

The findings, although being indicative, could be seen as a valuable tool for decision makers and involved stakeholders aiming to achieve successful sustainable adaptations within the contemporary sustainable era. Empirical studies like the one described in this paper, can prove the essence of adaptive reuse and can showcase robust insights and information concerning the strategic timing of a re-development. For example, all involved parties could navigate through the criteria of such models and act drastically towards a successful adaptation. Fundamentally, what this means is to 'read the room' when it comes to the trending market and general status of the construction era, and to act accordingly. Finally, the results of such an analysis could contribute to better resource management, improved cost and benefit processes, more effective assessments, and well-justified decisions that take into consideration several intersecting matters.

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AR04
adaptive
reuse
handbook for students

"AS FOUND"
A NEW APPROACH TO THE REUSE OF THE BUILT ENVIRONMENT.

Keywords

**as found,
Smithson,
Clément,
Tempelhof Field,
urban rewilding**

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The "as found" concept was defined by Alison and Peter Smithson in the 1950s as a specific design strategy based on minimal intervention. Their goal was taking profit of all the lot pre-existences that could be reused in the new buildings. This strategy is nowadays spreading as a new way of addressing the issue of the reuse of the built environment. Underlying this "as found" approach is the environmentalist debate. Deep ecology movements reclaim the need to overcome so-called "weak sustainability", defended by reformist ecology, and to take steps toward "strong sustainability" [Table 1]. This demand has stimulated interest for the preservation of obsolete areas, which are considered as an opportunity to repair part of the damage cities have caused to the natural environment. One of the best-known advocates of the conservation of these areas is the French botanist and landscaper Gilles Clément. The case of the old Berlin airport of Tempelhof, which was inaugurated in 1941 and closed in 2008, is a good example of the implementation of his ideas.

Table 1. Comparison between reformist ecology and deep ecology [García Vázquez, 2022, p. 39]

Comparison between reformist ecology and deep ecology		
	Reformist ecology	**Deep ecology**
Vision	Partially anthropocentric	Non-anthropocentric
Values	Materialistic Eco-capitalism (green economy)	Post-materialistic (ecosophical values) Anti-establishment
Objective	Sustainable growth	Zero growth or de-growth
Tools	Science and technology Laws and regulations	Techno-relativism Cultural revolution

It was the Independent Group who introduced in the British art scene of the post-war period an interest in Dadaist everyday and unassuming objets trouvés. During their walks through the working-class neighborhoods of East London, the photographer Nigel Henderson showed Alison and Peter Smithson a new way of looking at these elements:

> (...) children's pavement play-graphics; repetition of 'kind' in doors used as site hoardings; the items in the detritus on bombed sites, such as the old boot, heaps of nails, fragments of sacks or mesh and so on (Smithson, 1990, p. 40).

This fresh take on things led them to define the "as found" aesthetic, that called for a commitment to asceticism. That new aesthetic became part of the Smithson's architecture, not only in their interest and innovative approach to everyday objects, but also in the way they highlighted the importance of mass-produced industrial products, placed their efforts in the honest use of materials, and called for incorporation of the citizenry in the design process. This led to a specific design strategy: minimal intervention, which considers pre-existences a crucial part of the project and reduces to the bare minimum the transformation of the "as found" reality [Figure 1].

Figure 1. "As found": Farr's School of Dancing Pub (London) [Image by the author]

The "as found" design strategy has nowadays being recuperated by the radical ecology movements. They agree on the need to overcome what has become known as "weak sustainability", which merely attempts to make humanity give up its destructive habits in order to stabilize the climate and ecosystems. Instead, these movements propose to take steps toward "strong sustainability", which demands that humanity begin to repair the damage it has caused. Interestingly, this new approach enhances urban obsolescence. Traditionally, the areas that have become vacant from neglect have been considered decadent and anti-aesthetic anomalies to be corrected. This view started to change in the 1970s and 1980s, precisely when their appearance in the cities rose dramatically. Urban ecologists discovered the high ecological value of neglected vacant areas, which started to be mapped and protected. As Matthew Gandy stated, that put an end to centuries of conventions that linked the authenticity of nature to non-urban environments (Gandy, 2016, p. 161).

Presently, one of the best-known advocates of the conservation of obsolete areas "as found" is the French botanist and landscaper Gilles Clément. In his *Manifeste du Tiers paysage* (2004), he defined "Third landscape" as the set of spaces where human beings have relinquished the evolution of landscape to the hands of nature. He distinguished three categories, the third of which, "residues", refers to spaces, usually urban areas, that have been once used and later neglected. Clément requested from public administrations that the latter should be kept "as found", that is, free from urban development and transformed into "biodiversity capsules" as a means of devolving to nature tracts of the land that the city has taken away from it (Clément, 2007, p. 59).

Indeed, the "strong sustainability" vision responds to the commitment to repair some of the damage caused to the environment by means of the rewilding of the city. The strategy that has most attracted the attention of urban theorists has been the use of those vacant areas as leisure spaces that are an alternative to traditional parks and gardens. The randomness of their layouts and ruins, which no longer respond to the functional logic that they were designed for, turns neglected lots into extraordinarily evocative environments. In contrast with the aesthetically codified and functionally regulated traditional park, where people just consume the space designed by the landscape planner in a passive way and follow the behavioral rules prescribed by the authorities, the lack of order and deterioration of obsolete areas elicits creativity and personalization. There, people can carry out spontaneous activities that would hardly belong in a conventional park, such as camping, partying, farming, or setting up bartering markets [Figure 2].

Figure 2. City rewilding in Regent's Canal (London) [Image by the author]

The intervention methods that are used to transform a neglected area into a leisure space are diverse, but fluctuate along the thin red line that separates minimal intervention from no intervention. However, few cases have attracted as much attention from the media as the old Berlin airport of Tempelhof [Figure 3], which was inaugurated in 1941 and closed in 2008. Two years later, it was reopened as Tempelhof Field, a huge 303-hectare meadow (bigger than Central Park) located in the heart of the city and bound on its north-west corner by the old terminal—a 1.2-kilometer-long building which is representative of the best national-socialist architecture. In 2014, a referendum was called to decide on its future and Berliners voted in favor of leaving the place as it was, even rejecting any sort of building on its perimeter. Today, two sections can be clearly differentiated in Tempelhof Field. In the outer ring there are community gardens, dog parks, picnic areas, and sport facilities. The two old landing strips are in the central meadow, and they are used by cyclists, skaters, joggers, and walkers, although 80% of the surface is maintained as a valuable biotope where 329 species of wild plants coexist, as well as several endangered animal species— mainly birds like shrikes, goldfinches, and larks.

Over three million people visit Tempelhof Field every year. The impressive acceptance that Berliners have offered to a wild area which shows minimal intervention and is very different from traditional parks, hints to the fact that a sort of cultural revolution have begun. Matthew Gandy insisted on the cultural dimension that underlies the reevaluation of the obsolete:

Parts of Berlin are returning to nature, the distinctions between nature and culture becoming progressively more indistinct, as remnants of human activity such as rubble, rusting metal and other objects become gradually absorbed into a new kind of socio-ecological synthesis (Gandy, 2011, p. 150).

Figure 3. Tempelhof Field (Berlin) [Image by the author]

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PART 2.4

RESILIENCE AND CLIMATE CHANGE

RCC01
The effects of Climate Change on the cultural
heritage of Greece; Future Projections,
Assessment of the effects on cultural tourism
and on the energy consumption of museums.
Prevention, and Adaptation measures to the new
conditions.

✕

RCC02
Sustainable Wetlands. Projects and governance
tools to address environmental fragility.

✕

RCC03
Anthropocene/disorder. An outline for
associative urban resilience.

✕

RCC04
Intangible, yet Impending Lives of Modern
Heritage in Obsolescence: The Case of
Berengaria Hotel.

✕

RCC05
Fundamentals on Intervention on heritage as a
resilient strategy and resilient strategies for the
intervention on heritage.

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RCC01

**resilience and
climate change**
handbook for students

THE EFFECTS OF CLIMATE CHANGE ON THE CULTURAL HERITAGE OF GREECE; FUTURE PROJECTIONS, ASSESSMENT OF THE EFFECTS ON CULTURAL TOURISM AND ON THE ENERGY CONSUMPTION OF MUSEUMS. PREVENTION, AND ADAPTATION MEASURES TO THE NEW CONDITIONS

Keywords

**climate change,
monuments,
museums,
tourist activities,
indoor environment,
outdoor environment**

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As a society, we are accustomed to a normal range of conditions and may be sensitive to extremes that lie outside this range. The term climate change refers to continuous changes in the distribution of weather patterns that range from decades to millions of years. Climate change could affect our society through impacts on several different social, cultural, and natural resources (human health, effects on food and water, energy, cultural heritage, etc.) (EPA 2016). The climate system is affected by human activities and anthropogenic emissions, the atmospheric concentration of which has increased significantly since the industrial revolution (IPCC 2014). The effects of climate change are already evident. Temperature (both air and sea) has increased, the amount of snow and ice has decreased, and sea level has risen. At the same time, the increase in emissions and concentration of greenhouse gases will result in further warming and long-term changes.

The Intergovernmental Panel on Climate Change (IPCC) plays a crucial role in the field of climate change. Its assessments, policy guidance, consensus-building approach, global collaboration, and public outreach contribute to informed decision-making, effective climate policies, and increased awareness of the challenges and opportunities associated with climate change. To assess possible future climate change and its impacts, IPCC developed a series of different scenarios (Special Report on Emissions Scenarios, SRES). The six families of scenarios are A1FI, A1B, A1T, A2, B1, and B2 and are discussed in the Third and Fourth Assessment Reports (TAR and AR4) of IPCC. However, SRES scenarios (A1, A2, B1, and B2) do not encompass the full range of possible futures: emissions may change less than the scenarios imply, or they could

change more. For this reason, in the 5th Assessment Report of IPCC (IPCC 2014) the SRES scenarios were superseded by the Representative Concentration Pathways (RCPs). RCPs are greenhouse gas concentrations and are used in climate models to estimate the future changes of the climate's characteristics. Four different RCPs have been developed: a declining pathway that leads to very low radiative forcing (RCP2.6), two intermediate stabilization pathways (RCP4.5/RCP6), and a high radiative forcing pathway (RCP8.5). The RCPs are the main input data for General Circulation Models. However, to achieve a regional increase in resolution, the use of nested Regional Climate Models (RegCMs) is also used. RegCM was the first limited area model for developed for long-term regional climate simulation and it has been applied by a large community for a large range of regional and paleo-climate studies and also for future climate projections (Giorgi et al. 2012).

The Intergovernmental Panel on Climate Change (IPCC 2022) has warned that the world is set to reach the 1.5oC level within the next two decades. Climate change is raising global awareness of its causes and effects in several sectors of human activities including industry, energy, and health including recently cultural heritage as well. According to the 6th Assessment Report of the IPCC (IPCC 2022) climate change is projected to intensify in the Mediterranean region, including the area where Greece is located (Figure 1). This will lead to an increase in the frequency and intensity of extreme heat waves, heavy precipitation, droughts, and other climate-related events during the 21st century. Regarding precipitation, will possibly decrease in most areas by 4–22%, depending on the emission scenario. More specifically for the region of Greece, studies have shown that temperature is expected to increase which will be more intense at the end of the century (Tolika et al. 2012). Therefore, the hot days, tropical nights, and consecutive dry days will increase too (Georgoulias et al. 2022). Velikou et al. 2019 in a recent study for future projections in Greece with an up-to-date regional climate model under RCP4.5 emission scenario revealed an increase of temperature by 3.6°C until the end of the 21st century.

Figure 1. "The location of Greece in Europe and its geographical coordinates
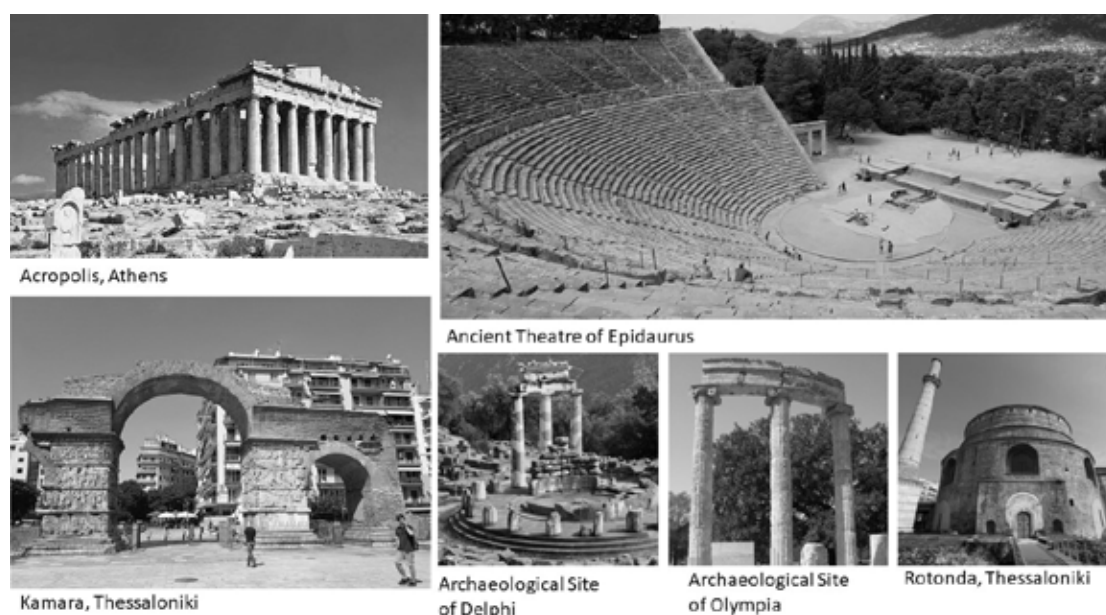
Cultural heritage is directly affected by climate change. The term "cultural heritage" refers to the tangible and intangible aspects of society and culture that are inherited from previous generations, for the benefit of future generations. This includes monuments, archeological sites, objects, collections, etc. Cultural heritage and resources play an important role in the society, including the enhancement public education, shaping socio-cultural capital community identity, supporting tourism and therefore the country's economy, etc. (Brabec and Chilton 2015). Since their creation, heritage assets have always interacted and will continue to interact with their surrounding environment including weathering processes (Sesana et al. 2021). However, the current rapid climate change adds an additional threat to the heritage as it exacerbates the expected rates of decay and may contribute to the appearance of new decay phenomena (Bertolin 2019). According to UNESCO (2007) the impacts of climate change are already affecting many natural and cultural World Heritage properties, and it is very likely to affect even more of them in the near future both outdoors on sites and within the museum environments. Changes in average climatic conditions can affect the biological, chemical, and physical mechanisms that contribute to the degradation of assets (Sabbioni et al. 2010; Cassar et al. 2018). According to UNESCO the factors that can cause the deterioration of cultural heritage are the changes in:

- Temperature

- Precipitation

- Wind intensity and speed

- Humidity

- Droughts and extreme heat and

- The interaction between climatic changes and air pollution.

In addition, the sea-level rise, coastal erosion floods, landslides, coastal erosion, etc., could increase the risk of disaster for cultural heritage (UNESCO 2007; 2008; Sabbioni et al. 2010). The change in temperature can lead to an increase in the number of freeze-thaw cycles, intensifying the physical weathering of stone and ceramic materials (Grossi and Brimblecombe 2007). Accordingly, a rise in precipitation and its intensity can cause corrosion and sedimentation and a higher risk of damp penetration in historical materials (Sabbioni et al. 2009). Mold and biological degradation can occur as a result of changes in relative humidity (Camuffo 2019). Air pollution is often associated with the surface soiling of stone surfaces and can cause corrosion (Grossi and Brimblecombe 2007). Droughts and extreme heat increase desertification and therefore fires. In addition, sea-level rise, coastal erosion, floods and fires, earthquakes, landslides, etc., are also serious threats to cultural

heritage (UNESCO 2007; 2008; Sabbioni et al. 2010). However, natural processes and the inclusion of geological hazards such as flooding in vulnerability assessments are limited (Cigna et al. 2018).

The Greek heritage on which this work focuses on, includes more than 21,000 monuments and archaeological sites, 18 of which have been recognized by UNESCO as world heritage sites. Nevertheless, climate change poses serious threats to the protection and preservation of these non-renewable heritages. Previous researchers have studied the impacts of climate change on heritage sites in the Mediterranean and have highlighted an increase of threats from anthropogenic global warming and extreme events (Kapsomenakis et al. 2022). In their earlier investigation into the effects of outdoor microclimate on Greek cultural heritage, Tringa and Tolika (2023) demonstrated that monuments will experience a higher frequency of exposure to 'moderate-maximum' risk in the future. However, Nastou and Zerefos (2021) for the effects of climate change on the Greek theatre of Dionysus recommended the preparedness for the adaptation to the present climate conditions, resilience, and devotion to the sustainability of the heritage for its transmission to the next generations. Ravankhah et al. (2019) in their study of the impacts of climate change on the historic center of Rethymno in Greece, mentioned that for cultural heritage risk assessment and management, there is a significant need to define both past and future risks due to climate change. The covering of archaeological World Heritage Sites for example in the case of Malta (Sesana et al. 2021) or even burying certain monuments has been proposed as a measure to adapt to the effects of climate change (Martens 2017). In addition to the high importance of the

Acropolis, Athens

Ancient Theatre of Epidaurus

Kamara, Thessaloniki

Archaeological Site of Delphi

Archaeological Site of Olympia

Rotonda, Thessaloniki

Figure 2. Some UNESCO World Heritage Monuments in Greece. Source: https://whc.unesco.org/en/statesparties/gr (accessed of 25 March 2023).

country's cultural identity, Greek monuments attract a large number of tourists every year, strengthening the country's worthwhile economic source, tourism. However, previous studies have shown that climate change is projected to have significant impacts on the physical resources supporting tourism in Europe (Scott et al. 2012). The attractiveness of an area, and the types of tourism activities it can host, depend highly on the local weather and climate (Lückenkötter et al. 2013). Alexandrakis et al. (2019) in their study of the economic and societal impacts on cultural heritage sites highlighted that a decrease in tourism demand is likely to occur, as people may have concerns about their general safety. Thus, future warmer climate conditions during summer in southern Europe will be less favorable for tourism (Giannakopoulos et al. 2009). At the same time, countries in the North, which are the countries of origin of many of the current visitors of the Mediterranean, will enjoy more suitable climatic conditions. Thus, countries such as Greece located on the coastal area of the Mediterranean face the risk of climatic change hazards, such as a significant impact from the sea-level rise (Alexandrakis et al. 2019). Du and Ng (2018) in their study on the effects of climate change on the tourism economies of Greece, Spain, and Turkey found that the impact of climate change on tourism economies is greater than on other types of economies and suggest strong international cooperation among these states. Obviously, all tourist destinations will need to adapt to climatic conditions to minimize the impacts of climate change. Therefore, the research efforts by national governments, the tourism industry and tourism organizations should be constantly informed about new measures and capacities to adapt to the new climate conditions for the strengthening of the sector.

Monuments and museum antiquities must be properly preserved to be transmitted to future generations. Museums are organizations with a diverse mission, including the protection of the cultural inheritance by providing a protective environment on display and storage. Changes in internal thermo-hygrometric conditions can lead to variations in the mechanical, chemical and biological decay of the objects and collections housed within the interiors (Sesana et al. 2021). The thermo-hygrometric conditions of the museums and historical buildings vary due to several parameters namely the building envelope, internal gains, climate control systems and outdoor meteorological conditions (ASHRAE 2015). Due to the importance of maintaining historical objects safe, many standards/guidelines have been developed that limit the indoor climate to keep the collections safe (Thomson 1986; UNI10829 1999; ASHRAE 2015). For the indoor climate to be suitable for hosting these valuable objects museums consume energy and money to meet their purpose (Coelho et al. 2019). The quest for achieving the recommended environmental conditions within the museum microenvironment by counterbalancing the extreme outside climate changes leads to excessive waste of energy. There is an increasing pressure in the museums'

sector for reducing energy costs and embracing sustainable practice by reducing their impact on the natural environment through processes that are environmentally responsible and resource-efficient. Schijndel and Schellen (2018) in their study of the future energy demands for European museums showed that more cooling will be needed in southern Europe while almost no cooling will be needed in northern Europe. Many researchers have studied passive rehabilitation measures, active rehabilitation measures or a combination of both types to decrease, as much as possible, the energy consumption of these buildings (Coelho et al. 2019). Hence, the study of future indoor conditions will help the museums' directors and boards to develop new methods to cope with potential climate change in time.

Overall, climate change is an undeniable challenge to cultural heritage. Therefore planners, museums professional, and governing boards must be remain constantly informed about these concerns. The development of new adaptation measures and strategies is a necessary process to enhance the resilience of cultural heritage to climate change. Mitigation measures should be sustainable, meaning they should be manageable and affordable.

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SUSTAINABLE WETLANDS. PROJECTS AND GOVERNANCE TOOLS TO ADDRESS ENVIRONMENTAL FRAGILITY IN THE VENICE LAGOON

Keywords

//

Wetlands are complex ecosystems, considered among the most productive environments in the world. They contain important biodiversity hotspots, perform important environmental and economic functions, reduce flooding events, improve water quality and represent a valuable cultural and natural heritage. In recent decades, scientific interest and public debate have increasingly focused on the status and health of wetlands, among other environments. This increasingly transversal interest, shared by local authorities, private economic sectors, research institutes and civil society, has guided and promoted institutional and innovative ways of managing these environments, which are crucial for the survival of all species.

The essay add resses the fragility of the Venetian Lagoon and the various tools that can be used to preserve and strengthen its wetlands. The first part discusses how one can ensure the representation and agency of the different actors – both human and non-human – who live in and care for the lagoon. The second part then presents the process of implementing a governance tool, called a wetland contract, for the specific case of the northern lagoon. We must note that although wetlands cover only 6% of the Earth's surface, corresponding to 12 million square kilometres, they are crucial in that they absorb 30% of the free carbon dioxide in the atmosphere and constitute a powerful reserve of biodiversity.

Figure 1. Venice Lagoon

Wetlands, which are protected and enhanced by the Ramsar Convention[1], are extremely delicate areas. Since the 1970s, they have suffered significant erosion, with almost 90% of European wetlands and 60% of those in Italy being lost. This erosion corresponds to a decline of 36% in flora and fauna species. To manage wetlands and promote governance processes for this type of environment, land planning and design tools and practices must be sensitive to differences between species, and consider not only humans, but also the other elements that make up the environment, such as plants and animals, which should even be prioritised. In fact, planning activities increasingly need to be considered open, transformative and cooperative with respect to a plurality of actors, including but not limited to animals, plants and humans.

Today, g overnance practices refer to environmental resources in the form of contracts, such as river contracts, estuary contracts, wetland contracts and coastal contracts. This tool – 'a process of governance that involves the stakeholders of a specific site in order to co-create and share a common program of activities necessary to protect and enhance a specific environment' – is becoming increasingly popular in planning

[1]   The Ramsar Convention is the oldest modern global intergovern-mental environmental agreement. It was adopted in the Iranian city of Ramsar in 1971 and came into force in 1975. Its aim is the conservation and wise use of all wetlands through local and national actions and international coopera-tion, as a contribution towards achieving sustainable development throughout the world.

processes and can help overcome sectoral instruments and policies that address problems from a limited perspective (Ernoul et al. 2021).

Over the past decade, the European Union has invested a huge amount of money in supporting environmental governance. In almost 50 pilot areas, wetland area contracts have been funded; in Italy, at least 200 wetland contracts have been activated or are going to be activated, with almost 40 of them already signed. Many actors are involved in these processes both in Italy and at the European level.

To manage wetland environments, at least three main issues must be considered. The first issue concerns the objective of addressing problems from an ecosystem perspective. The second issue concerns representing and providing agency for other-than-human things, recognising a radical plurality of life forms (Paba 2011). The third issue concerns the perspective of doing together to produce social capital, which is a key element of caring for our environment (Bang 2005).

Figure 2. Wetlands in the Venice Lagoon

A wetland contract for the northern Venice Lagoon //

For a period of three years from 2018 to 2020, the Iuav University of Venice was involved in the project Interreg Italia-Croazia CREW (Coordinated Wetland Management in Italy-Croatia cross-border region). This resulted in the promotion of seven wetland contracts, related to the target areas listed below:
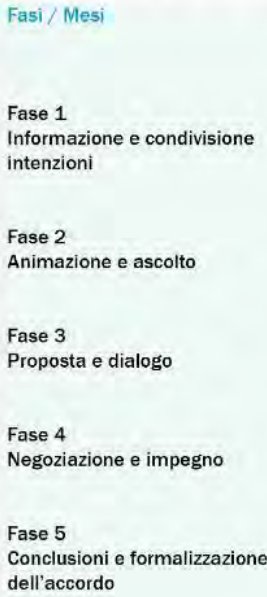
- Ofanto River
- Sentina Nature Reserve
- Northern Venice Lagoon
- Marano Lagoon
- Palud Istria
- Isola Pag
- Neretva River

Over the course of the three-year project, more than 100 local actors were involved in programmes for 150 actions and activities, with a budget of 10 million euros.

Within this framework, Iuav was responsible for the wetland contract for the Venice Lagoon, which is the largest coastal wetland area in the Mediterranean Sea, covering almost 500 square kilometres. The 'Venice and its Lagoon' site was inscribed on the World Heritage List in 1987 for the uniqueness of its cultural values, consisting of historical, archaeological, urban, architectonic and artistic heritage and exceptional cultural traditions, integrated into an extraordinary and outstanding environmental, natural and landscape context. However , just 50 years later UNESCO considered delisting it, because mass tourism peaked at some 25 million individual visitors in 2019, while about 1,000 residents leave the city of approximately 50,000 people each year. The sheer number of visitors puts enormous pressure on the city's sewerage and recycling facilities as well as on local transport and accommodation. To this day, the Venice Lagoon lacks a proper governance tool capable of managing its use, maintenance and exploitation.

To tackle the environmental issues facing Venice and its lagoon, I think we should learn from the long relationship between water and land specific to this environment. This relationship is characterised by integration and mutual adjustment between land and water and by profound knowledge of the reciprocal interaction between Venice and its lagoon. Thus, for instance, the salt marshes' erosion can be managed through an integrated approach, whose core is the prevention of erosion through numerous, small but spatially diffuse soil-bioengineering protection works, run primarily by semi-manual labour and causing minimal impact on the environment and the landscape.

The process

Fasi / Mesi

Fase 1
Informazione e condivisione intenzioni

Fase 2
Animazione e ascolto

Fase 3
Proposta e dialogo

Fase 4
Negoziazione e impegno

Fase 5
Conclusioni e formalizzazione dell'accordo

Thanks to the CREW project , the Iuav University of Venice oversaw the task of promoting and implementing the wetland contract for the northern part of the Venice Lagoon. The main challenge in considering the whole lagoon in this kind of process was related to the kinds of activities to put into practice: we had to involve a large group of stakeholders (local institutions and communities) and discuss and manage the co-creation of an action programme. For this reason we decided to consider only the northern part of the lagoon.

The process of the wetland contract started in September 2019 and ended in July 2021. For three years, the Iuav team developed the whole process and arrived at the signature of the contract.

Figure 3. The wetland contract phases
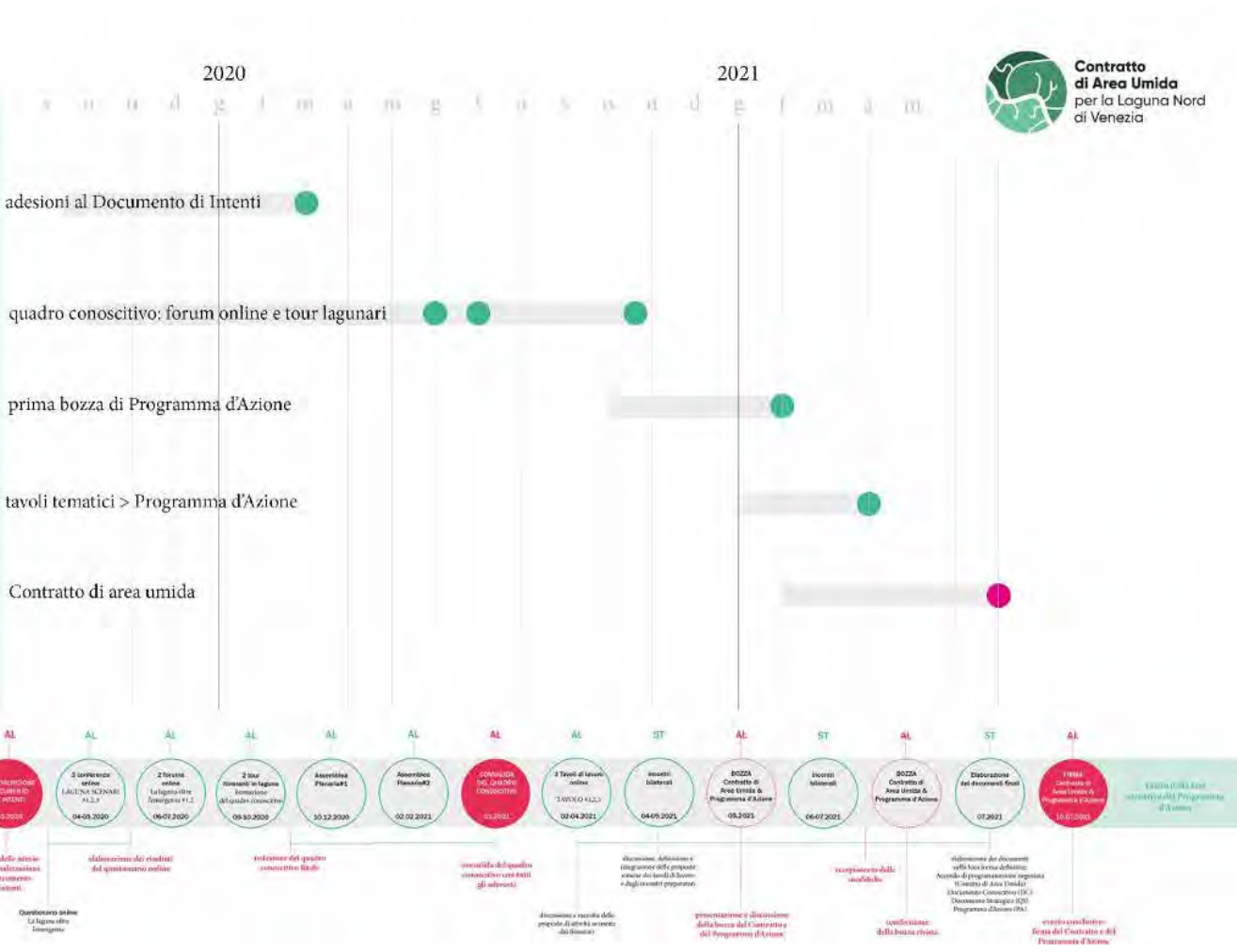
The first step consisted in disseminating information and sharing intentions to promote and create a wetland 'community contract', referring to a network of people who are interested in sharing their experience to develop an action programme . From September 2019 to December 2020, local stakeholders (such as municipalities, local associations, environmental associations, the Association of Sustainable Tourism and the Fisheries and Hunting Association) were engaged in four different areas of the northern lagoon.

The aim of the four meetings was to present the project and the university as an impartial entity. The purpose was to raise awareness about the need to protect the biodiversity of the northern Venice Lagoon valleys and to enhance the environment through an action programme. As a result of these meetings, preliminary documents were developed, in which all the stakeholders agreed to be a community which would take care of the Venice Lagoon.

After the stakeholders signed the intent documents, a new phase of the process began: the participatory phase. However, just as we were about to start, we were forced into lockdown due to the COVID-19 pandemic, necessitating a different participatory approach. Despite the challenges involved, we adeptly managed the situation by organising an online forum, comprising three meetings in which the stakeholders introduced themselves, presented the biggest problems facing the Venice Lagoon and suggested how they as stakeholders would overcome these problems.

A total of 150 stakeholders participated in the online forum . Subsequently, we administered an online questionnaire, which garnered responses from over 100 people. The following questions were posed to the community:

- What do you like about the lagoon?

- What do you dislike?

- What do you want the lagoon to be like?

- Which part of the lagoon do you know ?

- What are the main elements of the lagoon?

We organised two tours in the northern lagoon: a land tour by bicycle and a water tour by boat. During the land tour, we rode along the northern lagoon's shoreline and held meetings with the local community to collect information and improve our knowledge of this territory. We conducted the boat tour with the aim of exploring the lagoon by water.

Through these efforts, we produced a document of knowledge as the main outcome. We originally organised it into four different sectors: Cultural heritage ; Environmental heritage; Economic situation; Mobility and accessibility of the territory. However, after engaging in discussions with the stakeholders,

we recognised the importance of incorporating the values that people associate with the lagoon. As a result, we re-organised the document into four chapters:

- Taking care of the environment and the culture of the lagoon;

- Feeling the lagoon (how people feel when they live in the lagoon);

- Using and moving around the lagoon (how to make the lagoon more accessible);

- Transversal values (clear and simple administrative rules for all activities developed in the lagoon, the necessity of synergy among local organisations, and use of local knowledge).

As part of the knowledge process, we elaborated a map of the values and daily use recognised by local people and the stakeholders. The applied knowledge process and value recognition were relevant to the project because community support and stakeholder knowledge are central to wetland contracts. Indeed, it is thanks to the process of knowledge and community involvement that wetland communities can be formed.

The second phase saw us begin to work with the stakeholders to discuss the main actions recognised by the community as the most relevant. In 2021, during the last year of the project, we started working on the action programme. Due to the pandemic situation, we carried out this work exclusively online. We organised three meetings in which each stakeholder was required to decide how they would take care of the lagoon's heritage according to three different topics . Each meeting was attended by around 30–40 participants. The first was dedicated to ecosystem protection, the second to cultural and productive activities and the third to the habitability and accessibility of the lagoon. During these meetings, each stakeholder had the opportunity to work on activities promoted by Iuav– such as a map of the main local cultural activities in the northern Venice Lagoon – and different actions were suggested. At the end of the meetings, a reviewed action programme was elaborated, in which the main actions and secondary activities characterising the action plan were collected.

Relevant elements of the contract included a participatory definition of places, permanent coordination among the associations involved and some actions strictly related to network building inside the lagoon. In fact, one of its objectives was to coordinate the associations and capitalise on the presence of the very large number of people willing to take care of UNESCO heritage. Furthermore, a partnership of research groups was created involving the three different Venetian universities that study the city and its lagoon, which otherwise hardly collaborate . Other actions included

ensuring the accessibility of public spaces along the lagoon's boundaries, defining a strategy related to sustainable mobility and promoting conscious enjoyment of the lagoon. Specifically, these actions comprised:

- Participatory definition of a statute of places;

- Permanent coordination among the associations involved;

- Coordination among the research groups involved;

- Ensuring the accessibility of public spaces along the lagoon's boundaries;

- Definition of an integrated strategy related to sustainable mobility;

- Promotion of conscious enjoyment of the lagoon;

- Enhancement and promotion of thematic routes;

- Protection and enhancement of heritage (lace making, fishing, gastronomy);

- Integration and enhancement of museum heritage;

- Protection and enhancement of the village of Lio Piccolo;

- Protection and enhancement of the Barene di Campalto;

- Promotion of community agriculture;

- Initiatives for the hydromorphological rebalancing of the lagoon;

- Joint adaptation plan to the Climate Changes;

- Initiatives for the integrated management of the drainage network;

- Initiatives for the networking of Upper Adriatic wetland area contracts.

Each action was characterised by several concrete activities, such as the improvement of a specific bicycle path or the significant re-development and enhancement of some state-owned areas. One must acknowledge that a wetland contract is not a long-term plan; rather, it works for a five-year period and therefore the activities it describes, which are clearly localised in specific places, must be accomplished in a short time frame . Among others, the following concrete activities were identified:

Activities:

- Improvement of a bicycle path between Musile di Piave and Caposile;

- Re-development and enhancement of state-owned areas in Caposile;

- Identification of routes related to the lagoon's boundary stones;

- Re-development of the village of Lio Piccolo;

- Census of disused areas that can be valorised as community agriculture;

- Vivification of lagoon areas between San Giuliano and Venice.

The final meeting and the contract signing ceremony were held in July 2021. Due to the COVID-19 pandemic, this was the first time all the stakeholders had the opportunity to meet in person. The 31 stakeholders that signed the wetland contract included three municipalities, the Association of Farmers, local associations that promote action to avoid climate change, two wetland reclamation consortia, the Provveditorato Interregionale per le Opere Pubbliche per il Veneto, Trentino Alto Adige e Friuli Venezia Giulia Ex Magistrato alle Acque – Venezia , three universities (Iuav University of Venice, Ca Foscari University of Venice and University of Padua) and more.

The wetland contract aims at dealing with short-term actions (to be accomplished in two to five years) that are important for protecting the lagoon. Long-term scenarios were discussed as well, because the Venice Lagoon, like many other coastal environments and wetlands, is currently suffering and will suffer even more in the future due to the climate crisis and sea level rise.

What will happen in 2100? What future can we imagine for the Venice Lagoon? //

To answer these questions, some alternative scenarios were discussed with local stakeholders, which push in two different directions: resilience and resistance.

The Resilience Scenario recognises some critical realities and suggests strategies, actions, tools and devices to tackle the problem. It imagines that by 2100, the sea level will have risen so much that the mobile barrier at the mouth of the lagoon will no longer work. According to scientific research produced by local universities and the Italian National Research Centre, several scientists have proposed the use of a sump to inflate water in the subsoil to push Venice upwards, alongside the

production of new sandbanks to improve the wetlands' capacity to absorb waves. They have also called for the reinforcement of the barrier at the lagoon's boundaries to protect the mainland from sea level rise. Therefore, the first scenario proposes some actions to adapt the lagoon to the transformations produced by climate change.

The second scenario aims instead for 'resistance' and involves solutions to adapt to as well as resist climate change-induced transformations. It proposes closing the lagoon so that the mobile barrier can be stabilised, protecting Venice from sea level rise. However, completely closing the lagoon would change its status: it would become a lake. In this scenario, the wetlands would disappear and, because rivers currently bring water and sediment, some water bodies could be reclaimed for agriculture.

In conclusion, I have tried here to highlight the critical issues facing the Venice Lagoon, alongside some possible solutions to safeguard it. We need to be ready to take care of our environment and consider very different opportunities, solutions, tools and devices to protect and defend Venice and its lagoon. In particular, the work conducted in recent years has highlighted the importance of involving the local population in defining programmes of shared actions.

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ANTHROPOCENE/DISORDER.
AN OUTLINE FOR ASSOCIATIVE URBAN RESILIENCE

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The Anthropocene and uncertainty in planning

Uncertainty emerges as a prominent paradigm in our times. Especially, this applies to the escalating, though controversial recognition of the scope and magnitude of climate change that came with the Anthropocene. While conceptually signifying the geochronology of human-induced ecological transformations on Earth, the Anthropocene engendered a multitude of debates and controversies (see Bould, 2021; Eisenhower, 2017; Lorimer, 2017; Simonetti, 2019; Sklair, 2017). These controversies encompass methodological challenges pertaining to tracing alterations in the chemical and biological composition of the atmosphere and soil (Stephen et al., 2015; Zalasiewicz et al., 2019), as well as the political dimensions involved in delineating the key actors and proportions of ecological harm (cf. Charbonnier, 2017; Chandler, 2018; Moore, 2016). But, beyond the intricate dilemmas associated with designating a geologic epoch, discussions on the Anthropocene have nonetheless become a catalyzer for a capital reassessment of human-environment relations (cf. Blok and Jensen, 2019; Clark and Szerszynski, 2021; Jensen, 2022; Latour, 2017; Viveiros de Castro, 2019; Wakefield et al., 2020). At first glance, this might be odd. The intimidating character of climate uncertainty, driven by inquiries into the extensive and diffuse array of abiotic, biotic, and technological fluctuations that exceed human control, itself imposes a prolonged "staying with trouble" (Haraway, 2016). However, calls for embracing radical climate uncertainty are also being contemplated in an experimental sense - as a means and technique for envisioning future ecopolitical relations.

The Anthropocene has also imposed unprecedented challenges on urbanism, necessitating a fundamental reconfiguration of design principles due to anticipated ecological transformation, the precise scope and form of which cannot be determined (Johnson, 2019; Thompson and Newman, 2017; Wissman-Weber and Levy, 2017). It is widely recognized that imminent uncertainties and risks pervade both planning and architectural practices at large (Fusco et al., 2017; Zapata and Kaza, 2015). As a result, these uncertainties have become crucial

contemporary planning dilemmas, compelling professionals to address the complexities associated with chronic disasters stemming from climate crises (Khakee, 2020; Van Zandt, 2019). Nonetheless, this has sparked a surge of speculative designs, indicative of a broader reconceptualization of urban habitability and the need to reassess established notions linked to orderly, fixed, and rigid design principles - as an epitome of modernist ideology.

Consequently, a paradigm shift in planning methodologies advocates for the adoption of more adaptable, introspective, and analytical approaches, driven by the acknowledgment of the limitations inherent in predetermined master plans. Embracing the unpredictable and multifaceted nature of the future has given rise to a planning philosophy that embraces experimental concepts, such as "learning by doing," the downsizing of interventions, and active participatory engagement. Moreover, this perspective fosters a shift towards "phronetic" institutions that actively learn from perpetual uncertainty (Tyfield and Yullie, 2022). This perspective resonates within the domains of adaptive urbanism (Ahern et al., 2014; Birkmann et al., 2014; Scott et al., 2020; Wissman-Weber, Levy, 2017), tactical urbanism (Silva, 2016; Webb, 2017; Wohl, 2017), urban resilience (Crowe et al., 2016; Davoudi, 2012, 2016; Davoudi et al., 2013; Meerow et al., 2016; Pizzo, 2015; Sharifi, 2019), and antifragile planning (Blečić and Cecchini, 2017; 2019; Sartorio et al., 2021).

While adhering to the principles of adaptation, informality, disorder, and disruption, as opposed to notions of orderliness and rigidity in design, these approaches exhibit significant variations in terms of the scope, scale, and pace of adaptive measures. Integrating uncertainty into planning and architecture entails considering diverse alternatives that encompass strategies for regeneration, mitigation, and even embracing errors and risks as catalysts for improvement. However, the uncertainty arising in the Anthropocene should not be solely viewed as a source for risk-averse strategies. As argued by posthuman planning theorists (Houston et al., 2018; Jon, 2020a, 2020b), the context of the Anthropocene necessitates the adoption of a proactive approach that cannot be confined to "risks" or "vulnerability". This critical reframing of planning practices, proposed by posthumanist planners, encompasses not only active and practical engagement with issues directly impacting urban life but also, emphasizes the ethical and aesthetic dimensions of planning. It holds the potential to encompass, uncover, and integrate various other non-human material dependencies that play a crucial role in urban assemblages.

Ultimately, such shift brings planning methodology closer to experimentation that would be more adaptable and prone to using disorder in productive ways, and also susceptible towards broader socio-material entanglements in which the cities are situated (cf. Brenner and Katsikis, 2020). Thus, rather than

confining itself to a philosophy centered on risk prevention, this novel interpretation of disorder must reintroduce resilience as a means of revealing and articulating various interconnections and dependencies that are vital for the sustenance and development of urban life. We contend that resilience needs to be approached pragmatically, considering the emerging connectivity of urban assemblages and embracing what Amin and Thrift (2016) refer to as the politics of leverage - small interventions capable of generating significant spatial impacts. In the following sections of this paper, we will delve into the arguments put forth by Pablo Sendra and Richard Sennett. Our aim is to demonstrate that resilience, both as a potential platform and as a theory of urban development, must embrace change, diversity, surprise, and disruption, while fostering broader connections with non-human entities and vital infrastructures. In summary, the Anthropocene demands an associative form of urban resilience.

Associating through disorder //

Although not directly related to climate change issues, "Designing Disorder: Experiments and Disruptions in the City" by Sendra and Sennett (2020) is a particularly insightful work. They argue that the current forms of imposed and rigid design created by linear modernist planning simply suppress the emergence of informal, spontaneous, and unplanned uses of public space. Challenging the regular rigidity of forms and common urban design strategies, Sendra and Sennett propose a three-part model to intervene in existing urban structures with flexible solutions that can be adapted through practice. Ultimately, their proposal revolves around the concept of spontaneously evolving but well-coordinated disorder that enhances the built environment through associations and connectivity achieved through improvements to energy-supplying infrastructures.

By seeking to enable adaptations in terms of open forms, porous boundaries, and nonlinear narratives, Sendra and Sennett propose a synergy of interventions at three different levels: below, above, and in section. From below, the main task is to achieve infrastructural connectivity through terminals, watersheds, and new connections. In their view, architectural design should therefore reconnect public infrastructure, using examples of "interruption" and applying the logic of porous boundaries - those that can be recomposed through practical use. In essence, this comes closer to the nonlinear narrative they advocate - as a basis for new negotiations, interactions, and different kinds of engagement in the built environment. Viewed from above, a logic of open forms could encourage the interaction of different mobile elements. For example, the insertion of various infrastructure access points (e.g., charging stations, fountains, etc.) could open up public spaces, such as squares, to informal activities. Similarly, the application of modular logic allows for the creation of a flexible surface

- an adaptable surface that is open to pushing boundaries. By connecting to infrastructure (water, electricity, etc.), linear spatial narratives can be abandoned, and a plethora of unanticipated spatial practices can emerge.

The logic behind Sendra and Sennett's argument is based on the idea that spaces must be continuously created between neighborhoods to reverse the effects of the rigidity of the built environment and create conditions for unplanned activity. Since the removal of many physical and social barriers to interaction is considered necessary, what they call "intervention on the margins" leads to a transformation of places (streets and urban spaces) where many of the existing but previously isolated places meet. This is especially true at a third level they address: in section. Opening up connectivity in areas of high population density by enabling "narrative spaces" where linear flows are disrupted must also foster connections with the immediate built environment. What they propose are soft, permeable boundaries. These allow certain areas (e.g., residential buildings) to be territorialized, rather than creating a sharp distinction from other areas through compartmentalization, and instead allow residents' activities to be condensed.

However, the insistence on the permeable boundary between the private and the public in Sendra and Sennett's model entails much broader political aims than strengthening local communities. As they point out, "[t]he strategies 'below', 'above', and in the 'section' have explored leaving the public realm 'incomplete', allowing continuous upgrade and adaptation to uncertain futures. The strategies have also explored providing different elements with functional capacities rather than fixed functions, where the activities and interactions of the public realm depend on the different associations that take place" (Sendra and Sennett, 2020: 103). However, these associations are not only important in enabling informal transactions between residents and enforcing better adaptability. Sendra and Sennett would hardly accept the intimidating paradigm of "risks" that accompanies our recent climate consciousness or the brutal evolutionary logic found in urbanist theory, where urban spaces must be hedged against environmental connections. The crucial lesson from their project, then, seems to be the co-design: the ways in which humans, precisely through design, encounter elements that seem vital to urban life, enhance awareness by infusing their own being with assemblages of these mobile and modular material elements, and ultimately, by embracing uncertainty (see Figure 1.)[1].

Figure 1. A summary of a model proposed by Sendra and Sennet.

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[1] As being argued by Sendra and Sennet (2020: 104), a participatory co-design process "demonstrates how processes can encourage interaction between people and spaces and also a collective sense of awareness. It is likewise a good example of the emerging shift from ana interest in finished projects toward interest in an open process that accepts uncertainty. Architects, urban designers and planners must learn to work with this uncertainty."

types of adaptation

(open forms)

attaining infrastructural
connectivity

inserting different access points
to infrastructure

fostering vertical connections

(porous boundaries)

reconnecting public
infrastructure and using
examples of "interruptions"

creating flexible surfaces

enabling soft boundaries

(nonlinear narrative)

fostering negotiations and
different types of engagement

removing boundaries between
the neighboorhoods

softening the boundaries
between public and private
spaces

Conclusions ///

Deploying disorder in this regard not only embodies a moment of spontaneous rearrangement of the built environment but is also somewhat consistent with calls for a "renovation" of architectural design in the Anthropocene (e.g., Grosz, 2013) due to drastic changes in the landscape. Nonetheless, it incorporates the contingency of flows and potentially reveals the workings of infrastructures and non-human entities in sustaining human life. The last point seems to have broader resonance when keeping in mind how the proposed associative resilience, as an ongoing process of embracing uncertainty, might operate. As already argued, climate change and uncertainty impose the need to enhance susceptibility for non-humans participating in urban assemblages and, therefore, to expose components such as water, plants, rocks, electricity, pipes, and wires. Such ideas already fall under the banner of bio-digital aesthetics and architecture and their main appeal is to expose the co-productive relationship between humans and non-humans in a sensory way (e.g., Gradzinski, 2019; Prominski, 2014; Ripley, Thün, Velikov, 2009). This kind of "productive ambiguity," where human-made artificial creations such as technology or infrastructure coalesce and foster new biological processes (Pasquero, Polleto, 2019), simply seems to be a more practical and down-to-earth idea that contributes to the true adaptation of the urban environment than adopting a philosophy of risk avoidance.

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INTANGIBLE, YET IMPENDING LIVES OF MODERN HERITAGE IN OBSOLESCENCE: THE CASE OF BERENGARIA HOTEL

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On a prominent slope of the Prodromos village (Troodos Mountain region) stands the Berengaria Hotel. [Figure 1] Although abandoned and derelict since 1984, the hotel has remained a historical landmark in the heart of the locals. [Figure 2] The Berengaria Hotel opened its doors in the early 1930s, when Cyprus was still under the British colonial rule. It was one of the island's earliest luxury hotels and attracted the likes of the British elite and royal members of the Middle East. In the four decades since abandonment, there were various unsuccessful efforts to resurrect the hotel's past glory. The building's long-term and large-scale dereliction, as well as its listed status, which heightens renovation costs, are factors that scare away potential investors. To everyone's surprise, an official announcement in 2022 unveiled a promising regeneration scheme: the hotel's renovation combined with an expansion to include a series of high-end bungalows for sale. The expansion is an indication of a shift that has prevailed on the island over the past decade, introducing Cyprus as a global player in the provision of high-end real estate to foreign investors. This new plan has been applauded by some; it represents the beginning of a new chapter for this patiently waiting dilapidated structure. For others, the expansion is a reiteration of a financial model and construction culture that targets the 1% of the world population (Dorling 2014) and which, at least in Cyprus, has been criticised as being closely associated with political corruption (Rakopoulos and Fischer 2020). On a global scale, similar critiques occur, referring to neocolonial acts over society and nature (Graham 2016). This short essay discusses a less-known story behind the realisation of the Berengaria Hotel in the late 1920s to demonstrate the multi-faceted narratives a building may encompass.

Figure 1. The Berengaria Hotel in the 1930s. Source: Cyprus Press and Information Office ©

Figure 2. The abandoned façade of the Berengaria Hotel, 2011. Source: U-SHer Project ©

The Berengaria Hotel was the vision of a wealthy Greek-Cypriot, Ioannis Kokkalos, who was a native of Prodromos village and owned a large plot of land near the current site of the Berengaria Hotel. Kokkalos studied engineering in Egypt and worked on various projects as a contractor and developer in Cyprus, before taking the initiative to request the colonial government's permission for the hotel's development (Andreou 2011). During that time, the British colonial government was still reluctant to sponsor or invest in tourism development (Palate and Pyla 2023). The strained financial conditions of the island prioritised other sectors of the economy, such as mining and agriculture. However, the promising rise of tourism industry was already evident, given that many foreign travellers would arrive in Cyprus to spend their time in the island's mountains because of the mild temperatures throughout the year. Kokkalos's proposal coincided with the appointment of a new governor, Sir Roland Storrs, in 1926, who seemed to be more open to encourage local entrepreneurship. Storrs appreciated the initiative, given that Prodromos village was a favourable place for colonial officials and their families when visiting the island.

Storr's approval, but also the hotel's target audience, which involved mainly the British elite visiting Cyprus, could not but reinforce colonial presence, at least in the hotel's design.   It was after all designed by a British architect, Walter Henry Clarke, who was residing in Cyprus during that time and he was the architect of various projects sponsored by the British colonial government and some British companies operating on the island. The architecture of the Berengaria Hotel demonstrated features alluding primarily on the island's medieval, and subsequently more European past. In fact, the hotel was named after the Queen of England Berengaria of Navarre, who married Richard I of England (also known as Richard the Lionheart) in Cyprus in the 12th century. According to the legend, the wedding was held in Kolossi Castle, in the western area of Limassol city, not very far from Prodromos village. This part of Cyprus's history seemed to be skilfully interpreted in the hotel's architectural form, resembling the military architecture of the Kolossi Castle with thick masonry walls, made of local stone, and a few small windows and balconies. The hotel's central volume projects from the main façade and stands taller than the wings, forming a tower at the hotel's main entrance, which further exhibits medieval ornamental details, such as a dropped keystone and voussoirs. Similar details continued in the interior of the building with the hotel's lobby opening to a grand staircase leading to an arched balcony as a mezzanine overlooking the ground floor. In plan, the hotel resembles a flying eagle. [Figure 3] The roof pitches needed to satisfy weather conditions of snow and heavy rainfall, and the overall construction was based mostly on local materials, including various types of stone, brick, and timber.
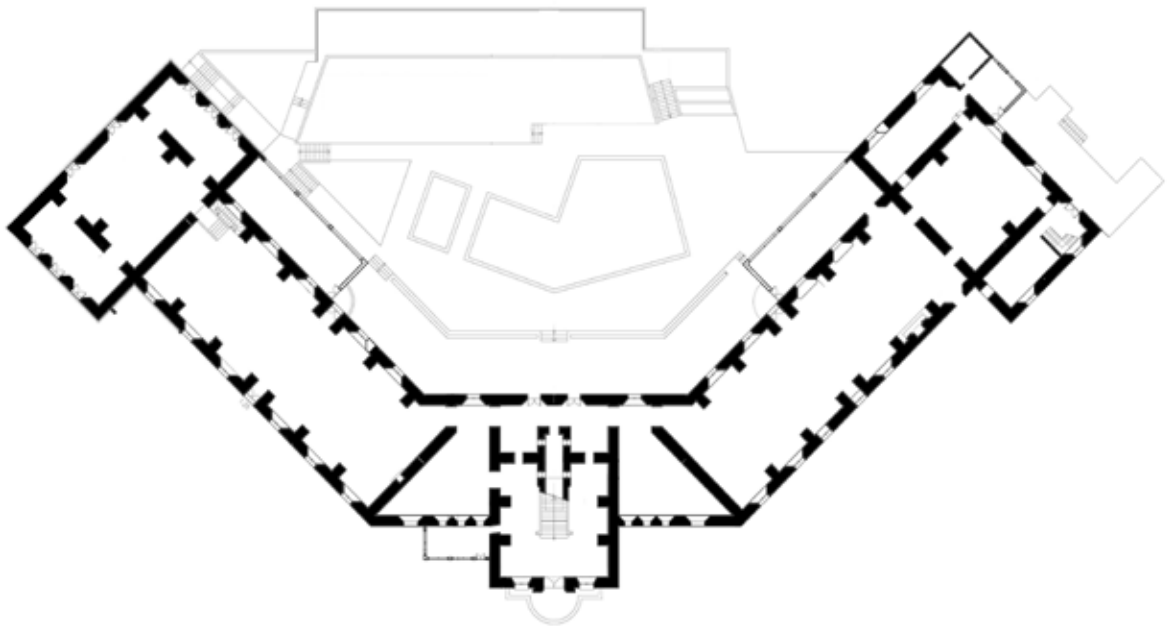
Figure 3. Typical plan of the Berengaria Hotel. Source: U-SHer Project (The plan has been retraced from various drawings).

The hotel's tangible expression of a medieval past and Eurocentric influence demonstrates colonial order and control, as well as the colonised subject's lack of agency. There is, however, an intangible parameter associated with the hotel's development that embraces a communal agency among the colonised population, one that made this otherwise private venture possible. Storr's seeming change of heart over the prevalent reluctance of the British colonial government in terms of tourism development was significantly affected by a broader collective effort of the locals; a 'small act of resistance' as Michael Given would call it, referring to hidden economies that colonised groups often create as a means of reclaiming self-respect and pride (Given, 2004). In the case of the Berengaria Hotel, this resistance can be read through a series of newspaper articles that unfolded the obstacles and postponements of the British rule to grant Kokkalos a planning permit. Interestingly, for the locals, the hotel could assist, not in the development of the 'tourism industry,' as one may assume today. Instead, the Berengaria Hotel was perceived by the locals as important for the development of 'the industry of the foreigners' (η βιομηχανία των ξένων). The semantics of this phrase can be compelling, insinuating the locals' observation that foreign travellers, indeed, benefit the island's finances, and that developments, such as hotels, are necessary to encourage their financial independence from the British rule. For them, the industry of the foreigners was 'the medicine against

poverty and misery,' where the locals, in a somewhat reversed exploitation, could recognise and absorb financial advantages that colonial officials and elite visiting Cyprus could offer. It was this public confrontation of the locals advocating in the press for Kokkalos's venture that granted him approval. Grasped as a cooperative labour project, the hotel's construction received the help of men, women, and children, who perceived the Berengaria Hotel as a place for future employment. Moreover, the hotel was an infrastructure for the community, providing electricity to several houses nearby, and bringing to the village facilities that were lacking, such as telephones (until then they could only use the telegram found in the nearest forest station).

Certainly, the 'industry of the foreigners' as an act of resistance can only be read as temporary, as it soon shifted to what is known today as the tourism industry. Issues of financialisation, commercialisation, and neo-colonial activity are well diffused in projects of tourism development, contradicting the early efforts of collective reaction and cooperative labour for the common benefit. Nevertheless, the development of the Berengaria Hotel can serve as a reminder to the abandoned hotel's impending life: there can only be a thin line separating the industry of the foreigners from the tourism industry, and of the consequences that each may engender.

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FUNDAMENTALS ON INTERVENTION ON HERITAGE AS A RESILIENT STRATEGY.

Keywords

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Now, it is the time to rethink some basic definitions, from the point of view of their operationality. We cannot continue to talk about sustainability as a global objective that we can achieve. Even if partial improvements in the sustainability of certain processes are possible, sustainability as a system will not be achieved. Any statistics consulted support this statement. Alternatively, the reasonable and necessary goal in the current scenario is resilience (Hopkins, 2019). Articulate mechanisms and strategies that allow human societies to overcome the crises we are suffering, and we will suffer. Climate and resource crises of all kinds, arising from the climate emergency or not.

And resilience is a capacity that, in terms of structure and resources, is fundamentally linked to self-sufficiency, which is exactly the opposite virtue to the global trend of recent decades, where the economy has grown along the path of globalization and interdependence.

This reality must be addressed with all possible tools and from all points of view to ensure its success. Since polyhedral changes like those we face, it needs an equally omnidirectional strategy. In this brief reflection we will approach the role of heritage in this global challenge.

There is no need to insist here on the huge importance of re-inhabiting the heritage that has been bequeathed to us as a key strategy for its conservation and integration in the common culture. And we continue to accumulate heritage elements at the rate of an increasingly fast spread of the concept of heritage.

This phenomenon takes place in a society and a world that, as said above, demands urgent sustainability mechanisms or beyond, resilience, facing mutations that may be looming on all orders (Fiksel, 2006). The city we have inherited, and we know as the 'historical city', with arguable terminology, is a palimpsest where the strata of the past form a fundamental part of its physical plot and practically all its memory and

identity. And the city as a system has proved to be the focus of the environmental emergency that we suffer (Hopkins, 2019). Consequently, this crisis will only find a solution if it can be solved from the city itself.

Fortunately, these two previous statements resonate since, with a conscious approach, heritage retrofitting can be a great strategy for resiliency, proportionate to the size and impact of its building stock in a society and culture where the concept of heritage extends and implies a growing number of buildings. This claim is aligned with the fact that rehabilitation is the most sustainable approach in construction (maybe the only one), as we previously assessed (Sánchez-Montañés, 2011). Today is generally accepted that energy and pollution-saving is approximately 60% compared to building another new one, depending on the climate and following the assessments of several authors in local studies (Ayuntamiento de Madrid, 2010). In a clear way, we need to understand built heritage as an ecological resource, the reuse of which is fundamental to determine the measure of resilience of our living environments (as, in a way, Figure 1 intends to express).

Figure 1. A visual metaphor. 2021, Schindler's Ark, Brněnec (CZ)_ Photo: the author

In the current situation we can reformulate the concept of heritage. We may ask what "heritage" means from the point of view of resilience. Our proposal is that heritage, from this approach, means at least two things:

- Heritage is anything that teach us how to deal with scarcity.

- Heritage is anything that saves unnecessary impacts and wastes.

In this second meaning, we could formulate an idea of "impact heritage", in which we assume that something is heritage for the simple fact that its reuse allows us to reduce the footprint of our actions on the environment.

About the first meaning, it is a fact that most of the architecture that we consider heritage has been built in times with some of the conditions we are afraid to suffer in the next future, namely, shortage of energy and resources (Yannas & Weber, 2014). Thus, they embody a great deal of knowledge about managing such conditions that we should be capable to recover and use for the future.

It should be noted that in this redefinition, the concept of "intangible heritage" takes on special value. We are not just referring to material qualities of the built heritage, such as its passive climate behavior. Also of great importance are the customs, habits and lifestyles linked to those moments of the past, in which the inherited city was conceived and in which they took place, as a "way of use" inseparable from it (Sánchez-Montañés & Castilla, 2020). This timeless wisdom must be seen as inherent in tangible heritage.

This comprehensive vision of material and intangible heritage associated with resilience is clearly reflected in the vernacular world. Vernacular architectures and the memory of their use constitute one of the richest sources of information to learn how to live with scarcity and self-sufficiency, so their study has an incomparable value in a situation like the current, from an operational point of view and not merely a cultural one.

Aligned with these previous statements, we can list some basic key points in the intervention:

1. Always propose rehabilitation instead of planning new buildings as resilient strategy, that will lead to the next point.

2. To integrate the environmental potential of heritage in the final proposal. This strategy will add to the process:

3. The "negative material impact" of the reused building. Due to the simple fact of avoiding new material demands.

4. Passive climate performance of the old architecture when it exists. This is not always complete or perfectly adapted to the new use and will need complementary actions, but not its full substitution.

On the other hand, we can't ignore that any type of intervention is not necessarily a sustainable intervention. It needs to be addressed with techniques in terms of materials, energy, and strategic conception that consider the positive environmental impact as a goal, where every intervention becomes an ecological activator of resilience for the society.

This will ensure that the heritage becomes an opportunity to improve our inhabited environment and our ability to harness any possible future with success and entitle us to re-propose new fields for the concept of heritage itself. A concept where the ecological or resilient performance of a reality is the main reason for considering it as a heritage spot that deserves study and care to be a legacy for the future.

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