Heritage of the Ordinary: an Alternative View

Strategies for using cultural heritage as a driver for sustainable urban [re]development in Piraeus

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CONTENTS

1 _ INTRODUCTION

The introductory chapter sets the general context of the work and outlines the main storyline of the thesis. It includes the motivation, objectives and relevance of the project, the analysis of problem field and statement, the research questions and methods to be used and the structure of the thesis project.

This research explores urban strategies for harnessing diverse types of cultural heritage as a capital for sustainable urban development. This thesis adopts the definition of cultural heritage as proposed by VERSCHUURE-STUIP (lecture 2017), that being: *"what a specific group of people considers as (historically) valuable at a specific moment in time. Therefore, heritage is time related, culture related and person-related"*. In the built environment, cultural heritage comprises tangible and intangible cultural features that occur within and through the cityscape (JPI CH 2014). Despite the significant role of heritage in shaping societal cultural identities and promoting local specificity and a sense of belonging, there is a widespread gap in the theoretical and urban planning frameworks related to cultural heritage and methods and strategies to incorporate characteristic elements of the heritage of the ordinary urban environment in urban redevelopment projects.

In the context of this thesis, the term 'ordinary urban environment' refers to urbanized areas that are not in some way characterized as exceptional urban complexes such as historical city centers or traditional settlements. This study focused on the cultural heritage of the ordinary because it is an integral part of the urban space and as such it represents a significant resource for its sustainable and prosperous development. The ordinary urban environment may include individual pieces of exceptional value but the work intends to highlight: (1) that the ordinary is essential in valuing the exceptional, in the same way that the exceptions provide the conditions to interpret fully the rule and (2) that the ordinary urban environment holds a lot more cultural heritage than it is officially recognized.

In order to stress the significance of ordinary in contrast to its limited recognition, the detailed analysis of the concept of cultural heritage and its content in the case study of Piraeus periphery followed the distinction between official and unofficial cultural heritage. Official cultural heritage includes officially declared monuments, by both national and international legitimized agencies, and usually reflects elements of exceptional historical, cultural and architectural character and value. Unofficial cultural heritage encompasses significant testimonies of past generations and historical processes that find their physical expression as structural elements of the ordinary urban environment, despite not being officially recognized as such.

This study puts forward the argument that sustainable urban development can be achieved by taking advantage of cultural heritage as a driver of urban redevelopment and by implementing strategies that synergize the cultural, social, environmental and economic spheres of sustainability, as suggested by the *Cultural Heritage Counts for Europe* report (GIRAUD-LABALTE et al. 2015). In this vein, this work adopts the understanding of sustainable development as stated in the Brundtland report (KEEBLE 1988:16), as any form of *"development that meets the needs of the present without compromising the ability of future generations to meet their own needs"*. Yet, GIRARDET (2013) stresses that striving only for sustainable development is not enough nowadays. New forms of *"regenerative development"* are fundamental in order to achieve urban development that restores the *"relationship between humanity and the ecosystems from which we draw resources for our sustenance"* rather than *"just sustaining them (the ecosystems) in a degraded condition"* (GIRARDET 2013).

In order to emphasize the spatial dimension and potential of cultural heritage for sustainable urban development, this work proposes the additional sphere of 'physical sustainability' to the four-layer understanding of sustainable urban development (GIRAUD-LABALTE et al. 2015). This work argues that physical attributes of cultural heritage elements play a crucial role in understanding a 'place', and are vital to any heritage conservation policy and sustainable urban redevelopment plan.

From a literature review on mainstream cultural heritage theories and on reference projects which implemented strategies towards heritage protection and urban development, a range of spatial characteristics, conditions or attributes necessary to the success of cultural heritage driven developments were identified. This work focuses on the potential role of cultural heritage expressions of the ordinary life in framing strategies of heritage protection and sustainable urban development. Therefore, the existence of important testimonies of ordinary life, which are not considered heritage, was emphasized throughout the research. A range of different methods were used in order to identify the spatial elements that embody these testimonies, their cultural relevance and how they can be incorporated in integral urban development plans.

In order to test the validity of the arguments proposed, a research by design was conducted on the peripheral unit of Piraeus[1], in the metropolitan area of Athens. During the 1920s and the 1960s, the city witnessed a massive urban transformation. In 1922, a massive immigration influx following the destruction of Asia Minor resulted in a demographic growth from c.135.000 inhabitant in 1920 to a c.319.000 inhabitant in 1928 (PontosNews 2016). Urban expansions took place without any special regard towards existing cultural heritage expressions, both official and unofficial. As a result, valuable testimonies of past generations were irreversibly lost in the process. Nonetheless, the same approach continues to steer urban development in Piraeus to today, leading to a densely built urban area with considerable amount of building stock of heritage value being either neglected or lost to redevelopment projects. In this

[1] See next page for clarifications on the name locations and scales of the case study area.

1. Aerial photo of Athens metropolitan area, which is part of Attica province. The so called Attica basin is the continuous, densely urbanized area that lies between the four mountains of Hymettus, Penteli, Parnitha and Egaleo (Aegaleo).

☐ The square indicates the case study area of Piraeus; this is the area of analysis at regional scale.

As a clarification, Piraeus exists as a city and a municipality but the same name is also used for an area of prefecture jurisdiction. In Greek it is called "peripheral unit of Piraeus" and comprises the following five municipalities: Piraeus, Perama, Drapetsona-Keratsini, Nikaia-Agios Ioannis Rentis and Korydallos (indicated in fig.2).

In the context of this project, the name locations will be used as following:

Piraeus = the formation of city and port, in different spatial configurations through various historical periods.

Periphery of Piraeus = the peripheral unit of five municipalities

2. Peripheral unit of Piraeus- zoom in of image 1. The hatched area represents the city center of Piraeus.

☐ The square indicates the area of analysis at neighborhood scale. It is an area of twenty blocks in Agios Ioannis Rentis

City of Piraeus = the municipality area of Piraeus
Piraeus city center = the hatched area
Agios Ioannis Rentis = the area of municipality of Agios Ioannis Rentis, where the design zoom-in case belongs
Neighborhood area = design area = Apollon neighborhood = the zoom-in case where I apply the guiding principles to explore their applicability and the possible spatial transformations

context, this work argues that the embedded characteristics of the existing built environment present an opportunity to introduce transformations necessary for further urban developments in Piraeus periphery without disrupting the city space, its flows and its spatial and social cohesion, and mainly, without further endangering the preservation of cultural legacies of everyday life.

This paper is a first step in highlighting how, in the context of cityscapes, spatial qualities that compose the cultural heritage of ordinary life can be used to tackle pressing sustainability issues. The use of cultural heritage as a conductor of urban development provides conditions to ensure the preservation of relevant testimonies of past generations and, therefore, of important artifacts and customs related to local identity. Additionally, the understanding of urban development through the perspective of cultural heritage preservation and development can create positive impact on the broader sustainability framework. This work does not propose the approach to urban development through the lenses of cultural heritage as an antidote to all sustainability challenges faced by contemporary urban territories. Rather, this work proposes that a systematic identification of cultural heritage characteristics can be used as an alternative capital for sustainable urban transformations.

1.2 _ Aim and Vision

The importance of cultural heritage has two dimensions. From a theoretical and philosophical point of view, it provides a connection to socio-cultural values that form the backbone of contemporary (and future) societies. From a practical point of view, most urban spaces inside the European continent have been densely built and are gradually stepping into the sphere of heritage. These urban areas represent the embodiment of customs, beliefs and historical processes of ordinary life that have defined a multitude of contemporary societal cultures. Cultural heritage, therefore, occupies a significant percentage of the European urban landscape. However, due to the recurrent lack of available urban land for new developments, cultural heritage testimonies of ordinary life have been perceived as one of the few available spaces within cities for redevelopment.

This work aimed at pinpointing the latent potential of cultural heritage as a driver of urban redevelopments focused on sustainability. It is acknowledged that having potential to act as a driver for sustainable urban development does not equal to having the solution for every sustainability challenge, but translates into offering a variety of possibilities. Cultural heritage of the ordinary urban environment takes on the role of an alternative spatial resource to deal with the urban transformation processes. Undeniably, international institutions

such as UNESCO and the European Union have significantly contributed to the protection of cultural heritage. However, in practice, there is a worrisome lack of recognition of alternative cultural heritage forms, which do not fit into the commonly accepted testimonies of few eminent and influential figures; such as royal families or personages of ancient history.

This work e project embraced and proposed the vision to cultivate and establish a holistic approach to cultural heritage, taking into consideration not only diffusely recognized official heritage forms, but also significant urban expressions of the daily life, so that coming generations use in a better, more efficient and respectful way what by then will also be heritage.

The proposed strategy for the periphery of Piraeus focuses on cultural heritage forms related to ordinary people and life, for it has become evident that safeguarding heritage should surpass the conservation and preservation of monuments and emblematic buildings (UNESCO 2011a&b). It is essential to adopt an approach toward cultural heritage that *"moves beyond the preservation of the physical environment, and focuses on the entire human environment with all of its tangible and intangible qualities"* (UNESCO 2011a:5) and that treats cultural heritage as part of the daily social, cultural and economic processes, rather than just an untouchable exhibit behind a glass. Hence, this work aimed at putting forward the need to detach cultural heritage from the notion of museumification and to use it as a resource to re-interpret urban territories. Finally, this work aimed to contribute to the debate on the content of cultural heritage and its potential contribution to urban sustainability.

1.3 _ Scientific and Societal Relevance

This thesis referred to a broader context, which consists of a shifting approach towards cultural heritage *"from a preservationist and object focused to an area-based and development-oriented activity"* (JANSSEN 2014:622). This work was elaborated in alignment with the ongoing academic discourse on cultural heritage, which brings to surface a reevaluation of what is cultural heritage, its value and its impact under a new multifaceted and layered perspective.

This work argued that cultural heritage comprises the tangible elements of the ordinary urban environment where the intangible can take place or it is expressed. These elements have influenced or influence the ordinary life in such a powerful way that they become characteristic of the urban space and urban life. However, the work also acknowledged that the concept of cultural heritage of the ordinary could inflate to such an extent that literally everything would be considered as cultural heritage and thus in need of special treatment. As a consequence, the intrinsic flexibility of urban space would be endangered

and along with it innumerable opportunities to create new layers of cultural heritage of the ordinary. Then, how can a balance between heritage protection and urban development be found within cities with a significant amount of cultural heritage?

In the specific context of Greece, society and cultural heritage have a peculiar relationship, in which the appreciation of a certain part of the history grows at the expense of the wider cultural capital. Thus, important testimonies of local collective history and memory are threatened by oblivion and extinction. The demolition of refugees' settlements of 1922 in the post-war decades can be pinpointed as a relevant example of cultural loss. As a result, a part of national history was lost and important national figures and their stories were forgotten.

In this context, this work aimed at promoting a platform to challenge not only the current perception on what cultural heritage is, but also on why it should be preserved. More importantly, it aimed at exploring methods on how to preserve cultural heritage in urban environments, without jeopardizing the city's capacity to adapt itself to new demands and challenges. The subject of this thesis also relates to the European Post-Masters in Urbanism (EMU) research agenda regarding the cultural landscapes and post-industrial sites.

1.4 _ Problem Field and Statement

1.4.a_ International context

The growing international research interest on the impact of cultural heritage on all domains of public and private life certifies that heritage can have a strong impact on urban environments, local and global economies and societies (GIRAUD-LABALTE et al. 2015). At the same time, the definition of the European Commission for cultural heritage as *"natural, built and archaeological sites; museums; monuments, artworks; historic cities; literary, musical, and audiovisual works, and the knowledge, practices and traditions of European citizens"* (VERNET & GUNSON 2014) reveals a new approach that encompasses heritage related to significant testimonies of the past and the present of all citizens and the ordinary life. This approach promotes cultural diversity and shifts away from the unidirectional perception of heritage, which addressed a restricted part of culture and only the testimony of a handful percentage of the world's population (UNESCO 2001b).

Nevertheless, as highlighted by the EUROBAROMETER reports (2011), the perception of cultural heritage by European citizens is solely focused on restoration, museumification and tourism. Cultural heritage and environmental qualities seem to be the driving forces in picking a touristic destination (EUROBAROMETER 2011) while in everyday life, *"lack of interest, lack of time and expense are the main barriers to participation in cultural activities"*. Only a minority of 13% of EU citizens has participated in cultural activities such as dance, singing, performance, visual arts and theatre, among others, while roughly 56% use Internet for cultural purposes (EUROBAROMETER 2013).

In an effort to harness cultural heritage as a resource for urban (re) development, international institutions, such as the European Commission and UNESCO, stress the need for interdisciplinary scientific research with the aim of decoding the potentials and understanding the possible risks and impacts of cultural heritage as an urban regeneration driver (GIRAUD-LABALTE et al. 2015). Within the European context, the European Union has embraced the prioritization of programs that use cultural heritage as a driving force in future developments regarding European countries and sustainability issues (INHERIT 2007).

1.4.b_ National context

Greece is famous for the archaeological sites and the idyllic summer landscape; features that frame the Greek national branding. However, the country possesses a multitude of tangible and intangible expressions of its rich cultural heritage, which often are not recognized and valued by Greek society and government. These expressions include a great variation of landscapes and natural ecosystems, as well as prehistoric sites, byzantine churches and settlements, vernacular architecture, buildings of neoclassical, art-deco, modern, postmodern and contemporary architecture, industrial complexes, folk art, and places related to the intense political and social transformations of 20th century (fig.3, 4). The city has evolved as a spatial patchwork, where each patch has its own reference point(s).

However, the understanding of cultural heritage and its potential are commonly restricted to the limits of tourism. The country is devoid of a holistic and integrated body of urban and economic strategies related to cultural management. The lack of acknowledgment and the de-prioritization of the cultural sector in terms of funding lead to the fast and often irreversible degradation of cultural heritage artifacts and sites. The increasing abandonment of the overall urban environment does not create conditions for the integration of cultural heritage in the already built areas and at the same time it leads to urban sprawl. Therefore, the danger of cultural losses is now urgent more than ever. `

The global and Greek national contexts of economic crisis, resource depletion, environmental hazards and urban expansion pressures put forward the need to consider cultural heritage as a key resource in the urban ecosystem. In addition to being a potential capital for redevelopments in consolidated urban centers,

3. (left) Diagrammatic representation of the historical layers identified in Athens and Piraeus. Some are defined by international movements in architecture and urbanism while others relate to the history of the modern Greek state and its evolution since the 1830s. Anyhow, it is a sad yet expected observation that not all layers are given similar attention. Unfortunately, cultural heritage interests frequently focus on certain periods of history instead of adopting a more holistic and integrated approach.
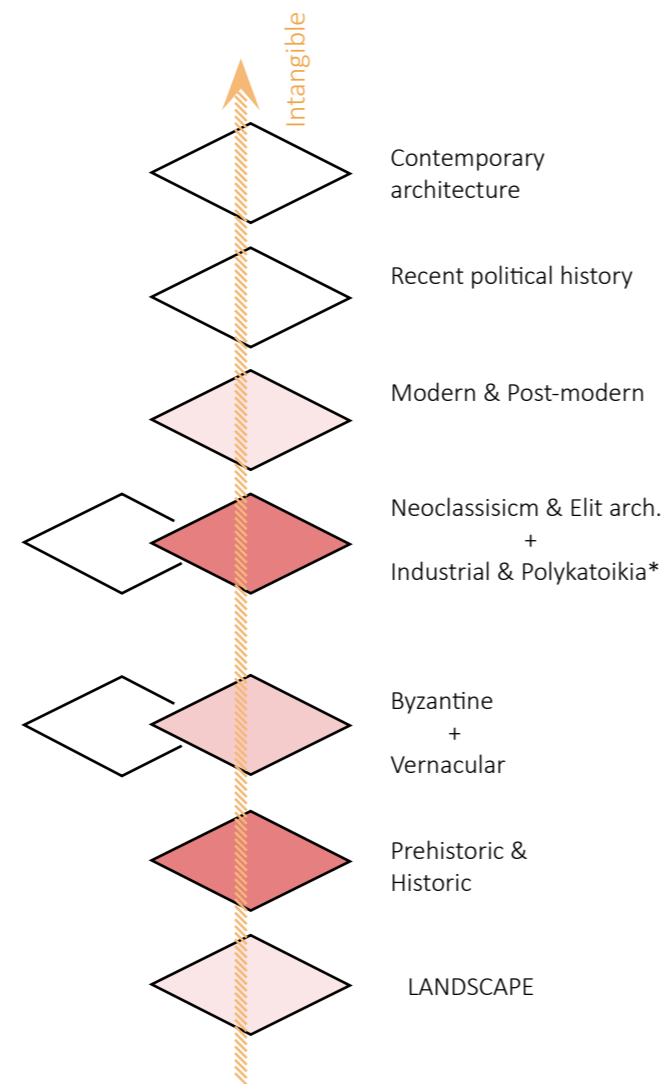
4. (down) Diagrammatic representation of different time periods of building and urbanization activity in Greece and Athens- Pireaus. The length of boxes is not representative of the time duration. The layers indicate the palimpsest character of the urban space and the current focus on specific heritage areas.

Intangible

Contemporary architecture

Recent political history

Modern & Post-modern

Neoclassisicm & Elit arch.
+
Industrial & Polykatoikia*

Byzantine
+
Vernacular

Prehistoric & Historic

LANDSCAPE

5a, b. *Syntagma* square (parliament square of Athens) at the end of the 19th century and on 2016

Source: Mpiris (1999) and personal archive

Sources fig.6: //www.uoa.gr/to-panepistimio/ yphresies-panepisthmiakes-monades/kapnikarea. html
https://chronontoulapo.wordpress. com/2014/03/19/...
http://www.gtp.gr/MGfiles/location/im- age4878[1136].jpg

6a, b, c. The historical church of *Kapnikarea* in Athens in the ottoman period, beginning of 20th century and today. It was built in the 11th century and almost demolished in 1834 to implement the new plan of Athens of Kleanthis and Schaubert. The changing landscape around the monuments is characteristic of the urban transformation process.

From paleolithic up to Minoan civilization

From archaic up to hellenistic period

Vernacular architecture	Polykatoikia *(standard multi-storey residential building)*

Prehistoric	Historic	Roman	Byzantine	Ottoman occupation	Neoclassisim	Arc-deco & elit	Modernism	Post-modernism	World wars & German occupation	Post-war	Dictatorship	Political reformation	Contemporary	Redevelopment plans

Industrial

432
minimum

CULTURAL ASSOCIATIONS
(private and civic)

68
minimum

PUBLIC BUREAU
(under the Ministry of Culture and Sports)

7. The top-down organization of the public sector as well as the unclear areas of jurisdiction between them complicates any process and action concerning cultural heritage. And even though public awareness is quite strong, it is also expressed in a fragmented way.

8a, b. The Technological Cultural park of Lavrio in the lpace of the old mine industry before and after the regeneration project.
Source:
http://www.digital-camera.gr/index.php?option=photos&action=view&photo_id=68701 | http://tropaio-news.gr/?p=5065

cultural heritage stands as testimonies and palimpsests of the evolution of a place and its people through time (fig.5, 6). This thesis deals with official and unofficial cultural heritage of the built environment, which are translated into not only elements of exceptional value and character, but also structural and characteristic elements of the ordinary urban environment embedded in the city. A combination of a diverse range of cultural heritage forms, urban morphological configurations and a set of manifold urban challenges and needs present an opportunity to redirect urban regeneration tactics.

In Greece, the protection, use and promotion of culture and heritage lie primarily under the jurisdiction of two ministries, namely the Ministry of Culture and Sports and the Ministry of Environment. A vast network of public bureau and organizations manage and monitor an extensive number of excavations and restorations. In an effort to actively modernize its approach and capitalize on the multifaceted advantages of cultural heritage, the state follows international paradigms of redevelopment and aligns its operations with the goals and standards set by the European Commission. Thus, these institutions organize and manage events aimed at increasing the awareness and participation of local communities to issues related to cultural heritage (fig. 7). Parallel to that, an equally big number of civic society associations and private foundations foster the appreciation, production and dissemination of arts and traditions of different regions through the gathering and display of historical and archival material and the organization of various cultural events and learning activities, such as film screenings, classes of folk dances or crafting techniques, festivities and events.

Despite the deeply rooted association of cultural heritage with tourism in the general perception of Greek society and on the actions and policies fostered by the State, there has been an ongoing shift in architectural and urbanism projects seeking to safeguard, contain and promote cultural heritage. This change is largely due to European equivalents that set successful precedents and the academic society, especially architects, urbanists and archaeologists who advocate a more holistic approach toward the country's cultural heritage and support actively the concept of heritage led urban regeneration.

Over the past 20 years, several such projects of architectural and urbanism interest have been discussed and often implemented throughout Greece. A clear conflict between good ideas, unclear and incoherent legal framework and scarcity of economic resources has led to three categories of regeneration projects worth mentioning: successful, unsuccessful and never realized (despite their dynamics and potentials).

Examples of successful regeneration projects in the national context encompass: i) the New Acropolis Museum and the interest it has triggered in its surrounding area, ii) the restoration and reuse of the old gas industry in the *Gazi-Keramikos* area, iii) the Environmental Awareness park *'Antonis Tritsis'*, iv) the Technological Cultural park of *Lavrio* (fig. 8a, b), v) the new facilities of the National Opera and National Library in *Phaleron*, and vi) the waterfront redevelopment of *Thessaloniki*.

Unsuccessful regeneration projects are illustrated by: i) the vast amount of abandoned historical and industrial buildings in all major Greek cities, ii) the backfired efforts to redevelop Omonoia and Koumoundourou square[2], and iii) the increasing gentrification and degradation processes of neighborhoods around the historical center of Athens due to beautification approaches and large investment in leisure, entertainment and commerce, as in the areas of Plaka and Metaxourgio (Balaoura 2015). Last but not least, there is a series of proposals that [would] offer a completely altered image and experience of the city but they were never realized. They became subject of intense controversy and remained on papers. *Re-think Athens* and the redevelopment of *Elliniko* and *Faliron* waterfronts are the most representative and massively featured by the media (Mpota 2016).

Regardless of their implementation success, these regeneration projects indicate a shift, in Greece, towards preserving and harnessing cultural heritage of the ordinary urban environment, alongside the protection of exceptional architectural and urbanistic artifacts.

[2] These two projects proved to be inadequately planned in relation to the everyday life and the urban lifestyle. A mix of conditions such as the unmet promises for environmental upgrading and commercial development, the economic crisis and the changing social and spatial dynamics led to opposite results than expected.

PROVINCE
ATTICA

REGIONS
ATTICA BASIN /
ATHENS METROPOLITAN AREA

PERIPHERAL UNITS
ATHENS
PIRAEUS

MUNICIPALITIES
PIRAEUS
DRAPETSONA- KERATSINI
KORYDALLOS
NIKEA- RENDI
PERAMA
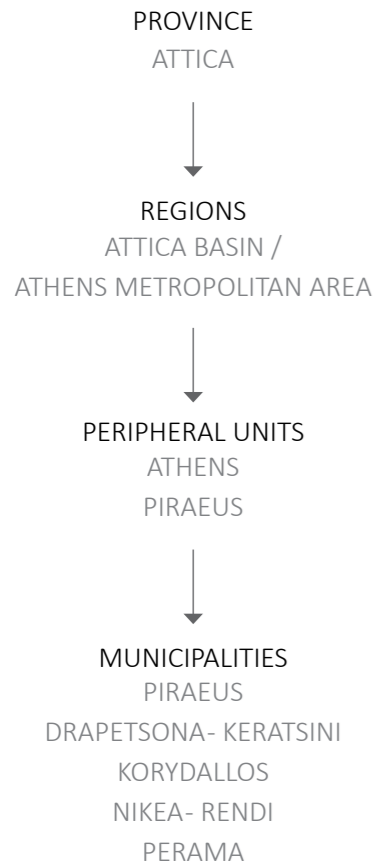
9. Administrative and spatial division related to the area of study.

The metropolitan area of Athens is a densely built and populated basin of about 4 million permanent inhabitants, spanning 3,808 km2 within Attica region (ATTICA Region, 2017). Within the metropolitan area of Athens, the periphery of Piraeus occupies a 50.42 km2 area and has a population of 448.997 residents (Hellenic Statistical Authority, census 2011). The area also presents a rich cultural heritage landscape, massively related to ordinary life; such as industrial complexes and refugee housing.

Piraeus has been the port city of Athens since ancient times. Despite being paramount to Athens' economic prosperity, Piraeus has always legged behind the capital regarding urban and economic development. In the Modern Greek state, Piraeus' history interweaves with industrialization and migrant communities created by refugees of Asia Minor or economic migrants from the Greek countryside (mainland and islands). Even today, Piraeus responds once again to the contemporary refugee crisis by opening its gates to refugees and immigrants from the Middle East.

The periphery of Piraeus presents a vast cultural heritage ensemble. The city also has a promising economy, with strong touristic, maritime and logistics industries. It is officially considered a second metropolitan center (after Athens). More importantly to the body of knowledge of this work, Piraeus represents the reference point in the daily life and collective memory of the whole western part of the Attica urban complex. The latter is of paramount significance due to the consistent economic and spatial inequalities between east and west in the basin of Attica, which have become an integral part of its physiognomy (Pantazis & Psiharis 2016).

During the past decade, it has become evident that the building stock in the majority of Greek cities is a lot bigger than needed and thus it cannot be sustained economically or environmentally (Tripodakis 2011). The economic crisis and the gradual deconstruction of the social welfare system destabilized the real estate market and the building industry through the decline of citizens' economic power. The prevailing building system has proven to be economically and environmentally unsustainable, due to various reasons; including its building technology and the unplanned, frequently unlicensed urban expansion. The repetition of multi-storey apartment building of low aesthetic quality and environmental value has resulted in loss of identity and sense of belonging. Severe traffic and congestion problems deteriorate the air and sound pollution while the scarce public spaces function as unexpected oasis rather than structural part of the city structure.

The periphery of Piraeus is a dense urban tissue, which struggles with multiple urban and environmental challenges. The city prioritizes private mobility models, lacks an organized network of public spaces and social facilities and

is spatially segregated from its waterfront and the surrounding mountain formations. Additionally, the urbanization model implemented in the city has led to a range of cultural heritage artifacts and ensembles being either ignored or destroyed. More importantly, the understanding of cultural heritage as a re-development resource remains largely unexplored in the city. Therefore, the urban transformations have been not only immense but also largely unsustainable, in ways that consume the natural environment and endanger the future development of the city.

Within the national urban context of Greece, cultural heritage of the ordinary urban environment remains unrecognized. Parallel, urban transformations take place at a fast pace, leading to unsustainable urban developments and urban environments with fragmented identities. Alternative methods and strategies focused on harnessing the potential character of cultural heritage sites for urban redevelopments are necessary, in order to promote sustainable cities and preserve important testimonies of local identity.

Problem statement

1.5 _ Methodology

In order to illustrate how the use of official and unofficial cultural heritage as a capital can provide solutions for different kinds of sustainability challenges in the urban scape, this work elaborated on a fivefold methodological framework. The first step addressed what cultural heritage is in the built environment and which spatial elements and characteristics compose the cultural heritage landscape of Piraeus. The second step stressed the definition of sustainable urban development and what are the challenges and demands of the Piraeus urban area considering the five layers of sustainability[3]. The third step enabled the combination of sustainable urban development and cultural heritage concepts. This step also indicated how the above mentioned characteristics of cultural heritage of the built environment can be combined with local demands regarding sustainable urban development in a set of principles. The fourth step demonstrated, in a selected neighborhood area of Piraeus, possible spatial outcomes of the proposed principles as site-specific solutions. The fifth and final step discussed the role of governance in the protection and management of cultural heritage.

A through-scale approach was applied as a method to understand the complex

[3] Based on the four-layer approach of *Cultural Heritage Counts for Europe report* (CHCfE, GIRAUD-LABALTE et al. 2015) which recognizes that sustainable development occurs when the domains of cultural, social, economic and environmental sustainability are considered together, the notion of physical sustainability have been introduced as a fifth layer in order to stress the importance of certain physical conditions in achieving sustainable urban development. This matter will be further elaborated in chapter 3.

social, economic and environmental (both natural and anthropic) dynamics, which take place in the Piraeus periphery urban scape. The analysis of Piraeus at a regional scale, from both heritage and sustainability perspectives, led to a set of five principles: i) to develop a network of centralities, ii) to integrate culture in everyday life iii) to develop multi-scale green networks, iv) to establish a functional system of social amenities, and v) to foster multi-scale productive landscapes. At a neighborhood scale, the analysis of the *Agios Ioannis Rentis* area explored the applicability and spatial outcomes of the implementation of the proposed general principles. The proposed design interventions reflected the initial argument of this work; that the various expressions of cultural heritage in the built environment offer diverse possibilities to tackle urban sustainability issues. The literature review regarding governance at both national and regional scale resulted in two basic recommendations with the aim to point to possible directions to overcome the complications of the current governance model. The creation of a national archive of cultural heritage and the implementation of pilot projects were suggested as potential opportunities to address the major challenges of unclear jurisdictions over the management of cultural heritage, inadequate legal framework and power centralization in decision-making. The final output of this study was a strategy consisting of three parts, namely the guiding principles, the design solutions and the governance arrangements.

Research questions and methods

Within this context, this study proposed the following research questions:

In the spatial transformation processes of the urban environment, how can the cultural heritage of the built environment be maintained and harnessed towards sustainable development?

What kind of strategies are necessary to use the diverse cultural heritage of the ordinary urban environment as a physical and conceptual capital to achieve sustainable urban development?

To answer the main research questions, additional sub questions needed to be investigated. In order to explore the spatial applicability and outcomes of the proposed arguments and findings of this research, the periphery area of Piraeus was adopted as a case study. The sub questions and methods used to explore them are described below:

1. How can we define spatially the cultural heritage of the ordinary life and ordinary urban environment in the periphery of Piraeus?

   i) Mapping based on official databases
   ii) Literature review, including legislative, historical and academic material
   iii) Historical research, in order to establish the diversity of cultural landscape

2. Which are the main challenges related to elements and issues of sustainable urban development in the periphery of Piraeus?

   i) layered mapping based on the relevant theoretical framework
   ii) statistical data review.

3. How can physical elements of the built environment that characterize local cultural heritage be addressed spatially in order to respond to local sustainability challenges?

   i) reference projects' analysis
   ii) research by design: identification of cultural heritage and sustainability elements at different urban scales
   iii) design development: principles at regional scale, and application of the suggested principles at a neighbourhood scale.

4. How is cultural heritage addressed regarding governance and planning in the context of Greece and Piraeus periphery?

   i) literature review
   ii) interviews
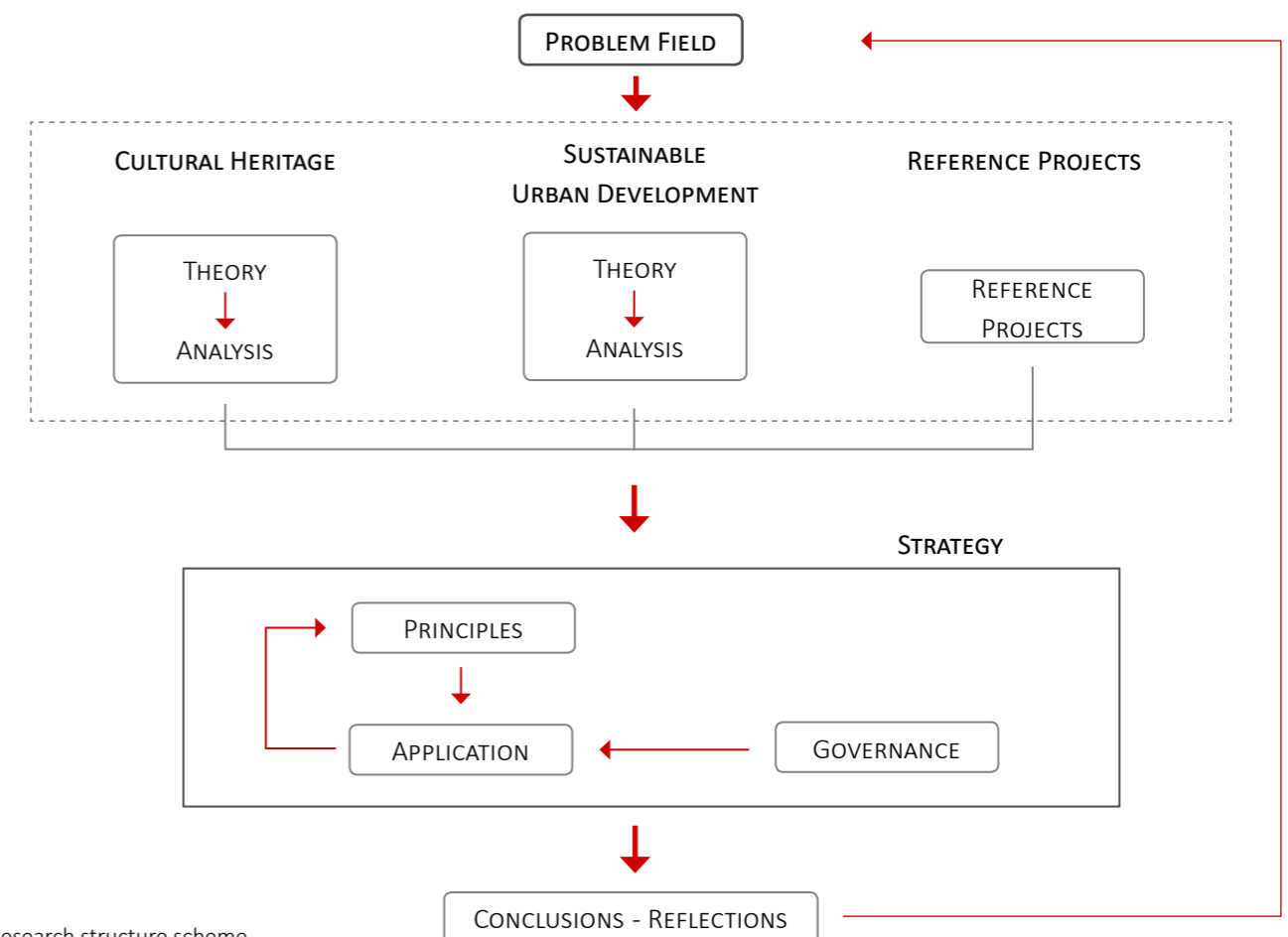
10. Research structure scheme.
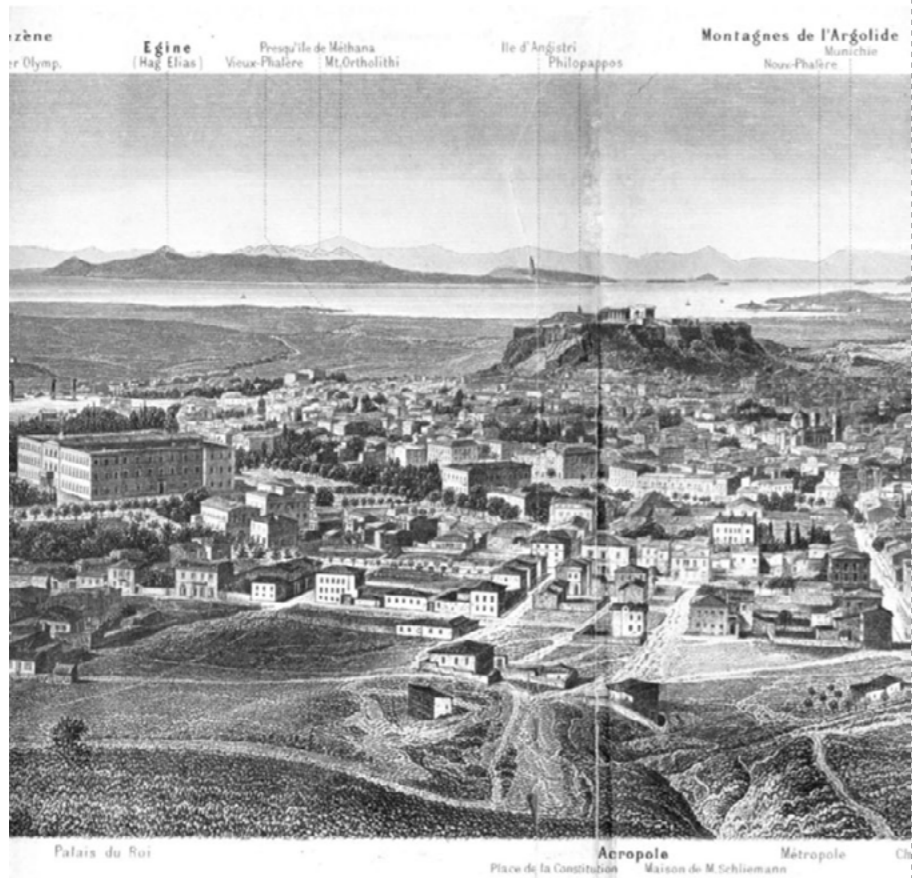
11a, b. Panoramic view of Athens' basin from Lycabettus hill in 1894 and nowadays (2013). The topography shaped the city and vice versa. Within one hundred years, the urban transformation has erased certain landmarks but also created new ones.

Sources: *K. Baedeker, Greece, Handbook for Travellers, Second Revised Edition, Leipzig 1894. [Online] Available from http://www.athenssocialatlas.gr/*

https://de.wikipedia.org/wiki/Lykabettus

https://commons.wikimedia.org/wiki/File:Attica_06-13_Athens_40_View_from_Lycabettus.jpg
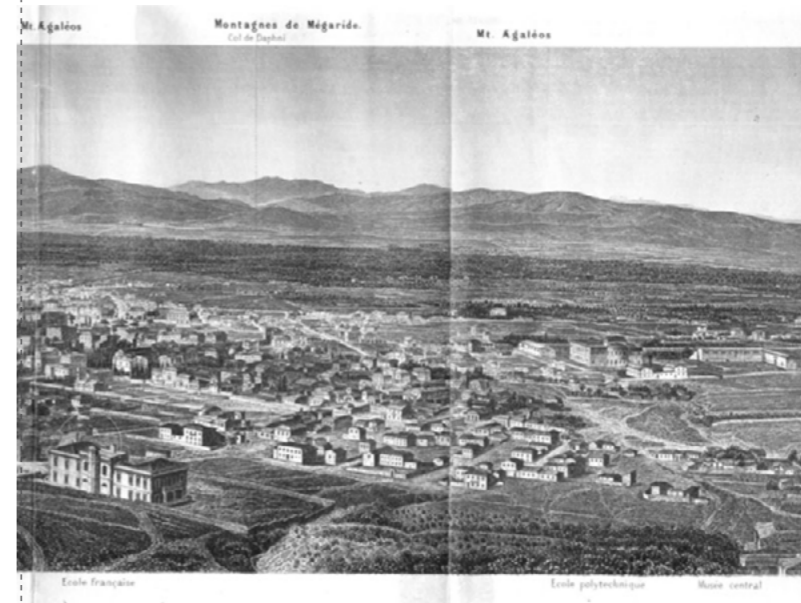
the Parliament   *Phaleron* bay   Acropolis   *Munichia (*hill of *kastella)*   Pireaus   *Perama* shipyards   *Gazi-Keramikos*   *Eleonas*   Mountain Egaleo
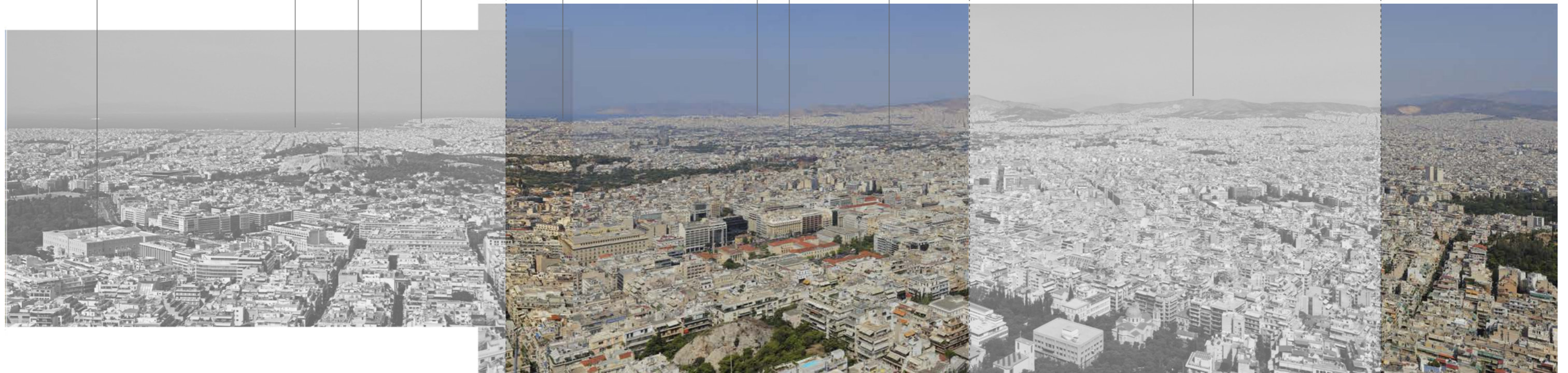
2 _ CULTURAL HERITAGE

This chapter addresses the concept of cultural heritage in the built environment and explores methods to correlate the theoretical definition of cultural heritage and a systematic identification of the spatial expression of cultural heritage in urban landscapes. As presented previously on chapter 1, the periphery of Piraeus was taken as a case study for the development of a research by design approach. The analysis presented, based itself on the distinction of official and unofficial cultural heritage, as proposed by RODNEY (2010).

The main goal of this chapter was to highlight that specific elements of the ordinary urban environment, which are not officially declared heritage, hold important historical value and have a structural role on the configuration of the urban space. This work argued that these tangible heritage should be recognized as cultural heritage, in order to protect important cultural and social testimonies of the Greek history.

"A country without a past has the emptiness of a barren continent, and a city without old buildings is like a man without a memory."

Jenkins, S. (2013) Liverpool: the three graces.
In Jenkins, S. (2013) England's 100 best views.

The quote by the British architect Graeme Shankland highlights the valuable role of cultural heritage to contemporary cities. Cultural heritage exists to remind us of who we are, where we come from and what we used to be. More importantly, cultural heritage is a testament of past knowledge and culture, which can aid in the imagination of possible, suitable and unwanted futures. However, despite its relevance and broad scope, the commonly widespread notion of cultural heritage as just 'old buildings' represents a disseminated, simplified and misleading perception of what heritage is. This section refers not only to the definition of heritage adopted in this work, but also to goals and principles set by international organizations, and diverse paradigms regarding the protection of cultural heritage and its integration in urban planning.

Based on a description of VERSCHUURE-STUIP (2017), heritage is *"what a specific group of people considers as (historically) valuable at a specific moment in time. Therefore, heritage is time related, culture related and person-related".* The importance of these parameters become more explicit when talking about cultural sustainability. Although the term is quite recent and without a commonly accepted definition, it could refer to either the survival of a culture through time or to the perception of sustainability in a certain cultural framework. Hence, time, culture (of a place or community) and personal attitudes affect what is considered heritage.

Within the theoretical framework of this research, cultural heritage specifies a spectrum in which culture and tradition build an understanding of heritage based on local history and the relationships between people and place. From the 1990s on, cultural heritage has expanded as a concept and currently englobes a diversity of elements, processes and customs (GIRAUD-LABALTE et al. 2015 & LABUHN & LUITEN 2015). At the same time, heritage has become more evident and accessible to the general public, leading to its understanding, appreciation and, eventually, to people's involvement in relevant decision making processes regarding heritage protection (LABUHN & LUITEN 2015).

However, despite the growing debate regarding cultural heritage, its relevance and importance of its protection, this work draws attention to two threatening misconceptions related to heritage. The first misconception relates to heritage being considered an unnecessary investment. This belief results in potential heritage being underused or sacrificed in the name of economic development profitability (Belavilas 2011). The second relates to the perpetual use of conventional tactics such restoration as the main way to work with cultural heritage in the built environment. Yet these tendencies are gradually changing. LABUHN & LUITEN (2015:120) mention that *"On the one hand [...] traditional strategies like conservation and restoration became pragmatically and economically impossible. On the other hand, [...] its demolition (cultural heritage) became ethically, politically and aesthetically unthinkable".* And indeed, an ever growing number of urban redevelopment projects give a central role to diverse forms of cultural heritage and try to find alternative ways to manage it.

The perception of cultural heritage sites as elements of special quality that add value to urban plans has evolved into the acknowledgment of heritage as an integral part of the urban and natural landscapes (BLOEMERS et al. 2010 cited by JANSSEN 2014). Consequently, scholars and politicians are exploring innovative ways of cultural heritage management, focused on the possibility of combining protection and conservation with rehabilitation and redefinition in both conceptual and practical levels (GIRAUD-LABALTE et al. 2015 & JPI 2014). Moreover, the understanding of heritage as a capital for urban development has gained attention; especially in decision making processes regarding brownfield reclamation and reuse of historical buildings and sites (JPI 2014). In these cases, heritage can be used as an asset in tackling issues such as complexity and adaptation.

Nevertheless, a necessary alternative approach to cultural heritage management includes not only recognizing the significance of heritage and its potentials in stimulating urban development, but also redefining the content of the term itself. A milestone in that direction has been the recommendations and projects of UNESCO (2011) regarding the Historic Urban Landscape as *'the urban area understood as the result of a historic layering of cultural and natural values and attributes, extending beyond the notion of "historic centre" or "ensemble" to include the broader urban context and its geographical setting'.* This approach set in focus the quality of human environment, its dynamic, diverse and historical character; as well as its sustainability in terms of socioeconomic and physical transformations.

Considering urban heritage as a *'social, cultural and economic asset for the development of cities'*, the Historic Urban Landscape approach intends to tackle the implications of climate change, extensive urbanization, market exploitation and mass tourism on historic cities. The continuity of these historic cities in time and space has equipped them with an abundance of cultural heritage that can become the catalyst of socioeconomic development and can initiate a circle of respectful interventions, bringing in their turn revenues to sustain maintenance and improvement of heritage sites. In this context, UNESCO defines seven main principles for activating the Historic Urban Landscape approach, those being: i) full assessment of the city's natural, cultural and human resources;

ii) participatory planning; iii) vulnerability assessment; iv) integration of urban heritage values; v) prioritization of conservation and development policies and actions; vi) appropriate (public-private) partnerships; and vii) mechanisms for the coordination of the various activities between different actors.

In a similar direction, the Joint Program Initiative of the European Commission (JPI 2014) has set a strategic research agenda related to cultural heritage in Europe. The report offers a more inclusive and detailed definition of cultural heritage as well as four categories of research priorities. It reflects all the advancements of the past decades in approaching cultural heritage and its development in the urban environment and takes a step forward in including the rapidly growing digital world in the spectrum of cultural creation and (potentially) heritage. The definition and research priorities are schematically represented in fig. 12.

This thesis embraced the broader definition of cultural heritage given by the JPI (2014), which comprises tangible and intangible cultural features of the city scape (fig. 13). The analysis presented in the following sections sought to define the spatial expression of cultural heritage in the periphery area of Piraeus and the spatial and conceptual characteristics that could be used as a capital for sustainable urban development. To do so, it did not follow the dipole of tangible-intangible but based itself on the distinction of official and unofficial cultural heritage, as proposed by RODNEY (2010) (fig. 14). Therefore, it investigated cultural heritage elements declared by the state and then the gradual processes of urban transformation in an effort to determine elements *that "may not be recognized by governments or be listed on official heritage registers but they are considered to be significant or culturally meaningful by communities and collectives in the ways in which they constitute themselves and operate in the present, drawing on aspects of the past."* (RODNEY 2010:240).

CULTURAL HERITAGE

Tangible   Intangible   Digital

Buildings Structures   Practices Customs   Digitalized

Cities & areas Landscapes   Memories Expressions   Produced digitally

Artefacts   Crafts & Skills

13. Definition of cultural heritage: main components.
Graphic by author, based on JPI Cultural Heritage and Global Change (2014) Strategic Research Agenda. For more details, see p.11 of the JPI Strategic Research Agenda.

12. Research priorities regarding cultural heritage.

Source: Graphic by author, based on JPI Cultural Heritage and Global Change (2014) Strategic Research Agenda.

DEVELOPING A REFLECTIVE SOCIETY

Identity & perception
Values
Ethics

SAFEGUARDING OUR CULTURAL HERITAGE RESOURCE

Conservation
Adaptation & mitigation

CREATING KNOWLEDGE

Linking information
Change
Methods & measurements
Integrating risks

CONNECTING PEOPLE WITH HERITAGE

Protection through use
Sustainability
Security
Heritage information

CULTURAL HERITAGE

Official   Unofficial

"Processes of heritage identification, management and conservation that are embedded in legislation and government."
(RODNEY 2010:240)

"There are hidden, neglected aspects of history which relate to the long tradition of interactions between cultural groups that lie buried in the memories and mementoes of ordinary communities."
(RODNEY 2010:242)

14. Distinction of official and unofficial cultural heritage.
Source: Graphic by author, based on RODNEY (2010)

The structure of section 2.2 was based on the distinction between official and unofficial cultural heritage. Both of these categories comprise elements of the ordinary urban environment. The main intention was to show the amount of valuable heritage present in the ordinary urban environment, which is not recognized and acknowledged.

15. Map of the official cultural heritage of Piraeus periphery.

Source: Design by the author based on (1) the official database http://listedmonuments.culture.gr/search_declarations.php (2) declaration document of Ministry of Environment at Governmental Gazette 420D/15.05.1987

Peripheral units
Municipalities of Piraeus periphery
Historical city center of Piraeus (declared by the Ministry of Environment)
Agios Dionusios district, announced to be redeveloped
Mountain Egaleo (declared by the Ministry of Culture)
Environmental park of Schisto
Habitat/Species management area (Natura 2000)
Archaeological sites
War memorials
Churches
Industrial complexes
Structures of *"historical importance"*
Buildings of *"architectural value"* (declared by the Ministry of Culture)
Buildings of *"architectural value"* (declared by the Ministry of Environment)

N

0   0.5   1km

2.2.a _ Official Cultural heritage

Official cultural heritage includes build elements, sites or uses and functions [1] officially declared by the state as *"monuments"* and *"worth to be preserved"* [2] for their architectural and/or historical value (Technical Chamber of Greece 2016).

In the urban context of Piraeus, official cultural heritage includes archaeological and industrial sites, religious buildings, buildings of architectural or historical interest (of public or private use, like theatres or residences), landscape features and war memorials. There are two noticeable remarks: the fact that most of the elements are located within the area designated as historical city centre of Piraeus and that most of the (declared) buildings date back to a handful of very specific historical periods (c.1830s - 1930s).

Apart from the elements of landscape and the archeological findings, the prevailing categories of official cultural heritage includes the industrial heritage and a series of individual buildings, scattered through the historical city centre of Piraeus. The first category comprises the industrial complexes with industrial facilities built in the case study area of Piraeus periphery from c.1850 to c.1940 (Belavilas 2007) [3]. Regarding the second category, the identification process showed that these buildings (indicated as light blue and fuchsia on fig.15) were private residences or public buildings built under the influence of the neoclassical or art-deco and elite/eclectic movement, which lasted in Greece for about a century, since the establishment of the Modern Greek state until the first decades of the 20th century (Roumpeka 2009). The majority of these structures has been recognized primarily for their architectural value, an action that raises questions about the level of realization of the importance of cultural heritage in the dissemination of historical, social and cultural values along with the aesthetics.

From one point of view, these actions are understandable because neoclassicism defined the first phase of (re)construction of the newly founded Modern Greek state. Even more interestingly, the neoclassical movement broke the barrier of public and official architecture (constructed and represented by the state or the elite) and permeated the vernacular, ordinary architecture (Roumpeka

2009). Its characteristic elements, both structural and morphological, were incorporated extensively in simple houses throughout Greek cities and subsequently in the periphery of Piraeus. In that way, neoclassical architecture was associated with a period of prosperity as well as with the ordinary urban environment. Their aesthetic and physical value was widely recognized while their existence reinforced the sense of identity. Therefore, the efforts for its protection dominated the scene of cultural heritage management because the aesthetic and physical value of these buildings were widely recognized while their existence reinforced the sense of identity (Roumpeka 2009).

From another point of view though, the preoccupation with specific historical periods or architectural movements indicates either ignorance and disregard for the heritage values of the recent past and present, or denial of their significance for reasons that are not relevant here. Even the recognition of industrial heritage remains a controversial process, despite the active mobilization of the academic and civic society since the mid 1970s. The map of official heritage of the periphery of Piraeus (fig.15) indicates clearly that the state authorities focused on specific typologies and categories based mainly on chronological and architectural parameters. That in turn suggests the exclusion of elements of cultural heritage belonging to other periods or architectural movements and the urgency to redefine what is cultural heritage, why and how it should be protected.

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[1] In specific, Parthenopoulos et al. (2009) mention the following elements: *"Individual buildings or parts of buildings or complexes of buildings, as well as elements of their surrounding area, such as courtyards, gardens, vestibules and fountains; individual elements of urban or rural equipment or networks such as squares, fountains, passages, cobblestone pavements, bridges, located in or outside settlements; [...] the use of a building or plot with or without buildings, which may be located in or outside settlements".*

[2] According to the Technical Chamber of Greece (Department of Central Macedonia 2016), the term refers to a building (or other element based on the detailed definition mentioned in Note 1) *"for which a decision of preservation has been issued by the responsible archaeological service and published in the Governmental Gazette"*. Occasionally the term 'preservable' is used as the translation of the Greek word 'diatritéo', which consists the key word used by the Greek state, academics and engineers to describe an element of the built or natural environment as heritage. However, the term 'preservable' does not express properly the intrinsic meaning of the Greek word that implies that the element should be preserved (and protected).

[3] The only exception found during this research was the building of the tobacco industry *Kerani*, which built its first building in 1939-1940 and a new multi-storey facility in 1969-1972 (Belavilas 2007)

2.2.b _ Unofficial cultural heritage as a result of historical development

Unofficial cultural heritage encompasses significant testimonies of past generations and historical processes that find their physical expression as structural and characteristic elements of the ordinary urban environment. This work addressed unofficial cultural heritage as a result of historical evolution. Therefore, the periphery of Piraeus was spatially analysed through its historical evolution, in order to identify tangible elements of the built environment which already are and others that should be considered heritage.

The historical analysis at the periphery scale contributed to the research in three ways: first, it substantiated the historical value of buildings and areas that are not officially recognized as heritage by the state. Second, it enabled a comprehension of larger spatial relationships such as the development of the dipole Athens - Piraeus or the immense impact of historical events, like the destruction of Asia Minor. Third, it provided conditions to grasp the identity of the place and the connection of the people to the place.

The explored neighbourhood area is part of the edges of both Athens and Piraeus and their development influenced directly its urban configuration and character. For each of the seven historical periods, the presented diagrams are followed by a descriptive text about the general context and a brief indication of what types of cultural heritage correspond to each period. The square indicates the Apollon neighbourhood area in *Agios Ioannis Rentis* that will be our design zoom-in case.

Note: The abbreviation CH is used instead of "cultural heritage".

16. Shipyards in front of *Perama*. A glimpse to the sea from the street level.
The physical and visual connection to the sea is a feature of intangible and unofficial cultural heritage that has its roots to the island origin of the first inhabitants of the area. While the industrial zone was hiding the waterfront, the houses would climb up the mountain slope.
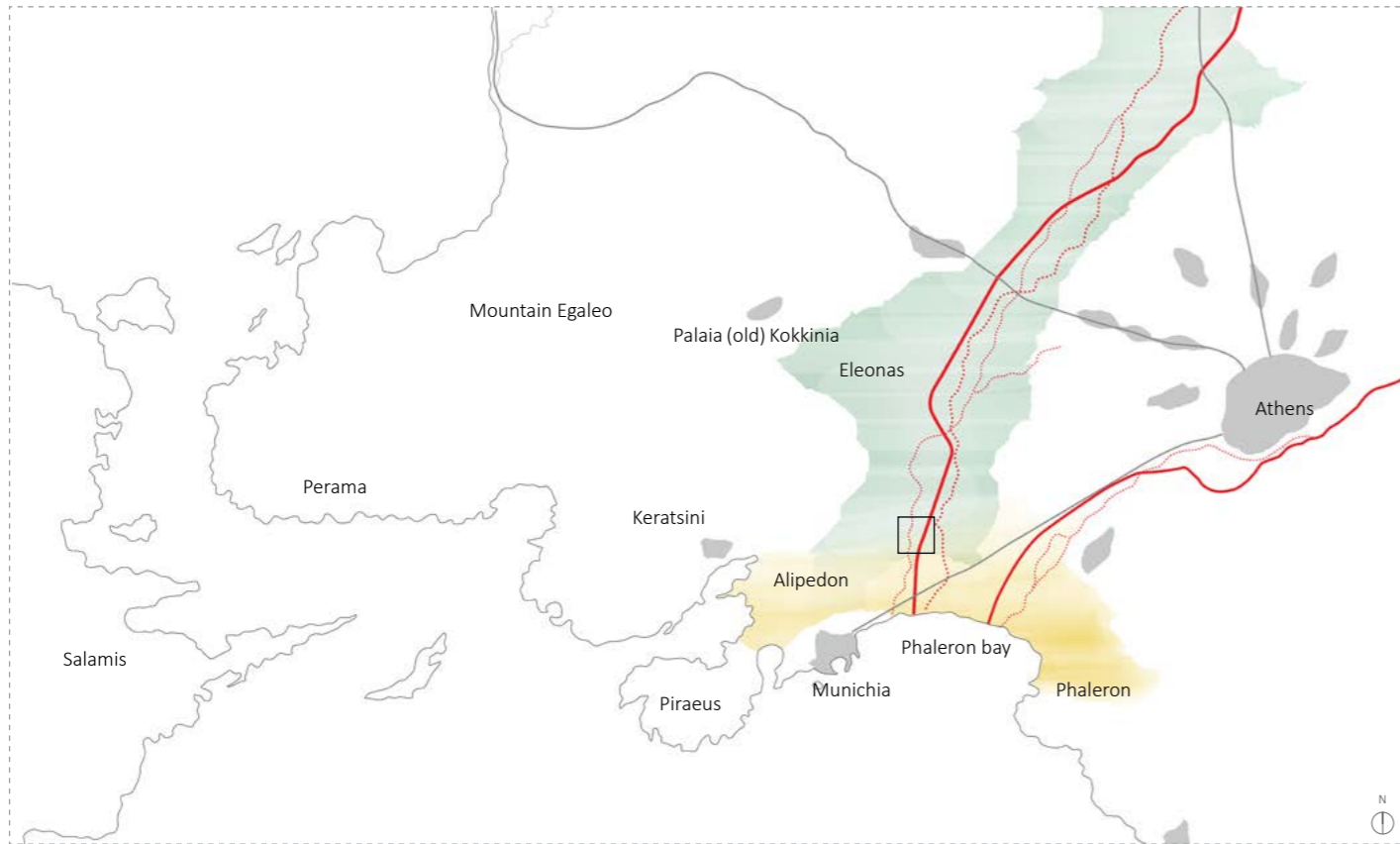
17. Piraeus in prehistoric times

- *Alipedon* (Swampy area)
- *Eleonas*, the olive-trees plain between Athens and mountain *Egaleo*
- Major rivers *Kifissos & Ilissos* (left to right)
- Indicative tributaries of major rivers
- Major transport and communication axes
- Urban development
- *Apollon* neighbourhood (Design area)

Prehistoric times

In prehistoric times, Piraeus was practically an island detached from the coast of *Phaleron*, as its name signifies in Greek etymology. A swampy ground called the *Alipedon* was to be found between the hilly Piraeus and Athens (fig. 17-18). The first inhabitants had settled in different communities, having the city of Athens as a reference point. Archaeological findings of early helladic settlements suggest the presence of several tribes since c.2600-1900 BC at the areas of (contemporary) *Palaia Kokkinia, Keratsini,* hill of *Munichia* and *Phaleron* (fig. 17). Archaeologists presume that the tribes shared a common worship place, around the *Kaminia* area. This is the closest indication of human presence in the design area of *Apollon* neighbourhood, which is located in the swampy grounds at the end of *Eleonas*.

From this period, cultural heritage features include:
Official CH: Archaeological findings
Unofficial CH: toponymy of Piraeus and Eleonas as a remnant of the place's original landscape
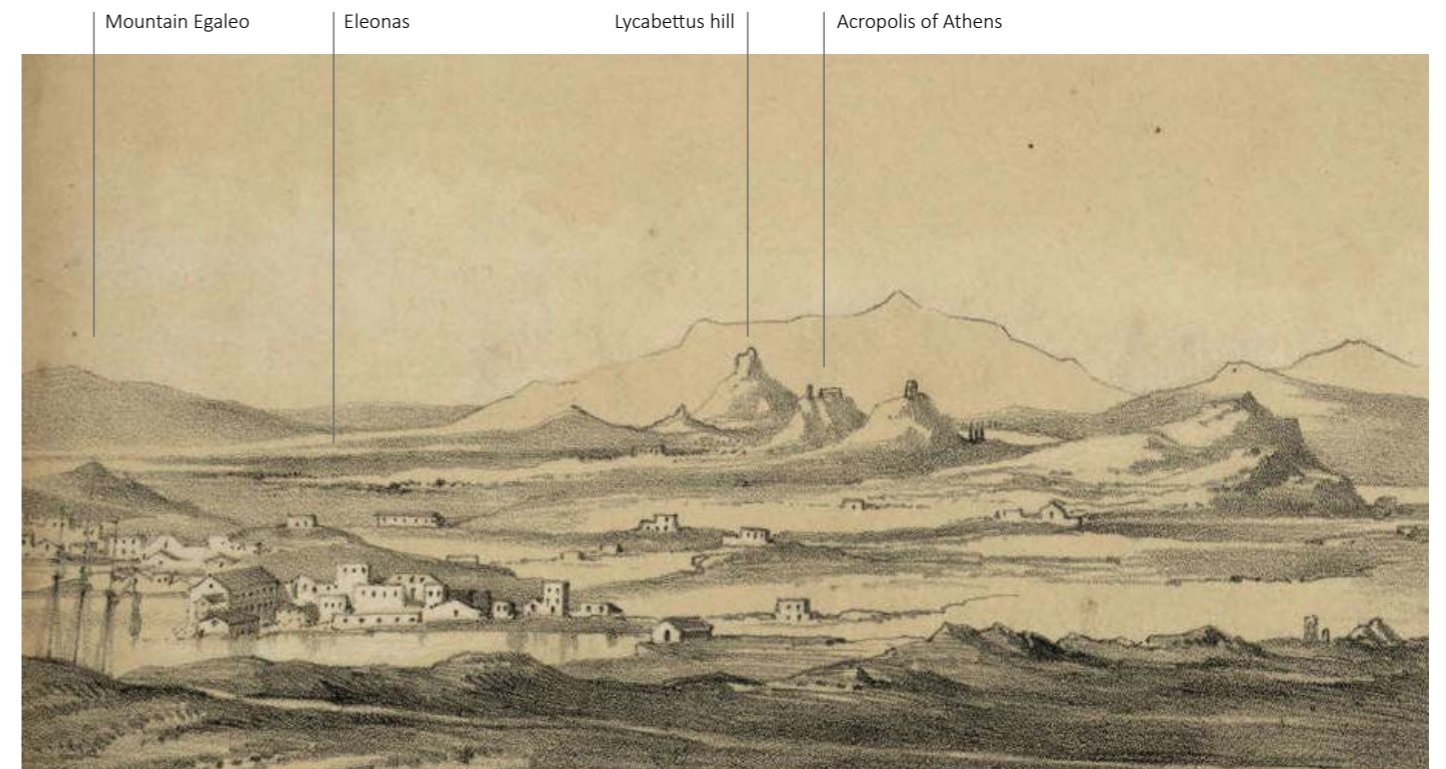
18. View of Piraeus towards Athens with the shallow water area between. Although the graphic dates c. 1845, it gives an idea of how the landscape of the area should have been in ancient times. The buildings are modern constructions, probably of the first residents of modern Piraeus. *Source: http://pireorama.blogspot.nl/2015/12/180-23-1835-23-2015.html (edited)*

19. Plan of Salamis battle, representation by French chartographer Jean Denis Barbie du Bocage (dated 1785). [Plan du Combat de Salamine Pour le Voyage du Jeune Anacharsis]. The graphic is of 1785 but it is based on the book about the travels of the ancient Scythian philosopher Anacharsis around Greece. The rectangular represents the area of fig.18. *Source: https://www.geographicus.com/P/AntiqueMap/salaminebattle-bocage-1791*
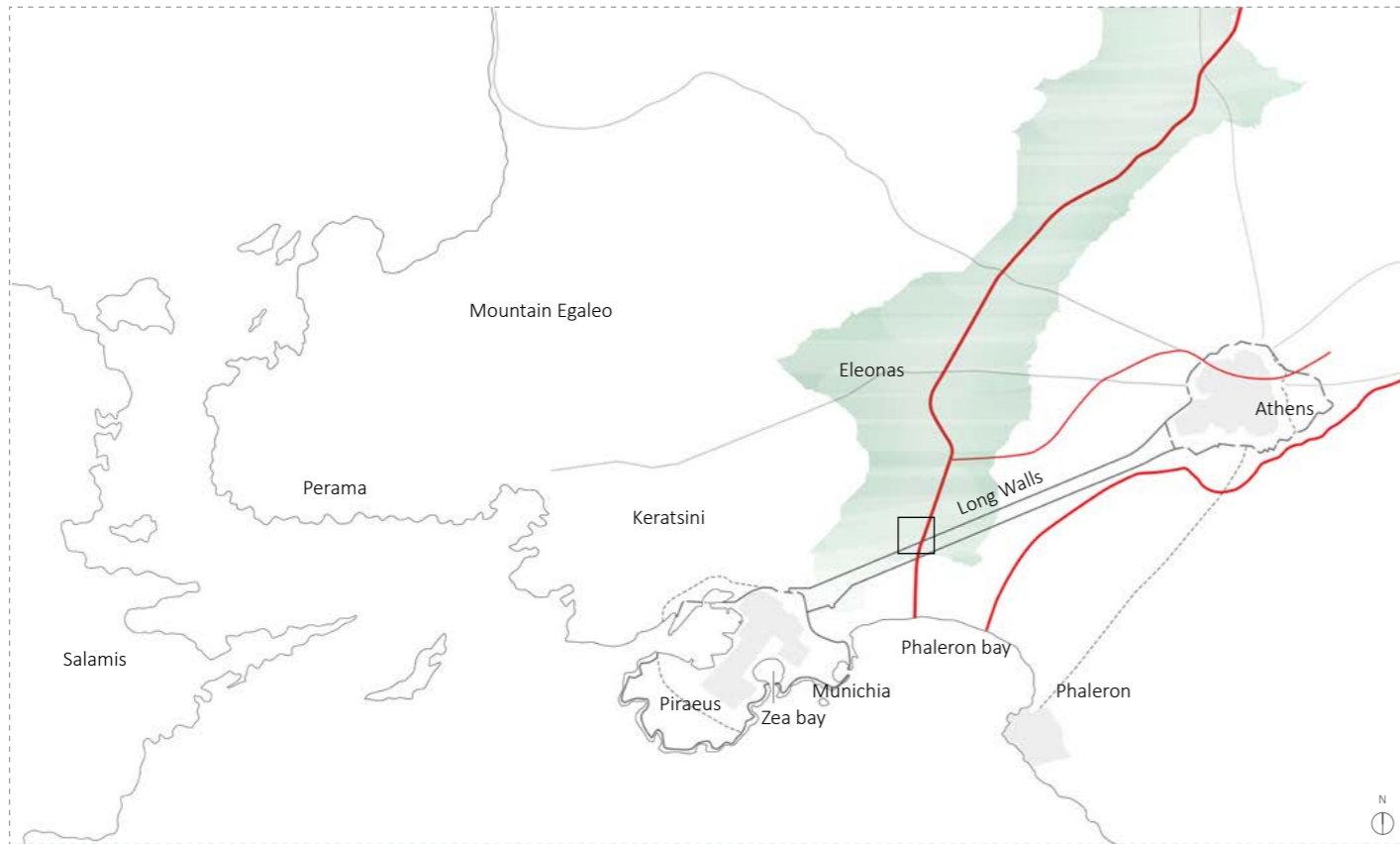
20. Piraeus after the Persian wars, during the classical period and until its destruction by Roman emperor Silas.

21. The port of Piraeus, 5th century b.C. View towards Athens.
Source: http://limenoscope.ntua.gr/limimgs/piraeus3.jpg

Legend:

Eleonas, the olive-trees plain between Athens and mountain *Egaleo*

Major rivers *Kifissos* & *Ilissos* (left to right)

Major transport and communication axes

Urban development

City walls of Themistocles

City walls of Konon

Apollon neighbourhood (Design area)

Historic times

At 483 B.C Themistocles convinced the Athenians to establish the port of Athens in Piraeus instead of in the *Phaleron* bay. Later on, the architect Hippodamus designed the city of Piraeus in an orthogonal grid, incorporating the military, commercial and civic activities. This period also encompasses the construction of the Long walls connecting the city in the hinterland with its port. The contemporary *Pireos* street (which translates as 'street of/to Piraeus') follows (in purpose) the trace of this ancient axis (fig. 20). The design area of *Apollon* neighbourhood is not in swampy grounds anymore, but there are no evident signs of organized inhabitation.

From this period, cultural heritage features include:
Official CH: Archaeological findings (parts of the Long Walls, defensive structures, underwater port facilities and parts of the ancient city's buildings)
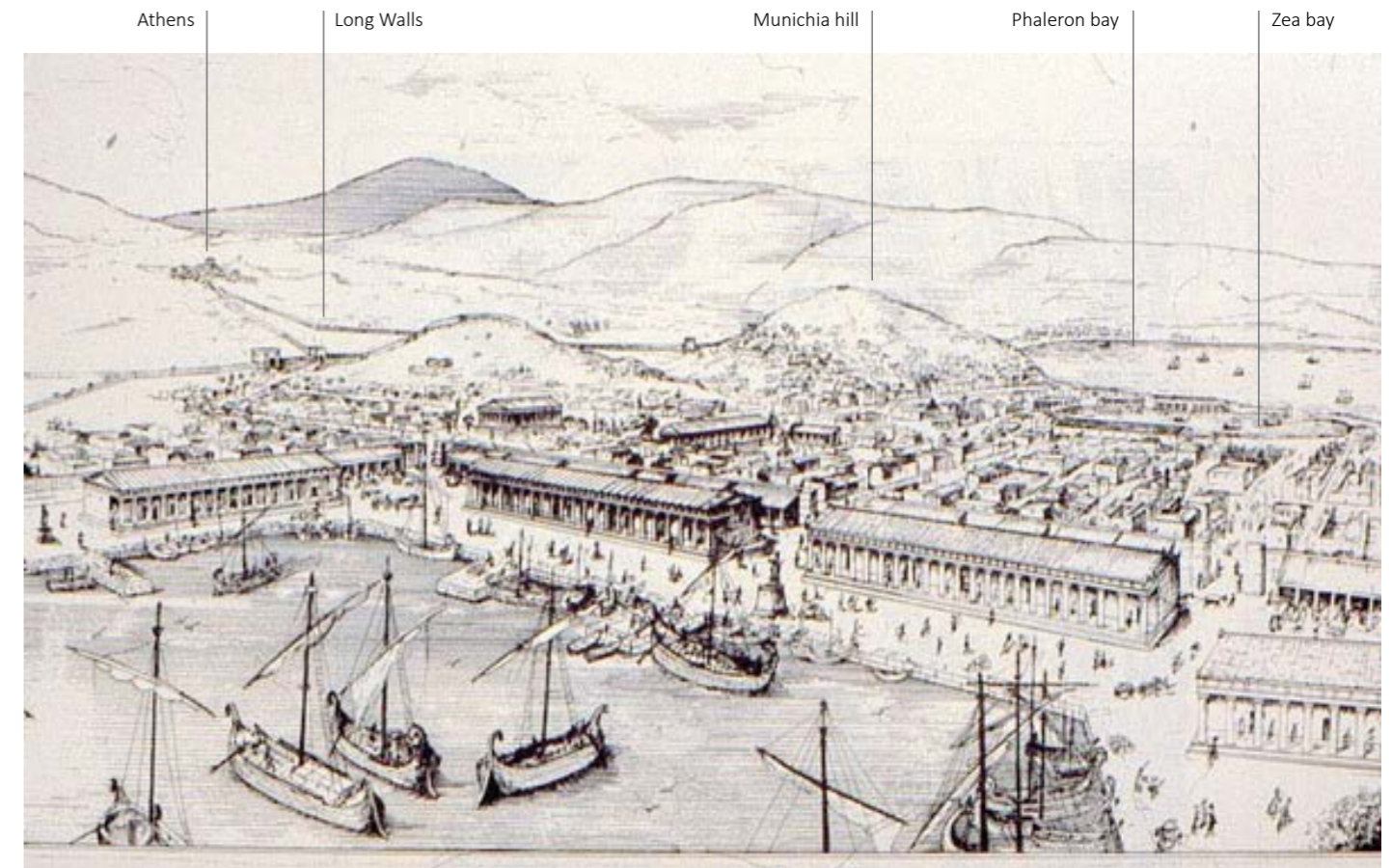Unofficial CH: Buildings buried under foundations of contemporary buildings, the two rivers as defining axes of the cities' development, the formal establishment of Piraeus as "the port of Athens".

22. Birdseye view (from north) of ancient Piraeus with the defensive, port and urban structures.
Source: Papahatzis 1974, https://www.pinterest.com/pin/170855379583792861/

23. Piraeus during the Byzantine times (roughly medieval period in Europe) and under the Ottoman occupation.

24. Piraeus on 1827 during a battle of the Greek Deliberation war, according to I. Makrygiannis (military officer during the Deliberation war & political actor after the liberation).
Source: http://www.koutouzis.gr/xtipokardia.htm

Legend:

- *Eleonas*, the olive-trees plain between Athens and mountain *Egaleo*
- Major rivers *Kifissos* & *Ilissos* (left to right)
- Major transport and communication axes
- Urban development
- City walls at the end of Ottoman occupation
- Monastery of *Agios Spyridon*
- *Apollon* neighbourhood (Design area)

Note: more phases can be identified during these long period from ancient Greece to modern Greek state but they don't represent any major difference in Piraeus' development.
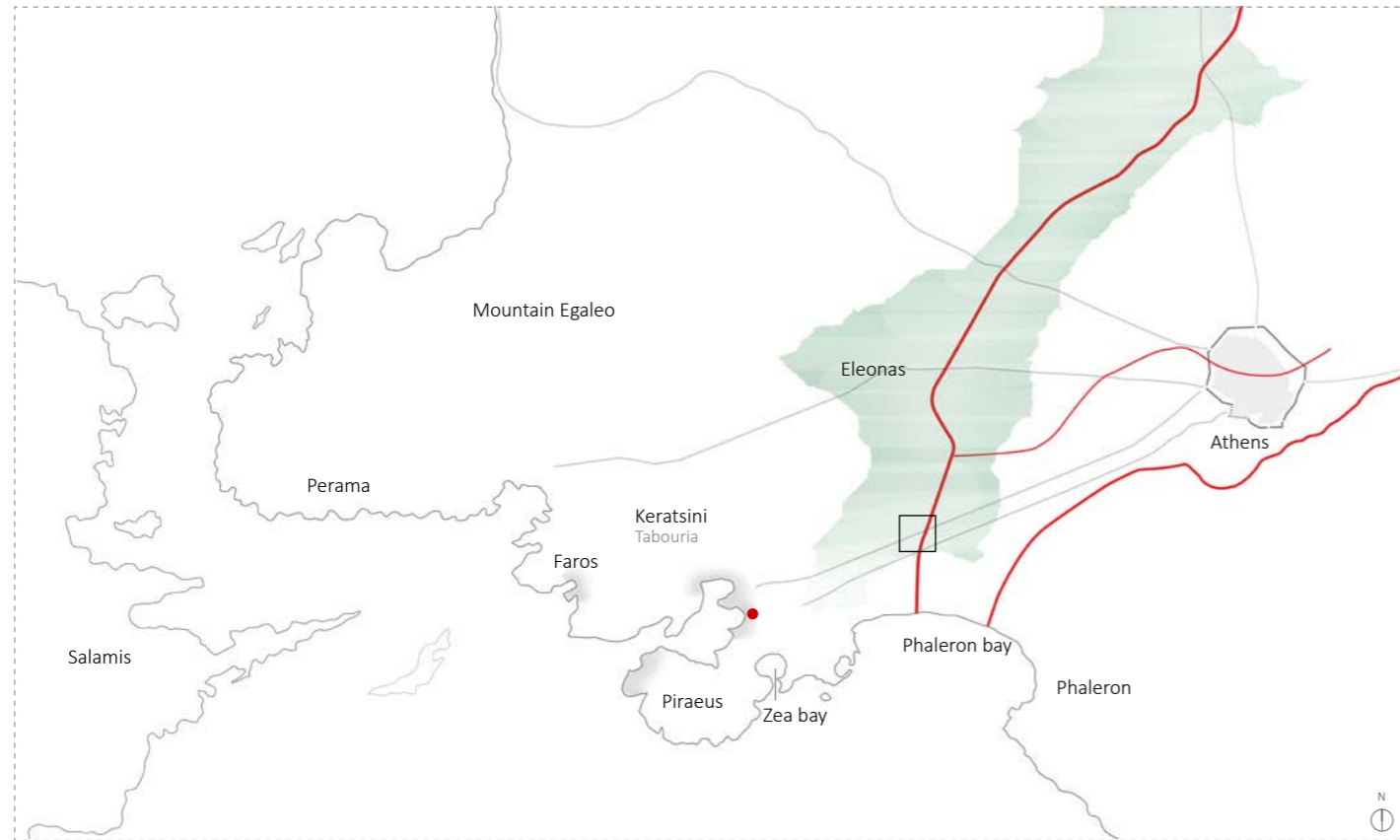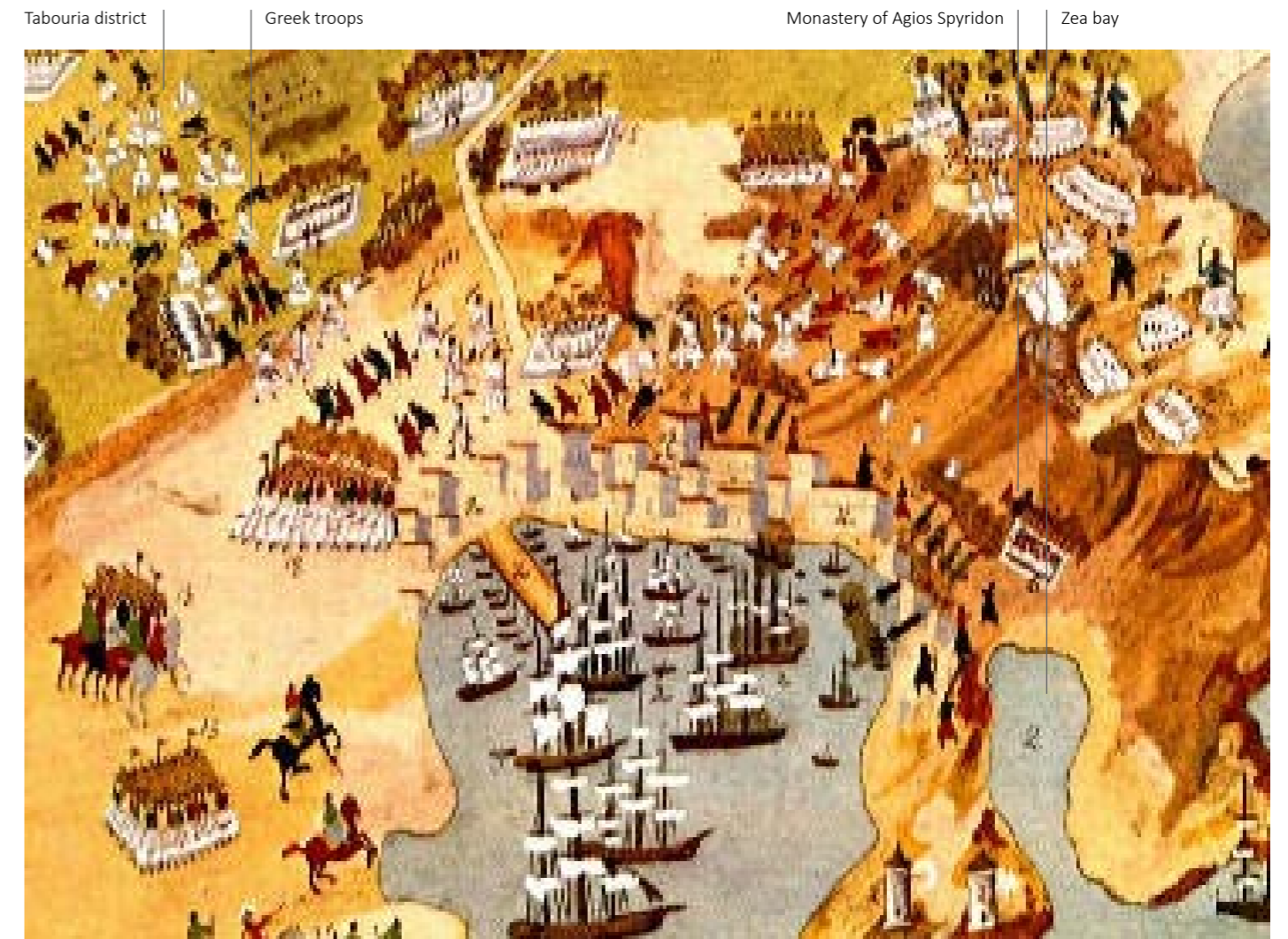
Byzantine times | Venetian and Ottoman occupation

After the destruction of the city by the Roman emperor Silas at 86 b.C, Piraeus remained inhabited, but with the character of a village at the outskirts of Athens. For a long time, Piraeus was a small port, sufficient for the basic transportation and communication needs. It became known as *Porto Draco* or *Porto Leone* or *Porto Aslan* and the multiple chronicles of western European travellers denote its significance as a gate to the city of Athens. Its most important landmark had been the monastery of *Agios Spyridon*, which offered accommodation to travellers (MLP 2015). The monastery was destroyed during the bombing by the Turks in 1827 (fig. 24) and the first church of the new (free) city of Piraeus was erected the same place after the Greek Deliberation war in 1836-1837. That church was replaced twice; the first time was in 1843 and the second in 1863 due to small capacity. This temple of 1863 remains to this day as a landmark of the city of Piraeus (fig. 23). There is no special evidence regarding the state of the neighbourhood (design) area during this period.
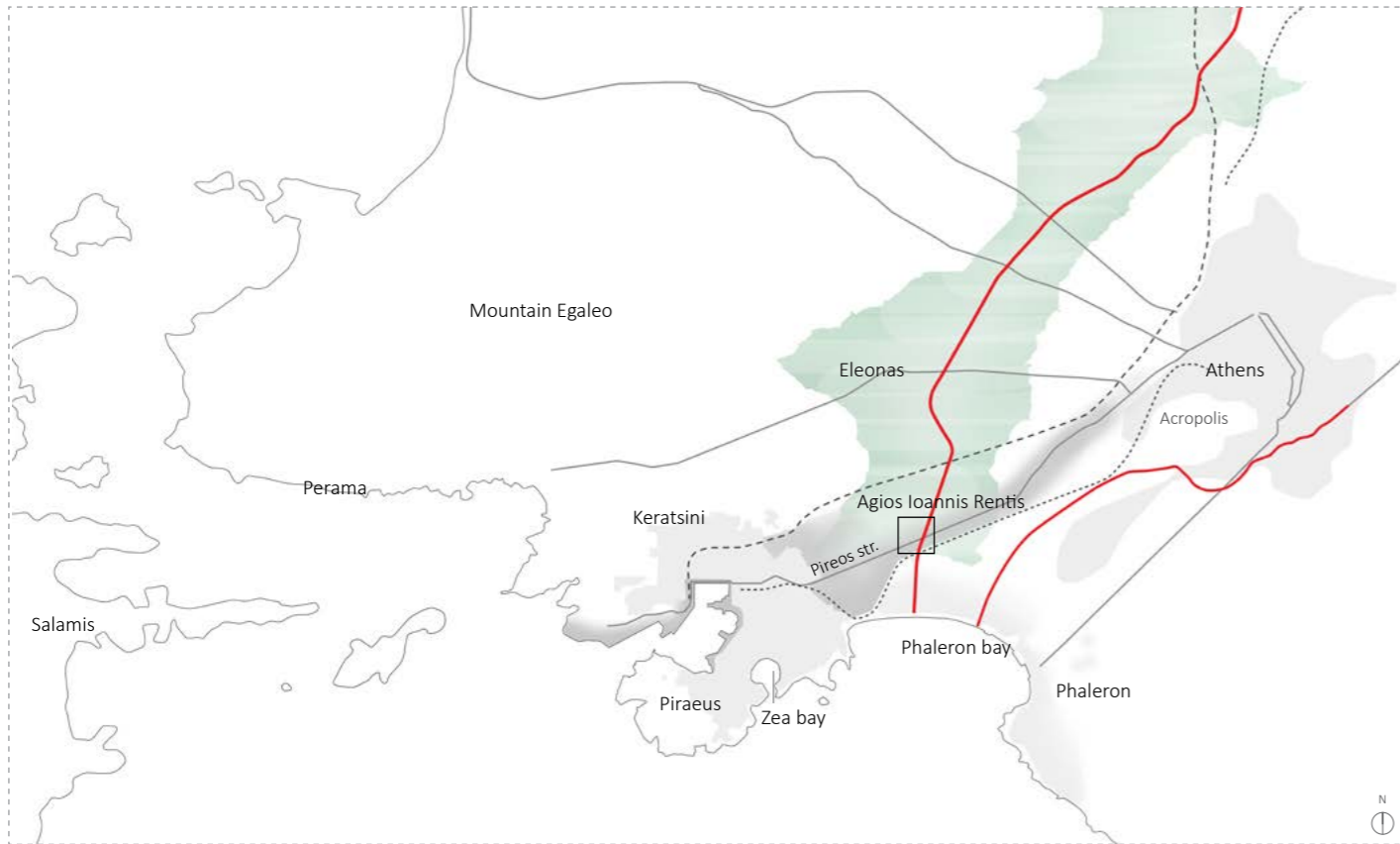
From this period, cultural heritage features include:
Official CH: --- [the Piraeus lion, today on display at the Venetian Arsenal]
Unofficial CH: Piraeus as the key to defend Athens once again. Toponymy (district *Tabouria* - meaning the place of defence barracks, *Faros* - the lighthouse, *Agios Spyridon* - the church and others)

25. Piraeus at the beginning of the modern Greek state

Eleonas, the olive-trees plain between Athens and mountain *Egaleo*

Major rivers *Kifissos* & *Ilissos* (left to right)

Major transport and communication axes

Freight and regional railway

Athens- Piraeus railway line

Urban development

Industrial development

Apollon neighbourhood (Design area)

The beginning of the modern Greek state

After the declaration of independence and the transfer of the state's capital to Athens in 1834, Piraeus regained its role as an indispensable port and became a municipality in 1835. Its importance was strengthened by major infrastructure that connected Piraeus with the national and international hinterland; as well as to international ports. The construction of the passenger and freight railway lines (1869, 1885 - 1909) and the Corinth Canal (1880 - 1893, not in the diagram) fostered the intense industrialization in the area. The first industries set the direction along the axis of *Pireos* street, around the main port and towards the west coast (fig. 25). At the late 19th century and early 20th, most of the factories and industries were fully functioning.

The soil and geographical location of *Agios Ioannis Rentis* area (where the *Apollon* neighbourhood belongs to) fostered the development of livestock farming and agriculture, although it bordered on industrial zones at the northeast and south. The necessity of the urban cores of Athens and Piraeus for food supplying turned the whole surrounding area of *Agios Ioannis Rentis* into an important suburb, while its rural character provided an excellent leisure place for the working class.
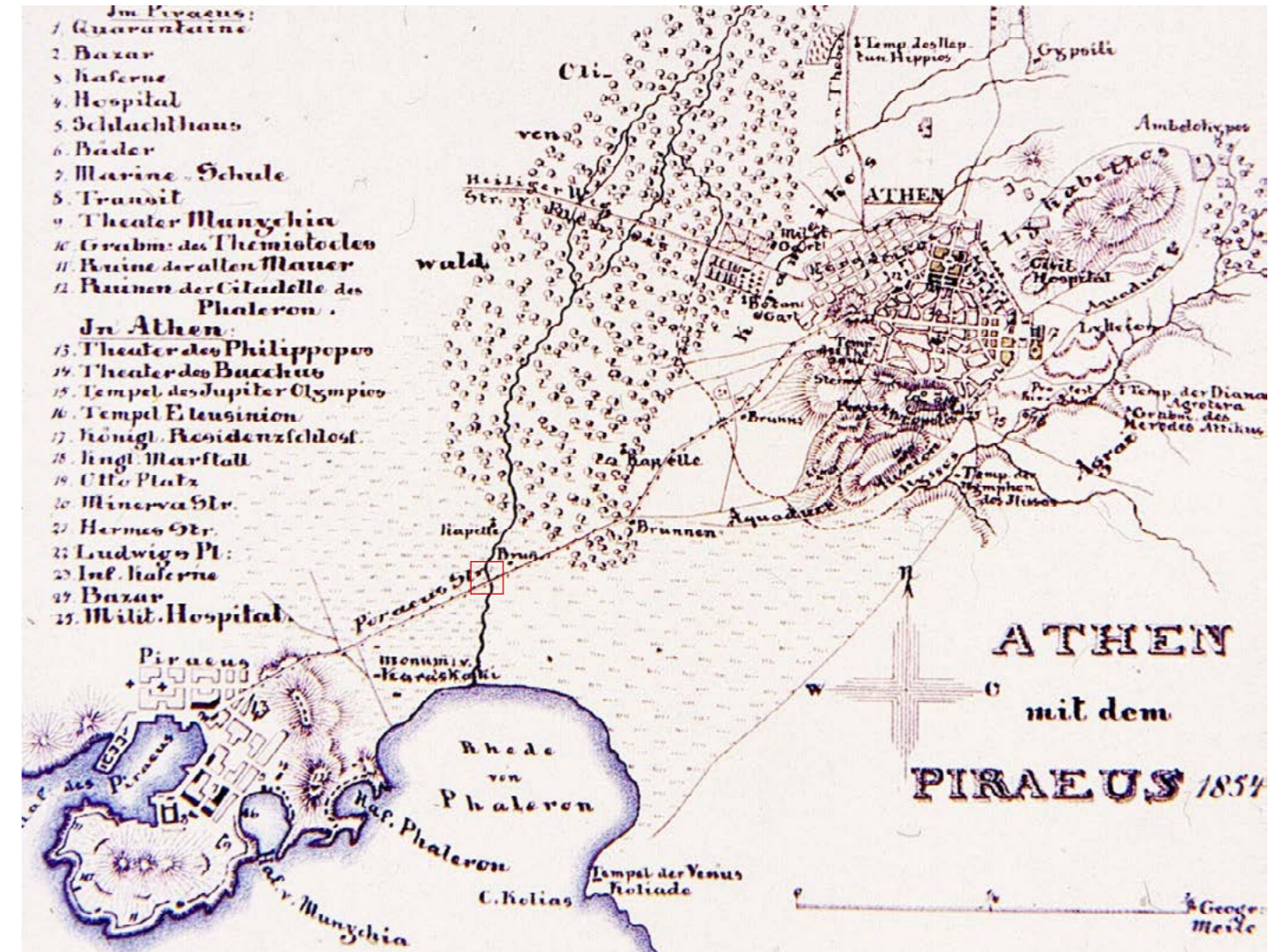
26. Map of Attica with the two poles of the city of Athens and its harbour and city of Piraeus (Leake W.M. 1850). The train lines are not constructed yet but the early city of Piraeus is formed around the port and it has all the necessary establishments (hospital, market, marine school, slaughterhouse and farms at the surrounding area to provide goods). The red square indicates the design area.

Source: https://www2.rgzm.de/Navis2/Harbours/Athen/Piraeus/PiraeusAbb4.htm

From this period, cultural heritage features include:
Official CH: industrial complexes, railway facilities, the axis of Piraeus street as the connection between the port city and Athens, some neoclassical and art-deco villas, the *Karaiskaki* monument
Unofficial CH: toponymy (various neighbourhoods named after the origin of the new settlers' or the specialization of industries), neoclassical and art-deco buildings (private and public), street pattern and land uses of Piraeus city centre and port.
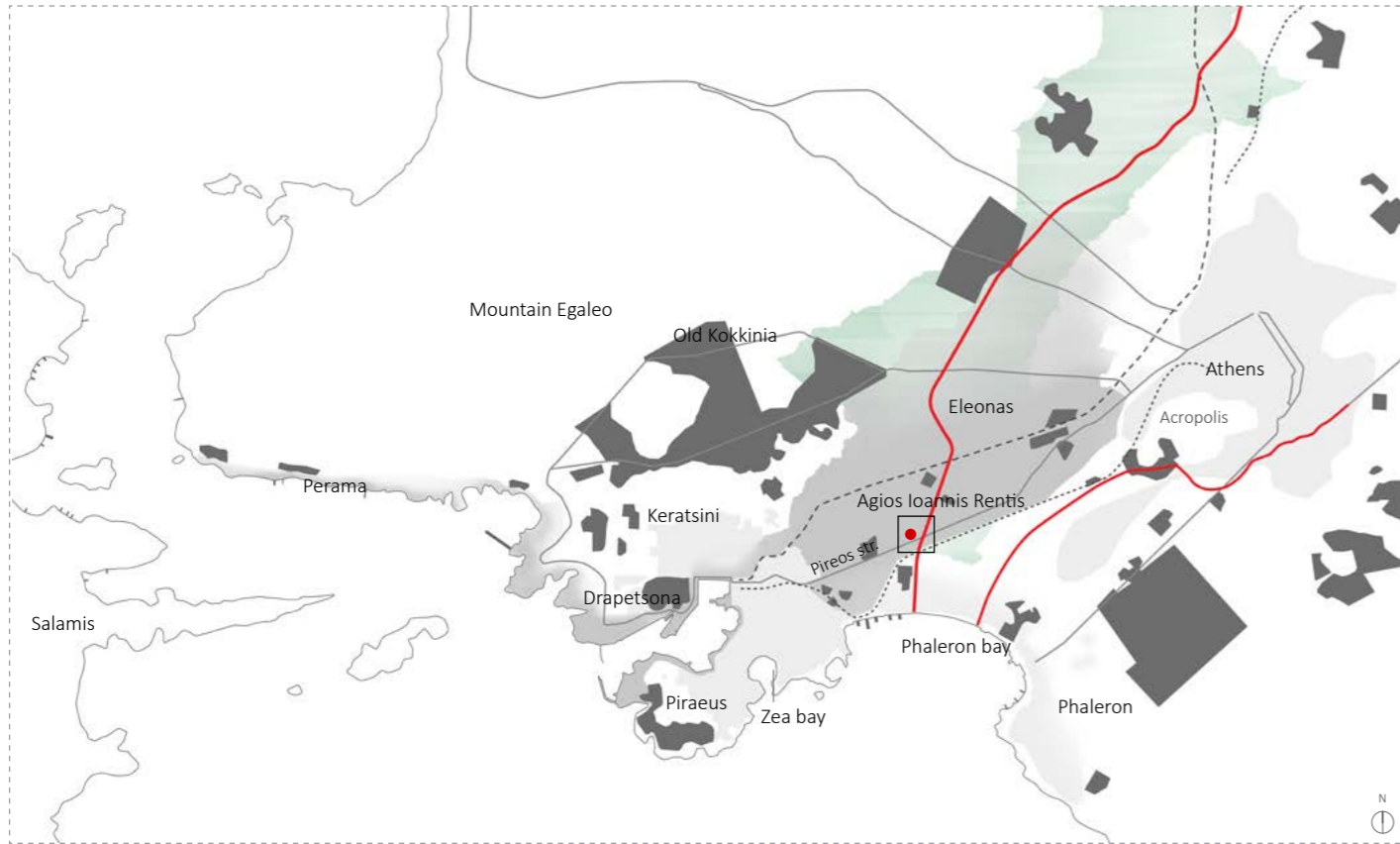
27. Piraeus and its periphery after 1922 and before 1940, the year of the beginning of WW II in Greece.

(green)	*Eleonas*, the olive-trees plain between Athens and mountain *Egaleo*
(red line)	Major rivers *Kifissos* & *Ilissos* (left to right)
(grey line)	Major transport and communication axes
(dashed)	Freight and regional railway
(dotted)	Athens- Piraeus railway line
(light grey)	Urban development
(mid grey)	Industrial development
(dark grey)	Settlements of refugees from Asia Minor (1922)
(red dot)	*Apollon* refugee settlement
(box)	*Apollon* neighbourhood (Design area)

Interwar times

In 1922, the destruction of Asia Minor brought a wave of Greeks from the west coasts of Turkey as refugees. This wave intensified the urbanization rhythm and the industrial production and development of Piraeus (fig. 27). The new population gave a twist to the city's character. They were skilful workers and technicians, with a distinctive cultural legacy, which they brought to their new home. Their culture in music, politics and lifestyle marked the cultural heritage of the whole southwestern part of the Athens basin.

The refugees settled in various places around the Athens basin, mostly in self-built structures constructed in plots conceded by the state and occasionally in social housing. The extent and intensity of the phenomenon is illustrated through photos in the following pages (fig. 28 -31). The *Apollon* neighbourhood experienced its first urbanization process with the development of the *Apollon* refugee settlement in 1932 but it kept its agricultural and leisure character until the end of the civil war (1949). From this time on, the whole area of *Agios Ioannis Rentis* was consolidated as a working class area.

28. The municipal theatre of Piraeus used as temporary refugees accommodation. One balcony per family which would soon transform into self-constructed houses, places that people would call home. *Source: http://www.lifo.gr/team/lola/60328*

From this period, cultural heritage features include:
Official CH: industrial complexes, railway facilities, the axis of Piraeus street as symbol of economic progress and collective memory, monuments for war and the resistance.
Unofficial CH: refugee settlements, modern buildings (private and public), street pattern and land uses of new urbanization, social housing complexes.

29. *Old Kokkinia*- slums of *Agia Sotira*, 1929. Photo by Dimitris Loukopoulos. *Source: http://www.lifo.gr/team/lola/60328*

30. *Drapetsona* 1930. During a long time of instability, urbanization happened in an incremental way, driven by the need of minimum space to settle decently. This process has left physical traces such as the density of the street pattern or refugee houses with all their modifications until today. *Source: https://ourathens.blogspot.nl/2014/10/20_31.html*
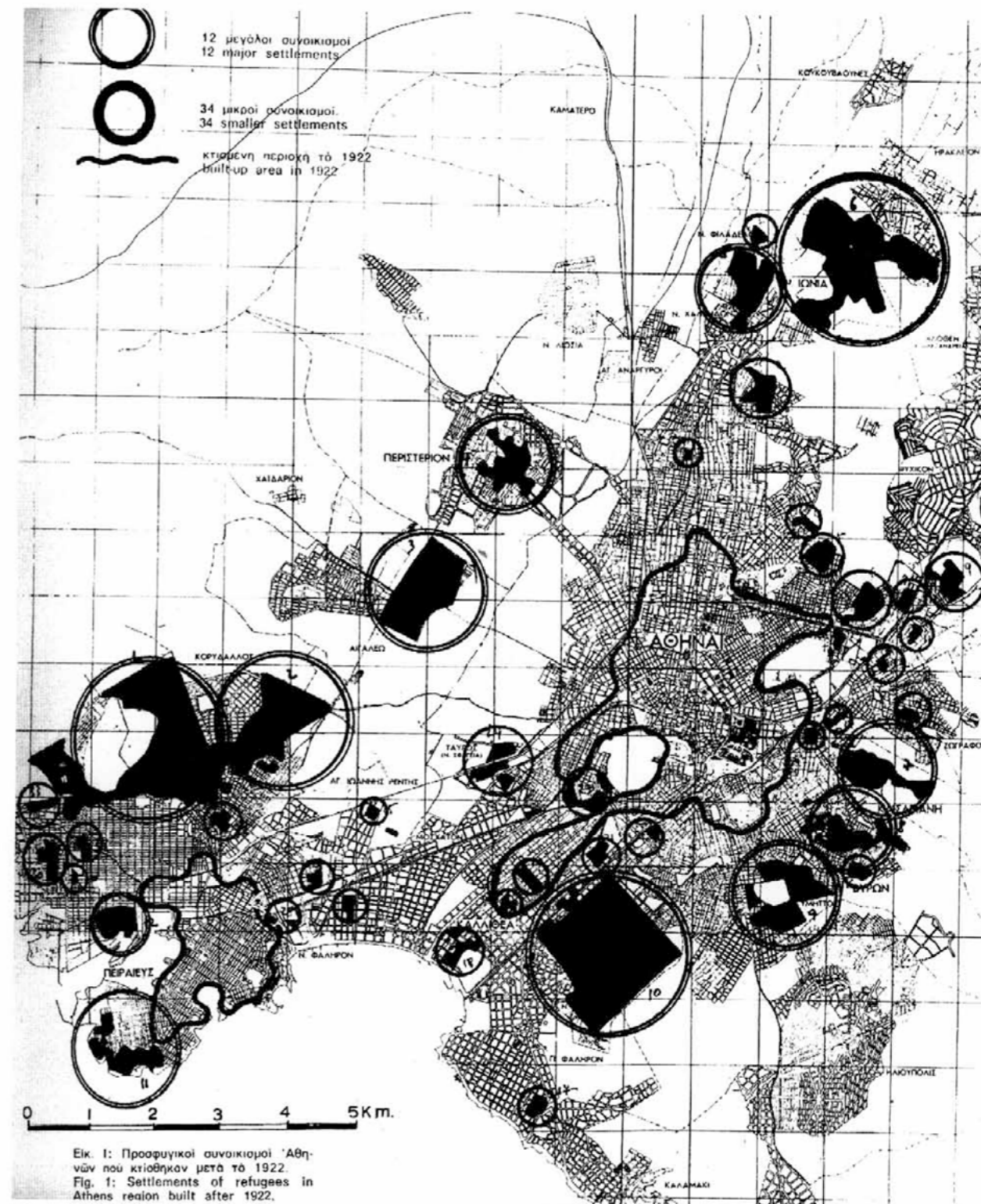
31. Refugee settlements in the Athens basin. 12 big settlements (double-line circles) and 34 small (single-line circles). Republication of the map of the Urban Planning Office in 1944 by the Ministry of Town Planning, Urbanism and Environment in 1975. So the background map depicts the urban area in 1944 while within the black border, we see the area built until 1922. The refugee settlements functioned as urban development centres and within twenty years, the urban centres of Piraeus and Athens were joint through a continuous urban fabric. The tendency of urban sprawl that would cover the entire Athens basin became obvious but the means to control it proved insufficient. *Source: Papaddopoulou & Sarigiannis (2006)*
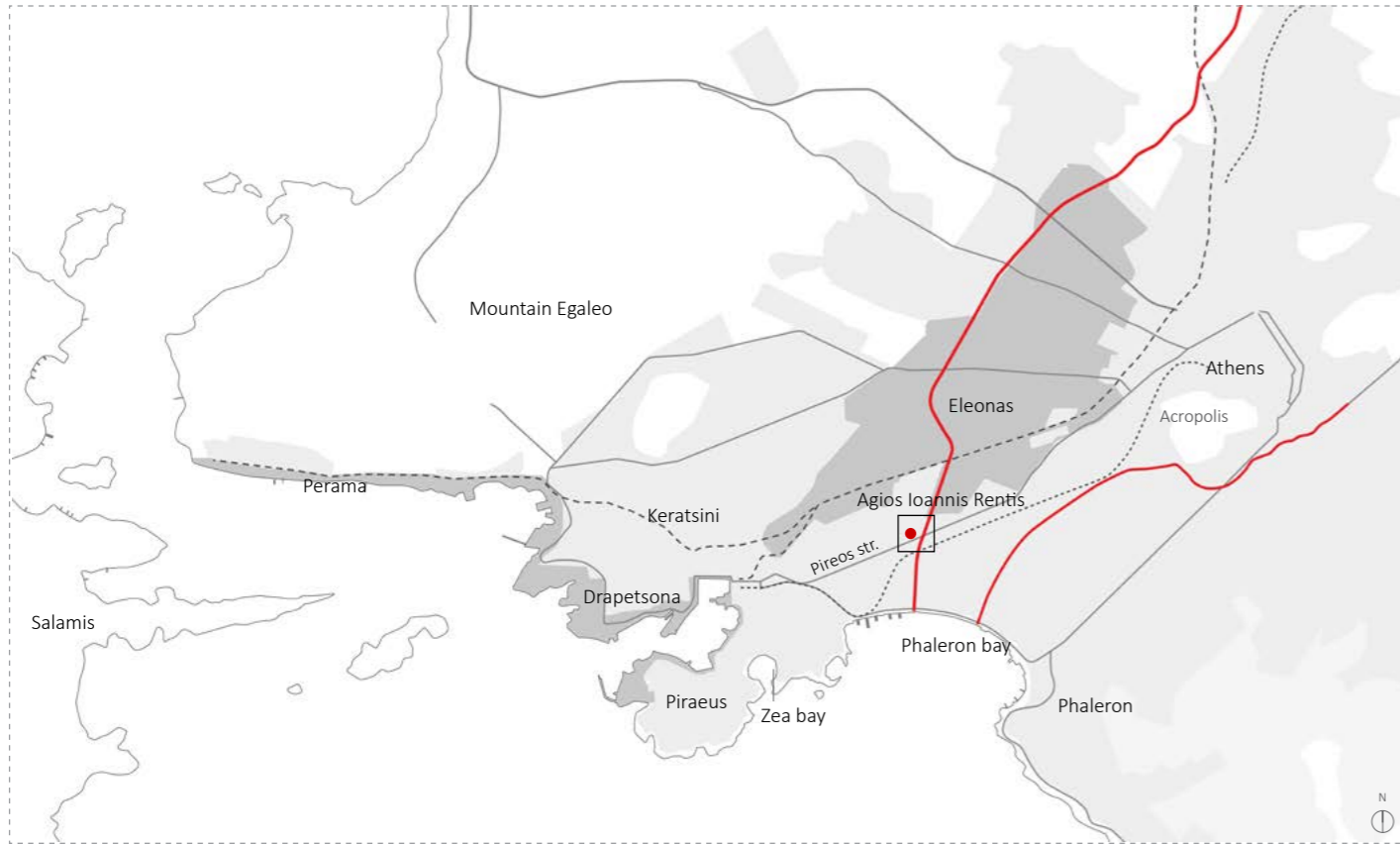
32. Piraeus at 1950-1975

Legend:
— Major rivers *Kifissos* & *Ilissos* (left to right)
— Major transport and communication axes
- - - Freight and regional railway
···· Athens- Piraeus railway line
▢ Urban development
▢ Industrial development
● *Apollon* refugee settlement
▢ *Apollon* neighbourhood (Design area)

33. Piraeus 1860. *Source: http://www.ub.edu/grassrootseconomics/?page_id=24*

34. Piraeus 1960. The transformation and expansion within 100 years can be seen on the mountain's slope behind the port. *Source: http://www. greekshippingmiracle.org/en/special-sections/piraeus.html*

25 years of post-war reconstructions

Industrialization and urbanization flourished during this period and they were often uncontrolled, unplanned and fragmented. *Eleonas* remained only as an area's name and the industrial areas were spatially consolidated in the middle the east Attica and along the coast of Piraeus, *Drapetsona* and *Perama* (fig. 32). During the first post-war years, the degraded neighbourhoods of Piraeus periphery faced further abandonment. At the beginning of 1950s though, people started investing in private properties, despite the economic instability and political uncertainty. This construction boom through private small-medium capital proved profitable and convenient for the government, once public resources were scarce. The urban landscape underwent a vast transformation (fig. 33-34) characterized by two building typologies: the double-family house and the *polykatoikia*, the typical Greek multi-storey and multifunction apartment building (more about it in p. 58). *Agios Ioannis Rentis* and the Apollon neighbourhood lost their agricultural character under the pressure of industrialization and urbanization and followed the mainstream development trend by small scale private investment.

From this period, cultural heritage features include:
Official CH: industrial complexes, buildings of the modern movement (mostly private)
Unofficial CH: buildings representative of the dominant housing typologies, social housing complexes

35. Piraeus from 1975 to today

— Major rivers *Kifissos & Ilissos* (left to right)
— Major transport and communication axes
— National highway
– – Freight and regional railway
···· Athens- Piraeus railway line
░ Urban development
▓ Industrial development
● *Apollon* refugee settlement
● Peace and Friendship Stadium
☐ *Apollon* neighbourhood (Design area)

In 1973, the seven years dictatorship ended and soon after Greece entered the European Economic Union (1981). Major infrastructure of metropolitan scale and importance was realized during the 1990s including the expansion of the *Phaleron waterfront* to give space for the *Peace and Friendship Stadium* and the high-speed avenue along the coast. The upcoming Olympic Games of 2004 stood as a promise for a bright future and brought a second wave of infrastructure, such as the metro lines, the major sport facilities and most importantly the massive elevated highway that covered the *Kifissos* river.

During the same period though, the existing building stock of the Piraeus periphery has undergone a phase of degradation. The deindustrialization that started in the mid 1980s left a high number of vacant spaces, formerly used for production and manufacturing. Similarly, the urban sprawl towards northeast Attica led to a growing housing, offices and commercial building stock of average quality and condition with less tenants to occupy it. Today the city of Piraeus is recognized as a metropolitan centre and as such faces all the relevant challenges. The *Apollon* neighbourhood faces accordingly challenges of an ordinary city district, such as the degradation of the urban tissue, dysfunctional public space, increasing vacancies and cultural heritage in danger.

36. Aerial view of Piraeus with the districts of Piraiki and Kallipoli at the foreground.

Source: http://runnismos.blogspot.nl/2016/03/trexo-ston-peiraia-to-megalytero-limani-tis-elladas.html

From this period, we have cultural heritage features such as
Official CH: ---
Unofficial CH: post-modern and contemporary architecture, infrastructural works like sport facilities, cultural venues and educational complexes

2.2.c _ Unofficial cultural heritage as a result of building regulations

The third section of the cultural heritage analysis of the periphery of Piraeus addressed unofficial cultural heritage as a result of planning and building regulations. The analysis of urban space from the legislation point of view contributed in understanding and defining the specific characteristics that are embedded in the ordinary urban space and influence its perception and experience. These specific characteristics represent site-specific features of cultural heritage, and therefore affect the culture of everyday, ordinary life; for they determine the local cultural identity.

In addition to defining the elements of ordinary urban environment that could be considered cultural heritage as a result of building regulations, the analysis of the legislation contributed in understanding why they have been integrated and solidified in the urban space. The characteristics were divided in three thematic groups: A) multifunctionality B) the right to develop the land and C) structural and morphological elements.

A | Multifunctionality of urban space

General residence: combined land use where the residential is combined (usually at the vertical axis, inside an apartment building) with any other function that is not considered too heavy, disruptive or hazardous.

Greek cities are characterized by their multifunctional character in both the horizontal axis (geographic expansion) and the vertical (in individual buildings, from ground floor to the upper floors). *General residence** dominates the urban space and comprises any land use that is not considered disturbing and can be combined with the residential. In that way, housing is combined with a wide range of uses in continuous rows of individual standard multi-storey buildings, forming blocks and neighbourhoods and ultimately the city (fig. 37). These uses include leisure (cafeterias, restaurants etc), commerce (from district scale convenience store to the big supermarket chain store and from neighbourhood alternative bookshop to the area's mall), personal services and working spaces (lawyers, doctors etc, ateliers, beauty salons), education (like foreign languages teaching institutes), workshops (car repairing, carpenter or shoemaker), light industry, wholesale and others.

Multifunctionality has always been the status quo of Greek cities. This condition was consolidated in the very first decades of the modern Greek state, when the government would simply forbid certain functions highly unsuitable or incompatible with the residential fabric (like heavy industry). The Legislative Decree (LD) *'About city, town and settlements' plans and their realization'* (Government Gazette A 228 / 16.08.1923) was a first attempt to deal with the already formed situation of freely decided land use based on socioeconomic conditions. However, it only provided basic measures and restrictions enough to avoid chaos.
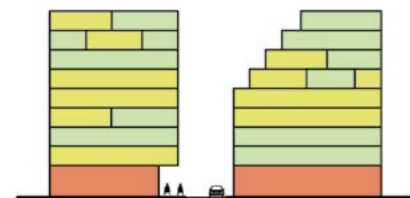
37. Multifunctionality: if not residential, the ground floor is usually commercial or parking and light industry. At the floors, residential is mixed with all kind of non-disturbing uses.

The next decisive attempt by the state to manage urbanization in a comprehensive way was with the Law 1337/83 about the *'Expansion of City Plans, Urban Development and other relevant regulations'* (Government Gazette A 33 / 14.03.1983). According to this, the planners of General Land-use Plans - namely the engineers of urbanism departments of the municipalities - would be responsible for defining a list of general and specific land uses. Practically, the planner of a GLP would decide which functions were "appropriate" and this is the practice until today.

The problem is not multifunctionality itself but the empiricism of the guiding legal framework. The standards are often obsolete, which makes the urban space rigid and inflexible to accommodate emergent land uses that have not been determined in the GLP. These arrangements impede the urban space and flows to dynamically adapt to the social needs.

The limited size of mono-functional areas might sound excessive but it is a genuine characteristic of the Greek cities. Therefore, the multiplicity of scale and typology of land uses and urban functions that can be found in a single neighbourhood or district is recognized as an element of cultural heritage of the ordinary urban environment in Piraeus periphery.

B | The ownership system and the right to develop the land

In Greece, every land property, whether private or public, belongs to its owner along with the development rights and - by default- it can be built under the regulations in effect and unless otherwise specified by special conditions or legal framework (Oikonomou 2002).

There are two important conditions about the ownership system: the multi-ownership and the attitude of owning immovable property. Both of them are characteristic of the ordinary urban environment because of their extent and they are the result of three mechanisms throughout the history of the modern Greek state.

The first goes deeper into history and relates to the development of the first urban centres. Before the deliberation, a great part of the population was nomadic due to the economic and sociopolitical conditions. At the beginning of the modern Greek state (in the first decades, c. 1833-1850), the government conceded land to cultivate and built to individuals or families as a way to create a bond between the people and the place and thus keep the population in urban centres. And from people's perspective, owning land and being responsible for it, including paying taxes, signified the status of citizen; a title well wanted. That was the first step in the attitude of owning the rights
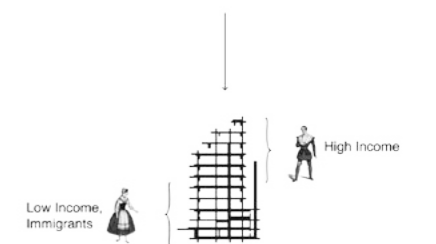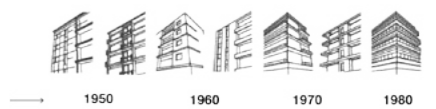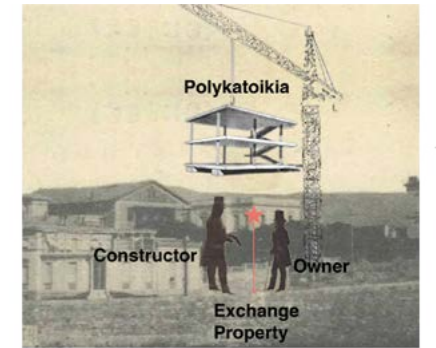
38. The system of *antiparohi**
Source: Balaoura 2015

Antiparohi : a contract system where the contractor undertakes the completion of a construction project on a plot that does not belong to him in return for exploitation rights on part of the finalized product (building). The contracting parties may be individuals or legal entities and the price(s) have always been negotiable. The agreement involves the contractor- manufacturer, the landowner- employer, the real estate agent, the lawyer and the notary. Its legal character is mixed, comprising production and sales. (Papadam 2014).

Polykatoikia: standard multi-storey apartment building. It literally means "multiple dwellings/residences" and consists the main component of Greek urban space. It can be found in different styles and typologies depending on the regulations in effect for the construction period and place.

Horizontal ownership: a particular ownership status where an individual is entitled to exclusive ownership (and development rights) of a building floor or part thereof (an apartment on a specific floor) and mandatory co-ownership of the common parts of the whole property, such as the plot itself, the foundations and external walls, the stair and elevator shafts, the *akalyptos** (see p. 59) or even amenities like the heating system and underground storage space etc. The concept was already introduced in legal terms since 1929.

General Building Regulations practically function as laws, deriving their power directly from the Constitution and can be appealed only by the Council of the State.

to the land.

The second was the system of *antiparohi** (fig. 38), which led to the consolidation of *polykatoikia** as dominant building typology and the possession of an apartment as the dominant type of ownership. As a result, the *horizontal ownership** became a concept embedded in the Greek reality and meant the multi-ownership over one structure for the majority of buildings in the city. This characteristic is of paramount significance in the realization of any proposal. Except for the ethical obligation of ensuring social consensus, multi-ownership is a practical problem that cannot be overlooked by planners and designers who seek a real change in the way people see urban space and its (re) development.

The third was taxation. During the post-war periods, financial incentives favouring the private initiative in building worked as a lever mechanism stimulating the country's economy and the urban environment's modernization. Favourable taxation combined with the system of *antiparohi** led to steep increase of owners in contrast to the massive amount of renters in other cities and countries. As presented, ownership is important not only for what it signifies but also because of the dimensions of the phenomenon and the social implications.

From this analysis, two characteristic features are identified as elements of cultural heritage of the ordinary urban environment: i) the horizontal ownership and thus multi-ownership and ii) the attitude of owning immovable property, which translates into the great amount of owners and stakeholders.

C | Structural and morphological elements

There are certain elements that characterize the structure and the form of the ordinary urban blocks and thus the entire configuration and experience of an area. They result from a series of factors determined by the General Building Regulations (GBR).

Since the beginning of the modern Greek state to today, there have been five GBRs (on 1929, 1955, 1973, 1985 and 2012). Overall, they have favoured the ownership of small-sized land property, facilitated the construction of *polykatoikia* and gradually formed the urban micro-space as it is today. The diverse ambiances of the contemporary city relate directly to the way the GBRs have developed. In order to maintain this characteristic diversity, it is crucial to understand the evolution process of the regulations. Five major factors and the conditions they have created are briefly analysed below. The tables give an idea of the factors' evolution according to the development of GBRs (fig.42-44, 48-49).

The position of the building within the plot basically defines the distance between the person (as user of urban space) and the built mass, thus influencing directly the perception of dense, narrow, vague etc (cite reference). It is the key factor determining the relationship of public-private and the form of the *akalyptos**(fig. 39). The modern urban fabric is a synthesis of four dominant typologies (fig. 40).

Prior to 1985, the dominant typologies in the city were the continuous, non-continuous and mixed. As a result, urban blocks developed the characteristic continuous front the vertical air shafts (arguably resembling orthogonal holes through the building) became a characteristic feature of the buildings' form due to the necessity (and legal commitment) of minimum space for ventilation and light.

Since 1985, the different typologies have been replaced by the detached from all sides (Oikonomou 2002). This condition was mandatory for new urban areas, so it was mainly used in the suburbs. Thus the unbuilt plots within the already formed urban area would follow the typologies of the previous regulations on that matter. Today, the position of the building within the plot in an already developed urban area depends on the existing situation and the development of adjoining plots. Therefore, the final form of the urban block depends on the chronological order of building development.

Position typology

Akalyptos: the unbuilt (uncovered) space of every plot. It is defined by the Building Regulation (fig.41).
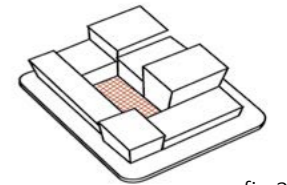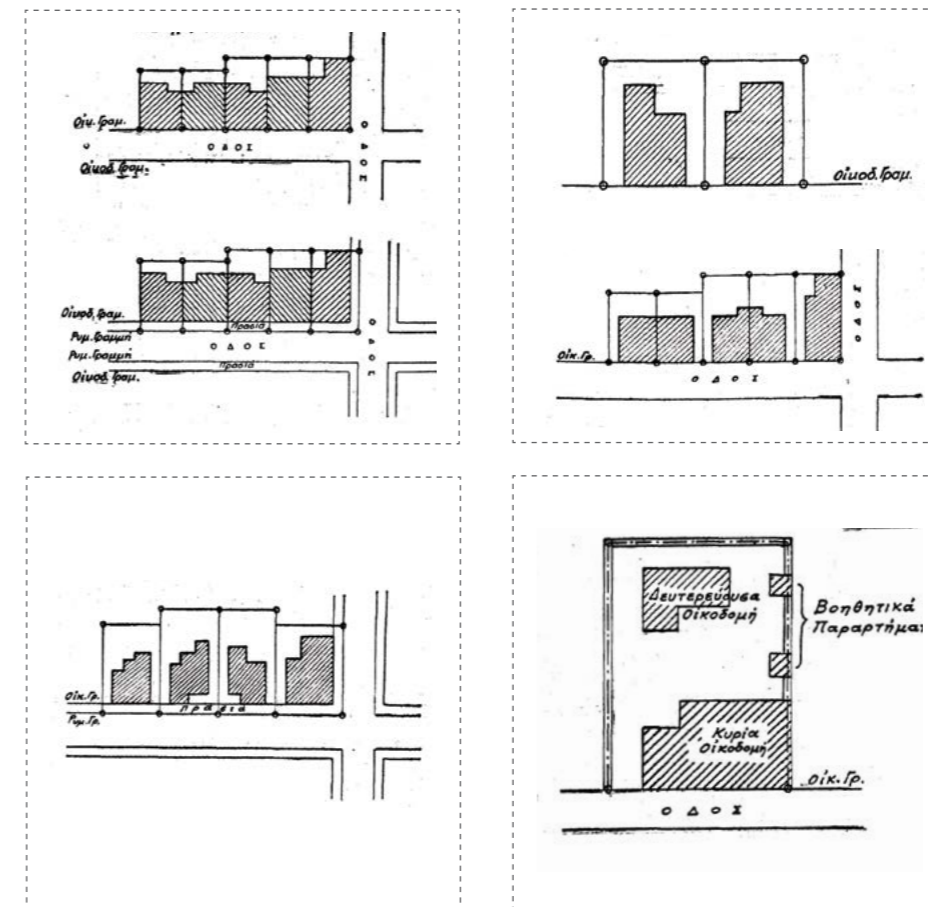

fig.39

40. The main position typologies (position of the structure or structures within the plot and in relation to the adjoining plots) that we encounter in the urban space.

Source: General Building Regulation of 1955

Continuous with and without flower bed	Non continuous & Mixed
Detached from all sides	Position of secondary structures

Minimum and maximum development: the first refers to the minimum size of structure that is required and allowed to be built. The second refers to the maximum area that is allowed to be covered in one plot. It is very interesting how the maximum development parameter soon became the "mandatory" (Παπαδάμ 2014).
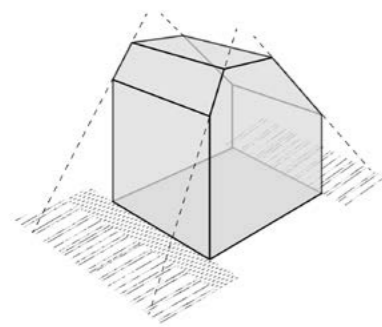
Plot suitability is a factor that indicates whether the plot is suitable for construction from the point of view of its physical dimensions. It is determined based on minimum and maximum dimensions of the lot and the structure to be built (fig. 42). The plot suitability factor led to the small-sized, long and narrow-face plots that characterize the ordinary urban block.

The factor of maximum development (or else plot coverage) impacts the size of the *akalyptos* but most importantly expresses the ratio of built and unbuilt area within a plot (fig. 43-44) and to a certain extent whether the urban fabric is dense or diffused. It was an effort to facilitate the integration of *polykatoikia* in the urban block of houses with courtyards and gardens, to optimize the development of increasingly limited yet valuable urban space and to provide a minimum percentage of open space (Papadam 2014). The problem is that this space remains fragmented and misused.

GBR		1929					1955					1973			
Position typology parameters															
Position typology	x	y	F	D	A	x	y	F	D	A	x	y	F	D	A
Continuous (and mixed for GBR 1973)	6	7	6	9.5	57	5	8	5		c.58			10	15	200
						8	5	8		c.58					
Non continuous	4	10	9	12.5	112.5	5	8	10	10.5	105			15	25	400
	10	4	15	6.5	97.5	8	5	13	7.5	97.5					
Detached from all sides	4	10	9	15.5	139.5	5	8	10	13.5	135			15	25	400
	10	4	15	9.5	142.5	8	5	13	10.5	136.5					

42

Building to land ratio / Volume ratio / Conceptual volume / Maximum height

Conceptual volume: a 3D outline of the geometrical limits of the building to be constructed. The building at its final form had to fit inside this conceptual shape, with strict exceptions for balconies and decorative features (fig.43).

Lastly, four factors define the skyline of the ordinary urban environment in terms of geometric correlations between buildings' mass and the urban space. The *building to land ratio*, *volume ratio*, the *conceptual volume** (fig. 41) and the *maximum height limits* (determined by zones) define the final volume of the buildings. In combination with the position typology, they influence the perception of the urban space (fig. 45-47).

These factors determine how many squared and cubic meters can be built in total and thus the profits from their capitalization. As a result, both constructors and owners would try to take advantage of legal loopholes in order to capitalize the most without extra financial obligations. Another issue is the steep increase of the land-to-building ratio and the maximum building height limits during the construction booming in the 1960s. Contractors were then allowed to built buildings of five, six and even nine floors, arguably disproportionate to the streets' width. So considering the scale of the phenomenon, it deteriorated the overall ventilation, lighting, visibility and perception of the urban space.

Of course, the four factors have changed through time and they have contributed in diverse ambiances and typological details (fig. 48-50). Overall though, the skyline as characteristic element is important because it suggests geometric limits that we should respect and further on improve in order to achieve a sustainable and more humane urban environment.

To recapitulate, from this analysis, the following five structural and morphological features are identified as elements of cultural heritage of the ordinary environment: i) the relationship of public-private, ii) the *akalyptos*, iii) the small-sized plots, iv) the relationship of built-unbuilt (coverage of free space) and v) the skyline.

GBR / Position typology	1955		1973		1985	2012
Continuous	standard plot	70%	standard plot	70%		
	corner plot A < 400 m²	85%	corner plot A < 200τ.μ.	80%		
	corner plot A 400 m²	0,8·400 + 0,7 (A-400)	v (one corner)	0,8·200 + 0,7 (A-200)		
			v times corner	v·0,8·200 + 0,7 (A - v·200)		
Non continuous		60%		60%		
Mixed		60%		60%		
Detached from each side		50%		40%	70%	60%

43

41. The conceptual volume

42. Position typology parameters in the different GBRs.
    x: minimum dimension of building's face
    y: minimum dimension of building's depth
    F: minimum dimension of plot's face
    D: minimum dimension of plot's depth
    A: minimum area of the plot (m²)

43. Variations of maximum development of the plot in different GBRs

44. Diagrammatic representation of the relationship built-unbuilt based on the minimum dimensions required for a plot in the GBRs of 1929, 1955, 1973 and for the three main position typologies.

Source: made by author based on the General Building Regulations

CONTINUOUS   NON CONTINUOUS   DETACHED FROM ALL SIDES

44
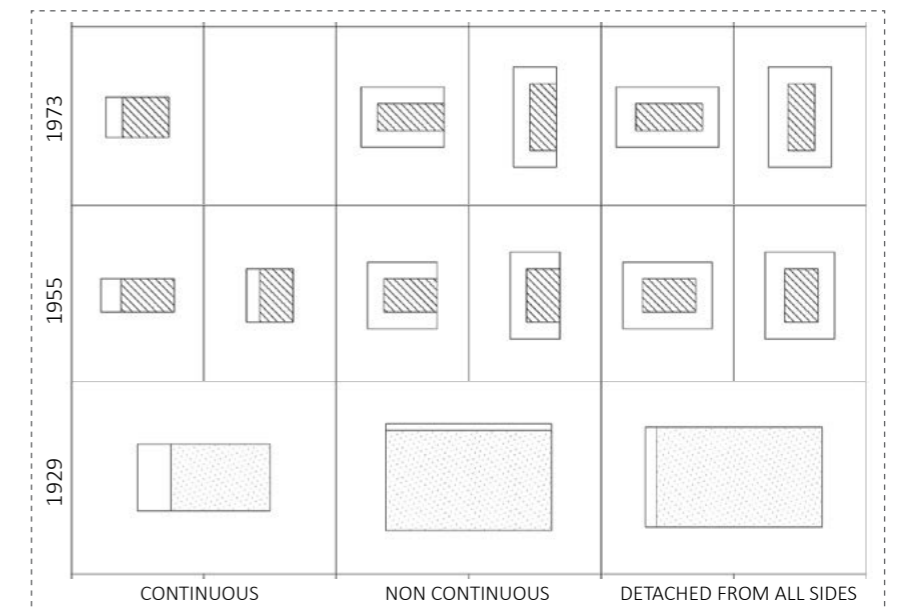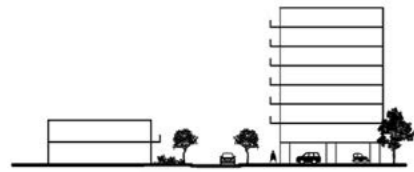
45. Section at an area where the residential prevails and the impact of position typology is more evident. Left, an older single or double-family house with a flower bed in front; the garden plays the role of semi-public transition space. Right, a *polykatoikia* with pilotis at the groundfloor; unfortunately instead of an enlarged public- semi-public space, we have extensive parking.

46. Section at an area where residential kind of balances other uses prevails. At the left, a *polykatoikia* with higher groundfloor to accommodate commercial uses. At the right, a *polykatoikia* with semi-basement as a result of the regulations about the height and volume of the buildings.

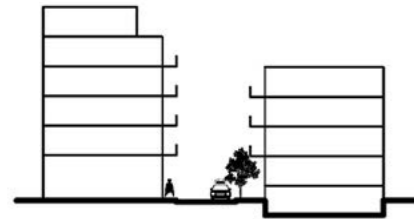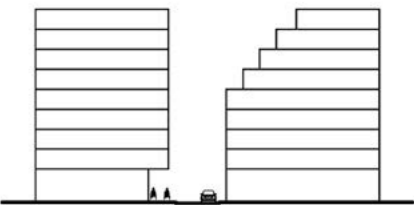47. Section at a city center area where other uses are more common than residential. At the left, a polykatoikia with higher groundfloor at withdrawal from the building line to facilitate commercial uses and expand the public space. At the right, a polykatoikia with several floors at standard withdrawal, as a result of regulations about the height and volume of the buildings.

1929	conceptual volume
	street width
	maximum height of area
1955	number of floors on facade
	number of floors withdrawn
	maximum height of area
1973	number of floors on facade
	$H = v \cdot 3{,}30 + C$
	street width
	maximum height of area
	building to land ratio
	total number of floors
1985 και 2012	conceptual volume
	building to land ratio & maximum height of area
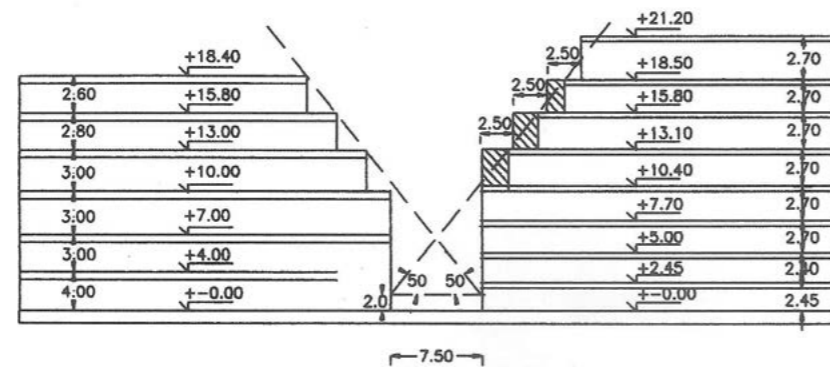
48. Diagrammatic representation of the difference in the final result of the conceptual volume of GBR 1929 and the standard withdrawal of GBR 1955.

49. (left) The different parameters defining the building's final height and volume in different GBRs.

Source: made by author based on the General Building Regulations & Σακελλαρόπουλος *2003*

50. Urban area of *Aroi, Patra*. The urban form is a synthesis of diverse structural and morphological elements, as a result of the developing legal framework. We see here how the standard small plot developed under different conditions as well as the intense transformation of the skyline.

In order to map the spatial expression of the aforementioned cultural heritage elements as a result of the building regulations, a series of parameters was chosen related to the aforementioned thematic groups. The parameters were used indicatively in two typical blocks of the chosen Apollon neighbourhood. Due to the similar structure with the rest of the blocks, it is safe to deduce the respective structural elements throughout the urbanized area and present them all together at one map (p. 132, fig. 122).

In order to define the element of multi-functionality, the different uses found in the two blocks were mapped (fig. 51). For the elements of horizontal ownership (and thus multi-ownership) and the attitude of owning immovable property, which translates into the great amount of owners and stakeholders, the parameters mapped were the number of plots within the block and the amount of properties and proprietors by plot (fig. 52-53). The number and configuration of the plots highlights their characteristic small size and the long, narrow-face shape.

For the structural and morphological elements, the parameters were used as following: the proportion of built-unbuilt space and the number of structures are indicative of the coverage of free space and the configuration of *akalyptos* (fig. 54-55). The position typology and the steps needed to reach 'home' express the relationship of public-private (fig. 56). The elevation of the two blocks' facades and the building typology (single-family house, double-family house or multi-family house) are the definitive parameters of the area's skyline (fig. 57-58).

A | Multifunctionality of urban space

51. Land uses

		Mixed residential	
▬	Residential	▥	Pilotis (parking)
▬	Storage	▬	Pharmacy
▦	Pedestrian streets	▬	Social care
▢	Property boundaries	▮	Light industry (car workshop)
		▤	Leisure (restaurant)
		▦	Without use (abandoned)
		▦	Partially empty

101

52. Plots within the blocks
The drawing shows where the boundaries of the plots and not the built space.

53. Number of proprietors within a plot

▬	One proprietor
▬	More than one
▢	Ambiguous

The ambiguous cases might belong to one person but house more than one households.

N 0 50 100m

B | The ownership system and the right to develop the land

102

103
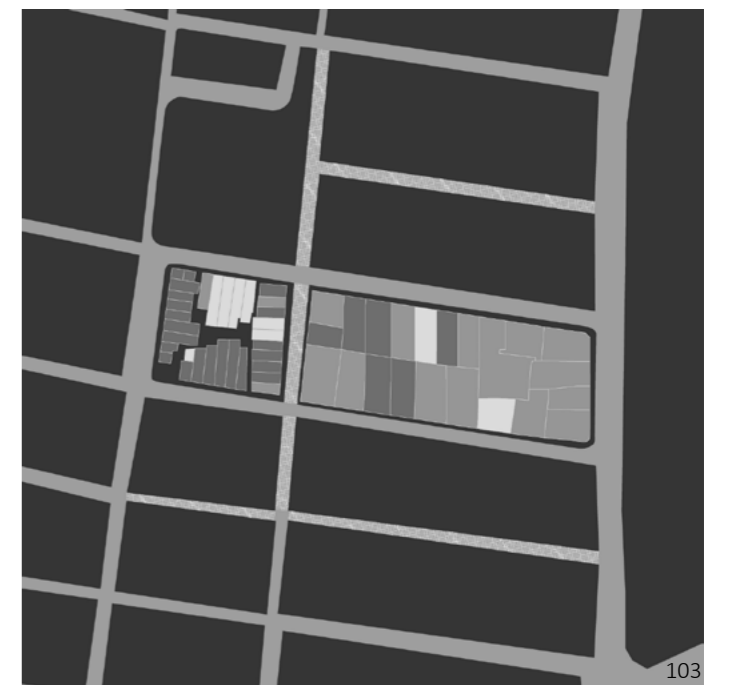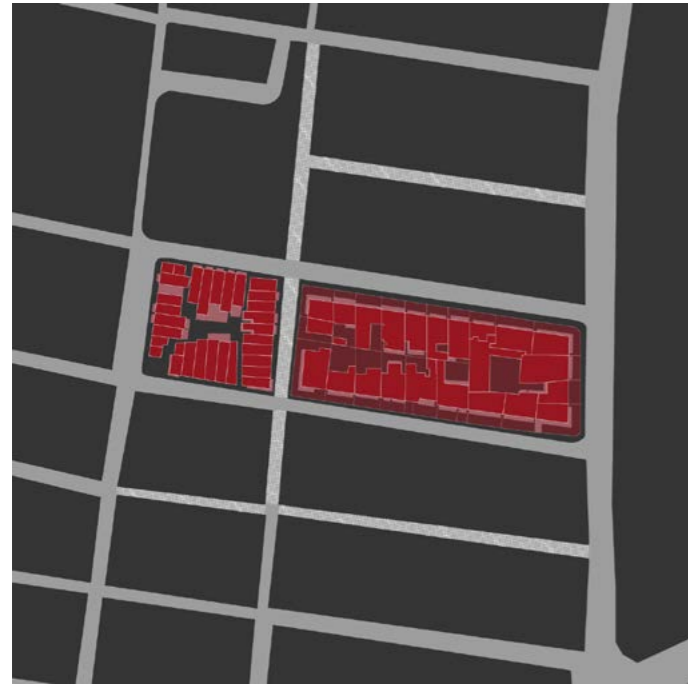
54. Built and unbuilt space

▮ Building
▮ Balcony or porch (semi-built)
▮ Unbuilt space; private
▮ Unbuilt space;public

55. Number of structures within the plot

▮ One structure
▮ One central with secondary
▮ More than one (incremental)

56. Relationship of public and private

○ Entrance to plot/property
◔ Entrance to the building
● Entrance to residence (home)
● Entrance to shop

57. Building typology

▮ Single-family house
▮ Double-family house
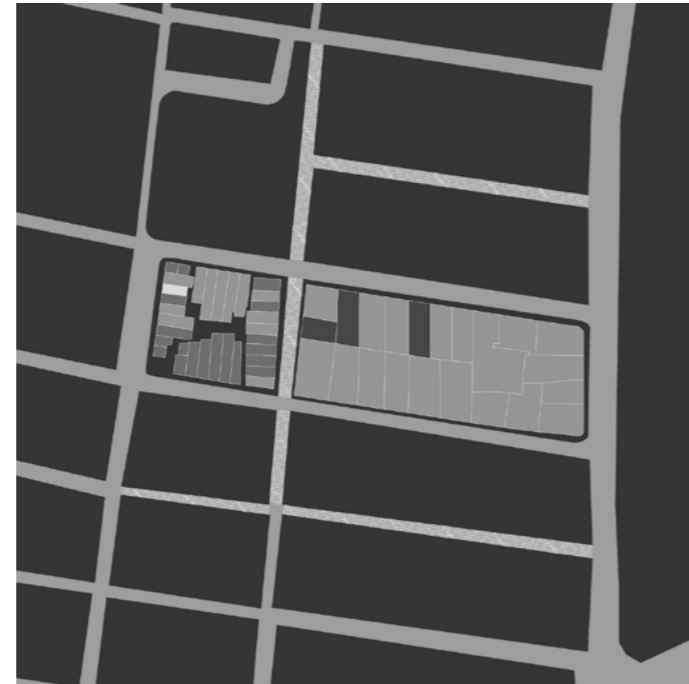▮ Multi-family house or Apartment building (*polykatoikia*)

The detailed analysis of the two representative blocks allows us to draw conclusions about the elements and characteristics that need to be integrated into the intervention proposal. For example, the scale and type of functions show that the reuse of spaces should accommodate low profile land uses, such as small commerce or local health care.

The proportion of built and unbuilt space (fig. 54) makes evident the problem of high land coverage and the need to release space and redesign the open space with softer pavement and more user-friendly qualities. At the same time, the fragmentation of open space stresses the importance of incremental and focal interventions such as a network of green pockets.

Fig. 56 indicates the relationship between public and private space and the position typology. More specifically,

the first is expressed through the number of steps needed to enter the residence (home), which represents the place of absolute privacy. The second is seen in the difference between the property line and the building line. In half of the cases, the buildings withdraw from the property line and shape a semi-private/semi-public space that influences the character of the place and its experience by the user. This transitional space facilitates the integration of a slow mobility network and fosters social interaction.

The building typology and the height combined with the width of the road define the skyline and affect the sense of openness, safety and comfort. It is crucial to respect their scale in order to avoid the disruption of the urban space by massive flows, and thus jeopardize spatial and social cohesion.
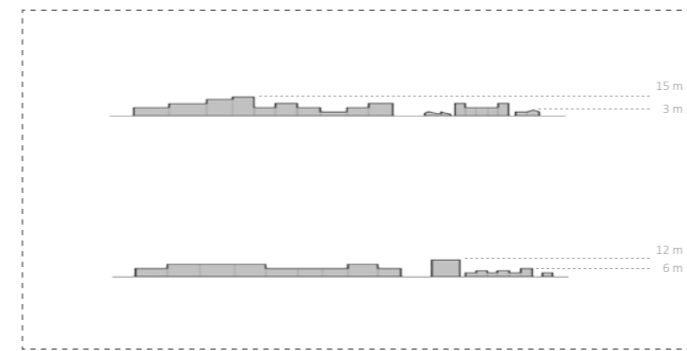
58. Elevation along the streets Mpaltatzi and Stratou

As a conclusion of the parameters' analysis, a series of embedded characteristic can be recognized as elements of cultural heritage in the ordinary urban environment. Overall, the structure of the blocks needs to be maintained. More specifically, reuse of spaces should accommodate small scale and local impact uses. New developments should respect and enhance if possible the transitional space formed by the distinction between property and building line. No more than two plots should be allowed to merge, unless to be used as public space; developments of large scale will disrupt the continuity of the urban fabric. Likewise, the proposed and allowed housing development should not exceed the triple-residence typology in order to preserve the plot coverage and a uniform character and skyline.

The analysis of cultural heritage presented previously enabled the understanding of cultural heritage of the ordinary urban environment as a broad field, which comprises the tangible and intangible expressions and elements of everyday life. These elements have influenced or influence the ordinary life in such a powerful way that they become deeply embedded in local culture and characterize urban spaces and social dynamics. However, only a part of these cultural heritage elements is officially recognized as such. As a result, a great amount of cultural heritage of the ordinary urban environment remains unrecognised and unappreciated.

59. The HBH factory, characteristic sample of industrial complex of the 19th - 20th century and representative of beverages' production facility. Under the new designation system, it would be level-1 cultural heritage. Although officially designated industrial heritage, it remains unused.

Source: https://www.flickr.com/ photos/57763865@N07/16938170869/

60. Warehouses and workshops in the former manufacturing area of Agios Dionysios. The majority used to process and sell iron sheets. The modern additions are visible, but their distinctive character is maintained. Under the new designation system, these would be level-2 cultural heritage.

Source: http://www.portnet.gr/diadromes-portnet/9790-stis-lamarines-2.html

However, declaring as heritage vast surfaces of the urban territory is not the optimum solution to ensure the appreciation and preservation of testimonies of ordinary life. Indeed, such action, in the national context of Greece, could lead to abandonment and low interest of investment in these infrastructures, due to local governance arrangements regarding heritage protection. As an alternative, this work identified the need of governmental actions that introduce a second type of official recognition of heritage that effectively protects, preserves and manages the entire spectrum of cultural heritage of the ordinary urban environment. The existing governance system uses a strict dichotomous recognition of elements as whether or not official heritage. This categorization leaves no room for flexibility and implies that only two ways of addressing cultural heritage are possible: absolute conservation or absolute idleness. Consequently, this separation is often regarded as the defining criteria about the significance of any cultural heritage element.

Taking into consideration the great number and diversity of cultural heritage elements, this work proposes a two-level system of official designation where each represents different priorities and a set of corresponding actions. Level-1 includes the most representative, unique and endangered cultural heritage elements, which need to be protected by strict regulations and whose development require the joint efforts of governmental, academic, private and societal institutions. Level-2 includes cultural heritage elements whose preservation is pivotal to the historical continuity of urban space, yet they can undergo a series of modifications without altering their essence. In fact, the adjustment process itself can be considered part of the cultural heritage value embedded in these elements. An additional characteristic of level-2 cultural heritage is its eligibility to be designated by local authorities and then managed and maintained by smaller institutions or even individuals.

To illustrate the suggested approach, this work considered two testimonies of productive landscapes in Piraeus. On the one hand, the HBH industrial complex of the early 20th century includes the original buildings in good condition and safeguards a series of cultural elements: the structures and machinery are indicative of the productive system and technology of that time, while the buildings' configuration and morphological characteristics stand as testimonies of architecture and urbanism (fig.59). On the other hand, a significant number of warehouses and industrial buildings are scattered through the urban tissue of former industrial areas of Piraeus municipality. Their preservation is important, yet their restoration and reuse can follow a more flexible path (fig.60). In this case, the industrial complex is level-1 while the warehouses are level-2 cultural heritage. Consequently, the HBH industrial complex would be under the jurisdiction of the state while the warehouses could be privatized. Respectively, their development will be subject to different regulations: the

permitted interventions in structure, form and use will be precisely defined for the HBH industrial complex whereas a more general intervention guide for the warehouses would be sufficient to delineate the main methodology.

This research showed it is possible to define spatially the spectrum of cultural heritage of the ordinary urban environment through the understanding of the place and its historical evolution. Cultural heritage lies into a series of significant 'details' or 'typicalities' that have outlined the way the city has evolved through time. For instance, in the case of Piraeus periphery, heritage is seen in the officially declared industrial heritage, archaeological sites and buildings of historical or architectural value, but also in former refugee settlements and the way the orthogonal grid designed partially by the state adapted to the natural slopes and created patches of urban tissue. It is expressed as well through the characteristic multifunctionality of Greek cities and the consistent repetition of features such as the local convenient store or the structural elements of an average block like the *akalyptos*, the building typologies or the small-sized plots (fig. 61a, b). Fig. 62 shows some of the elements mentioned in the analysis as cultural heritage due to historical evolution at the scale of the periphery. The suggested elements include refugee houses, characteristic street patterns and defining axes; as well as buildings and areas of historical significance.

Lastly, this research also highlighted that elements of cultural heritage have spatial qualities that can be used to address existing urban challenges. The summarized listing of the cultural heritage of the periphery of Piraeus in the following pages is a concise overview of the cultural richness of the case study area. It includes all the elements that this research was able to identify as cultural heritage of the ordinary urban environment as well as the category of archaeological findings. Although the latter do not relate to the modern urban life, their presence within the urbanized environment impacted, albeit indirectly, on its configuration. Therefore, it was considered valuable to mention this particular category as cultural heritage in (but not of) the ordinary urban environment.

In conclusion, this analysis stressed the need to adopt a new approach towards cultural heritage of the ordinary urban environment and enabled the identification of several spatial features that characterize cultural heritage in the periphery of Piraeus. The above mentioned elements were used to structure the principles that are presented in chapter 4 while the three main methodological steps used in this chapter (research on the official heritage, historical evolution and building regulation) were followed in the identification process of cultural heritage elements at the neighbourhood scale in chapter 5.

62. Elements of cultural heritage of the ordinary urban environment which draw their significance from the historical evolution of the area. This map is only indicative to help the reader visualize some concepts and does not represent a full listing.

A missing group of elements is the representative buildings of modern, post-modern and contemporary architecture. Although this kind of buildings are not depicted at the moment, it is highly probable that they would form an image similar to the one of neoclassic structures in Piraeus historical center (fig. 15, p. 32-33).

61a. The ordinary urban environment.
Source: Google view

61b. Elements of cultural heritage as a result of the way the city has been formed.

The way that these settlements climbed up the mountain has given a characteristic street pattern.

The consistent repetition of specific features in the urban fabric, such as the kiosks - convenient stores (orange dots), indicates a cultural aspect related to everyday life. These little structures define anew the urban space and they consist humble landmarks of the ordinary urban environment.

The typical structure of the urban block is a palimpsest of both regulations and unwritten laws, which indicate two conditions: (1) the different approach to the built environment over time (2) the underlying sociopolitical conditions that led to certain spatial needs. The way these needs were satisfied is largely responsible for the morphology and structure of the ordinary urban environment.
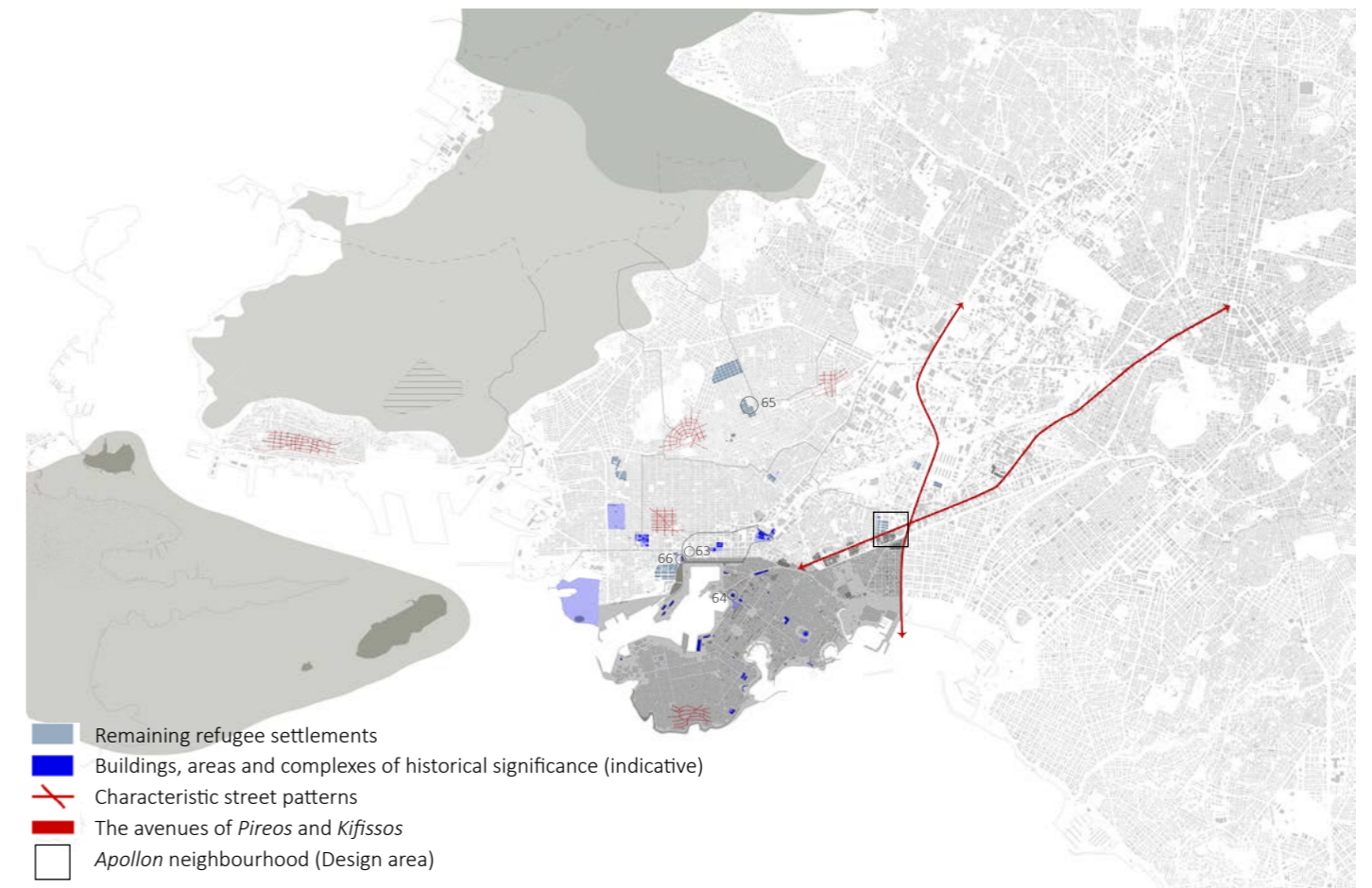
Remaining refugee settlements
Buildings, areas and complexes of historical significance (indicative)
Characteristic street patterns
The avenues of *Pireos* and *Kifissos*
Apollon neighbourhood (Design area)

Archaeological Findings

- Touristic attraction
- Historical interest and value
- Reference points within the city, even defining toponymy

Natural Elements

- They define the urban landscape by contradiction
- Areas of public interest. They can act as connectors and generate flows
- Expression of historical continuity

Historical Monuments (such as war memorials)

- They represent different facets of the history
- They can act as reference points and local landmarks

Religious Monuments

- Bearers of architectural, artistic and aesthetic value
- Bearers of collective memory
- Reference points of collective identity
- Expression of local sociopolitical narratives
- Expression of historical continuity

Industrial Complexes and relevant Facilities

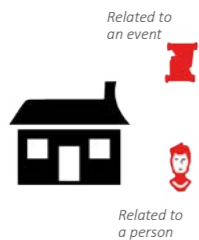- Bearers of architectural value (industrial architecture)
- Considerable size
- Metropolitan accessibility
- Bearers of historical value: Representative of the daily life of the average social classes & Expressions of local sociopolitical narratives

Buildings of Historical Significance

Related to an event

Related to a person

- Medium size
- Disseminated through the city (potential to create conceptual connections)
- Local reference points

Buildings of various Architectural Periods

1950   1960

1970   1980

Image Source: Balaoura 2015

- Bearers of architectural, artistic and aesthetic value
- Medium size
- Disseminated through the city (potential to reuse them in various ways)
- Bearers of historical value: (1) as testimonies of architectural history (2) occasionally related to an event or a person

Remaining Refugee Settlements

- Important architectural ensembles
- Special architectural features such as the publicly accessible inner courtyard
- Structural interest (representative of the self-construction methods)
- Bearers of collective memory

Multi-Functionality & Multi-Ownership
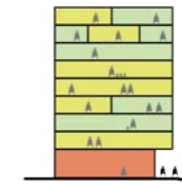
- Avoidance of zoning
- Smoother transition of urban land uses and functions
- Flexibility in transforming the uses
- Great amount of stakeholders
- Property as life investment
- Increased fragmentation of the urban space

Public and Private Space: Relationship and Transition

- Different types of ground floor to street relation
- Various transitional spaces

Akalyptos (p.67)
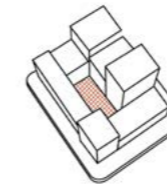
- Semi-public / common free space
- Potentially green area
- Re-interpretation of inner courtyard

Small-Sized Plots

- Fragmented property (both spatially and socially, with implications for any regeneration effort and the management of the built space)
- Small buildings and "pockets" of unbuilt space
- Expression of historical continuity (as a feature dating back to the foundation of the Greek modern state)

Relationship of Built-Unbuilt Space

vs   vs
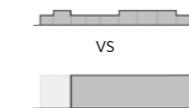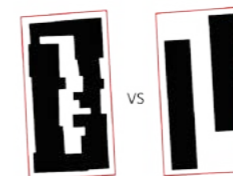
- Defining the density of built and unbuilt
- Differences of scale

Important Axes & Street Patterns
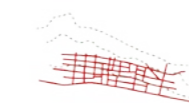
- Expression of historical continuity
- Bearer of collective memory and identity
- Connection of port and city, north and south
- Considerable amount of vacancy along the central
- Proportion of street width and buildings' height
- Different characters (size, mobility etc)
- Synergy with the original landscape
- Integration (local / metropolitan) and accessibility

63. Typical store with items of everyday use. It is representative of the daily routine that used to take place in the commercial/industrial area of *Agios Dionysios* neighbourhood in Piraeus. The original labels, the door and windows are preserved. *Photo by author.*

64. The *Tower of Piraeus*; one of the few skyscrapers in Athens (and Greece overall), built in 1972-1983. Only the first three floors have been ever used. The rest remain empty until today, for various reasons. *Source: http://www.greekarchitects.gr/gr/*

65. An old refugee house next to newer buildings that replaced similar refugee houses but kept the initial plot proportion. *Nikea*, Piraeus periphery. *Photo by author.*

66. The old railway line use to pass through the houses. At the right and left of the rails, buildings made by stone would accommodate storage uses (in the basement/ground level to the rails), light industry/manufacture in the ground floor (face to the street at the other side) and residence on the top floors. This ensemble is today preserved in these two blocks. *Photo by author.*

3 _ SUSTAINABLE URBAN DEVELOPMENT

This chapter addresses the concept of sustainable urban development and explores methods to correlate the theoretical definition of sustainable urban development and a systematic identification of the spatial expression of it in urban landscapes. The main goal of this chapter was to comprehend the main challenges related to elements and issues of sustainable urban development and their spatial expression. This work adopted the approach of sustainable urban development as a synergy of multiple sustainability spheres, as proposed in the *Cultural Heritage Counts for Europe* report (CHCfE 2015). The content of each sustainability sphere was determined based on the methodological tool of *Sustainability Circles* (CoS 2015/2017). The two theoretical approaches were partially adjusted for the purposes of the project and formed the backbone of the spatial analysis regarding sustainable urban development in the periphery of Piraeus.

3.1 _ Theoretical Framework: Sustainable Urban Development

Unprecedented transformations related to society, economy, culture and environment are taking place into modern cities (UNESCO 2011a). As a discipline that addresses the issues of the built environment, urbanism has a significant role in securing the sustainable urban development of cities in rapidly changing economic, environmental and social conditions. In this context, the presented theoretical analysis contributed in deciphering the meaning and content of sustainable urban development and subsequently defining which elements were to be analysed in the case study of Piraeus periphery.

Internationally, there is a strong tendency to reinterpret sustainable urban development as a multifaceted and complex process comprising a set of decisions and actions to ensure resilience, stability and livability (INHERIT 2007). Similarly, urban projects are seen as an opportunity to reflect on achieving sustainability in all sectors of urban life, as evidenced by the plethora of reports on discussing and evaluating regeneration projects all around Europe and the world. The United Nations have declared sustainable cities and communities, and responsible consumption of resources as two out of the seventeen goals in *the 2030 Agenda for Sustainable Development*. That elaborates into making *"cities and human settlements inclusive, safe, resilient and sustainable"* and ensuring *"sustainable consumption and production patterns"* (UN 2016:3, 13) (fig. 67). Therefore, various organizations and institutions work on defining the core elements of sustainable urban development; as well as universal principles of strategic planning and design to achieve the ultimate goal.

Admittedly, there have been fundamental achievements in the general theoretical framework since the 1980s. The definition of sustainable development by the Brundtland Commission of the United Nations, as any form of *"development that meets the needs of the present without compromising the ability of future generations to meet their own needs"* (KEEBLE 1988:16), introduced a much broader view on sustainable development, open to different interpretations. It stated firmly the universal, interracial and intergenerational character of sustainability and its through-scale and transdisciplinary perspective.

67. The 17 global goals of the United Nations for Sustainable Development as presented in the 2030 Agenda (UN 2015)
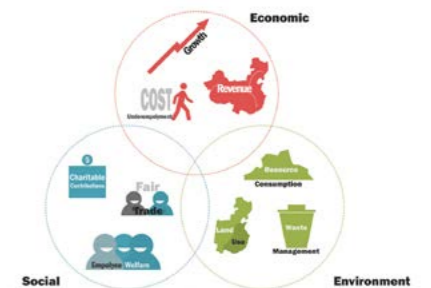

Soon after, the three E's of sustainability triangle by Goodland (1995), the conceptually similar Triple Bottom-Line approach by Elkington (1997) and the three-legged stool of sustainability by Hasna (2006) established the equal importance of social structures, economic prosperity and environmental resilience in pursuing sustainable development (fig. 68-70). As a result, the concepts of spatial equity, socio-spatial justice and social cohesion entered anew the field of urbanism and planning.

Unfortunately, the economic crisis of the last decade revealed fundamental weaknesses of the European Union in all three economic, social and political levels. It also halted and even pushed back the socioeconomic progress of the past twenty years (EUROPEAN COMMISSION 2010). In order to overcome the general recession, the European Commission set as Europe's central aim the *"sustainable, smart and inclusive growth. Sustainable growth"* was defined as a *"more resource efficient, greener and more competitive economy [...] exploiting Europe's leadership in the race to develop new processes and technologies"* (EUROPEAN COMMISSION 2010:12). The focus was on using clean energy and upcoming technologies, safeguarding the small-medium enterprises and creating new jobs through the development of these sectors. *Smart growth* highlighted entrepreneurship and financial support in digital products and services as conditions to strengthen the knowledge and innovation sectors and ensure that ideas can evolve and find application in the global market. *Inclusive growth* addressed educating and empowering people to confront the changing world by tackling unemployment, poverty and social inequalities.

These approaches consolidated the notion that sustainable development (should) address economic, environmental and social facets of human activities as of equal importance to the resilience and livability of the built environment. However, none of them dealt with the significance and the role of culture and heritage as an autonomous category of human activity whose sustainability is jeopardized by the pressure of growing urban transformations, despite the general agreement on the *"need to better integrate and frame urban heritage conservation strategies within the larger goals of overall sustainable development, in order to support public and private actions aimed at preserving and enhancing the quality of the human environment"* (UNESCO 2011b)

Recently, the *Cultural Heritage Counts for Europe* (CHCfE) report moved decisively towards a holistic approach of sustainable development in the built environment (GIRAUD-LABALTE et al. 2015). The project identified four spheres of development and combined them into a four layer approach, thus stressing the need to cross-analyse various aspects of sustainability in order to address successfully the complexity of urban (re)development. These layers embody the environmental, economic, social and cultural sustainability

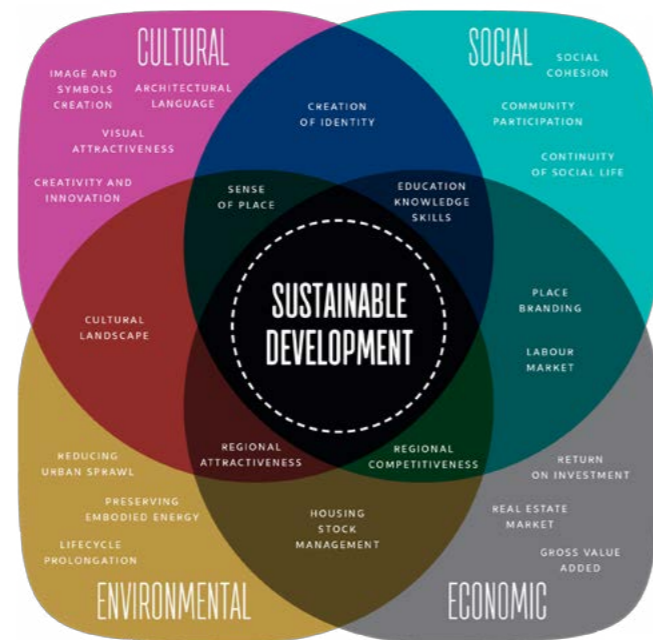
68. The three E's of Sustainability by Goodland, 1995

69. Triple Bottom Line by J. Elkington, 1997

70. The three-legged stool by Hasna 2006

Source: http://statesustainabilityindex.com/three-es-of-sustainability/

and each comprise a series of elements and concepts that contribute to achieve the respective sustainability (fig. 71). This approach made a radical contribution to the body of knowledge in two ways. By recognizing that *"heritage is a resource which can enhance social capital, economic growth and environmental sustainability"* (GIRAUD-LABALTE et al. 2015:100), it introduced the notion of cultural sustainability as equally significant to social, economic and environmental sustainability. By adopting a four-layer approach rather than four-pillar alternative, it stated that environmental, economic, social and cultural sustainability ought to converge and act in synergy in order to achieve sustainable urban development [1].

According to the World Health Organization, *"Environmental sustainability is the ability to maintain rates of renewable resource harvest, pollution creation, and non-renewable resource depletion that can be continued indefinitely. Economic sustainability is the ability to support a defined level of economic production indefinitely. Social sustainability is the ability of a social system, such as a country, to function at a defined level of social well-being indefinitely"* (WHO 2015). As mentioned above, cultural sustainability remains without a commonly accepted definition and could have a dual interpretation as the survival of a culture through time or the perception of sustainability in a certain cultural framework. The content of each sustainability sphere will be further defined and analysed in the following pages and in section 3.2, yet they could be defined in short as following.

In order to emphasize the spatial dimension and potential of cultural heritage for sustainable urban development, this work proposed the additional sphere of *'physical sustainability'* to the above analysed four-layer understanding of sustainable urban development (fig.72). *Physical sustainability* describes an area, a complex or a building/structure in relation to the city's flows, concentrations and reference points or landmarks. Unfortunately, this perspective often seems to be implied or self evident. Researchers, governments and citizens take it for granted and consequently compromise the very existence of cultural heritage. This work argued that physical attributes of cultural heritage elements play a crucial role in the understanding of a 'place', and are vital to any heritage conservation policy and sustainable urban redevelopment plan. Within this study, these attributes are: i) the physical status of structures, that is the condition of buildings in terms of stability, risk of collapsing and various damages; ii) local accessibility; iii) metropolitan accessibility and iv) vicinity to centralities and services.
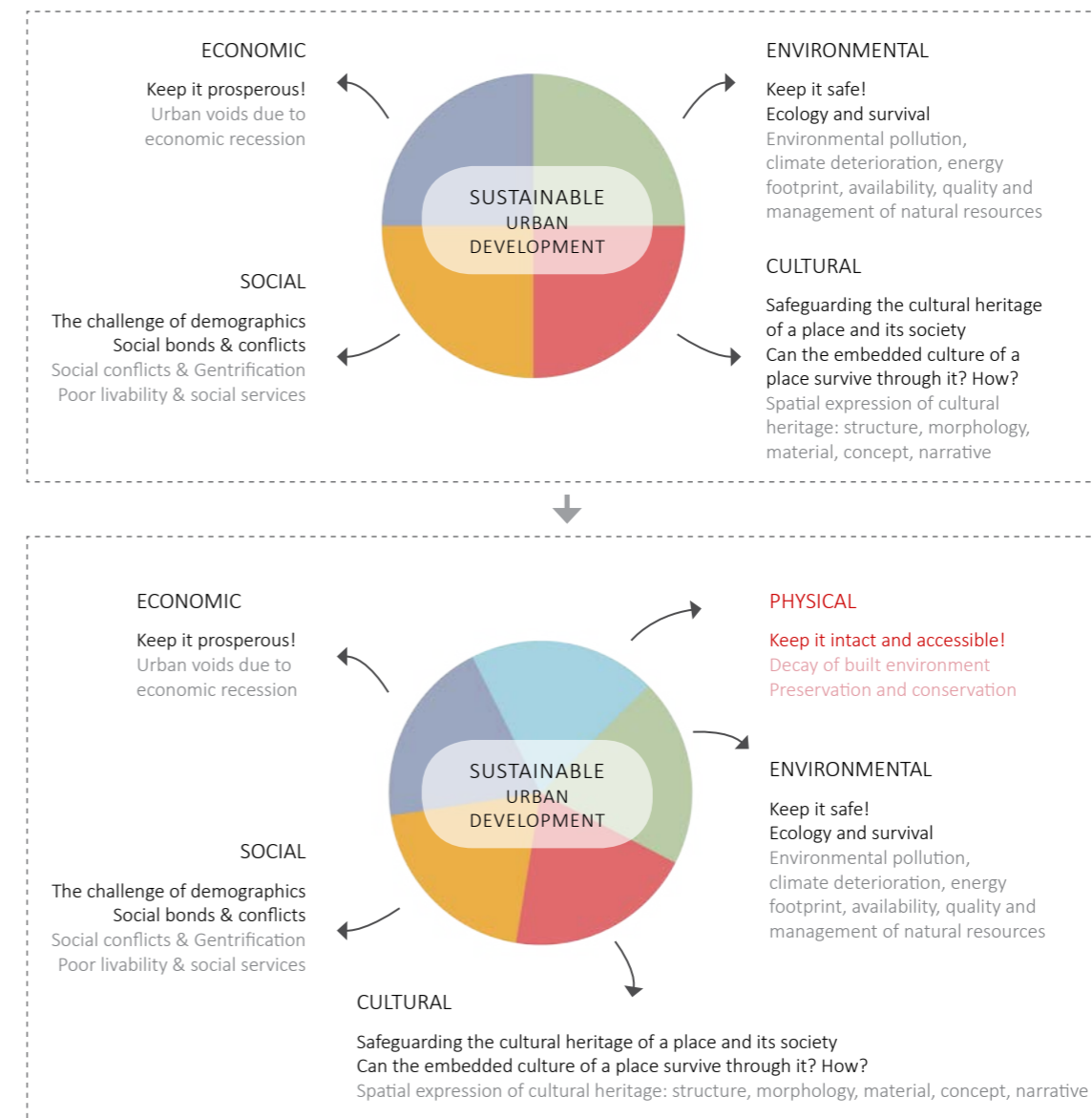
72 a, b. Personal reflection on the four-layer approach of *CHCfE* report and proposal of a five- layer approach in order to investigate the concept of sustainable urban development and its spatial expression within the periphery of Piraeus.

71. Sustainable development as suggested by the *Cultural Heritage Counts for Europe* report (2015).

[1] As mentioned in the report, *"It is suggested that sustainable development occurs when all domains are considered together and all possible logical relations between given domains may occur"* (GIRAUD-LABALTE et al. 2015:100).

The content of sustainability spheres

Having established that sustainable urban development is expressed through the synergistic framework of five spheres of sustainability, the theoretical analysis proceeded in determining the specific content of each sphere. Which features and concepts would indicate the achievement of every sustainability objective? From a theoretical point of view, these elements were specified using the *Circles of Sustainability*, a methodological tool introduced by Paul James in 2015 [2] and adapted in this work to answer to the objective of this project. From a practical point of view, the analysis investigated maps and data related to these elements for each sphere of sustainability in order to identify spatially the main challenges of sustainable urban development in the periphery of Piraeus (section 3.2). This process offered the opportunity to deconstruct the generality of the concept of sustainable development and address its components in specific, as well as to conceptually put together quantifiable and non-quantifiable factors without compromising their importance or contribution.

Originally, the tool of *Sustainability Circles* was developed based on the view that social practices form the background of the urban life and can be categorized in four domains: economics, politics, culture and ecology (CoS 2015/2017). In that way, the sustainability of a city is linked to the sustainability of its society. Hence, by assessing the sustainability of the social life domain we can assess how sustainable a city is (through the activity of its residents). This work embraced the theoretical and conceptual basis of the *Sustainability Circles,* but a series of adjustments were needed in order to incorporate the *Circles of Sustainability* in the research and design process. The adjustments aimed to align this method with the content of sustainable development and referred to its structure and content.

The original graphic comprised four *'domains'* of social life with seven *'subdomains'* each; the latter represent defining elements with significant role in achieving, safeguarding or even disrupting sustainability. Each element could in turn take a value ranging from *'critical'* to *'vibrant'* (fig. 74). In the adjusted version, the following have changed (fig. 75-76): i) the feature of value assigning was excluded from this analysis because the *Sustainability Circles* were used primarily for their content, as a complementary tool of definition; ii)

the domain of ecology matched the sphere of environmental sustainability for practical reasons; iii) the notion of politics was incorporated into the sphere of social sustainability, which in turn was renamed as sociopolitical sustainability; [3] iv) the domain of *'physical sustainability'* was introduced so that the tool would be consistent with the theoretical framework of sustainable urban development, as used in the context of this project; v) certain elements were simplified or merged while others were added. It is important to clarify that the added or adjusted components were implied in the existing version. However, their representation was unnecessarily rigid, the language was occasionally confusing and the individual elements represented values or aspects that could hardly be defined at a small-scale analysis of a city neighbourhood [4].

CIRCLES OF SUSTAINABILITY
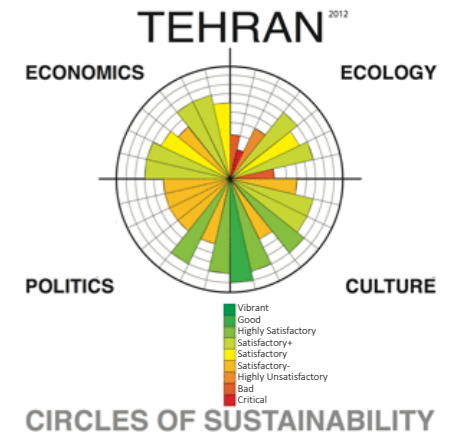
ECONOMICS
    Production and Resourcing
    Exchange and Transfer
    Accounting and Regulation
    Consumption and Use
    Labor and Welfare
    Technology and Infrastructure
    Wealth and Distribution

ECOLOGY
    Materials and Energy
    Water and Air
    Flora and Fauna
    Habitat and Settlements
    Built-Form and Transport
    Embodiment and Sustenance
    Emission and Waste

POLITICS
    Organization and Governance
    Law and Justice
    Communication and Critique
    Representation and Negotiation
    Security and Accord
    Dialogue and Reconciliation
    Ethics and Accountability

CULTURE
    Identity and Engagement
    Creativity and Recreation
    Memory and Projection
    Beliefs and Ideas
    Gender and Generations
    Enquiry and Learning
    Wellbeing and Health

73. Diagrammatic explanation of the graphic's structure

| Circle of Sustainability | Domain | Sub-domain |

74. (next page) The Urban profile of Tehran developed using the existing framework and methodology.

Source: *http://www.circlesofsustainability.org/circles-overview/profile-circles/*

[2] The *Circles of Sustainability* are the graphic representation of the so called *Profile Circles*, which is the first part of the *Circles of Social life* approach. The latter also comprises the *Process Circles*, the *Engagement Circles* and the *Knowledge Circles*. The whole method was developed in detail by Paul James in his book *Urban Sustainability in Theory and Practice: Circles of Sustainability* (2015) and *"provides tools for responding to four key questions […] associated with four related circles"* (CoS 2015/2017).

[3] The two domains of economics and culture correspond accordingly to the spheres of economic and cultural sustainability.

[4] As aforementioned, these categories and elements have been adjusted based on the existing method of *Sustainability Circles*. Details about the exact contents of each element of the *Sustainability Circle* as developed by the research team of the *Circles Project* can be found on their official web page (http://www.circlesofsustainability.org/circles-overview/profile-circles/). Extensive information about the content of the elements in the context of this project can be found in the relevant tables presented at the Appendix.

75. The elements of sustainability spheres (domains) in the existing framework.

76. The elements of sustainability spheres, as adjusted in the context of this research.

Graphic by author.

3.2 _ Challenges of Sustainable Urban Development in Piraeus Periphery

The structure of section 3.2 was based on the five-layers framework of sustainable urban development and aimed to highlight the primary challenges that need to be addressed by the design proposals in the case study area of Piraeus periphery. The characteristic elements of each sustainability sphere were identified according to (the content of) *Sustainability Circles*.

Despite the indisputable importance of all five spheres, this work focuses on developing an integrated strategy that addresses the physical, environmental and cultural sustainability as a representative version of the approach and methodology suggested by this project. Therefore, the spatial analysis addressed thoroughly three out of the five spheres of sustainability, namely the physical, environmental and cultural, while the spheres of social and economic sustainability were briefly investigated. The development of guiding principles and design proposals in the following chapters was aligned to this decision.

3.2.a _ Physical Sustainability

This sphere of sustainability comprises the physical state of structures and the built environment, the local and metropolitan accessibility and the vicinity to centralities and services.

In terms of physical state, the overall urban space presents a state of decay, including structures and sites with cultural value. The majority of the built stock in the periphery of Piraeus (55.4%) was constructed in the decade 1971 - 1980 or earlier (Hellenic Statistical Authority 2011, fig. 77), which already implies a level of wear due to time. In parallel, the urban sprawl of the past three decades towards the northeast suburbs of Attica has increased the percentage of vacancies (fig. 78). That is because the urban sprawl was not driven by booming population numbers or (emerging) housing needs, but by the socioeconomic changes in the average household and the raising living standards (Palogou 2009-2010). The vacant apartments or buildings have multiplied in the recent years as the financial crisis has led many businesses and productive activities to cease their operations. As a result of desuetude, a significant amount of the built environment is poorly maintained, in an incomplete and incorrect way, if not at all abandoned.

Single-family house
Double-family house
Multi-storey residential building
Building without housing as its primary function

77. Buildings according to construction period

Source: Hellenic Statistical Authority 2011. Edited by author

Occupied housing — Vacant- second housing
Vacant- for sale — Vacant- rural
Vacant- for renting — Vacant for other reason
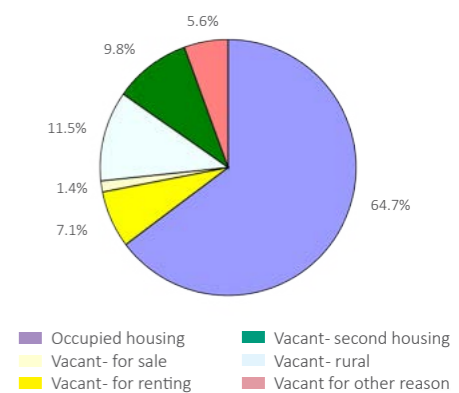
78. Vacant housing according to reason of vacancy.

Source: Hellenic Statistical Authority 2011. Edited by author

Note: the statistical graphics refer to the total amount of buildings in Greece but the proportions do not differ for the built stock in the periphery of Piraeus.

In terms of accessibility, there is a strong dependence on private car (Vlastos 2015). Especially citizens of the wider metropolitan area of Athens (out of Athens centre) prefer the use of private cars to the public mobility system (commonly known as slow, insufficient and inefficient).

"... following all these infrastructure works made for the car and public transport, what can be observed today is that Athens is divided into the centre, where the use of public transportation is favourable and the rest of the city, of multiple area size, wherein the private car remains advantageous"

Vlastos (2015)

From the point of view of metropolitan accessibility, the car infrastructure serves sufficiently all the areas of the Piraeus periphery (fig. 81a). In addition, the fixed track means of transportation reach the port (and hence city centre) of Piraeus, which works as a reference point and transfer node, primarily for the rest of Piraeus municipality and the areas of *Perama, Drapetsona* and *Keratsini*. In the same way, another centrality that draws attention is the metro station of *Egaleo*. Although outside the boundaries of Piraeus periphery, it works regularly as a transfer node for the residents of *Korydallos* and *Nikea*. Currently, the west municipalities are disconnected in terms of fixed track means (fig. 81b), which intensifies the car dependency. However, the extension of the *metro line 3 'Agia Marina - Eleftherios Venizelos Airport'* towards Piraeus through the western suburbs proceeds intensively (fig. 80) and the first three stations of *Agia Varvara, Korydallos and Nikea* are expected to be delivered in 2019 (News247 2017).

From the point of view of local accessibility, the car use prevails once again, partially due to the lack of alternative means of transportation. Public transportation is organized around a dense, yet inadequate bus network, which lacks proper organization of timetables and routes in order to meet the needs while the bus fleet becomes largely obsolete. Apart from the vehicle based accessibility alternatives, the scarcity of pedestrian or bike networks exposes the disproportional distribution of urban space throughout the area. Pedestrians have very little space, since sidewalks are generally too narrow, badly maintained and regularly occupied by parked cars (fig. 79). Occasionally, some streets are pedestrianised within local commercial areas of the municipalities or following local initiatives. The first case is somehow more organized and two examples are to be found in the periphery of Piraeus (Piraeus city centre and *Nikea*). The second case is reflected in fig. 81b with the scattered, disconnected fragments of pedestrian streets. The situation is even worse with the -basically inexistent- bike network (fig. 81b).

In terms of vicinity to centralities and services, the research showed that all residential areas are in acceptable distance from municipality centres and basic services such as healthcare, education, leisure etc (fig. 81c). However,

these services are not enough to cover the needs of the half million population living in the area due to understaffed facilities, insufficient equipment, unqualified or unskilled employees and lack of proper management training of high rank employees with positions of responsibility, which results in deficient and damaging human resources management (Ministry of Administrative Reformation 2007). Consequently, the public services are inefficient, unproductive and economically damaging for the public sector (Ministry of Administrative Reformation 2007). The last topic to be mentioned in this analysis is the metropolitan centralities; areas of public interest at locations widely accessible, such as the Environmental Park of *Schisto*, Piraeus and *Egaleo* mobility nodes, Piraeus city centre, the cultural centre *Manos Loizos*, the Stadiums *Peace and Friendship* and *Karaiskaki* and other major leisure, cultural and athletic facilities. Although these centralities could have metropolitan impact, the accessibility problems mentioned above undermine their potentials.

In conclusion, the continuing degradation of the built environment influences the overall image and attractiveness of the city and intensifies the citizens' indifference towards the urban space. This long-term inaction hinders the development of a comprehensive policy and carries on problems to the next generation of decision-makers. In parallel, the lack of slow mobility networks intensifies the fragmentation of the urban space and leads to the marginalisation of the disconnected areas. The urban space bears the marks of car dependency and its configuration impedes the safe and reliable commute of non-car users within the city. Therefore, the analysis of the elements of physical sustainability highlighted the need to reverse the degradation process of the building stock, to provide accessibility for all the users of the urban space and to enhance the vitality of the metropolitan centralities network.

79. Perspective view of a commercial street in a general residential area. The configuration of the space impedes the circulating of pedestrians and bikers.

i) Although there is enough space, it is occupied by parked cars and there is no biking lane.

ii) The placement of trees reduces the useful space at half without at least replacing the hard pavement with greenery or a softer material.

80. Planned extension of *Attico Metro - line 3*

81a

National highway
Metropolitan axes
Primary municipal axes (main traffic network)

☐ Municipality borders
☐ Peripheral units borders
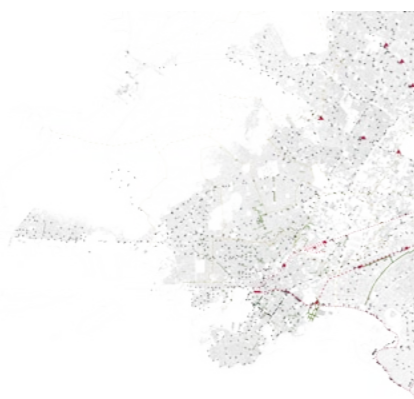
81b

╦╦ Freight railway and regional train
╦╦ Subway
■ Train or subway station
▲ Metro line stops
•••• Tram
● Public bus stops
— Pedestrian streets
— Streets with bike lanes

81c

● Centralities

☐ *Apollon* neighbourhood

81. Map of mobility infrastructure, accessibility and centralities. The centralities are places where people from different municipalities would visit or gather. They are green areas of metropolitan range, Piraeus and *Egaleo* centres as mobility nodes, Piraeus city centre and major leisure, cultural and athletic facilities.

Overall, both local and metropolitan accessibility are car oriented. The former is fairly good despite the lack of organized slow mobility networks while the latter has few alternatives other than the car due to lack of connections to fixed track means and inadequate bus service. As a consequence, the diverse centralities are not well connected and therefore miss the opportunity of metropolitan impact through a coherent network.

Design by author based on GIS data from
mapzen.com
https://www.google.com/maps/d/viewer?mid=1Mlm8sacYM7qXOeLsZHpOL
i7I6AE&hl=en_US&ll=37.96115743903308%2C23.682336521069374&z=13
http://www.openstreetmap.org/

N
0   1   2   5km
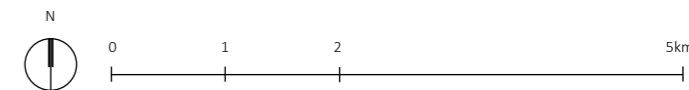
3.2.b _ Environmental sustainability

This sphere of sustainability addresses the following: i) habitat and settlements (topography and land-use); ii) availability and quality of materials (e.g. minerals, soil fertility) and energy (use and consumption, renewable resources); iii) condition of air and water (vitality, adaptability, climate); iv) condition of flora and fauna (biodiversity and vitality); v) emissions and waste (pollution, management of solid and liquid waste); vi) physical, mental and psychological health of the inhabitants. Within the context of this analysis, four out of the six elements of environmental sustainability were addressed, namely the habitat and settlements, air and water, flora and fauna and emissions and waste.

In terms of habitat and settlements, the natural landscape has left indelible traces in the configuration of modern urban environment. The topography of the periphery of Piraeus is defined by the mountainous relief of Mount *Egaleo* in the west, the long coastline, the river *Kifissos* crossing the basin from north to south and its plain area, *Eleonas* (see section 2.2.b). All four of them affected significantly the urbanization process and vice versa. More specifically, as mentioned above in section 2.2, the mountain slopes were gradually occupied by the migrants flowing into the area, thus the city adapted to the contours and climbed up the mountain. Similarly, the coastline was transformed to serve the needs of the modern city both as a port and an urban centre. Today the access to the waterfront is inhibited by the heavy port activities along the west coast (fig. 82) and the plethora of cafeterias, restaurants and yacht docks along the eastern (fig. 83 a, b).

Kifissos riverbed was either confined or forced underground and converted into a highway. A small part of the river was left uncovered but remained practically inaccessible and detached from the adjacent urban space [5] (fig. 84). The multiple streams flowing from the hills into *Kifissos* river were put underground as well, yet their trace is reflected in the modern street pattern (fig. 94b). Lastly, the plain area of *Eleonas* was transformed from the renowned olive grove of Attica to an extended industrial zone, destroying one of the largest natural reserves of the basin.

In terms of air and water, the vitality and adaptability of the region to climate change and the urban transformations are affected by the downgraded microclimate and the flooding risks. The urban configuration *"affects the microclimatic conditions because it determines at great extent the shading and airflow between buildings (ventilation)"* (Karakounos & Stathakis 2013). Proper

[5] *Kifissos* river used to be one of the most important and renowned natural landmarks for all the inhabitants of the basin of Attica. People used to spend leisure time during weekends and holidays along its riverbed until the 1960s. The urbanization and industrialization processes contributed to its pollution by urban and industrial wastewater as well as its detachment from the residential areas.

82. View of the further west coast of Piraeus port, in front of *Perama*.
Source: http://www.paraskhnio.gr/i-anaplasi-tis-drapetsonas-perioxi-li/

83 a, b. The *Tourkolimano* bay (ancient bay of *Munichia*) before and after the intense building. The access to the waterfront is not public anymore; it is for the clients of the restaurants and bars who have set *"temporary light"* facilities on the waterfront, possibly without the proper license.
Sources: http://kanaliena.gr/sto-kosmopolitiko-tourkolimano/

http://www.nou-pou.gr/articles/pame-peiraia/kyriakatikh-bolta-sto-mikrolimano/

84. The river *Kiffisos* at its last part, uncovered but under the elevated highway and with its riverbed built and cut off the urban area.
Photo by author

87. Graphic representation of air pollution due to gas emissions in streets of the continuous position typology (see p.59)
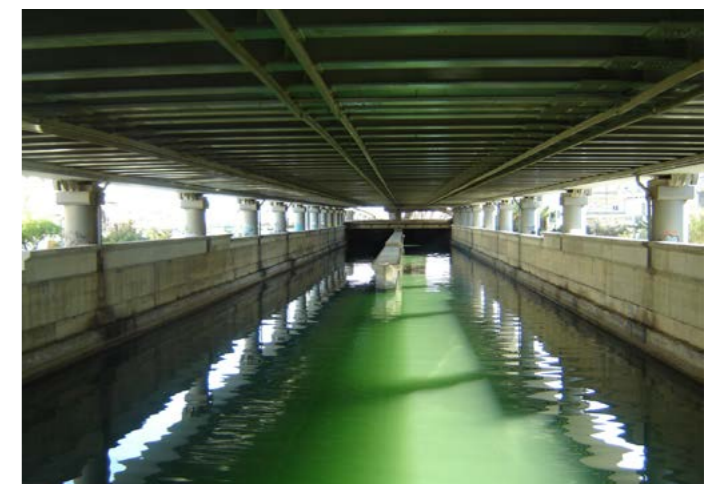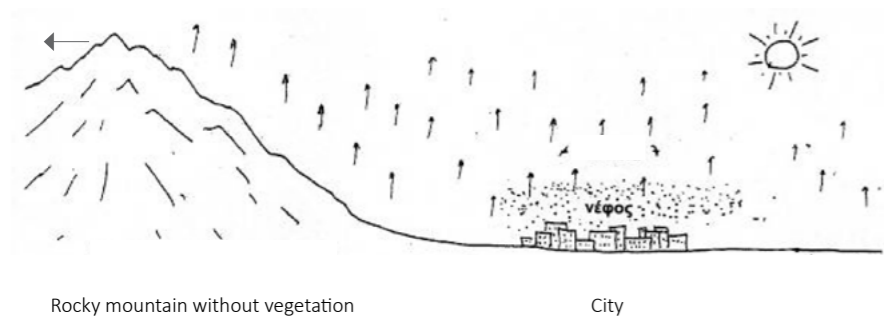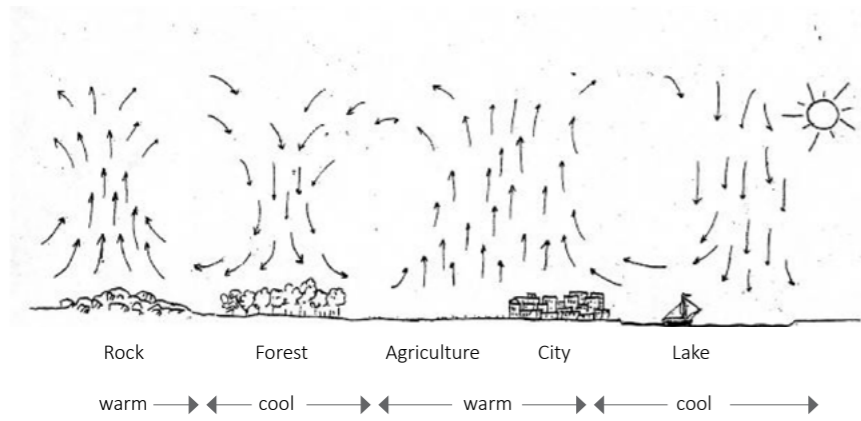
85. Meteorological principles that affect the microclimate of the city.

The different microclimate conditions are due to the different thermal behaviour of the landscape elements. Elements like the rock, the city and agricultural fields absorb the heat whereas green areas and water body do not. The regular repetition of unbuilt and preferably green spaces in the dense urban fabric helps cool down the air of adjacent areas and facilitates the air renewal.

86. In Athens basin, the similar thermal behaviour of the rocky mountain and the city prevent the air renewal and results in accumulation of emissions and heat upon the city.

Source: Sarigiannis 2007; edited by author

88 a, b. Flooding incidents in 2014 in West Attica. On the left, a flooded underground passage; on the right, flooded street in Piraeus city centre.

Source: http://www.naftemporiki.gr/slideshows/872654/eikones-katastrofis-apo-tin-kakokairia-sti-dutiki-attiki/all

shading and ventilation are crucial to the atmospheric cleansing and cooling of an urban area and they are both influenced by the orientation and width of the streets, the height and shape of the building blocks and the building density. Unfortunately, the spatial characteristics throughout the periphery of Piraeus obstruct the successful regulation of the microclimate (fig. 85-87). The location of the city on the bare mountain slopes in combination with the high density of urban space impede air renewal and lead to temperature rise (fig. 86). Likewise, the unfavourable proportion of (narrow) streets to the height of buildings prevents the cleansing of air from gas emissions that accumulate and get trapped within the urban fabric (fig. 87). This already suffocating feeling in public space is further deteriorated by the lack of organized greenery in tactical intervals that would increase significantly the shading area and contribute to temperature reduction due to the plants' *"lower thermal capacity and thermal conductivity in relation to building materials and outdoor spaces (Gianna, 2002)"* (Karakounos & Stathakis 2013). The urban greenery would also act as a filter by absorbing about 50% of the solar radiation while reflecting 30% and emitting only 20% (Karakounos & Stathakis 2013).

Another issue of adaptability is the recurrent flooding incidents that occur in case of heavy winter rainfalls and provokes several damages, from ground-floor and basement flooding to paralysis of the road network and landslides (fig. 88). This is mostly due to the unthoughtful, unplanned and reckless way of urbanization since the post-war era. The lack of an organi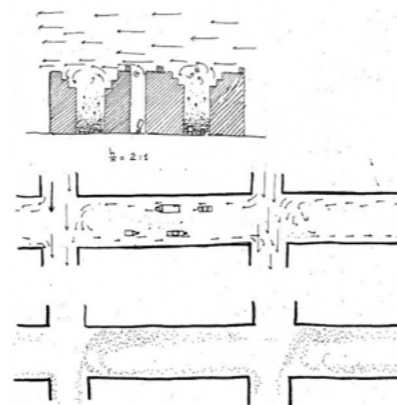zed plan for urban extension resulted in low quality drainage infrastructure that might serve adequately the everyday life but fails to cope with emergencies. In addition, the covered streams (fig. 94b) and the extensive use of impermeable paving materials add to the limited infiltration capacity of the urban space.

In terms of flora and fauna, the periphery of Piraeus shares the same general characteristics with the rest of Attica and Greece. It has an astonishing biodiversity due to three main factors: i) the country's favourable climate; ii) the diverse ecosystems throughout the territory that provided conditions for the evolution of new species; iii) its location south enough to be less affected by the last ice age but also at the intersection of three continents, thus allowing numerous species to survive (Bröderbauer 2013). A surprisingly large number of species of both flora and fauna are endemic, that is to be found exclusively in Greece or even Attica (Vallianatou 2012). Indicatively, at least eighty-three species of flora have been recorded in public parks and squares within the five municipalities of Piraeus periphery (fig. 89-93) (Environmental Association of Municipalities of Athens - Piraeus 2012/2017), despite the intense urbanization of the area. In all likelihood, even more species can be found along the streets and private gardens' vegetation. Likewise, it is safe to assume that an equally great number of fauna species inhabit the urban space.

89. Mt Egaleo, *Horafa* fields, above *Perama*. Source: http://www.panoramio.com/photo/71028776?source=wapi&referrer=kh.google.com#

90. Urban green in Keratsini. Source: http://www.panoramio.com/photo/88996720?source=wapi&referrer=kh.google.com#

91. Park around the church of prophet Elijah (Ilias) in Piraeus. Source: http://www.attiko-prasino.gr/Default.aspx?tabid=196&language=el-GR

92. Nikea, park and open air theatre. Source: http://www.panoramio.com/photo/52839621?source=wapi&referrer=kh.google.com#

93. Mt Egaleo, above *Perama*. Source: http://www.panoramio.com/photo/82171562?source=wapi&referrer=kh.google.com#

94a

94b

94c

- - - - Uncovered river
· · · · Covered river
- - - River under elevated highway
▨ Covered streams

▭ Municipality borders
▭ Peripheral units borders

Natural (wild) green
Natural landscape protected by the law
Wooded areas of the mountain *Egaleo*
Metropolitan green
Municipality green
Local (neighbourhood) green

Brownfields
⊥ Pollution from port activities
▲ Pollution from industrial activities
◉ Air pollution from industrial activities
△ Pollution from urban waste
⚓ Stagnant waters
↪ Direction of major winds

▭ *Apollon* neighbourhood

94. Map of natural elements and environmental conditions in the periphery of Piraeus

The configuration of the modern urban environment bears the indelible traces of the natural landscape, despite its detachment from the urban scape and lifestyle. The lack of organized urban green in combination with the dense urban fabric impede the air renewal and its filtering. Due to the topography, the urban configuration and the prevailing wind directions, the periphery of Piraeus either accumulates atmospheric pollution from the northern peripheries or pushes industrial pollution towards the centre of Athens basin. The aquifer and the marine ecosystem suffer from pollution and the confinement of the water system (mostly underground) in combination with poor drainage infrastructure result in flooding. The improvement of conditions in the periphery will prove beneficial for the entire Athens basin.

Design by author based on GIS data from
mapzen.com
http://www.openstreetmap.org/
https://dasarxeio.com/2014/10/25/0230-1/
Sarigiannis (2007)

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0   1   2   5km
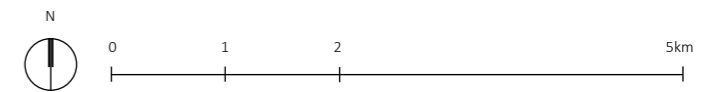
The challenge regarding the biodiversity and vitality of fauna and flora is related to its distribution throughout the built environment. The majority of small-scale green spaces have occurred as remnants of building activity rather than planned public green. Although there is a substantial amount of greenery, the absence of continuity disrupts the local ecosystems and undermines the biodiversity as well as the efforts to find an equilibrium of built and unbuilt urban space. While public green space remains fragmented, the attractiveness of the city decreases and common perception of people cannot recognize it as an integral part of urban space and therefore, the detachment from the natural landscape is intensified.

In terms of emissions and waste, the heavy industry and the intense port activities along the coastal zone of *Drapetsona-Keratsini* and *Perama* as well as *Pireos* street have always been a large-scale source of water and air contamination. The contamination of the aquifer was expressed mainly in the marine ecosystem and the river *Kifissos*. Due to improper infrastructure for waste management, urban and industrial waste would leach directly into the river and its streams and eventually into the sea. Until 1994, another major source of water pollution were the sewage treatment plants at *Akrokeramos (Keratsini)*, where the Central Sewage Pipeline channelled the sewage and wastewater of the historical city centre directly into the sea (EYDAP 2017)) (fig. 94c). After the establishment of biological treatment facilities in *Psyttalia* and the closedown of the *Drapetsona - Keratsini* heavy industrial zone, the conditions for the neighbouring municipalities have ameliorated significantly in the past decades.

Regarding air contamination, the prevailing winds disperse towards the residential areas industrial gas emissions as well as odours from the stagnant water areas where wastewater from urban functions or port activities accumulates (fig. 94c). In addition to large-scale contamination sources, a series of innumerable small-scale sources of pollution within the city burden significantly the environmental sustainability of the case study area. These are mainly due to excessive car use and inadequate solid waste management throughout the periphery of Piraeus, characterized by the unreliable garbage collection system and the minimal efforts of recycling (Negas 2017 & Kanellos 2017).

Overall, the main environmental challenges in the periphery of Piraeus are the loss of the original landscape, the flooding, the deterioration of microclimate, the fragmentation of public green and the atmospheric and aquifer pollution. It is evident that the natural landscape has been greatly altered by the urbanization process and in several cases it is lost. The largest part of the periphery of Piraeus accommodates urban land uses and functions, which affects severely the area's vitality and adaptability. The unplanned urbanization disrupted and polluted the local ecosystems, which in turn struggle to withstand and counteract the implications of climate change.

3.2.c _ Cultural sustainability

This sphere of sustainability addresses the following: i) sense of identity and social engagement in cultural practices; ii) creativity and recreation; iii) expression of diverse beliefs and ideas; iv) cultural diversity (manifested through equality and respect amongst and for all, independently of gender, generation, nationality, religion, social status); v) inquiry and learning; vi) memory and its preservation. Within the context of this analysis, five out of the six elements of cultural sustainability were addressed, namely the sense of identity and social engagement, the creativity and recreation, the expression of diverse beliefs and ideas, the inquiry and learning and the preservation of memory.

Regarding the sense of identity, there seem to be two different tendencies. On the one hand, the various blogs about Piraeus and its history (e.g. *Pireorama*, *MLP blogspot*, *Piraeus: our city*) suggest a part of local society has strong ties with the place and gets organized in order to highlight its special narrative through activities and events. In that case, the social engagement is driven by the sense of belonging and the moral duty to safeguard the collective memory. On the other hand, two interviewees claimed that the bond of the people with the urban space is based on practical needs, such as employment, vicinity to family and housing affordability (Negas 2017 & Kanellos 2017) [6]. For them and the generation they represent, the social engagement in cultural activities is rather detached from the sense of identity and community, but related to the availability and the quality of diverse forms of cultural life. The interviewees highlighted that the historical city centre of Piraeus is gaining a lot of interest after the renovation of the Municipal Theatre, while there are several cultural activities and leisure opportunities at the local scale, from the most intellectual to the most folksy.

In order to assess the other aspects of cultural sustainability, the research identified the places that contain or promote culture and cultural activities. These places host institutions and organizations that are both public and private and can be grouped in three categories: i) educational facilities (kindergartens, schools, universities), sport facilities (open fields, indoor gyms, sport halls, stadiums) and churches; ii) cinemas, theatres and cultural associations (groups or organizations united over their common origin or a common interest); iii) museums, municipal cultural centres (public institutions commissioned to promote culture and lifelong education) and libraries.

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[6] The interviews were taken by the author and a review can be found in the appendix. Both interviewees are less than 30 years old and they grew up in Piraeus (*Kallipoli* district) and *Korydallos* respectively. According to G. Negas, the residents of Piraeus city centre and the surrounding neighbourhoods (*Piraiki*, bay of Zea, hill of Kastella etc.) live there because of their employment in the tourist, maritime or industrial sector. For J. Kanellos, his parents chose their place of residence as a combination of vicinity to family and affordability; he thinks they would have liked to move if it was economically possible.

95, 96. Activities during the "Days of the Sea", a week long event dedicated to Piraeus and its relationship with the sea. On the left, a guided tour at a rebuilt ancient trimere. On the up right, a guided tour in the floating museum 'Hellas Liberty', inside a Liberty-type ship. *Source: http://www.imeresthalassas.gr/*

97. Concert of the Philharmonic Orchestra of Piraeus at the 2nd Band Meeting in Piraeus. Performance in the Veakeio Theatre, 2011. *Source: https://www.youtube.com/watch?v=KS1-HE8udTg*

98. Folklore dances at Veakeio Theatre, 2015. *Source: https://www.youtube.com/watch?v=ltnyPdtrJ74*

99a

99b

99c

Education (kindergarten, school, university)

Sport facility

Church

Municipality borders

Peripheral units borders

Cinema

Theatre

Cultural associations (civic society)

Museum

Municipal cultural centre

Library

Stavros Niarxos Foundation Cultural Centre (includes the new facilities of the Greek National Opera, National Library of Greece and performance halls for other activities)

Egaleo

Korydallos

Perama

Nikea

Redi

Keratsini

Piraeus

Drapetsona

Piraeus
port and city centre

Apollon neighbourhood

99. Map of places that contain or promote expression of culture.

There is a great number and variety of institutions in the periphery of Piraeus that act as poles of cultural education and guardians of the national heritage and the collective memory, but they do so in an amateurish way mostly. Educational facilities and the Church are established as the main cultural institutions, while the civic society could become more efficient with proper resources and orientation. The city lacks an organized approach towards the cultural heritage of the built environment where the urban space is an active factor and the responsible institutions take on this duty as their primary focus and not as a complementary activity.

Design by author based on data from
http://keratsinilibrary.blogspot.gr/p/o.html
http://www.vrisko.gr/dir/bibliothikes/attikis/
https://www.xo.gr/search/
http://www.eebep.gr/
and googlemaps

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0   1   2   5km

The notions of creativity and recreation, expression of beliefs and ideas as well as inquiry and learning, are primarily addressed by the institutions of the first and second category, which focus mainly on promoting culture and cultural activities. The institutions of the first group are mostly public and their services are targeted to specific audiences and with specific objectives (fig. 99a). It might be surprising to put churches in this category but in the Greek context, the Church as an institution plays a significant role in the cultural formation of the individuals [7]. The primary intention of education and sports is to stimulate interest for science and crafts, encourage creative ideas and activities as well as instil fundamental principles such as the good sportsmanship and the tolerance for the different. The church has the complementary role of teaching acceptance, morality and respect to faith and its practice.

In parallel, the second category represents the private sector or private initiatives seeking to provide an alternative cultural product and access to different forms of art (fig. 99b). Cinemas and theatres have a strong educative role; the movies and theatrical plays often challenge the cultural, social and political conventions and expand the horizons of perception towards the unknown. Similarly, the cultural associations contribute to the appreciation, production and dissemination of arts and traditions of different regions through the gathering and display of historical and archival material and the organization of various cultural events and learning activities, such as film screenings, classes of folk dances or crafting techniques, festivities and events (fig. 95-98). The members of cultural associations are brought together by their desire to establish links to their past and preserve cultural elements of everyday life from their origins. Therefore, these institutions contribute equally to the containment and preservation of collective memory.

Memory and its preservation are primarily addressed by the institutions of the third category, which includes the places founded precisely to contain and promote culture in the most consistent and unprejudiced way possible (fig. 99c). Their primary objective (and reason of existence) is to preserve tangible as well as intangible cultural elements (archaeological findings, items, books, etc but also recordings of customs, rituals etc). The institutions mapped under this category are the official guardians of national cultural heritage and assigned to address the authenticity and historicity of cultural elements, to keep archives relevant to cultural heritage and to communicate its content and importance.

The overall impression is that the cultural facilities in the periphery of Piraeus respond adequately to the needs of cultural sustainability. However, the existing modes of participation in cultural events reveal the tendency to disassociate from the past, especially since younger generations lack the stimulus and motivation to embrace it [8]. And there lies a second issue: the institutions which primary objective the preservation and promotion of cultural heritage lag behind in number and resources, thus being replaced by the educational system and the Church. Eventually, these institutions are established in common perception as primary cultural organizations and gain too much power in shaping basic cultural beliefs at risk of biased pedagogy. Hence, it becomes ever more difficult to highlight cultural aspects that do not coincide with the mainstream approach of the established institutions. Under these circumstances, engaging with culture and being inquisitive about the world are not perceived as an everyday and lifelong activity. On top of that, the elements of the built environment lack recognition as individual cultural assets that carry fragments of cultural heritage by themselves. The urban space and the buildings within it are seen as a shell to contain items or expressions of cultural heritage and thereby contribute to heritage preservation, rather than being considered as cultural expressions themselves.

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[7] In Greece, religious education is part of the official educational program throughout primary school and high school. In parallel, the religious festivities represent important landmarks for the collective life, even for the nonreligious citizens. Indicatively, most of the national holidays have a religious base while some have national/political base (usually related to deliberation wars) and just the 1st of May has social base. To the national holidays, one should add multiple local holidays based on local saints-patrons and occasionally events of local importance.

[8] It is very illustrative that the participants of the events in fig. 95-98 belong mostly to age groups of 45+ (whether planners or visitors).

3.2.d_ Sociopolitical sustainability

This sphere of sustainability addresses the following: i) governance; ii) justice and ethics; iii) communication and critique; iv) representation and empowering and v) security. As mentioned above, the sociopolitical sustainability was only briefly analysed.

Governance is analysed thoroughly in chapter 6 but overall, the vast centralization of power impedes the participation of citizens in decision-making. During the past decade though, a growing number of citizens' movements takes action, especially at the local level. In several cases, the economic crisis triggered social self-organization in various sectors, which in turn provided alternative opportunities of socialization, as well as access to social amenities to a lot of people. The so-called *societal grocery stores and medical centres* emanated from the need to support fellow citizens in socioeconomic disadvantage. These collectives became a means of communication and empowering, a reference point of democracy and political expression. Even though the fragmentation and degradation of public space works at the expense of social cohesion and spatial justice, local societies often overcome the various obstacles and shape the spaces they desire, thus changing the urban space in unexpected ways.
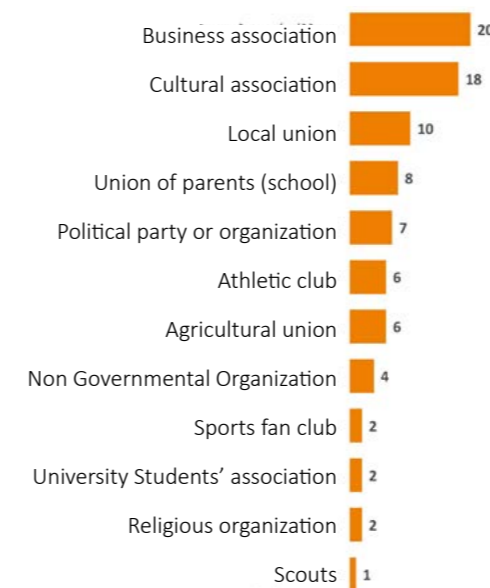
These kind of initiatives enhance social interaction and contribute to developing what is defined in the social sciences as *'social capital'*, a means of strengthening social ties and establishing defence mechanisms to adapt individually and collectively to the intense global changes (Public Issue 2016). Internationally, the discourse about social capital investigates the social participation in decision making, the frequency of social interactions, the general feeling of trust in people and the presence of persons to offer support in case of difficulties (Public Issue 2016). In the context of this project, it is interesting to mention the following:

• Business associations, cultural associations and political organizations are the most common civic society groups (fig. 100). The general profile of the actively involved citizen is "male, of higher education and with interest in politics". Yet, participation in business associations is more common for men (27% versus 11% for women), individuals of 35-54 years old (25%), graduates of higher education (29%), public sector employees (51% compared to 18% for private sector employees) and people ideologically adjacent to the left-wing. Participating in political organizations is also higher for men (10%, compared to 5% for women), public sector employees (10%, compared with 6% for private sector employees) and people ideologically adjacent to the right-wing (11% compared to 8% for the left-wing). The difference at the latter attribute reveals a structural characteristic of Greek society related to politics and the connotation of fighting alongside the 'powerful' (political party) or the 'worker'. Equally intriguing is the profile of NGO participants as people of higher education,

residents of suburban areas and without the feeling of financial insecurity

• In terms of social interactions, 75% of Greeks meet with friends at least once a week; men, young people (18-34 years old), graduates of secondary education, residents of suburban areas, employers and self-employed present the higher frequency of social interactions. Even so, 60% of the population has trust issues with 'others', revealing a general disbelief within Greek society for people further than the close environment of relatives and friends. The social trust is influenced by four main factors, namely: i) level of education, ii) level of urbanization of the (permanent) residence area, iii) income and iv) political beliefs. The second indicates the importance of spatial configuration and suggests an opportunity to provide spatial conditions that would foster social cohesion and socio-spatial justice.

In conclusion, the economic crisis of the last decade highlighted a series of sociopolitical problems, which could be summarized in the unequal access to social services that deepens social inequality and in the limited participation in decision-making, which deprives people from their right to claim equal opportunities and benefits. Despite the significant progress in social participation within the Greek society, the statistics show that it remains somehow a privilege of gender, social status and education. Although the study will not explore this matter further, it would be a remiss not to wonder whether social participation is a taboo and a privilege or our societies undergo a severe crisis of ethics and societal values.

Organization	Value
Business association	20
Cultural association	18
Local union	10
Union of parents (school)	8
Political party or organization	7
Athletic club	6
Agricultural union	6
Non Governmental Organization	4
Sports fan club	2
University Students' association	2
Religious organization	2
Scouts	1

100. Participation in organizations and associations.
Source: http://www.publicissue.gr/2539/participation-2013/ . Edited by the author

3.2.e _ Economic sustainability

This sphere of sustainability addresses the following: i) production and resourcing; ii) efficiency and growth; iii) regulations and justice (legality of enterprises and compliance with the regulations of fair competition); iv) consumption and use of resources; v) technology and infrastructure (access, use and innovation) and vi) trade and networking

The main economic activities in the periphery of Pireaus are i) the port activities (cruise ship, passenger, industrial, shipyards, containers), ii) the big- scale industry along *Pireos* street and the western coast (as developed historically in *Agios Dionysios* district, *Drapetsona, Keratsini* and *Perama*), iii) the maritime and logistics, iv) the touristic businesses, v) the wholesale in the area of *Agios Ioannis Rendis,* and vi) the small-scale economic activities, leisure and retail in the municipality centres and along the busiest roads (primary and secondary municipal network). Although the periphery of Piraeus has maintained its extensive productive character, information that cannot be visible at first glance and periphery scale should be taken into consideration. According to Belavilas & Prentou (2015), in 2012 the city centre of Piraeus had 315 closed shops, approximately 16% of the total commercial activity. The percentage was lower in the more central streets while the types of commerce that present greater losses was clothing, luxury products and retail.

The economic recession had a major impact in the economic centres of Piraeus periphery (fig. 101). The larger industrial areas gradually convert into residual space and wasteland, industrial buildings and workshops remain empty or underused while a vast amount of small and medium apartments remains vacant, after offices and services have ceased to operate due to the economic crisis. In addition, the economic crisis provoked extensive damage in youth entrepreneurship. Fig. 102 indicates both the decreased income from property renting and the lack of entrepreneurs as opposed to the high contribution of pensioners and employees to the average income of the area.

101. Map of income in the region of Attica. From low to high income, the representative colour darkens. It is striking how in 2013 the situation was practically reversed to ten years earlier, in 2003.

Source: edited from http://www. athenssocialatlas.gr/...
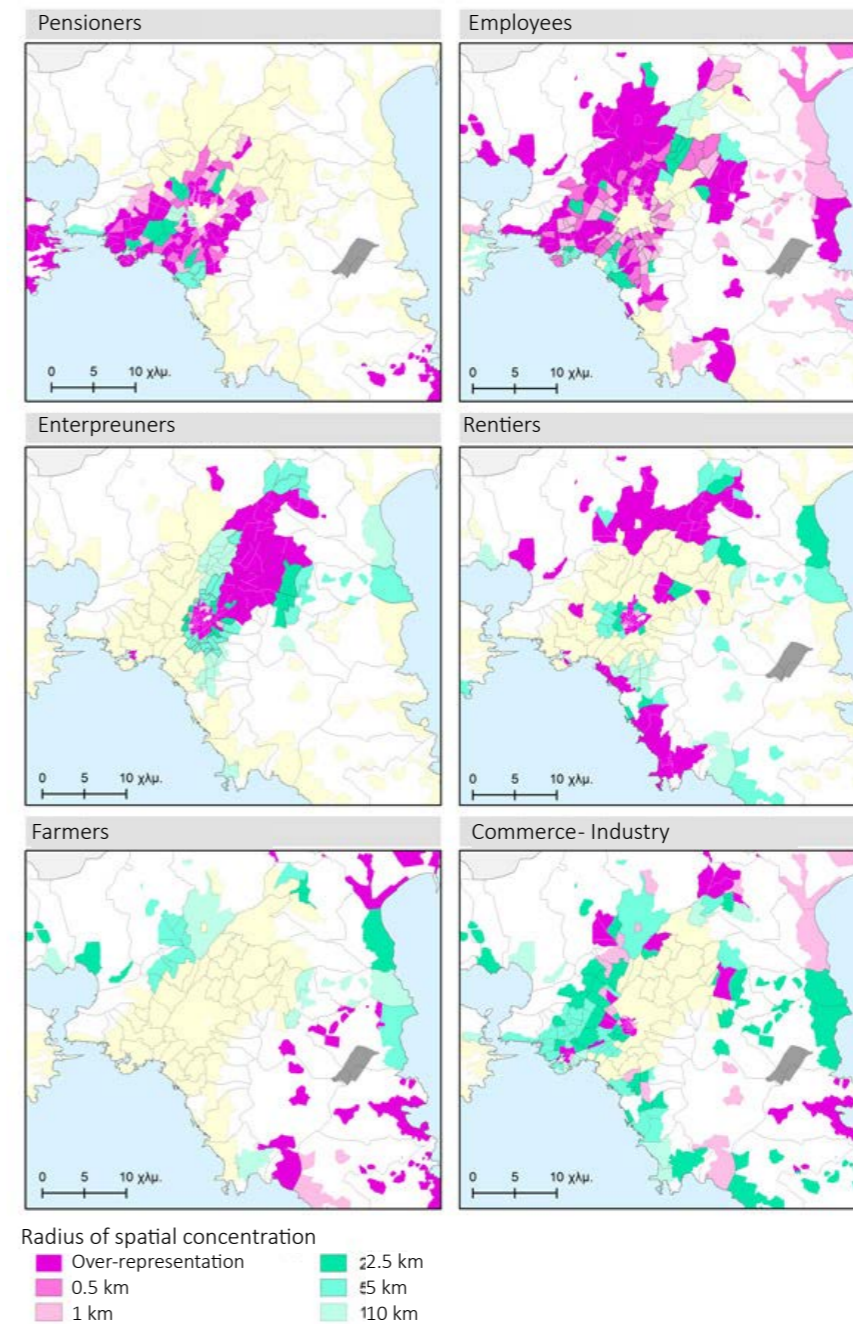
102. Categories of the main household income source.

Source: edited from http://www. athenssocialatlas.gr/...

3.3 _ Conclusion Map

Fig. 103 depicts a combination of the various sustainability challenges identified in the periphery of Piraeus through the research and analysis and the following conclusions were drawn:

1. The recorded biking and running activity happens along the major axes, even without the proper infrastructure. On the contrary, the neighbourhood areas appear surprisingly inactive. Apparently there is a growing tendency to use alternative ways of transportation for the longer distances but it does not compensate for the car dependency and overuse in everyday life activities (which are experienced locally, such as grocery and leisure).

2. The axes of *Kifissos* highway (and river) and the roadways along the coast act as barriers within the urban space and further strengthen the detachment from the natural landscape.

3. The atmospheric contamination is dispersed towards the areas in the middle of Attica basin, thus creating regularly the phenomenon of a static fine dust cloud where topography is not that steep anymore, especially in the municipality of *Agios Ioannis Rendis* and the northeastern part of Piraeus municipality. These areas are also in the high-risk flooding area in case of heavy rainfall.

4. Green fragmentation is a widespread issue but there is high potential to connect the existing greenery into a network through simple, small-scale interventions and thereby recover the space of pedestrians and bikers in the city.

5. The only segment of the ordinary built environment recognized as a carrier of historical value and cultural heritage is the city centre of Piraeus, within which lies the official heritage of the whole Piraeus periphery (as presented in chapter 2).

Routes followed by bikers or runners, mapped in Strava Global Heatmap based on GIS data. The colour intensity signifies the frequency of use (from low to high respectively)

Detachment from the natural landscape

Water pollution

Dispersion of atmospheric contamination

Cloud of fine dust

Flooding risk area (overflow area of the river, exposed to flooding due to heavy urbanization and limited space for excess water)

Fragmentation of public green

Historical city centre of Piraeus (as designated by the state)

The rest of the ordinary urban environment; potential carrier of cultural heritage elements

103. Conclusion map of physical, environmental and cultural sustainability challenges. The cultural sustainability

The main issues of the case study area in terms of sustainable development are the alienation from the natural landscape, the lack of accessibility for all, the atmospheric and aquifer contamination, the flooding incidents, the green fragmentation and the lack of recognition of the built environment as a carrier of cultural heritage that could both contain and promote cultural sustainability.
The multiplicity of sustainability challenges in both scale and character suggests the need to use equally multifaceted resources to react efficiently and put forward a holistic approach of sustainable urban development in the periphery of Piraeus.

Design by author based on GIS data from
Strava Global Heatmap
Sarigiannis (2007)
http://floods.ypeka.gr/index.php/23-ydatika-diamerismata/gr06/213-fhm-gr06
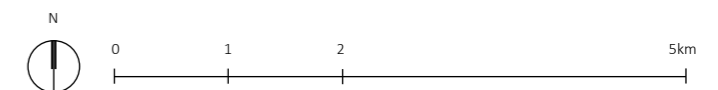
N

0   1   2   5km

4 _ ONE STRATEGY - FIVE PRINCIPLES

This chapter connects the concepts of cultural heritage and sustainable urban development under a set of guiding principles, applied and tested at the neighbourhood scale further on. It is the first part of the overall strategy for the periphery of Piraeus and aimed to showcase that harnessing cultural heritage to achieve sustainable urban development can be site specific (thus providing solutions for Piraeus) but also malleable in order to steer the planning and design process according to the case, without imposing specific methods and practices, or leading to prefabricated results.

4.1 _ One Strategy - Five Principles

The guiding principles constitute the first part of the overall strategy for the periphery of Piraeus, which also comprises design solutions at the neighbourhood scale (chapter 5) and governance arrangements (chapter 6). At the end of chapter 2, a new definition of cultural heritage in the ordinary urban environment was presented, that being: all tangible and intangible elements that significantly have influenced or influence ordinary life and, therefore, become an integral characteristic of the urban space and urban life. Following this statement, the strategy developed in this work explored alternatives to incorporate cultural heritage (which aspects, for what purposes, at what point of the time frame) in the design and planning of a more sustainable urban space.

Each chapter represents a different scale of design and implementation, which was imperative to showcase the plausibility of what has been claimed so far theoretically and in terms of research analysis. In the same way that the analysis followed a through scale route, the proposals of this thesis did as well. Overall, the guiding principles set the frame that encompasses and illustrates the greater vision. Then, the design solutions tested the applicability of the theory and the principles at the scale of everyday life and served to reflect upon realistic conditions of implementation in order to project a viable outcome.

The principles were formulated based on the conclusions of the spatial analysis and concentrated on using the cultural heritage elements of the ordinary urban environment in favour of sustainable urban development. Each principle addressed primarily one sphere of sustainability and provided focal solutions for the respective group of problems. Addressing specific issues through separate principles gives the opportunity to redefine the spatial conditions one-step at a time. Each principle gradually prepares the ground for the next transformation to take place and address more issues through another specialized principle. Therefore, every principle benefits indirectly the other. Together, all principles can provide the balance needed for sustainable urban development.

The structure of this chapter was aligned to the decision taken in chapter 3 to focus on developing an integrated strategy that addresses the physical, environmental and cultural sustainability as a representative version of the approach and methodology suggested by this project. Hence, the three principles related to physical, environmental and cultural sustainability are presented in detail while the two related to sociopolitical and economic sustainability are briefly mentioned.

104. The shipyards of Perama, as seen from the sea.

4.1.a_ Slow mobility infrastructure

From the analysis of physical sustainability, it was concluded that the most pressing issues in Piraeus are the lack of soft mobility infrastructure, the degradation of the building stock and the misused potential of the metropolitan centralities. The first guiding principle suggests the development of a slow mobility network by consolidating the (physical) connections between metropolitan centralities. The ultimate goal is to improve the accessibility infrastructure, strengthen the quality and efficiency of public services, as well as amplify the impact of existing places of interest at the regional scale.

As aforementioned, there are several locations in the periphery of Piraeus consolidated as reference points, yet deprived of proper accessibility for all. These centralities are already important destinations, thus generating substantial flows from and towards their territory. Therefore, the construction of pedestrian and bicycle networks should start along the commonly used routes in order to reach as much of the population as possible. As the network becomes accessible, efficient and beneficial to more users, the conditions are created for people to adapt to the idea of alternative ways of mobility and their commuting behaviour to transform. This gradual process shall facilitate the integration and prioritisation of slow mobility in the local and metropolitan street network.

The principle also introduces new centralities to repurpose cultural heritage elements such as industrial brownfields that are locally and regionally integrated in the urban fabric and provide significant amount of space to accommodate functions of public interest. The new uses should respond to essential social needs, like welfare amenities and leisure spaces, both lacking throughout the periphery of Piraeus. For instance, an old factory could be converted into a 'hub' of central offices of several public services, such as the Internal Revenue Service, the Urban Planning Service, the Power (electricity), Water and Sewage Companies (providers) etc. The local branches would still serve daily needs, but in the central, one could deal with complex matters of hereditary, real estate etc. In this way, the citizens gain better services while cultural heritage is preserved and maintained properly, thus tackling physical degradation.

105. The principle of the metropolitan centralities network

Main objectives: inter-connect, attract attention and stimulate interest for regeneration projects, promote societal well-being and life-long education

Qualities of locations: cultural heritage sites of considerable size and metropolitan accessibility

Types of interventions: urban parks, social amenities, public spaces of culture, art, technology and science, research and experimentation
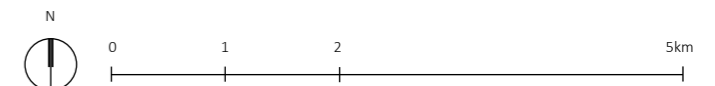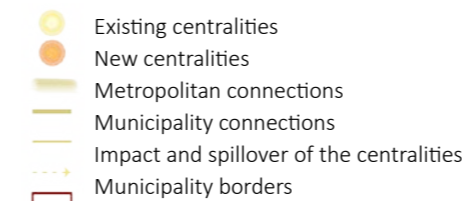
Existing centralities
New centralities
Metropolitan connections
Municipality connections
Impact and spillover of the centralities
Municipality borders

N

0   1   2   5km

4.1.b_ Multi-scale green networks

The second guiding principle focuses on reintroducing urban green in order to tackle the environmental degradation of the urban environment. The suggestion of multi-scale green networks comprises two basic scales. The first is the use of larger areas, such as industrial brownfields, as urban parks. However, finding available space of substantial size in the dense urban fabric of Piraeus periphery is rather challenging, while it is easier to find small patches that remain vacant (of uses or structures) or misused. Therefore, other ways are required to release space as well as connect the abundance of individual free spaces in a green network to compensate for the extensive built surface.

Hence, the second scale takes advantage of the structure of the urban environment and concentrates on incremental interventions and their inter-connection. For instance, empty or abandoned plots are located and connected through a pedestrianized street network that prioritizes slow mobility (pedestrians and bikes). This network is further connected with some of the inner unbuilt space of the urban blocks (the *akalyptos*) (fig.108). In that way, the characteristic small-sized properties, the residential character of the street network, the structure of the urban blocks and the buildings' typology are used to cut through the built environment and scale up the effect of focal, incremental interventions. The implementation of this principle would improve essentially the aesthetics and the environmental conditions of the periphery of Piraeus, as well as benefit the configuration and quality of public space, thus providing conditions to increase meaningful social interactions and social cohesion.

106. Metropolitan network

107. Municipality network

108. Neighbourhood network

Street network

Akalyptos

106-108. Indicative representation of the transformation of the mobility network according to its spatial characteristics, in order to receive more urban green.

109. The principle of multi-scale green networks for the periphery of Piraeus.

Main objectives: release the urbanization pressure, increase the ground permeability, regulate the microclimate and biodiversity, re-naturalize and connect the fragmented natural elements into a recognizable landscape

Qualities of locations: unused plots (unbuilt or with empty buildings that could be demolished), pedestrian axes and sidewalks, residential street network that does not accommodate heavy traffic, already existing parks and squares

Types of interventions: form green corridors by 'stretching' the existing green and introducing new, create green pockets by using the scale and configuration of the ordinary city block, relocate land uses- densify and release space to nature, pedestrianize or give priority to slow mobility

- Existing public green
- New public green
- Metropolitan network
- Municipality (primary local) network
- Municipality borders

N

0   1   2   5km
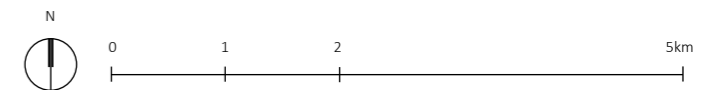
4.1.c_ Integrate culture in everyday life

The analysis regarding cultural sustainability stressed three needs: (i) to encourage the activity of independent (that are not directly accountable to the public sector) institutions responsible for the protection and dissemination of the whole spectrum of cultural heritage; (ii) to actively engage people in order to cultivate the sense of shared identity and promote cultural education as an everyday and lifelong activity; (iii) to put forward the acknowledgement of the elements of the built environment as cultural expressions themselves. Therefore, the third guiding principle suggests the reuse of the most representative cultural heritage elements as small-scale, local based, thematic centres in order to and reinforce the role of civic society as well as harness the potential of the built environment itself in heritage preservation and sustainable urban development.

This approach prioritises buildings or sites of strong narrative and exceptional architectural or historical value to set up a network of small museums, libraries, archives and exhibition centres. The various places would host thematic cultural functions that refer directly to their own special character. For example, the (abandoned) residence depicted in fig. 110 is officially declared a heritage monument and a representative example of the influence of eclecticism in urban architecture of Piraeus (probably at the beginning of the 20th century). Instead of being left to collapse over time, it could be converted into an exhibition space or archive devoted to this specific architecture and its history. Similarly, specialized thematic exhibitions could be installed in former industrial facilities referring to the production process or inside unused refugee houses recounting the immigration history in modern times. Applying this method to a series of cultural heritage elements, a network of diverse *'micro-spaces'* in the logic of an open air museum would unfold throughout the periphery of Piraeus.

Considering the built environment itself as a living museum, its diverse elements can reveal pieces of its past and eventually synthesize the complete story. The site specificities are used not only as spatial capital but as conceptual references as well, in order to promote history learning and sensitize people to diverse facets of collective life and memory. It is further proposed that NGOs or local associations that already show an interest in relevant subjects take over the operation of the cultural micro-spaces with the aim to decentralize the existing top-down management system, thus empowering civic society and fostering cultural diversity, creativity and empirical learning. Lastly, by establishing cultural heritage of the ordinary urban environment as a pole of attraction for locals and foreigners, this approach also offers economic opportunities for local investment through various sectors, such as the construction industry, tourism and education.

110. Old residence in *Kastella*, Piraeus.

Source: http://pireorama.blogspot. gr/2012/04/blog-post_20.html

111. The principle of integration of history and heritage in the daily life of the city

Main objectives: minimize cultural loss in terms of tangible and intangible heritage, enhance the sense of identity and place, preserve and honour the memory, educate and cultivate a culture of respect

Qualities of locations: buildings and sites of exceptional architectural and historical value, representative samples of architecture, history (significant historical events of the local community or the nation) or collective memory

Types of interventions: preservation and restoration, thematic exhibition spaces, libraries and archives, open air museum, touristic attraction

Existing cultural facilities

Official and unofficial cultural heritage of the ordinary environment of Piraeus periphery

Representative elements to be reused (white)

500m and 1km radius

Metropolitan connections

Municipality connections

Municipality borders

N

0   1   2   5km
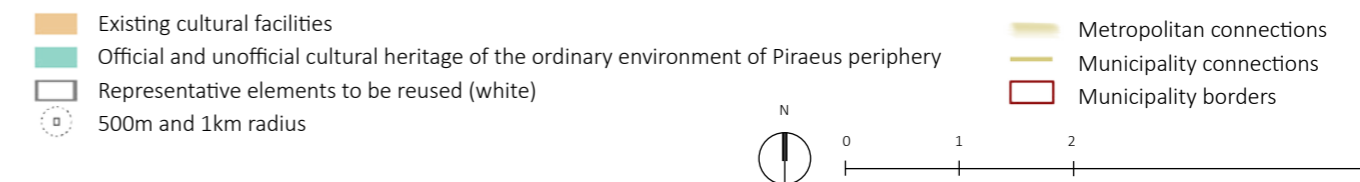
4.1.d _ A network of social amenities

The fourth guiding principle aims to establish a functioning network of welfare provisions in order to counteract the lack of primary social care services (such as healthcare, elder care, nurseries, homeless shelters etc), which in turn is a fundamental cause of the increasing social inequality. Given the number of vacant buildings that are officially and unofficially considered as cultural heritage elements, the principle suggests to refurbish them and accommodate the mentioned functions at local level. Their position within the densely populated urban fabric makes them ideal to serve the citizens' daily needs but also accessible by public transportation. In addition, the multiplicity of building typologies allows diverse functions based on site-specific characteristics of the cultural heritage elements.

For instance, some of the declared neoclassical buildings in the city centre of Piraeus could be refurbished as elderly homes and create a network of communal houses where elders live in a protected environment, yet they keep a minimum independence and have access to social life and public services. These smaller scale investments could also be more economically profitable and attract local investment by the private sector, under the general management of public.

The sphere of social sustainability presents a series of additional challenges, such as limited social representation, empowerment and participation in decision-making; although their spatial expression has not been thoroughly investigated in the context of this project, the proposed governance arrangements address the structural aspect of these matters.

Main objectives: provide social services for all, improve living conditions from the welfare point of view, enhance equity

Qualities of locations: individual buildings of historical or architectural significance, industrial heritage for large facilities due to metropolitan accessibility and considerable size, public space as part of the city's structure

Types of interventions: reuse spaces for diverse kinds of social care: first-aid centres, children's hospital, elderly homes, centres for victims of domestic violence, refugee integration centres, kindergartens and nurseries, vocational centres etc.

4.1.e _ Multi-scale productive landscapes

The fifth guiding principle addresses the challenges of shrinking local economies, increasing residual space and misused opportunities of port and logistic activities. As in the case of green networks, two basic scales of development are suggested. The first refers to the areas of *Agios Dionysios* district and *Agios Ioannis Rentis* that have traditionally accommodated productive uses such as industry, wholesale, workshops and storage. The principle prioritises the productive sector of metropolitan impact in these two areas because they provide appropriate spatial infrastructure, well established metropolitan accessibility and connectivity as well as historical continuity in terms of functions. Their relation to the port, the railway and the transportation axes can support national and international companies of logistics, maritime affairs and specialized industry. Production and manufacture should be combined with green infrastructure and the integration of residential functions as well.

The second scale aims to reinforce local investment by reusing individual buildings as specialized local markets and entrepreneurship hubs. Economic recession had a great impact on local economies, which currently struggle to restructure themselves. In that case, successful cases need to expand their know-how and experience while the urban space needs restructuring in order to adapt to the new social demands and attract long-term investments. The suggested approach is similar to the principle of social amenities; individual buildings worth maintaining for heritage reasons should be prioritised to accommodate offices, local manufacture and services. Another way of strengthening economic vitality and competitiveness based on harnessing cultural heritage is to support entrepreneurship that focuses on that specific sector, whether from the perspective of tourism or sociocultural services. In that case, the cultural heritage elements are used as conceptual capital, rather than spatial, in order to provide relevant services.

Main objectives: confront economic recession, make the economic sector more adaptable and resilient to global changes

Qualities of locations: small scale neighbourhood centres, larger scale areas around the port and the transport axes

Types of interventions: reuse of local built stock to accommodate creative hubs and high-tech or other start-ups, special markets and local investments; reuse of larger areas for logistics and focus on trade, networking, money exchange, maritime sector and R&D

5 _ DESIGN SOLUTIONS AT THE NEIGHBOURHOOD SCALE

This chapter is the second part of the overall strategy and focuses on demonstrating possible outcomes of the suggested method in the *Apollon* neighbourhood in the area of *Agios Ioannis Rentis.* The following analysis identified the elements of cultural heritage and the challenges of sustainable urban development at the local scale and proposed a series of interventions that show the applicability of the guiding principles. The identification process followed similar steps as the one presented so far for the periphery of Piraeus.

As mentioned above, the three main methodological steps used in chapter 2 to identify the elements of cultural heritage of the ordinary urban environment at the periphery scale (research on the official heritage, historical evolution and building regulation) were followed in the identification process at the neighbourhood scale.

The area of *Agios Ioannis Rentis* might have been inhabited in the prehistoric times due to its location just before the swampy area of *Alipedon* (see section 2.2.b) but there are no clear indications about it. It is located quite centrally, along the river/highway *Kifissos* and the axis of *Pireos* street. At the beginning of the modern Greek state, it had a dual purpose: it was the supplier of agricultural products for the urban centres of Athens and Piraeus but also an important leisure destination for the working class (fig. 118). Due to its role as food provider, the area was one of the last to receive refugee population. Gradually it was industrialized due to its proximity to the river and the transportation infrastructure (fig. 113). The first official community of *Renti* was created in 1925 and the first urban plan in 1935.

The chosen neighbourhood area belongs to the district of *Agios Ioannis Rentis* and concentrates at the same time several representative layers of cultural heritage (historically and thematically) while it faces a series of urban sustainability challenges due to the spatial, sociopolitical and economic transformations of the city.

112. Aerial view. At the foreground, the intersection of *Pireos* street and the elevated highway (at its construction phase)
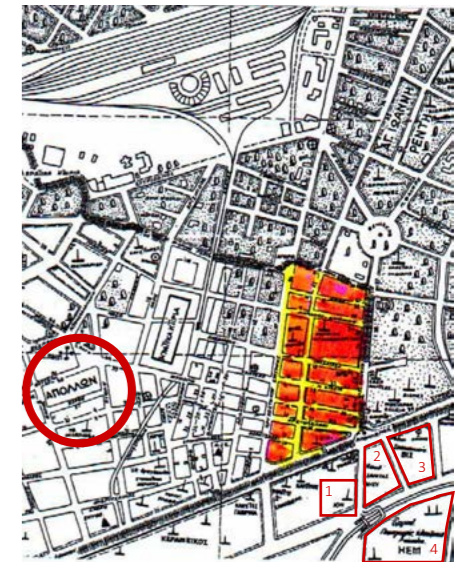*Source: Analuti (c2006)*

115

113. The municipality of *Agios Ioannis Rentis* within the city

- - - Periphery of Piraeus boundary (partially overlapping the municipality boundary)

Municipality boundaries; at the edge of Piraeus periphery, *Agios Ioannis Rentis* borders on Athens and South Attica periphery

District of *Agios Ioannis Rentis*. Its name originated from the church, which dates back to the "*Renti*" family (red dot)

The *Apollon* neighbourhood (design area)

Infrastructure and connections surrounding the chosen area

■■■ Elevated highway

■■■ Primary street network

■ ■ Passenger railway

■ ■ Freight railway

114

116

114. Plot planning for the refugee settlement Apollon.
115. Apollon settlement in a state map, 1950. In the circle, the candle factory 'Apollon' which feeds one theory about the area's name origin. The other theory refers to an ancient statue of god Apollo found in the area.
116. Apollon settlement according to another state map, 1959.

Sources: Analuti (c2006) [plan] & Papadopoulou & Sarigiannis (2005) [maps]

The polygons of fig. 114-116 correspond to:
1. Chocolate factory ION
2. Paper manufacturer SANITAS
3. Packaging manufacturer ΒΙΣ
4. Electricity plant
5. Metallurgical plant *(Elliniki Metallourgia)*
6. IKA building (social insurance system)

Historical analysis

The urban development of the area started with the immigration of Greek refugees from Asia Minor. In 1932 the state granted them land and the right to build. One plot per family, about 16m^2 of covered space and 32m^2 of open. The plan also indicated a publicly accessible courtyard in the middle with the common hygiene space (fig. 114, 119-120). Small, 'light constructions' were gradually added to the original 16m^2 making room for a kitchen or extra bedrooms.

Since then, the initial buildings underwent several transformations. Some kept their randomness with added elements and expansions. In some plots, typical double-family houses of mid-war or post-war period replaced the refugee houses while in others the dwellings were replaced by the typical *polykatoikia* (multi-storey residential building, see p. 58). In any case, the overall structure of the blocks has been maintained. Narrow-face and long plots and buildings, lined up at a continuous front, with a courtyard in the middle (the element of *akalyptos*) and the characteristic high coverage of the plot's surface.

Although the area of *Agios Ioannis Rentis* had preserved its agricultural character until the mid 1960s, the new industries changed its potentials. Employment opportunities in combination with urbanization pressure by adjacent neighbourhoods led to more industries, which in turn brought workers looking for affordable housing. Next to the refugee settlement, the urban space was shaped by scattered buildings at the beginning and a systematic construction phase during the 1960s.

The industrialization of the area started with the electricity power plant in 1869, which was also the first of Athens. Through time, the most important industries around *Apollon* neighbourhood have been the electricity power plant (1869-1982), the paper manufacturer *SANITAS*, the packaging manufacturer *ΒΙΣ*, the metallurgical plant (*Elliniki Metallourgia*), the candle factory *Apollon,* the tannery and the chocolate factory *ION* (1930). All but Apollon candle factory were situated along *Pireos* street.

Today only the chocolate factory *ION* is still working and it is a benchmark of successful Greek industries. The packaging factory is demolished (brownfield), the candle factory does not exist and some of the buildings of the metallurgical plant were converted into big commercial stores. The electricity power plant and the former paper factory were officially declared as industrial heritage. The paper factory was partially renovated and occasionally used for cultural purposes.

Overview

From the historical evolution of the design area, the cultural heritage elements that arise are the industrial facilities along *Pireos* street, the refugee houses along with the internal courtyard, the renovated tannery, the river *Kifissos*, a number of single-family and double-family houses due to architectural interest, the modernistic building of shape Ξ (n.6 of fig. 116) as well as the street pattern orientation parallel to *Kifissos* and towards *Pireos* street.

The official cultural heritage and unofficial due to historical evolution are complemented by the results of the analysis conducted in section 2.2.c about the unofficial cultural heritage due to the building regulations. Based on the findings of the above presented spatial analysis, fig. 122 depicts the entire cultural heritage of the case study neighbourhood.

117. Aerial view of the area in 1937
Source: Papadopoulou & Sarigiannis (2006)

118. The river *Kifissos* in 1907 (area of *Agios Ioannis Rentis*)

Source: https://www.facebook.com/permalink.php?story_fbid=370886043114714&id=237485389788114

119. Self-construction of house. Kokkinia 1922. The constructions were similar at the area of *Agios Ioannis Rentis*

Source: http://mlp-blo-g-spot.blogspot.gr/2012/09/blog-post_16.html

120. Old refugee houses in *Apollon* neighbourhood (probably in 2006 or before).

Source: Papadopoulou & Sarigiannis (2006)

121. The same refugee houses in *Apollon* neighbourhood today.

Photo by author (August 2017)

A

B

C

D

E

F

Industrial heritage declared by the state (official cultural heritage)

Cultural heritage due to historical evolution

Refugee houses (remaining) and the internal courtyard

Individual buildings of architectural and historical significance

River *Kifissos* (covered by the elevated highway)

Cultural heritage due to building regulation: the structure of the block

Small sized plots (consisting a block)

Akalyptos (p. 59)

Transitional space created from the difference between the property line and the building line

Property line (where the ownership changes)

Building line (where the building can start)

A. Remaining refugee houses in *Stratou* street. *Photo by author.*

B. The renovated building of the old tannery, today used as cultural and leisure space. *Source: http://wikimapia.org/*

C. Inside the main buildings of the electricity plant. *Source: https://nl.pinterest.com/pin/255579347577551160/*

D. View of the industrial brownfield and the elevated highway that covers the river. *Source: Google view (edited)*

E. The chocolate factory of ION. *Source: http://www.ion.gr/history.html*

F. The former facilities of SANITAS as cultural space. *Source: http://www.clickatlife.gr/theatro/story/37764*

This section focuses on identifying the spatial expression of the sustainability issues at the local scale in order to determine specific needs and thus places and ways of possible intervention. The analysis followed the same logic as practiced at the metropolitan scale; that is the investigation of the different sustainability spheres separately by mapping certain elements for each one.

In terms of physical sustainability, the physical condition of the built stock in the design area is generally good but already shows signs of decay, especially the structures that are not used. The *Apollon* neighbourhood is well integrated at both local and metropolitan (regional) scale. The street hierarchy and the orientation of the street pattern highlight the different characters of the design area, namely the local/residential versus the metropolitan/industrial (fig. 124). The area is also favoured by the vicinity to multiple local and metropolitan centralities (fig. 123)

In terms of environmental sustainability, fig. 125 puts forward the crucial issue of green fragmentation. Although there is significant amount of green in the city, most of the times it is either private or a series of individual elements scattered through the urban fabric. The lack of connections impedes the formation of green concentrations that can compensate for the extensive built area. In our case, the industrial brownfield and the covered river represent a great potential of larger scale environmental intervention that could be combined with a network of green micro-spaces. In addition, such an approach will give a second chance to reintroduce part of the original landscape and it will contribute positively to the regulation of the microclimate and pollution in the neighbourhood.
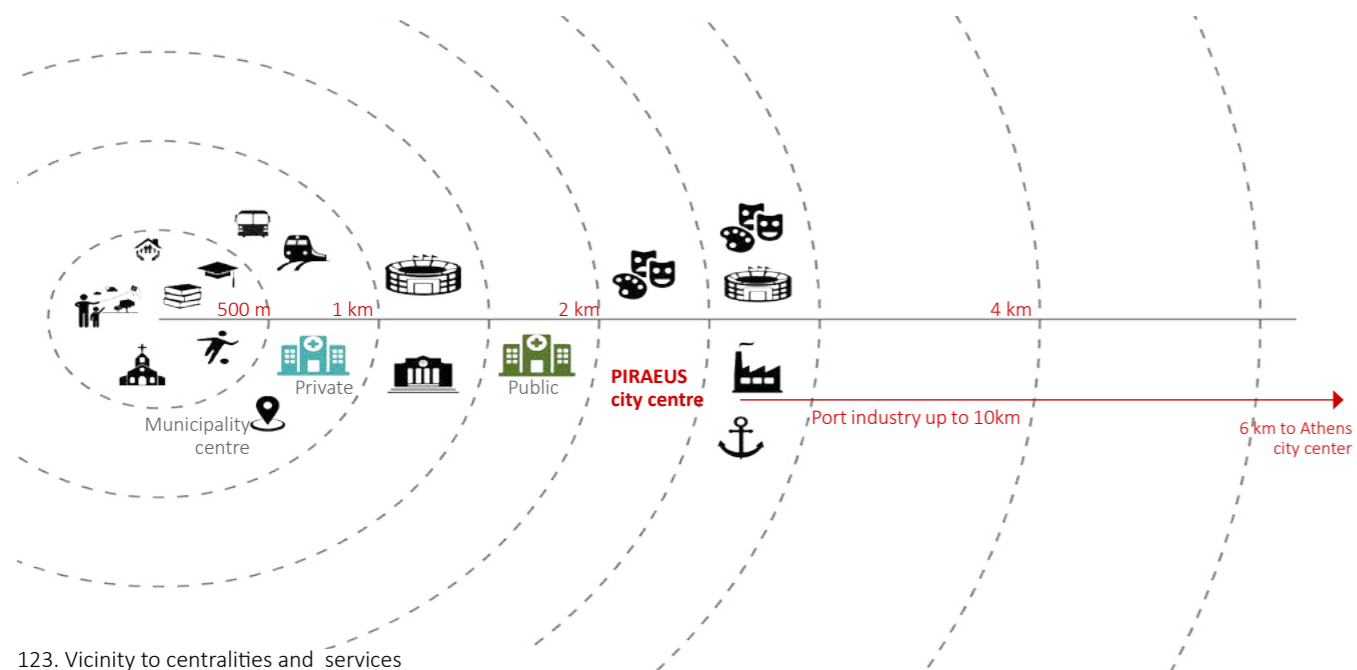
Good — Metropolitan axes
Medium — Primary residential axes
Bad — Railway
Public bus stop — Pedestrian streets

124. Physical sustainability: condition of built stock and accessibility

125. Environmental sustainability: existing green and blue

500 m 1 km 2 km 4 km
Private
Public
PIRAEUS city centre
Municipality centre
Port industry up to 10km
6 km to Athens city center

123. Vicinity to centralities and services

Public park or square
Private green
Brownfield
River Kifissos (covered by elevated highway)
Trees

In terms of sociopolitical sustainability, the majority of city space is private and unfavourable for public social interaction (fig. 126). The configuration of public space does not foster sociopolitical representation and empowering, security and equal access to social amenities. These conditions affect negatively the sphere cultural sustainability because they deprive the local population of the chance to cultivate a common sense of identity and express the diversity of cultural beliefs and ideas. In combination with the bad condition of several cultural heritage buildings, the memory of the place and its preservation is at stake. On the other hand, the neighbourhood's vicinity to educational and cultural facilities provides a strong advantage to interconnect and become integral part of the wider network.

Lastly, the economic vitality of the neighbourhood is fairly good. A considerable variation of economic activities take place, mainly along the metropolitan and primary residential axes (fig. 127). The figure also shows the characteristic multifunctionality of urban space as well as the vacancies in the built stock. The latter create considerable urban voids that can be re-purposed or even released to nature.

In conclusion, the challenges of sustainability at the local scale are similar to the general issues of the periphery of Piraeus but the site specificities indicate the spaces of potential intervention. In order to determine these places, specific attributes were highlighted and combined (fig. 128): (i) the unused cultural heritage elements (official and unofficial) as potential centralities; (ii) the residential character as an opportunity to introduce slow mobility; (iii) the vacant and misused spaces as spatial resource that can be redefined as public, at least partially; (iv) the characteristics of the urban space as the spine of coherent public space.

■ Public space
□ Private space
■ Semi-public/semi-private space
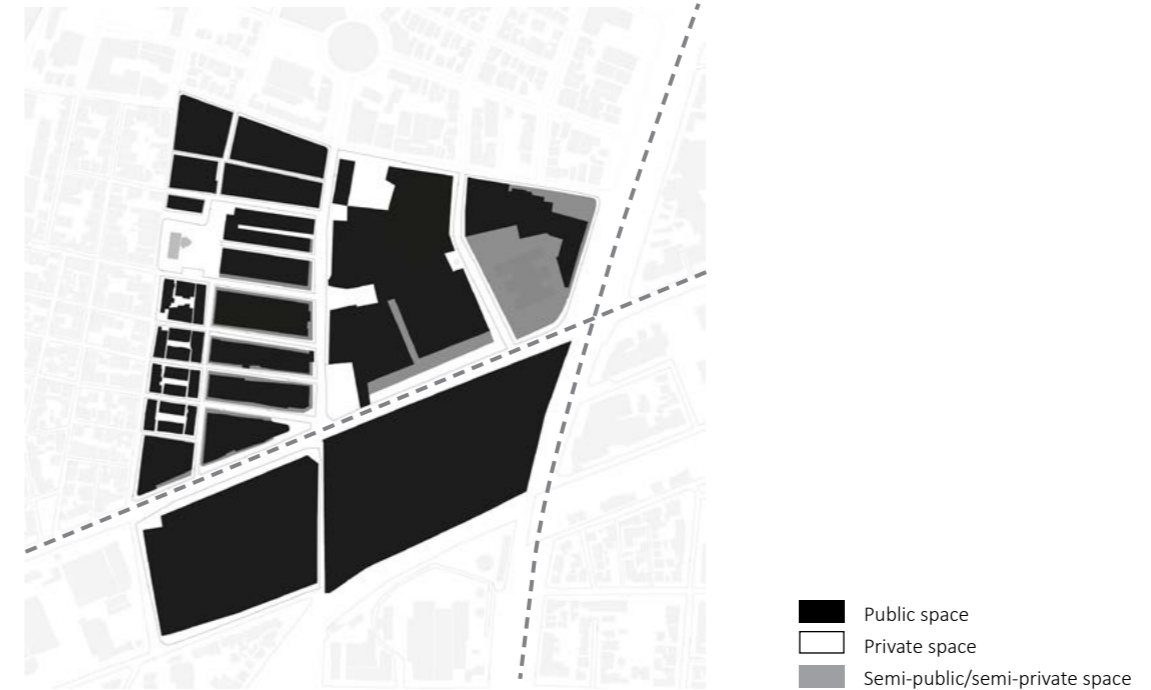
126. Space for social interaction

127. Land uses

■ Residential	**Mixed residential**
■ Commercial (retail)	▨ Commerce
■ Industry (manufacture, wholesale)	▨ Services
■ Public green	▨ Cafes, restaurants, bars
■ Sport fields	▤ Pharmacy
■ Culture and education	▤ Social care
■ Vacant	▥ Light industry
▨ Partially vacant	▥ Pilotis and parking

128. Summary map: combined sustainability features and spaces of potential intervention

A

B

C

D

E

F
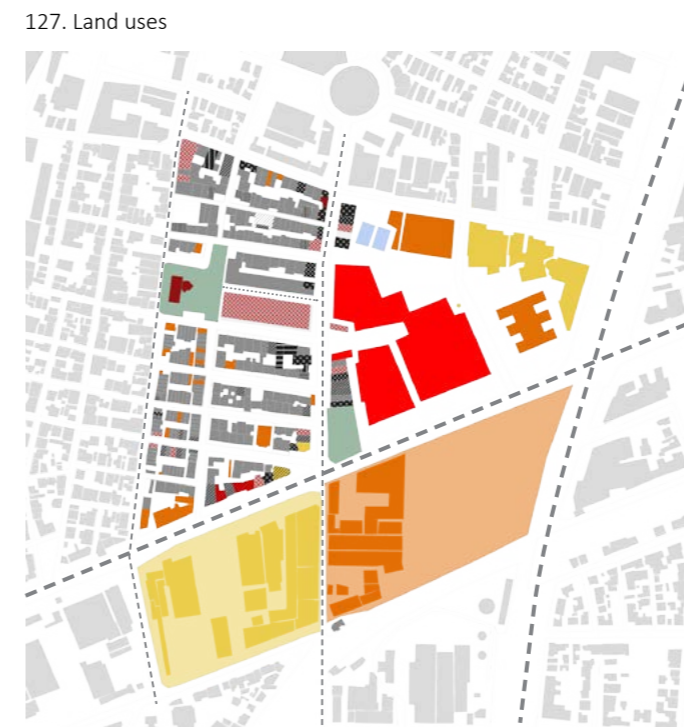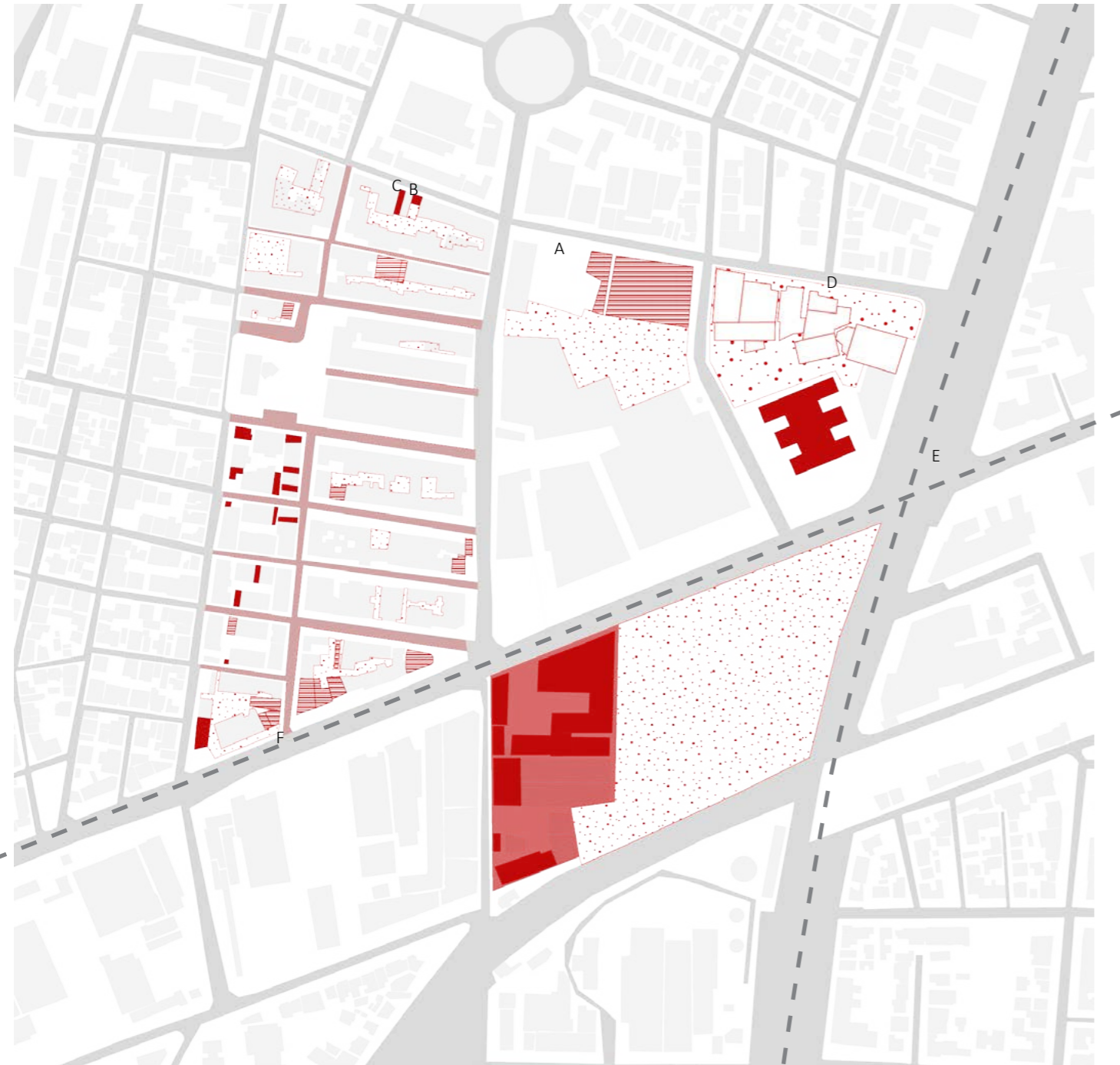
Cultural heritage buildings that are unused. They are converted into spaces of sociocultural purposes.

Structures in bad condition and vacant. They offer high potential to release space to nature and to the public.

Structures in bad or medium condition and nonresidential. They offer higher potential to relocate.

Private areas with the potential to become public

Asphalt layer (hard pavement) with residential character

A. Space behind the sports fields as residual. Currently used as parking.
B. Old house in bad condition; street Pavlou Mela. *Source: Google view (edited)*
C. Old house in bad condition; street Pavlou Mela. *Source: Google view (edited)*
D. Structures in bad or medium condition and used as warehouses (nonresidential). *Photo by author.*
E. View of river *Kifissos*; a representative example of downgraded natural elements and public space. v
F. View of empty buildings in bad and good condition. They are located along *Pireos* street and built to accommodate light industry and offices. *Photo by author.*

5.4.a _ Intervention plan

129. Intervention proposal for the *Apollon* neighbourhood

- ■ Buildings reused for cultural purposes
- ▨ Buildings reused to densify functions from surrounding buildings
- ⠿ Demolished buildings and space released to nature
- ▨ Sidewalk
- ▨ Pedestrian streets

- ••••• Potential routes (indicatively)
- ▪ ─ ▪ Section line (corresponds to fig.___)

As mentioned above, the design solutions are the second part of the proposed strategy and they aim to test the applicability of the guiding principles. The design phase followed the method of design by research to explore how the theoretical ideas and the new definition of cultural heritage of the ordinary urban environment can be put in practice under realistic terms. Through the analysis of cultural heritage and sustainability challenges at the local scale, it was concluded that the site can be improved by providing accessibility for pedestrians and bikers, reusing cultural heritage buildings in various ways and releasing unused space to nature. The case study was used to showcase in precise which elements of cultural heritage can be harnessed, in what ways and which sustainability issues will be benefited. In the context of this project, the intervention proposal for the *Apollon* neighbourhood focused on applying the three first principles developed in the previous chapter and it unfolds in seven steps. For each one of them, the suggested actions are explained, the benefits as well as the possible drawbacks and alternative counteraction.

Step 1 | Slow mobility

The pedestrianization of the local street network addresses directly the sidelined slow mobility. To be clear, the pedestrianizing does not induce absolute prohibition of vehicles but legal and practical prioritization of non-car users. However, the strong car dependency makes the transition from the current situation to the new mobility pattern more difficult, with the most pressing issue being the parking space. To overcome this obstacle, three measures are suggested: i) a strict parking policy within the pedestrianized area that determines precisely the places and capacity of public space for parking; ii) expensive fees for the privilege parking spaces and fines for violation of the regulations; iii) coalition with the private sector. A promising alternative is a business agreement between the residents (represented by the municipality) and the administration of the two big commercial stores that would permit the former to use the extensive underground parking facilities of the latter in exchange for a monthly fee. The citizens will benefit from the lower prices for ensured parking while the companies will obtain full use of their parking facilities - besides the free disposal for the store's customers. But most importantly, the released space in the city will provide better commuting conditions for all the users of the urban space, thus leading to more sustainable ways of everyday mobility.

Step 2 | Urban park

Converting the industrial brownfield into an urban park and consequently into a metropolitan centrality is the first move to reintroduce green as an integral part of

the city. The size and location of the plot favour this larger scale transformation. It is in the middle of the dense urban tissue, along metropolitan transportation axes and between the covered river of *Kifissos* and the officially declared industrial monument of *SANITAS* (paper manufacturer; more about its reuse in step 3). In addition, at the other side of the railway tracks lies the old electricity plant, which is also recognized as official industrial heritage. Therefore, the urban park benefits the environmental conditions (clean air, regulation of microclimate, reference to the original landscape) and offers socio-political and cultural advantages by providing space for interaction and expression. It is also an opportunity to form an important node that will act as the link between neighbouring municipalities and other centralities of public interest at the metropolitan scale.

Although a park has obvious advantages for the residents, there will be obstacles regarding the project's funding and management. There is high probability that the owner(s) of the plot will oppose, seeking a more profitable opportunity while the municipality's resources will not be enough to compensate fully. In that case, the municipality and the residents' associations should seek the support of private companies with two core arguments: the increase of their property value by the realization of a major leisure space and the possibility to be in-kind sponsors of the project; in exchange for their contribution, they open up to a greater target group of customers and investors.

Step 3 | Green pockets

This is the second move to reintroduce and interconnect greenery within the city, where a number of available plots (empty or abandoned) are connected through the pedestrianized street network. This configuration could be further strengthened if connected with some of the inner unbuilt spaces of the urban blocks (akalyptos). In that way, the characteristic small-sized properties, the residential and quiet character of the street network and the buildings' typology contribute to establish a network of green pockets by combining the smaller pieces with almost insignificant impact into a system of green public spaces that can scale up and counterbalance the densely built urban fabric.

At this point, several actors are involved, including the municipal administration, the real estate and the citizens, whether individually or organized. The primary role of public authorities is to negotiate the terms and delegate the tasks during the implementation phase. The real estate agents are mainly local, small-medium enterprises; they have expertise and experience in property management and their engagement can boost their activity. The most likely scenario is that a significant amount of residents will object the concession for personal or financial reasons and maybe accuse the municipal authorities for appropriation. Under these circumstances, the only chance for the municipality and the planners to achieve consensus is to collaborate with the local businesses and community leaders.

The goal is to acquire insight from the real estate market and then negotiate over compensations and collateral benefits from the implementation of the proposed plan. Depending on the type of land under discussion, there are two directions. If the dispute is about empty plots, the municipality should put forward the economic advantages, such as the tax elimination. If the dispute concerns the shared unbuilt space (*akalyptos*), then the authorities should promote moral incentives, pointing to the responsibility of citizens to facilitate the city's development and appealing to their goodwill. The last resort is the use of legal ways to support the case based on majority consensus, if necessary.

Step 4 | Reuse of the [abandoned] refugee houses (unofficial cultural heritage)

This step is about contributing to the active integration of the city's historical heritage in urban life, as suggested by the third guiding principle. In this study case, the municipality takes the lead by officially designating as a level-2 cultural heritage the remaining refugee houses as well as of the overall structure of the four blocks included in the initial plan of the settlement (as shown in fig.__), for their architectural and historical significance. The vacant structures are reused as small exhibition spaces or archives with special focus on the history of migration and the evolution of the *Apollon* neighbourhood. Then, this ensemble of scattered individual structures will become the backbone of a historical route in the style of an open air museum where anyone can walk through the neighbourhood and discover the place's narrative. It is crucial that the micro-spaces are considered community assets; for that, the should be operated by the local associations dedicated to the culture of Asia Minor, where the inhabitants migrated from. The latter can act as civic society groups or even as Social Cooperative Enterprises, a newly introduced business and governance model which promotes cooperatives that aim for both social and economic benefits through their activity.

Step 5 | Full reuse of the SANITAS industrial complex (official cultural heritage)

The former paper manufacturer *SANITAS* is one of the two industrial complexes of the area that were officially declared as heritage by the state (level-1 in the suggested system). It is property of the National Theatre and partially renovated. Following its designation in 1997, the reconstruction works have been funded exclusively by the actor Irini Papa in her effort to establish a drama and acting school that would function as space of culture and education for all citizens. Its current function status is unclear but it is certainly underused and not regularly open to public. Its officially recognized architectural and historical value in combination with its relatively good condition and the realized renovation works makes it easier to put forward the plan for its redevelopment as a cultural and educational centre. In this attempt, the governmental agencies must be responsible for the monitoring of the process, but the management and construction can be commissioned to

other institutions in order to ease the financial and administrational burden. For instance, the works can be executed by public-private initiatives, private cultural institutions like the *Stavros Niarchos foundation*, the *Alexander S. Onassis Public Benefit Foundation* or the *Mpenaki Museum* or even by the *Hellenic Republic Asset Development Fund [HRADF]*, the institution responsible for the privatization of public assets, such as infrastructure and immovable property.

Step 6 | Relocate and release

As mentioned in the analysis, the built space is actually more than enough to cover the needs of the inhabitants. For that reason, this work proposes to free up redundant built space in order to claim back a part of the natural scape as the third move to finally establish multi-scale green networks. In this study case, a number of light industries and warehouses are relocated to the adjacent building and the occupied space is turned into public green space. These green patches have medium size and link to both the residential patchwork of green micro-spaces and the urban park. This tactic is highly controversial and the suggestions are based on assessing the physical condition, duration of vacancy, land use and heritage value of the buildings. The relocation approach is not limited to non-residential uses, and it can be applied in order to decompress the densely built urban fabric.

Obviously, reservations about compensation or people's right to develop their land and property should be anticipated by the municipal authorities. The latter need to guarantee that the exchange provides owners with at least same conditions of living and equal opportunities of development. The economic crisis could be an opportunity to handle this kind of controversial matters in a diplomatic and profitable manner. Some owners might be relieved to concede their property as a measure to mitigate the burdens of the economic crisis; the compensation can be non-monetary, such as favorable tax arrangements or joint investment and exploitation of the property. The real estate agencies could be a valuable affiliate in this effort, acting as the intermediate link between the state and the locals. Their expertise can contribute to make offers that people would be ready to accept because they meet the properties' site specificities and thus their expectations.

Step 7 | The walk

To make this plan grow and inspire similar developments, the municipality in cooperation with civic society and the public should make certain to maintain clear passages through the public green spaces and the cultural centres, thus establishing a continuous route.

130. Diagrammatic representation of the intervention time line. Various actions, such as the negotiations for land concession, start at the same time. Similarly, the works of the conservation of heritage buildings and the operation of micro-spaces are completed gradually.

Brownfield

Unused building- former administration offices

Warehouses, wholesale providers,
light industry and manufacture

BEFORE

Urban park as a new centrality
- major public space and link between the neighbourhoods
- re-connect to nature and re-introduce water into the city

Urban green as a filter and
structuring element of the sidewalk

Relocation of uses- densification &
release of space to nature

Vegetation instead of hard pavement
- neighbourhood public space/leisure space

AFTER

131. Section indicated in fig. 120. The transformation of the brownfiled and the industrial area before and after the suggested intervention

132. View of the intersection of *Chrisostomou Smirnis* and *Stratou* streets. The focus is on the incremental transformation of the neighbourhood by bringing together several micro-spaces into a coherent green network.

Vegetation instead of hard pavement in the unbuilt spaces

Pedestrianisation of residential street network

Abandoned refugee houses from the 1930s as exhibition spaces to form a cultural/educational route with focus on a certain historical event. Local cultural associations take care of the maintenance and operation.

6 _ GOVERNANCE & CULTURAL HERITAGE

Aside the design proposals, a part of recommendations addresses the role of governance in the protection and management of cultural heritage in the built environment. This analysis is the third part of the overall strategy and it shows that problems such as the incoordination of institutions, the lack of a comprehensive legal framework and the power centralization impede both the proactive action and the prompt reaction to affairs of cultural heritage in the ordinary urban environment.

6.1 _ Governance Challenges in the National Context

This section addresses three key aspects of governance and their consequences for the protection and management of cultural heritage in the built environment. The proposed governance arrangements of section 6.3 are based on this analysis.

The concept of governance in the context of this project is used based on the following definition:

> "*Governance comprises the traditions, institutions and processes that determine how power is exercised, how citizens are given a voice, and how decisions are made on issues of public concern. [...] Since a process is hard to observe, students of governance tend to focus our attention on the governance system or framework upon which the process rests - that is, the agreements, procedures, conventions or policies that define who gets power, how decisions are taken and how accountability is rendered.*"

Institute on Governance (GRAHAM et al. 2003)

The three sections analysed below are based on this approach and aim to unfold the main challenges regarding governance and cultural heritage. The structure and jurisdiction of responsible institutions expresses the components of exercise of power, decision-making and accountability; the legal framework expresses the governance system (procedures etc) and the social participation represents the interaction of stakeholders and citizens' engagement.

Overall, the notion of governance in Greece is fundamentally connected to the state, which translates into the formal institutions of the government elected by the people and its set of departments and offices. Hence, there is not a lot of governance in the sense it is used globally to describe the process of decision making and the involvement of a wider range of actors in it. On the contrary, there is still heavy reliance on the formal government structures and lack of more informal interaction between various actors.

The reliance on the formal government has resulted in unclear jurisdictional fields, increased bureaucracy, and limited capacity of institutions at the local level. As a consequence, the mechanisms of decision-making are not only complicated but overly rigid and obscure to facilitate the integration of cultural heritage in the transforming urban environment.

6.1.a _ Structure and jurisdictions of responsible institutions

According to the Greek Constitution, the state is responsible for the protection of natural and cultural milieu by enacting preventive or repressive measures (Avgoustianakis 2012). However, there is a fundamental lack of common approach toward cultural heritage among the various governmental institutions In several cases, it remains unclear who has power over whom and how they can exercise this power, who decides and who is accountable (what are the rights and obligations).

The most illustrative example of incoordination between governmental bodies is the issue of listing elements of cultural heritage. On the one side, the Ministry of Culture and Sports declares *"monuments"* and *"historical places"* created before 1830. On the other side, the Ministry of Environment[1] declares *"traditional settlements"* (vernacular architecture), *"spaces, places or zones of protection of the traditional settlements"* but also buildings or parts of them *"to be preserved"* created after 1830 (Parthenopoulos et al 2009 and Avgoustianakis 2012). In addition, the Ministry of Environment has the power to regulate in favour of any element that contributes in preserving the special aesthetics, natural, urban, historical and architectural character of a building or area (Avgoustianakis 2012).

The ministerial offices are subsequently authorized to regulate terms and conditions related to works of restoration, reuse and integration to the urban environment. These decisions override any other general or specific building restriction and give to the Ministry in charge the opportunity to intervene effectively (Parthenopoulos et al 2009). Nevertheless, there is not a conclusive indication of which institution would be in charge. The distinction is simultaneously driven by time factors as well as the typological characteristics of the elements of cultural heritage.

Although the Ministries' standards converge in some aspects (e.g. definitions, declaration requirements, owner's' rights and compensation, time limits as well as protection, restoration and controlling processes), they also differ in others (e.g. control in protected settlements or acceptable transformations). Parthenopoulos (2009) indicates that this situation has led to fragmented listing of elements of cultural heritage that impedes the effective protection of the elements in specific as well as the historical character of the urban environment.

As a consequence of this structure, institutions and individuals in charge fail to find a common language of communication, let alone a common goal, approach and understanding. Therefore, it is common to have conflict of interests and responsibilities between different state institutions that have the same scope of action. That in turn increases the bureaucratic processes, impedes the successful preservation of cultural heritage and discourage people from participating.

[1] It is officially called Ministry of Environment, Energy and Climate Change and it is responsible for the Urban Planning and everything related to urbanism and regional planning.

6.1.b _ Legal framework and complications

The second challenge lies in the governance system and more specifically in the numerous legislative documents that regulate the procedures and policies concerning the protection and management of cultural heritage. The basic issue is that there is not a comprehensive legal framework but a series of regulations scattered through various pieces of legislation (Avgoustianakis 2012). That leads to three individual problems that need our attention.

Firstly, the protection and management of cultural heritage is subject to various legal provisions of different character and thematic focus. These provisions often overlap and they can be ambiguous and contradictory (Avgoustianakis 2012). Indicatively, there are eight distinct categories of legislation that influence the protection and management of cultural heritage (Avgoustianakis 2012):
1. The Greek Constitution
2. Special laws for the protection of cultural heritage
3. Legal provisions of the legislation for the protection of the (natural) environment
4. Legal provisions of the legislation for the urban environment, Indicatively,
5. General Building Regulation, Law 1577/1985. Overridden by the New GBR of 2012
6. International Conventions and Treaties, ratified by laws of the Greek state. It is interesting that international Conventions have taken several years to become official law (fig. 133)
7. Legislation of the European Economic Community
8. Decrees (mostly Legislative and Presidential) and Ministerial Decisions

Secondly, the existing legal framework proves to be obsolete due to four characteristics (Parthenopoulos et al 2009): i) the primary criterion for the recognition of an element as cultural heritage is temporal instead of examining its importance for the local culture; ii) the incentives given by the state are not competitive and they have proved inadequate to prevent degradation or support private investments, iii) the laws do not require the participation of an architect or urbanist in the committees that decide upon the cultural heritage and iv) the General Building Regulation describes the necessary process to declare an element, yet it does not refer to the appropriate methodology that the researcher should follow in order to suggest an official declaration. As a result, today there is lack of legal provisions that address the diverse typologies of cultural heritage as well as strongly decreased capacity to adapt governance framework to the emerging social, economic and urban needs.

Third, the decisions are often taken out of local context. According to the law [2], any file on a candidate element of modern heritage (not antiquity) must be sent to the regional central department and will be examined only by the (central)

Council of Modern Heritage in Athens (Parthenopoulos et al. 2009). It is then possible that the decision is made with little idea about the importance or the role of a building, an area or a site in the life of the local community. The law does not provide sufficient safety valves to protect local interests and ensure the optimum use of cultural heritage based on its context, importance at local and national level, historical significance and special characteristics.

These inconsistencies of the cultural heritage legislation influence urban development in a twofold way. On the one hand, cultural heritage is an integrated part of the ordinary urban environment, and as such, its condition impacts significantly on the overall urban development. On the other hand, the absence of a comprehensive legal framework that takes into consideration the potential of cultural heritage as a spatial resource impedes its use for sustainable urban development.

The 1954 Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict (14.5.1954).	Law 1114/1981	27
The 1970 Paris Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property (17.11.1970).	Law 1103/1980	10
The 1972 Paris Convention on the Protection of the World Cultural and Natural Heritage (23.11.1972).	Law 1126/1981	9
The 1969 European Convention on the Protection of the Archaeological Heritage (6.5.1969).	Law 1127/1981	12
The 1985 European Convention for the Protection of the Architectural Heritage of Europe (3.10.1985).	Law 2039/1992	7
The UNESCO Recommendation on the Safeguarding of Traditional Culture and Folklore (15.11.1989).	---	---

133. International Conventions about cultural heritage with dates of realization and ratification by laws of the Greek State.

[2] Law 3028/2002 *"For the protection of antiquities and cultural heritage in general"*, introduced by the Ministry of Culture.

6.1.c _ Centralization of power and civic participation

The third challenge of governance is the limited interaction of the various groups of stakeholders in the decision-making process. The low civic participation is a generalized phenomenon caused by *"well-cited mono-causal explanations (like a history of adverse state formation, semi-authoritarian governance, partitocracy and clientelism)"* but also *"the pace of economic growth, church-state relations and ineffective policies like the lack of tax incentives and civic education"* (Huliaras 2014). All the former are basically expressions of a very "big" government that seeks to settle every issue through its formal institutions while the citizens remain attached to older social norms and the perception that engaging with public matters equals participation to political organizations or a position in the public sector.

Regarding civic participation in urban planning, the intervention of citizens is practically limited to their representation of the citizens through governmental institutions and elected councilmen at the local level. The way and depth of involvement of public is determined by municipal or community councils. The most common ways of civic participation are the press conferences, open meetings and announcements on municipal or community notice board or website. However, the role of local government and communities remains advisory, according to the relevant legislation. In case they want to strongly object to a decision, the civic society needs to appeal it to the court.

Similarly, the concept of social participation and responsibility in protecting the cultural heritage is only added in the Greek status quo by International Conventions (Gratsia 2012). Even though the International Conventions of Granada (1990) and of Florence (2010) eventually became laws of Greek state, in practice the social participation faces various organisational problems. In combination with the incoordination of governmental institutions that increases bureaucracy and their exclusive jurisdiction on final decisions, people lose their interest in engaging after all.

This situation has four negative impacts on cultural heritage. First, few people have too much power. The strong dependency on formal authorities for any kind of decision undermines projects and initiatives of local importance while it allows more space for corruption. Second, the decisions and proposals made without public participation often miss the context and therefore they reflect the needs of a desirable society or a desirable situation instead of addressing how to improve the existing conditions stepwise in collaboration with people and their demands.

Third, if not imposing, the incentives are mainly economic such as subsidies, taxation reduction, financial support from European programs, special

arrangements in building regulations (related to volume ratio etc), transfer of the land-to-building ratio to another property. These motives have not proved sufficient to sensitize the citizens and they cultivate an attitude of give and take instead of respect and social obligations (Parthenopoulos et. al 2009). Fourth, the weak communication between citizens and decision-makers have led people to lose their interest and trust in the state and the governance system. Citizens do not feel included and in the end they do not believe their effort matters so they avoid engaging at the first place.

During the past two decades, organized civic society has grown in Greece, yet not as a bottom-up process. On the contrary, the evidence shows that civic participation was vigorously encouraged by EU funding for the strengthening of civic society initiatives and driven by alternative approaches on people's mobilization by the Greek left wing (Huliaras 2014). It also seems that the economic crisis has had both positive and negative effects in self-organization and participation in the governance processes.

To recapitulate, fig. 134 presents a matrix in which stakeholders related to the proposed intervention were positioned according to their level of interest and power. The actors with both power and interest need to be convinced to participate in the redevelopment. The actors that lack interest need to be engaged while the ones that lack power need to be empowered. And the actors that are both uninterested and powerless need to be informed, in order to raise awareness and interest.

The illustration is representative of the main issues of the established governance model, which were analysed above. In short, the public institutions prevail but they also overlap in terms of decision-making, with the ministries being the ones that can enable or entirely block any project related to cultural heritage and urban development (6.1.a). On the other side, the increased interest of civic society is not reflected to its influence potential due to inadequate civic education and limited resources (6.1.c). Between public authorities and civic institutions, the private stakeholders are rather dispersed. The private cultural foundations are valuable allies and provide assistance for financial and management issues. The Social Cooperative Enterprises represent an interesting business model that balances private and public interests. Meanwhile, the real estate sector is rather weakened because it comprises a lot of small and medium size enterprises. Its added value compared to other local businesses is the expertise in the sector of construction and urban development. Lastly, what is not depicted but implied by the graphic is the inconsistency of the relevant legal framework that complicates even more the decision-making and implementation processes (6.1.b).

134. Matrix of stakeholders, according to their power and interest level regarding the intervention proposal.

The actors with both power and interest need to be convinced to participate in the redevelopment. The actors that lack interest need to be engaged while the ones that lack power need to be empowered. And the actors that are both uninterested and powerless need to be informed, in order to raise awareness and interest.

6.2 _ Examples in Piraeus Periphery

At this section, three cases in the periphery of Piraeus that illustrate the governance problems discussed above will be briefly examined.

The former industrial- harbour zone of *Drapetsona-Keratsini*

It is an area of great significance for the industrial and urban development of the modern city. At the area we find the tomb of Themistocles, an important archaeological site; yet its landmark is the old fertilizers factory which stopped operating in 1999. By 2004 all industrial functions in the area ceased for environmental and economic reasons. Most of the facilities were demolished in 2003, despite the efforts of the Ministry of Culture's responsible Committees to declare them as cultural heritage and save them as an entire complex.

Since then, a couple of plans have been proposed for the area [3] but failed due to similar problems: multi-ownership [4], grave pollution and the international financial crisis. At the end of 2012, the then regional governor approved the environmental conditions for the re-opening of petroleum processing plants although the area had been designated as a non-industrial site to be redeveloped by the Athens Regulatory Plan Organization in 1997 and 2007. Today, after 23 years of public conflict, finally a part of the area has been successfully conceded to the municipality, which begun its regeneration for cultural and sports purposes.

From this brief description, we see how the centralized power of just one person in combination with the absence of a comprehensive legal framework about what is cultural heritage, how it shall be identified and how individual issues like conflict of interests due to multi-ownership should be addressed. Priorities and jurisdictions are not clear and the public opinion has been repetitively disregarded despite the active social participation through local initiatives.

[3] The main proposals have been a high end maritime pole in 2006-2007 and a F1 racing area in 2011-2012. They were both conducted by the private sector in anticipation of the government to adopt the proposal. Although interesting, the public needs for an extensive area of public green were disregarded and the new developments were focused on economic profits.

[4] Indicatively, the majority of the c.650 acres area belongs to the corporation of the National Bank of Greece while other stakeholders are the municipality of *Drapetsona-Keratsini*, the local population, the HERACLES Group of Companies (cement producer) under the LafargeHolcim corporation, Aegean Shipping Management S.A and the Piraeus Port Authority S.A.

135. View of the remaining facilities of the fertilizers factory in *Drapetsona*.
Source: http://www.digital-camera.gr/index. php?option=photos&action=events&by_ user=4189&gallery=237

The former factory of alcoholic beverages of HBH

It was built in 1884 along *Pireos* street and officially declared as an industrial heritage monument during the 1990s. After decades of degradation and abandonment, in 2013 an investor proposed the development of a private polyclinic at its place. However, the proposal did not include use of the declared monuments but basically their replacement from a multi-storey building (7-9 floors) and the land use regulations did not include healthcare as an option. The attempt of the mayor of Piraeus at the time to change the regulations and move with the plan failed.

Both sides had reasonable arguments. The mayor supported the investor claiming that the area has competitive accessibility and healthcare units are not only needed but also upgrading facilities. On the other hand, the industrial heritage was evidently neglected, the proposal seemed to favour private interests rather than public and there was a high risk of creating a precedent for multi-storey buildings on *Pireos* street at the expense of cultural heritage sites.

The main problems in this case are two: first, the issue of power centralization is obvious. With a simple municipal council decision, the situation could have taken an undesirable and irreversible direction. Second, there has not been a serious effort for a middle ground solution; for instance, the functions of healthcare could have been permitted (because not all heritage can turn into museums), but the investor would have been obliged to preserve the heritage and develop the functions in more buildings of lesser height. In that way, neighbouring industrial heritage sites could have been used to create a healthcare campus instead of a super-block.

136. The former factory of alcoholic beverages of IVI [HBH in Greek] at its current condition.
Source: http://athensville.blogspot.nl/2015/10/h-15.html

The refugee apartment blocks of Alexandras Avenue

The third example is one that has divided the public opinion and troubled the public institutions for over two decades. The complex of refugee houses along Alexandras Avenue, close to the city centre of Athens, occupies an area of 14.5 acres, only 30% of which is built and 70% is shared public space. It was built in 1933-1935 by the Ministry of Social Provisions (as called at the time), in the context of the national social housing program to accommodate refugees from Asia Minor. The architects *Kimon Laskaris* and *Dimitris Kiriakou* designed 228 identical apartments distributed in eight buildings. The complex is considered characteristic and representative sample of functionalism and the Bauhaus movement in Greece (National Hellenic Research Foundation n.d.).

In December 1944 the buildings became the setting to a series of armed conflicts during the World War II, when rebels (members of the Greek left-wing resistance forces EAM and ELAS) took cover in the buildings to protect themselves from the British and Greek army, supported by several government friendly forces. The bullet holes can still be seen on the walls of the buildings, reminding to the passersby pieces of the modern social and political history of the country.

During the post-war decades, most of the residents moved out and a lot of the apartments passed to the ownership of the state. In the 1990s, the degradation and abandonment of the complex drew the attention and only then the government became concerned about their past history and future fate. In 2002, the state authorities sought its partial demolition in order to beautify the city in view of the Olympic Games 2004. The residents of the 51 privately owned apartments in cooperation with the cultural associations of Asia Minor refugees fought fiercely against it and managed to engage the academia, NGOs and the local society until the entire complex was finally declared a monument by the Ministry of Culture in 2009. That was the minimum to protect its form and prevent its demolition but its development has been debated ever since.

The official declaration led to a proposal by the municipality of Athens and the Technical Chamber of Greece, which offered to exchange an area of its property in Athens (Exarchia district) with four out of the eight buildings in order to accommodate its functions (offices, archive etc). The plan did not progress and in 2014, the apartments owned by the state passed to the Hellenic Republic Asset Development Fund, the institution responsible for the privatization of public assets, such as infrastructure and immovable property. However, the change of the government in 2015 led to the concession of the apartments from HRADF to the periphery of Attica in 2016.

What is highly interesting in this example is the tireless mobilization of various civic society groups against private interests and doubts about the heritage value of an "ordinary wreck of a bygone era". The social participation in that

case has been a rare example of unity, solidarity and self-organization towards a common goal: the protection and development of an element of the ordinary urban environment as distinguished work of modern architecture and bearer of the collective memory. Despite the numerous opponents that used the extensive degradation, the amount of vacancies and the concentration of immigrants and squatters as arguments for the demolition of the buildings, countless upholders resisted to the plans of private interests, the indifference of public authorities and the ignorance of society. Cultural associations, residents' communities, the Architectural School of the National Technical University of Athens, councilmen, the press, NGOs and independent citizens engaged actively in informing people, gathering signatures, pressing the state authorities and defending publicly the place and its history. The result today is one of the best possible under the current circumstances, having guaranteed official recognition, public ownership and a robust network of supporters.

137 a,b. The buildings complex when it was built to accommodate refugees and as it is today.
Source: https://www.vice.com/gr/article/xyq9ek/milane-ta-ktiria & http://www.lifo.gr/team/gnomes/47776
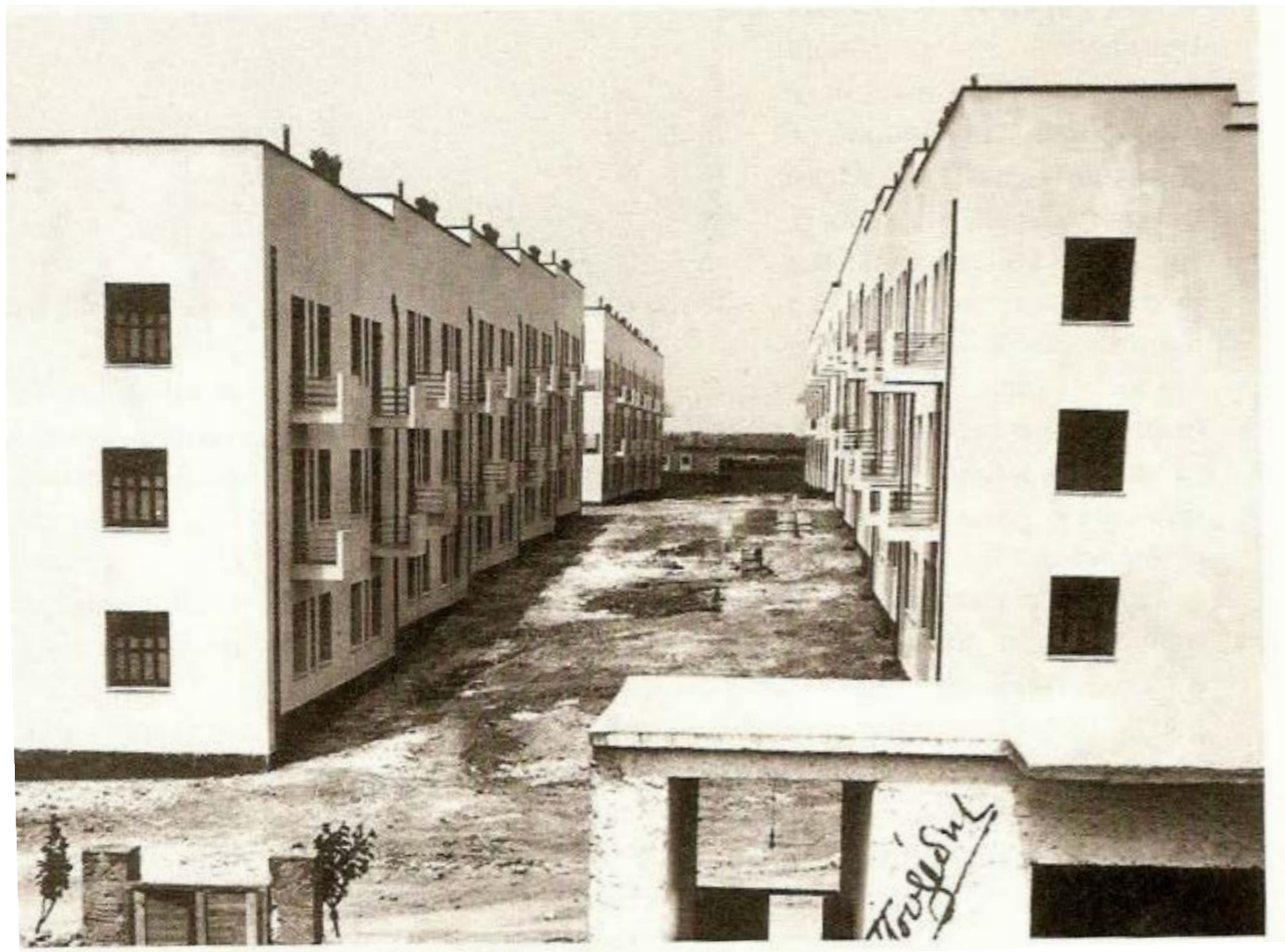
6.3 _ Governance arrangements: comments and recommendations

The analysis from the point of view of governance is important because any "efforts to create an enabling environment and to build capacities will be wasted if the political context is not favourable" (GDRC 2016). It is crucial to comprehend that any proposed redevelopment needs to be embraced by the people (various groups of stakeholders involved) and supported by an organized system of defined procedures.

The suggested governance arrangements aim to highlight certain issues and point to possible directions to overcome the complications of the current governance model, that is of the structure and operation of the main governance components as described above. Obviously not every issue can be solved in the context of this project; my intention is to put forward the importance of the governance issues and the urgency to address them promptly and systematically.

The following recommendations comprise two basic actions that can be elaborate in short-term and long-term phases. Their ultimate goal is to provide the means for the adaptation of the entire legal framework concerning the protection and management of cultural heritage of the ordinary urban environment. Their implementation can start happening immediately and making a difference while it will provide input and valuable arguments for more fundamental changes at the long-term phase. The ultimate objective is to create conditions to channel the energy and resources of responsible authorities into an adaptable and inclusive way of spatial planning and urban development rather than to impose changes that would complicate things.

1 | A common inventory of cultural heritage elements

The first step addresses the challenge of clarifying the jurisdictions and coordinating the numerous governmental institutions by developing a common archive of the entire cultural heritage of the country.

Since 1997, there is a National Archive of Monuments 5 (project Polemon) by the Ministry of Culture and Sports. It is an information system designed for implementation at national level. Nonetheless, the archive includes only monuments declared (and managed) by the Ministry of Culture and Sports because it was developed to be used by its departments. It does not relate in any way to cultural heritage elements recognized by the Ministry of Environment and thus it does not cover the full spectrum of cultural heritage. Also, it is only available to the employees of the specific ministry's departments.

Under these circumstances, it is imperative to go the extra mile and enrich the existing archive as well as make it public, at least partially. To be more specific, a common archive of the entire cultural heritage of the country will include the

cultural heritage elements under the jurisdiction of both responsible ministries. This is a feasible goal because the base already exists and it does not require any new institution to be accountable. The Directorate of the Management of the National Archive of Monuments, Documentation and Protection of Cultural Goods can remain responsible for the recording and the management of the archive while the Ministry of Environment needs to cooperate in providing all the necessary information. In this case, the final inventory will follow the structure of the existing database, where the monuments are categorized based on (a) their use and (b) their type.

The process is demanding beyond doubt and it will take some time to establish a common language but the benefits are multiple. At the short-term, the enrichment of the National Archive of Monuments will allow to interconnect all the available databases of museums and collections under the jurisdiction of one institution, namely the Ministry of Culture and Sports. The existence of such a tool will simplify and optimise the research on cultural heritage, especially when the basic information (such as full list of names, location, responsible institution and relevant references) will become publicly accessible to independent scholars. The public character of the inventory is a catalyst for the active use of the collected information, which will enable thorough and well-documented planning.

At the long-term, the development of an integrated national archive is a fundamental step in aligning the interests and methods of the two ministries and in setting a comprehensive approach to what is cultural heritage and how it should be protected and managed (fig. 138). The experience of collaborative efforts of the two ministries is highly possible to facilitate important restructuring on how power is exercised, how decisions are taken and who is accountable.

2 | Pilot projects

The second step is to put forward a series of pilot projects that will be the experimental field for all multiple governance challenges. The pilot projects primarily deal with the problem of power centralization and lack of social participation (fig. 139). They aim to encourage the collaboration of the central government with the academic society, NGOs and citizens in order to establish a more inclusive decision-making process and stimulate the interest of society. Fig. 140 and 141 show in a diagrammatic way the implementation process of a pilot project and the involvement of various stakeholders.

An interesting point about social participation came out from the two interviews with residents of Piraeus periphery (Negas 2017 and Kanellos 2017). According
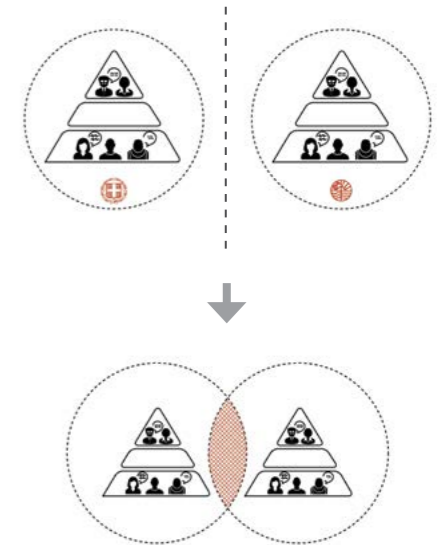
138. Moving from a system of segregation and unilateral decisions towards a system of collaboration.

139. In order to address the lack of social participation, we need to bring together people of different background. The objective is to promote the interaction of stakeholders.

5 By "monuments", it is meant any element recognized as cultural heritage, whether tangible or intangible.

to them, if you try to have an open dialogue with citizens, they will come to convince and not to listen because they are not used to this kind of inclusive planning processes. So the first step should be to approach and inform people where they already hang out. Then the municipality should give them the right to choose, yet in a subtle way like public ballot boxes where they could vote for a specific matter. The key to this process is that you give them privacy and the choice to answer whenever they want. Both interviewees agree that if the local government is persistent and realizes something that corresponds to the participation campaign, then things could actually change over time.

The lack of civic education is a threat to pilot projects, because it is one of the most neglected factors regarding social participation in Greece (Huliaras 2014). Therefore, the first group of pilot projects should be adjusted to the special context of Greek society, as described by the two interviewees. Gradually, they can evolve into something more elaborate and closer to similar practices in northern European countries. More specifically, the pilot projects could start with this kind of public poll and continue with workshops with people that have declared their interest in participating.

At the short term, pilot projects offer a great opportunity to realize small scale urban programs that benefit directly the cultural heritage, the built space and the people. Through interventions like the design proposal (chapter 5), cultural heritage elements are saved from destruction and negligence, the urban space conserves its defining character and a more sustainable and livable city is granted to the people. Moreover, pilot projects are a first step toward restoring people's trust to the state and changing the public's perception about governance. They foster the contextualization of projects and thus decisions on the basis of site-specificities, and they provide practical civic education so that people acknowledge the importance of other stakeholders and their potential contribution.

At the long-term, pilot projects give valuable feedback for future projects and for the revision of the legal framework. The multiple experiences make evident what works better at local level (so it should be left open-ended) and what is fundamental to be defined. Consequently, it is possible to formulate a comprehensive legislation that will refer solely to the protection and management of cultural heritage and address all its facets. When these governance obstacles are overcome, cultural heritage can reinforce its role as spatial resource for urban development. Last but not least, the implementation of pilot projects will contribute in the democratization of processes and results and strengthen the role and impact of civic society. By informing, empowering and engaging the various stakeholders in the decision-making and implementation of urban projects, a common vision can be formed. As a result, a powerful moral and social incentive for participation and collaboration is created, making possible to fight idleness and indifference as well as reduce incidents of power misuse and law violation regarding cultural heritage of the ordinary urban environment.
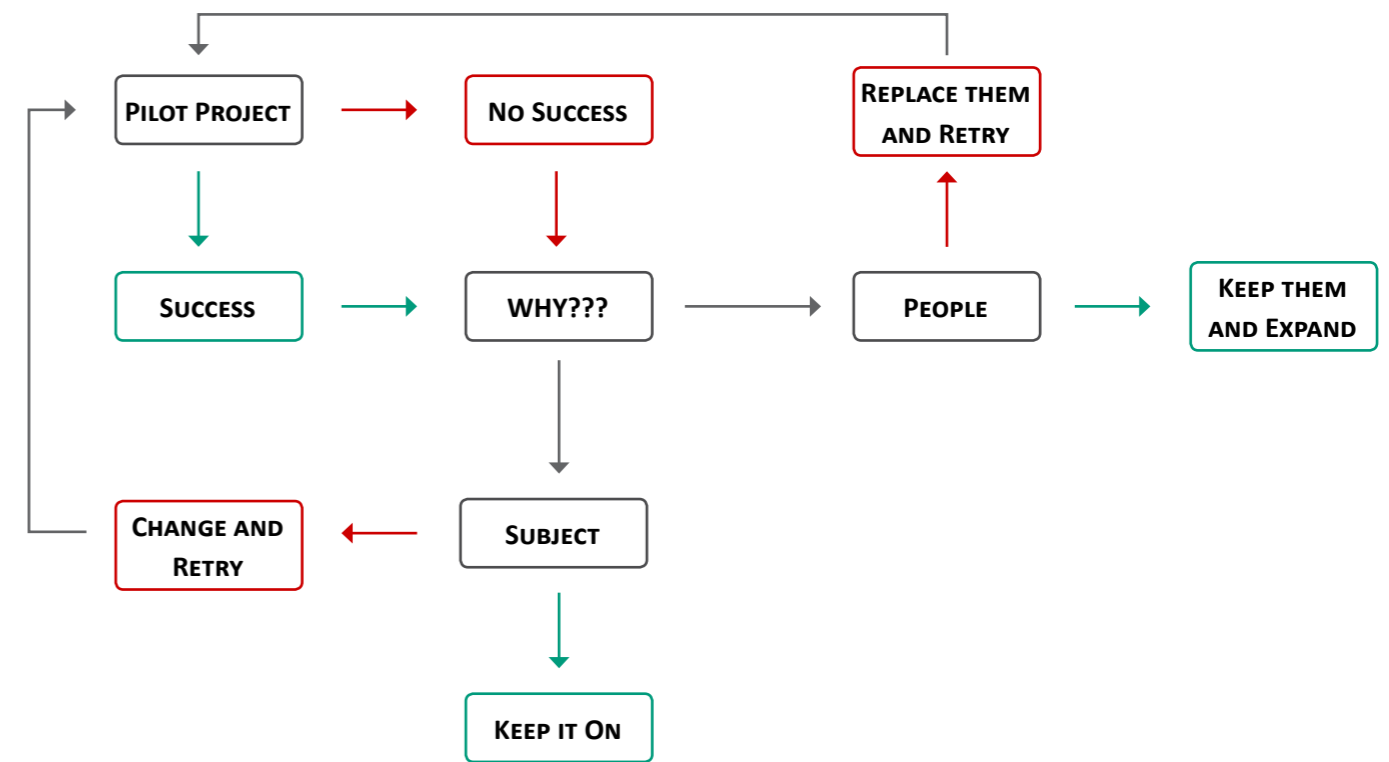
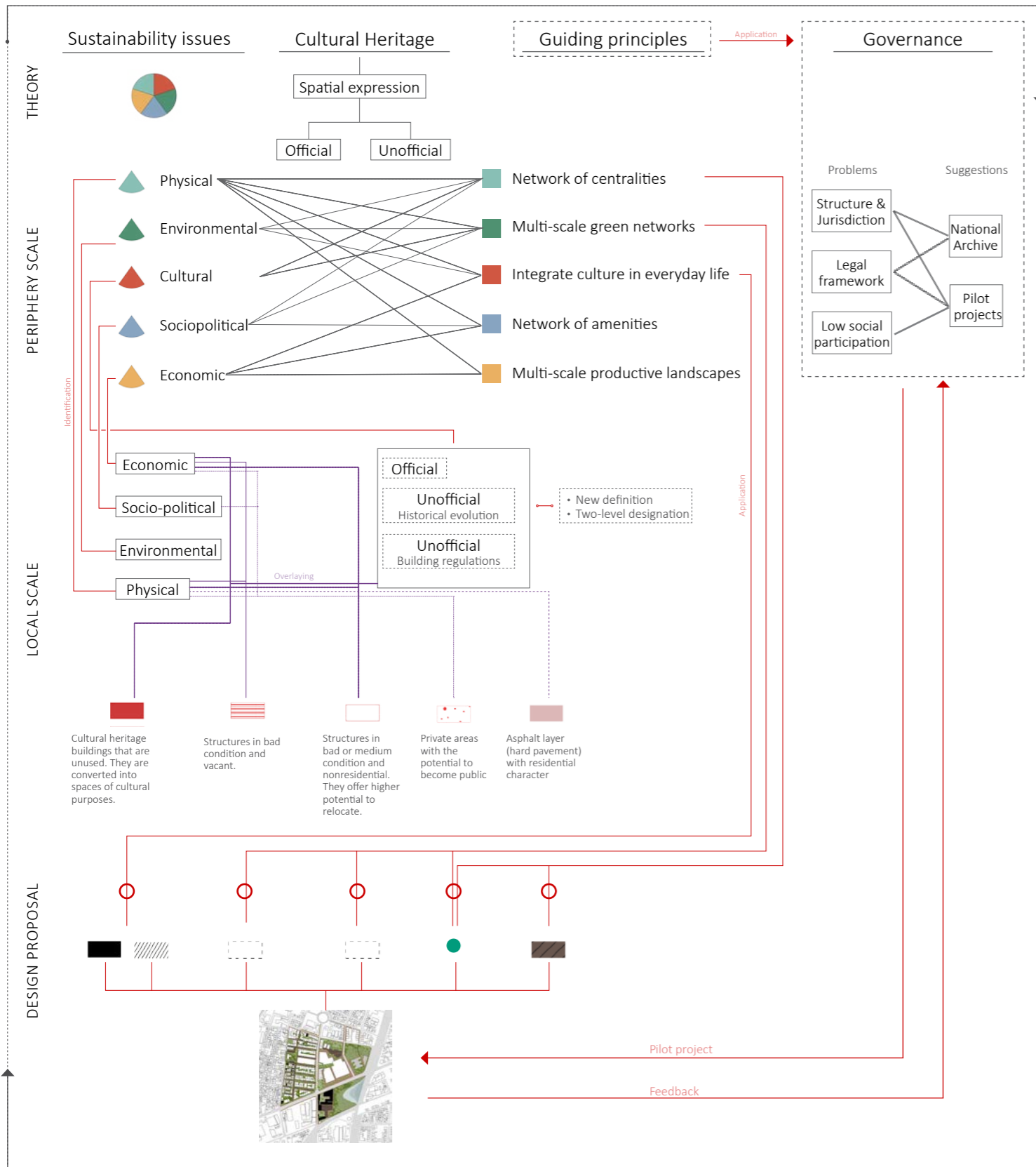140. Implementation process of a pilot project and way of evaluation.
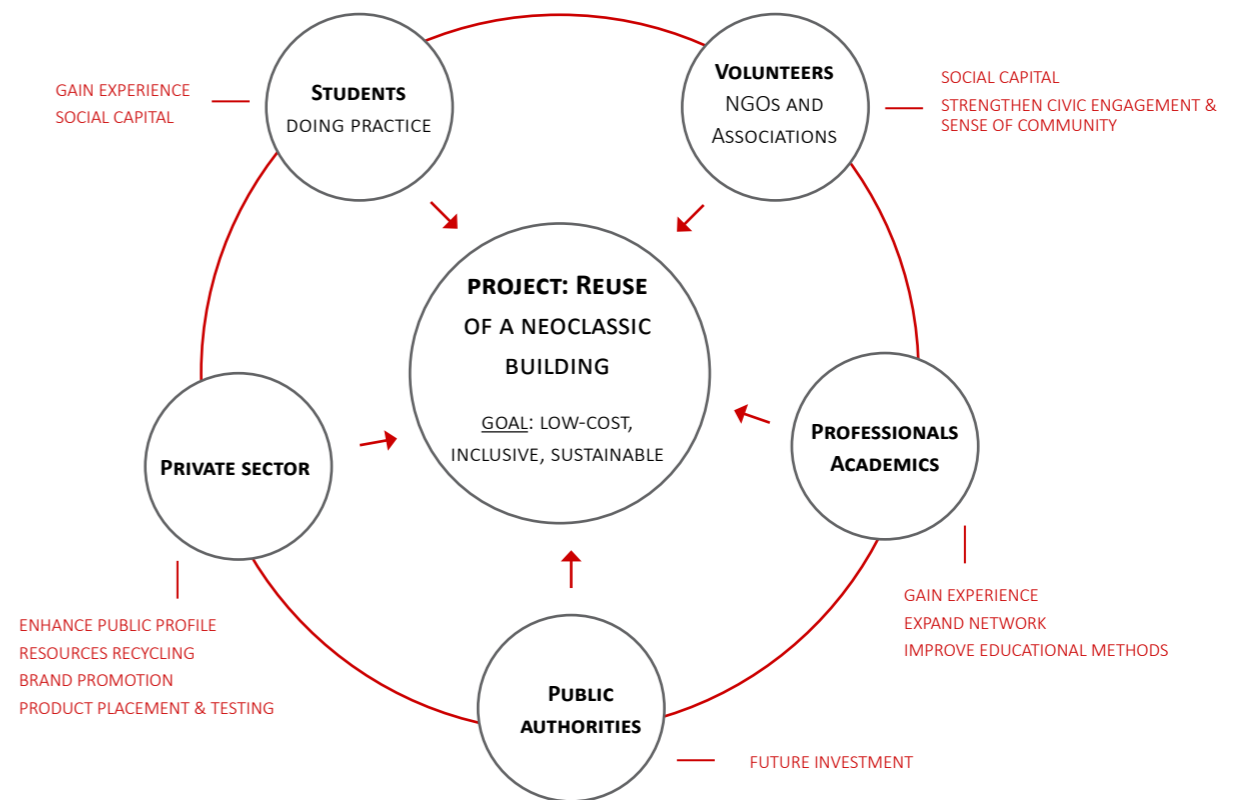
141. Main categories (groups) of stakeholders that should be involved in the decision-making process. Possible benefits/incentives (why would they engage) are indicated in red.

7 _ SUMMARY AND REFLECTION

7.1 _ RESEARCH METHODOLOGY AND CONCLUSIONS

To recapitulate, this thesis explored urban strategies for harnessing diverse types of cultural heritage of the ordinary urban environment in order to achieve sustainable urban development. During the past century, urban expansions took place without any special regard towards existing cultural heritage expressions. Despite the significant role of heritage in shaping societal cultural identities and the extensive space that occupies within the built space, it is not taken into consideration in strategic planning. As a result, a great amount of cultural heritage remains unrecognized and ignored. Meanwhile, the urban transformations have been immense and largely unsustainable, in ways that consumed the natural environment and endangered the future development of the city.

The aim of this research and design project was to highlight the latent potential of cultural heritage as a driver of urban redevelopments focused on sustainability. To explore this argument, the project took as case study the periphery of Piraeus in Athens metropolitan area, Greece and examined the relevant concepts and proposals at the metropolitan and local scale. The process of research, analysis and design was a continuous dialogue between two basic lines of narrative, namely the cultural heritage and the sustainable urban development.

The research and design process employed various methods, based on the needs and challenges of each topic. The findings led to the elaboration of a strategy for the periphery of Piraeus comprising guiding principles, design solutions at the local scale and governance arrangements. The final structural and design proposals included: i) the recommendation of a two-level system of official designation of cultural heritage elements; ii) a set of guiding principles for sustainable urban development at the metropolitan scale; iii) a design solution for Apollon neighbourhood, which acted as a showcase of the principles' applicability; iv) the development of a national inventory and the implementation of pilot projects, as counteraction to the governance challenges.

1| A new approach toward cultural heritage and its role in urban development

The research about cultural heritage was initially based on the description that heritage is *"what a specific group of people considers as (historically) valuable at a specific moment in time. Therefore, heritage is time related, culture related and person-related"* (VERSCHUURE-STUIP 2017). However, the analysis approach followed the distinction of official and unofficial cultural heritage, as

142. Detailed structure of thesis. Diagrammatic summary of the process followed.

proposed by RODNEY (2010) in order to delineate the tangible expressions of cultural heritage within the urban space. The identification process concluded in a new definition of cultural heritage of the ordinary urban environment as a response to (i) the unclear content of the term 'cultural heritage' and (ii) the heavy reliance of heritage designation on architectural and aesthetic criteria.

Contrary to common belief, cultural heritage does not appear in the form of urban islands in a sea of unworthy structures. It is an assemblage of scattered elements of heritage value embedded in the entire urban fabric. Consequently, this work proposed the following definition: *the cultural heritage of the ordinary urban environment comprises all tangible and intangible elements that significantly have influenced or influence ordinary life and, therefore, become an integral characteristic of the urban space and urban life.* These elements pertain to the daily culture of ordinary citizens, rather than exceptional figures of national history such as royal families. They draw their significance from the fact that they are embedded in the urban space, which suggests their historical continuity and the role in the evolution of urban space. To assess the latter, researchers need to be cautious in choosing the methods and parameters to decode the process of urban transformation and evaluate the importance of various elements.

Moreover, this work argued that the current system of official designation of heritage value is ineffective because it promotes a model of polarization and induces countless development difficulties due to bureaucratic processes and lack of updated management models. Therefore, a two-level system of official designation was suggested in order to protect, preserve and manage the entire spectrum of cultural heritage of the ordinary urban environment. Level-1 heritage includes unique cultural testimonies that should be protected by strict regulations and under the jurisdiction of state authorities. Level-2 heritage includes cultural heritage elements whose preservation and development can be realized under more flexible terms, conceding the primary role to local authorities and communities (for more detail, see p. 68-69).

As an integral component of the ordinary urban environment, cultural heritage has a threefold role: to remind us of the past, structure the present and guide the future. By preserving it, we keep the memory (and knowledge) of the past. By reusing it, we integrate cultural heritage in the structure of everyday life. In order to achieve the third and use cultural heritage as a driver for sustainable urban development, we have to value it equally with other factors and use its underlying qualities, rather than concentrating in conserving only the 'beautiful forms'. Until recently, heritage only fulfilled its first role. However, the emerging initiative toward the second shall eventually lead cultural heritage to undertake the role of catalyst in urban development.

2| Sustainable development is a realistic scenario

The analysis of sustainable development challenges in the periphery of Piraeus was based on two existing theoretical frameworks. The four-layer approach of sustainable urban development as a synergy of the environmental, economic, sociopolitical and cultural sustainability spheres (*Cultural Heritage Counts for Europe* report 2015), determined the general frame of the spatial analysis. The content of each sustainability sphere was then determined based on the methodological tool of *Sustainability Circles* (Paul James 2015). In order to emphasize the spatial dimension and potential of cultural heritage for sustainable urban development, this work introduced the additional sphere of *'physical sustainability'* to the four-layer understanding of sustainable urban development. This adjustment was essential to deal with the physical attributes of cultural heritage elements in a way equal to every other factor. The combined use of the two methods contributed to cover a wide spectrum of sustainability factors by breaking down this very complex notion into specific elements.

The spatial analysis highlighted the pressing issues related to the mobility infrastructure, the degrading environmental conditions, the cultural loss and the socio-economic pressure and inequality. These problems were then addressed by the guiding principles and the design solutions. Through the research by design process, it became evident that a more sustainable urban environment can be obtained and cultural heritage plays a catalytic role. To achieve this goal, there are three conditions to be met. Firstly, cultural heritage should be recognized and harnessed as a spatial resource within the urban environment. Secondly, the challenges of each sustainability sphere need to be addressed separately, using a targeted principle for each group of issues. Thirdly, each principle needs to guarantee collateral benefits to the others, thus contributing to the balance of the general framework in a twofold way. Since sustainable urban development is seen as a synergy of individual sustainability spheres, then the solutions should follow the same synergistic pattern.

3 | A new governance model

The theoretical research regarding the role of governance in protecting and managing cultural heritage led to a contradictory observation. Although people start perceiving heritage in a broader view, the legal, technical and administrative framework is rigid and complicates the actual adaptation of urban space to economic, socio-political, cultural and spatial transformations. The centralized power of the government and the obsolete means used to define and integrate cultural heritage in the built environment lead to increased bureaucracy and public indifference. Therefore, it is vital to decentralize the current governance system and delegate specific responsibilities to the various

stakeholders in order to inform, engage, empower and convince them.

The research by design process investigated how local societies, organized around public, private or civic institutions could take the lead in the heritage led urban regeneration. It was deducted that a new governance model was required to promote small-scale, incremental transformations carried out by several actors, instead of centrally planned regulations and master-plans that do not reflect the local needs nor the pragmatic capability of the state authorities to implement them. Although the current socio-political and economic conditions have fostered self-organization of civic society, the emerging social dynamics come with a great risk; that having a very fragmented system of decision-making and implementation can be as damaging as immensely centralized governance. Therefore, the mobilization of civic society needs guidance and monitoring to ensure its positive impact on the physical environment.

4 | Theorization and practicality

A great challenge throughout the project was the complexity of the analyzed concepts requiring continuous contextualization at all phases and scales. This process was the strongest indication that the followed methodology can be theorized and used in different case studies and spatial contexts. For instance, the principle to counteract environmental challenges in the Netherlands would promote green-blue networks, using dykes infrastructure and the water system in a twofold way: as carriers of heritage value as well as an indispensable spatial condition.

At the same time, the followed methodology created conditions for practical alternatives that do not impose change but facilitate it and guide it in order to keep the structural elements of the place and the society, yet improving the living conditions. By investigating what kind of cultural heritage elements could contribute in addressing a specific sustainability issue, the research and design process led to site-specific solutions that met the needs of diverse urban environments and the demands of local communities. These proposals included actions feasible since day one with minimum effort and budget (such as the pedestrianization of the local road network), as well as others that need negotiation and possibly redesign at the long-term (such as the demolition or reuse of buildings). Ultimately, the proposals introduced the cultural heritage of ordinary life in an ordinary urban project, catering for the best interests of the city and its citizens for long-term sustainability, resilience and livability.

Next steps

This study investigated the potential of cultural heritage of the ordinary as a resource for sustainable urban development. Due to the limited time span of this research, several topics should be further addressed to improve the suggested urban development framework.

1 | Local identity

In the case study of Piraeus, the cultural heritage elements were defined spatially based on historical research and the overview of state legislation. However, people's perception of cultural heritage and its role in their everyday life could be further explored. A series of interviews with residents and experts would offer valuable insight of what features define their sense of identity and how they relate to the urban space and its narrative. An understanding of this matters would strengthen the redevelopment proposals and facilitate their implementation and acceptance by local communities.

2 | Sustainability challenges

In the context of this study, only a part of the numerous factors that affect urban sustainability was analyzed. The information available served the objectives of the project, but there is room for deeper and more site-specific analysis. Moreover, the concepts that were not examined by this study should be analyzed in order to complete the picture of sustainability challenges. The principles and the design solutions could be further explored with additional data such as the type of economic activities locally, the amount and distribution of air or underground pollution, the concentrations of aging population, the vacancies and the condition of the built stock etc.

3 | Design solutions

For this research to practically contribute to the improvement of urban development and the protection of all cultural heritage of the ordinary urban environment, its results should be presented to the various stakeholders, including state authorities, civic associations and private enterprises. For this step, it would be helpful to elaborate on the strategy in two ways: i) by developing guiding principles that respond to the socio-political and economic challenges and ii) by designing solutions for more case studies at the local scale. In this way, it would be easier to illustrate the abundant possibilities to use cultural heritage of the ordinary environment as a resource for sustainable urban development.

8 _ APPENDIX

8.1 _ Reference Projects

During the research process, a series of reference projects was reviewed to explore the advantages and disadvantages of the implementation of heritage driven redevelopment in cases similar to our case study. The conclusions of this analysis indicated important conditions that contributed in the synthesis of the suggested guiding principles of chapter 4.

The three reference projects are the area of Gazi- Keramikos in Athens, the city of Lodz in Poland and the city of Barcelona in Spain. The cases were examined on the basis of their narrative, the relation among the various historical layers and their expression in the urban space, the context of redevelopment (causes and conditions, goals and implementation body), what has been preserved, what has been the role of ordinary environment in the redevelopment and what are the resultant conditions to be integrated in the strategy for Piraeus periphery.

In all the three applications of heritage led urban regeneration, various cultural heritage elements were put at the centre of interest and used as an incentive and a driver for change. The public sector had the leading role and put effort to engage private initiatives and investments, despite the different context of redevelopment. The analysis of the reference projects also proved that different historical layers can coexist and find their expression harmoniously within the urban space, regardless of the course they have followed in time and the narrative of each region. This further reinforces the argument that the urban environment bears multiple narratives with great significance for the preservation of its cultural heritage.

A common feature of the three reference projects was that certain elements acted as reference points and landmarks, with the aim to stimulate the interest of investors and visitors for the specific area. In that way, the special character of the ordinary urban environment acquired a special role was highlighted and its elements were recognized and integrated rather than ignored. At this point, there is a significant difference between Barcelona and the other two cases. Only in the first case the ordinary urban environment and its structural elements were recognized and addressed as of equal importance as the prominent buildings and the (declared) historical monuments. On the other hand, the site specificities revealed particular needs and risks of urban regeneration on the basis of cultural heritage and fuelled the development of the guiding principles with crucial details. Indicatively, the sociopolitical dimension of the reference projects inspired the guiding principle for cultural sustainability as well as in the governance arrangements, where the involvement of local communities in the protection, preservation and dissemination of cultural heritage was the main priority.

Apollon neighborhood
(design area)

200 m²

Piraeus municipality

11 km²

Gazi- Keramikos
neighborhood

400 m²

City center of Łódź

9 km²

Barcelona

15 km²

143. Schematic comparison of the case study scales and the size of the reference projects. Despite the differences, the three cases offer the chance to reflect on different approaches of harnessing cultural heritage.
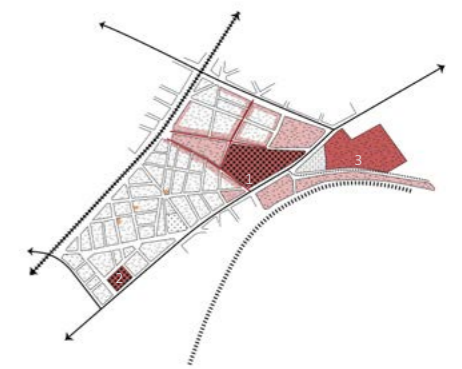
A | Gazi- Keramikos

Gazi - Keramikos is a neighborhood in the center of Athens and it was chosen due to the similarities of scale, configuration of urban space, social background and narrative with the *Apollon* neighbourhood that will be our design case (chapter 5).

The area is located close to the ancient cemetery of Keramikos, the *Mpenaki* Museum and between three major axis: *Pireos* avenue, *Iera odos* street and *Konstantinoupoleos* street, which is also a railway axis. Its history was defined by the gas factory that operated from 1857 to 1984 (fig. 145-146). The first inhabitants were workers who self-constructed their houses and worked in heavy and light industry. Later, it became home to refugees from Thrace and migrants from the countryside who would find labour and cheap residence. While the middle class was expanding to suburbs and other urban areas were being massively rebuilt by the system of *antiparohi* (see p. 56), Gazi- Keramikos kept a significant part of its original character up to today.
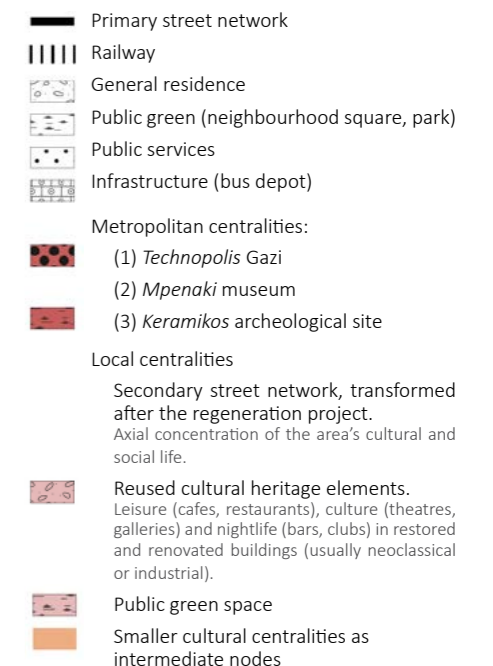
Due to de-industrialization and heavy pollution, the factory ceased its operation in 1984 leaving behind a monument of industrial heritage but also a fragmented and depopulated urban fabric. The plan of Athens Municipality to restore the old factory as a *Technopolis* (center of culture and technology, fig. 147) had multiple objectives: at the short-term, to preserve the industrial complex and re-brand the adjacent archaeological sites; at the long-term, to regenerate the area and foster the realization of big infrastructure like the metro line station.

The example of *Gazi-Keramikos* offers two valuable insights. First, the coexistence of various historical layers in an ordinary neighbourhood can be an asset as long as all of them are addressed with equal interest (fig. 144). In our case, the main driver of the project was the preservation and reuse of the industrial facilities while the rest of the ordinary environment was addressed as a quaint setting for leisure time and activities. The consequence is that the scale and typology of buildings and their historical uses are overlooked and often replaced by new conditions that do not correspond to the area's specificities. Although the archaeological and industrial landmarks create a dynamic network (as reference point) that fosters the development of the rest ordinary environment, the latter is in risk of losing its special character due to impetuous capitalization.

Second, an active community can prevent or-at least- amend interventions that do not correspond to the area's specificities. In the case of *Gazi-Keramikos*, two out of three gas tanks were demolished and reconstructed in the same form but with modern materials. The social reaction saved the third original gas tank.

144. Diagrammatic representation of the area of Gazi-Keramikos. A lot of different characters coexist in a small neighbourhood area. *Mpenaki* museum, *Technopolis* Gazi and the archeological site of Keramikos define the area and draw attention. Hence, they affect the vitality of adjacent blocks and create a bigger centrality. Through the neighbourhood, smaller cultural centralities act as intermediate nodes of a network.

Primary street network

Railway

General residence

Public green (neighbourhood square, park)

Public services

Infrastructure (bus depot)

Metropolitan centralities:
(1) *Technopolis* Gazi
(2) *Mpenaki* museum
(3) *Keramikos* archeological site

Local centralities

Secondary street network, transformed after the regeneration project. Axial concentration of the area's cultural and social life.

Reused cultural heritage elements. Leisure (cafes, restaurants), culture (theatres, galleries) and nightlife (bars, clubs) in restored and renovated buildings (usually neoclassical or industrial).

Public green space

Smaller cultural centralities as intermediate nodes

145. The gas factory at the mid 20th century. *Source: Adrakta et al. (2005)*

146. The gas factory at the end of 20th century. Source: *http://aromalefkadas.gr/γκάζι-το-εργοστάσιο-φωταερίου-της-αθή/*

147. Technopolis Gazi- centre for culture and technology. The old factory after the renovation has become a famous destination for nightlife. The area around hosts from alternative theatres and underground bars to pop music scenes and fancy clubs. *Source: Adrakta et al. (2005)*
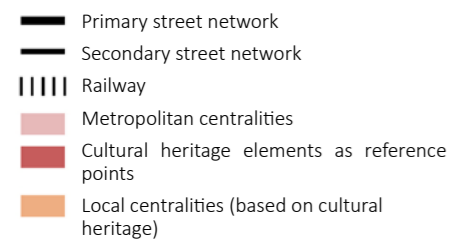
B | City center of Łódź, Poland

148. Diagrammatic representation of the City center of Łódź, Poland. In general, a number of representative buildings prevail as reference points (axes or areas) and create a network of territorial importance. In parallel, other projects based on reusing cultural heritage form local centralities and intermediate nodes.

Note: the local centralities (in orange) do **not** correspond to the exact locations in reality.

— Primary street network
— Secondary street network
||||| Railway
▬ Metropolitan centralities
▬ Cultural heritage elements as reference points
▬ Local centralities (based on cultural heritage)

This reference project was chosen because of similarities of scale and narrative with Piraeus in terms of strong industrial heritage that is expressed both through the multiple industrial complexes in the city's territory and through the citizens' collective memory.

Łódź started as a medieval city and had a strong link with the clergy until the end of 18th century. During the 19th century, it underwent intense industrialization with focus on the textiles, which attracted working population of diverse nationalities and cultural background. The WW II and Nazis occupation devastated the city due to hunger, pollution and diseases. After the war, the period of Polish People's Republic (Communist Poland) from 1952 to 1990 was characterized by shortages in food, medicines, gas etc but at the same time its industries were major suppliers of the USSR countries. The fall of communism and the de-industrialization led to a critical declination and the necessity to reuse the massive amount of underused facilities and redefine the identity of the city and people.

The public sector initiated the regeneration procedure with the aim to attract private investments. From the various historical layers of the urban space of Łódź, the industrial complexes prevail as defining elements and structure the ordinary urban environment. They were frequently built as small communities including a variety of facilities such as manufacturing, residential premises for employers and employees, schools, hospitals and commercial. The multiplicity and public character of functions are reinterpreted within the contemporary city and reflected in the new uses of cultural, scientific and technological interest.

Łódź today is famous for its National Film School, its graffiti art and its unique ambiance (fig. 150-152). However, the 'respectful' reuse with culture, leisure, science and commerce has only increased the flows of customers and visitors without contributing in a more permanent way in the city's advancement.

The example of Łódź is characteristic of how a disruptive event like de-industrialization can turn into a process of rethinking the city's future. As conclusions, the (endangered) sense of identity can act as driver for change, citizens respond positively when emblematic buildings serve once again the public and heritage preservation and appreciation have to be open to alternative scenarios and innovative solutions. All three points are important for the case study of Piraeus periphery, where the industrial heritage is massively linked to the place's and its inhabitants' narrative but unfortunately threatened by abandonment and oblivion.

C | Barcelona, Spain

This reference project was chosen due to similarities of scale and overall culture with Piraeus but mainly as a showcase of successful redevelopment through multi-scale interventions and based on maintaining and integrating cultural heritage as a primary driver.

Barcelona is famous for the way it embodies its past in a continuous urban fabric that meets the modern needs. It is remarkable how structural elements of various historical periods coexist within the contemporary city as a coherent narrative inscribed in the city's patterns, areas and individual structures (fig. 149).

These elements go back to the city's origins, starting with the location and configuration as a result of geographical conditions. They include remnants of the medieval period, the colonization by Madrid, the industrialization phase and the political changes during the 19th and 20th century that formed the Catalan identity. The plan of Cerda in 1857 reoriented the city towards the sea and established the physical and conceptual basis for modern Barcelona. Yet, it was the persistence of Barcelona school (versus the Modern movement) in preserving the elements of historical continuity and defining the Catalan identity that drove the city to its present character.
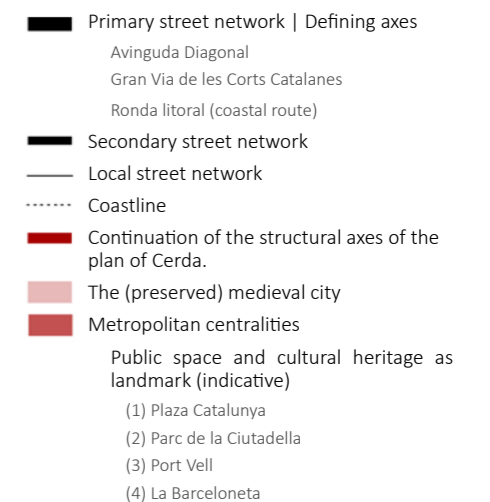
From the 1980s on, Barcelona's urban waterfront has been extended and the public space reorganized throughout the whole city in a consistent network of axes and patches (fig. 153-154). The main objective has been to adapt to the new conditions while strengthening the local identity and sending a message of competency to the central government. Since the Olympic Games of 1992, the main drivers of redevelopment have been the major infrastructure works and the city's re-branding as top destination for tourists and students.

The experience of Barcelona represents a paradigm for the following three conditions. First, a strong political background and the social need to define the place's identity and people's sense of belonging can act as a driver for development. Second, as cultural heritage element can be considered anything that relates to or expresses historical continuity and identity. Third, the city is both its structure and the buildings. Therefore, the elements and the relationships between them become the heritage of the ordinary environment and its appreciation empowers the past to live through the present not as a revival or conservation but as a reinterpretation. .
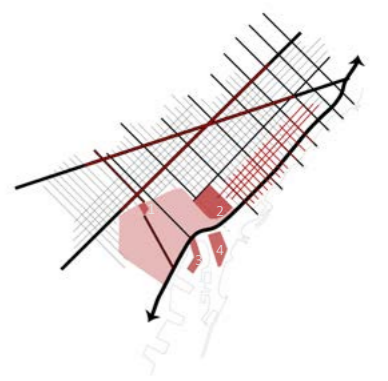
149. Diagrammatic representation of Barcelona's main structure and waterfront. We see similarities with the case of Łódź in Poland in the way that certain elements (axes, areas or buildings) stand as reference points and generate the main flows while local centralities function as intermediate nodes. The urban fabric contains the cultural heritage within its configuration as well as through its buildings.
The most important feature though is that the city has maintained in its urban life all the elements that have played a decisive role in the city's evolution: the streams as *ramblas*, the exceptional buildings as tourist attraction or public spaces, the plan of *Cerda* through the *Diagonal*, the typology of buildings and the orthogonal street pattern that frames the medieval city but does not disrupt it as well as the new waterfront as a testimony of the more recent periods.

▬ Primary street network | Defining axes
  Avinguda Diagonal
  Gran Via de les Corts Catalanes
  Ronda litoral (coastal route)
▬ Secondary street network
— Local street network
····· Coastline
▬ Continuation of the structural axes of the plan of Cerda.
▬ The (preserved) medieval city
▬ Metropolitan centralities
  Public space and cultural heritage as landmark (indicative)
    (1) Plaza Catalunya
    (2) Parc de la Ciutadella
    (3) Port Vell
    (4) La Barceloneta

150. *"There are a lot sites like that. This is a big part of the city"* by Ola Gordowy, student of Architecture in TU Delft

152. *"But then they are trying to reuse the space a lot. So this is another image of the city"* by Ola Gordowy, student of Architecture in TU Delft

151. View from 1914, photo by Bundesarchive & 2016, photo by Renata Głuszek.

Source: http://www.polenvoornederlanders.nl/?page_id=17904&lang=en

153. The coast of Barcelona c1970s.

Source: http://www.thepolisblog.org/2010/09/shantyism-in-barcelona-of-20th-century.html

154. The coast of Barcelona, 2013 by Vladimir Tkalcic.

Source: http://www.sail-world.com/Australia/photo/335051

Sustainability sphere		Content (non exhaustive list)		Possible sources of information and data
PHYSICAL				
State of structures		Stability, Risk of collapsing, Architectural or Structural Damages, Transformations		Technical reports, Site observation, Archeological and Architectural research, Historical research through photos and archives, private archives of engineers and construction companies
Accessibility_Local scale		Connection to the neighborhood and municipality, Facilitation of local flows		Technical reports, Transportation reports, GIS data about traffic, Radius and Route distance [possible data sources: national land registry, national statistics (Hellenic Statistical Authority), Google (or other similar) applications]
Accessibility_Metropolitan scale		Connection to the periphery and metropolitan area, Facilitation of heavy traffic		
Vicinity to centralities and services		Distance and accessibility to public services, education, health, commerce, leisure, culture & sports, city centers and industrial zones		GIS data, analysis based on Radius distance, actual Route distance and Time needed to commute [possible data sources: as above]
ENVIRONMENTAL				
Materials & Energy (availability & quality)		Availability and Quality of raw material, Renewable and Recyclable resources, Soil fertility, Conventional and Unconventional Energy forms, Use and Consumption		Technical reports and GIS data on ground quality (soil fertility, ground layers etc), Statistics and Measurements about Energy Consumption, Use of alternative energy systems and their scale, Academic reports and research conducted by National Institutions
Water & Air (vitality, climate, adaptability)		Vitality, Considerate use of natural resources, micro-Climate, Climate change and Adaptability		Technical reports and GIS data, Statistics, Measurements and Analyses of academics and national institutions, Reports, data and information from NGOs and other Associations or individuals, Natural disasters reports, Historical research on the transformation of landscape and land use, People's narratives and micro-stories
Flora & Fauna (biodiversity)		Biodiversity, Domestic Animals and Species Relations, Ecosystems, Complexity and Resilience		
Habitat & Settlements (topography & land use)		Topography and Liveability, Land use, Original Habitat and Native Vegetation, Natural Reserves		
Emissions & Waste (pollution)		Pollution, Ecological Footprint, Waste management, Reuse and Recycling		
Health (physical, mental, psychological)		Physical, Mental, Psycological, Nutrition, Hygiene, Fitness, Wellbeing		Health care facilities and services (coverage, specialization, response), Hospitalization rates and relevant data, Statistics and Research of Medical background, Site observation and Discussion with locals
CULTURAL				
Identity & Social Engagement		Multiculturalism, Diversity, Sense of place and Belonging, Acceptance of the different, Participation in Cultural Practices		
Creativity & Recreation		Aesthetics, Arts and Crafts, Events, Celebrations, Sports, Leisure, Innovation		Cultural events and participation, Reported (or not) assaults, Diversity of cultural spaces in terms of interests, Official places of Worship, Social facilities, Education facilties, Orientation and educational programs or events, Sense of identity, Recognition of emblematic heritage sites and public act to protect them, Preservation and Conservation, Listings and Recorings related to personal stories, Declared monuments or sites
Beliefs & Ideas		Ideologies, Religion and Faith, Knowledge and its Interpretation, Symbols, Rituals, Emotions		
Cultural diversity		Gender and Generations representation, Reproduction and Mortality, Equality and Equity, Family as the social core, Sexuality, Quality of Life		
Inquiry & Learning		Curiosity, Research and Application, Teaching and Training, holistic Education		
Memory & its Preservation		Traditions, Authenticity, Historicity, Archives, Protection and Conservation, Expression and Communication		
SOCIO-POLITICAL				
Governance		Participation in Decision-making, Organization, Political Power, Authority, Legitimacy, Decision making, Planning and Programming, Vision, Respect, government Transparency		Statistics on participation at elections, city councils and neighborhood or community gatherings, Number, Size, Hierarchy and Jurisdiction of governmental institutions
Justice & Ethics		Access to social amenities, Law enforcement, Social and Human Rights, Social Responsibilities, Equity, Equality, Equal Opportunities, Fairness, Judgement and Penalty		Society's position and activity against social crimes and ethical questions, Criminality rates, Domestic violence, Reported and unreported violetions, Street gangs, Police presence and engagement, Emergency response and exertion of power, Site observation on Street equipment and space configuration (street lamps, visibility etc)

Communication & Critique		Dialog, Freedom of Speech and Act, space for Debate, Expression of Opinion, Information and Update, Privacy, Accountability		Local Associations, Actions and events for different social groups but also bringing together the diverse social groups, existence of Gathering Places in Public (not only cafeterias etc),
Representation & Empowering		Participation to the commons, bridge the Gender and Generation gap, Inclusive decision making, Communication with the people, Democracy, Self-organization, Autonomy		Communication of local government to people (update and notification systems), Everyday life Facilities for people in need and special social groups (elderly, handicaps etc), Statistics on Residents' background (age, education, origin, occupation, socio-political mindset, religion etc)
Security		Safety, Protection, Support, Integrity, Accountability, Social Care, Defence of common goods, Trust		Criminality rates, Domestic violence, Reported and unreported violetions, Street gangs, Police presence and engagement, Emergency response and exertion of power, Site observation on Street equipment and space configuration (street lamps, visibility etc)
ECONOMIC				
Production & Resourcing		Productivity, Processes and Services, Innovation & Resourcefulness, Competitiveness		Statistics of government, institutions and companies (to juxtapose), Accounting books and Tax information (background, declared income vs property assets), Economic Reports of local and national government
Efficiency & Growth		Stability and Development, Revenues, Potentials, Autonomy, Circular economy, Creative economy		
Regulations & Justice		Legality, Tax evasion, Labor rights, Welfare contribution		Statistics, Accounting books, Monthly to yearly reports, Emploees' and Employers' opinion but also reports of inappropriate behaviour, Legal cases against companies
Consumption & use of Resources		Management of resources, Logistics, Process Optimization		
Technology & Infrastructure		Equipment, Connection to infrastructural grids (sewage, water, electricity, internet), Access and Use of infrastructural networks and technology, Innovation		Property declaration, Technical reports and plans of infrastructure (public and private archives), Participation in Innovation conferences, events or activities
Trade & Networking		Import-Export, Credibility, business Alliances, Public Relationships, Economic Impact		Statistics, Accounting books, Monthly to yearly reports, Emploees' and Employers' opinion, Membership in national and international corporations, associations etc, GDP

| PERSONAL NARRATIVE (WHY THEY LIVE HERE) | BOND WITH THE PLACE | WHAT DOES THE SPACE REPRESENTS | CULTURAL HERITAGE STIMULUS | (UN)SUSTAINABILITY | INCLUSIVE DESIGN & PARTICIPATION | RELOCATE? |

George Negas, 25 yrs old
He is a journalist and lives in London. He is half British and raised in Kallipoli, Piraeus (next to Zea port).

We live here because my mother worked here. Her job was related to the port and the shipping industry.

We had a call and money transfer center for foreigners so we needed to be next to the cruise ship terminals. Sailors wouldn't go much further to settle their business. We also needed to be inside the Internet grid infrastructure. The options were limited.

I live in London now. My mother still lives in the same place. We have invested in that.

Anyway, I love Paleo Faliro more; that's where I have my best childhood memories. I spent all the summers with my father there.

Only a handful of my friends are actually from Piraeus.

It's a typical middle class area. Normal settings, normal life. Most of it connected to the port or industry.

You also have people of higher income, especially when you move towards the coast line. Most of them work with the shipping or tourist industry; that's why they live here anyway. But if you have money, you move to the southeast of Attica

When I was growing up, not much was happening. Now the historical center is gaining interest due to the renovation of the Municipality Theatre and an effort to promote Piraeus as a cultural center equal to Athens.

There are several leisure opportunities, from the most intellectual to the most folksy. Things are changing, people ask for the different.

The urban environment itself is a problem. Narrow streets that you cannot navigate, confusing and unreliable transportation, bad management system for solid waste.

I don't feel like there is tremendous lack of public space, although I would love to see more. Safety in the parks can be an issue though and cultural sites are quite unknown.

Health care is also a serious problem. We live close to the hospital but we maintain a private insurance with the private hospital at Neo Faliro.

People don't trust anything related to the government; but do you blame them?

The first step would be to approach and inform them where they already hang out. But you cannot - and shouldn't - transfer the public dialogue into the private space.

And it should be subtle, give them a choice. Public ballot boxes, like the simplified "customer service" in some shops could work. You give privacy and the choice to answer when they want.

And if you realize something corresponding to the whole process, then it will be each time easier to engage them.

People could accept the idea if you provide something better and don't disturb their convenience. They see their houses as life investments and the moving as a hassle. It will take a lot to convince them that releasing space can actually work.

Giannis Kanellos, 26 yrs old
He is a dentist, studies and lives in Thessaloniki. He was raised in Korydallos.

When my father's parents came from Tripoli (middle-size town in countryside), they stayed somewhere in Athens. My mother's family was staying in Nikea so when they got married, they tried to find something affordable close to her family.

I think my parents would have liked to move if it was economically possible.

Korydallos is a place that keeps you stuck. Mainly because people will marginalize you if you want to make a difference.

Nothing really keeps me there. I don't want to spend my life and make a family in that area.

Contrary to common belief, people of Korydallos represent the middle class left wing. And they are quite mainstream.

Surprisingly, there are a lot of cultural activities happening. Classical theatre, athletics, concerts.

Its cultural heritage is certaintly linked to the rempetiko (music genre). Not so much with politics as in similar areas like Kokkinia.

Public transportation and waste management. Of course there is lack of services.

The location of the prisons next to the schools is an issue. Especially in the summer, the inmates try to have conversations with school kids!

Safety in public space too; there is not enough lighting or visibility.

Good luck with that. One, people will be bored and unwilling. Two, if you try to have an open dialogue, they will come to convince, not to listen.

The municipality should implement something that puts less pressure for both parties. Information booths and maybe public voting places. If they would do a persisting and organized campaign, things could change over time.

Provided that you keep the owning system and you offer something at least equal or better.

It will work only if you have something to show. But it sounds really good to open space inside the blocks!

9 _ REFERENCES

8.1 _ Reference List

English

Balaoura, O. (2013) *Metaxourgio of Athens: towards a counter hegemonic use of space*. EMU Postmaster thesis. Delft University of Technology.

Bröderbauer, D. (2013) Biodiversity in Greece. In: Lichtenecker, A. (2013) *Biodiversity-info. Naturefriends International (NFI)*, 1, 5-6. [Online] Available from http://www.nfi.at/dmdocuments/BiodivInfoApril2013_EN.pdf [Accessed 9 August 2013]

Circles of Sustainability (2015/2017) *Circles of Sustainability: Practical tools for creating sustainable cities and communities*. [Online] Available from http://www.circlesofsustainability.org/ [Accessed 25 March 2017]

European Commission (2010*) EUROPE 2020: A strategy for smart, sustainable and inclusive growth.* [Online] Available from http://www.eea.europa.eu/policy-documents/com-2010-2020-europe-2020 [Accessed 1 March 2017]

Flash Eurobarometer (2011) *Survey on the attitudes of Europeans towards tourism.* European Commission. Report number: 328. [Online] Available from http://ec.europa.eu/COMMFrontOffice/publicopinion/index.cfm/Survey/index#p=3&instruments=FLASH [Accessed 1 February 2017]

Girardet, H. (2013) Sustainability is unhelpful: we need to think about regeneration. *The Guardian.* [Online] Available from https://www.theguardian.com/sustainable-business/blog/sustainability-unhelpful-think-regeneration [Accessed 02 August 2017]

iraud-Labalte, C., Pugh, K., Quaedvlieg-Mihailović, S., Sanetra-Szeliga, J., Smith, B., Vandesande, A. & Thys, C. (2015) *Cultural Heritage Counts for Europe* (CHCfE) Krakow, International Cultural Centre on behalf of the CHCfE Consortium. [Online] Available from http://blogs.encatc.org/culturalheritagecountsforeurope/outcomes/ [Accessed 10 February 2017]

Global Development Research Center (GDRC) (2016) *Understanding the Concept of Governance*. [Online] Available from https://www.gdrc.org/u-gov/governance-understand.html [Accessed 28 June 2017]

Graham, J., Amos, B. & Plumptre, T. (2003) P*rinciples for Good Governance in the 21st Century.* Institute On Governance. Policy Brief No.15. [Online] Available from http://iog.ca/publications/iog-policy-brief-no-15-principles-for-good-governance-in-the-21st-century/ [Accessed 28 June 2017]

Huliaras, A. (2014) *The dynamics of civil society in Greece: creating civic engagement from the top*. The University of Peloponnese. [Online] Available from https://www.uop.gr/images/files/huliaras.pdf [Accessed 01 July 2017]

INHERIT (2007) *Investing in Heritage – A Guide to Successful Urban Regeneration*. Norwich, European Association of Historic Towns and Regions (EAHTR). [Online] Available from www.historic-towns.org [Accessed 13 March 2017]

Institute On Governance (IOG) (2017) Defining governance. [Online] Available from http://iog.ca/defining-governance/ [Accessed 28 June 2017]

Janssen, J. (2014) Modernising Dutch heritage conservation: current progress and ongoing challenges for heritage-based planning and management. *Tijdschrift voor Economische en Sociale Geografie* 105 (5) 622-629 [Online] Available from http://onlinelibrary.wiley.com.tudelft.idm.oclc.org/doi/10.1111/tesg.12117/abstract [Accessed 15 January 2017]

Jenkins, S. (2013) Liverpool: the three graces. In Jenkins, S. (2013) *England's 100 best views.* [Online] Available from https://books.google.gr/books?id=9Yr4AAAAQBAJ&pg=PT212&lpg=PT212&dq=a+country+without+a+past+has+the+emptiness&source=bl&ot s=gl4t9oZg6F&sig=h2TumEJfgJgVl4DwUdH0PQRv1N8&hl=en&sa=X&ved=0ahUKEwjIip SLqbnVAhWOJhoKHU4qDbQQ6AEIQTAF#v=onepage&q=a%20country%20without%20 a%20past%20has%20the%20emptiness&f=false [Accessed 2 August 2017]

Joint Programming Initiatives in Cultural Heritage (JPI CH) (2014) *Cultural Heritage and Global Change: Strategic Research Agenda.* Joint Programming Initiative. [Online] Available from http://www.jpi-culturalheritage.eu/about-us-2/strategic-research-agenda/ [Accessed 10 February 2017]

Keeble, B. R. (1988) The Brundtland report: 'Our common future'. *Medicine and War.* [Online] 4(1), 17-25, Available from http://www.tandfonline.com/doi/abs/10.1080/07488008808408783 [Accessed 1 August 2017]

Labuhn, B. & Luiten, E. (2015) When everything becomes heritage: experiments with heritage sensitive spatial design and planning in the Netherlands. In: Purchla, J. & Jagodzińska, K. (2015) *Limits of Heritage*. The 2nd Heritage Forum of Central Europe. Kraków: International Culture Center Kraków, 119-138 [Online] Available from http://www.zora.uzh.ch/121838/ [Accessed 17 February 2017]

Rodney, H. (2010) Heritage as Social Action. In 2010 in West, S. (ed) *Understanding heritage in practice.* Manchester University Press in association with the Open University, Manchester and Milton Keynes, pp. 240-276. [Online] Available from https://www.academia.edu/776657/Heritage_as_Social_Action [Accessed 1 August 2017]

Special Eurobarometer (2013) *Cultural access and participation.* European Commission. Report number: 399. [Online] Available from http://ec.europa.eu/public_opinion/index_en.htm [Accessed 1 February 2017]

UNESCO (2011a) *New life for historic cities: The historic urban landscape approach explained.* [Online] Available from http://whc.unesco.org/en/news/1026/ [Accessed 1 March 2017]

UNESCO (2011b) *Recommendation on the Historic Urban Landscape, including a glossary of definitions* [Online] Available from

http://portal.unesco.org/en/ev.php-URL_ID=48857&URL_DO=DO_TOPIC&URL_SECTION=201.html [Accessed 1 March 2017]

United Nations General Assembly (2016) *New Urban Agenda: Adopted by the UN General Assembly*. New York, USA. [Online] Available from https://habitat3.org/the-new-urban-agenda [Accessed 23 April 2017]

Verschuure- Stuip, G. (2017) Lecture *Presented at Delft University of Technology, 16 February 2017.*

Vernet, A. & Gunson, J. (2014) *Cultural Heritage Policy In The European Union.* [Online] Available from https://epthinktank.eu/2014/12/16/cultural-heritage-policy-in-the-european-union/ [Accessed 31 May 2017]

Greek (transliterated author's name and translated title)

Adracta, E., Kravari, R & Papaioannou, M. [Αδρακτά, Ε., Κράβαρη, Ρ. - Μ. & Παπαϊωάννου, Μ.] (2005) *Γκαζοχώρι: Αναλυτική προσέγγιση του αστικού χώρου [Gazi settlement: Analytical study of the urban space]*. [Online] Available from http://www.arch.ntua.gr/sites/default/files/project/8156_/5_adrakta_kravari_papaioannou_sm.pdf [Accessed 14 April 2017]

Analiti, B. [Αναλυτή, Β.] (c2006) *Πολεοδομική εξέλιξη και κοινωνική κατοικία στον Άγιο Ιωάννη Ρέντη [Urban development and social housing in Agios Ioannis Rentis]*. [Online] Available from http://www.cityofrentis.gr/newsite/htmls/page6sub43.html, [Accessed 28 April 2017]

Avgerinou-Kolonia, S. & Toufeggopoulou, A. [Αυγερινού-Κολώνια, Σ. & Τουφεγγοπούλου, Α.] (2012) *Ο Σχεδιασμός της Πολιτιστικής Κληρονομιάς με Όρους Βιωσιμότητας: Οι Επιπτώσεις του στην Τουριστική Εικόνα και την Ανάπτυξη του Αστικού Χώρου, μέσα από την εμπειρία της Κέρκυρας [The Design of Cultural Heritage under Terms of Sustainability: Impacts on the Touristic Image and the Development of Urban Space, through the experience of Corfu]*. CityBranding [Online] Available from http://www.citybranding.gr/2012/04/blog-post_25.html [Accessed 1 February 2017]

Avgoustianakis, M. [Αυγουστιανάκης, Μ.] (2012) *Νομοθετικό πλαίσιο προστασίας της πολιτιστικής κληρονομιάς [Legislative framework for the protection of cultural heritage]*. [Online] Available from https://eclass.uoa.gr/modules/document/index.php?course=MUSIC165&openDir=/49e241c7yaab [Accessed 18 June 2017]

Belavilas, N. [Μπελαβίλας, Ν.] (2007) *Οδός Πειραιώς [Pireos street]*. [Online] Available from https://ergatavrou.wordpress.com/2017/03/07/%CE%B3%CE%B9%CE%B1-%CF%84%CE%B7%CE%BD-%CE%BF%CE%B4%CE%BF-%CF%80%CE%B5%CE%B9%CF%81%CE%B1%CE%B9%CF%89%CF%83-%CF%84%CE%BF%CF%85-%CE%BD%CE%AF%CE%BA%CE%BF%CF%85-%CE%BC%CF%80%CE%B5%CE%BB%CE%B1%CE%B2%CE%AF/ [Accessed 15 March 2017]

Belavilas, N. [Μπελαβίλας, Ν.] (2011) *Βιομηχανική κληρονομιά στην Αττική. Η κατάσταση των πραγμάτων [Industrial heritage in Attica. The state of affairs]*. [Online] Available from https://www.academia.edu/9890188/ [Accessed 15 March 2017]

Environmental Association of Municipalities of Athens - Piraeus (PESYDAP) [Περιβαλλοντικός Σύνδεσμος Δήμων Αθήνας-Πειραιά (ΠΕΣΥΔΑΠ) (2012/2017) *Δήμοι-Μέλη [Municipalities - Members]*. [Online] Available from http://www.pesydap.gr/ [Accessed 9 August 2017]

EYDAP S.A. - Athens Water Supply and Sewerage Company (2017) *Wastewater Treatment*. Online] Available from https://www.eydap.gr/en/TheCompany/DrainageAndSewerage/Sewerage/ [Accessed 08 August 2017]

Gratsia, E. [Γρατσία, Ε.] (2012) *Ο ρόλος των πολιτών στην προστασία της αρχιτεκτονικής κληρονομιάς [The role of citizens in the protection of architectural heritage]* [Online] Available from http://www.medies.net/_uploaded_files/desd_manmade_2012/gratsia.pdf [Accessed 10 February 2017]

Hellenic Statistical Authority (HSA) [Ελληνική Στατιστική Αρχή] (2011) *Απογραφή πληθυσμού - κατοικιών: χαρακτηριστικά και ανέσεις [Population and housing census: characteristics and amenities of dwellings]*. [Online] Available from http://www.statistics.gr/el/statistics/-/publication/SAM05/2011 [Accessed on 25 May 2017]

Hellenic Statistical Authority (HSA) [Ελληνική Στατιστική Αρχή] (2011) *Πληθυσμός και Κοινωνικές Συνθήκες - Απογραφή 2011 [Population and Social Conditions - Census 2011]*. [Online] Available from http://www.statistics.gr/el/statistics/pop [Accessed 10 April 2017]

Kanellos, G. Interviewed by: Papadam, M. (May 2017)

Karakounos, I. & Stathakis, D. [Καρακούνος, Ι. & Σταθάκης, Δ.] (2013) *Αστική μορφολογία και μικροκλίμα στις πόλεις [Urban morphology (configuration) and microclimate in the cities]*. *Citybranding*. [Online] Available from http://www.citybranding.gr/2013/04/blog-post_11.html [Accessed 11 August 2017]

Ministry of Administrative Reformation [Υπουργείο Διοικητικής Μεταρρύθμισης] (2007) *Επιχειρησιακό πρόγραμμα: Βελτίωση διοικητικής ικανότητας δημόσιας διοίκησης - Προγραμματική περίοδος 2007-2013 [Operational program: Improvement of administrative capacity of public sector - Programming period 2007-2013]*. Υπουργείο Διοικητικής Μεταρρύθμισης. CCI: 2007GR05UPO003. [Online] Available from http://docs.uoa.gr/D_KPS/2_%D4%EF%EC%E5%E1%EA%DC/7_%C5%D0_%C2%C5%CB%D4%C9%D9%D3%C7_%C4%C9%CF%C9%CA%C7%D4%C9%CA%C7%D3_%C9%CA%C1%CD%CF%D4%C7%D4%C1%D3_%C4%C7%CC%CF%D3%C9%C1%D3_%C4%C9%CF%C9%CA%C7%D3%C7%D3/%C2%C5%CB%D4%C9%D9%D3%C7_%C4%C9%CF%C9%CA%C7%D4%C9%CA%C7%D3_%C9%CA%C1%CD%CF%D4%C7%D4%C1%D3_%C4%C7%CC%CF%D3%C9%C1%D3_%C4%C9%CF%C9%CA%C7%D3%C7%D3.pdf [Accessed 08 August 2017)

MLP (2015) *The monastery and the church of Agios Spyridon [Το μοναστήρι και ο ναός του Αγίου Σπυρίδωνα]*. MLP-blo-g-spot. [Online] Available from http://mlp-blo-g-spot.blogspot.gr/2015/12/agspyr.html [Accessed 2 April 2017]

Mpota, E. [Μπότα, Ε.] (2016) *Οι πέντε αναπλάσεις στην Αθήνα που δεν έγιναν ποτέ [The five redevelopments in Athens that never happened]*. [Online] Available from http://www.insider.gr/eidiseis/ellada/7725/oi-pente-anaplaseis-stin-athina-poy-den-eginan-pote [Accessed 1 February 2017]

Negas, G. Interviewed by: Papadam, M. (May 2017)

News247 (2017) Μετρό: Το 2019 θα παραδοθούν οι σταθμοί 'Αγ. Βαρβάρα', 'Κορυδαλλός' και 'Νίκαια' [Metro line: in 2019 the stations of 'Agia Varvara', 'Korydallos' and 'Nikea' will be delivered]. *News247* [Online] Available at http://news247.gr/eidiseis/koinonia/metro-to-2019-tha-paradothoun-oi-stathmoi-ag-varvara-korydallos-kai-nikaia.4553394.html [Accessed 07 August 2017]

Oikonomou, D. [Οικονόμου, Δ.] (2002) *Πολεοδομία II: Πολεοδομικός Σχεδιασμός, Σημειώσεις [Notes for the course of Urbanism II: Urban Design]*, Βόλος, Πανεπιστήμιο Θεσσαλίας - Τμήμα Μηχανικών Χωροταξίας και Περιφερειακής Ανάπτυξης

Palogou, S. [Παλόγου, Σ.] (2009-2010) *Προσεγγίσεις του φαινομένου της αστικής διάχυσης. ΗΠΑ - Ευρώπη - Ελλάδα [Approaches of the urban sprawl phenomenon. USA - Europe - Greece]*. [Online] Available from http://courses.arch.ntua.gr/el/metallages_tvn_idevn_gia_thn_polh_ston_20o_aivna/metaptyxiakes_spoydastikes_ergasies/2009-2010/keimena_ergasivn.html [Accessed 9 August 2017]

Pantazis, P. & Psiharis, G. [Πανταζής, Π. & Ψυχάρης, Γ.] (2016) *Στεγαστικός διαχωρισμός με βάση το φορολογητέο εισόδημα στην μητροπολιτική περιοχή της Αθήνας [Housing segregation based on taxable income in the metropolitan area of Athens]*. Athens Social Atlas [Online] Available from http://www.athenssocialatlas.gr/%CE%AC%CF%81%CE%B8%CF%81%CE%BF/%CE%B5%CE%B9%CF%83%CE%BF%CE%B4%CE%B7%CE%BC%CE%B1%CF%84%CE%B9%CE%BA%CE%AD%CF%82-%CE%BF%CE%BC%CE%AC%CE%B4%CE%B5%CF%82/ [Accessed 19 March 2017]

Papadam, M. [Παπαδάμ, Μ.] (2014) *Αστικός χώρος και νομοθεσία: Αθήνα - Θεσσαλονίκη - Πάτρα [Urban space and legislation: Athens - Thessaloniki - Patra]*. Διάλεξη (ερευνητική εργασία), Αθήνα, Εθνικό Μετσόβιο Πολυτεχνείο - Τμήμα Αρχιτεκτόνων Μηχανικών.

Papadopoulou, E. & Sarigiannis, G. [Παπαδοπούλου, Ε. & Σαρηγιάννης, Γ.] (2006) *Συνοπτική έκθεση για τις προσφυγικές περιοχές του λεκανοπεδίου Αθηνών [Brief report on the refugee areas of the Athens basin]*. ΕΜΠ - Σχολή Αρχιτεκτόνων Μηχανικών: Σπουδαστήριο Πολεοδομικών Ερευνών. [Online] Available from http://courses.arch.ntua.gr/el/katoikia_kai_polh_/h_katoikia_sthn_ellada/synoptiki_ekuesh_gia_tis_

prosfygikes_perioxes_toy_lekanopedioy_auhnvn.html [Accessed 15 March 2017]

Parthenopoulos, K., Kampouri, E., Dousi, M. & Parthenopoulou, N. [Παρθενόπουλος, Κ., Καμπούρη, Ε., Δούση, Μ. & Παρθενοπούλου, Ν.] (2009) *Διατηρητέα Κτίρια και Στοιχεία Ανθρωπογενούς Περιβάλλοντος -Παραδοσιακοί Οικισμοί και Οικιστικά Σύνολα - Ιστορικά Κέντρα και Πόλεις [Buildings and Elements of Manmade Environment under Preservation status - Traditional Settlements and Complexes - Historic Centers and Cities]*. Τεχνικό Επιμελητήριο Ελλάδος - Τμήμα Κεντρικής Μακεδονίας. [Online] Available from http://library.tee.gr/digital/kma/kma_m1417.pdf [Accessed 10 February 2017]

PontosNews (2016) Όταν οι ξεριζωμένοι πρόσφυγες δημιουργούσαν τις «πόλεις της σιωπής» γύρω από τον Πειραιά [When the uprooted refugees created the "cities of silence" around Piraeus] [Online] Available from http://www.pontos-news.gr/article/156291/otan-oi-xerizomenoi-prosfyges-dimioyrgoysan-tis-poleis-tis-siopis-gyro-apo-ton [Accessed 1 June 2017]

Public Issue (2016) Greek Social Issues: το κοινωνικό κεφάλαιο στην Ελλάδα [The social capital in Greece]. *Public Issue.* [Online] 11-2016. Available from http://www.publicissue.gr/12622/part-2015/ [Accessed 08 August 2017]

Roumpeka, K. [Ρουμπέκα, Κ.] (2009) *Νεοκλασσικισμός [Neoclassicism].* [Online] Available from http://www.artmag.gr/art-history/art-history/item/468-neoclassicism [Accessed 2 August 2017]

Sarigiannis, G. M [Σαρηγιάννης, Γ.Μ.] (2007) *Air Pollution: Notes for the course of the 7th fall semester "Special topics in environment" [Ατμοσφαιρική ρύπανση: προσωρινές σημειώσεις για το μάθημα "ειδικά θέματα περιβάλλοντος" του 7ου χειμερινού εξαμήνου]* National Technical University of Athens [Online] Available from courses.arch.ntua.gr/fsr/.../ATMOSFAIRIKH%20RYPANSH.pdf [Accessed 18 June 2017]

Technical Chamber of Greece - Department of Central Macedonia [Τεχνικό Επιμελητήριο Ελλάδος - Τμήμα Κεντρικής Μακεδονίας] (2016) *Έτσι μπορούν να χρησιμοποιηθούν τα κενά ή εγκαταλελειμμένα διατηρητέα [This is the way to use the vacant or abandoned preservable buildings]* [Online] Available from http://www.teetkm.gr/%CE%AD%CF%84%CF%83%CE%B9-%CE%BC%CF%80%CE%BF%CF%81%CE%BF%CF%8D%CE%BD-%CE%BD%CE%B1-%CF%87%CF%81%CE%B7%CF%83%CE%B9%CE%BC%CE%BF%CF%80%CE%BF%CE%B9%CE%B7%CE%B8%CE%BF%CF%8D%CE%BD-%CF%84%CE%B1-%CE%BA%CE%B5/ [Accessed 1 August 2017]

Tripodakis, A. [Τριποδάκης, Α.] (2011) *Τα προβλήματα περιβάλλοντος στις Ελληνικές πόλεις [The environmental issues in Greek cities].* CityBranding [Online] Available from http://www.citybranding.gr/2011/08/blog-post_12.html [Accessed 21 February 2017]

Vallianatou, E. [Βαλλιανάτου, Ε.] (2012) *Η βιοποικιλότητα στην Αττική [Biodiversity in Attica].* [Online] Available from http://naturefriends-gr.blogspot.gr/2012/12/biodiversity-in-greece-and-attica.html [Accessed 9 August 2017]

Vlastos, Th. [Βλαστός, Θ.] (2015) *Δημόσια συγκοινωνία [Public transportation].* Athens Social Atlas [Online] Available from http://www.athenssocialatlas.gr/%CE%AC%CF%81%CE%B8%CF%81%CE%BF/%CE%B4%CE%B7%CE%BC%CF%8C%CF%83%CE%B9%CE%B1-%CF%83%CF%85%CE%B3%CE%BA%CE%BF%CE%B9%CE%BD%CF%89%CE%BD%CE%AF%CE%B1/ [Accessed 19 March 2017]

English

Attica region (2017) *Spatial Jurisdiction* [Online] Available from http://www.patt.gov.gr/site/index.php?option=com_content&view=article&id=2415&Itemid=6 [Accessed 22 January 2017]

Dutkowski, M. (2015) Poland's cities and regeneration of its city centers. *Presented at Seminar 'EU policy for regenerating town and city centres' Brussels'.* [Online] Available from http://web.cor.europa.eu/ea/Events/Seminar-CoR-Open-Days-2015/Documents/Poland%27s%20Cities%20and%20regeneration%20of%20its%20City%20Centres%20Marek%20Dutkowski%20Brussels%2013.10.2015.pdf [Accessed 15 April 2017]

EC1 Łódź (2017) *EC1 Łódź - City of culture*. [Online] Available from http://www.ec1lodz.pl/ [Accessed 15 April 2017]

Meyer, H., (1999) *City and port : urban planning as a cultural venture in London, Barcelona, New York, and Rotterdam: changing relations between public urban space and large-scale infrastructure*. Rotterdam, International books.

Shouyong,P. (2008) Museums and the Protection of Cultural Intangible Heritage. *Museum International,* [Online] 60 (1-2), 12-19 Available from http://onlinelibrary.wiley.com.tudelft.idm.oclc.org/doi/10.1111/j.1468-0033.2008.00632.x/abstract [Accessed 4 January 2017]

The city of Łódź Office (2017) *History.* [Online] Available from http://en.uml.lodz.pl/city/history/ [Accessed 15 April 2017]

Tourist Information Centre in Łódź (2011) *«Industrial architecture» Tourist Trail.* [Online] Available from http://en.cit.lodz.pl/pokaz/1413,3,1,quot-industrial-architecture-quot-tourist-trail# [Accessed 15 April 2017]

Traulos, I. (1972) *Athènes au fil du temps : atlas historique d'urbanisme et d'architecture [des grandes villes mondiales]*. Trans. Saulnier, M. Boulogne, Cuénot.

Yoshida, K. (2004) The Museum and the Intangible Cultural Heritage. *Museum International* 56 (1-2) 108-112. [Online] Available from http://onlinelibrary.wiley.com.tudelft.idm.oclc.org/doi/10.1111/j.1350-0775.2004.00464.x/

Greek (transliterated author's name and translated title)

Argyropoulos, K. [Αργυρόπουλος, Κ.] (2014) *Shacks and monuments at Alexandras avenue [Παράγκες και Μνημεία στην Αλεξάνδρας].* [Online] Available from https://www.vice.com/gr/article/xyq9ek/milane-ta-ktiria [Accessed 15 September 2015].

Avdelidi, K. [Αβδελίδη, Κ.] (2010) *Η χωρική εξέλιξη των 4 μεγάλων ελληνικών πόλεων [The spatial development of the 4 big Greek cities]*, Αθήνα, ΕΚΚΕ : Κείμενα Εργασίας. [Online] Available from http://www.ekke.gr/publications/wp/wp21.pdf, [Accessed 30 August 2013]

Galani, D. [Γαλάνη, Ντ.] (2012) Το εγχείρημα της ανάπλασης της Αθήνας και της αναβάθμισης του κέντρου της. Μια πρώτη αποτίμηση. Μελλοντικές Προοπτικές [The project of Athens regeneration and upgrading of its center. A first evaluation. Future prospects]. *Presented at the course "Urbanism - Town Planning" of the interdepartmental master program of National Technical University of Athens [ΕΜΠ - Διατμηματικό. Πολεοδομία - Χωροταξία].* [Online] Available from https://www.google.nl/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwi-lvSQ6uTTAhUqBsAKHdK9DeMQFggnMAA&url=http%3A%2F%2Fcourses.arch.ntua.gr%2Ffsr%2F144723%2FOMILIA%2520D.

GALANI%2520EMP%252029.5.2012--1.pdf&usg=AFQjCNFqB8C07Wx4b_
WgSnnua5RzliN5ag&sig2=V3xNSqekMiJeMDCJfjT7NQ [Accessed 14 April 2017]

Gianpapa, E., Karafilli, M. & Karafilli, Ch. [Γιανπαπά, Ε., Καραφύλλη, Μ. & Καραφύλλη, Χ.] (2009) *Το φαινόμενο του gentrification και ο κοινωνικός χαρακτήρας του στο Γκάζι [the phenomenon of gentrification and its social character in Gazi].* [Online] Available from http://courses.arch.ntua.gr/el/kateyuynsh_a__sxediasmos_kai_bivsimh_ anaptyjh_sthn_polh_kai_thn__perifereia__ths_/spoydastikes_ergasies/2008-2009/ to_fainomeno_toy_gentrification_kai_o_koinvnikos_xaraktiras_sto_gkazi_.html [Accessed 14 April 2017]

Grigoriadis, B. & Lempesis, Ch. [Γρηγοριάδης, Β. & Λεμπέσης, Χ.] (2013), *Ψευδαισθήσεις περί την Πανεπιστημίου [Illusions about Panepistimiou street].* CityBranding [Online] Available from http://www.citybranding.gr/2013/05/blog-post_4.html#more [Accessed 1 February 2017]

ariatis, M. [Χαριάτης, Μ.] (2013) *«Κόλπο Γκρόσο» με το διατηρητέο εργοστάσιο της HBH στον Πειραιά ["Colpo grosso" with the industrial heritage of HBH factory in Piraeus]* [Online] Available from http://syspeirosiaristeronmihanikon.blogspot.nl/2013/05/blog-post_9.html [Accessed on 9 June 2017]

Hulot, M (2016) *Λιπάσματα Δραπετσώνας: τα όμορφα ερείπια [Fertilizers factory of Drapetsona: the beautiful ruins].* [Online] Avaialble from http://www.lifo.gr/articles/

athens_articles/122047 [Accessed on 9 June 2017]

Kaltaki, M. [Καλτάκη, Μ.] (2016) *The refugee apartment blocks of Alexandras avenue: A listed monument hosting 300 residents (video) [Προσφυγικά Λ. Αλεξάνδρας: Ενα διατηρητέο μνημείο που φιλοξενεί 300 κατοίκους].* [Online] Available from http:// www.ert.gr/eidiseis/ellada/kinonia/prosfygika-l-alexandras-ena-diatiriteo-mnimio-

pou-filoxeni-300-katikous-video/ [Accessed 15 September 2017].

Loukopoulos, D., Polizos, G., Pirpotis, G. & Tounta, F. [Λουκόπουλος, Δ., Πολύζος, Γ., Πυρπώτης, Γ. & Τούντα, Φ.] (1990) *Δυνατότητες και προοπτικές των προγραμμάτων ανάπλασης: Προτάσεις για ένα νέο οργανωτικό σχήμα [Possibilities and prospects of redevelopment programs: Proposals for a new organizational structure].* Αθήνα, ΕΜΠ Τμήμα Αρχιτεκτόνων - Τομέας Πόλη & Κοινωνικές πρακτικές - Γενική Γραμματεία Έρευνας & Τεχνολογίας - Ελληνική Εταιρία τοπικής ανάπτυξης & Αυτοδιοίκηση. [Online] Available from http://courses.arch.ntua.gr/el/ergastirio_ astikoy_periballontos/ereynhtika_programmata/dynatothtes___prooptikes_tvn_ programmatvn_anaplashs__protaseis_gia_ena_neo_organvtiko_sxhma__1990.html [Accessed 10 February 2017]

MLP (2009 - 2017) *MLP BLO-G -SPOT.* Weblog [Online] Available from: http://mlp-blo-g-spot.blogspot.nl/ [Accessed February to May 2017]

Mpourlessas, P. [Μπουρλέσσας, Π.] (2015) *Χωρική εγγύτητα και κοινωνικές αποστάσεις: η κάθετη κοινωνική διαφοροποίηση σε μια πολυκατοικία της Αθήνας [Spatial proximity and social distances: the vertical social stratification in an apartment building of Athens].* [Online] Available from http://www.athenssocialatlas.gr/%CE%AC%CF%81%CE%B8% CF%81%CE%BF/%CE%B7-%CF%80%CE%BF%CE%BB%CF%85%CE%BA%CE%B1%CF%8 4%CE%BF%CE%B9%CE%BA%CE%AF%CE%B1/ [Accessed 25 April 2017]

National Hellenic Research Foundation [Εθνικό Ινστιτούτο Ερευνών] (no date) *Contemporary Monuments Database: Refugee Apartment Blocks - 165-169, Alexandras Avenue [Αρχείο Νεώτερων Μνημείων: Προσφυγικές Πολυκατοικίες - λεωφόρος Αλεξάνδρας 165-169].* [Online] Available from http://www.eie.gr/archaeologia/En/ arxeio_more.aspx?id=1 [Accessed 15 September 2017]

Papastathopoulou, Ch. [Παπασταθοπούλου, Χ.] (2013) *Φωτιές ανάβει στον Πειραιά το πέτρινο διατηρητέο της HBH [A new debate for the industrial heritage of HBH factory in Piraeus]* [Online] Available from http://blogs.sch.gr/jpmarinis/2013/04/27/%CF%84%C E%BF-%CE%BA%CF%84%CE%AF%CF%81%CE%B9%CE%BF-%CF%84%CE%B7%CF%82-

%CE%B7%CE%B2%CE%B7/ [Accessed on 9 June 2017]

Papastathopoulou, Ch. [Παπασταθοπούλου, Χ.] (2017) *Ξεκίνησε η ανάπλαση στα Λιπάσματα [The redevelopment of the fertilizers factory started].* [Online] Available from http://www.efsyn.gr/arthro/xekinise-i-anaplasi-sta-lipasmata [Accessed on 9 June 2017]

Vogiatzakis, S. [Βογιατζάκης, Σ.] (2014) *Ξανακάνουν χαβούζα τη Δραπετσώνα [They turn Drapetsona into a dump-site once again]* [Online] Available from http://krisseis. blogspot.nl/2014/08/blog-post_795.html [Accessed on 9 June 2017]