DESCRIPTION REPORT OF OVERALL PROPOSAL

A. ABSTRACT

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The project understands the city as an ecosystem containing many areas of different characteristics, where open and green spaces are the opportunity places to enhance natural conditions. It looks, therefore, for the city's natural structure, where the intervention axis plays a very important role: It is the binding spine that connects fragmented green and open spaces in a local and metropolitan scale. It is, moreover, a multifunctional spine as it is, apart from a green corridor, the emblematic, cultural, social and economic center of Athens. The project transforms the axis into a real new green public space and a sustainable mobility spine where mixture of activities reinforces its multifunctional character and converts it to a vibrant center. In parallel, the intervention area, apart from the main spine and its monumental squares , looks for the proximity scale, the neighborhood, for all the potentially public spaces like small squares, public building gardens or terraces, pedestrian streets and several interior blocks, where new green community spaces are proposed. This secondary public spaces infrastructure is connected to the binding spine, or better, the spine is the element that binds all places together. In all places, apart from the design the proposal seeks creating a place, an essence, the life in the street that is reinforced by several street cultural activities.

A cropped lineal architectural element, recognizable all along the spine, connects different typology interventions in a unique balanced proposal. The lineal element changes direction in order to invite people to discover the places behind the central spine, it opens the view to the monumental squares, while, at the same time, it organizes urban spaces and furniture. A variety of typological sections create different atmospheres along the spine with the help of plants, pavement treatment and material colors.

A part from the tram line and the implanted competition public transportation system, a continuous bicycle lane all along the spine is proposed, connecting with the metropolitan bicycle network.

A lot of emphasis is given to the sustainability of the project. Great variety of vegetation increases biodiversity, while vegetation itself works as a generator of local microclimate. Intent of maximization of permeable surfaces is made, taking into consideration water sustainable drainage and maximum infiltration through continuous trees surrounds that in cases also concentrate rainwater from the streets, while permeable paving is also used all along the bicycle lane. The color of hard material paving is inspired by the stones of the surrounding mountains and a preference to the use of local material is made. Urban furniture, like solar bus and tram stops and energy efficient urban lighting, also follows the criteria of a sustainable city.

The combination of all elements of the proposal creates a green infrastructure and an integrated district with a real well being effect to its users and an impact that is considerably wider than the area's intervention natural limits.

ΠΕΡΙΛΗΨΗ

Η πρόταση αντιλαμβάνεται την πόλη ως ένα οικοσύστημα με περιοχές ποικίλων χαρακτιριστικών, όπου δημόσιοι χώροι και χώροι πρασίνου είναι τα δυνητικά μέρη ανάπτυξης των φυσικών συνθηκών. Αναζητά, λοιπόν, τη φυσική δομή της πόλης όπου ο άξονας της επέμβασης διαδραματίζει έναν πολύ σημαντικό ρόλο: είναι η ραχοκοκκαλιά που συνδέει διάσπαρτους χώρους πρασίνου και αστικά κενά σε τοπική και μητροπολιτική κλίμακα. Είναι, επιπλέον, ένας πολυλειτουργικός άξονας, καθώς αποτελεί το εμβληματικό, πολιτιστικό, κοινωνικό και οικονομικό κέντρο της Αθήνας. Η πρόταση μετατρέπει τον άξονα σε έναν νέο πραγματικό πράσινο δημόσιο χώρο και έναν άξονα βιώσιμης κινητικότητας, όπου μίγμα δραστηριοτήτων ενισχύει τον πολυλειτουργικό χαρακτήρα του και τον μεταβάλλει σε ένα ζωντανό κέντρο. Παράλληλα, η περιοχή επέμβασης, εκτός από τον κεντρικό άξονα και τις μνημειακές πλατείες αναζητά την μικρή κλίμακα, τη γειτονιά, που περιλαμβάνει όλους τους εν δυνάμει δημόσιους χώρους όπως μικρές πλατείες, εξωτερικούς χώρους δημοσίων κτιρίων, κήπους, πεζόδρομους και εσωτερικούς ακάλυπτους οικοδομικών τετραγώνων, όπου προτείνονται νέοι κοινοτικοί χώροι πρασίνου. Αυτή η δευτερεύουσα αστική δομή δημοσίων χώρων συνδέεται με τον βασικό άξονα, ή καλύτερα, η ραχοκοκκαλιά είναι το στοιχείο που «δένει» όλα τα επιμέρους στοιχεία μεταξύ τους. Σε όλους τους χώρους η πρόταση επιδιώκει, εκτός από το σχεδιασμό, τη δημιουργία ενός τόπου, μιας ατμόσφαιρας, της ζωής στο δρόμο, που ενισχύεται με ποικίλες υπαίθριες πολιτιστικές δραστηριότητες.

Ένα αρχιτεκτονικό τεθλασμένο γραμμικό στοιχείο, αναγνωρίσιμο σε όλο το μήκος της ραχοκοκκαλιάς, συνδέει τις διάφορες τυπολογικές επεμβάσεις σε μια μοναδική ισορροπημένη πρόταση. Το γραμμικό στοιχείο αλλάζει κατεύθυνση προκειμένου να κατευθύνει το χρήστη να ανακαλύψει τα μέρη πίσω από τον κεντρικό άξονα, ανοίγει τη θέα στις μνημειώδεις πλατείες, ενώ, παράλληλα, οργανώνει τον αστικό χώρο και την αστική επίπλωση. Ποικιλία τυπολογικών τομών δημιουργεί διαφορετικές ατμόσφαιρες κατά μήκος του άξονα με εργαλεία τις φυτεύσεις, τις αστικές διαρυθμίσεις και τα χρώματα των υλικών.

Εκτός από τη γραμμή του τραμ και το σύστημα δημόσιων συγκοινωνιών, προτείνεται ένας συνεχές ποδηλατόδρομος κατά μήκος του άξονα, που συνδέεται με το μητροπολιτικό δίκτυο ποδήλατο.

Μεγάλη έμφαση δίνεται στη βιωσιμότητα του έργου. Μεγάλη ποικιλία φυτών αυξάνει τη βιοποικιλότητα, ενώ η ίδια η βλάστηση λειτουργεί ως «γεννήτρια» του τοπικού μικροκλίματος. Γίνεται προσπάθεια μεγιστοποίησης των διαπερατών επιφανειών, λαμβάνοντας υπόψη το βιώσιμο σύστημα αποστράγγισης νερού μέσω συνεχών παρτεριών που συγκεντρώνουν το βρόχινο νερό από τους δρόμους, ενώ διαπερατό μπετόν χρησιμοποιείται σε όλο το μήκος του ποδηλατοδρόμου. Τα χρώματα των πλακοστρώσεων είναι εμπνευσμένα από τα πετρώματα των βουνών του λεκανοπεδίου και υπάρχει προτίμηση για τη χρήση των τοπικών υλικών. Ο αστικός εξοπλισμός ακολουθεί επίσης τα κριτήρια της βιώσιμης πόλης, όπως η χρήση φωτοβολταικών πλακών σε στάσεις λεωφορείων και τραμ και ο αστικός φωτισμός ενεργειακής απόδοσης.

Ο συνδυασμός όλων των στοιχείων της πρότασης δημιουργεί μια πράσινη υποδομή και μια ακέραιη γειτονιά που δημιουργεί ένα αίσθημα ευζην στους χρήστες του κσι ξεπερνά κατά πολύ τα φυσικά όρια της περιοχής επέμβασης.

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0. PLANNING ANALISIS

0.1 Athens today

The city of Athens has been developed following the radial structure originally around Acropolis and the old city center. As a result of historical succession of different political circumstances, Athens has come to cover today its entire valley arriving till the parts where the orography of the surrounding mountains made it difficult to occupy.

This immense built mass corresponding to the contemporary city is interrupted by few isolated green “islands”, and the hills, which were saved from urbanization due to their abrupt relief. In a smaller scale, the urban green and pedestrian zones, fewer in number and in proportion to the built environment, are limited to specific areas and are not often connected.

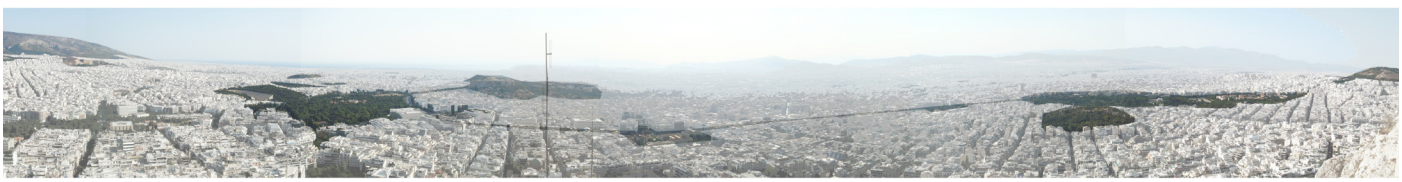
Despite the “hostile” environment, contemporary Athens conserves undeniable qualities and assets:

- **An immense historical weight.** The city conserves noticeable examples of history and culture that have been a constant source of inspiration and knowledge until today. The past is present in Athens, as all historical layers are uncovered: great monuments of antiquity, elegant Byzantine churches, and romantic Neo-classical architecture.

- **A mediterranean climate**, that creates charming weather conditions, with its diverse vegetation and blue sky.

- **A particular way of life**, in accordance to people’s temperament, manifested through its gastronomy, shops, museums, art events, cafes and nightlife, but mostly through the life in the streets.

- A **great touristic potential** due to the qualities mentioned before.



1. GENERAL STRATEGY

1.1 City as an ecosystem

The city of Athens has evolved in expense to the natural space surrounding it, while space expansion politics seem to have badly consumed open spaces. Natural streams and rivers, that were characterizing the landscape of Athens valley, have been covered and disappeared under the city mass.

The proposal understands the city as an ecosystem containing many areas of different characteristics. Citizens, like animals and plants, are part of this ecosystem, not alienated from it, and one another share it on an energy exchange basis over a material resource; the city and its surroundings. Open spaces and natural remaining spaces are opportunity places that can enhance various ecosystem conditions.

In this sense, in the general planning analysis, we look for the **natural city's structure**, for the green and open spaces that can work, with the appropriate intervention, as **ecological corridors** in a metropolitan scale and as spaces of comfort in the city, small biotopes of **biodiversity**.

1.2 Green spaces connection on different scales

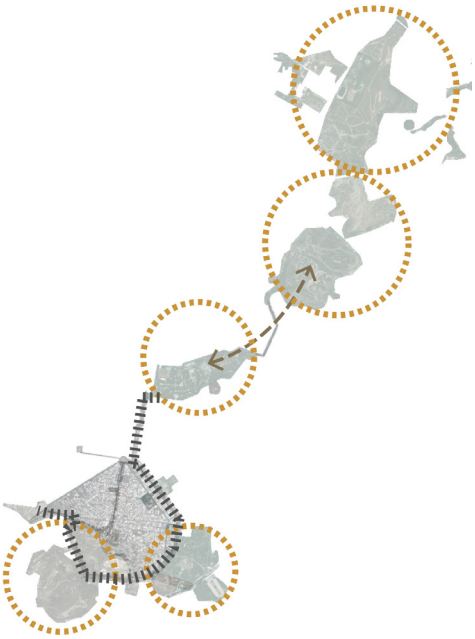
The transformation of the center of Athens around the Panepistimiou axis is a project that concerns the whole city. The Panepistimiou axis is understood as the **binding spine** of an equilibrated system of public spaces with different typologies and sizes. This system introduces a **green public grid** on a local and **metropolitan scale** that connects fragmented green spaces on a **neighborhood scale** with larger urban spaces and natural areas around the city.

More specifically, the broad area of the intervention works as a binding spine of connection between:

- **Urban open and green spaces on a proximity scale**. These spaces are distributed in a radial structure along the old city center.

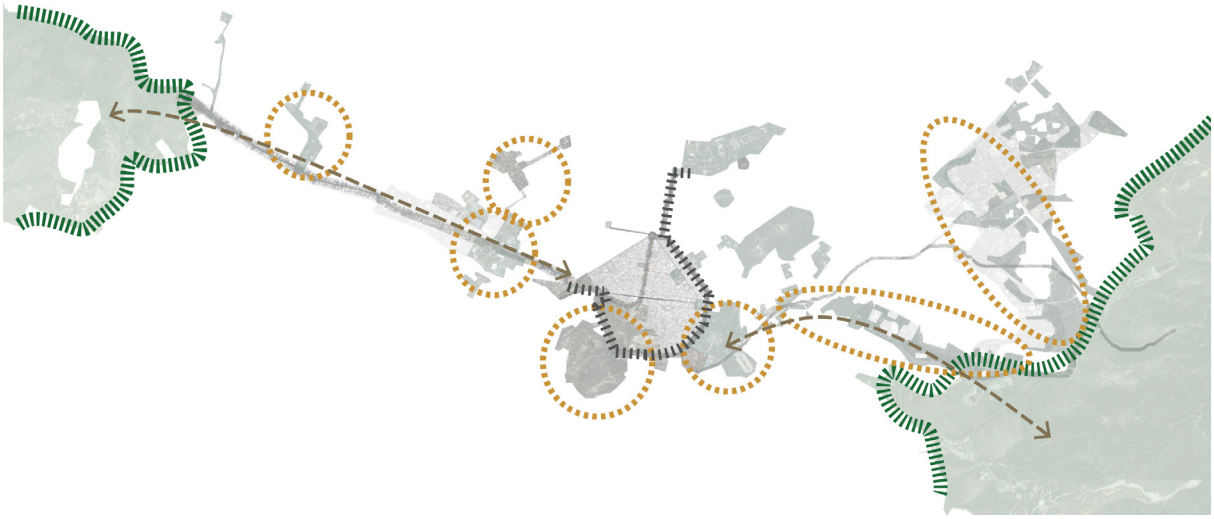
- **Special orography fragments on a larger urban scale**. These are the hills, the most important natural spaces of the valley of Athens inside the city grid, undoubted landmarks and magnificent viewpoints of the city.

Radial green connection in a proximity scale



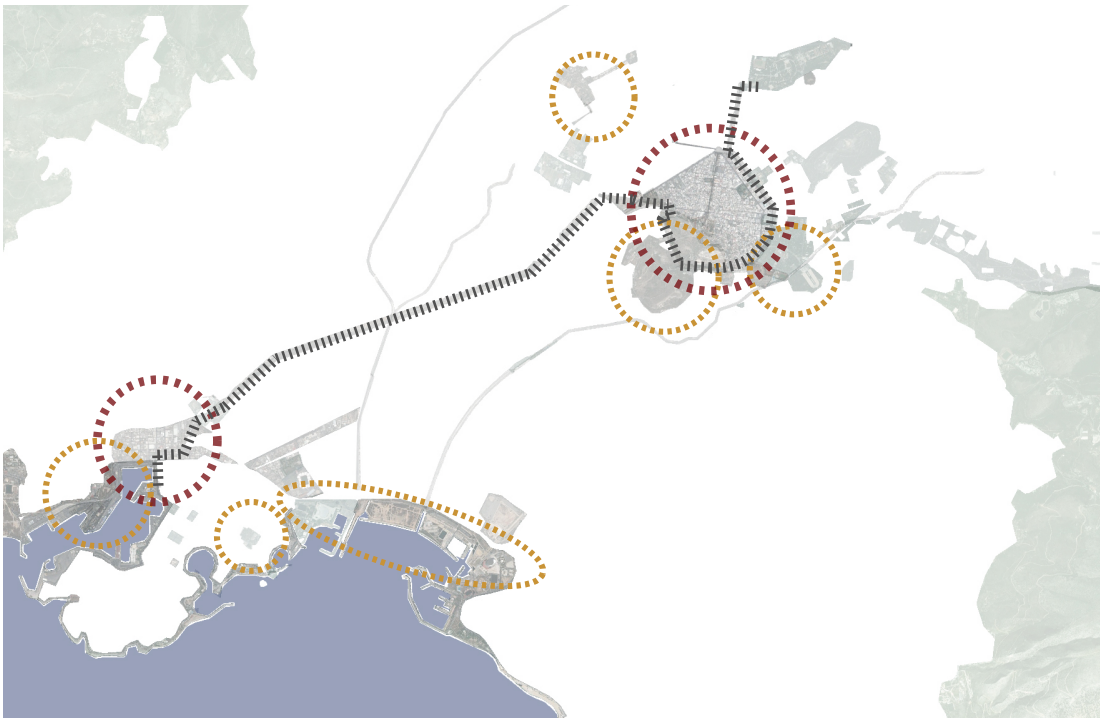
Hills connection: The continuity of the axis at north.

• **Natural systems on a territorial scale**. A continuous green network of potential spaces that works as an ecological corridor which connects the mountains that surround the city.



Perpendicular urban spaces connection with natural green spaces. East to west ecological connectivity.

• **City Centers.** The continuation of the spine towards south west connects the center of Athens with Piraeus, establishing at the same time, an archeological site connection of the two areas and in addition, the city's connection with the sea.



Cities' connection following the ancient wall mark that connected the two cities.

Shortly, creating potential green and open spaces on a local and a metropolitan scale, the proposal aspires to create a **green corridor** in the city along the Panepistimiou axis.

1.3 Center's revitalization

Design by itself is not enough to achieve urban regeneration. The Omonia project experience has taught us that. We look for places more than designs. We think in big, on a whole city scale, but act in small, looking for the micro-places on a local scale.

Center's revitalization strategy supports a multifunctional and multicultural city center, with a real mix of uses, incomes, social classes and cultures. We create the conditions that will attract people to the center and reduce social disparities.

The proposal of public design aims to achieve a revitalization of the center of Athens in several aspects. Specifically we aspire for:

- Social revitalization

- Economic revitalization

- Environmental revitalization

- Cultural revitalization

General center's revitalization strategy: multifunctional interconnected center

1.3.1 Social revitalization.

The proposal looks for the local scale; for the **neighborhood** in the center. According to this idea, small squares and new pedestrian streets, perpendicular to the main Panepistimiou axis, are included in the intervention. These **local character** places host leisure, social and cultural activities on the ground floor of the buildings so as to bring life into the street. In bigger squares, periodical street activities, like trade fairs, craft markets and different kind of festivities, are combined with the everyday use of the public space.

At the same time, several existing buildings without actual use, mainly the listed ones and those of architectural interest, are destined to **municipal and social use** for the citizens. For these buildings programs of renovation and rehabilitation, following sustainable criteria, are also fundamental.

Athens' built environment is too dense, with intense and harsh living condition; lack of green spaces, playgrounds for children, and neighborhood's sensation drive people away from the center. The proposal includes non-built spaces that can be found inside the blocks which can be converted into public, semi-public or community places. These **new community open spaces** can also host underground parking for neighbors. Although the whole intervention is based on a non-car-friendly logic, parking lots for people living in the center are important. Therefore, use of underground space for parking in the intervened places provides parking lots strictly for neighbors, and cars are not on the streets or over the pedestrian zones. Concerning the interior of the blocks, the intervention might involve, in certain cases, demolition of buildings in order to ease the high built density. However, this is certainly a long-term strategy, and different agents should be implicated to make it work.

Example of block interior intervention creating new community and public space.

The new space gained by using the block interior space and that created by a demolition of two buildings. The undreground new space for neighbors' parking.

The new image of the community space with green spaces, playgrounds and other activities spaces.

The success of such operations needs people's approval and support. In this way, all agents can work together for a common goal; the improvement of their living comfort standards, something that promises certain success. The appropriate design can make these places work as ecological corridors, as **veritable green and social networks** crossing the blocks.

The above mentioned spaces of local activity form a secondary structure of interconnected public and community spaces and provide a more human scale to the monumental city of Athens that operates in parallel to the large monumental squares. All these spaces, at the same time, hang from the central monumental Panepistimiou spine; the element that binds all the different elements together.

1.3.2 Economic revitalization

We propose buildings that due to economic crisis, remain without use to become the **poles of a new economy** based in **technology and innovation,** destining several of them to research centers or other business services and equipments related to new technology and knowledge. The proposal aims to encourage buildings' owners to update their businesses and renovate these buildings while maintaining economic activity where innovative companies co-exist with research, training and tech transfer centers. The renovated buildings are centers of experimentation and innovation and the incentives of the new tendencies. At the same time, the urban space of the center can be the place for the experimentation of local and international innovative business cooperation projects, such as systems based on sensors and panels at the streets for an efficient and sustainable management of the city.

On the other hand, center's social revitalization achieved by the enhancement of the public space will activate economy on local scale –shopping, small commerce, service sector- so new economic poles of local activity directly related to the use of public space will emerge. The coexistence of the two different poles of economic activity, the innovative and dynamic companies and the local district ones, will configure a rich productive fabric that work together in a harmonious way as these activities are not competitive.

These conditions create an attractive space for the implementation of the most innovative activities of **knowledge-based economy** that permits the improvement of the **quality of life** of the citizens that live and work in the center. This economic strategy already functions in several European cities, initiated by the European Union as the *European Initiative on Smart Cities* and is centered in sustainability aspects and energetic systems. Athens can play an important role in the European community as an innovative European capital, taking advantage of the renewable energy sources that its climate provides, and achieving sustainability and quality life for the people.

1.3.3 Environmental revitalization

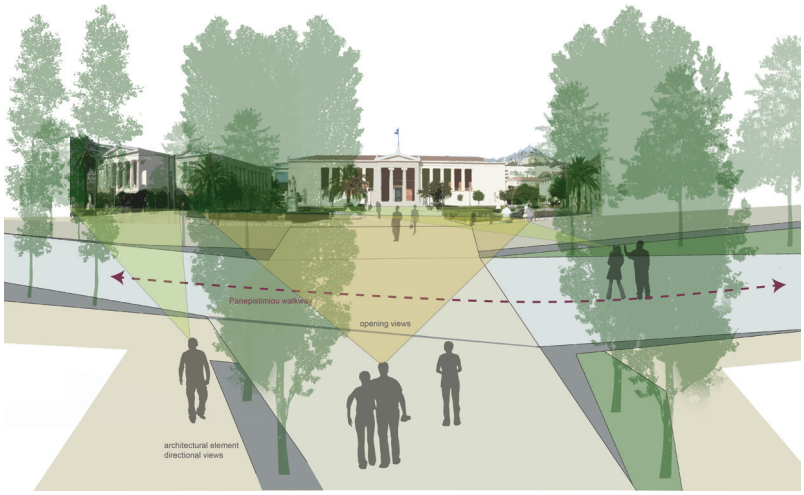
As mentioned before, the axis of the project works as a **green infrastructure** that crosses the city center. The new green spaces function as oxygen lungs while the vegetation reduces CO2 and achieves thermal comfort. At the same time, the projects' vegetation and green surfaces approach increases on an important scale the infiltration areas and, therefore, improves the natural hydrological system of the city. Drainage is part of the design and important part of the rainwater is filtered into the ground and not in the sewage system or recollected to be used for irrigation. The whole environmental strategy in general adds to the landscape quality of the public space and reduces the ecological footprint to the environment.

Small biotops are created enhancing the enviromental quality of the public spaces

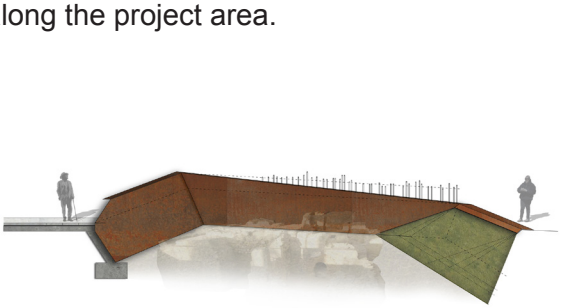
1.3.4 Cultural revitalization

The proposal reinforces the **emblematic elements** of the city along the axis, opening the views towards them, while the design intervention, in general, seeks to integrate them into the public spaces, establishing **an open dialect between the old and the contemporary.**

The proposed intervention enhances the disclosure of the monumental architecture through openness to the public space and to the people. The monumental courtyards, originally part and continuation of the buildings and combined with certain social circumstances, are now transformed in order to become part of public space too, embracing the new meaning of it as open, interactive and collective space.



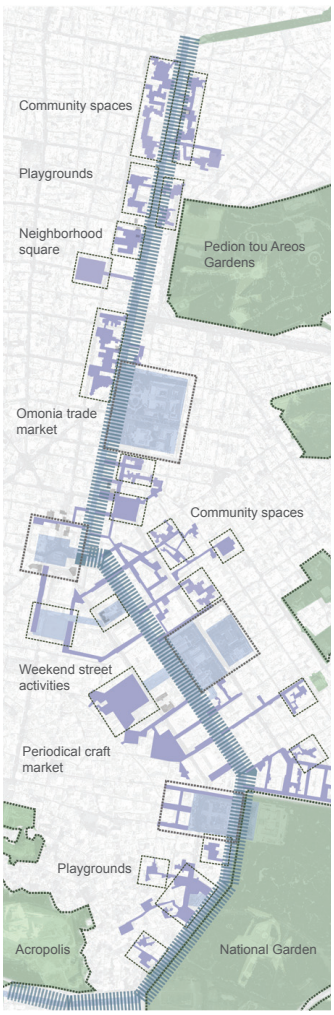
As far as strategy for archeology is concerned, the proposal searches to demonstrate the value and to enhance the **archeological remains** of the city, **integrating them harmonically in everyday life**. We understand the city as a palimpsest of many historic layers related and interconnected and look for the archeological remains, generously given in Athens, trying to connect the dots that will form a **historical grid** that will give a more complete image of the past of the city.
This idea, transported in the intervention area, highlights the main archeological promenade from Acropolis and the Museum of Acropolis up to the National Archeological Museum, passing through the monumental Panepistimiou axis. On a closer scale, in the intervention area there is a big number of archeological remains, most of them uncovered. These points are understood not as fragmented elements but as part of the general historical grid. The proposal integrates the actual archeological remains and those that will probably be found during future excavations or the implementation of the project into the public space of the city and are conceived as part of the public space project. Several **typological interventions** are proposed according to morphology, size and depth of the excavation, while a continuous cultural itinerary is marked through signs along the project area.



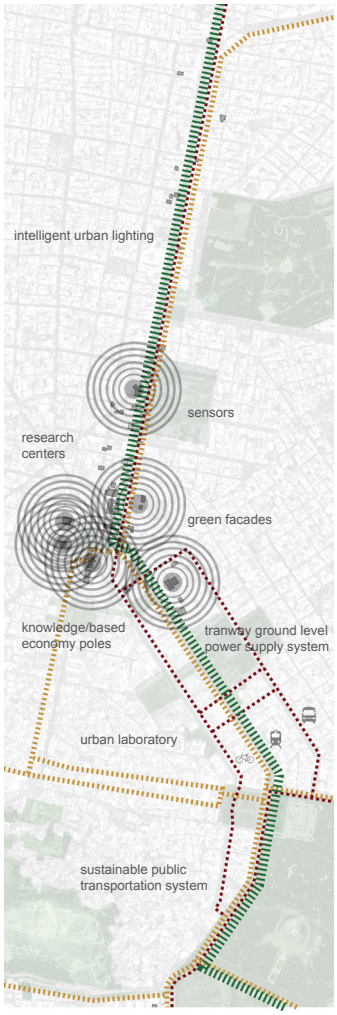
The above mentioned strategies aspire to create a vibrant center that reinforces the local character of the neighborhood and the multicultural character of the city.

2. THE BINDING SPINE

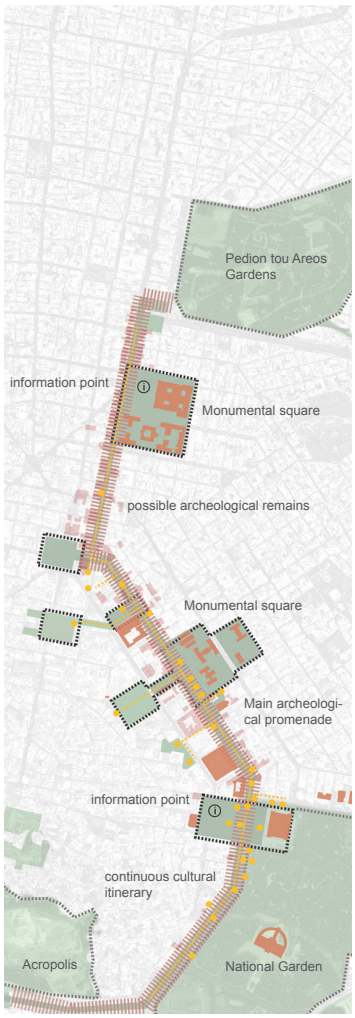
The objectives of the revitalization strategy make the axis of the project work as a spine that combines the different strategies and binds all urban elements in a unique articulated language proposal. The spine is a **multifunctional** spine and therefore it works as:



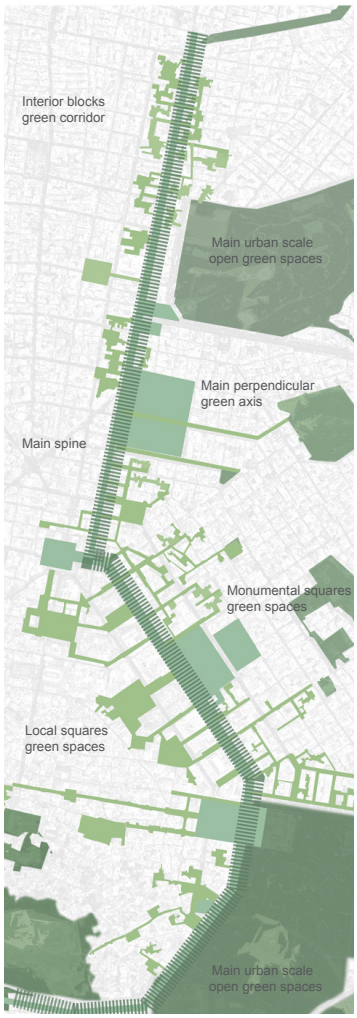
Social spine



Innovation and Sustainable mobility spine



Emblematic spine



Green infraestructure

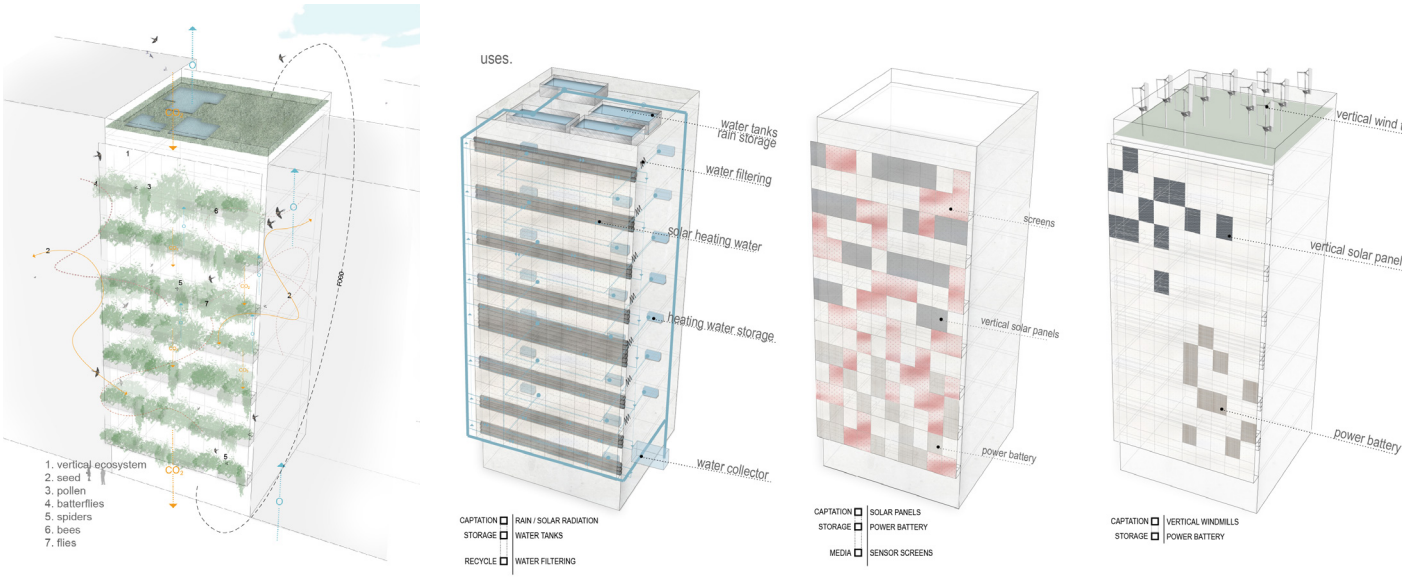
2.1. Social spine

The center's revitalization strategy gives importance in the use of local character public spaces for leisure activities, and to the squares for street activities related to festivities, fairs and markets combined with empty buildings for cultural and social activities. Giving back life in the street with the appropriate background infrastructure to support cultural and social activities, is fundamental to achieve a balanced center development around the spine that binds all spaces and activities together. In addition, the new community spaces in the interior of the blocks work as focal social points on a proximity scale.

Small square proposal enhancing local caracter public space.

2.2. Innovation and Sustainable mobility spine

The use of empty buildings, especially close to Omonoia square, such as offices, research centers or other business services and equipment related to new technology and knowledge creates new economic poles with an important influence ratio that will bring activity to the center. The implementation of innovative activities brings a new economy based on **knowledge, sustainable criteria** and **energy efficient city model** that makes the city competitive both on a national and international level. At the same time, the axis concentrates only sustainable **public transportation system** as bike, bus, tram and the existing metro lines.
The intervention area also becomes a laboratory of the new trends: building renovation to host these activities according to energy efficiency and ecological criteria (green facades, photovoltaic panels, sensors for light and temperature regulation, etc.); energy efficient urban space management systems based on sensors (smart traffic lights, intelligent urban lighting and urban waste management solutions, intelligent parking management solutions, real time traffic information and traffic management optimization, etc.); innovative ground level power supply system for the tramway used in certain points of intervention area in order to avoid overhead wires, etc.



Building renovation strategy: existing buildings as insertion points of artificial ecosystem and ecological modules (energy reception, recycling and storage).

2.3. Emblematic spine

The project reinforces the axis' **monumentality** as an important connection spine between archeological spaces of great significance, archeological remains found along the spine, monumental squares and important neoclassical buildings. The spine, a landmark itself in the contemporary city, is the element that binds most important parts of the past, and therefore, reinforces the identity of the people.

The spine integrates emblematic elements into the public space design.

2.4. Green infrastructure

On the basis of the understanding of the city as an ecosystem, and the importance of green space connection on different scales, the vegetation intervention is based on the idea of creating a balanced green public space system that work as a biotops that enhance the urban ecosystem connectivity.

Panapistimiou axis in the new ecological corridor

3. THE PUBLIC SPACE PROJECT

3.1 The intervention area

Public space has been an essential collective place directly connected to everyday life in the history of Athens. It was here where the *agora*, the heart of public life of the ancient city and the birthplace of democracy, was established. Agora was the place where people would gather, transact business, talk about politics and philosophy and create relationships in informal and unpredictable ways. Nowadays' dense built environment has made public space lose its original character of collective social place. The need for places inside the urban fabric where people can meet and socialize is our concern and priority. In that sense, the boundaries of the broad area of the competition is changed in order to include spaces that we consider essential so that the revitalization strategy targets are achieved. Consequently, the intervention area conglomerates, apart from the main spine and its monumental squares, all potentially public and non-built spaces like small squares, public building gardens or terraces, pedestrian streets and community spaces of interior blocks. All these places can interact and regain the social essence of Greece, by which its people and its history are characterized.

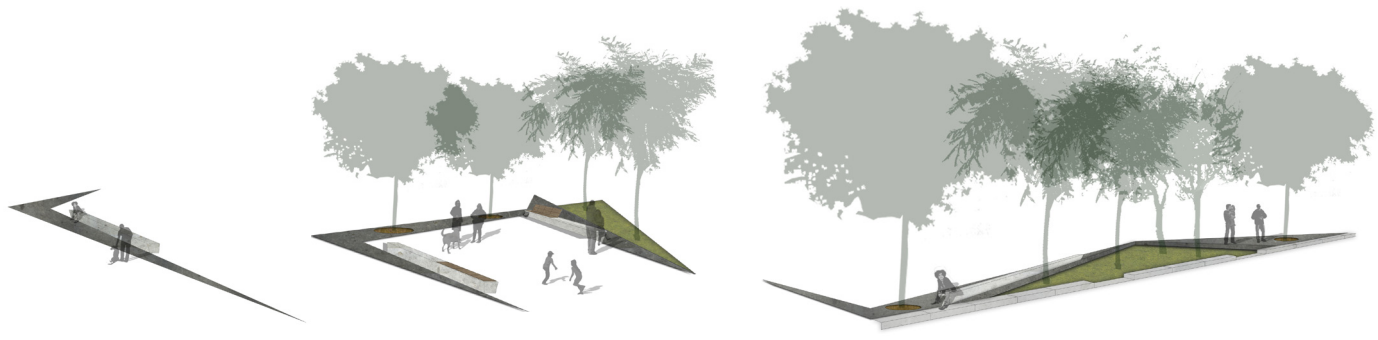
The limit is also extended through the main axis up to Aeropageitou Street, and consequently Acropolis, and Aigyptou square up to Pedio tou Areos, so as to connect main open public spaces of great social and cultural importance.

3.2 The cropped lineal element

The main binding spine forms a green promenade with sequence of different public spaces and variations according to section typology. At certain points of the spine a lineal element, recognizable all along the spine, organizes public space, urban functions and furniture. This element contributes in giving an image of unity and helps understand the project as a unique proposal despite its large intervention area.

All along the spine, the lineal element is transformed from horizontal surface to green areas limit in the form of a wall or a bench, creating different levels, it directs the view to certain points, and it is transformed into other materials or elements like wooden surfaces, pergola or other architectural elements.

At the binding points of the main spine with the perpendicular streets that lead to secondary local structure spaces, the element is cropped directing and driving the attention to these streets that lead to entrances of interior blocks or local squares. In this way, the lineal element insinuates that there is something there and invites people to turn, so as to discover what it is. In the squares the lineal elements open viewpoints to monumental buildings and directs people towards them.



The cropped lineal element applied to different situations along the binding spine and squares.

3.3 The spine

The project along the spine is based on the idea of a **green image** of the spine with a maximum of permeable ground and vegetation. This is achieved with tram's green base, continuous trees surroundings that work as infiltration swales, green permeable surfaces all along the spine, squares and interior blocks, with herbaceous plants and trees. In the intervention area an effort has been made to preserve the maximum of existing trees, providing they don't interfere in the project's main objectives.

The sidewalks have the maximum possible width with minimal interventions in order to enhance public space, while the cropped lineal element helps to create different micro-spaces along the spine.

There are five main **typological sections** along the spine:

- **Amalias Avenue**, with both walkways enlargement and green tramway. Here a considerable enlargement of the walkway at the side of the National Garden transforms this area practically into a promenade. Both walkways contain continuous tree surroundings that collect rainwater from the avenue, while green surfaces and lines of trees, organized by the lineal element, create variation of new comfortable pedestrian areas all along the avenue.

- **Panepistimiou Street,** the new emblematic promenade, with an exclusive pedestrian use, but several section variations to increase the interest of the visitor. The Panepistimiou axis integrates the tram line into its section, while the cropped lineal element organizes the public space and creates small places inside the main spine, and directs the view to the secondary structure of the intervention area.

The grass line green tramway, the system chosen to implement all along the spine, gives an even more green image of the spine while the grass vegetation is composed by plants adapted to the climate and resistant to drought, contributing to the sustainability of the proposal. In front of the monumental squares, like the trilogy and archeological museum square, the green tramway is interrupted and the tramway area is a continuation of the square's pavement, while the tramway uses at these areas a ground-level power supply instead of overhead lines.

Parallel to the tramway, a continuous double direction bicycle lane is proposed, limited from the tram on one side and from a line of trees that provide shadow on the other.

Here again the green surfaces that host the trees correspond to infiltration swales that collect the superficial water.

• **Three typological sections in Patision Street** depending on number of traffic lanes and, as a consequence, sidewalks width. Patision also includes a bicycle lane, a green tramway and infiltration swales into its section. At the point of crossing with Panepistimiou, it maintains only one bus line and gradually the street's width is increased to include up to four traffic lines. All along the Patision axis, a continuous line of poplars works as a limit between the bicycle lane and tramway, providing shadow too. The sidewalks are widened as much as the traffic circulation permits and, like in the whole intervention area, an attempt to maintain a maximum of existing trees of the street is made. The intervention ends at the point where Patision Street meets Egiptou square, there the proposed square serves as the entrance to the monumental gardens of Pedion tou Areos.

Typology section in Patision street from Panepistimiou street until the Archeological Museum.

Typology section in Patision street over Egyptou Square.

3.4 The squares

Minimal spaces are the key concepts that can enhance the buildings' neoclassic architecture. The idea here is based on minimal pavement intervention with discreet colors that let the buildings to be seen. The vegetation is very low, like herbaceous plants, and very tall, big trees, in order not to beon the eye level and they are organized in groups so that they are not obstacle to the buildings. Most existing trees at the squares are maintained and several new are introduced, basically at Omonoia Square. The cropped lineal element in the squares creates slight level surfaces, or limits for the green areas surfaces, organizes urban furniture and directs to main emblematic elements.

3.4.1 Trilogy

The Trilogy is a **symbol** itself, a landmark of the city of Athens. The intervention here searches a modest way to establish a **harmonic dialog between the old and the new**. All surrounding urban elements direct the view to the buildings of the square, while almost no new trees proposal is made. The square, except from certain green surfaces that organize existing vegetation in groups, is left as clean as possible in order to **enhance its neoclassical architecture.**

As far as the courtyards of the neoclassical buildings are concerned, they maintain their geometrical form, material and shape but their proper use as public space is emphasized to embrace a more interactive social meaning.

Specifically, the courtyards in front of National University and National Library of Athens are transformed into elegant grass frames planted with specific grass resistant to being stepped on so that people can walk on and lie down on it. At night, these frames are emphasized by the lighting arrangements, which consist of illuminated bands sets into the ground beneath the continuous marble edges.

The trilogy urban space proposal with discreet intervention that let the neoclassical buildings to be seen and establish a dialog between old and new.

The water element is introduced into the square by the transformation of the courtyard in front of Athens's Academy into a water mirror of only few centimeters thick where the frame of the impressive neoclassical building is reflected. Aside from a unique perception the water mirror invites people to explore the square and enjoy its monumentality seated on the original marble frame of the courtyard that makes a continuous bench around the water layer.

Consequently, the Trilogy Square that works today more as an important touristic spot and a transit zone for citizens becomes a place of gathering, a place to stay, meet, talk, walk and lie on the grass admiring the monumental architecture.

3.4.2 Omonia Square

The current situation of Omonia square reflects the center's need for revitalization. The design of the square is based on inverting this currently insecure pole of the city into an interactive public space and economic pole with local commercial activities, innovative buildings facades and vegetated resting areas.

Omonia Square trasformation into a new economic pole and interactive public space.

The design is restricted by the presence of the underground and by the actual levels of the ground derived from it. The entrances to the underground are maintained, as well as the ventilation grating and the higher levels of the slab structure, so that the construction is carried out without interrupting the everyday underground services.

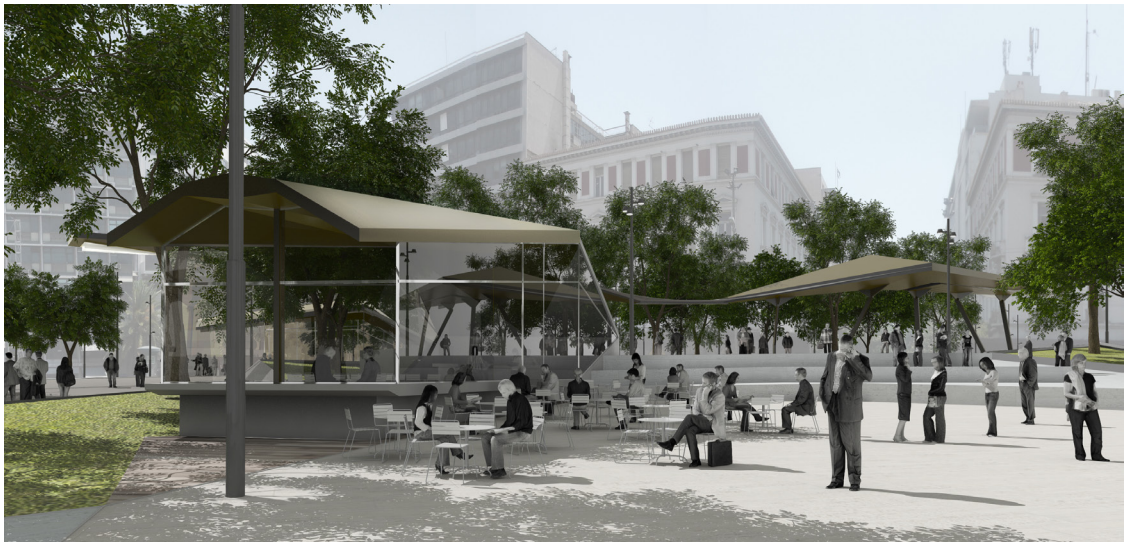
The main pedestrian circulations acts as design lines for the new spatial organization; perpendicular circulations shape internally the circulations of the square. Omonia's main promenade which is the continuation of Panepistemiou axis includes green areas, resting areas with benches, a big pergola along its main internal promenade, and a water fountain for children to play.

Omonoia Square proposal. New green resting areas are created in the square with low herbaceous plants and trees, in order to create light and secure spaces.

Current Omonia's level configuration, due to the underground presence, acts as a design element that determines tree different spaces inside the square; In the first one, related to the Stadiou street, the intervention has reinforced the relation between the square and the commercial street. It would incorporate activities related to the daily commercial and street life, including a new newsstand and bus stop area. The second area, situated at the level of the underground ventilation grating, would function as the main promenade, as well as resting area. A series of inclined surfaces creates a new topography with enough depth of soil to be able to plant.

Omonia Square proposal section with the level configuration and relations between the square and commercial streets

The proposal of Omonia Square looks for the connection between the actual walkway with the third area of the intervention, at the lowest level of the square. This area, in relation with the emblematic cafe NEON, seeks creating a new pole of leisure activities, gathering together existing cafes and commercial areas with the proposed new cafe pavilion. The transitions between different levels of the square are resolved with a stepped terrace that acts as a resting area in relation with the leisure areas.



New cafe pavilion and the new pole of leisure activities at Omonia Square

3.4.3 Squares' outdoor activities

Squares are, at the same time, the focal points of people's socialization. Therefore, they combine resting areas with street activities according to the character of each place. Omonia's Square, for instance, can concentrate weekend and festivities trade market that can give periodical activities to the square. In Klathmonos Square, that has a more local character, a crafts market could be organized, while Dikaiosinis Square could have a more social character, converting the main public building in a social – cultural center and providing the square with a periodical book and antiquities market. The Trilogy and the Archeological Museum Square have a strong monumental character so no further street activities are proposed. Sintagma square, the arriving point of many tourists, is equipped with a city's information point.

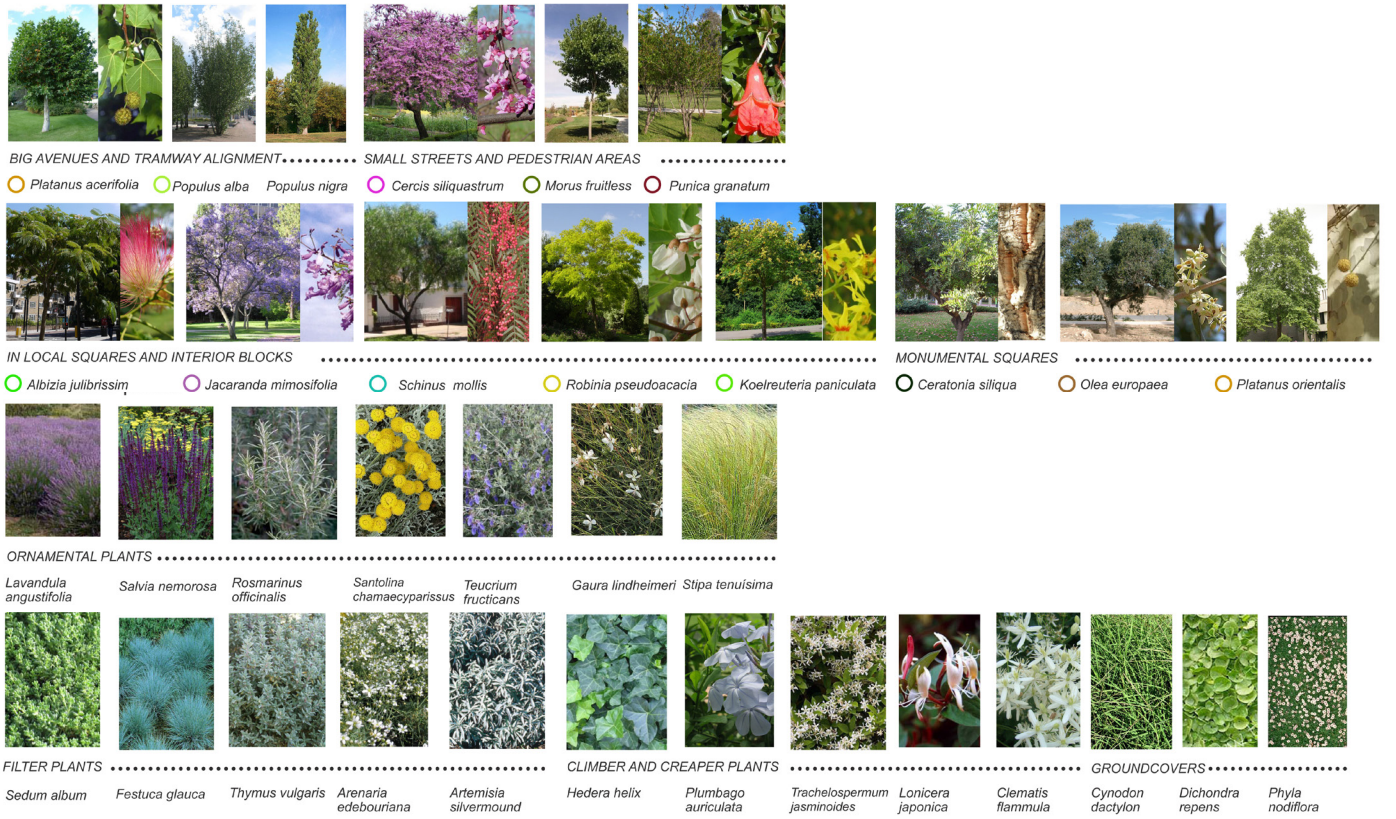
Dikaiosinis' Square public space proposal with the weekends' book and antiquity market.

3.5 Materials

3.5.1 Softscape

- Vegetation

The spine should be as green as possible in order to work as a **green corridor**. This is achieved through maximization of permeable areas replete with big variety of all vegetation stratus. The chosen vegetation combines native plants with those adapted to mediterranean climate and harsh urban conditions. The criteria for their selections are their low need for maintenance and water needs. Big tree variety, combined with existing trees, shrubs and herbaceous plants add to a rich vegetation proposal. Combination of deciduous and evergreen plants and flower colors are also design elements.



The vegetation palette of the project

3.5.2 Hardscape

- Pavements

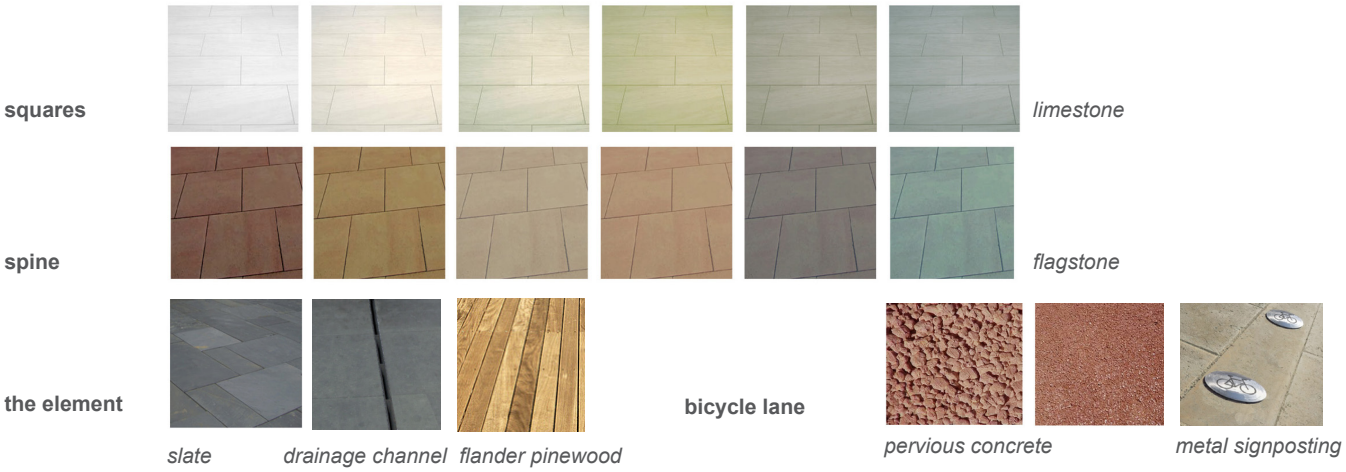
The pavements are basically divided into two categories according to their location: Natural paving stones for the main squares and prefabricated eco-flagstones for the spine, perpendicular streets and local squares.

The squares pavement consists of an elegant treatment of natural paving stones of slate and limestone with combination of the mediterranean palette colors inspired by the local stones of the surrounding mountains. Some marble stones of the existing pavement are also recycled.

Along the spine, perpendicular streets and secondary intervention structure, mediterranean color palette of big eco-flagstones are applied. They are non-slip resistant flagstones that are moreover ecologic, as they are able to reduce air contaminants. Furthermore, their big size, gives an optical effect of spaciousness.

The cropped lineal element corresponds to natural slate tiles of dark gray color. It is applied as a pavement and as surface cover in case of three dimensional elements as walls and other limits. The element also is converted occasionally into bench, which is an acid-edged cast stone of beige color that can include wooden seats with or without backrest.

All along the bicycle lane, colored pervious concrete is applied. It is a system of aggregate particles that is highly permeable and drains quickly. This surface increases the permeable surface of the green infrastructure.



Proposed paviment palette

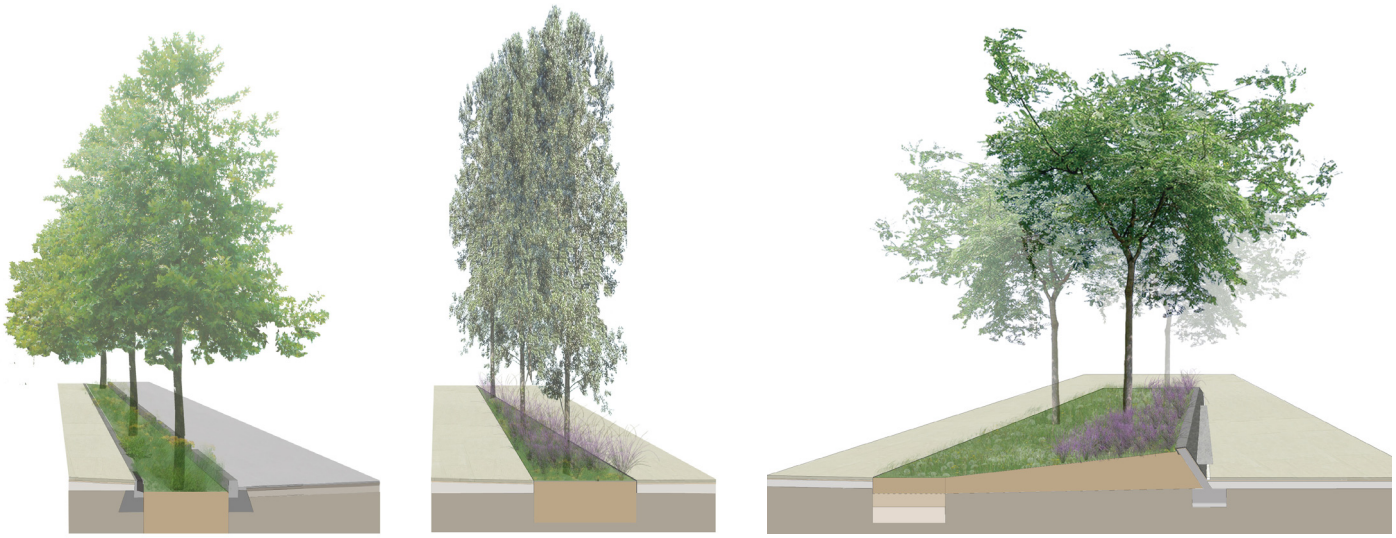
- Tree surroundings

There are three main types of tree surroundings:

1. Vegetated infiltration swale. They are applied all along the spine mainly between the curb and the street. The growing vegetable medium is some centimeters lower than the street and walkway level, so as to concentrate the rainwater from the streets and walkways and infiltrate it into the ground. This system is also applied on green surfaces of Panepistimiou between the bicycle lane and the walkway.

2. Continuous tree surroundings of several triangular forms at walkway level, with several herbaceous plants at the ground level.

3. Circular and rectangular tree surroundings, applied on cases of individual trees.



The vegetated infiltration swale

The continuous tree surrounding in different situations

- Urban furniture

Urban furniture like benches, fountains, bicycle parking, barriers, railings, pass markers, litter bins etc., are selected according sustainable, low maintenance and antivandalism criteria.

- Urban illumination

We propose a unique system of streetlamps recognizable all along the intervention spine. The streetlamps are adjustable to different heights, lighting and designs, according to public space typology. The design is discreet, with great flexibility as far as height and orientation are concerned, making it suitable for pedestrian streets, sidewalks, streets, small or big squares.

We go for fostering the city's image and character through Special Lighting of the monumental buildings, creating at the same time enjoyable and safe places during the night.

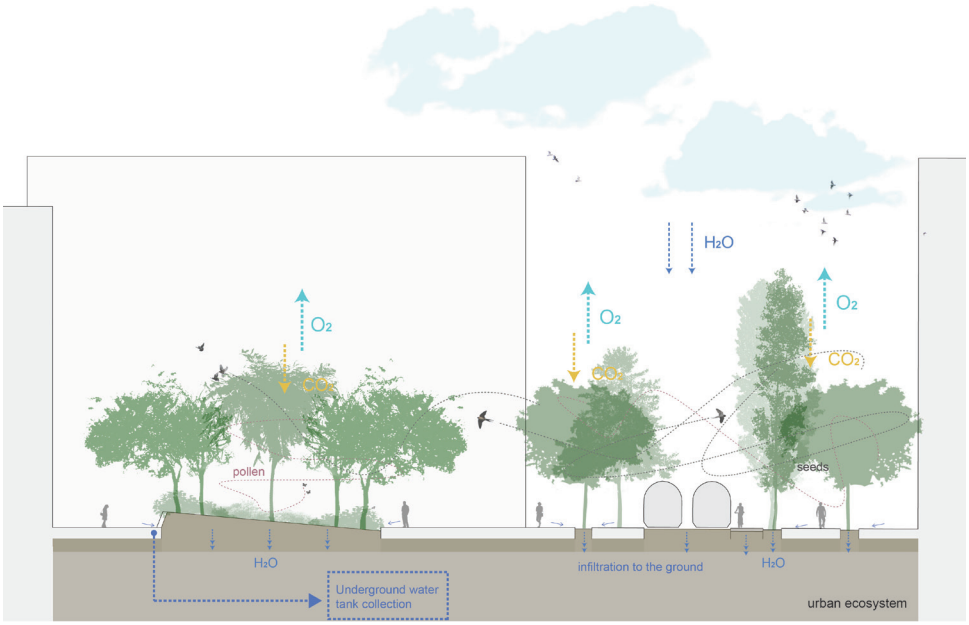
3.6 Sustainability and Energy efficiency

3.6.1 Sustainable design

The whole intervention design introduces a new city model with an efficient and sustainable urban management.

The vegetation works as a local microclimate generator, while its great variety increases the biodiversity of the city. Trees work as an umbrella to sun's direct radiation, totally essential during the summer period, and they absorb the harmful pollutants of the air. The green surfaces contribute in reducing the urban heat island effect, providing a permeable surface for rainwater to infiltrate, and reducing pollution. Energy efficient systems and green facades applied over buildings help to thermal isolation, create small biotopes and beautify the image of the city.

The public space water management is part of the design. A strong intent of maximizing permeable surfaces using appropriate systems and materials is made so that public space water is not wasted in the sewage system.



Proposed Athens' urban ecosystem diagram

As far as the materials are concerned, the eco-flagstones have the capacity of reducing air contaminants produced by cars through a chemical reaction in presence of oxygen and light that transforms contaminants into no toxic elements. In this way, they improve the quality of the air in the city.

In parallel, pervious concrete bicycle lane's high porosity is capable of capturing rainwater and allowing it to seep into the ground, reducing the possibilities of rainwater being runoff and recharging the groundwater.

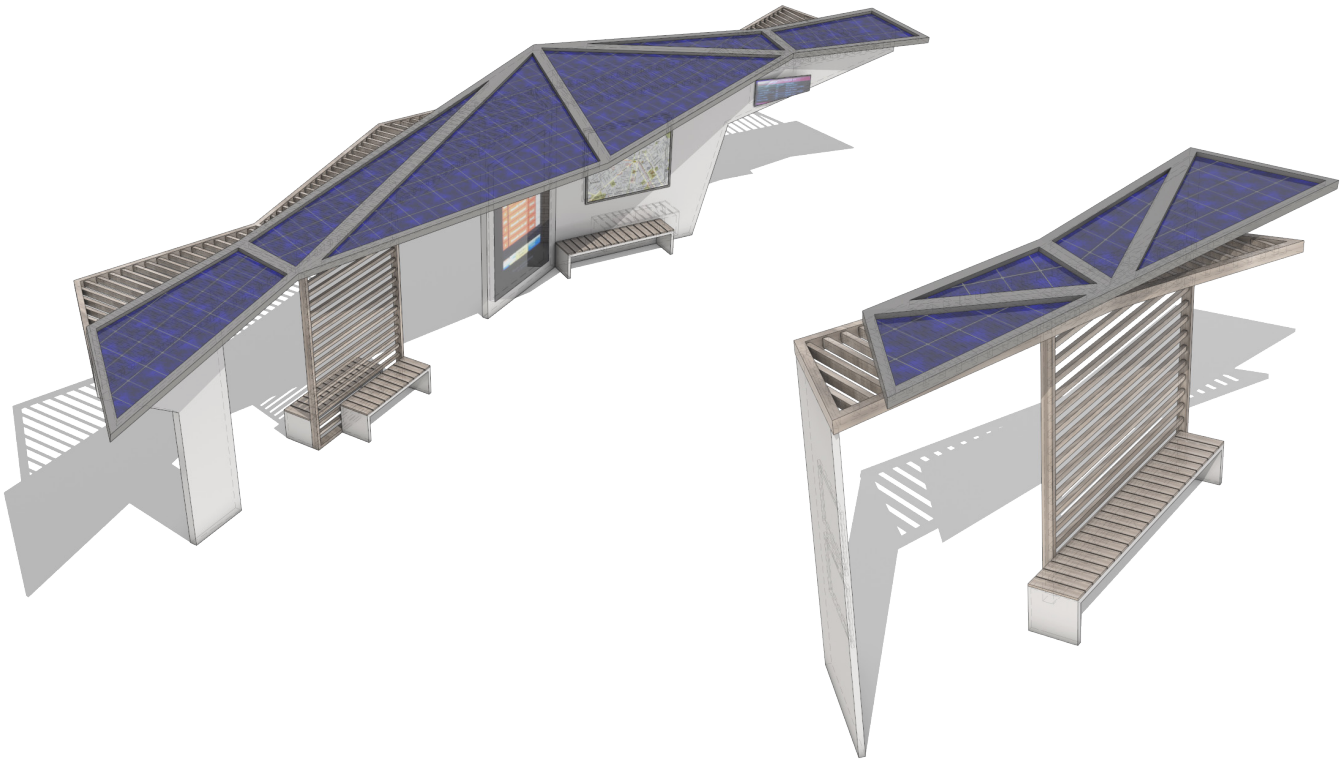
The project's intervention spine is a real sustainable mobility axis as it conglomerates all public transportation and bicycle lanes. Moreover, the whole intervention logic and new circulation reality of clearing the center from traffic will decrease the actual pollution and traffic jam and consequently, noise. In parallel, the new innovative methods for energy efficiency in urban space contribute in a more sustainable city.

3.6.2 Energy efficiency

Athens has sunshine throughout most part of the year so it is an ideal place for the development of photovoltaic solar power. According to an energy efficient lighting system, the solar bus and tram stops are run by solar cell technology that stores energy during the day and uses it during the night.

Photovoltaic solar arrays are proposed to be introduced on existing buildings, either as sunshades to create shadow, reduce cooling load and glare or become integrated on roofs or onto the exterior skin of buildings.

The chosen urban illumination, with Starlights Certification, is also a sustainable lighting system that cares for energy optimization and nightscape preservation. It is based on a double lighting system included in one streetlamp of two different Led technology sheets that gives an efficient lighting during the activity hours, and it is adapted to an innocuous lighting during dawn. This system reduces the urban lighting pollution, saving in total up to 50% of energy compared to conventional city lighting. In addition, sensors can be included in the streetlamps to achieve greater energy benefits.



The tram and bus shelter design with the photovoltaic panels and the wooden pergola.

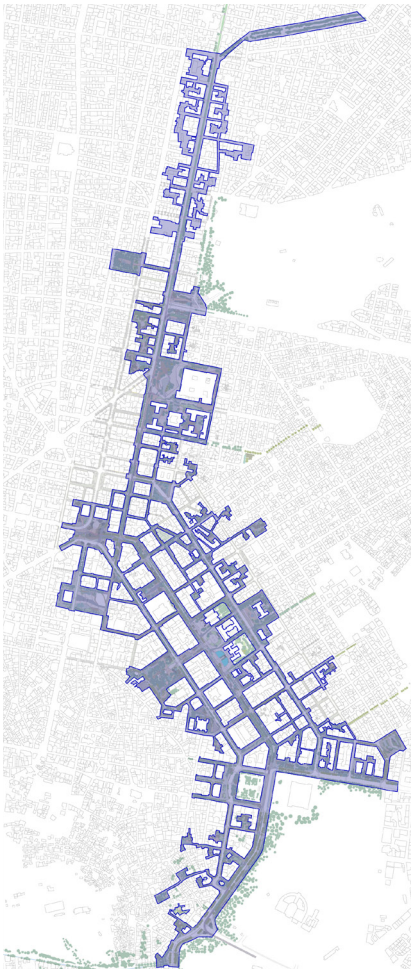
4. TECHNICAL AND ECONOMICAL FEASIBILITY STUDY

4.1 Geometrical definition

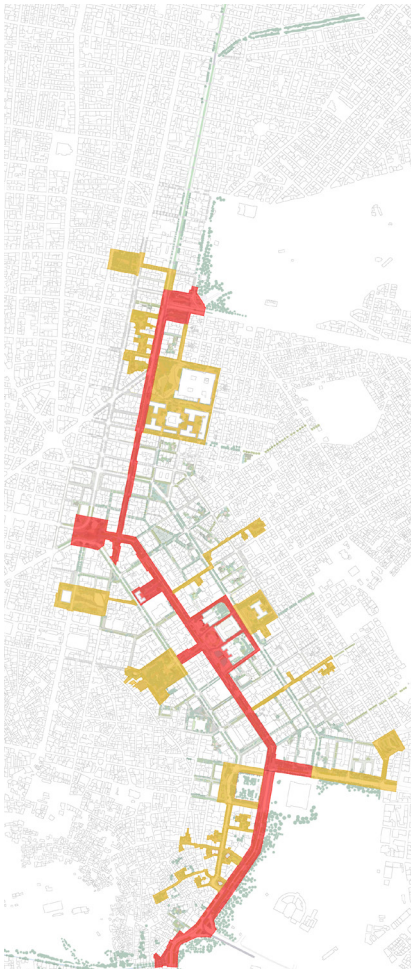
The road management and traffic circulation is basically the one proposed by the competition, in addition of some pedestrian streets in certain crucial for the proposal points. The new tramway, and a continuous bicycle lane cross the main axis of the project all along its length. The bicycle lane is also connected with the future metropolitan bicycle network.

Permitted perpendicular inclinations, and minimum permitted clear widths of streets and walkways are considered for the accessibility of pedestrian and handicapped persons, on one hand, and emergency vehicles on the other, as they are fundamental for the proper functioning of the overall system.

A constructive process by several phases is proposed prioritizing areas and facilitating the implementation in several independent parts so as to avoid the congestion of simultaneous construction works in the center of Athens.



Broad area of strategic intervention



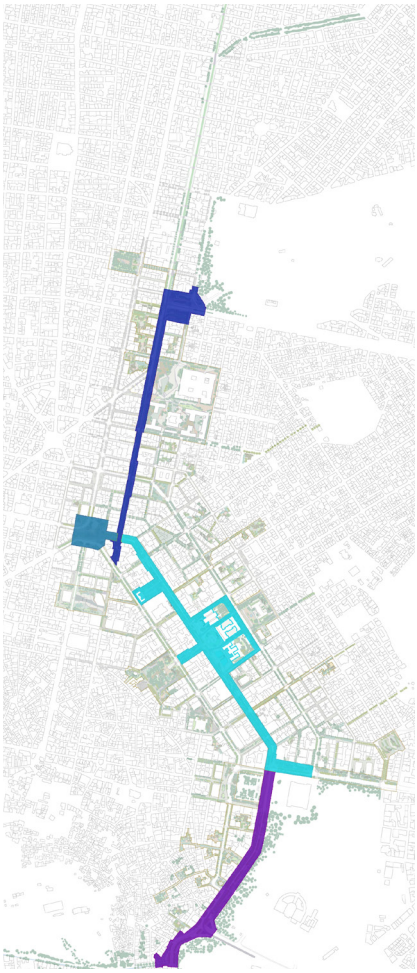
Priority areas:

Primary area:162.827 m2.

**Area corresponding to estimated budget .*

Secondary area: 182.599m2

Perimetral squares, local squares and perpendicular streets.



Construction phases:

Phase 1: 85.190 m2

Phase 2: 14.757 m2

Phase 3: 40.414 m2

Phase 4: 39.167 m2

4.2 Preliminary works. Demolitions and earthworks

As the project is concerned with the reconstruction of the urban space of existing streets, squares and open spaces, the preliminary works involve mainly the elimination of the existing pavements, urban furniture and road and urban infrastructures in order to adapt it to the proposal.

The project is adapted to current topography in order to minimize the earthworks. The earthworks derive from the implementation of pavements, as the existing heights are adapted to those of the project, and from the ditches performed in order to host the necessary urban installations. Land movements do not interfere, in any case, with the underground infrastructure system along the axis.

In the case where the previous works come across with an archaeological zone, the project is adapted to the area of protection, and the appropriate earth movements are carried out in order to protect the archaeological zone, and guarantee the stability of generated slopes accordingly.

4.3 Foundations and retaining walls

The foundations and retailing walls proposed derive from the archaeological interventions and from the construction of the elevated green areas.

Among the different levels that could emerge from the archaeological sites, we propose two construction solutions to guarantee the stability of the site; the first one consists of a vegetated slope with a maximum of 3 horizontal -2 vertical proportions. When the space is not enough to form a vegetated slope, a surrounding reinforced concrete retaining wall would be placed. The wall, made of A HA-25/P/20/IIa concrete and B 500 SD steel reinforcement, is placed above a 10 cm HA-15/P/20 poor concrete layer. Water drainage and a waterproofing sheet are placed in the wall surface in contact with the ground.

For the elevated or sloped green areas a small reinforced concrete wall is applied, with the same characteristics as described above, finished with natural stone veneer.

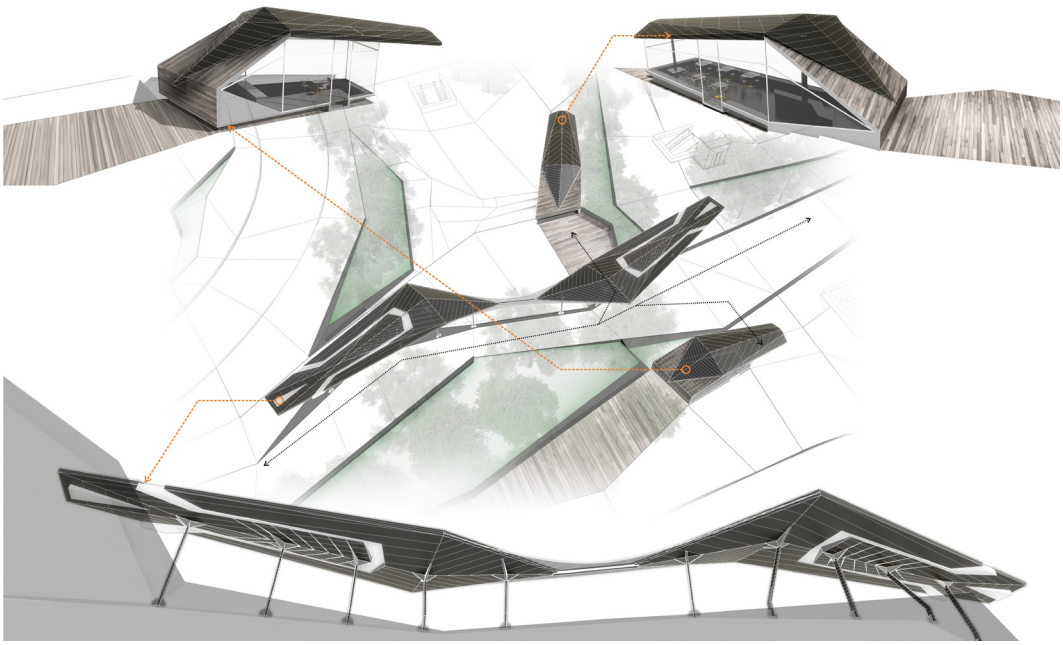
4.4 Architectural elements

4.4.1. Canopy at Omonia Square

The canopy is supported on metal columns of rectangular profile 7X30cm that are attached to the ground in an embedded concrete foundation 60X60X120cm. The main body of the canopy is made out of lightweight metallic sheets, CNC cut and folded. The sheets are supported by an interior metal truss (members profile: 5X5cm) that transfers all the loads to the vertical columns. Inside the body of the canopy are embedded linear electric lights finished with hard plastic.

4.4.2 Cafe and kiosk at Omonia Square

The roof of the cafe and the kiosk at the Omonia Square are constructed in a similar manners to the main canopy: Metallic sheets supported on a metal truss which in turn is supported by 2 metallic columns. Their base is made out of reinforced concrete and the enclosure is defined by a glass curtain wall supported by metal mullions.



Omonia Square architectural elements proposal.

4.4.3 Tram and bus stop

The tram and bus stops are supported by a steel structure. Their canopy is composed by two members: A wooden horizontal pergola and a second element made out of folded metal sheets. On top of the metal sheets are positioned solar panels that produce enough elements to support the power needs of the stop. Sitting is provided by a steel bench cover with wood. Both stops have embedded electronic systems providing information for the city and the tram schedules.

4.5 Pavements

4.5.1 Natural stone

Natural rectangular paving stone of slate and limestone of 60 x 40 x 8 cm is applied in main squares, in cream, blue, yellow, brown and gray color. They are placed on a 20 cm permeable layer of gravel of 0-32 mm over a previously compacted leveled natural soil with 3 mm joins of fine sand of 0-1,25 mm.

The cropped lineal element is also a natural dark gray stone of slate cut in special forms according to the design. When it is paved the installation procedure is the one described above. In case, it is a wall 2 cm thick tiles are placed over reinforced concrete wall that is made “in situ” and are fixed with mortar for cladding of 2 cm.

4.5.2 Prefabricated pavement

Along the spine and secondary intervention structure mediterranean color palette of rectangular eco-flagstones are applied in a combination of 120 x 80 x 12cm and 80 x 60 x 12 cm with 3-6 mm joins. Their colors are similar to that of the natural stones. They are placed on 3-4 cm layer of soft mortar and sand, over a 20cm thick concrete base and a previously compacted natural soil . Pavement joins up to 3 mm of fine sand of 0-1,25 mm.

The pervious concrete bicycle lane consists of a high porosity 15 cm thick permeable concrete placed through sliding formwork pavers over a 10 cm permeable sub-base that has a special method of compaction.

4.5.3 Joints between pavements and edge elements

- Metal joints

Between different material elements and as an element of the design, metal edges are used on the paved ground. They consist of galvanized steel edges 8 mm thick and 200 mm height, with metallic elements of anchor soldered to the board, placed over concrete base HM-20/P/40/I.

- Curbs and dropped curbs

The curbs consist of half battered curb of prefabricated pieces of 100x28x17 cm with double layer. They are a combination of straight, external angle, internal angle and radius curbs according to street typology and are positioned over an 18 cm height concrete base. Special water erosion resistant drains type curbs, the scupper holes, collect the water on the sides of the roads, and directs it into the infiltration swales. Dropped pedestrian curbs of 100mm width and curbs for vehicles of 50mm width are formed by prefabricated pieces of 40x50x10 cm.
- Tree surroundings

The system mentioned before, for the separation of different materials through galvanized steel edges is used, also, for the circular and rectangular tree surroundings limit, and as a green surface limit too. In case of circular tree surrounds curved galvanized steel rings 5mm thick are used of two different diameters, 0,8 and 1,5 m according to space restrictions. The rectangular tree surroundings are 1,5 m long and 1 m width.

4.6 Protections and signposting. Archaeological areas intervention.

For the archeological sites intervention that could emerge during the construction of the project, a general design is proposed to define the limits and the signposting of the particular areas. It consists of Corten steel edges 3-5 mm thick, with different geometries and variable height, forming the railing, curb elements and signage in a continuous folding surface. The sheet is placed with metallic elements of anchor soldered to the board and placed over concrete base HM-20/P/40/I.

4.7 Vegetation plantations

Trees of different ages are supplied to maximize diversity and minimize simultaneous aging effect. They are supplied with root ball and plantation planning, so as to guarantee the appropriate seasonal planting.

4.7.1 Trees

Trees are distributed according to shape, size, shade, growth speed, foliage:

- Trees of fast growth and monumental size like *Platanus acerifolia* every 6-8 m, *Populus alba* and *Populus nigra* cada 4-6 m, in big avenues and tramway alignment;
- Round shape medium and small trees like *Morus fruitless, Morus alba, Cercis siliquastrum, Punica granatum* every 4-6 m, in smaller streets and pedestrian areas;
- Round medium and big trees like *Schinus mollis, Albizia julibrissim, Robinia pseudoacacia, Jacaranda acutifolia,* and *Koelreuteria paniculata* in 5x5 or 6x6 m net, in local squares and interior blocks;
- Native trees like *Ceratonia siliqua, Platanus orientalis* and *Olea europaea* - the symbol of the city - in the monumental squares.

4.7.2 Herbaceous and schrubs

Herbaceous and shrubs and aromatic plants are used in continuous tree surrounds and green areas of small and big squares like *Lavandula angustifolia, Rosmarinus officinalis, Treucrium fruticans, Santolina chamaecyparissus, Salvia nemorosa, Glaura lindheimeri* and *Stipa tenuisima.*

Several plants like *Arenarial edebourian, Artemisia silvermound, Thymus vulgaris, Sedum album, Festuca glauca* work as a filter in the vegetated infiltration continuous tree surroundings.

4.7.3. Groundcovers

For the tram base and groundcovers species like *Phyla nodiflora, Dichondra repens* and *Cynodon dactylon* are proposed.

4.7.4 Climber and creeper plants

Certain climber and creeper plants like *Clematis flammula, Hedera helix, Lonicera japonica, Plumbago auriculata, Trachelospermum jasminoides* are disposed depending on orientation on green facades.

4.8. Sewerage and drainage system

The sewerage and drainage system consists of a gravity system, where the slopes of the streets and surfaces are the key elements. The sewerage and drainage systems aim to provide correct urbanization conditions for rainwater evacuation. The sewerage system consists of general sewerage collectors that run through main streets, and are connected to the drains located on each side of the road, always at the low point of the street section. This system is connected to the city's sewerage. A 1-2% transversal slope is proposed in the streets to guarantee the recollection of water. For the squares, a design of steel linear drainage elements is used for the rainwater collection.
A second system of vegetated infiltration swale collects rainwater from main street and pedestrian areas, and is infiltrated into the ground. It consists of a vegetated surface some centimeters lower than the street, filled 30cm soil over two layers of gravel with different grain sizes separated by from filter fabric that has the capacity to infiltrate fast, in case of torrential rain, the typical type of rain in this climate.

4.9 Electrical installation and lighting

The urban lighting system is divided into sectors for better urban management. Different combinations of a gray color galvanized steel streetlamps of Philips Urban Scene are proposed. The columns are of 4 – 8 m or held by wire with 2 – 6 points of light, according to public space typology. A Philips Decoflood with two halogen lamps is used for monumental buildings' illumination. Surface mounted underwater LED lamps are placed for the illumination of the fountain, with stainless steel covering. The ground-bench lighting consists of a LED Flexible hose Microlux situated in a steel profile between the protected railing, and the green area, and anchored to the ground.

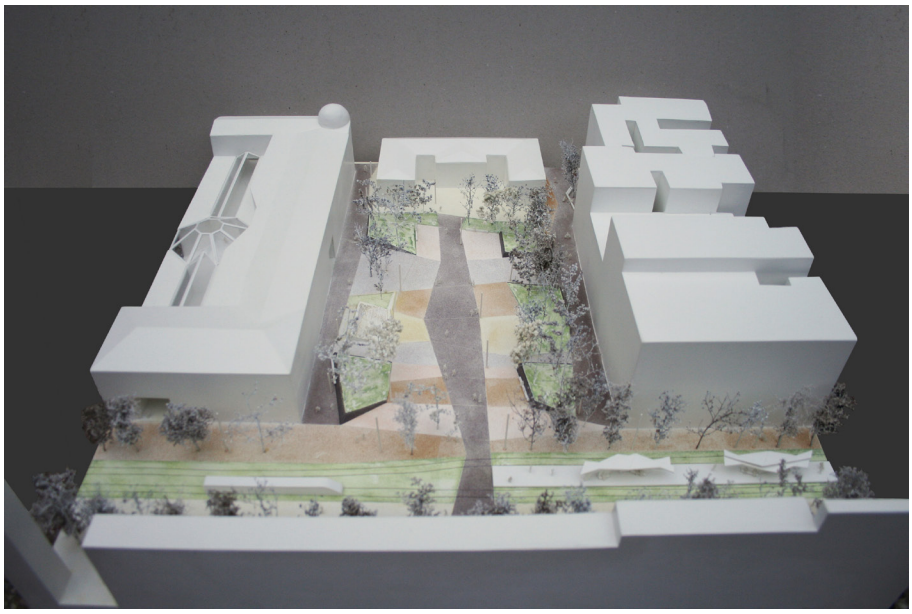
4.10 Irrigation installation

The irrigation system consists of drip irrigation for shrubs and trees, with tech-line tubes, combined with spray irrigation for fields and the tramway base. The system will be divided in sectors to optimize water consumption. An underground collecting tank allows the use of rainwater collected from streets to implement irrigation system, pumping it into the irrigation network.

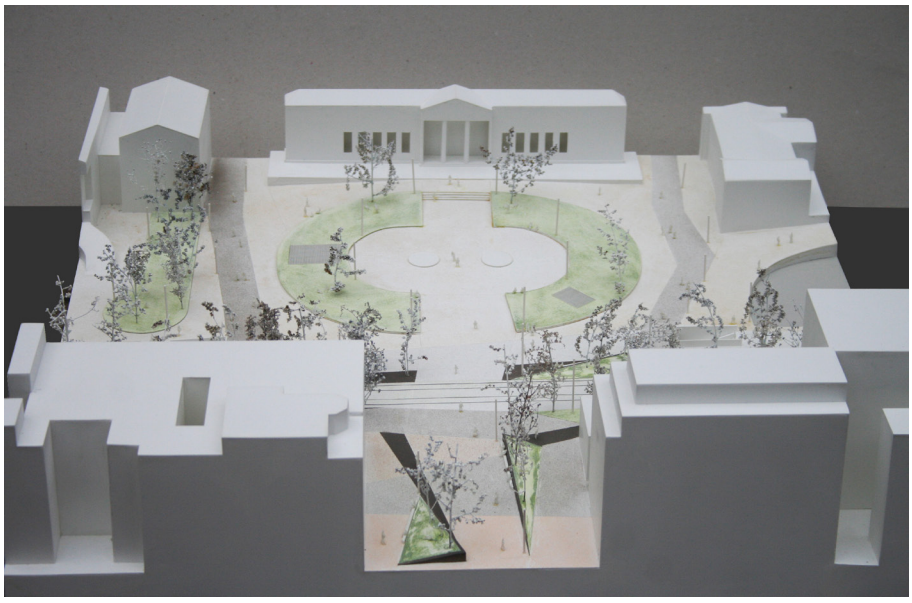
4.11 Estimated budget

Type of work	Price/surf. (€/m2 ,€/m)	Price/ unit	Surface (m2 or m)	Units	Total cost
1. Preliminary works. Demolitions and earthworks , provision of land, and level out of the surface.	8 €/m2		162.827m2		**1.302.616,00** €
2. Foundations and retaining walls.	100 €/m		1.668 m		**166.800,00** €
3. Architectural elements					
3.1 Cafe pavilion	1.550 €/m2		100 m2		**155.000,00** €
3.2 Canopy	400 €/m2		300 m2		**120.000,00** €
3.3 Bus shelter		5.500 €		16	**88.000,00** €
3.4 Tram shelter		8.500 €		10	**85.000,00** €
3.5 Kiosk pavilion	1.300 €/m2		50 m2		**65.000,00** €
4. Pavements It includes the pavement, base material, the leveling of the ground and junction elements, as well as the proportion of the attachments of rainwater collection, water supply and lighting installations.					
4. 1 Natural stone pavement. Urbanization works.	165 €/m2	43.342 m2			**7.151.430,00** €
4. 2 Prefabricated pavement. Urbanization works.	75 €/m2	96.436 m2			**7.232.700,00** €
5. Archeological areas intervention Protections and signposting.	230 €/m	528 m			**121.440,00** €
6. Urban furniture	10 €/m2		162.827m2		**1.628.270,00** €
7. Vegetation plantation It includes the proportion of contribution of land, fertilizers, lawn planting and irrigation facilities.	30 €/m2		20.930 m2		**627.900,00** €
7.1 Large- sized trees Supply and planting of tree(trunk diameter of 25-35 cm)		150 €		284	**42.600,00** €
7.2 Medium-sized trees Supply and planting of tree(trunk diameter of 18-25 cm)		80 €		710	**56.800,00** €
7.3 Shrubs Supply and planting of shrubs with a density of 4-6 U/m2.	20 €/m2		8.750		**175.000,00** €
8. Water mirror		45.000 €		1	**45.000,00** €
9. Deposit for rainwater collection and irrigation installation (50x30m)		800.000 €		1	**800.000,00** €
TOTAL COST ** Note: Prices include material supply, transportation on the site of the project and installation task costs. In the case of green areas, trees and shrubs the price includes maintenance costs until the delivery of the project.Total cost of the estimated budget doesn't include taxes.*					**19.863.556,00** €

Omonia Square



Dikaisinis Square

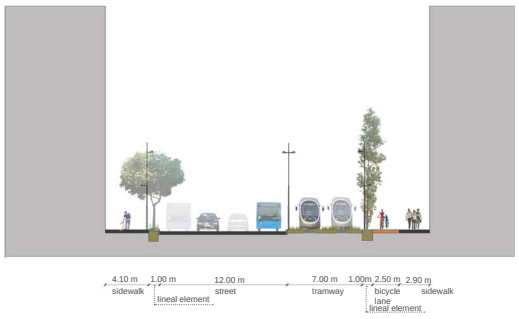


Korai with Panepistimiou junction

C.ANNEX TO THE REPORT

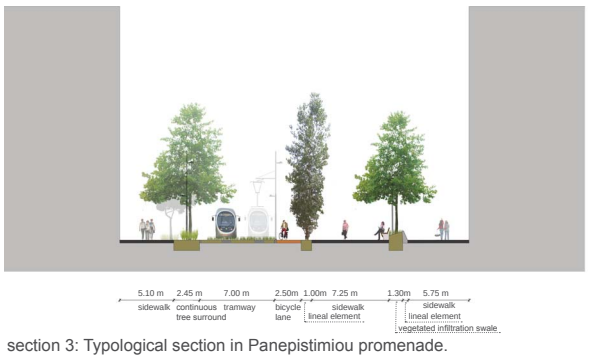
The proposal includes non-built spaces that can be found in the inside of blocks which can be converted into public, semi-public or community places. These new community open spaces can also host underground parking for neighbors. They form a secondary structure parallel to the main axis that creates neighborhood and works as ecological corridor, as veritable green network crossing the blocks.

A variety of typology sections create different atmospheres along the spine with the help of plants, pavement treatment and material colors.



section 1: Typological section in Patision street over Egyptou Square.

section 2: Typological section in Patision str. from Panepistimiou str. until the Archeological Museum.



section 3: Typological section in Panepistimiou promenade.

The beginning of Panepistimiou promenade. A green image of the city is achieved by maximum surfaces permeability including green base tramway, continuous trees surround, big trees alignments, permeable concrete bicycle lane. Large and comfortable sidewalks and modern urban furniture enhance public space and convert Panepistimiou in a focal point of the city.

section 4: Typological section in Amalias Avenue.

THE BINDING SPINE

_The main intervention area axis is understood as the **binding spine** that connects fragmented green and open spaces in a local and metropolitan scale. It is, moreover, a **multifunctional spine** as it is, apart from a green corridor, the emblematic, cultural and social center of Athens. The project transforms the axis into a real new green public space and a **sustainable mobility spine** where mixture of activities reinforces its multifunctional character and converts it to a vibrant center.

_The intervention area, apart from the main spine and its monumental squares, looks for the **proximity scale**, the neighborhood, for all the potentially public spaces like small squares, public building gardens or terraces, pedestrian streets and several interior blocks, where new green community spaces are proposed. The spine is the element that binds all places together.

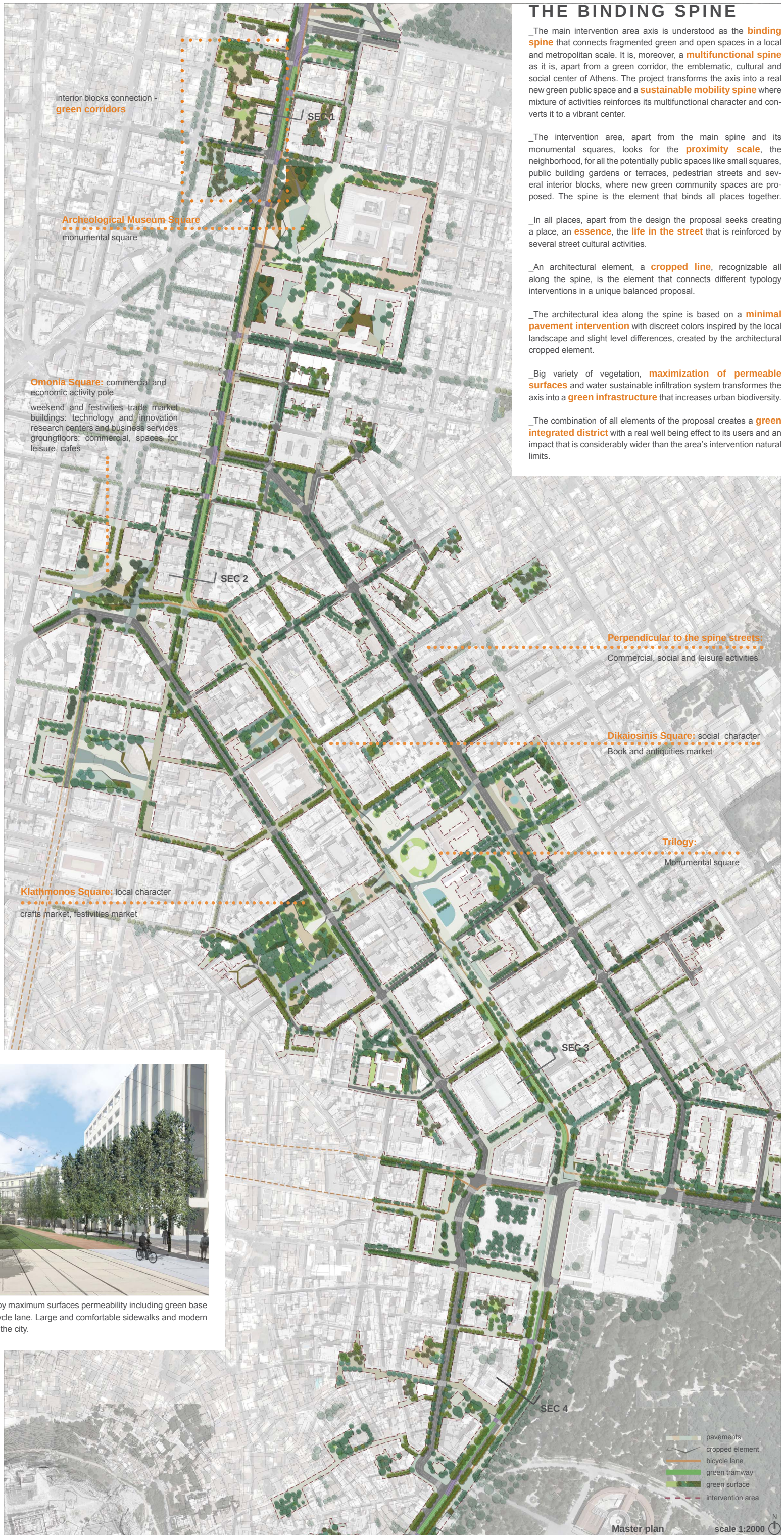
_In all places, apart from the design the proposal seeks creating a place, an **essence**, the **life in the street** that is reinforced by several street cultural activities.

_An architectural element, a **cropped line**, recognizable all along the spine, is the element that connects different typology interventions in a unique balanced proposal.

_The architectural idea along the spine is based on a **minimal pavement intervention** with discreet colors inspired by the local landscape and slight level differences, created by the architectural cropped element.

_Big variety of vegetation, **maximization of permeable surfaces** and water sustainable infiltration system transformes the axis into a **green infrastructure** that increases urban biodiversity.

_The combination of all elements of the proposal creates a **green integrated district** with a real well being effect to its users and an impact that is considerably wider than the area's intervention natural limits.



Natural metropoli`s structure

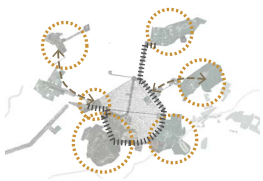
The city is understood as an **ecosystem** containing many areas of different characteristics. Citizens, like animals and plants, are part of this ecosystem, not alienated from it, and one another share it on an energy exchange basis over a material resource, which is the city and its surroundings. Open spaces and natural remaining spaces are **opportunity places** that can enhance various ecosystem conditions.

In the general planning analysis we look for the **natural city's structure**, for the green and open spaces that can work, with the appropriate intervention, as ecological corridors in a metropolitan scale and as spaces of comfort in the city, small **biotopes of biodiversity**.

Taking into consideration all the potential green and open spaces related to it in **local and metropolitan scale**, the proposal aspires to create a **green corridor** in the city along Panepistimiou axis.

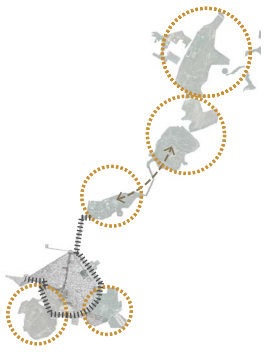
The main spines works as:

Radial green connection on a proximity scale



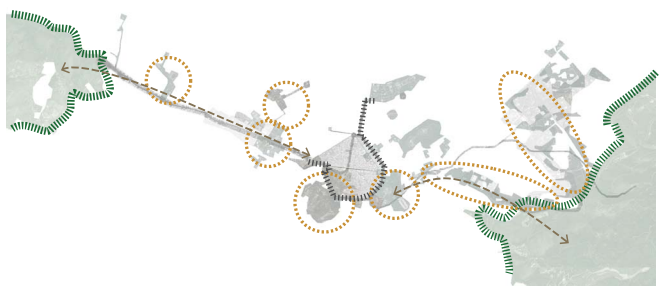
Urban open and green spaces in a **proximity scale**. These spaces are distributed in a radial structure along the old city center.

Hills connection: The continuity of the axis at north



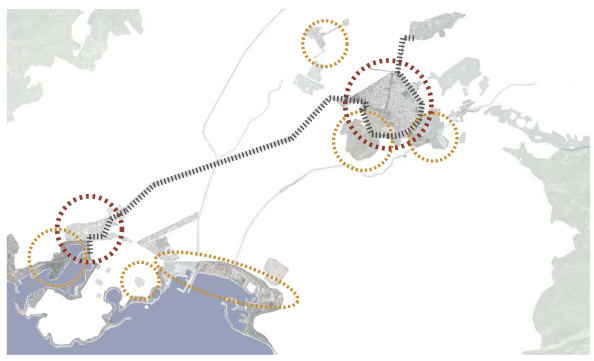
Special **orography fragments** in a larger urban scale. These are the hills, which are the most important natural spaces of the valley of Athens inside the city grid, undoubted landmarks and magnificent viewpoints of the city.

Perpendicular urban spaces connection with natural green spaces. East to west ecological connectivity



Natural systems in a territorial scale. A continuous green net of potential spaces that works as an ecological corridor which connects the mountains that surround the city. The broad zone intervention is connected to this continuous green system of ecological connectivity.

Cities' connection following the ancient wall mark that connected the two cities

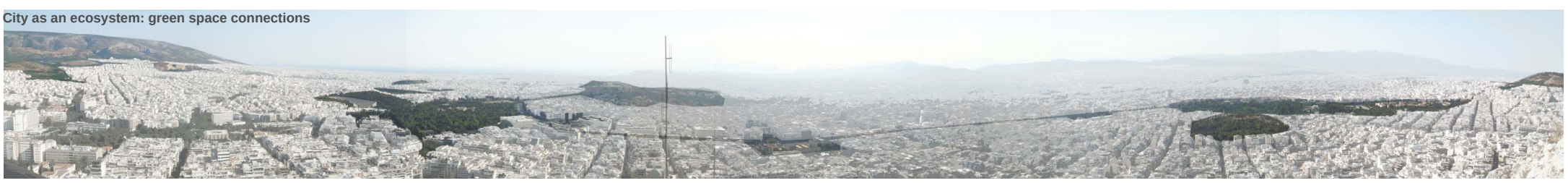


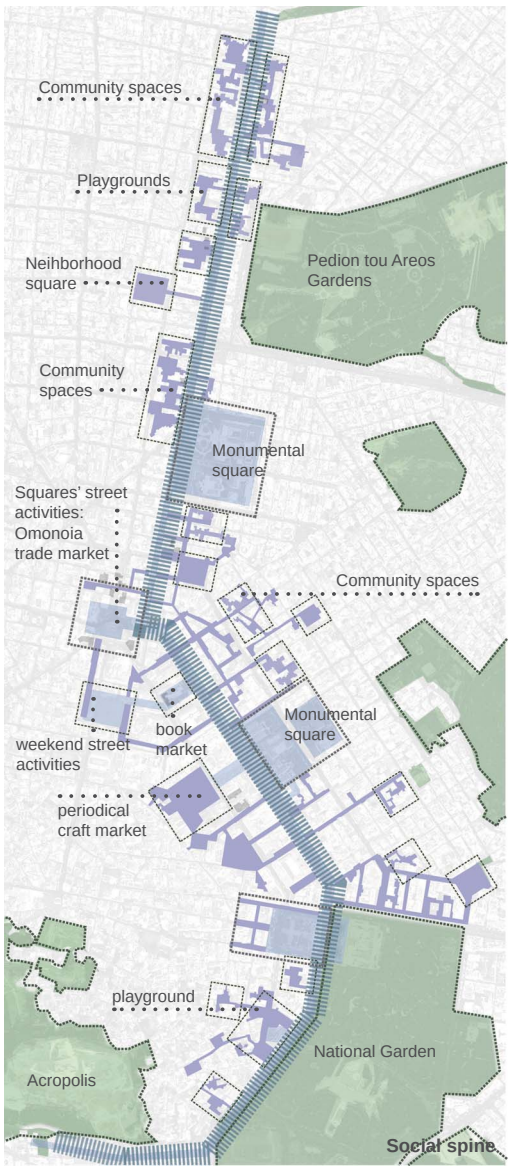
City Centers: The continuation of the spine towards south west connects the center of the city of Athens with the city of Pireaus, establishing at the same time an archeological sites connection of the two areas and in addition the city's connection with the sea.

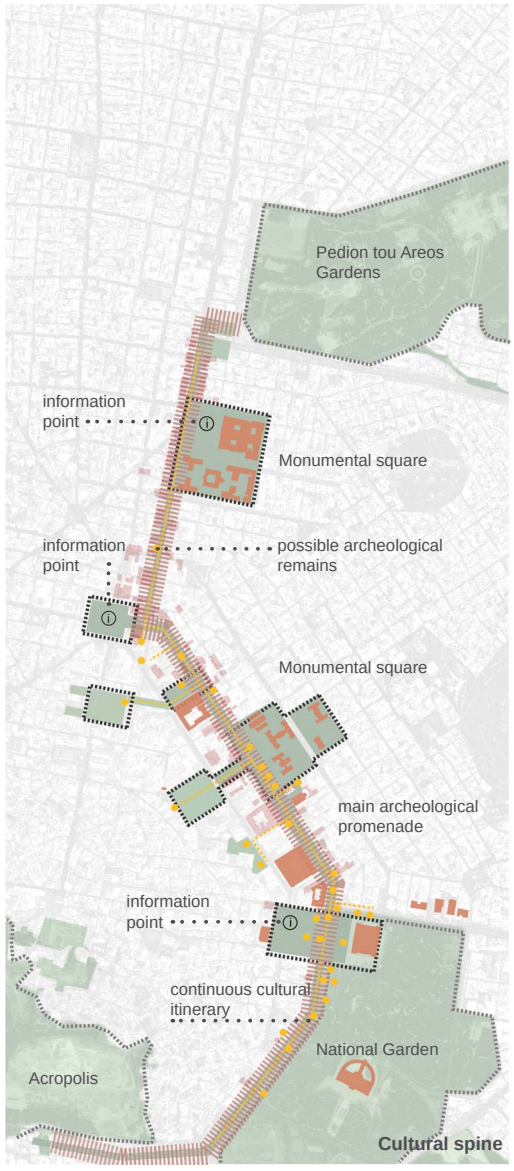
General center's revitalization strategy: multifunctional interconnected center

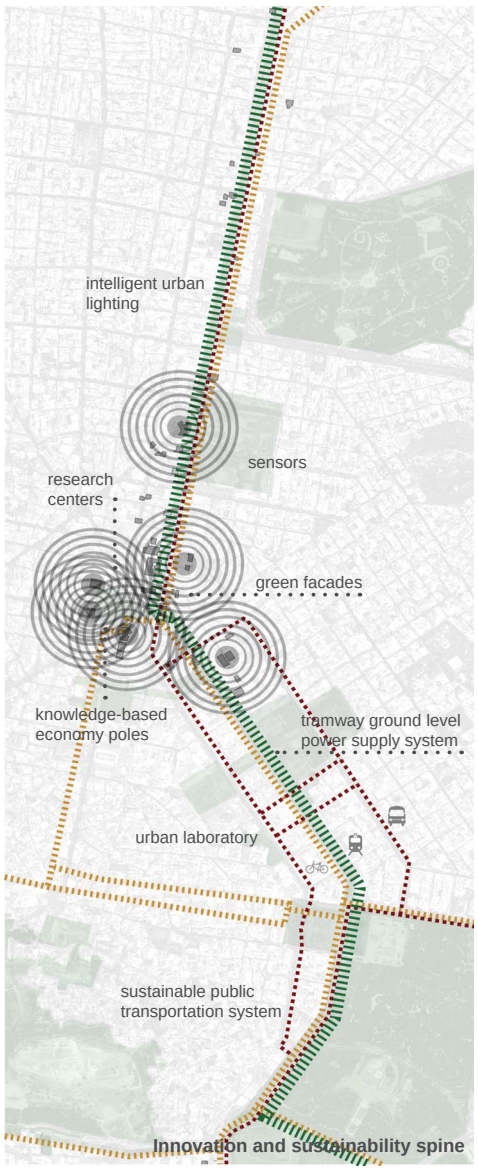
scale 1:4000

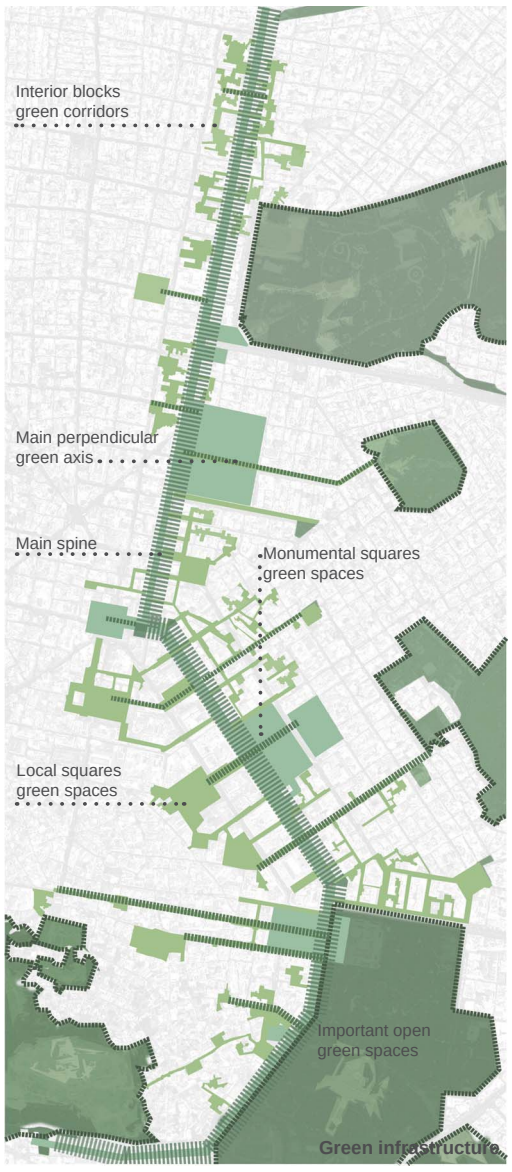
City as an ecosystem: green space connections











The proposal looks for the **local scale**; for the **neighborhood** in the center. According to this idea, **small squares** and new **pedestrian streets**, perpendicular to the main Panepistimiou axis, are included in the intervention. These local character places host leisure, social and cultural activities on the ground floor of the buildings so as to bring **life into the street.**

In bigger squares, periodical street activities, like trade fairs, craft markets and different kind of festivities, as well as buildings related to cultural and social activities, are combined with the **everyday use of the public space.**

All potentially public and non-built spaces are the places where people can interact and regain the **social essence** of Greece, by which its people and its history are characterized.

Weekend book market in Dikaiosinis square.

Squares are the focal points of people's socialization and they combine **resting areas** with **street activities** according to the character of each place.

The new cafe in Omonia square.

New spaces for leisure and gathering bring life into the squares and are combined with the everyday life of the public space.

Interior blocks and small squares proposal.

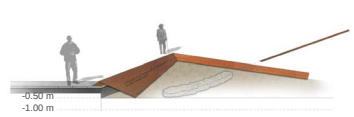
Resting areas and playgrounds for children are integrated into small squares and interior blocks. These new community open spaces can also host underground parking for neighbors.

The new **community spaces** contribute to neighbourhood dynamics and local urban experiences and become an anchor for neighborhood interaction as they **get together people** of different backgrounds and ages.

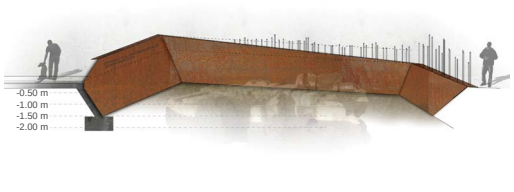
The proposal **reinforces** the **emblematic elements** of the city along the axis, **opening the views** towards them, while the design intervention, in general, seeks to **integrate** them into the public spaces, establishing an **open dialect** between the old and the contemporary.

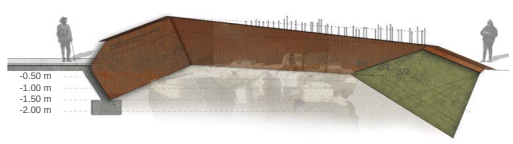
The actual **archeological remains** and those that will probably be found during future excavations or the implementation of the project are conceived as **part of the public space** project and are integrated harmonically in everyday life.

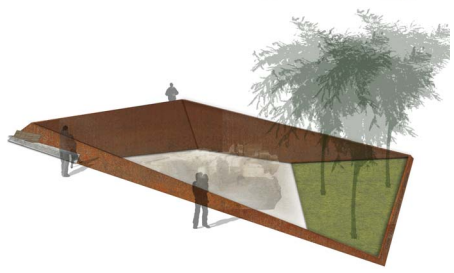
Several typological interventions are proposed according to morphology, size and depth of the excavation. Continuous folding surfaces of Corten steel edges, with different geometries and variable height define the limits and the signposting of these particular areas.



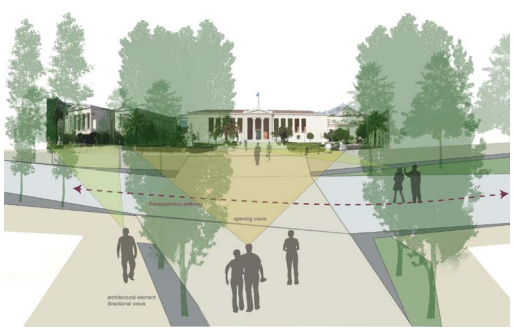
Continuous folding surfaces of Corten steel edges, with different geometries and variable height define the limits and the signposting of these particular areas.







A **continuous cultural itinerary** is marked through signs along the project area and highlights the **main archeological promenade** from Acropolis and the Museum of Acropolis up to the National Archeological Museum, passing through the monumental Panepistimiou axis.



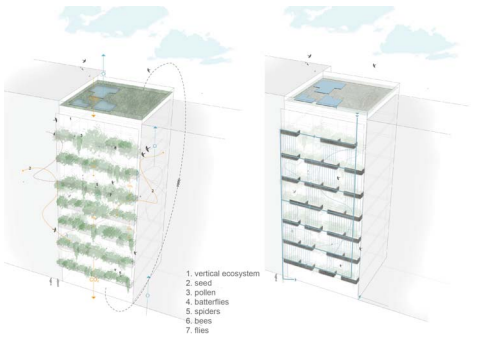
The proposed intervention enhances the **disclosure** of the monumental architecture through openness to the public space and to the people. The monumental courtyards, originally part and continuation of the buildings and combined with certain social circumstances, are now transformed in order to become **part of public space** too, embracing the new meaning of it as open, **interactive** and **collective space**.

We propose several empty buildings to become **poles** of a **new economy** based in technology and innovation.The renovated **buildings** are the **incentives** of the new tendencies and the **urban space** the place for the **experimentation** of innovative business cooperation projects.

The buildings serve as **insertion points** of artificial ecosystems and ecological modules (energy reception, recycling and storage). A second skin- facade is conditioned by elements, spread out in each building and strategically oriented in the facade such as: heat receiving walls, vertical gardens, solar protection, humidity regulators, etc. The whole skin works as a chamber that controls thermically the whole building with a natural ventilation technique.

1.Green systems

Green facades with climber and creeper plants create vertical ecosystems that help to thermic isolation and enhance the image of the city.The watering of plants is based on a vertical irrigation system that minimizes water loss as any possible excess of water is recollected and transported through tubes to the lower plants' levels. Part of the water for irrigating is recollected in a water tank at the roof of the buildings. Any excess of water is finally ricycled and used again.

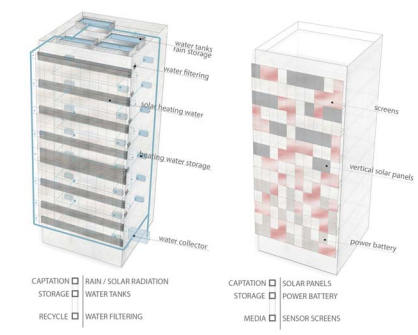


2. Water systems

A system based on the circulation-recycling of water within the building. The solar heating water moving in tubes placed in the facade, provides heating in the building, while water filtering of rain water, used supplementary in the circulation system, provides water for secondary domestic uses.

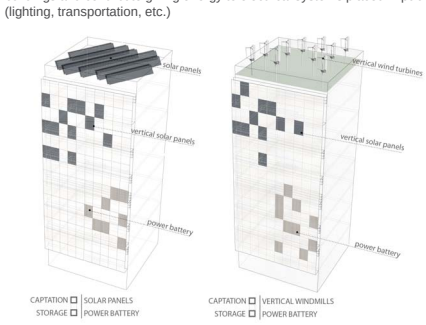
3. Media systems

Information and communication elements appear as an interface between exterior and interior. Screens and measuring systems that inform of the ecological processes of the building (solar energy received, collected water, etc.), or reflect social data.



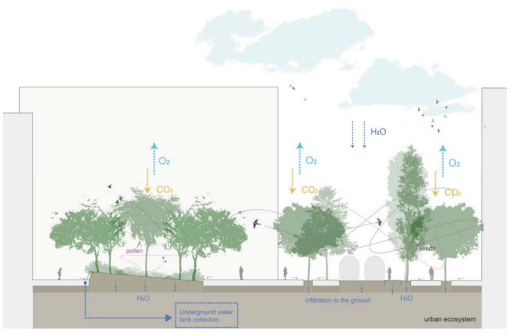
4. Energy systems

Systems of energy captation and storage provide energy self-sufficiency of the buildings and contribute giving energy to electrical systems placed in public space (lighting, transportation, etc.)



Through these strategies, Athens can play an important role as an **innovative European capital**, taking advantage of the renewable energy sources that its climate provides, and achieving sustainability and quality life for the people.

On the basis of the understanding of the **city as an eco-system**, the vegetation intervention is based on the idea of creating a **green corridor** along the spine that enables spaces - therefore biotopes - connection in different scales. In this way and increases the **biodiversity** of the city is increased and urban **environmental conditions are improved.**



The new proposed green spaces function as **oxygen lungs** while the vegetation reduces CO2 and achieves thermal comfort. At the same time, the projects' vegetation and green surfaces approach increases in an important scale the **infiltration** areas and, therefore, improves the natural hydrological system of the city.

Drainage is managed in the proposal as part of the design and important part of the rainwater is filtered into the ground and not in the sewage system. The continuous **vegetated infiltration swales** along the spine and the **pervious concrete** used along the bicycle lane are efficient systems of managing the water runoff.

Rainwater from squares is recollected into a water tank in order to be used to implement irrigation system.

Panepistimiou axis is the new ecological corridor

Eco-friendly materials, like prefabricated eco-flag stones along the spine have the capacity of reducing air contaminants through a chemical reaction in presence of oxygen and light that transforms them into no toxic elements.

Pervious concrete bicycle lane's high **porosity** is capable of capturing rainwater and allowing it to seep into the ground, and recharging the groundwater.

Small biotops are created and enhance the image of the city.

The whole environmental strategy in general adds to the landscape quality of the public space and reduces the ecological footprint to the environment.

Egyptou square, the limit of the proposal area to the north. The square is an entrance to monumental Pedion tou Areos Gardens and connects with the main axis of the project.

Omonia's square proposal, the new **interactive public space** and **economic pole** of the city. The main promenade, which is the continuation of Panepistemiou axis, includes green areas, resting areas with benches, a big pergola along its main internal promenade, and a water fountain for children to play. A series of **inclined surfaces** creates a new topography with enough depth of soil to be able to plant.

The square incorporates activities related to the daily **commercial and street life**, including a new newsstand and a cafeteria. This square could also concentrate weekend and festivities trade market that can give periodical activities to the square.

The **green promenade** at the end of Panepistimiou axis before entering Patision street. The cropped lineal element is transformed into a continuous bench and green area limit, while the pavement proposal is based on big flagstones inspired by the local landscape colors.

Patision street also includes three typological sections according to traffic lanes and, therefore, sidewalk width.

A constant bicycle lane, a green tramway and infiltration swales are also included in its section.

At the point of crossing with Panepistimiou, it maintains only one bus line and gradually the street's width is increased to include up to four traffic lines.

All along the Patision axis, a continuous line of poplars works as a limit between the bicycle lane and tramway, providing shadow too.

The sidewalks are widened as much as the traffic circulation permits and, like in the whole intervention area, an attempt to maintain a maximum of existing trees of the street is made.

paved areas
cropped element surface
bicycle lane
green tramway
green resting area
tree alignment
playgrounds and community spaces
water feature
wooden surface
tram stop
bus stop
lighting

N

Plan of the proposal

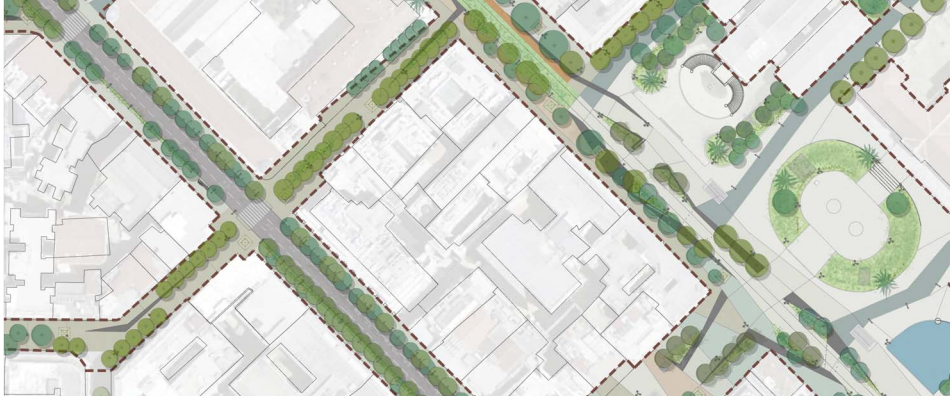
scale 1:1000

Dikaiosinis square proposal, directs the attention towards the public building at the end of the square. The cropped lineal element here functions as green surface limit and wall that is converted occasionally into bench. A wooden perforated folded surface hides the ventilation grating underneath and works as a resting area.

The trilogy urban space proposal, with its minimal limestone design with discreet colors that enhance the neoclassical buildings and establish a balanced dialog between old and new.

Lighting arrangements and water are introduced into the geometrical courtyards and **emphasize their monumentality**.

The cropped element in Panepistimiou axis directs to the interior of the square, while its pavement is a continuity of the pavement of the square even in the tramway zone, where a ground-level power supply is used instead of overhead lines. All these decisions are an attempt to achieve a **discreet design** and maintain the image of the squares as clean as possible in order to enhance the buildings' neoclassic architecture.



The Panepistimiou binding spine, the new **emblematic promenade**, integrates the tram line and bicycle lane into its section, while the cropped lineal element organizes the public space and creates small places inside the main spine, and directs the view to the secondary structure of the intervention area.

The grass line green tramway gives an even **more green image** of the spine while the grass vegetation is composed by plants adapted to the climate and resistant to drought, contributing to the **sustainability** of the proposal. The green surfaces that host the trees correspond to infiltration swales that collect the superficial water.

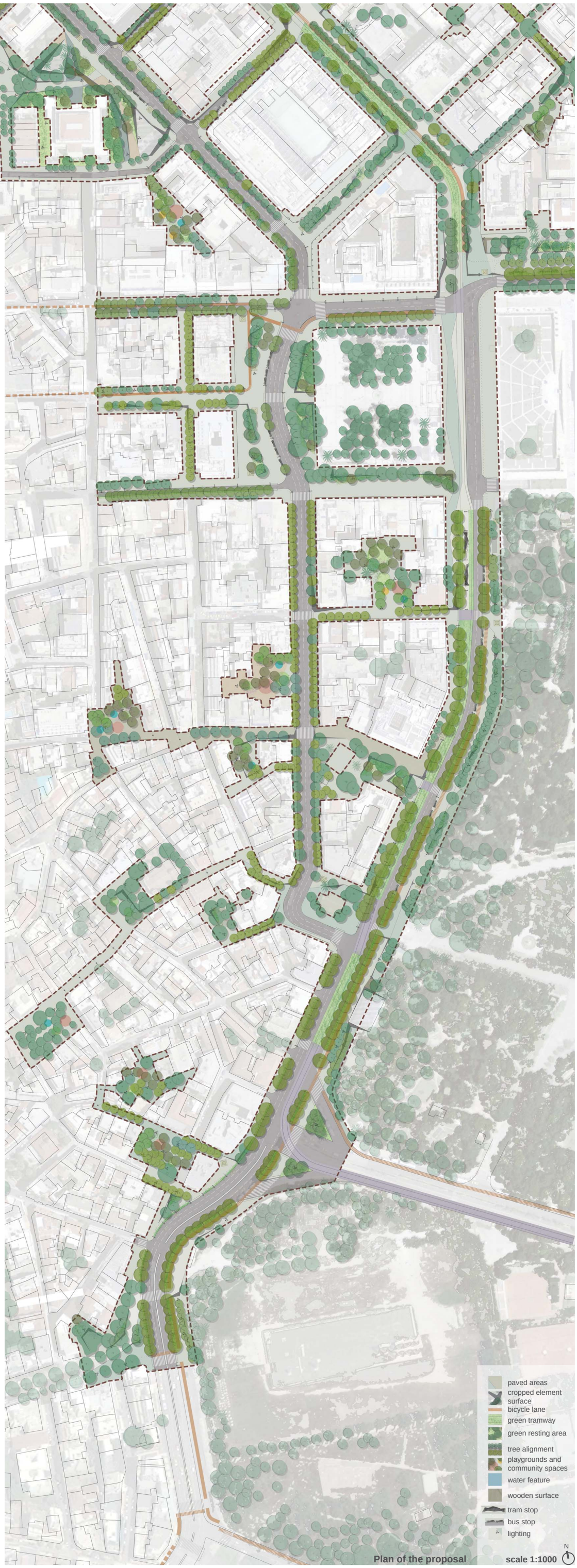
Plan of the proposal scale 1:1000

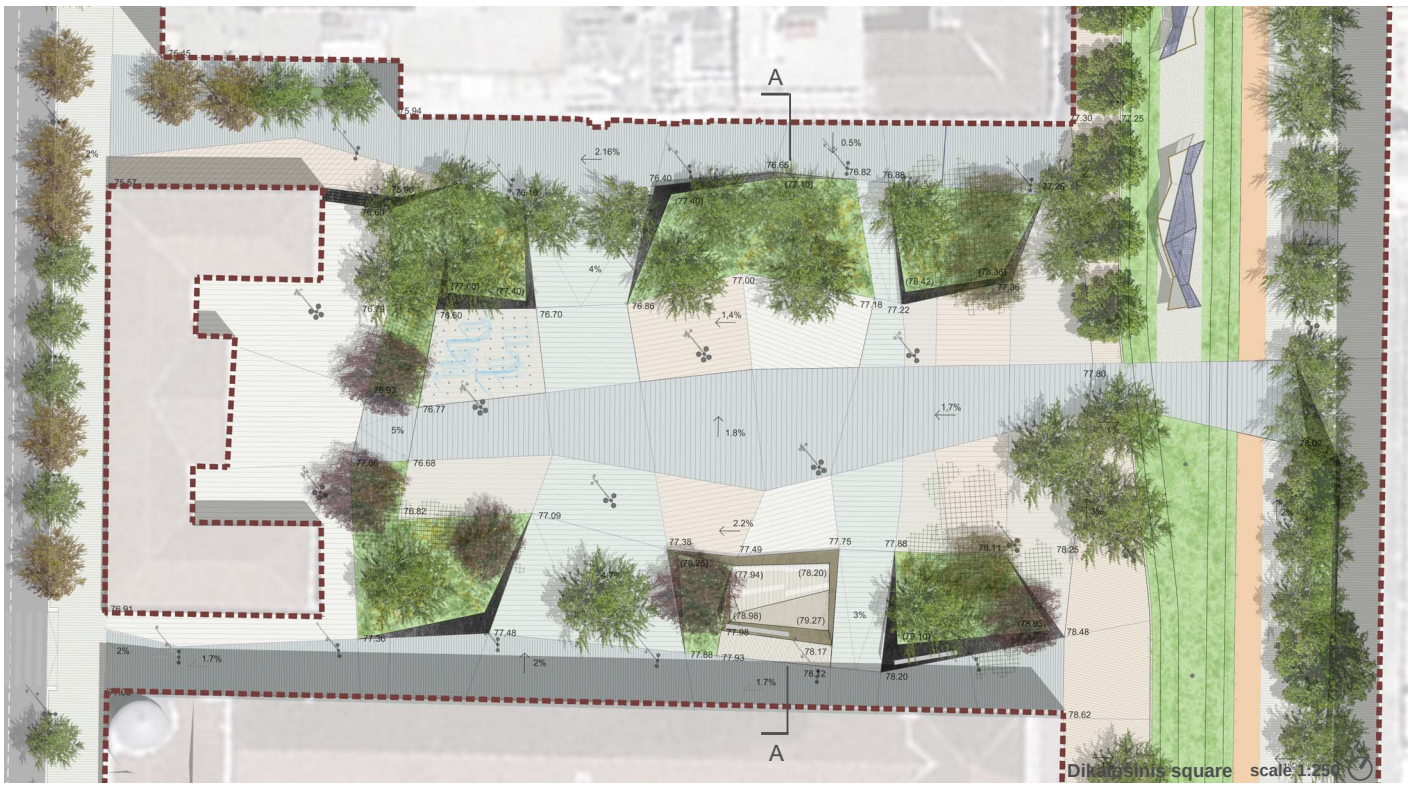
New community spaces for leisure in interior blocks create charming urban conditions for neighbors. Different play objects materialized in different colored rubber offer a variety of **playgrounds for children** and are adapted to the size of the places.

Ermou walkway: The bicycle lane is integrated to the street and is connected with the metropolitan bicycle network. Existing trees are preserved and a new line of trees, green surfaces and benches organised by the lineal cropped element are added to the walkway section.

Amalias Avenue, with both walkways enlargement and green tramway. Here a considerable enlargement of the walkway at the side of the National Garden transforms this area practically into a promenade. Both walkways contain continuous tree surroundings that collect rainwater from the avenue, while green surfaces and lines of trees, organized by the lineal element, create variation of new comfortable pedestrian areas all along the avenue.

Amalias avenue and connection with Aeropageitou walkway: The end of the proposal to the south. The lineal element in form of green surfaces directs to Aeropageitou street and the Acropolis of Athens establishing the connection with the important archeological landmark of the city.





Dikaiosinis square proposal: This square due to its size, on one hand, but also its position on Panepistimiou axis, on the other, has both a local and a center's square character.

It is organized through three paths, two at the sides that connect the Panepistimiou axis with Stadiou street and also guarantee vehicles access to surrounding buildings and a central one, that leads to the municipal building at the end of the square. Between these paths a transition area at both sides organizes green resting areas and ramp surfaces.

The heights of the square are practically maintained and so are most of the existing trees. The green resting areas where shadow is provided by the trees, are accessible to people, so that they can step and lie on them.

The central zone is as clear as possible, so as to serve as a municipal buildings' square during working days and host street activities during weekends or festivities.

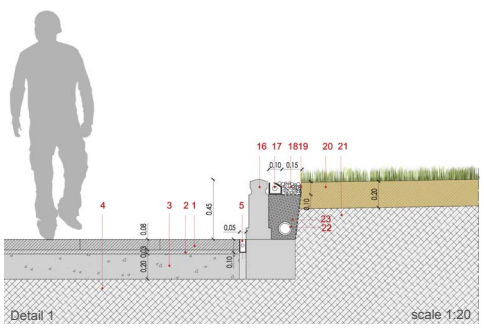
Section A. Dikaiosinis square **scale 1:250**

The Trilogy is a symbol itself, a **landmark** of the city of Athens. The proposal here searches a modest way to establish a **harmonic dialog** between the old and the new. All surrounding urban elements direct the view to the buildings of the square, while almost no new trees proposal is made. The square, except from certain green surfaces that organize existing vegetation in groups, is left as clean as possible in order to **enhance its neoclassical architecture**.

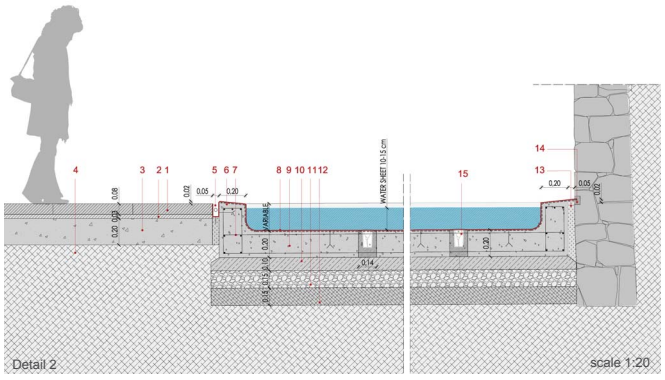
The **courtyards** of the neoclassical buildings maintain their geometrical form, material and shape but their proper use as public space is emphasized to embrace a more interactive social meaning. Specifically, the courtyards in front of National University and National Library of Athens are transformed into **elegant grass frames** planted with specific grass resistant to being stepped on so that people can walk on and lie down on it. At night, these frames are emphasized by the lighting arrangements, which consist of illuminated bands sets into the ground beneath the continuous marble edges.

The **water element** is introduced into the square by the transformation of the courtyard in front of Athens's Academy into a water mirror of only few centimeters thick where the frame of the impressive neoclassical building is reflected. Aside from a unique perception the water mirror invites people to explore the square and enjoy its monumentality seated on the original marble frame of the courtyard that makes a continuous bench around the water layer.

Consequently, the Trilogy square that works today more as an important touristic spot and a transit zone for citizens becomes a **place of gathering**, a place to stay, meet, talk, walk and lie on the grass admiring the monumental architecture.

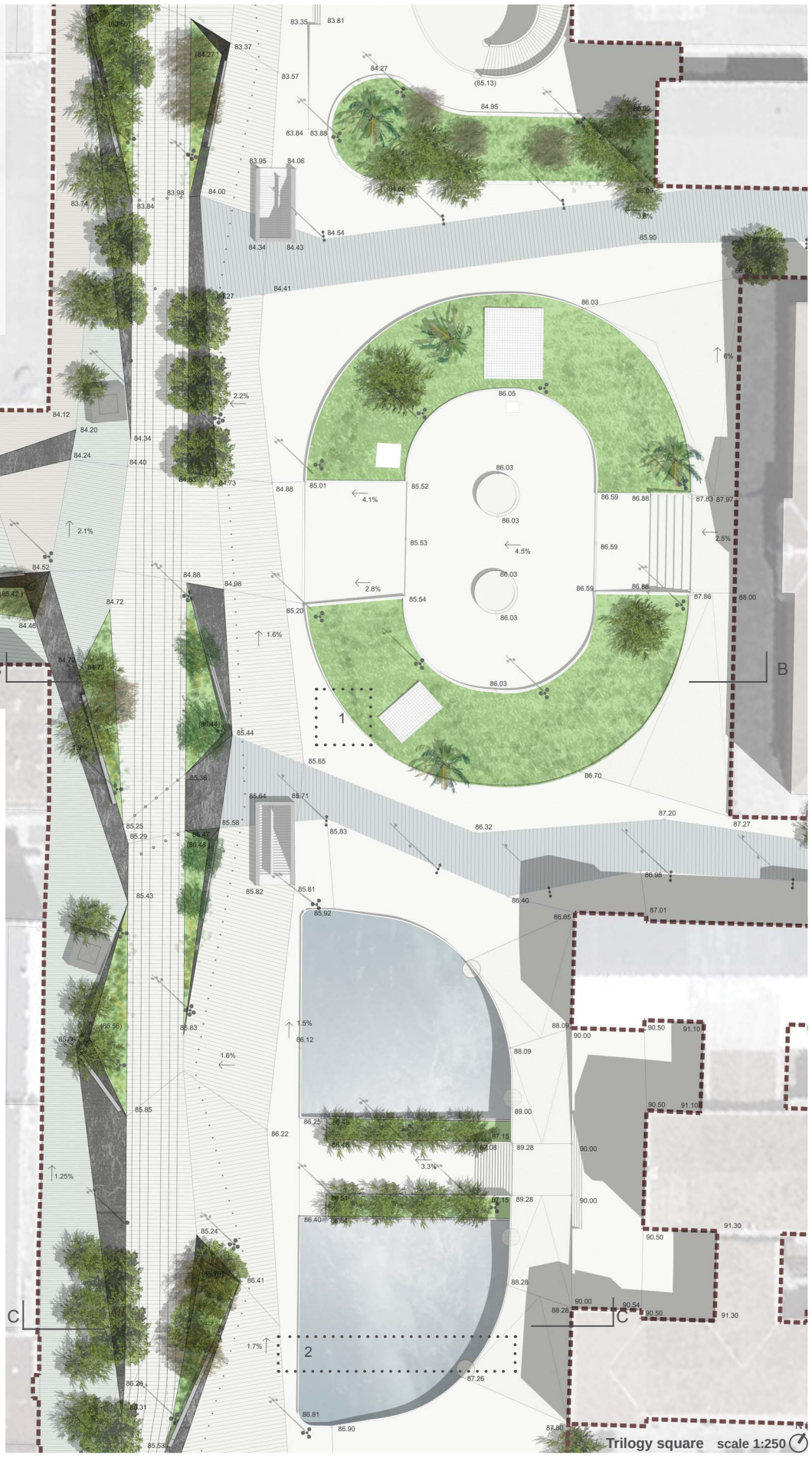


Constructive detail of the grass frame of the courtyard of National Library and National University.



Constructive detail of the water mirror of the courtyard of the Academy of Athens

1. Natural rectangular paving stone of slate and limestone of 60 x 40 x 8 cm, in cream, blue, yellow, brown and gray color, with joins up to 3 mm of fine sand of 0-1,25 mm.
2. Layer of soft mortar of 3-4 cm.
3. 20cm thick concrete base HM-20/P/40/I over a previously compacted natural soil.
4. Previously compacted natural soil.
5-17. LED Flexible hose, with 60 light points/m and IP44 protection, situated in a steel profile.
6. Waterproofing membrane.
7. Galvanized steel reinforcement, horizontal Ø15 mm /20cm and vertical Ø15mm/15cm.
8. Corten steel sheet, thickness 1.5 cm, forming the water mirror pool, with anti-corrosion treatment, screwed on the concrete base.
9. Reinforced concrete structure, HA-30/B/20/IIIa.
10. 10 cm thick concrete base HM-20.
11. Layer of gravel of Ø 0-32 mm over a previously compacted graded-aggregate layer.
12. Compacted graded-aggregate layer.
13. Expansion joint between concrete structure and existing stone wall, filled with gravel.
14.Galvanized steel anchoring , screwed on the existing stone wall.
15. Surface mounted underwater LED lamps (18x 1W) for the illumination of the fountain, with stainless steel covering and IP68 protection.
16. Existing protected balustrade.
18. Ornamental gravel of Ø 0-32 mm board.
19. Filter fabric, 100gr/m2.
20. Organic soil for planting.
21. Existing ground.
22. Drainage perforated pipe Ø100 mm.
23. Filtering gravel layer Ø 2.5-5 cm separated by filter fabric.



Section B. Panepistimiou axis in front of National University. Trilogy square **scale 1:250**

Section C. Panepistimiou axis in front of Academy of Athens. Trilogy square **scale 1:250**

The design of the square is based on inverting this currently insecure pole of the city into an **interactive public space** and economic pole with local commercial activities, innovative buildings facades and vegetated resting areas.

The design is restricted by the presence of the underground and by the actual levels of the ground derived from it. The entrances to the underground are maintained, as well as the ventilation grating and the higher levels of the slab structure, so that the construction is carried out without interrupting the everyday underground services.

The main pedestrian circulations acts as design lines for the new spatial organization; **perpendicular circulations** shape internally the circulations of the square. Omonia's main promenade which is the continuation of Panepistemiou axis is emphasized by a **big canopy** along its main internal promenade, and a water fountain for children to play.

Current Omonia's level configuration, due to the **underground presence**, acts as a design element that determines **three different spaces** inside the square; In the first one, related to the Stadiou street, the intervention has reinforced the relation between the square and the commercial street. The second area, situated at the level of the underground ventilation grating, would function as the main promenade, as well as resting area. A series of **inclined surfaces** creates a new topography with enough depth of soil to be able to plant.

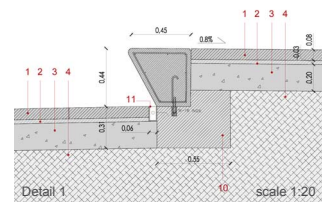
The proposal of Omonia Square looks for the connection between the actual walkway with the lowest level of the square. This area, in relation with the emblematic cafe NEON, seeks creating a new pole of leisure activities, gathering together existing cafes and commercial areas with the proposed **new cafe pavilion**. The transitions between different levels of the square are resolved with a **stepped terrace** that acts as a resting area in relation with the leisure areas.

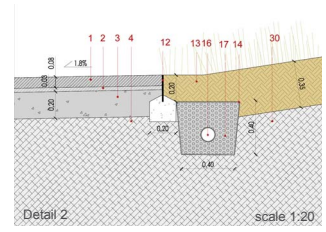
Platanus acerifolia
Robinia pseudoacacia
Ceratonia siliqua
Morus fruitless
Cercis siliquastrum

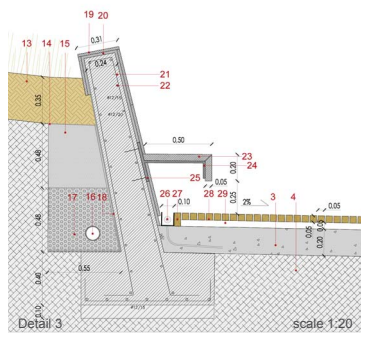
natural limestone
prefabricated flagstone
wooden surface
slate tiles
vegetated surfaces
fountain
bench
bus stop

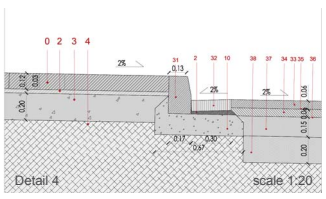
Omonia square scale 1:200

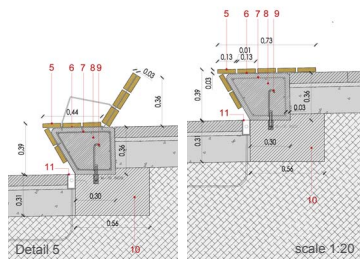
Section D. Omonia square scale 1:200


Detail 1 scale 1:20


Detail 2 scale 1:20

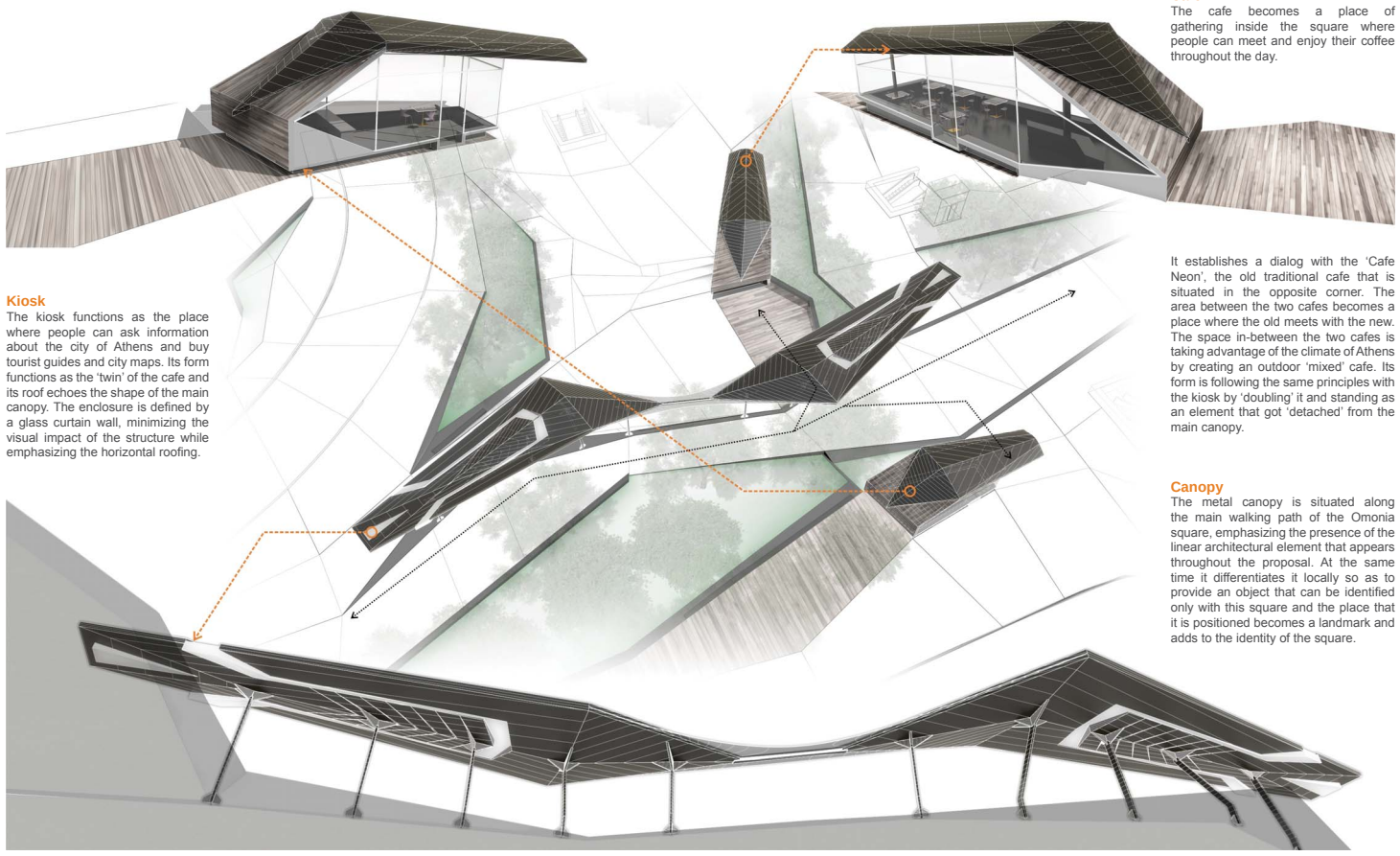

Detail 3 scale 1:20


Detail 4 scale 1:20


Detail 5 scale 1:20

Constructive details of paved surfaces and limits of Omonia square.

Omonia´s square architectural elements



Kiosk
The kiosk functions as the place where people can ask information about the city of Athens and buy tourist guides and city maps. Its form functions as the 'twin' of the cafe and its roof echoes the shape of the main canopy. The enclosure is defined by a glass curtain wall, minimizing the visual impact of the structure while emphasizing the horizontal roofing.

Cafe
The cafe becomes a place of gathering inside the square where people can meet and enjoy their coffee throughout the day.

It establishes a dialog with the 'Cafe Neon', the old traditional cafe that is situated in the opposite corner. The area between the two cafes becomes a place where the old meets with the new. The space in-between the two cafes is taking advantage of the climate of Athens by creating an outdoor 'mixed' cafe. Its form is following the same principles with the kiosk by 'doubling' it and standing as an element that got 'detached' from the main canopy.

Canopy
The metal canopy is situated along the main walking path of the Omonia square, emphasizing the presence of the linear architectural element that appears throughout the proposal. At the same time it differentiates it locally so as to provide an object that can be identified only with this square and the place that it is positioned becomes a landmark and adds to the identity of the square.

0. Rectangular eco-flagstones in a combination of 120 x 80 x 12cm and 80 x 60 x 12 cm with joins from 3-6 mm.
1. Natural rectangular paving stone of slate and limestone of 60 x 40 x 8 cm, with joins up to 3 mm of fine sand of 0-1,25 mm.
2. Layer of sand of 3-4 cm.
3. 20cm concrete base HM-20/P/40/I over a previously compacted natural soil.
4. Previously compacted natural soil.
5. Pressure treated flander pinewood 13,5x3cm.
6. Anchoring galvanized steel sheet 1.5 cm thick
7. Galvanized steel reinforcement Ø6mm.
8. Precast reinforced concrete piece, 30-36x44x100 cm
9. Stainless steel M-16 anchoring, Ø16mm.
10. HM-20 concrete base.
11. LED Flexible hose, with 60 light points/m and IP44 protection, situated in a steel profile.
12. Galvanized steel edge 8 mm thick and 200 mm height, with metallic elements of anchor soldered to the board, placed over concrete base.
13. Organic soil for planting.
14. Filter fabric, 100gr/m2.
15-17 . Filtering gravel Ø 2.5-5 cm separated by filter fabric.
16. Drainage perforated pipe Ø100 mm.
18. Waterproofing membrane.
19. Natural grey slate stone wall tiles 60x40x2cm.
20. 2cm layer of mortar for cladding.
21. Reinforced concrete wall HA-30/B/20/IIIa
22. Galvanized steel reinforcement, horizontal Ø15 mm /20cm and vertical Ø15mm/15cm.
23. Natural grey slate stone tiles 50x50x5cm.
24. Galvanized steel sheet 15 mm thick, with metallic elements of anchor soldered to the anchoring plate.
25. Anchoring galvanized steel plate, 30x30x2 cm.
26. LED Flexible hose, with 60 light points/m and IP44 protection, situated in a steel profile.
27 . Pressure treated flander pinewood pavement edge, 10x5cm wood strip.
28-29 . Pressure treated flander pinewood pavement and sub-structure , 5x5cm wood strip.
30. Existing ground
31. Battered curb of prefabricated concrete pieces of 100x28x17 cm with double layer.
32. Prefabricated concrete piece of 100x38x8 cm.
33. Asphalt pavement, granite aggregate D-12 and bitumen mixture.
34. Asphalt pavement, granite aggregate S-20 and bitumen mixture.
35. Tack coat with bitumen 1kg/m2
36. Prime coat, bitumen 1.5 Kg/m2.
37-38. Layer of compacted graded-aggregate.

Dikaiosinis square

Dikaisinis square represents a **local character public space**, fundamental to achieve a balanced center development. The design is based on achieving a **place for citizens**, with periodical activities like **fairs** and **markets**, combined with the **environmental quality** of the space. Vegetation, green surfaces, a wooden platform resting area, shadows and lights configure the backdrop of the cultural and social activities.

Nightscape of Omonia square. The lighting arrangemetns on the big canopy convert it into a gathering point and direct people through the main path of the square.

Omonia square

Omonia square is transformed into a **new economic pole** and **interactive public space** of Athens. Spacious green areas intertwine with paved gathering spaces in a harmonic balance, creating a **multifunctional square**. The atmosphere is dominated by the presence of vegetation, water and new architectural elements. The **big canopy** reinforces the main path which is the continuation of Panepistimiou promenade into the square. The new **café pavilion** and the **kiosk** add more uses to the square.

Trilogy square

Trilogy square shows the relation between the intervention and the existing emblematical elements. Playing with main design elements, like the cropped lineal element and the vegetation, the proposal seeks the simplicity that requires a **monumental atmosphere**, introducing at the same time **subtle details** that attribute a **modern character** to the square.

The presence of the **water mirror**, the **lighting** arrangements, the control of **perspectives** from the spine and the **neoclassical architecture** construct the image of the new square.

The nightscape of Trilogy square. The lighting arrangements of the neoclassical frames of the courtyards, with the addition of the water mirror, enhance their architecture and add to a new unique perception of the square.

Korai and Panepistimiou axis junction

The proposal connects Trilogy square and Kathmonos square through Korai promenade; a minimal pavement intervention resolves **circulations flows** and, at the same time, transforms this pedestrian street into a **place of gathering**, enhancing its street life.

Softcapes

Vegetation: green corridor

Trees

BIG AVENUES AND TRAMWAY ALIGNMENT — Platanus acerifolia, Populus alba, Populus nigra

SMALL STREETS AND PEDESTRIAN AREAS — Cercis siliquastrum, Morus fruitless, Punica granatum

IN LOCAL SQUARES AND INTERIOR BLOCKS — Albizia julibrissim, Jacaranda mimosifolia, Schinus mollis, Robinia pseudoacacia, Koelreuteria paniculata

MONUMENTAL SQUARES — Ceratonia siliqua, Olea europaea, Platanus orientalis

Herbaceous plants

ORNAMENTAL PLANTS — Lavandula angustifolia, Salvia nemorosa, Rosmarinus officinalis, Santolina chamaecyparissus, Teucrium fructicans, Gaura lindheimeri, Stipa tenuisima

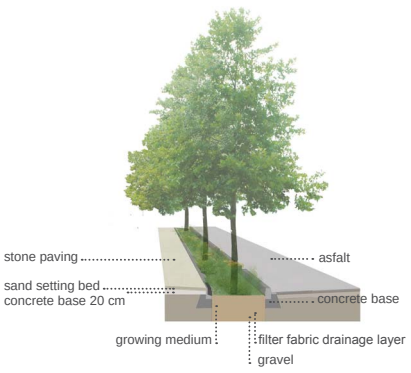
FILTER PLANTS — Sedum album, Festuca glauca, Thymus vulgaris, Arenaria edebouriana, Artemisia silvermound

CLIMBER AND CREEPER PLANTS — Hedera helix, Plumbago auriculata, Trachelospermum jasminoides, Lonicera japonica, Clematis flammula

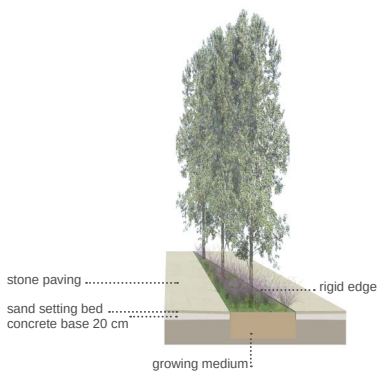
GROUNDCOVERS — Cynodon dactylon, Dichondra repens, Phyla nodiflora

Tree surrounds: public space water management

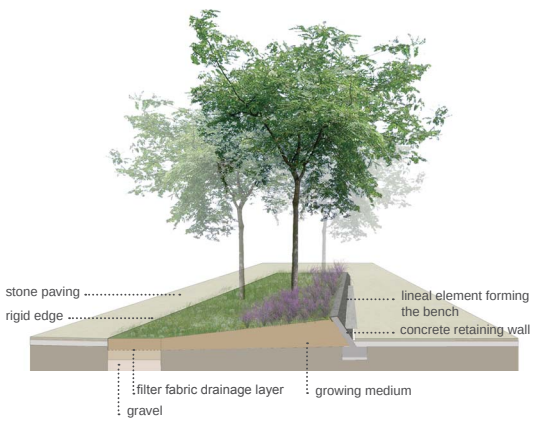
Continuous tree surround infliltration swale system



Continuous tree surround



Green surface resting area with infliltration swale system



The spine should be as green as possible in order to work as a **green corridor**. This is achieved through **maximization of permeable areas** replete with big **variety of all vegetation stratus**. The chosen vegetation combines native plants with those adapted to mediterranean climate and harsh urban conditions. The criteria for their selections are their **low need for maintenance and water needs**. Big tree variety, combined with existing trees, shrubs and herbaceous plants add to a rich vegetation proposal. Combination of deciduous and evergreen plants and flower colors are also design elements.

Vegetation proposal diagram

Hardscapes

The cropped lineal element

A **cropped lineal element, recognizable all along the spine**, appears at certain points of the spine and organizes public space, urban functions and furniture. This element contributes in giving an image of unity and helps understand **the project as a unique proposal** despite its large intervention area.

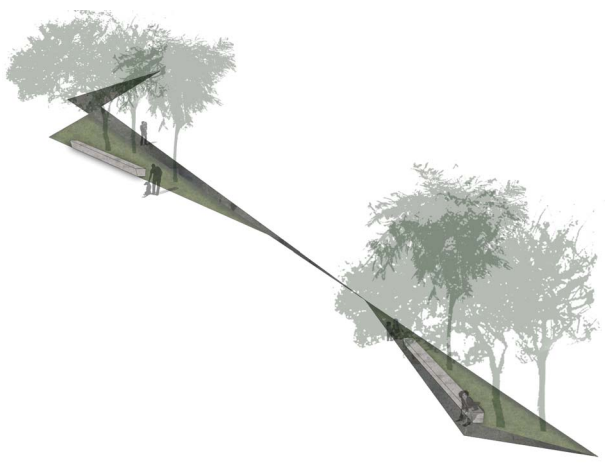
All along the spine, the lineal element is **transformed** from horizontal surface to green areas limit in the form of a wall or a bench, creating different **levels**, it directs the view to certain points, and it is transformed into other materials or elements like wooden **surfaces**, pergola or other **architectural elements**.

At the binding points of the main spine with the perpendicular streets that lead to secondary local structure spaces, the element is cropped directing and **driving the attention** to these streets that lead to entrances of interior blocks or local squares. In the squares the lineal elements **open viewpoints** to monumental buildings and **directs people** towards them.

small pedestrian street

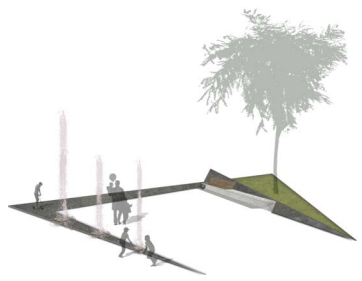
green surface resting area

binding points of the spine with perpendicular streets

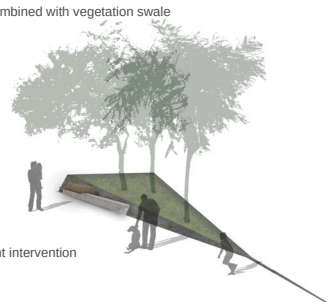


small pedestrian street element intervention

street ntervention combined with vegetation swale



water element, the fountain



small square element intervention

archeological area

Pavement proposal diagram

Pavements: eco-friendly materials

Squares

limestone

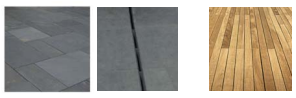
The squares have an elegant treatment of **natural paving stones of slate and limestone** of 60x40x8 cm. Some marble stones of the existing pavement are also recycled. The colors that are applied are similar to the spine flagstone pavement, as they are both inspired by the local stones of the surrounding mountains.

Spine

flagstone

Along the spine mediterranean color palette of **eco-flagstones** are applied in combination of 120x80x12 and 80x60x12 cm.They have the capacity of **reducing air contaminants** produced by cars through a chemical reaction in presence of oxygen and light that transforms contaminants into no toxic elements and **improves the quality of the air** in the city.

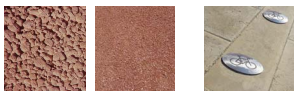
The element



slate — drainage channel — flander pinewood

The cropped lineal element corresponds to **natural slate tiles of dark gray color**. It is applied as pavement and as surface cover in case of three dimensional elements as walls and other limits. The element is also converted occasionally into bench, which is an **acid-edged cast stone** of beige color. Finally, it is transformed into a **flander pinewood** element to form **architectural elements**.

Bicycle lane

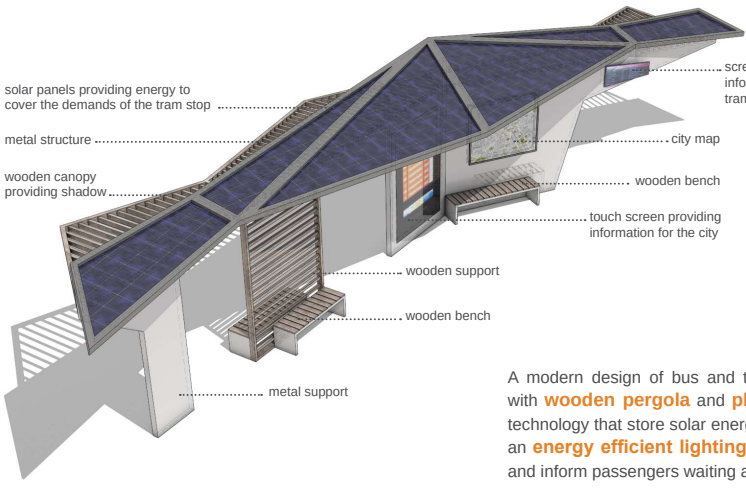


pervious concrete — metal signposting

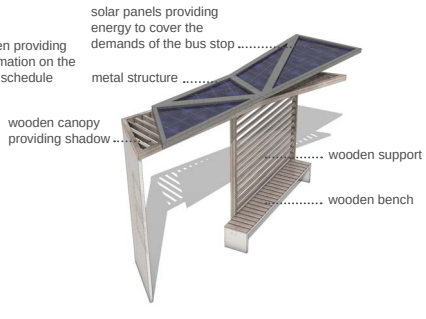
All along the bicycle lane colored **pervious concrete** is applied. Its high porosity is capable of capturing rainwater and allowing it to seep into the ground, **reducing rainwater runoff** and recharging the groundwater. When the bicycle lane crosses a square a **metallic signal**, instead of a continuous material lane, anchored to the pavement of the square indicates the bike course.

Urban furniture: energy efficiency

Tram stop



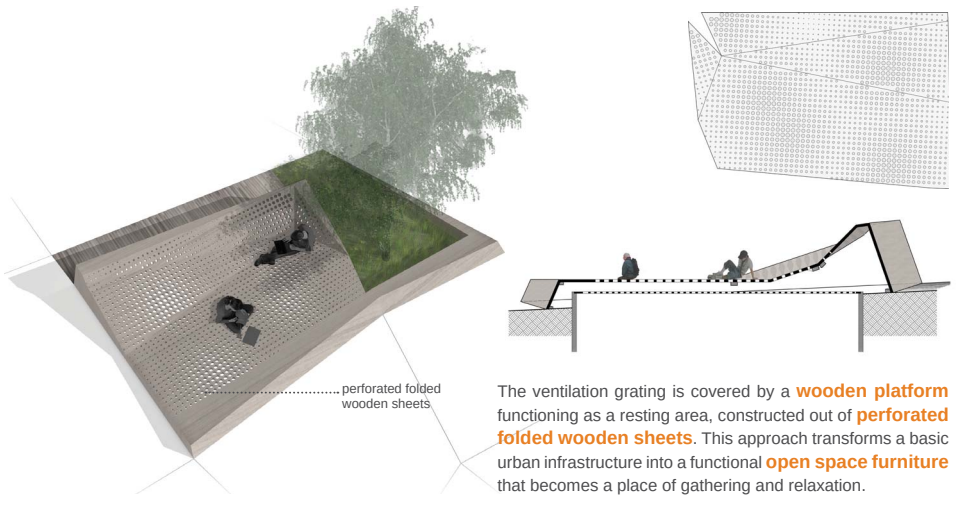
Bus stop



A modern design of bus and tram stops is proposed that is combined in both cases with **wooden pergola** and **photovoltaic panels**. These stops are run by solar cell technology that store solar energy during the day and use it during the night, according to an **energy efficient lighting system**. Moreover, the stops are connected to internet and inform passengers waiting about schedules

Urban furniture

Wooden platform resting area



The ventilation grating is covered by a **wooden platform** functioning as a resting area, constructed out of **perforated folded wooden sheets**. This approach transforms a basic urban infrastructure into a functional **open space furniture** that becomes a place of gathering and relaxation.