

INTERNATIONAL CONFERENCE

ENERGY IN BUILDINGS ATHENS 2025

ΥΠΟ ΤΗΝ ΑΙΓΙΔΑ ΤΟΥ **TEE**

SATURDAY
NOVEMBER 15, 2025

- DECARBONIZATION & ENERGY SECURITY
- SUSTAINABILITY & GREEN TRANSITION
- ARTIFICIAL & BUILDING INTELLIGENCE
- ENERGY SAVING IN COMMERCIAL & INDUSTRIAL APPLICATIONS

09:00-18:00 | @ DIVANI CARAVEL HOTEL, ATHENS

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Dr Maria Sinou, Professor, University of West Attica
‘The perspective of a small urban space network as an answer to the scarcity of available public spaces in city centers’

The theory

A **green network** accessible to all is significant for people to socialize, penetrate the urban fabric, and live healthier outdoor lifestyles.

A green network accessible to all is significant in order for people to socialize and create permeable and rigid environments that promote health and wellbeing.

The value of such interventions and the existence of a network in terms of local food production, energy crops and water treatment together with associated economics and social functions is high.

Green spaces in cities can provide cooling through shading and enhanced evapotranspiration, thus reducing the heat island effect that occurs in many cities.

Green areas are often threatened by expanding city structures, which have fragmented natural areas, creating small patches of green spaces in amongst buildings and roads. For example, patches of urban woodlands are generally separated from each other, which affect the ability of many woodland species to disperse, or move among different locations with similar habitats.

Ecological corridors or connections between urban woodlands, gardens or other green spaces are recognised as a way to limit the negative effects of fragmentation.

The creation of green areas and corridors can be applicable in most urban areas. The wide array of available techniques allows application in areas with very different characteristics and even where space is limited.

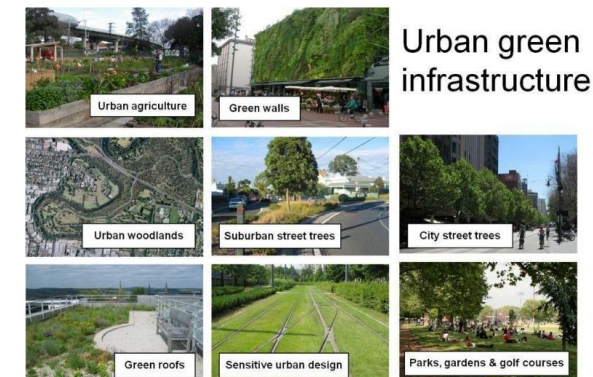
The urban green network is part of green infrastructure.

Green infrastructure is a **strategically planned network of natural and semi-natural areas** with other environmental features designed and managed to deliver a wide range of ecosystem services such as water purification, air quality, space for recreation and climate mitigation and adaptation.

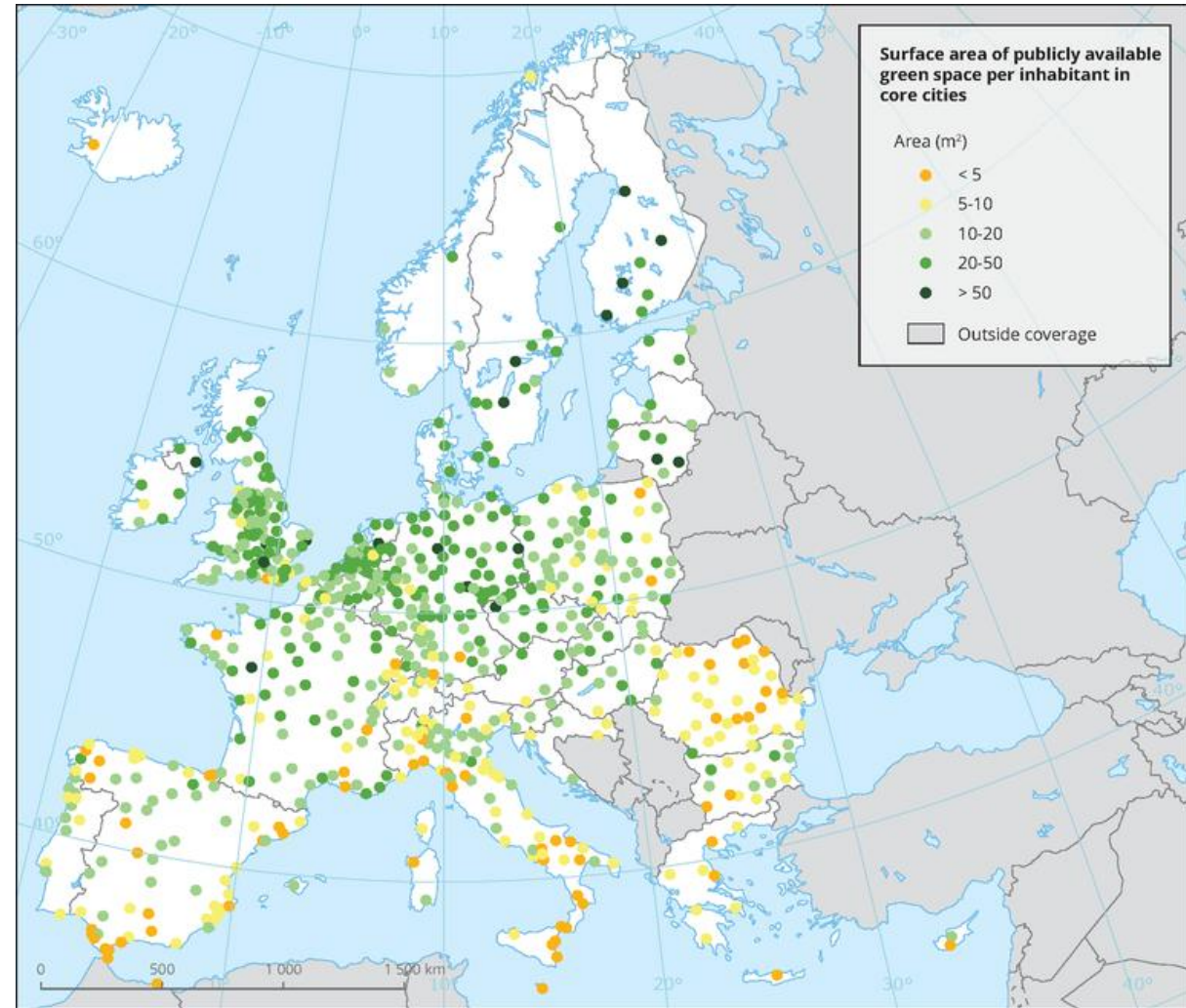
This network of green (land) and blue (water) spaces can improve environmental conditions and therefore citizens' health and quality of life. It also supports a green economy, creates job opportunities and enhances biodiversity.

Green infrastructure planning is a successfully tested tool to provide **environmental, economic and social benefits through natural solutions**. In many cases, it can reduce dependence on 'grey' infrastructure that can be damaging to the environment and biodiversity, and often more expensive to build and maintain.

https://ec.europa.eu/environment/nature/ecosystems/index_en.htm



The Problem



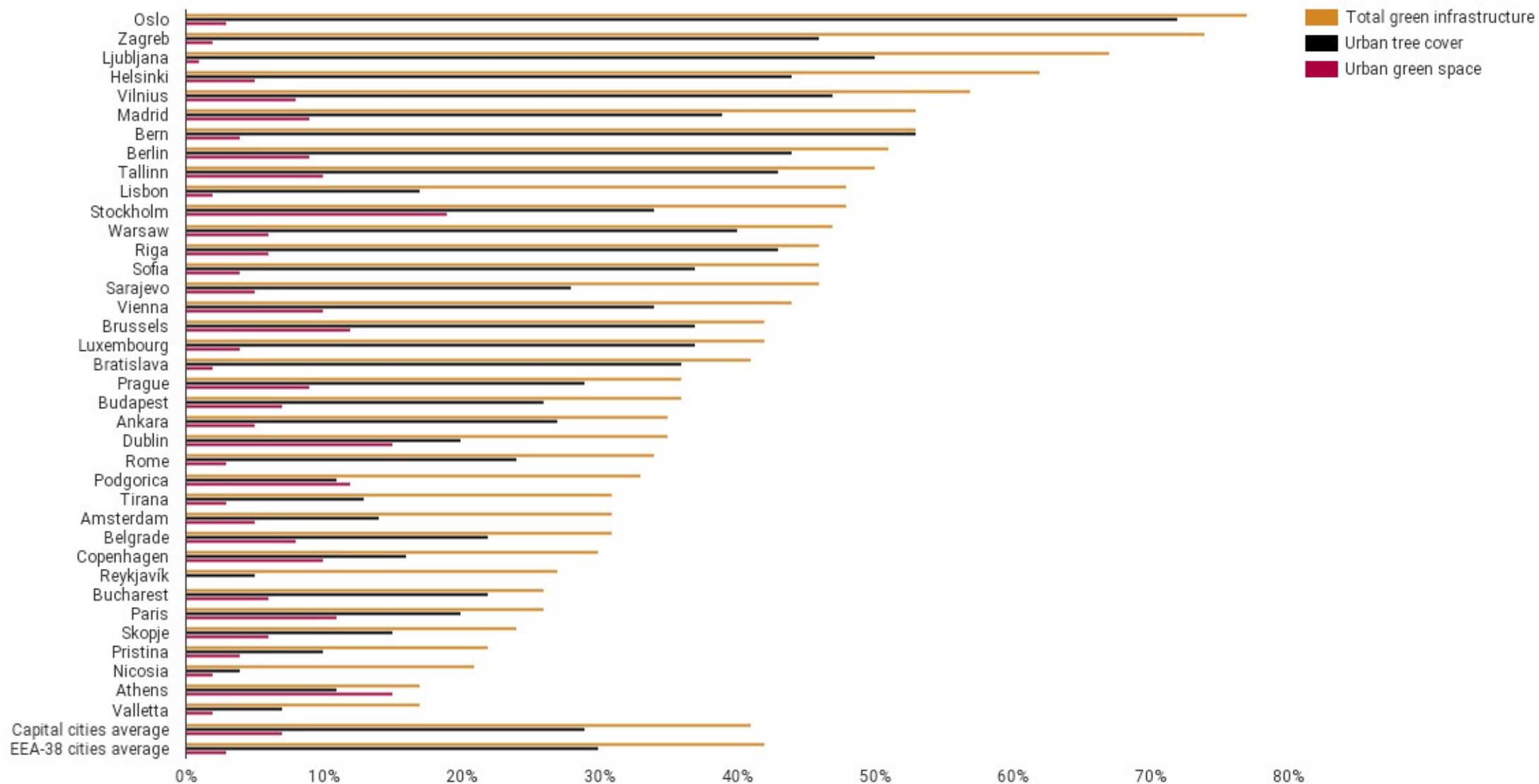
Reference data: ©ESRI

European Environmental Agency

<https://www.eea.europa.eu/en/analysis/maps-and-charts/surface-area-of-publicly-accessible/surface-area-of-publicly-accessible>

ENERGY IN BUILDINGS 2025

Chart



The solution

The solution in dense urban fabrics may be found in a variety of small urban spaces such as **urban courtyards, pocket parks, parklets, semi enclosed urban spaces.**

- Large building blocks with open spaces within them, in the form of open courtyards.
- In Athens these open spaces are rarely being used due to their poor or no design at all design and are left abandoned and often used for storage.
- Are found in both existing and new buildings
- A courtyard will create new healthy sustainable environments. Such spaces can offer public area, but can also contribute towards a more diverse environment.



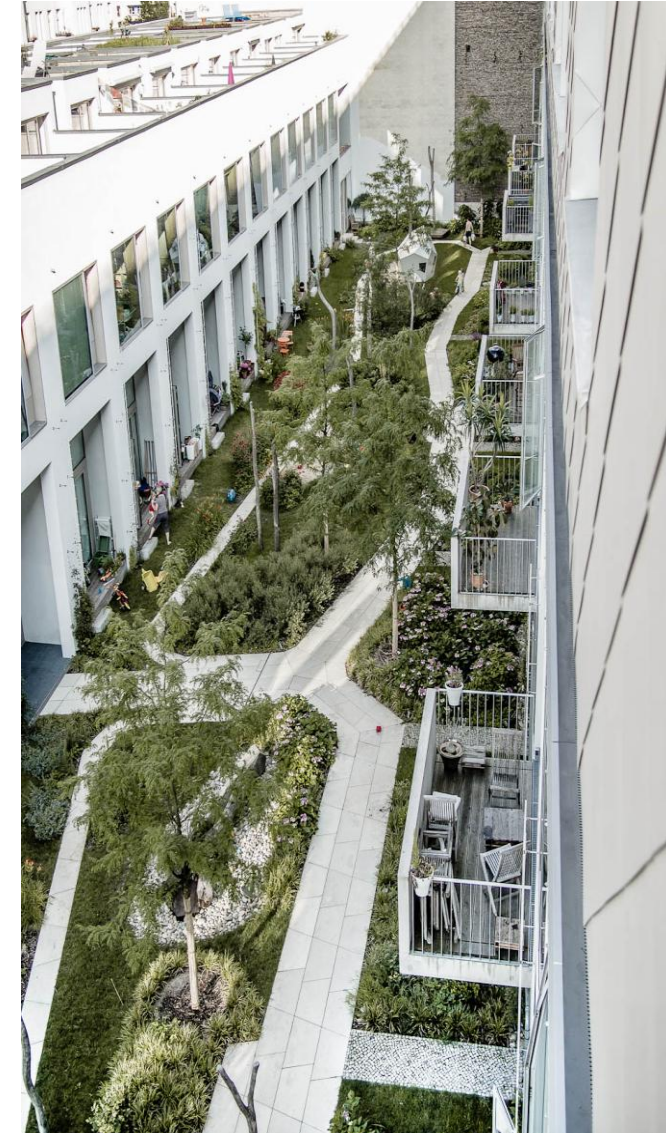
Court Square Press, existing building, Boston, Hamburg (middle), Berlin (right)

- A courtyard is the space of the plot that is not built. (ΦΕΚ Αρ. Φύλλου 79 / ΝΟΜΟΣ ΥΠ' ΑΡΙΘ. 4067- Νέος Οικοδομικός Κανονισμός, Άρθρο 2.3 - Government Gazette No. Sheet 79 / LAW No. 4067- New Building Regulation, Article 2.3)
- A courtyard is the uncovered part of the building that is surrounded on all sides by the building or the boundaries of the plot, in which they can have openings, spaces of main use and a circle of diameter Δ . (Ν.Ο.Κ. , Άρθρο 2.1)
- **Courtyards** of the plot is the area that is left uncovered so that there is no **exceedance** of the coverage rate or the rate of rent that applies in each area.(Όροι Δόμησης)
- We usually refer to spaces that are **surrounded by structural elements**.
- Their **size** varies depending on the layout of the buildings of an area and depending on its urban constraints. It can be from very large to very small (case of skylights).
- The courtyards have the possibility to be **internal** (access from inside the building), **central** (to be located between apartment buildings) and even **blocked skylights**.
- At the courtyard no owner of an apartment or flats has **the right to build**, even if he has the exclusive use of all or part of the uncovered space.
- Each of the co-owners **has the right to make use of the common areas** and to carry out their repair and renovation renewal, provided that it does not harm the rights of the other co-owners.

Gartenhof BIGyard

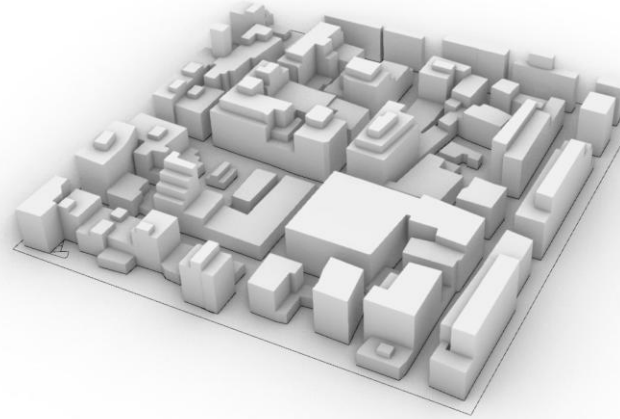
Landscape architects : herrburg
Landschaftsarchitekten

The design was based on a community garden. There is a distinction between public and private areas. Most of the garden is planted and only a small part is covered with concrete slabs - hard surfaces. This allows the garden to change, giving it a timeless value.

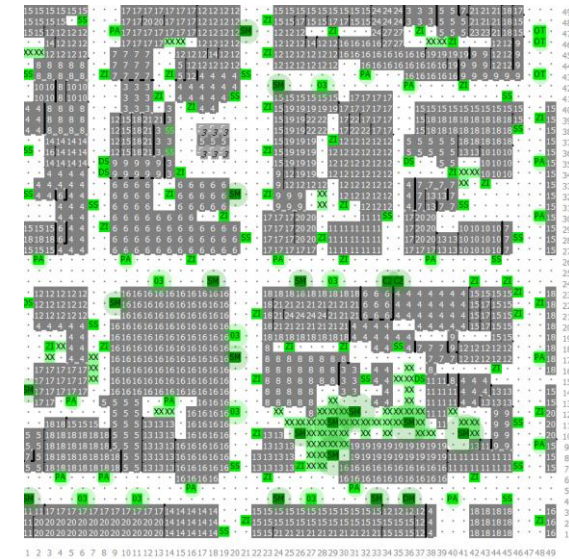
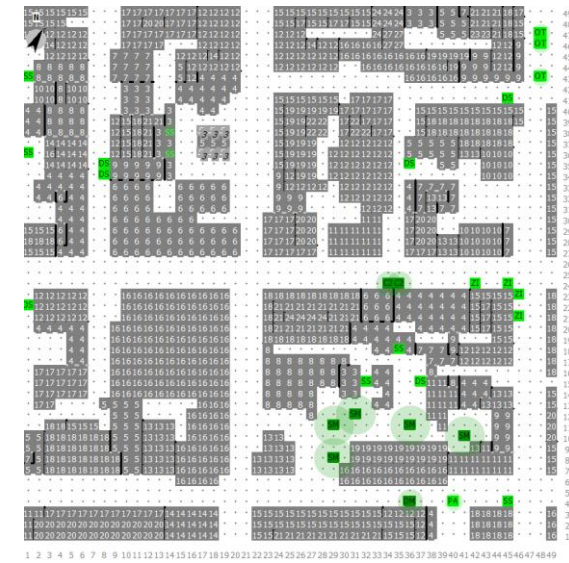




(a)

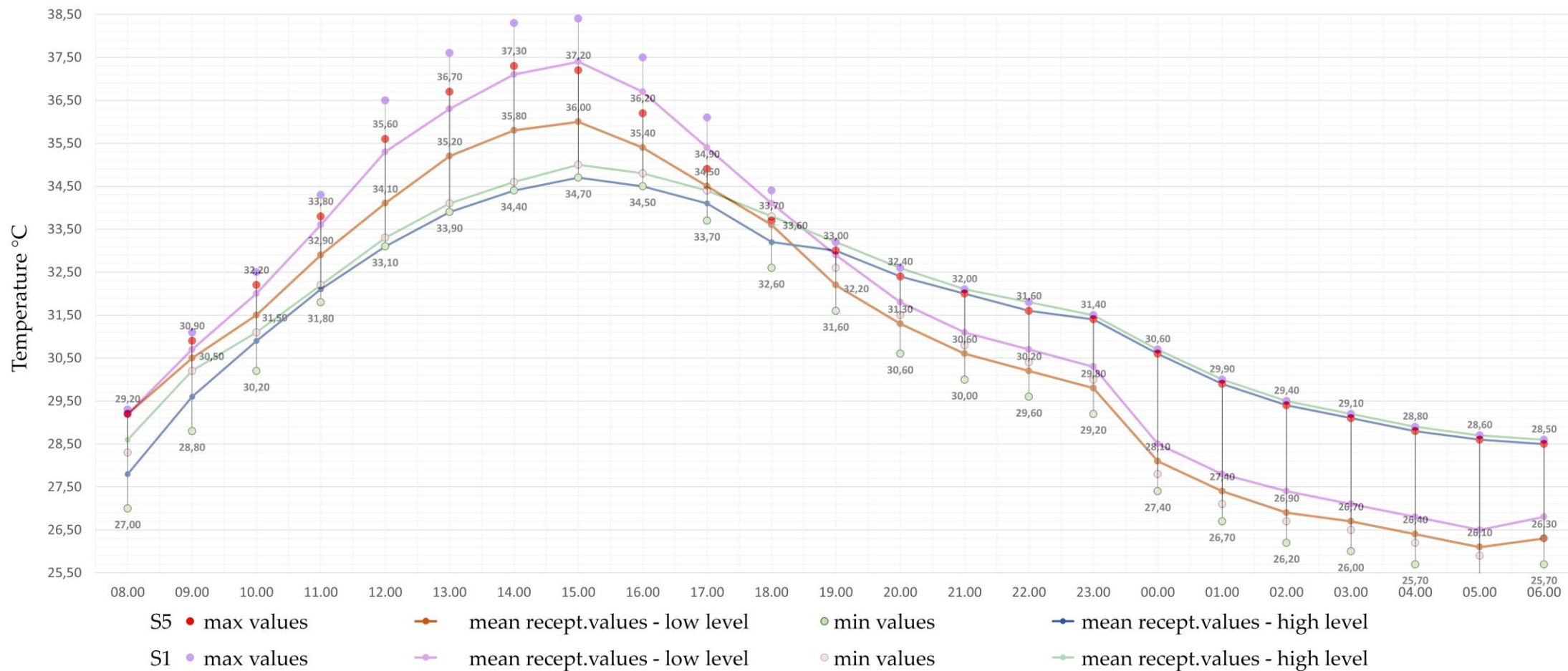


(b)



Vegetation maps Implementation of existing situation (above), and Implementation of S5 Scenario (below)_ENVI-MET

Koutsanitis, S., Sinou, M., Kanetaki, Z., Touse, E., & Varelidis, G. (2025). Thermal Performance Investigation in Historical Urban Neighborhoods Using ENVI-Met Simulation Software. Land, 14(2), 284. <https://doi.org/10.3390/land14020284>



The original “vest pocket park” and the very first pocket park was the Rev. Linnette C. Williamson Memorial Park created in 1965 between two buildings on 128th St. It was developed as a way to add green open space to an area in the city that was in most need of public space.

In 1967, Paley Park on 53rd St. and 5th Ave. in Midtown Manhattan was created to honor William S. Paley’s father, Samuel Paley. This privately-owned public space was set aside for the enjoyment of the public.



[Rev. Linnette C. Williamson Memorial Park](#) in New York (left) & Paley Park in New York (right).

- network of small green spaces serving neighborhoods
- spaces that are human in scale
- urban open spaces at a small scale of 0.125 acres – 500sqm.
- contribute to a sense of place, provide comfort and a sense of well-being contribute to the urban microclimate.
- pocket parks can be defined as greens or quiet enclaves.
- They should be accessible and viewable from the street and can have a variety of characteristics, such as trees and greenery, urban furniture, recreation facilities etc.
- With some planning, they can be connected if they are placed along greenways or bike paths as long as they would still be visible to a sufficient number of pedestrians who are also potential users.

Design parameters for inclusion in the study of pocket parks were identified during the literature review, and were classified into three broad categories; namely Space, Environment and Society.

Main categories	Sub-categories	Design Parameters
SPACE	size	<ul style="list-style-type: none"> a small park 50 by 100 feet determine exact size according to anticipated uses
	space identity	<ul style="list-style-type: none"> determine the function/s of the space innovative design concepts variety and choice greatest play value adaptable spaces
	surfaces	<ul style="list-style-type: none"> the walls, those of adjacent buildings, can become vertical lawns the floor, textural interest and pattern the ceiling- canopy of leaves, solid roof of shade avoid blank walls in the space perimeter
	focal point	<ul style="list-style-type: none"> need of focal point - water features, gazebos or other structures defined edges which may contain a focal point.

Table 1: The first category - Space.

ENVIRONMENT	environmental performance	<ul style="list-style-type: none"> maximise the amount of natural shade environmentally friendly features: pervious surfaces, bio-filter landscaping beds, high-efficiency lighting, solar-powered amenities environmental education explore aquatic and riparian habitat and stormwater and aesthetic enhancements adequate lighting during night time
	location & linkage	<ul style="list-style-type: none"> investigate vacant sites to provide opportunities for temporary public space locate the park adjacent to a greenway and the largest concentration of housing layout of public open space influences pedestrian flow provide paths that lead somewhere promote pedestrian use, linkage to network, high use corner or mid block link linked to other recreational, cultural and community facilities ensure a good flow of park users between the greenway and the park.

Table 2: The second category - Environment.

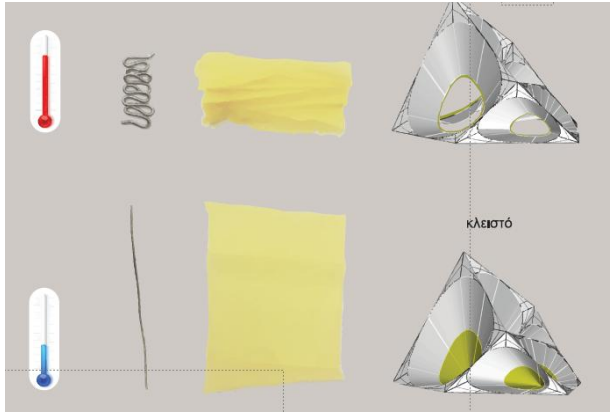
SOCIETY	users	<ul style="list-style-type: none"> goals: physical fitness, social adjustment, mental and moral improvement and neighbourhood betterment play spaces designed for the present population of the area comfortable social interaction welcoming and appealing design to a diversity of users determine major users involve neighborhood in design process
	accessibility	<ul style="list-style-type: none"> easily accessible inviting with multiple points of entry convenient and safe pedestrian access non-traditional locations: roof tops, building facades or foyers
	amenities-activities	<ul style="list-style-type: none"> individual sitting replacing bench drinking fountains, bicycle racks, trash receptacles, etc. playground, opportunities for sitting, and open, grassy areas range of activities that will activate public space at all times maximise the amount of seating. opportunities for public art
	safety & maintenance	<ul style="list-style-type: none"> supervision and maintenance well buffered from moving cars equitable access free from barriers to the street reduce onerous maintenance requirements

Table 3: The third category – Society.

DR MARO SINOUE, DR AMANDA GAIL KENTON, Parameters contributing to the design of a successful urban pocket park, PLEA2013 - 29th Conference, Sustainable Architecture for a Renewable Future, Munich, Germany 10-12 September 2013



Kazamia, et al, Changing Cities 2024, Rhodes: Multi-criteria tool for evaluating pocket parks according to the 17 sustainable development objectives.



Urban regeneration of open public space in Fokionos Negri
 From Maters course: Design Studio II: Sustainability, Society and Digital Environments. In Sustainable Design of Architectural Space, UNIWA, <https://mssuda.uniwa.gr/>
 Students: Aspasia Salachouri, Domna Valavanoglou

Green Schoolyards can form a large part of this network and be made available to the community at times when the school is not in use, or at weekends, with appropriate supervision.

Before and After Impact



<https://www.tpl.org/community-schoolyards-campaign>
<https://www.sfusd.edu/shareschoolyard>

ΜΕΤΑΜΟΡΦΩΣΙΣ

ΣΤΟΧΟΙ ΣΧΕΔΙΑΣΜΟΥ

ΥΠΑΡΧΟΥΣΑ ΚΑΤΑΣΤΑΣΗ

ΦΥΤΑ ΕΛΛΗΝΙΚΟΥ ΤΟΠΟΥ

ΤΟΠΟΣ

ΦΩΚΙΩΝΟΣ ΝΕΓΡΗ

ΣΗΜΕΙΟ ΕΠΕΜΒΑΣΗΣ

ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ ΠΕΡΙΟΧΗΣ

ΑΝΘΡΩΠΙΝΗ ΠΡΟΚΑΤΑΡΚΤΗ

Πανεπιστήμιο Δυτικής Αττικής Π.Μ.Σ. : Τμήμα Εσωτερικής Αρχιτεκτονικής
Αρχές και Πρακτικές Αειφόρου Σχεδιασμού ΜΠΣ Αειφορικός Σχεδιασμός Αστικών Χώρων (Project)

ΜΕΤΑΜΟΡΦΩΣΙΣ

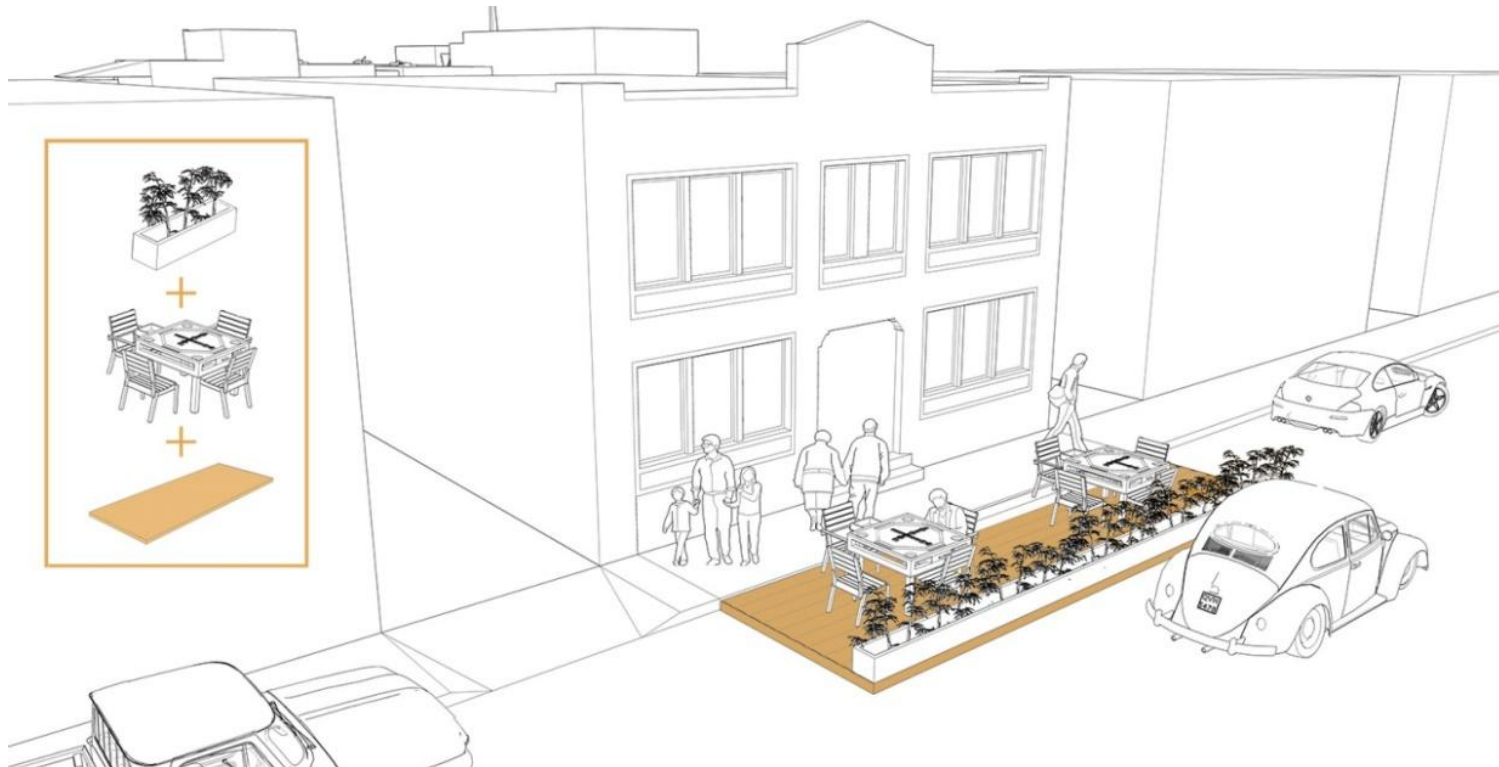
ΕΡΓΑΛΕΙΑ ΑΙΦΟΡΙΚΟΥ ΣΧΕΔΙΑΣΜΟΥ ΒΙΟΜΙΜΗΤΙΚΟΥ ΣΧΕΔΙΑΣΜΟΣ

ΒΙΩΜΑΤΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Ομάδα Φοιτητών : Πάνου Έλενα (ssd20016), Μαντζούρου Γιώτα (ssd20012)
Καθηγήτρια : Σίμου Μάρω | Β' Εαρινό Εξάμηνο 2020-2021

Urban regeneration of open public space in Fokionos Negri
From Maters course: Design Studio II: Sustainability, Society and Digital Environments. In Sustainable Design of Architectural Space, UNIWA, <https://mssuda.uniwa.gr/>
Students: Elena Panou, Giota Matziorou

- The parklet is an extension of the sidewalk a small park - public space that is installed in the place of a parking space of one or two cars.
- They can be extended outside the sidewalk but at the same level towards the width of the adjacent parking space and can be designed either as permanent or as temporary constructions.



1. Re Energy Parklet

Location: center of Athens, Poliklitou str.

Date: 2017

Designed & Installed By: students from the Laboratory of Urban Ecology of the Department of Interior Architecture of the Technological Educational Institute (TEI) of Athens under the supervision of Dr Maro Sinou

Hosted By: University of West Attica



The parklet implemented in the center of Athens, Poliklitou str. in 2017

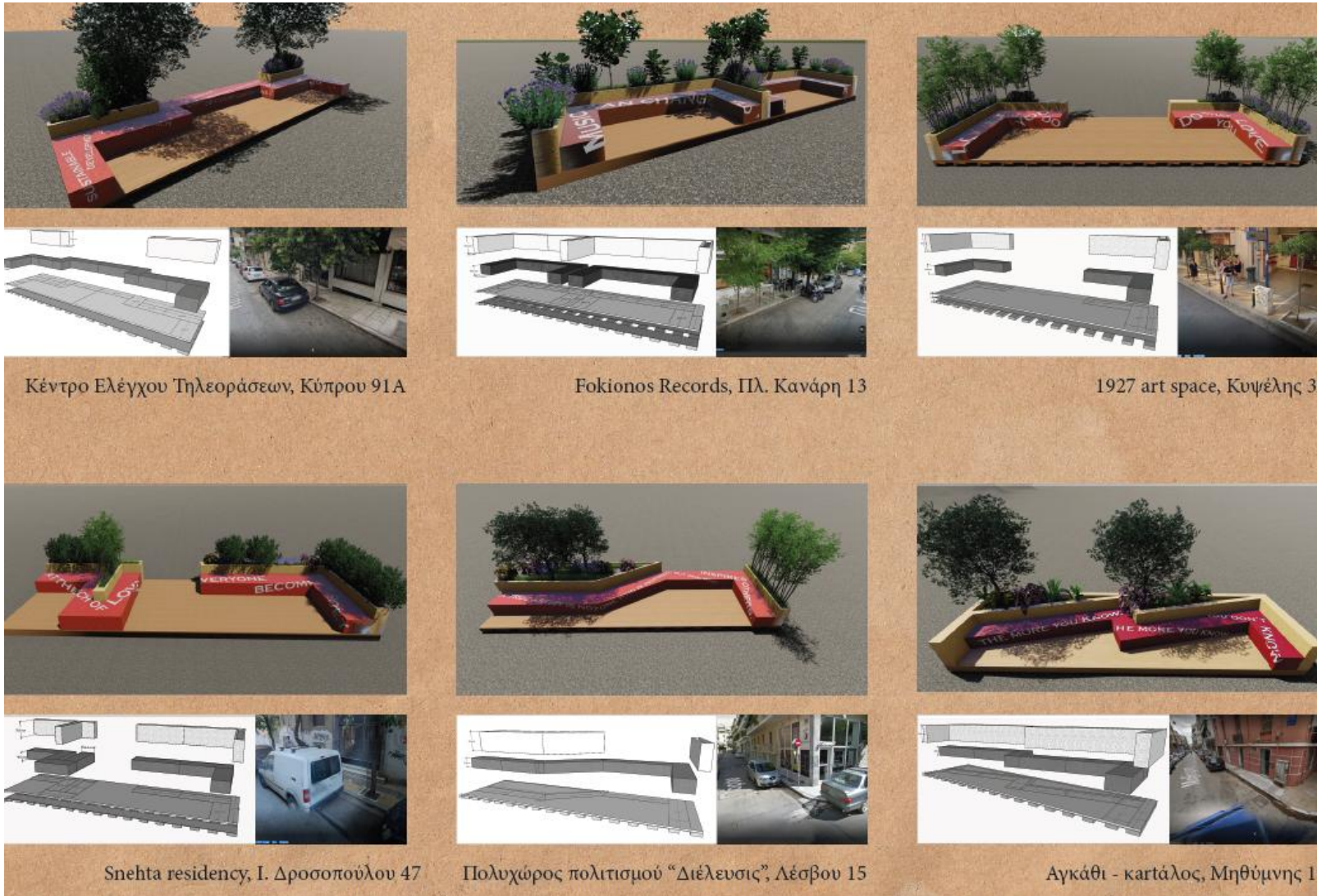
- https://www.oneman.gr/synentefxeis/tha-thysiazes-mia-thesh-parkingk-gia-ligo-prasino/?fbclid=IwAR0KDp_8JZx12GEZnvuDxGfEluv-doLKV6GWiznS4EDGF4gSrCm0vw-Vfeo
- <https://www.youtube.com/watch?v=eKyMTQmpK9Y&feature=share>.



- A parklet was created as a pilot project in the center of Athens.
- The idea for the parklet is based on the altitude curves in combination with the street plan that once had the center of Athens, when the concept of neighborhood was still strong and Athens was not an impersonal city.
- This implementation was very informative in terms of the limitations of such projects as well as its perspectives.
- The purpose of this action is to create a network of such Parklets



Standardization



Study form the class Project II MA 'Sustainable Design of Architectural Space – Students: Ennios Gogos, V. Delindadaki

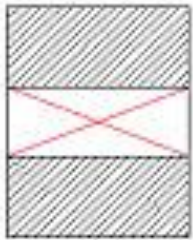
The semi-enclosed spaces examined in this study are outdoor urban spaces, used for various purposes. A typology is proposed in order to identify and create the basis for the analysis of the different microclimatic conditions that can be experienced in these spaces. This study distinguishes four types of space: (1) porch, (2) arcade, (3) portico, and (4) hypostyle hall.

This does not take into consideration either the significantly different scale or proportions between the spaces of each category or the different historic periods in which they belong. The types result from their different morphology with a particular reference to their degree of enclosure. The names given to each type are a product of this research and do not necessarily correspond to other architectural studies or dictionary definitions.

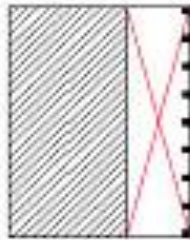
Semi-enclosed spaces are very significant since they act as climate moderators, being cooler than the outside temperature during summer and warmer during winter. Also, these spaces often become friendly sociable spaces hosting several small urban functions.



(1) Porch



(2) arcade



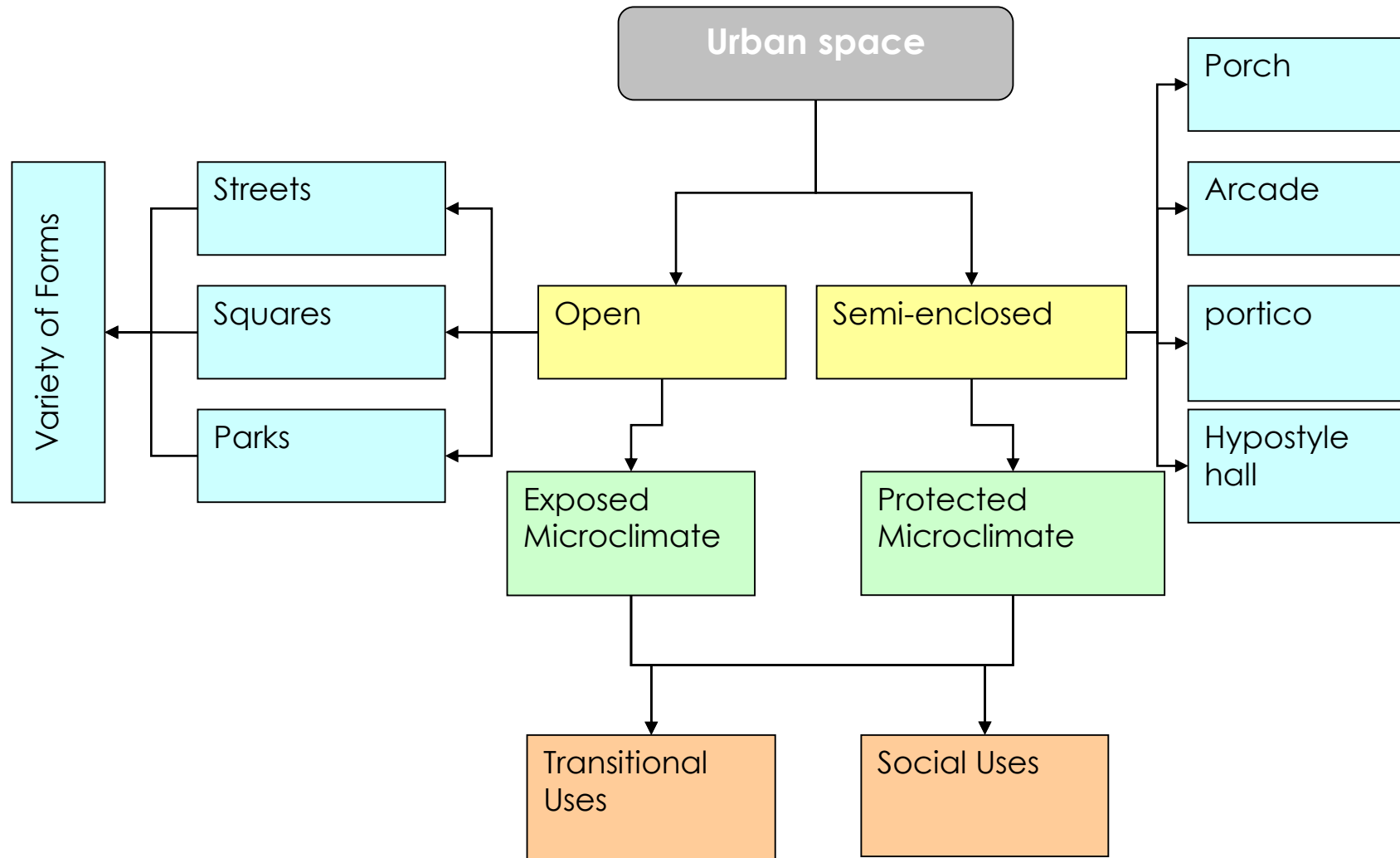
(3) portico



(4) hypostyle hall



M. Sinou, 2007, Design and Thermal Diversity of Semi-Enclosed Spaces, Melrose Books, UK



M. Sinou, 2007, Design and Thermal Diversity of Semi-Enclosed Spaces, Melrose Books, UK

WALKABILITY

15 MIN NEIGHBOURHOOD
IN HISTORIC URBAN AREAS
IN ATHENS, GREECE:
THE CASE OF GAZI



BIP (BLENDED INTENSIVE PROGRAM)
UNDER ERASMUS+ HIGHER EDUCATION
5 DAY WORKSHOP
Athens, University of West Attica
3-7 November 2025

THE THEME

Investigating the Concept of Cool
and the 15-Minute Neighbourhoods
in Historic City Centers. The workshop
aims to create healthier and more
livable environments that enhance
community building and fostering
strong relations.

PRESENTATION

Thursday, 6 November | 16:00 pm |
Egaleo Park Campus Conference Center



BUILDING LIVEABLE URBAN ENVIROMENTS

ARVANITI SMARAGDA, EL OUAFI RANIA, MILTIADOU MICHALIS

ANTOINE DUPUIS, VERONIKA JONINA

A **green network** accessible to all is significant in order for people to socialize, to be able to penetrate the urban fabric and to live a more healthy outdoor living.

The urban green network is part of green infrastructure, which forms a **strategically planned network of natural and semi-natural areas** with other environmental features designed and managed to deliver a wide range of ecosystem services.

A variety of small urban spaces such as **urban courtyards, pocket parks, parklets, green schollyards and semi enclosed urban spaces** can be integrated into the network providing a diverse and rich environment within the goals of sustainability.

The above spaces have a variety of environmental, spatial, social and also cultural characteristics that can create **a more healthy and attractive environment but also contribute to the improvement of the urban microclimate.**

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ΥΠΟ ΤΗΝ ΑΙΓΙΔΑ ΤΟΥ **TEE**

THANK YOU! Q & A

NAME: Dr Maria Sinou
EMAIL: msinou@uniwa.gr

09:00-18:00 | @ DIVANI CARAVEL HOTEL, ATHENS

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