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Green corridors and exterior common areas, enhancing connectivity in Athens, Greece

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Abstract. The greater Athens area, Greece's capital, has a very low percentage of green spaces which also lack connectivity, resulting in an urban environment which is anything but resilient and sustainable. This deficiency is particularly evident in the city's centre, where building regulations allow for tall buildings with maximum lot coverage, leaving little room for green areas. The few green spaces which do exist in Athens are usually in poor condition and their potential role as a "building block" of the city is overlooked. To remedy this situation, the existing green spaces as well as their connectivity must be improved, making them more appealing and accessible. Considering however that their percentage is so small, one way to "create" more of them is to take advantage of the unbuilt and overlooked surfaces in the back of lots, otherwise known as exterior common areas, which are privately owned, belonging to all of the owners in any given building block. They have the potential to become havens of greenery and pockets of tranquillity, transforming the urban environment on many levels. One way to make these green spaces (existing parks) and potential green spaces (exterior common areas) more accessible and better connected is through the use of green corridors. Thus, this paper's objective is to present such a design proposal, creating a green corridor network within Athens' city centre, linking the various existing parks with a few exterior common areas.

1. Introduction

Over the last few decades, where the issue of sustainable cities has risen to prominence, connecting green urban areas and open urban spaces through green networks has been seen as a positive step towards achieving a more ecologically sound urban environment.

The existence of open spaces in a city is an indicator of the urban environment's quality. They are often unevenly distributed in modern agglomerations, while their quantity and quality are influenced by the changes that occur in the urban fabric over the years. Thus, in many urban centers, as a result of high building densities and of unpredictable urban sprawl, these very populated areas have been characterized by severe social, economic and environmental degradation.

In Greek cities, and particularly in Athens, Greece's capital, there is a definite shortage of open public space. This problem is further compounded by the fact that many available public lots have been taken over and used in ways which have led to their semantic degradation; such as being used as parking lots. Indeed, the ever-increasing number of cars on the road and the commercialization of

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open public space are preventing citizens from using what is rightfully theirs. Streets too, which in the past were meeting points or a place for children to play in, have now been so overrun by cars that they have become inaccessible for citizens. Squares have also been taken over to a great extent by coffee shops and restaurants, with their ever-growing need for more tables and chairs for their customers. Unfortunately, they are also often appropriated by drug users, the homeless and other disadvantaged people, further hindering their original purpose. Even sidewalks are occupied, either by restaurant tables and chairs or by shop owners who display their wares, as seen in Figure 1 and Figure 2 below of a pedestrian street overrun by tables and shop owners' wares[1].





Figure. 1 & Figure 2. Public space is taken over by shop owners.

There are no reliable sources which list, let alone evaluate urban green spaces in Greece, which is regrettable given their widely known benefits and the important functions they provide. Briefly, these include protecting water resources, reducing air and soil pollution, increasing riverside habitats and biodiversity, reducing the effects of floods, providing recreational opportunities, providing environmental education/awareness, alleviating noise, enhancing the micro-climate (cooling and air quality improvement) as well as reducing riverside erosion [1].

Apart from urban green spaces, another element which characterizes modern cities across the globe is vacant land. Vacant land is oftentimes made up of fragments of private lots which have been left over after urban development. While not consistently defined or systematically tracked, existing estimates indicate that it often comprises substantial portions of the total urban land area of a city [2].

It is widely accepted that urban residents' well-being is highly dependent on the existence of open, unbuilt areas between buildings. It is indeed vital for it enables ventilation and allows sunlight to penetrate buildings. This is why many urban designers, when developing city plans, base their designs on the typical interior courtyard (the patio). As such, exterior common areas (the unbuilt area in urban building blocks) function the same way a patio does in a house, albeit at a smaller scale. In Athens, because of the varying plot sizes and the changes in the allowed plot coverage over the years, there is unbuilt space in the middle of building blocks which could easily serve this function.

European cities on the other hand, such as Amsterdam, are full of examples of exterior common areas which have been connected and put to good use. As Kenneth Frampton said: "Since Berlin's Reformed Buildings Act in 1897 as the H.P. Berlage study for southern Amsterdam in 1917, scholars and theorists in Germany and the Netherlands are engaged in the development of a type of building block with apartment blocks on the perimeter that would maintain the plastic continuity of the road, while at the same time making the inner formed courtyard, as useful as an enclosed semi-public space." [3]

In Greece however, the building codes of the last decades have allowed for large, or in some cases, enormous amounts of open unbuilt areas within building blocks but which have not been used in a

[1] The municipality allows restaurant and café owners to have a specific number of tables and chairs in squares but often this number is surpassed illegally. Shop owners however are not allowed to take over the sidewalk with their wares but unfortunately, in many cases this is overlooked.

way which could benefit their residents. Indeed, these spaces are often abandoned (used as dumping grounds for unused things) and sometimes inaccessible, having lost their primordial role as communal space.

Despite the current situation, these spaces can nonetheless be connected and transformed into havens of greenery to be used by all building dwellers without infringing upon property rights. Doing so would improve the microclimate, something which is particularly important in the center of a city. Indeed, creating more open urban space can reduce air pollutants, especially carbon dioxide. Their environmental benefits are irrespective of the size and scale of buildings that surround them: they have the ability to control solar radiation; they enable shading and they facilitate the movement of gaseous masses within buildings. This type of transformation could redefine people's sense of community and their view of the urban environment, allowing for a better quality of life in city centers.

This paper's subject is based on a project done through the "Natural Environment & Innovative Actions" Program which was funded by the Greek Green Fund, whose beneficiary was the NGO "KEAN" (Cell of Alternative Youth Activities). Its purpose was to identify potential green corridors within three large municipalities in the greater Athens area (including the municipality of Athens) and to suggest the conditions for their integration. In the course of this particular project, the design team was confronted with the large amount of unused open spaces, particularly in the municipality of Athens, and decided that a design proposal that could work as a guideline for making good use of them would further the scientific research on the matter.

Thus, inspired by the information that was gained, this paper puts forward ways in which to take advantage of these unbuilt spaces in Athens (exterior common areas and vacant lots), by transforming them from empty meaningless spaces into meeting places and by connecting them through networks of green corridors. This approach is in tune with the current tendency towards the cohesive city model, which suggests that the need for being close to nature can be achieved within the limits of the city and without further impinging upon land on the outskirts of urban environments.

2. The situation in Greece, past and present

After World War II, most European cities suffered large scale destructions, which is why their urban fabric was renewed and radically redeveloped.

During that same time in Greece however, the central government was responsible for urban planning, instead of the municipal authorities [4] and its primary goal was to build every available piece of land. This was particularly the case in Athens because of the huge influx of migrants that were pouring in from the countryside. Thus, the open spaces within and around Athens, as well as the most fertile agricultural land and forests were viewed simply as potential land for development and reconstruction [5]. This practice led to a lack of green spaces, which coupled with the rise in living standards and increased environmental pollution, decreased the quality of life in the country's capital as well as in other major cities in Greece.

As such, the residential development of large portions of Greek cities and even complete cities was done without being planned out beforehand. Consequently, urban designers had to find ways to smooth out and correct these extreme dysfunctions within the already formed urban fabric. This problematic situation characterizes most Greek cities which developed during the 20th century (as well as European cities which came to be during the 19th century, in the midst of the tumult of the industrial revolution). [6]

As a result, modern Greek cities have evolved as if apparently detached from nature, resulting in a hostile and unsustainable urban environment. Hence, the few existing urban open spaces are neglected and degraded; the urban environment exhibits signs of deterioration, of poor-quality construction and of isolated open public spaces [7].

2.1. The existing framework in Greece

It is vital to refer to the existing legal framework in Greece regarding urban green spaces, which is inadequate and remains mostly unchanged, particularly over the last decade – which is most probably

due to the economic crisis that has affected Greece. Some attempts at remedying this have been made, which are presented in the following subsections.

2.1.1. The "Greek Urban Planning Standards". In the Ministerial Decision No10788 ("Approval of Urban Standards and Density Limits Applied in the Preparation of General Urban Plans, Spatial Plans for an Open-City Settlement and Town Planning Studies") of the Ministry of the Environment, Spatial Planning and Public Works (FEK 285/D/2004), "minimum standards" are proposed regarding the density and types of green areas required, which can be applied in the development of General Urban Plans for Greek cities.

According to the Regulatory Decision, the desired area for open urban space per capita is set at 8 m^2. The given sizes are recommended and not obligatory (see Table 1).

It is important to note that international examples reveal that in many cities around the world, the area of green areas per capita is 15 - 20 m^2 [8], a figure quite higher than one finds in Greek cities. Contrasting to this, in many European cities, the implemented standards are even higher.

Table 1. Greek urban planning standards.

REQUIRED SPACES ACCORDING TO CITY POPULATION SIZE					
	Significance – Role	Surface per capita (m^2/capita)		Range of use (m)	Livable size (m^2)
		Neighborhood	City		
Planted median strips	Rational design and creation of "openings" within the urban fabric	0,25		800	100–1.000
Square	Areas for socializing and recreational areas	0,50		800	1.000– 5.000
Playground	-	0,25			100–1.000
Park	These can include to green spaces as well as areas for sport activities		1,50	1.500	5.000– 15.000
City park	Natural areas that function as an "escape" from the urban environment		5,50	City	> 15.000
TOTAL		8,00			

2.1.2. The "Athens Regulatory Plan 2021". The Athens Regulatory Plan 2021 which is presented in Law 4277 (2014) and hereinafter referred to as the new ARP, is a Strategic Plan for the spatial organization of the city Athens and the whole of the Attica Region (the greater Athens area). It provides a set of objectives, policy directions, priorities, measures and programs which are necessary for the planning, urbanizing and organizing of residential zoning, as well as measures for environmental protection, all in accordance with the principles of sustainable development.

The new ARP formulates strategic proposals for the integrated and sustainable development of Attica on a national level, including economic, social and spatial policies. It contains guidelines and arrangements which enhance and complement national development planning for the Attica region and which involve defining its role at national, European and international levels.

The new ARP is a very important supporting measure for the inhabitants of metropolitan areas on many levels, including on an economic scale. Its main scope is Urban - Suburban Area Management, Planning Organization and Urban Revitalization, Metropolitan Interventions, Support of Entrepreneurship, Environmental Protection, Urban Regeneration, Social and Territorial cohesion and, of course, Protection and Conservation of Cultural Heritage.

This paper is based on certain sections of the new ARP which are described below:

- Section 15: this section describes the creation of “cultural routes”, that is, routes linking urban green spaces to cultural attractions. It also refers to the connection and joining of archaeological sites. The pedestrianization of primary arteries is also proposed, where buildings and monuments of cultural interest can be found.
- Section 19: this section presents the creation of a "green arc", referring to the design and management of communal or other green areas in urban and peri-urban areas, as a structural element for the organization and reconstruction of urban space. As such, a proposal to connect the centre of Athens with the surrounding mountains of Parnitha, Hymettos and Egaleo is suggested. This can be done through appropriate interventions, such as plantings, the extension or creation of pedestrian traffic networks, but also through green networks and green corridors.
- Section 30: in this section interventions aiming at strengthening sustainable mobility are advocated. Integrated traffic networks for pedestrians and cyclists are suggested, as is an extensive network of metropolitan cycling routes, which would connect important natural and cultural centres.

2.1.3. The “New Building Regulations” Code. The “New Building Regulations” Code which is presented in Law 4067(2012), hereinafter referred to as the NBR Code, defines the rules to be observed in the execution of building projects regardless of their scale.

Within the context of approving, extending, revising or modifying a town planning design, clause 10.7 of the NBR Code refers to the joining of the exterior common areas of each building block, allowing in this manner all the occupants to benefit from this newly redefined space. This clause also refers to the creation of a network of open public areas, to be used exclusively by pedestrians, using these unbuilt areas of plots. As a motivation to implement this measure, an increase of up to 20% of the permitted building allowance is given.

There are also suggestions regarding the permitted configurations and structures for these unbuilt spaces that make up a communal space (clause 17), such as landscaping, stairs, ramps, benches, terraces, plantations, pergolas with temporary sunshades, service elements (benches, tables), sports equipment and playgrounds, sloping structures for establishing water elements and swimming pools.

Furthermore, in clause 33, there are specifications concerning the indemnity payments for compulsory expropriations involving the owners of these properties. This facilitates interventions as well as the transformation of these unstructured spaces, thus allowing a connection of communal spaces and the creation of a wider system of open-air networks.

Finally, it is important to mention that a new term that has been recently introduced in Greek urban development; the “active block”. It refers to the unification and redevelopment of exterior common areas, the creation of a connection between exterior common areas and open urban spaces (and the urban fabric), the creation of common areas, facade renovations, etc. In this way, a harmonious integration of building blocks with the natural and residential environment of the area is achieved. At the same time, the adverse effects created by the individual study of each plot are eliminated (the building block is seen in a more holistic way, as a whole entity), the plots’ unbuilt space (exterior common areas) is given a new function while at the same time the need for socialization is also met. There is wide variety of applications corresponding to the active building block in European cities.

3. Open spaces in contemporary Greece

Modern Greek cities are changing slowly but steadily in terms of their size and structure. Their expansion is leading to a continuous redistribution of urban land use and creating empty, unused space as a result, which is potentially suitable for new functions. In contemporary urban planning, we are witnessing that many large modern parks are appearing, taking the place of abandoned industries because their location within the urban fabric no longer serves their original needs. Former army camps, airports and abandoned transport facilities that no longer meet in their original purpose and role are also being transformed.

A large number of smaller scale urban gaps are scattered within the urban fabric as well, such as plots that were formerly used by smaller industries, plots that for various reasons have not been developed and unbuilt spaces inside building blocks that remain unused. It is common practice to create – or at least try to create – small parks (pocket parks) within these spaces, which could form the foundation of a green network, allowing nature to infiltrate the urban fabric. This is a new category of urban green space, something in between the neighborhood park and the private garden. These small parks could function as bioclimatic "pockets" and simultaneously as an intermediate social space. These spaces are usually developed on empty plots, in direct contact with the street or in the interior of building blocks. Before their development, oftentimes inhabitants may already be using them informally.

4. Case study

The case study presented is structured in two parts; in the first part an attempt is made to analyse the existing layout of exterior common areas in Athens, by presenting an indicative example, but also by finding ways of making good use of them, in accordance with the existing institutional framework regarding their unification. It would also be desirable to establish a pilot implementation of this measure for upgrading the wider urban fabric. The second part describes a proposal to interconnect these spaces within a network of green corridors, as well as with other existing green spaces, or potential green spaces.

4.1. Proposal: goals and design strategy

Athens is characterized by small building blocks, with a dense road network, narrow sidewalks and fragmented green spaces. Furthermore, in the late twentieth century the city seems to have been developed linearly, that is, along its main arteries. Today, given the fact that the number of motor vehicles has increased exponentially, resulting in traffic congestion, with everything else that this entails (increased stress, pollution) the necessity to transform these main thoroughfares into a more functional, environmentally friendly and user-friendly environment is more important and urgent than ever.

The interconnection of open green spaces in a network of green corridors has many positive effects, on an environmental and social level. Some of these include: mitigating the microclimate, aesthetically upgrading and improving a given area, enhancing residents' quality of life and providing better traffic conditions through the reduction of motorized vehicles. By creating new green spaces for recreational use, which would be easily accessible by all, natural resources are also protected. These will be described in detail below.

Consequently, the design strategy focuses on improving the connectivity in the study area, taking into consideration existing and future urban planning strategies, by proposing the connection of existing green spaces and the creation of new ones, through a network of green corridors, pedestrian and bicycle routes.

The proposed interventions are of a small scale (building blocks) and of a larger scale (green corridors). They have four specific goals:

- Improving Environmental Quality; the use of native planting would help the expansion and improvement of existing habitats in vacant lots, through the removal of invasive species and the re-vegetation of native plant species, creating food and habitat resources for wildlife and enabling their movement throughout the city. The use of low impact stormwater management practices could help to absorb and infiltrate urban stormwater runoff [9], a measure that would help with the flooding that occurs in Athens in certain areas after heavy storms.
- Encouraging Healthy activities, access to open space improves physical and psychological health while providing opportunities for social interaction among residents, resulting in a sense of community or belonging [10]. The presence of local green space (neighbourhood parks) may also incite people to engage in physical activity. Furthermore, when residents have access to open green spaces, this generates in them a positive image of their neighbourhood, which in turn may make them happier in general [11][12].

- Encouraging Social Interaction; people are often isolated in their apartments, with little or no contact with their neighbours. The creation of a communal space in exterior common areas which would be connected to the wider urban network of green spaces would provide opportunities for people to meet each other, form bonds and have a greater sense of belonging.
- Stimulating Economic Growth, given that the diversity of recreational opportunities and emphasis on ecological design has the potential to attract local business and potential homeowners to the neighborhood and because the presence of green areas leads to a better quality of life. This more appealing environment can result in more people being outdoors leading to a potentially safer streets and a decrease in crime rates.

4.2. Exterior common areas in Athens

Community projects to reclaim unused or vacant lots come about for a variety of reasons and under a variety of circumstances. Some begin when a community group or individuals identify an unused space as being unused or harmful to the neighborhood. Others may begin by the identification of a missing social or ecological function, as when the community comes together to develop a desired green space, playground, meeting space or one for performances [13]. Vacant lots could also be reused for sports and recreation or habitat enhancement, offering alternatives for residents. Greening unused urban areas can reduce the negative appearance of vacant land [14] and simultaneously could increase property values.

In order to present the exterior common areas of the building blocks in Athens, the authors decided that it would be easier to present an example of the an existing one and to analyze the suggested ways to connect them.

The proposed intervention has four levels of implementation that could be applied according to the existing conditions of the blocks.

- The first level refers to the proposal of unifying the unbuilt spaces which are in the inner core of the building blocks by creating public spaces. Creating suitable entrances in these unified spaces and their interconnection with the surrounding streets is also suggested.
- The second level, in addition to the measures of the first level, refers to the creation of underground garages, in the – usually – vacant underground floors of some buildings. This way, fewer cars would be parked on the streets.
- The third level, in addition to the measures of the second level, suggests the expansion of the unified open spaces by legally binding the unused plots or plots whose owners are unknown.
- The fourth level, in addition to the measures of the third level, includes the demolition of some buildings – old, derelict or abandoned – or portions of them, in order to create larger open spaces, contributing this way to the improvement of bioclimatic conditions in the area (daylighting, air circulation, better views).

In this context, a building block will be presented– including its exterior common areas – in the Kipriadou district, an area which is not far from the central Athens, in the northern part of the city. It mostly residential with some small industries and retail stores. Being one of the very few areas which were designed before being built, following the principles of the garden city model, it is particular in that it has many squares and the building line is set back from the street line. The streets serve the residential areas and are of local significance. According to the building code, the plot coverage ranges from 60-70%, while the total building area allows one to build up to 260% the size of the plot (these are common figures in central areas of the city).

The building block which was chosen for this study has a total area of 0.75 ha. It contains some unbuilt areas and some unbuilt plots as well (see Figures 3 and 4). A large square is located nearby which has a significant amount of planting, but the rest of the greenery on the block is limited to tree planting on the sidewalks and a few private gardens.



Figure 3. The building block in question. (Source: Google maps)

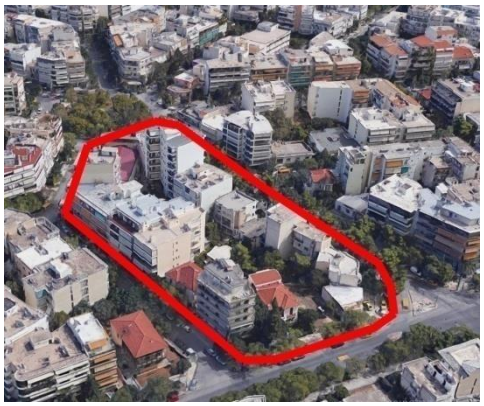


Figure 4. The building block in question. (Source: Google maps)

The proposed interventions in this block are of the first level – from the four levels mentioned above, ie the unification of the exterior common areas of the plots in this block is proposed, in order to create a larger exterior common area, that could be used by the wider area's residents and not only for those of the block in question (see Figures 5 & 6).



Figure 5. The existing configuration. (Source: OpenStreetMap)



Figure 6. The proposed configuration. (Source: OpenStreetMap)

Consequently, a building block which in its present state is inaccessible and without any function is transformed, increasing the greenery in the area, since new vegetation is added. Furthermore, through the use of water permeable materials, the microclimate conditions are maintained at desirable levels, something which is particularly important during summer. New sitting areas are also proposed, which could contribute to increased sociability and neighborhood revitalization.

4.3. Green corridors and connectivity of open spaces in Athens

The creation of new green spaces, through the connection of the unbuilt exterior common areas between them, as well as within a wider network of green corridors, improves the quality of life of city dwellers (Figure 7).

The positive effects of the creation of such a network could be:

- A potential increased use of green spaces, as well as an improvement in residents' sense of security in their neighbourhood which could potentially reduce the crime rate.
- The creation of new habitats and an improved connectivity of natural environments.
- The existence of a large amount of smaller green spaces is better for the local microclimate, than fewer larger ones. This could lead to a reduction in health problems of the vulnerable

population groups, as well as to the reduction of electricity consumption in the critical summer period, for cooling.

- The transformation of existing exterior common areas can lead to improved well-being.
- Encouraging sustainable mobility can reduce the amount of air pollutants from motorised vehicles. In addition to this, the management of connectivity is of significance to urban sustainable development [15].
- Better socialization for people with mobility issues, by creating spaces which are more accessible and walkable, allowing them to be more active.
- The aesthetic improvement of the urban environment, through the creation of functional and attractive areas.
- The increase of property values, as a result of more attractive surroundings.
- Increased revenues for businesses, due to more people being outdoors.
- Greater tourism, which could strengthen the local economy.

In this context, the proposed masterplan of the green corridor network (see figure 5) enhances the connectivity of existing and proposed green and open spaces in Athens, focusing on ecological function and social interaction [9]. It also focuses on the reinterpretation of streets' current functions, by increasing pedestrianism and by improving alternative transportation options. As aforementioned, the masterplan includes the municipality of Athens, where the proposed transformation of the exterior common area is located.

As such, the green corridor network transforms existing vacant land into usable space that improves pedestrian circulation and safety. It also promotes social interaction and provides educational opportunities as it includes archaeological sites.

Athens is characterized by densely built, densely populated and oftentimes run-down areas, mostly in the western parts of the city. Consequently, the green corridor network masterplan's main recommendations are:

- Existing and future green areas to be connected to each other, but also with neighboring areas through existing main arteries.
- Bicycle paths to be implemented on main roads (in accordance with the suggestions of the Athens Regulatory Plan 2021) which would be connected to less congested roads, with a low slope.
- To create new pedestrian areas and roads with traffic calming measures, targeting the connection of existing green areas.
- The pedestrianization of a large number of streets in the greater Archaeological Promenade (at the base of the Acropolis Hill), in order to easily connect the various archaeological sites, but also to prevent the use of cars in these areas.
- The connection, through linear green corridors, of large green areas, such as Attiko Park, Lycabettus Hill, the Pedion of Areos Park etc. with smaller green areas (neighbourhood park+s).

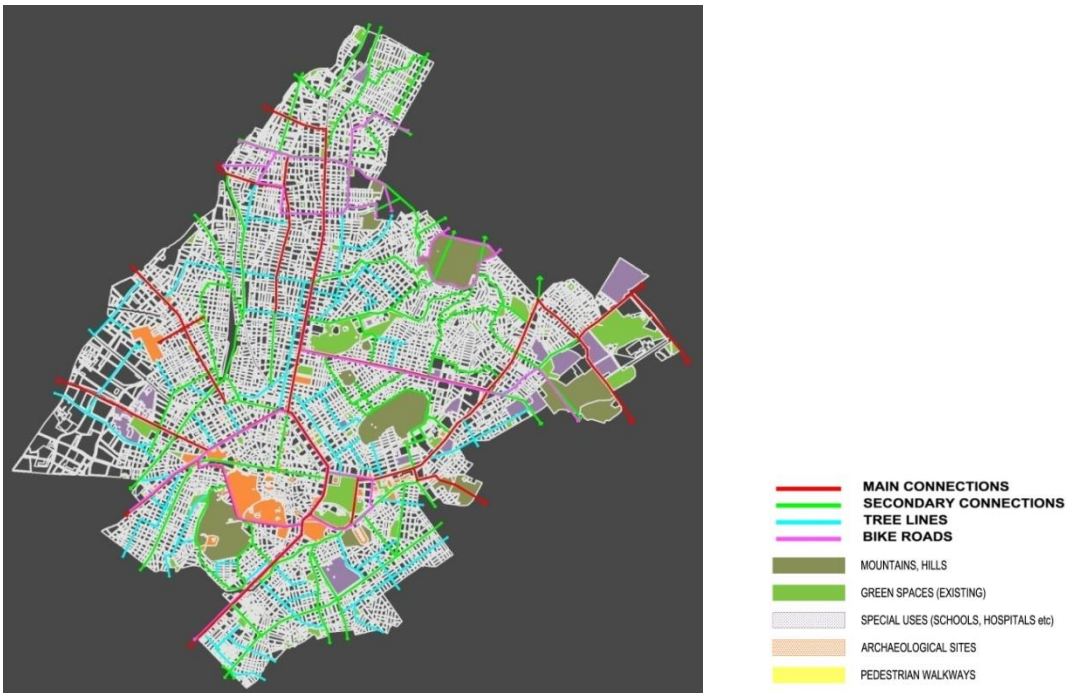


Figure 7. The proposed green corridors masterplan in Athens.

It is important to note that the main objective of the proposed interventions is to create two categories of green areas, each of which would fulfill distinct needs. Firstly, the necessity for "Local green", that is, green spaces that the residents can access by foot, like the connection of the exterior common areas of the building block which has been described above (see Figure 8). The second proposed category is of a larger scale, "City green", capable of covering the needs of all residents, in a way that green areas can be accessed by bicycle or public transport.

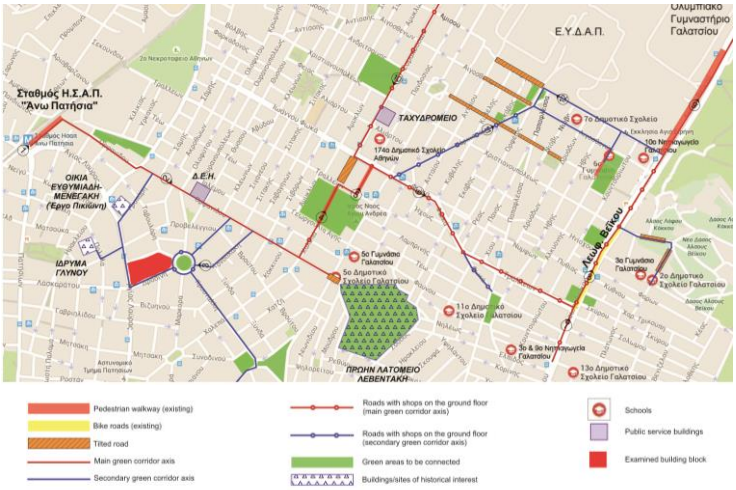


Figure 8. The examined building block and its location on the proposed green corridor. (Source: Google maps)

Finally, it must be noted that through the implementation of the proposed interventions, an increase in the surface of green spaces in the study area is achieved, from 3,84 m^2/capita, to 5,76 m^2/capita.

5. Conclusion

As urban populations expand, the design and management of green spaces presents hidden opportunities for planners, designers and public officials [16] who have an ongoing role in addressing urban challenges [17]. Political and social initiatives are critical for the success of green policies and must involve wider groups of the population [18]. Furthermore, over the last decades, local, regional or even national initiatives for the sustainable development and management of urban areas are being researched and developed, taking environmental policy as the main focus [19].

Under the pressure of urban growth and densification; urban voids can function as mediators between existing and new spaces by providing the missing link for renewal and replacement [20]. The measure of open space consolidation can be combined with the parallel integration of the building blocks, initially in more difficult areas (densely built, larger traffic load) and then more generally [21]. In newly developed areas, it could be mandatory to unify the unbuilt spaces. Building blocks could be made bigger too, allowing for larger exterior common areas, resulting as aforementioned, in better of quality of life.

These unified places should be connected in a network of green corridors in order for their presence to have a greater impact. The primary benefit of any application of the connectivity and green corridor concepts to landscape management is the ability to restore the interconnection of the landscape [22].

In this context, as it has been previously touched upon, green corridors in a city take on various roles, such as: answering to the increasing interest in outdoor recreation, by establishing amenities such as gardens, fitness areas, playgrounds etc. that would create an urban destination for leisure and recreation activities, improving connections for pedestrians and bicycle users, protecting habitat and supporting the conservation and development of the area's flora and fauna and wildlife areas, mitigating air pollution and excessive heat changes as well as and controlling urban development [23].

However, the growing interest and social demand for more greenery is often at odds with the scarcity of public funds. There are also practical difficulties associated with decision-making and funding, especially now with the economic crisis that has affected Greece in the last decade, creating conflicts regarding the different possible use of public funds [24]. Another hurdle that would need to be overcome would be this plan's possible rejection bu the exterior common areas' owners; this could be resolved through educational programs, incentives to those who participate, practical research with technical analysis on the matter with figures proving the decrease in air-pollutants and lastly perhaps by presenting similar projects which have been implemented in other cities, including feedback from the residents.

From the above it is obvious that transforming exterior common areas and implementing their connection could contribute decisively to the improvement of the urban environment and the quality of life in large urban centers, such as Athens. The creation of quality, people-centered public spaces can only have a positive impact on society [25].

In conclusion, despite the difficulties in implementing such a plan, it must be noted that the benefits expected from the establishment of a green corridor network can be of economic, social and ecological importance. Such a project would greatly upgrade the greater Athens area on an environmental level.

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