

# Urban Acupuncture As a Method of Open Space Regeneration in Greek Ex-refugee Areas. The Case of Nikea, Piraeus

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The paper explores the potential of implementing the principles of urban acupuncture in a selected Greek case study, taking into account international experience in the field. The research includes literature review and field work. The area of study is Nikea, an ex-refugee urban area in the Attica metropolitan region. It was founded during the 1930s to host refugees from Asia Minor. The initial Hippodamian grid offers beneficial intermediate communal spaces inside each city block and there are also larger green spaces in proximity. However, the area suffers from urban blight owed largely to the poor quality of preservation of the old refugee housing estates. A mixture of factors contributes to the complex contemporary situation characterized by opportunities and challenges. On the one hand, there is great potential for regenerating the existing intermediate communal spaces and on the other decaying refugee houses and vulnerable households intricate the already convoluted situation. The paper provides cartographic depiction and categorization of the existing open spaces highlighting also contemporary socio-spatial challenges and market driven limitations. The research describes the obstacles that hinder the activation of “urban sensitive points” in terms of urban acupuncture, also advocating for possible solutions. The paper opens dialogue on the Greek case study in terms of urban acupuncture with the view to suggest strategies to foster socio-spatial cohesion in degraded ex -refugee urban areas. This is a pilot case study with further application in other post-refugee urban areas in Greece that share common socio-spatial attributes. Thus, the topic of the paper may have a greater impact within the Greek urban context.

**Keywords:** sustainability, urban acupuncture, urban planning, Greece, ex-refugee urban areas.

Urban Acupuncture focuses on small scale neuralgic interventions with direct impact on urban morphology and microclimate. Taking into account a variety of factors, from socio-cultural context to environmental upgrade, urban acupuncture contributes to the creation of functional public spaces. According to literature, the micro-grids of urban acupuncture challenge conventional infrastructural planning and design (Apostolou, 2015). With plenty of locally oriented experimental approaches, international experience outlines the significance of small-scale interventions; they are envisaged as key-generators for changing urban surroundings. From this point of view, urban acupuncture is considered to be a holistic socio-environmental theory that goes from micro to macro. In particular, the healing of nodal urban points may progressively transform the whole urban fabric (ibid). The origins of the concept derive from the traditional method of acupuncture

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## Abstract

## Introduction



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ture. The main idea revolves around the application of pressure on specific points of the body so as to ameliorate health conditions. Similarly, well-targeted small-scale projects find analogies with this healing method, aiming at the relief of the built environment (Daugelaite and Grazulevičiute-Vileniske, 2018).

Based on localized approaches, urban acupuncture introduces the perception of the city as a living organism. This means that urban regeneration will be achieved through the remediation of urban parts. These interventions may be both individual and systematic, comprehended as a network of urban points or dots. International literature offers a variety of examples and case studies in the realm of urban acupuncture and tactical urbanism. These terms are not synonyms, yet they employ similar practices. The work of the pioneering architect Marco Casagrande, the theoretical work of J.Lerner and the work of Iaconesi and Persico, focusing on emotional landmarks and digital urban acupuncture (Iaconesi and Persico, 2014) could be perceived as important theoretical and practical contributions. Moreover, the DoTank in Brooklyn, New York, the “Labplatz” project in Berlin (2012) and the international movement of “chair bombing” are some of the most influential tactical urbanism initiatives.

As far as Greece is concerned, there are only rare initiatives in the field of urban acupuncture. One such example is the Program “*This is Athens-ΠΟΛΗ<sup>2</sup>*” implemented in the municipality of Athens, the capital of Greece. The program offers financial support to collaborative initiatives so as to improve urban infrastructure and microclimate conditions. The interventions include among others, urban agriculture facilities, vertical urban gardens, green corridors and pocket parks, artificial lighting of public spaces with the help of renewable energy technologies and eco-friendly urban furniture. Furthermore, academic dialogue on the issue has clarified the importance of urban acupuncture for Greek cities so as to combat climate change and thermal heat island in metropolitan areas (Agathangelidis, et.al., 2020 and Santamouris et.al., 2018). Urban green might prove beneficial for the improvement of the local microclimatic conditions in a megacity like Athens (Papangelis et.al., 2012).

On account of these techniques, this paper explores the potentialities and challenges of the implementation of urban acupuncture analyzing a Greek case study, taking into consideration the specificities of the Greek urban development. The area of focus is a typical ex-refugee urban area in Attica, designed during the 30s for the rehabilitation of the refugee population after the Asia Minor Catastrophe in 1922. Apart from the metropolitan Attica Region, refugee settlements are found also in many urban areas of Greece. Based on their initial urban design, the majority of these areas has open spaces inside each city block and pedestrian corridors that connect the blocks to each other. Local residents use these spaces in various ways, giving them a semi-private semi-public sense. These open spaces could function as a springboard for further development. Speaking about the area of focus, the presence of many scattered open spaces was the motive to explore the urban acupuncture potential, taking into account possible key-obstacles. In particular, field work analysis provided useful pieces of information not only for the barriers but also for the beneficial factors that facilitate the urban acupuncture perspective. The ultimate purpose of the paper is to open scientific dialogue on Greek case studies, suggesting possible ways to overcome the barriers that impede the implementation of urban acupuncture.

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## Methods

Research is based on literature review and field work. Research stages are illustrated in Figure 1. Delving into international literature, authors have identified the value of strategic small-scale interventions in order to regenerate a blighted urban district. Furthermore, literature review includes pieces of information related to the multiple forces that shaped Greek metropolitan areas, highlighting local specificities. In particular, authors studied the interwar refugee rehabilitation and the postwar urbanization in Greece. The main research questions include:

- The identification of the sensitive points of the area in terms of urban acupuncture, meaning the urban spots that could provide a greater positive impact if regenerated according to citizens needs
- the key-obstacles that hinder the activation of the “sensitive urban points” of the area in terms of urban acupuncture.

To answer these questions field work was an important stage of the research, since these topics are not covered in pertinent literature. To be more specific, field work is divided into three stages. The first stage included identification of the “sensitive urban points” of the area as well as cartographic depiction of all the available open spaces in the Municipality of Nikea, while the second comprise categorization of the sites. For the categorization of the sites, critical parameters were the size of the site, the neighboring land uses and the presence or absence of decayed refugee housing complexes. During the third stage, authors delved into the key-obstacles as derived from direct observations. Mapping and photographic documentation were used as tools for describing the factors that have detrimental effect on the urban acupuncture perspective. Finally, regarding the above-mentioned material, authors identified the positive attributes of the selected case study that may facilitate the implementation of tactical urbanism. The methodology presented here might be suitable for other post-refugee urban areas in Greece, that share common attributes with the selected case study.

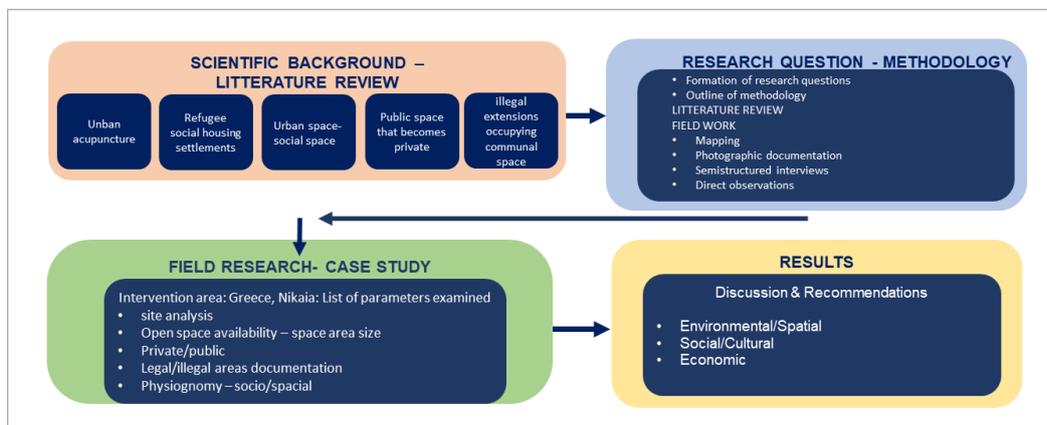


Fig. 1

Research scheme, authors' work

## Urban acupuncture and Tactical Urbanism: Their potential impact on the Greek case study

Urban acupuncture represents the “extra-small”, a notion contradictory to “extra-large” that prevailed during the previous decades. Extra-large projects are connected with top-down, high-tech monoculture protocols while extra-small usually with bottom-up decentralized, often low-cost projects (Lydon and Garcia, 2015). The term was coined by Manuel De Sola-Morales (1999) a Spanish architect who focused on minimum interventions that achieve maximum effect. His work on the “urban skin” paved the way for further application of the method. Following his example, other architects and urban planners like Marco Casagrande and Jaime Lerner became key-advocates of the urban acupuncture method as an effective approach to ameliorate urban stress. Urban acupuncture is presented also as a method to surpass economic impediments and to lessen bureaucratic requirements (Balicka et.al, 2021). As a fast-track planning method, urban acupuncture includes projects able to trigger direct upgrade in the quality of the adjacent enclaves.

To identify these crucial urban spots, the so called “sensitive urban points”, it is important to proceed to an in-depth analysis of numerous social, cultural and spatial factors and their synergies (De Sola Morales, 2008). Thus, the selection of urban spots for intervention is not random nor op-

## Theoretical Context

portunistic; it is the product of a profound analysis. This fact differentiates the urban acupuncture method from other types of small-scale interventions in the realm of tactical urbanism. In this respect, the terms *urban acupuncture* and *tactical urbanism* are not synonyms; they both however employ a similar range of practices.

Urban acupuncture has the intention to provide a more responsive urban environment for all social groups. Claiming the “*right to the city*” as described in the work of Henri Lefebvre, urban acupuncture indicates the importance of re-programming the public space so as to serve a greater purpose; the achievement of a sustainable urban environment. Most of the projects exercise a high degree of reversibility leaving room for corrective measures compared to large-scale urban interventions. Explorations in micro-scale urbanism include also impromptu bottom-up initiatives that express localized needs, introducing participatory urban spaces. This approach reveals the transformative power of citizen-led action. Focusing on the “citizens’ perspective”, small scale interventions highlight the unexploited opportunities of the bottom-up initiatives. Contemporary findings on urban dynamics instigate the ever-growing interest on interventions in the small scale of the city.

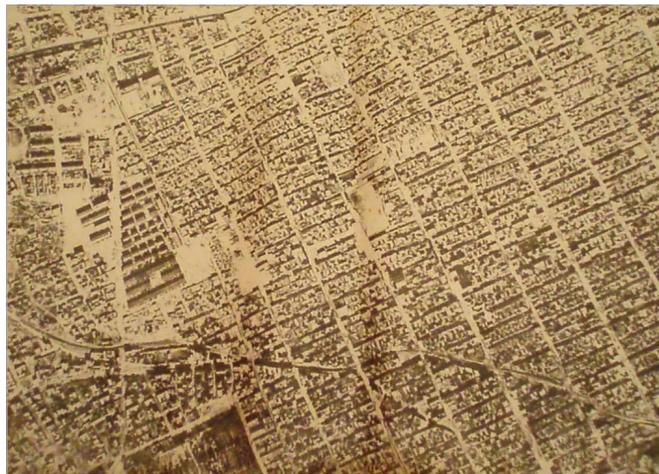
As stated in pertinent literature “*cities need big plans and small tactics*, so as to raise public awareness and interest (Lyndon and Garcia, 2015). This thesis reveals a differentiation between strategies (from a top-down strategic planning standpoint) and tactics. Strategies refer to a kind of master-planning key-policy while tactics serve the ever-changing citizens’ needs. Nonetheless, tactics and strategies are of equal value and could be used as complimentary tools for urban renewal. Furthermore, a combination of small-scale methods could also benefit areas like the selected case study where there is an evident lack of urban infrastructure. Using urban acupuncture as a compass to navigate within the complex ex-refugee urban fabric, the emphasis on urban infrastructure upgrade could undoubtedly benefit the area of study. From this point of view, tactical urbanism comprises a range of planning and design strategies so as to improve inefficient urban infrastructure by employing low-cost, usually small-size, often temporarily or non-spatial means. (Balicka et.al, 2021). It is also referred as “guerrilla urbanism”, “pop-up urbanism”, “city repair” or “DIY (do-it-yourself) urbanism”. The term was introduced after translating Michel Certeau’s book *The Practice of Everyday Life* in 1984, where he used the term in order to distinguish the scale of the mentioned practices compared to “strategic urbanism”. The term was broadly popularized though, by M.Lyndon and T.Garcia in 2015 through their book *Tactical Urbanism: Short-term Action for Long-term Change*.

The initial rise of tactical urbanism in North America was underpinned by citizens’ return to the urban centers combined with financial factors associated with the Great Recession of 2007. The necessity for fast, low-cost and high-impact urban improvements was introduced in a globalized context of perpetually strained resources in the aftermath of the urban sprawl. This turn to small scale interventions was also corroborated by landscape architects and artists. According to literature, art installations of the 70s provided commentary on allocation and use of public space (Lyndon and Garcia, 2015). From this point of view the work of Bonnie Ore Sherk was a representative example. The series of art installations in San Francisco was an inspiration for the improvement of urban infrastructures (ibid). In 2010, the activities of the New Urbanist “CNU NextGen” group, supported the further application of the method through recommendations for the city of New Orleans so as to deal with the damages of the Hurricane Katrina (Balicka et.al, 2021). Since 2010, tactical urbanism has been an emerging trend in many cities all over the globe (Angelidou, 2019). To be more specific, the method was used in Christchurch in New Zealand following an earthquake and in France at Paris Plages, a famous long term tactical urbanism intervention. The reasons for its success may be associated with the level of complexity met in contemporary urban surroundings, where a linear, top-down approach does not fulfill citizens’ needs (Balicka, et.al., 2021). Considering the competing views and the diverse demands of different stakeholders, decision making might be a rather intricate and long process. Thus, small scale experimental

approaches could better facilitate the purpose of improving the urban environment. Despite their slight differences, both urban acupuncture and tactical urbanism reinforce social and spatial cohesion, avoiding the dichotomy of upscale and degraded urban enclaves.

Based on literature, increasing socio-spatial inequalities challenge social cohesion in urban Europe (Cassiers, and Kesteloot, 2012). To analyze present-day societal and spatial dynamics, one should reckon the fact that European cities display a variety of socio-spatial structures. As for the wider area of Athens, the capital of Greece, vertical segregation (Maloutas, 2007) and spatial patterns depended on historical and socio-political parameters, create a specialized urban context. To be more specific, the phenomenon of vertical segregation involves socio-economic discrepancies among the tenants of the same building, with the lower socio-economic strata occupying the lower floors. From this point of view, the social role of open public spaces is increased so as to offer a homogenous urban experience to all citizens. Focusing on the case of Greek metropolitan areas, the refugee rehabilitation of the interwar period (1930s) shaped the urban fabric in such a way that large scale interventions could be perceived as synonyms to large scale demolitions. High building density in Nikea (Fig.2), does not allow large scale interventions, reaching at least 9.436,14 citizens per Km<sup>2</sup>. Thus, Nikea is one of the most populated municipalities in the Attica region (Report INEMY, 2015). Today, the presence of vulnerable households in the old refugee houses (low income, low educational level and immigrants) requires socially and culturally sensitive localized gestures so as to avoid severe gentrification in the area (Tousi, 2014 and 2019).

In this urban context, mobilization of capital, resources and administrative services at different scales is necessary so as to forge new institutional arrangements. According to the Greek urban planning legislation, the value of open public spaces was adequately acknowledged during the 1980s with the Law 1337/1983 and the Presidential Decree 23.02.1987 (Papageorgiou and Gemenetzi, 2017). Since then, effort has been made so as to protect urban and peri-urban green. Furthermore, unexploited urban empty spaces are at the forefront the last couple of years so as to reinforce socio-spatial cohesion in Greek metropolitan areas. On



**Fig. 2**

Aerial view taken in 1953, the selected case study, the post-refugee area of Nikea, source: Technical Services of the Municipality of Nikea, Archival Material

account of all these, this paper explores the potentialities and challenges of the implementation of urban acupuncture in dense Greek urban complexes, as in the case of the ex-refugee neighborhoods, taking into consideration the international experience in the field and the special circumstances in the area of study. This special urban context refers also to the unique character of the existing open public spaces. According to the masterplan of the area, they are officially declared public spaces, however they feel like private because of the way the citizens use them. These spaces include the communal spaces inside each city block as well as the pedestrian corridors that connect one city block to another. Since the first establishment of the refugee settlement, the residents use these intermediate spaces for a variety of household activities (e.g., laundry, Hirschon 2004 and Tousi, 2014). They also place tables and chairs in the communal spaces and between buildings so as to organize afternoon gatherings, offering a sense of social solidarity at neighborhood level (Tousi, 2014 and 2019).

As De Sola Morales (2008) puts emphasis on the spaces between the buildings and the activities of citizens, it is of great interest to look in depth the selected case study so as to explore the potential of applying urban acupuncture and tactical urbanism methods. Moreover, the great number of scattered open spaces in the area combined with their unique social and cultural character could serve as a motive for creating a network of synergic open spaces in the area. This network could improve the living conditions in the area as well as the microclimate conditions taking in terms of both socio-cultural and environmental factors. To combat the ramifications of the economic crisis of 2008, forms of tactical urbanism could provide viable solutions in the area of study, including the local community in the decision-making process.

### A brief overview of the socio-spatial specificities of the ex-refugee urban quarters

According to literature, the urban growth met in European Mediterranean Cities, is described as a hybrid urban model, something between compact cities and excessive sprawl (Kiousopoulos and Tousi, 2017). Attica Metropolitan Region follows a multi-core urban development, with many different centers of various importance and influence. Major demographic flows during the 20<sup>th</sup> century have strongly affected the physiognomy of Metropolitan Attica Region, where the selected case study belongs. These flows determined the urban geometry and morphology as well as the social synthesis of the Greek urban areas. Thus, contemporary environmental and social challenges are strongly connected to the demographic flows and the policies implemented afterwards. The first important demographic flow was the Refugee population as a consequence of the Asia Minor Catastrophe in 1922. More than 1.500.000 refugees found shelter in Greece, 48% of whom resided in the wider area of the urban conglomeration of Athens-Piraeus (Pentzopoulos, 1962).

In spite of their gradual urban assimilation<sup>1</sup>, they suffer today from various problems owed largely to their first foundation and the policies followed afterwards. Furthermore, alterations in urban planning legislation during the 60s and 70s allowed the construction of higher building volumes, deteriorating the microclimatic conditions of the existing urban centers and the refugee areas. Higher population density, overlapping shadows among buildings, insufficient sunlight, poor natural ventilation are only a few of the problems affecting the quality of life in the ex-refugee urban areas. These urban problems combined with air pollution, photochemical smog and airborne particulates led to the extensive suburbanization of Attica region after the 1990s. This suburbanization process affected the refugee areas as well; a significant portion of the population abandoned the old refugee apartments (see pictures 3 and 4). Simultaneous to this middle-class outflow (Maloutas et.al, 2001), was the inflow of economic immigrants after the 1990s, mostly from Balkan countries and the former USSR. After 2005, immigrants from Asian countries are observed in the ex-refugee urban neighborhoods because of the low rents (Tousi, 2014). They mostly reside in degraded refugee housing complexes characterized by poor facilities (e.g., lack of central heating, see pictures 3 and 4). On account of these conditions, one of the crucial issues is the decay of the old refugee housing complexes that today host

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**Fig. 3**

Rental apartments in Nikea, contemporary condition, Authors' field work, 2014



<sup>1</sup> The refugee housing enclaves were founded 1 to 4 kilometers outside the boundaries of the existing urban structures, usually near industrial units (Sarigiannis, 2000). This planning choice was associated with social exclusion and segregation according to pertinent sources (Leontidou, 2017).

vulnerable households – mostly immigrants and low-income elderly people (Tousi, 2014). This situation is challenging social cohesion, leading neighbourhoods to urban blight. Moreover, high population density, inefficient open spaces, poor thermal comfort, energy poverty and lack of holistic planning are some other noteworthy issues.

However, despite this unfortunate condition, there are some potentialities, such as the presence of scattered open spaces

of different scales, that could be regenerated in terms of urban acupuncture to reinforce urban compactness.



Fig. 4

Abandoned refugee housing complexes, contemporary condition, Authors' field work, 2014

### The role of open spaces in Nikea. Sensitive urban points for further consideration

The urban history of the area of Nikea is strongly associated with the Asia Minor Catastrophe in 1922. Before the refugee rehabilitation, the area had not been an organized urban suburb (Hirschon, 1989). One important factor that still affects the physiognomy of the area is the presence of a communal open space inside each city block. This open intermediate space was the borderline between private and public, a multi-functional semi-private, semi-public space that fostered social networks at neighborhood level. After the first refugee settlement, social networks at the neighborhood level served as a shield against social exclusion (Hirschon, 1989). From this point of view, the presence of communal open space in the middle of each city block was rather significant. It offered a suitable field for social exchange and interaction. Thus, apart from their environmental value, these spaces have a special sentimental and symbolic value in terms of urban collective memory. Nonetheless, through the lapse of time, changes in the urban fabric have transformed the existence and quality of these open spaces. In some cases, the demolition of the old refugee housing complexes, the distribution of properties to the refugee descendants, and the construction of new multi-storey blocks of flats have led to the extinction of the intermediate communal space. Despite these alterations, the area preserves today a significant number of open spaces, as presented in Table 5 and in Fig.6. The intermediate open spaces as well as the pedestrian alleys could be perceived as sensitive urban points in terms of urban acupuncture. As presented in Table 5, categories a, b, and c comprise variations of the intermediate communal space inside the city blocks, while categories d and e, include open spaces outside the blocks, mostly squares and parks. In particular, there are only four spaces of more than 500m<sup>2</sup> in the vicinity. Categories a, b, c refer to enclaves inside the initial refugee urban core, counting 41 open spaces. The first three catego-

## Results and Discussion

Category coding	Number of spaces	Available area	Prevailing Neighboring land uses	Presence of old refugee houses
a	12	Less than 40 m <sup>2</sup>	Mostly residential	yes
b	20	40 m <sup>2</sup> to 90 m <sup>2</sup>	Mostly residential	yes
c	9	90 m <sup>2</sup> to 100 m <sup>2</sup>	Mostly residential	rare
d	25	100 m <sup>2</sup> to 500 m <sup>2</sup>	Residential/commercial	no
e	4	More than 500 m <sup>2</sup>	Residential/educational	no

Table 5

Categorization of available open spaces in the area of study, authors work

Fig. 6

Sensitive urban points  
in the area of study  
according to field work,  
authors' work



ries are strongly associated with the derelict refugee housing complexes, as presented in table 5.

Apart from their significant number, another advantage is the fact that they are easily accessible since they are found in the middle of each city block. As for the surrounding land uses, they are mostly residential with some exceptions of commercial and educational uses, near the larger open spaces (categories d and e).

The existing narrow corridors between the old refugee houses (see Fig.6) could be transformed into green corridors with suitable design solutions.

Nonetheless, this is something

that the citizens have already tried to implement using their own means and aesthetics as presented in pictures 9 and 10. From this point of view, all these scattered open spaces could become a sustainable green network able to improve microclimate conditions, with greenways and green corridors to complete the patchwork of small and large green open spaces in the area. In particular, the small open spaces could function as pocket parks, redesigned in terms of urban acupuncture. According to literature, even the small urban voids could be exploited in creative ways so as to foster socio-spatial cohesion and improve thermal comfort. Following key-design parameters as indicated in international literature (Sinou, 2013) these small open

Map 7

Different scales of open  
spaces in the Municipality  
of Nikea, Undergraduate  
Thesis, Antonia Perouli,  
2020, University of West  
Attica, School of Interior  
Architecture



Key categories	Key parameters
Space	<ul style="list-style-type: none"> <li>_ Surfaces</li> <li>_ Focal point</li> <li>_ Space identity</li> <li>_ size</li> </ul>
Environment	<ul style="list-style-type: none"> <li>_ location and linkage</li> <li>_ environmental performance (adjustment to local climate conditions)</li> </ul>
Society	<ul style="list-style-type: none"> <li>_ users</li> <li>_ accessibility</li> <li>_ amenities/activities</li> <li>_ safety/maintenance</li> </ul>

Table 8

Table presenting the key-parameters for successful design of small-scale public spaces, (according to Sinou 2013)



Fig. 9, 10

Communal public corridors inside the city blocks, vegetation and residents' decorative elements, authors' field work, 2020

spaces have the potentiality to transform the general physiognomy of the area, improving also microclimatic conditions. These key parameters could be summarized in the **table 8** (according to Sinou, 2013).

Unfortunately, despite potentialities, there are certain challenges. As illustrated in the **pictures 11 and 12**, these intermediate open spaces have inefficient design, being used as auxiliary spaces outside the houses. There are also illegal ground floor constructions that occupy communal public space as illustrated in **map 11 and figures 11,12**. The only official approach related to urban regeneration dates back to the 1990s. However, this regeneration process did not meet citizens' needs. It focused on redesigning the intermediate spaces in the city blocks by placing concrete jardinières without taking into account users' activities. These flower-boxes were not accompanied by benches or other infrastructure that could support the formation of a focal-meeting point (see Sinou, 2013) and thus the citizens continued to bring their own chairs for their evening gatherings even after the completion of the regeneration project. The way in which plants were placed did not

Fig. 11, 12

Typical examples of illegal ground floor construction (in front of the refugee housing complex) on the intermediate communal space of the city block, Nikea, Tousei, 2019



take into consideration the flows and gatherings of locals either residents or passers-by. This top-down approach could not be described as efficient considering the special networks expanded on the intermediate public spaces of the area. The pedestrian routes created during this regeneration project have been since occupied as unofficial parking areas. (fig. 14, 15). Thus, another important issue affecting the quality of existing open spaces is the lack of parking spots in the area. As a result, parts of the existing open spaces are used for parking (see picture 14).

As observed during fieldwork, the post-refugee urban core suffers from urban blight without being included in strategic planning. Especially during the economic crisis of 2008, no funds were allocated for the regeneration of the area. Given the location of a new metro station in the area, there are concerns for the future of the degraded enclaves. The increasing interest from private investors raises skepticism on the potential type of future development of the area. If we combine this with the fact that most of the refugee descendants rent the old refugee houses to vulnerable households, then the risk of gentrification could be a possible future scenario. To resist market driven solutions, it is important to organize grassroots efforts to improve the urban environment with effective citizens-led, low-cost interventions. The multiple owners of each refugee apartment

Fig. 13

illegal ground floor constructions in the intermediate space of each city block, inside the circle is the location of the new metro station that is a part of the blue metro line which connects Piraeus Port to the national airport Eftherios Venizelos, authors' field work 2021





Fig. 14, 15

the urban regeneration of the 1990s, concrete jardinières, pedestrian routes occupied as parking spots, author's field work 2020

(refugee descendants) could be perceived as another barrier to overcome. From this point of view, strong community driven initiatives should motivate the owners of the refugee houses to participate in the procedure with the view to preserve the identity of the area. The rapid upgrading of the area around the new metro station would induce further gentrification procedures within the ex-refugee urban core (see Fig.13).

### General Guidelines for further application and research. Obstacles, Advantages and Recommendations

The results of this research involve key obstacles and key advantages as well as potential recommendations for the future development of the area. The analysis of the former is presented in three subject areas following the three pillars of sustainability: environmental/spatial, social/cultural and economic (see table 16). All recommendations have taken into consideration the specificities of time and space as presented in the previous chapters so as to propose viable solutions for the selected case study. These recommendations might focus on forms of tactical urbanism and urban acupuncture as well as officially planned proposals. A combination of bottom-up and top-down approaches in the area may benefit the efficient regeneration of the degenerated urban ex-refugee core. The problem of the decaying refugee housing reserve is so severe that official actions should be taken (issues of maintainance and responsibility sharing). From this point of view, a mixture of planning methods could help the amelioration of this intricate situation. To be more specific, State authorities should delve into the case of Nikea so as to reach a decision on which refugee houses could be preserved. Then it is important to understand residents' perspectives on the future development of the area, to bridge the gap between administrative authorities/experts and residents. The following table presents the identification of obstacles and advantages of the area that could be either used in top-down or bottom-up planning procedures. The below mentioned positive and negative attributes could be used to detect the "sensitive urban points" as mentioned in relevant urban acupuncture literature (see theoretical framework) and to set a solid framework to prioritize the necessary actions for the improvement of the quality of life in the area. Table 16 illustrates key-obstacles and key-advantages in the area while table 17 presents recommendations to overcome the obstacles.

According to the analysis of the area, all intermediate city block spaces could be perceived as "sensitive urban points" in terms of urban acupuncture. To activate these spaces a set of actions should be taken to successfully surpass the key-obstacles mentioned above. Moreover, a combination of bottom-up and top-down approaches could benefit the inclusive planning of the area so as to eliminate the risk of gentrification.

Table 16

Key-Obstacles for activating the sensitive urban points of the area and advantages of the existing urban environment regarding the future development of the area, authors work

Main categories	Key obstacles for activating the “sensitive urban spots”	Key advantages identified
Environmental / spatial	Illegal extensions occupying communal areas	Open space availability
	Decaying building stock	Different space scales
	Former non effective regeneration in the ‘90s, lack of “focal point” see Sinou,2013	Proximity to large green areas
	Lack of parking spots leads to cars occupying communal areas	Existing spontaneous indigenous vegetation
	Overlapping shadows among buildings Poor natural ventilation in some cases because of the irregular placement of the illegal extensions	Fragmented pedestrian routes low levels of noise and air pollution
Social / cultural	Unclear distinction between public/private, residents placing private objects on the communal space	There is a warm atmosphere in communal open spaces owed to the local social networks
	Presence of vulnerable households that are at risk of exclusion. Fear of severe gentrification after urban regeneration	Strong sense of community & interaction Sense of neighborhood, solidarity networks
Economic	Lack of funding	Proximity to new metro stations
	Identification of buildings with demolition possibility	Low land prices might attract private investors (around 1100 euros/m <sup>2</sup> )
	Complex ownership status	Proximity to supralocal cultural uses (e.g. Katrakeio Theater) and athletic facilities

Table 17

Recommendations to overcome key-obstacles, authors work

Recommendations	Possible Method
– Reinforcement of accessibility and connectivity of open urban space network	Both bottom-up and top-down
– Creation of focal points in each city block according to users’ activities	Bottom-up initiative to identify the “focal points” of each city block concerning the existing outdoor activities and pedestrian flows
– Explore sustainable mobility (pedestrian, bicycle routes etc.)	Top-down- to officially define pedestrian routes and cycling routes
– Legalize or demolish illegal extensions or annexes to existing houses in order to define the actual size of the open space	Top-down
– Evaluation-thorough study of existing refugee stock in terms of static adequacy.	Top-down
– Enhance existing vegetation	Bottom-up and top-down
– Define parking zones	Top-down
– Study in depth the existing social networks so as to offer the necessary infrastructure and urban furniture	Bottom-up initiative to create a user-friendly intermediate urban space/ urban infrastructure with the help of tactical urbanism
– Study existing and potential uses	Bottom-up initiative so as to define uses in the open space of each city block
– Define the limits between private and public space	
– Inclusive community committee (representation of all population groups)	Bottom-up initiative to motivate all residents and owners to participate
– State and EU funding opportunities form the municipality or central government	Some citizens-led actions could motivate local municipal authorities to register for relevant EU’s funding programs
– Clarification of the ownership status and the demolition process of the perilous condition buildings	Bottom up and top-down (cooperation among residents and municipal authorities)

It has become clear from the study that the implementation of small interventions in the realm of urban acupuncture is bound to create significant potential in ex-refuge areas. The investigation has shown that in these areas, space availability is limited and the quality of existing space is poor, however social cohesion is strong, deriving from common history and difficulties of the past and present. High building density leads to localized small-scale gestures. The lack of funds in the aftermath of the economic crisis of 2008 could be counterbalanced by forms of tactical urbanism with low-cost interventions. Citizen-led initiatives could improve urban infrastructure in the area (urban furniture and vegetation). However, issues relevant to the preservation of the old refugee houses require official support from the State. A combination of bottom-up and top-down strategies and tactics could benefit the area the most. Despite the difficulties, several sustainability goals are considered as possible to implement, thereby forming a more holistic strategy that can improve the built and unbuilt environment, as well as citizen's living conditions in the area. Given the pilot character of this study, research methodology might find analogies with other ex-refugee urban areas in Greece so as to activate their "sensitive urban points" in terms of urban acupuncture.

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## Conclusions

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