

4

New  
breath

***THESSALONIKI***  
***CONFEXPARK***

INTERNATIONAL ARCHITECTURAL DESIGN COMPETITION  
2021 JUNE, 28

DESIGN DOCUMENTATION

# New breath

## DESIGN DOCUMENTATION

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***Explanatory narrative including :***

Site plan documenting the overall concept

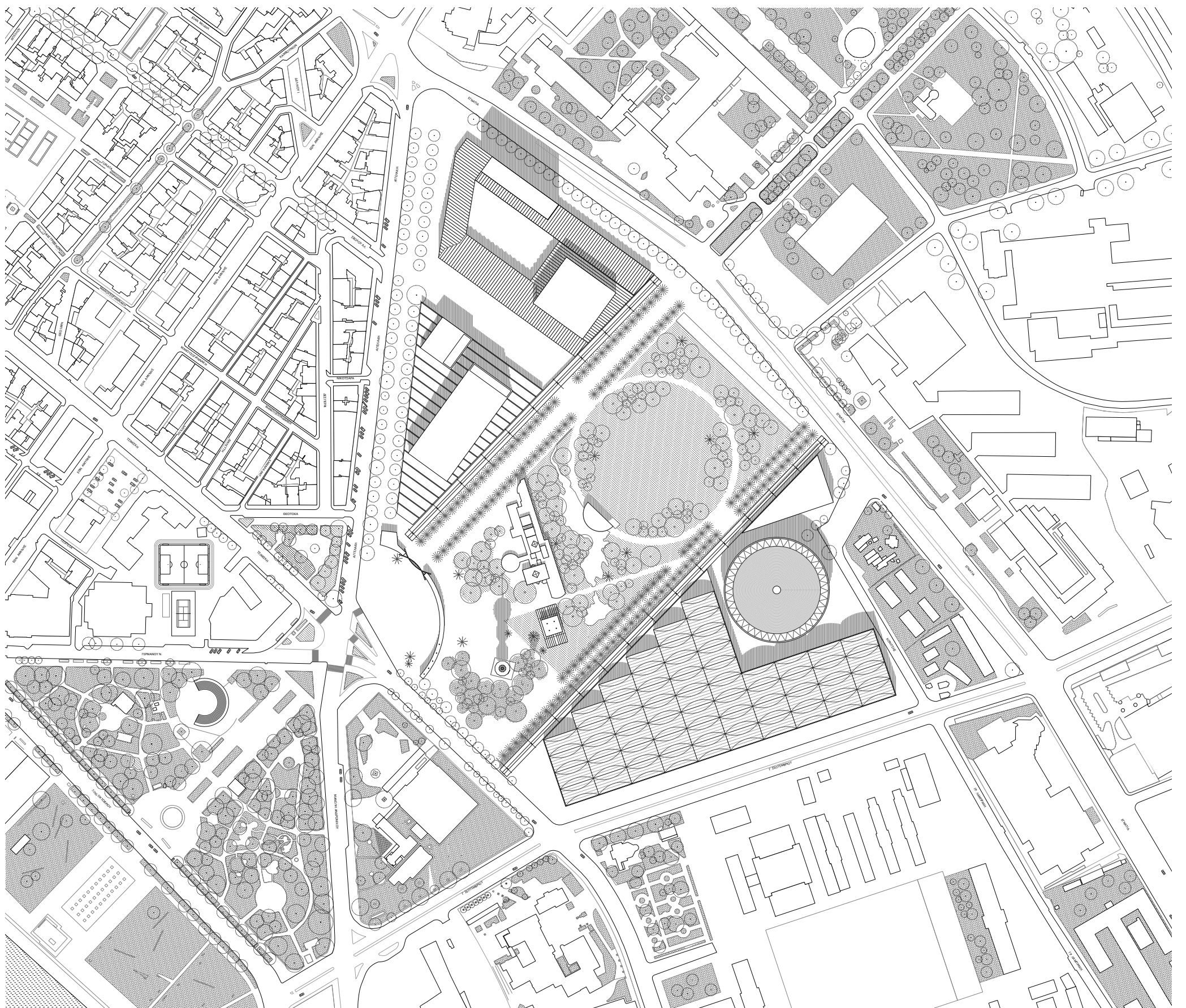
- A Vision and philosophy of the design
- B Approach to sustainability
- C Approach to technical and structural issues
- D Approach to materiality and economy
- E Table with the space program given and the space program realized
- F A3 copies of the drawing panels



## Prerequisite

The history of Thessaloniki is marked by ambitious urban projects. The new ConfEx Park must take this heritage into account, as such a project also has the capacity to clarify a composite urbanity. Several projects have succeeded each other during the twentieth century, all struck by a certain urban rationalism that varies according to the era. These applications have had the merit of implanting rational and recognizable urban grids on this vast territory. At the risk that these different pieces of city tend to become autonomous sectors. However, the location of this new project (urban climate park, convention center, exhibition hall, business center) offers an exceptional location that also offers a historical opportunity: at the crossroads of the historic city in the Center-West and a more modern urbanity - in «grids» or even «blocks» - in the Center-East. It is already an opportunity to act as an interface between two urbanities with a very marked identity.

Site plan documenting the overall concept





A

Vision and philosophy  
of the design

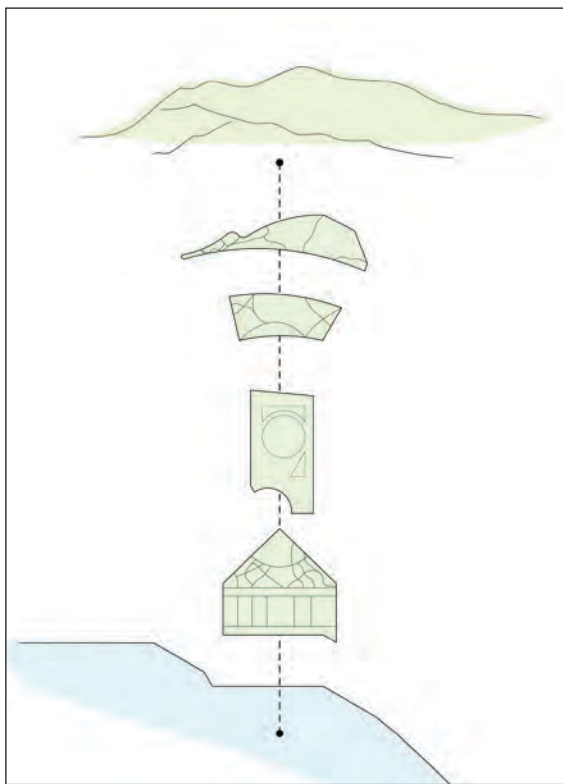




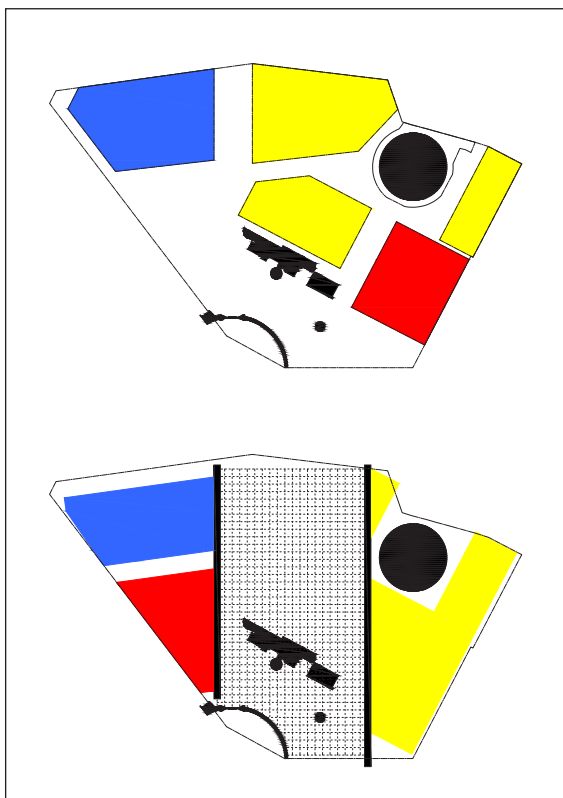
# New breath



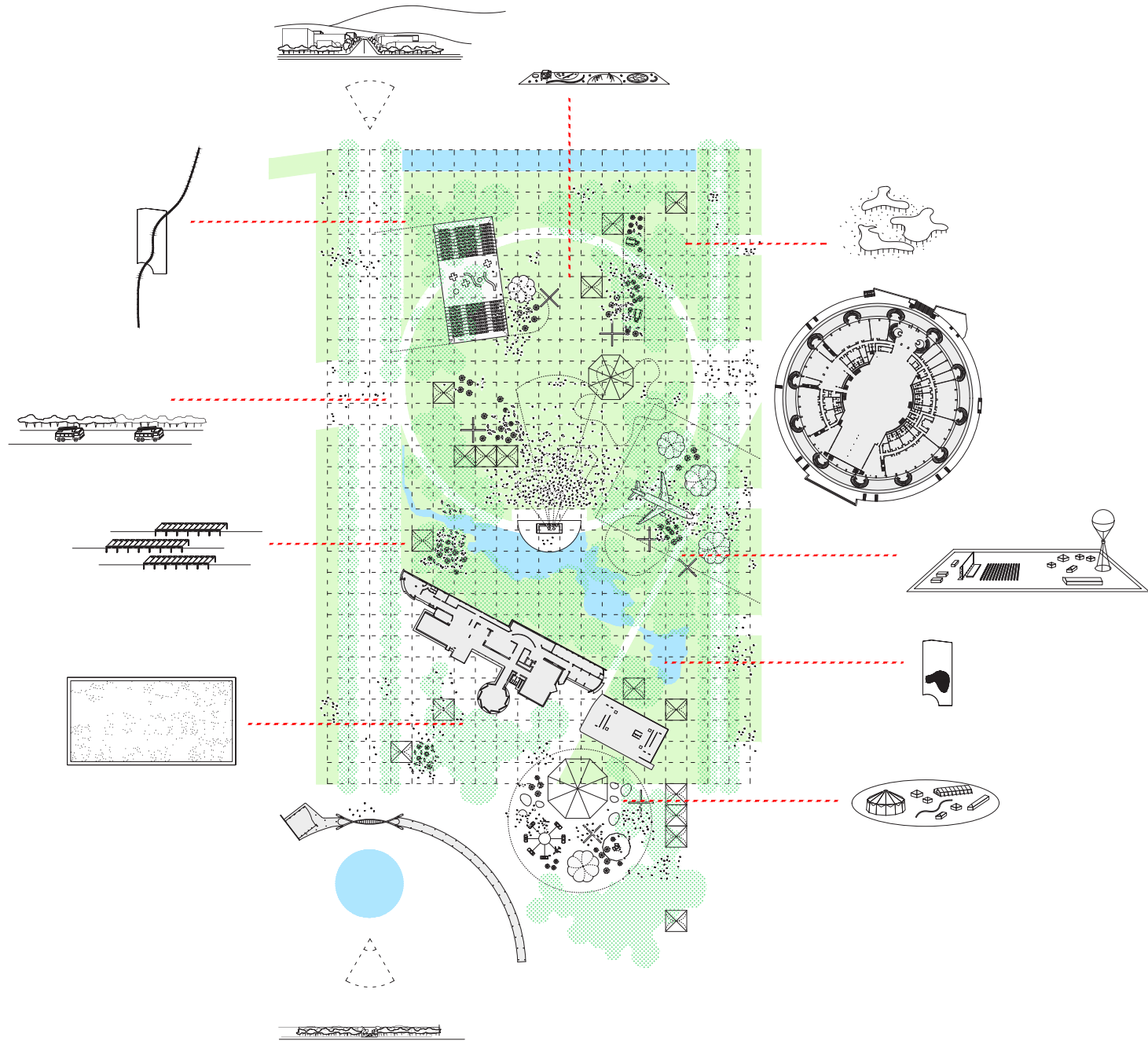
**Ball joint**  
The site is compressed inbetween 4 different conditions: (1) the historic city, (2) the urban extension, (3) the mountain and (4) the city.



**A Central Park**  
An oversized park visually connects the see and the mountain. It is the centre of the ConfEx Park but also an iconic public space on the scale of the city.



**Slightly rotated masterplan**  
The central position of the park aims to enhance the masterplan qualities for openness and porosity while slightly turning them around the park.



## A new urban fragment to clarify the previous ones

This duty to clarify the site is all the more evident as the surroundings are marked by vast, autarkic urban entities: the university to the north, the sports center to the east, the barracks to the south. Within this environment, it is necessary to propose a new entity, marked by its own logic, but not completely closed on itself.

Certainly, this new ConfEx Park project can be considered as a new urban fragment in the rich history of Thessaloniki, but it must also fight against the surrounding fragmentation. All in all, this new fragment opens up new lines, beyond its sole perimeter of intervention.

To reason about the great dimension of the site, is above all to clarify it. Its history has allowed it to host buildings constructed between 1956 and 2004, leading to a saturation of the site. These buildings, marked by the seal of functionalism, are often implanted in the direction of the greatest dimension of the site. In doing so, they go against the topographic and structuring axis of the site, between the hill and the sea. It was, among other things, on this axis that Ernest Hébrard's 1917 park plan was based. Our intervention is not based on a nostalgic or historicist approach, but remains governed by a concern for clarity. In this sense, rediscovering the structuring axes, then progressively abandoned by the avatars of modern urbanism, remains a project driver.

This concern for clarity finds an immediate translation in the clarification operated on the site. Thus, only the most remarkable buildings are preserved on the site, those whose scale, structural innovation or architectural style also acquire an urban and landscape value. In short, landmark buildings whose singular expression echoes the large size: the museum, the panoramic tower, the arch that marks the western entrance to the site, the rotunda of the Palais des Sports to the east of the right-of-way.

Reduced to these iconic buildings, the site suddenly appears much clearer and mostly oriented along the topographic axis North East (hills) / South West (sea). The highlighting of this axis also operates at the level of urban functionality. Thus, this new complex is connected with the large entities located at the foot of the hill (university, large sports facilities, barracks) as well as with the city hall and its esplanade overlooking the sea. Clearing the right-of-way of this new park therefore allows for the establishment of new porosities of scale that benefit the city as a whole.



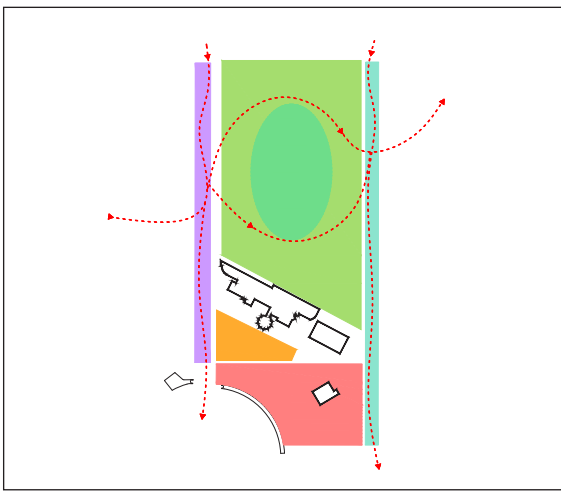
# Central park

The central park asserts itself as the structuring urban element of the project. Crossing and enhancing the topographic axis of the site, it asserts itself from the outset by its scenographic value. Wherever he is in the park, the visitor finds the sensation of facing the sea or the hill. Facing or behind him, he never loses sight of the two great geographical landmarks of his environment.

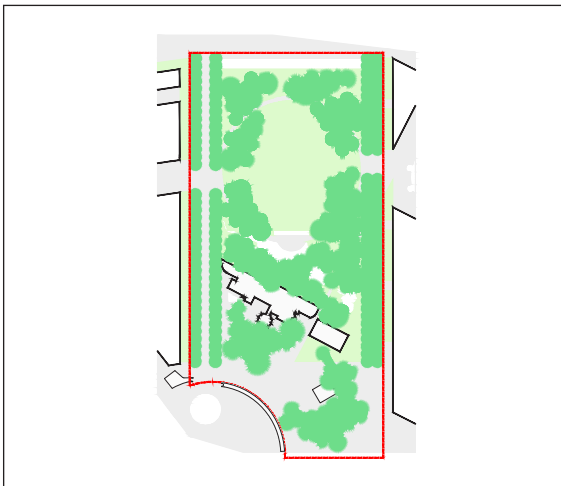


## A green Lung

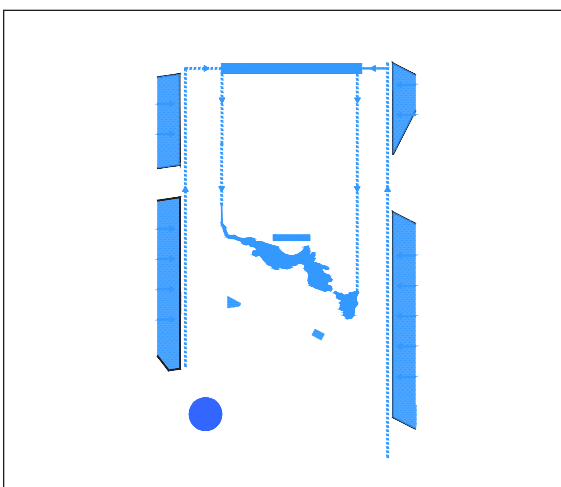
Rather than a «void», a «reserve» or a «pocket», the most appropriate image would be that of a «lung». The space of the available park is a source of healthy breathing space that spreads throughout the urbanity of the district on several levels.



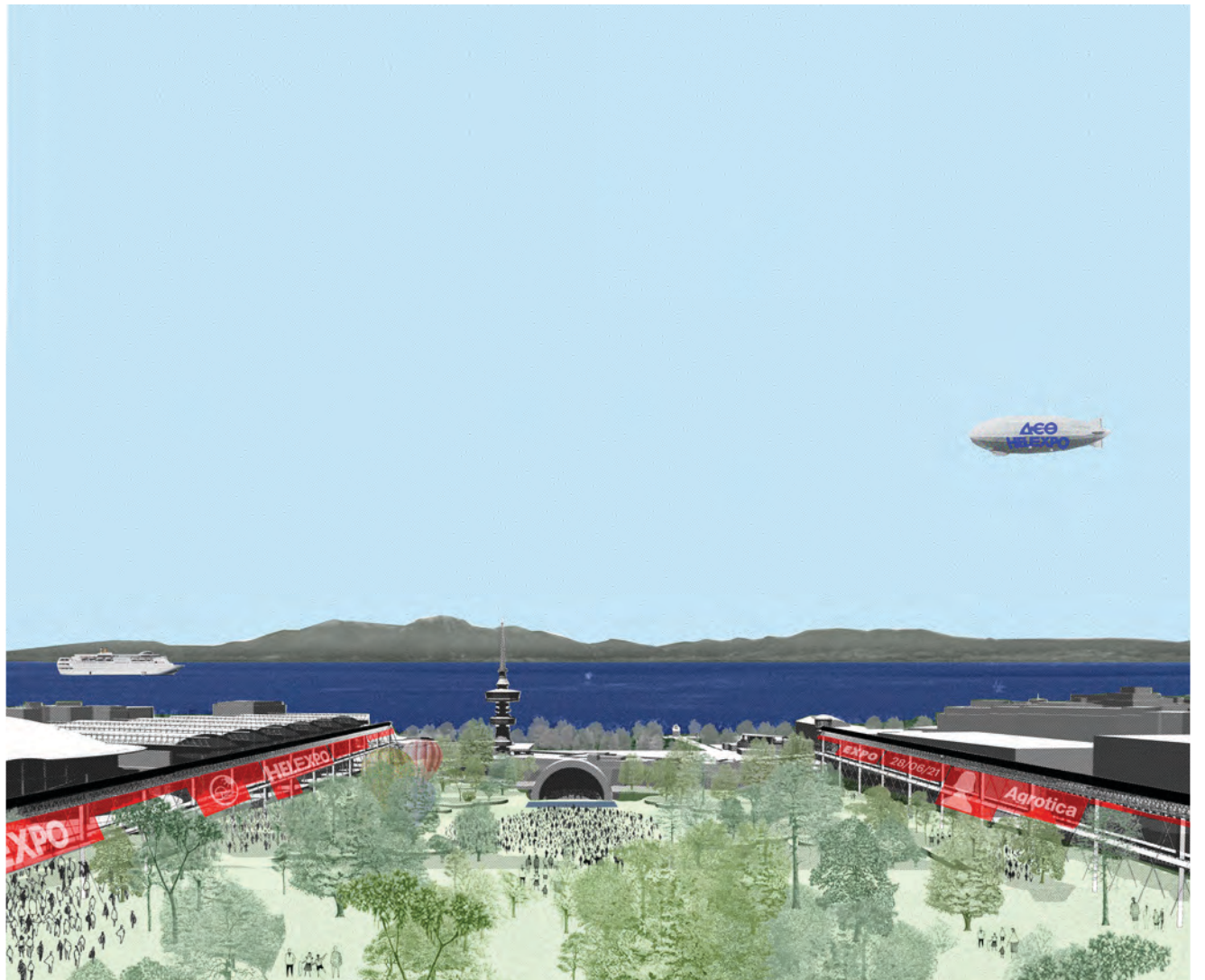
## Surface typology



## Landscape



## Water system



## A structuring and appropriable park

Now that the ConfEx Park has been reduced to its most significant buildings, there is no need to be afraid of the void. On the contrary, we must exacerbate the dynamics of its new qualities. Rather than a «void», a «reserve» or a «pocket», the most appropriate image would be that of a «lung». Its available space is the bearer of salutary breaths that spread to several levels in the urbanity of the district.

Thus, the principle of development obeys a radical choice, based on a tripartition of the park's right-of-way: the central «void» in the center, leaving the most space for a cultural and climatic park, the «full» of a large exhibition hall in one piece on the eastern part of the site (the «Exhibit» part of the program), and to the west, a more measured urban density, hosting the tertiary programs (business center, hotel). This third, more composite element (the «Business» and «Congress» parts of the program), negotiates the relationship of the ConfEx Park with a more ordinary urbanity, attenuating the enclavement of this type of equipment.

This master plan has two main qualities. First, it is immediately legible, while allowing for real urban nuances from the outset. Thus, the logistics of the large exhibition hall is relegated to the periphery of the site, opposite the barracks, in the most enclosed part of the site. At the other end of the site, the surroundings of the business center will show, on the contrary, more permeable limits and on the scale of the opposite blocks. The frankness of the overall design is therefore not incompatible with an art of urban nuance, allowing for a balance between clear limits and chosen porosities.

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The park is bordered by two new architectural interventions, both heroic and modest: two ten-meter wide pedestrian galleries, covered and on stilts. These long and economically constructed buildings mark the limits of the park, leaning laterally against the large built entities of the exhibition hall and the business center. Both lines and signs, these galleries serve several functions: display supports, panoramic stands reinforcing the scenography of the central park, and distribution areas for the exhibition hall and the business center. They can also host temporary programs.

In spite of their modest construction, these galleries are indispensable for their ability to irrigate and even ventilate the various programs on the site.

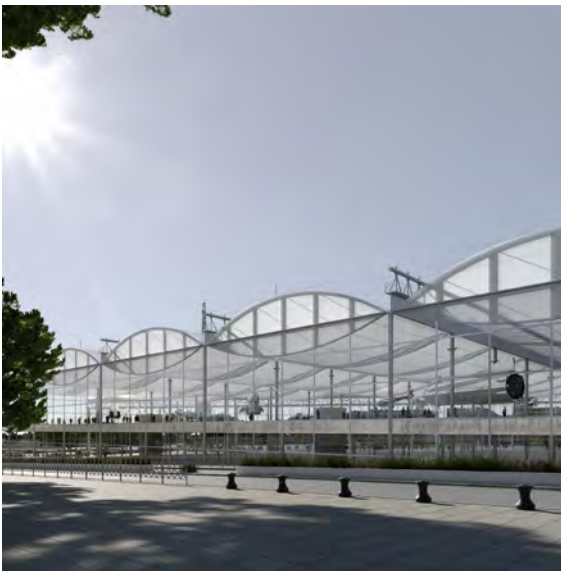


# Machine buildings

The machine building likes to be a hospital building.  
Inside the machine building, everything is fluid, everything is open.  
The machine-building reconciles different uses.  
The machine-building gives you a choice.  
The building-machine adapts.



View from level +1 of the gallery on the Exhibition Center side



View of the facade of the Exhibition center from 3is Septemvriou street



View of the West facade of the Congress Center, Aggelaki street



View of Business Center from the intersection of Aggelaki and Egnata street

## Structural bets in the service of architectural settings

The project for the exhibition hall takes the gamble of a one-piece building, defined above all by the expressiveness of its structure.

The exhibition hall is based on a very large structural frame (30 by 30 meters on the first floor, 15 x 15 on the first floor) and the performance of a lenticular metal structure allowing for large spans. Thus, the roof of the hall takes on the appearance of a continuous sheet, whose oblique grid follows the North-South urban orientation, structuring the surrounding blocks.

More than a structural feat, what is aimed at is the possibility of a roof allowing generous light to enter, but whose degrees of luminosity and thermal comfort remain controllable.

This roof is divided into three translucent layers. A curved glazing resting on the longitudinal supporting rows, a horizontal plane in opalescent polycarbonate and the last filter of a PTFE membrane, ensuring the diffusion of a soft and homogeneous light. The whole evokes a bubble in suspension above the exhibition spaces. The curvilinear curve of the roof carries several images: a sail inflated in the wind, an extended tent for events, a luminescent bubble topping the building. Technically, this device does not require major innovations, because this roof remains guided by a concern for economy, since it is entirely made of standardized elements with which, for example, industrial greenhouses are built.

The efficiency and the importance of this roof also operate on a landscape and urban scale. Thus, the vast translucent sheet, its undulations and its light reflections can also evoke a stylized sea. This is a good thing. From the top of the site, one can also see the sea on the horizon, and the ferries leaving in the distance.

In the immediate vicinity of this structure, the rotunda of the Palais des Sports is highlighted by a set of slopes that creates a specific base for the distribution of this equipment. Thus, the structural framework and that of the flat roof of the exhibition hall can be interrupted to fit without damage in a geometry that highlights the emergence of the dome of the sports facility. Here again, the new project is polite to the most remarkable architectural objects on the site.

On the other side of the park, the business center and the hotel play the card of building ensembles that are both autonomous and interdependent. The topography makes it possible to specify two large plateaus, again comparable to «urban bases» hosting two large blocks, in open connection with the city.

The «Business Center» block, located in the north, has an entrance at the most frequented corner of the site. It opens onto a generous interior courtyard, lined with buildings (hotel and offices) that benefit from a double orientation, both on the city and on the park. This large open courtyard can also be used as an antechamber to the park as a whole, since it allows views and oblique passages towards both the climatic park and the large exhibition hall.

Further south, the «Congress Center» island also takes on the appearance of a structural sheet echoing the exhibition hall, but on a deliberately smaller scale. This hall allows for retail space on the street side, and for luxury goods exhibition space within the block. The large boxes of the convention halls emerge from this layer. Thus, the constant of this urban project is established: to establish a regular structure in order to stage the most singular architectural objects.

**Whether one considers the project as a vast whole or as individual parts, this project shows that the necessarily imposing scale and the sometimes radical principles of design are not the enemies of the city. The imperatives of clarity are dictated by the need to identify the site as a whole, but are also useful in providing this urban environment with greater legibility.**

**Such a project must satisfy the imperatives of the leisure, commercial, work and landscaping programs. But the coexistence of these activities also reveals several porosities, even complementarities that make the urban value of such a proposal. Our approach to the large size also shows that structural and landscape bets are not antinomic to each other, nor even antinomic to a human, even domestic appreciation of such buildings. Our interventions are always guided by a primary concern for economy. This one remains for us as much a pledge of relevance as a possibility offered for an open appropriation of our project.**



B

Approach to  
sustainability





# The next level

**Sustainable development** is defined as «development that meets the needs of the present without compromising the ability of future generations to meet their needs.»

## Developing urban sustainable society

Sustainable development is defined as «development that meets the needs of the present without compromising the ability of future generations to meet their needs.» It is a development that prevents negative impacts on human health and the environment. Its goal is to fit human activity into cyclical ecosystems that are characterized by self-repair, resilience and a balance between the organisms, materials, energy, food and waste.

The sustainable development of the Thessaloniki Confex Park is based on five pillars: the relationship with the context and the aesthetic impact (“PLACE”); the use of ethical standards and fostering of social inclusion - to ensure a lasting positive impact on the community - in the collective space (“PEOPLE”); the performance in terms of use of resources and impact on the environment (“PLANET”); the viability and compatibility with the available, economic resources (“PROSPERITY”); innovation and transferability, the multiplier effect (“PROGRESS”).

It is important for the Thessaloniki Confex Park to develop a cross-cutting vision of sustainability that includes all of these aspects. Too often sustainability is limited to measures in the “PLANET” category only. This narrow interpretation is certainly useful, but it is limited to the most measurable category. A building where it is pleasant to work, to live and to stay (“PEOPLE”), the sensible spending of available budgets (“PROSPERITY”), the integration of the building in the environment or the mobility generated (“PLACE”) as well as the extent to which a building can be a trendsetter for other buildings (“PROGRESS”) are at least as important facets of sustainable construction.

## European ambitions

We are ambitious and would like the Thessaloniki Confex Park to hit the European ambitions horizon 2050: we would like to target «zero carbon», focus on “circular economy” and consider the development as a future “Positive Energy District” (PED).

In this respect, our sustainability approach will focus on energy, water management, and materials use. Ambitions beyond «business as usual» will be defined. Maximization of renewable energy production, fossil-free technical solutions, rainwater recovery and infiltration, reduction of city water consumption, use of bio-based materials and reuse of materials are some of the solutions that will be considered.

## SML

Innovation starts by looking at the project from a different perspective. When we look at buildings we also consider the public space, when we develop sites we take into account the neighbourhood, and when we think about a neighbourhood we keep in mind the city, the mountains, and the sea.

The Thessaloniki Confex Park will be an icon in its neighbourhood and can play an active role as part of a larger community.

We see it as a project with three different scales: SMALL, MEDIUM, LARGE. The smallest level is the building; the second level is the site, the third

level is the neighbourhood. In the future, these 3 levels can no longer be considered separately, but must on the contrary be integrated in a more global, sustainable and innovative approach. Neither energy nor CO2 neutrality can be achieved at building level; however, we are convinced that an energy positivity is possible at the site level.

Positive Energy Districts will play an increasingly important role in a sustainable future. By becoming a Positive Energy District the Thessaloniki Confex Park project will be an important catalyst for change. A positive energy district (PED) is an urban area that produces at least as much energy on an annual basis as it consumes. The purpose of a PED is not to be an island isolated from the rest of the energy system but rather a functional and flexible part of the larger whole. The mix of functions on site (with the hotel, event space, parking, offices, etcetera), but also in relation to the neighbourhood (with residential areas, university, military basis, etcetera), creates an ideal context for a positive energy district. The Thessaloniki Confex Park can lead the way as a change agent not only for its own site, but also for the wider surroundings, profiling itself as a provider for the neighbourhood, both in terms of energy and sustainability.

## Energy concept

The necessary energy will come from renewable and emission-free energy sources. The buildings will thus also play an active role in the energy supply of the environment. They will benefit from a sustainable physical envelope and efficient generation, exchange and storage technologies, controlled by an intelligent system, integrated in an intelligent network with neighbouring buildings and the rest of the network.

We see the buildings as a protected environment for working, living, staying, visiting, in which humans can thrive with all the necessary comfort (sufficient light, healthy air, thermal comfort). A good building design from an energy point of view foresees a balance between a passive design in which light, air and heat or cold are provided in a natural way, with sufficient air circulation and insulation, and a systemic approach that allows the use of active sources of lighting and HVAC to improve comfort when necessary. In a zero-emissions building, these active sources do not use fossil fuels, and in an energy-neutral/positive building renewable energy sources are used to cover the annual energy consumption and produce more than is used. The «exemplary buildings», we aim to create, will need to strike the right balance between these four elements. This balance will need to be strong and flexible, so that the buildings don't lose their resilience in the face of changes in human use (e.g. higher or lower occupancy rates) or in the external climate (e.g. increasingly frequent heat waves).

It is important to clarify the concepts of «energy neutral» and «energy positive». Neutralizing energy consumption on an annual basis often leads to seasonal peaks (typically, production in summer and withdrawal in winter), having a major impact on power plant emissions. Elements such as «load shifting» and «peak shaving» can help diminish the ecological and economic impact of these peaks on the network. The capacity for energy storage can also play a role: seasonal storage by means of a large battery of water, geothermal storage or even the usage of the sea, close to the site are all options to be considered.

The starting point of any reflection on energy neutrality and even positivity is of course energy demand. Reducing energy demand is a crucial first step that can be achieved through, well-considered architectural design, progressive facade package with intelligent solar protection, natural cooling and intelligent control techniques amongst others. Any design should also take into account daylight, shading and even wind.

It is our goal to generate as much as possible of the necessary energy for heating and cooling from renewable sources. The only way to do this completely electrically is by using heat pump technology. As explained, we suggest using a seasonal thermal energy system.

It is clear that the roofs in the Thessaloniki Confex Park project create an opportunity for sustainability: they are true fifth façades due to their large surfaces and their exposure to the climate and sometimes extreme weather conditions. Special attention will therefore be given in the architectural design. Some roofs are optimal for the production of energy through the aesthetic integration of photovoltaic cells. Other roofs, such as the immense roof over the event hall, are designed in such a way that a maximum of natural light is let in. They can be combined with optimal performance in terms of insulation, sun protection against overheating and natural ventilation.

## Distributor of energy

The gallery between the buildings and the park also plays an important role as it connects buildings, and creates a link between buildings and the park. It plays a role of distributor of energy, and offers a space where energy can also be produced. For example, small urban windmills can be integrated. The gallery is also the perfect buffer between indoor and outdoor space as it provides a place for relaxation, protection from elements and plays an important role in water management.

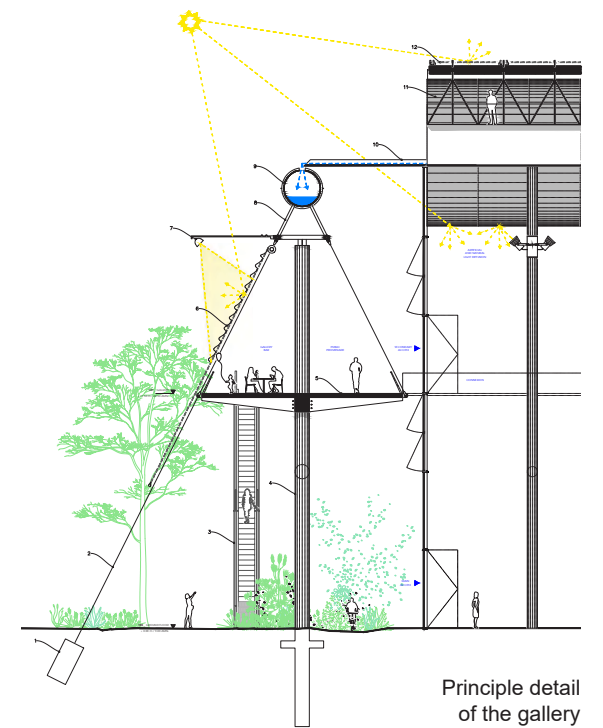
We are also focusing on intelligent control of the technical components in order to reduce the energy requirements. A sufficiently large flow rate for ventilation is supplied as a standard and can be increased if desired. Empty spaces are not ventilated unnecessarily but fitted with CO2 sensors that make it possible to use simultaneity. Ventilation systems are one of the largest sources of energy consumption in buildings. By using simultaneity, the power can be reduced, which ensures a lower investment and more efficient use of the fans. Also the use of residual heat from grey water can contribute to a lower energy need.

All techniques can be connected with a predictive building control. By combining the building model and user data with weather forecast and energy price data, optimal control and set points can be reached. This in turn makes it possible to achieve the lowest possible cost and maximise use of local energy production.



# The factories

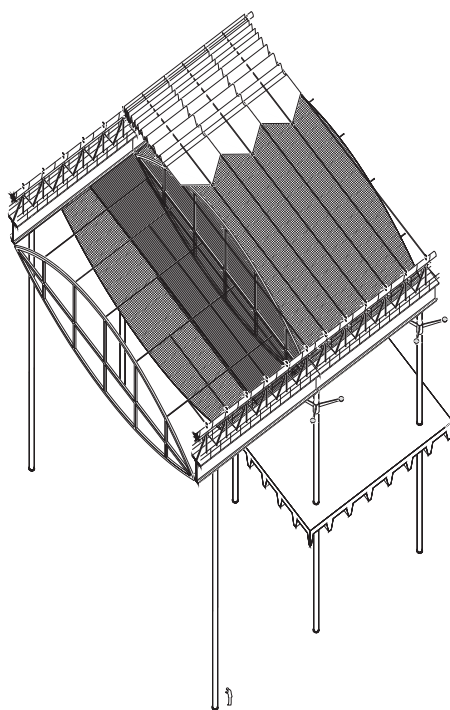
The pedestrian galleries are more than just links. They are equipped lines, deliberately oversized, that measure up to the scale of the territory. The value of the bridge is also scenographic, as it allows users to rediscover the landscape from different angles and heights. It is both a distributive and ecological "exchange", whose scale of appropriation is as domestic as it is territorial. It is a place of welcome, both diffuse and structuring.



Principle detail of the gallery



View of interior of Exhibition Center



Axonometry of the structural and envelope principle of the roof



View of interior of Exhibition Center

## Water strategy

In an urban context, especially in Thessaloniki with a relatively high annual amount of rainfall, water management is crucial. The choice of systems and techniques affects the whole ecosystem of the neighbourhood: public sewers, water treatment plants, groundwater level and biodiversity. The aim of our proposed water strategy is threefold: limit the amount of runoff into the sewer system and thus prevent overloading of the public sewer system and treatment facilities, limit the use of urban water by reusing both rainwater and grey water, enhance the development of biodiversity on the site through the implementation of extensive green zones, both in the park zone and between the buildings.

The collection of the rainwater starts at the highest roofs, called the retention roofs. Through a dynamic system the rainwater is temporarily stored, used to humidify green roofs and then discharged into the underlying structures, by means of gravity and thus without the use of pumps. The system can be integrated into the building management system and even be predictively controlled to take into account the predicted water load. All roof water is finally collected in the central canalisation that is part of the gallery structure. Rainwater will then be used to supply the green areas but also but also to irrigate the open water features. Infiltration of water in the public space is important because of the albedo reduction, which will have a positive impact on overheating. Flowing water, using the natural slope, of the site and evaporation will have a cooling and refreshing effect on the people. This rainwater system, in combination with a park and trees, responds to climate change by reducing the heat island effect and the overheating of the urban area. Effects such as rainwater nuisance and extreme precipitation can be overcome, and regulated drainage of rainwater will relieve the sewer system.

Inside the buildings we want to limit the use of city water. This will be done by installing energy efficient devices (toilets, showers, water taps, etc.). In addition, grey water from the showers, sinks and kitchen will be reused to supply the toilets.

## The next level

In conclusion we do not see the Thessaloniki Confex Park as a stand-alone sustainable project but rather as an immense opportunity to set an example for the entire neighbourhood and the city of Thessaloniki. Not only can it provide heat and cold, but it can also take on the role of sustainability manager by, amongst others, making green electricity available for charging cars, making recycled green or grey water available for cleaning bicycles and integrating urban farming in the project.

## Materials strategy

We want to minimize the negative environmental impact of the project's material flows (by prioritizing flexibility and modularity), while creating a positive social impact (e.g. by creating local jobs) through the integration of the circular, social and solidarity economy. This means that we take into account on the one hand the architecture, construction and future dismantling of the existing buildings, and on the other hand their use, which must be flexible, modular and easy to maintain.

From the beginning of the project, and as part of the chosen design, the Lansink Scale will be systematically followed for circular strategies. This is often ignored in other projects, the first steps of «prevention» and «reuse» are too easily discarded to focus immediately on recycling. Technical, economic, legal and cultural solutions to this problem will be identified.

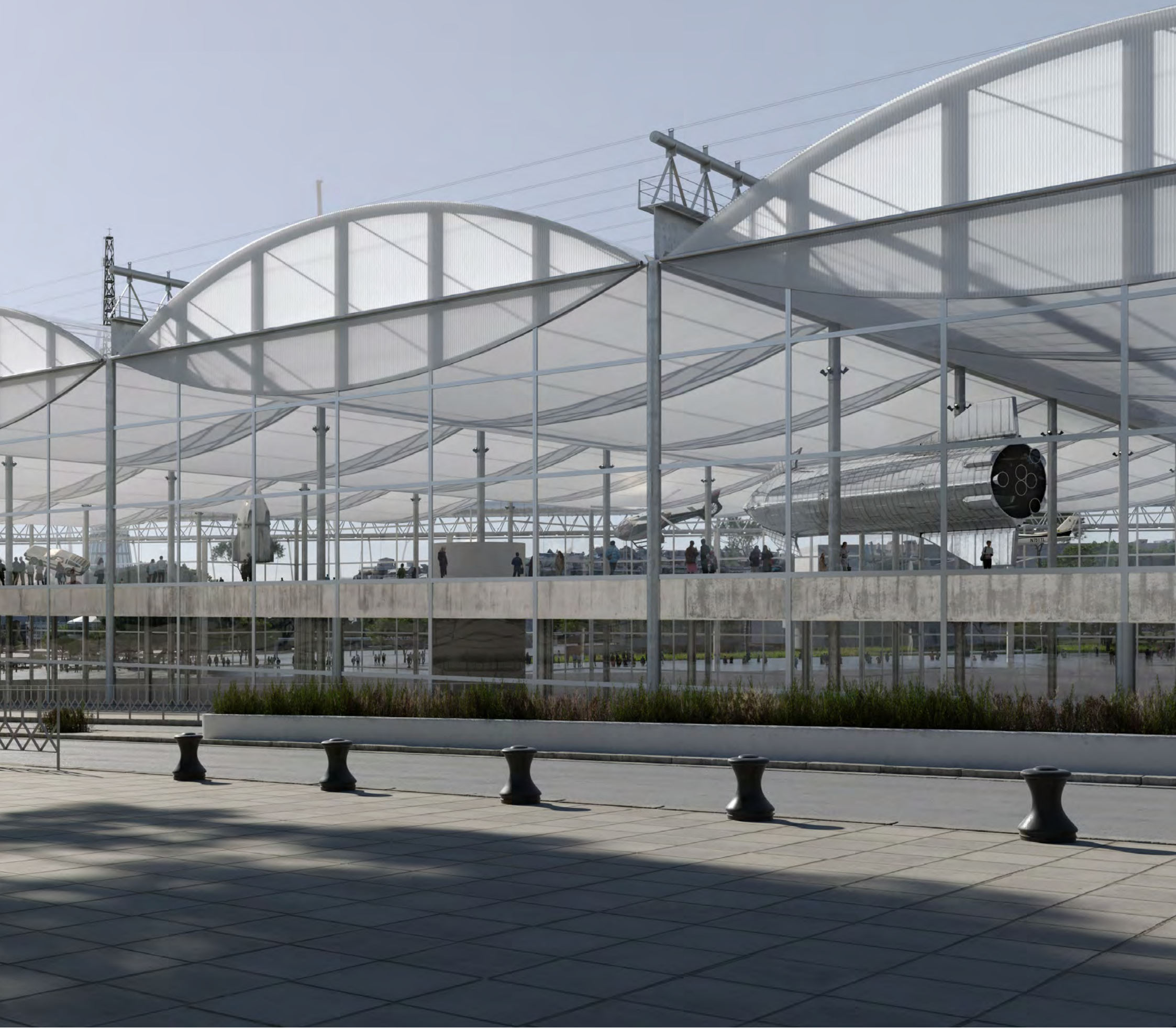
When reuse is not possible, alternative proposals must be made to minimize the environmental impact as much as possible. These range from the use of CO2 negative materials (which are starting to appear on the market) to circular products based on excavated soil and bio-based materials. The Thessaloniki Confex Park is a fantastic opportunity to promote the local economy, which is above all social and solidarity-based. This economy employs in part low-skilled workers, contributes to the preservation of cultural heritage and stimulates social economy enterprises.

**Sustainability shouldn't be an afterthought but rather the natural starting point of the future Thessaloniki Confex Park. This project can be a true source of inspiration for many as it can offer buildings and a park at a human scale, respectful of nature and its environment, integrated into its neighbourhood. It will be the result of a true creative, multidisciplinary and optimistic vision of the future.**





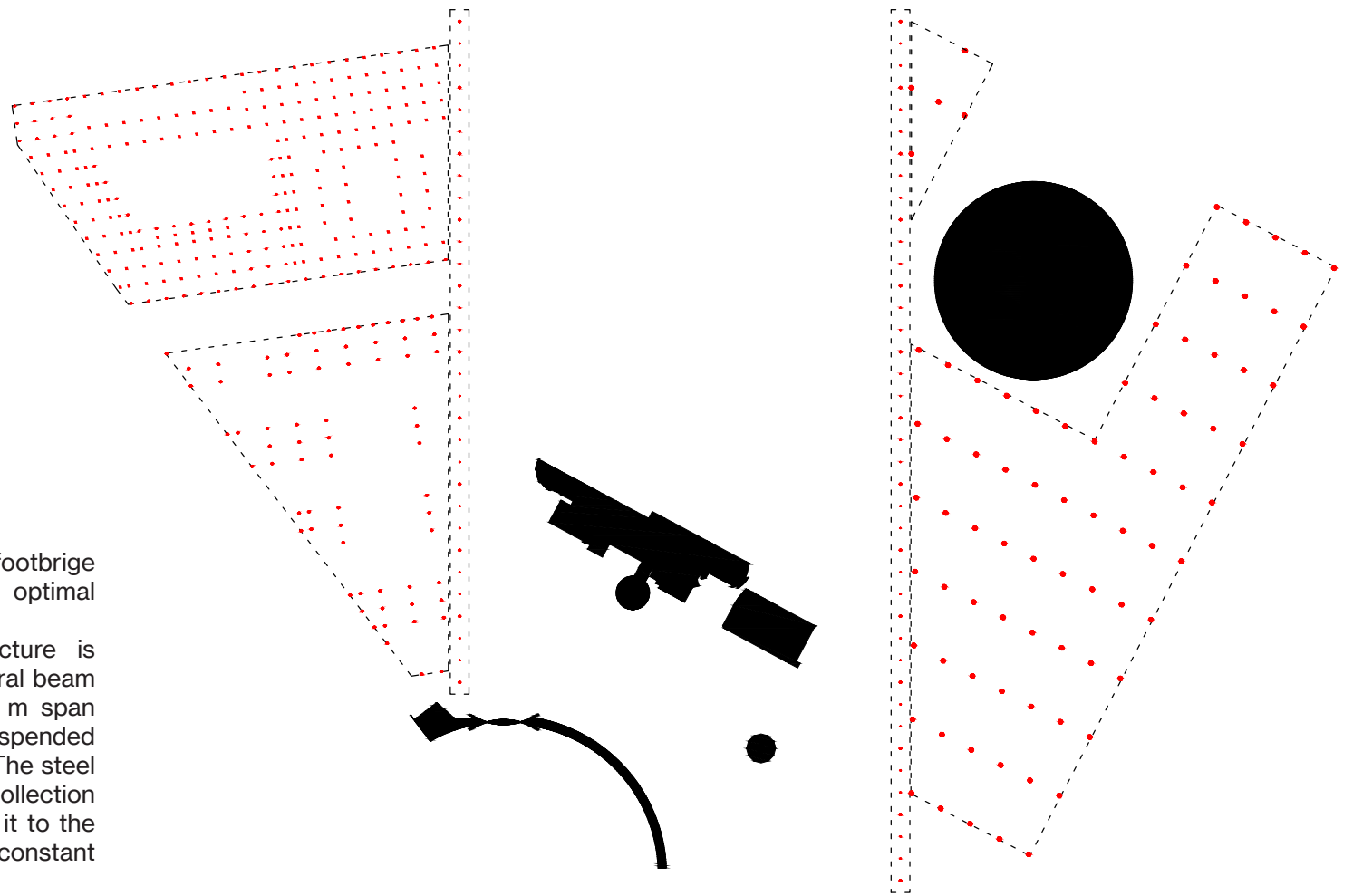
Approach to  
technical and structural issues





# Capable structures

We simply want to build structures that are closed and covered but remain subject to a certain programmatic indeterminacy. It is by leaving several options open that, paradoxically, these new constructions prove to be efficient. They respond to the program, but their functional compactness allows them to offer additional spaces.



## GALLERIES

On the each side of the park a lightweight footbrige provides a surelevated pathway for an optimal connection to the neighbouring buildings. The horizontal deck of this infrastructure is conceived as a concrete slab with a central beam and cantilevering ribs. To allow the 30 m span between the main pillars the deck is suspended every 10 m to a steel truss construction. The steel truss uses the steel tube of the rainwater collection system as an upper chord and connects it to the two steel tubes of the lower chord with a constant triangulation.

## CONFERENCE CENTER

The conference center is conceived around two main conference volumes with a surrounding exhibition space. The underground level is conceived as a simple concrete structure with regular spans and a flat slab. The ground floor follows the site topography and is divided in four 40m deep platforms. The exhibition space takes the whole ground floor and follows the simple constructive principle of the industrial shed halls, allowing an optimal natural lightning into the whole space. The building is divided into twenty 8m strips with columns disposed every 13.5 m. On each of these axis a filigree steel truss supports the 8 m inclined lightweight roof structures composed by diagonal I beams. The service space are materialized by concrete cores stiffening the structural complex. The main conference hall is disposed centrally as a 72m x 40.5m column free space. Its roof structure spans over the 40 m span with a concrete ribbed slab. The 2.0m height 45 cm deep post tensioned ribs are disposed every 8 m to support a 30 cm thick slab. The space underneath the conference hall is as well conceived as column free. Here a Bridge like concrete Structure with a structural height of around 2.6 m spans between the concrete cores and divides the space into two 32mx40.5m structural unities. This slabs are conceived as post tensioned concrete waffle slabs with 1.2m high ribs following a 4 x 4.5 grid. The waffle slabs are imagined as site cast with simple precast concrete lost formwork elements. The additional conference halls are planned as stacked on a compact 22.5m x 24m column free volume. Here as well a post tensioned concrete Waffle slab is imagined.

## BUSINESS PARK

The buissness park is composed by a serie of five building brought together under a common roof structure defining an interior vegetal space. The volume of the hotel and the multi-purpouse hall stand out above the roof. The underground floor is conceived as a parking with a simple concrete structure with constant spans and a flat slab. The load bearing structure of the building follows the structural grid off he underground level with spans of around 8m and simple concrete flat slab. The horizontal stability of each building is provided by its concrete cores. The hotel building has ten regular floors of 14m x 64 m. The load bearing structure followst he simple principles off he other buildings. Each level is conceived as a concrete flat slab on the regular structural grid with a cantilevering steel construction supporting a light concrete balcony plate. The multi-purpouse hall is a 40m x 48m column free space. Its roof structure is conceived as a 2m heigth concrete waffle slab following the main 8m x 8m grid. The space underneath the multi-purpouse hall is divided into a central 24 m space and two lateral 12 m spaces. The 12 m spans are conceived as a 40 cm slab and the 24 m x 40m space as a 1.2m high post tensioned waffle slab. The lightweight steel structure of the roof construction follows the main structural grid. The folded glass surface is supported by a filigree steel construction ling on the secondary roof beams. On the column axes the folded substructure is activated with a compression and a tension member to function as a primary truss and transmitt the roof's loading into the steel columns. The horizontal stability of the roof structure is provided by the adjacent buildings

## EXHIBITION FACILITIES

The exhibition building consists of three floors. The underground floor as a constant simple concrete structure and serves mainly as a parking area. The ground floor starts at the ground level on the sea side and follows the topography defining 60 meters deep platforms. The floor is covered on its southern side by a 60m wide ribbed concrete slab. The 80 cm ribs spans in the longitudinal direction of the building and lie every 15 meters on an intermediate supporting beam. The ribs are conceived as precast elements, which allow an cost- and time-effective execution. Each element is 2.5 wide and consist of two ribs and an intermediate 10 cm thick slab. The transversal beams are in site cast post tensioned concrete. On each supporting line a formwork is installed. The elemnts of the ribbed slab are then installed on the formwork and cast together with the beams and supplementary 12 cm cm layer of concrete wich connects all the elements in a monolithic structure. The Roof structure spans over the whole building, defining 30m column free spaces. The load bearing structure is conceived a a part of an innovative low tech roof construction. The upper chord is formed as an optimal arch and provides support for the light glass cover, the lower chord has an inversed form working as an ideal tension member and supports the lighweight membranes. An horizontal member provides support for the intermediate roof layer. Vertical elements are introduced to reduce the span of the intermediate member and stiffen the structure against asymetrical actions. The structure is repeated every 2.5m and lies on the colums axis on a transversal beam, trasmitting the loading to the columns. A supplementary bracing on the roof level allows the transmission of horizontal forces to the main stiffening elements. The horizontal stiffening of the building is provided by a composite action of the round concrete cores and the façades.



D

Approach to  
materiality and economy





# Future

Conjugating the program to the future, our proposal for the Thessaloniki ConfExPark is defined as a combination of open infrastructures, capable of responding to a multitude of possible contexts as well as to a great malleability of uses.

Conjugating the program to the future, our proposal for the Thessaloniki ConfExPark is defined as a combination of open infrastructures, capable of responding to a multitude of possible contexts as well as to a great malleability of uses.

It is thus a question of proposing spatial and constructive forms that adapt to a nervous, changing and unpredictable today. We take note of this instability but we also oppose the notions that are the first material of the architect: perennity and serenity.

Before designing buildings, we conceive receptacles, large infrastructures that support and welcome at the same time. Something robust and perennial, but which does not transmit an image of rigidity either. The infrastructure we want is not purely technical thinking, the vision of an uninspired engineer, or worse, the glorification of norms and standards. We want generous infrastructures, infrastructures that are plastic events, infrastructures that transform our buildings into real equipment with a malleability of use.

We are out of the era where the program connotes the architectural form. The only valid program, in fact, is the duty of adaptability. All this implies leaving behind predetermined scales and writing and not being offended by a certain sculptural monumentality. Here, the buildings are in the form of a skeleton. No expressionism or fetishization of the skeleton. Rather, the idea that spatial and constructive frameworks go hand in hand, without being afraid to express their robustness. We also want the current performance of materials to allow a generosity of surface and use. Our architecture dares to assert its raw and gaunt dimension. Our approach is both modest and ambitious. We want to build something other than buildings. We simply want to build «containers», structures that are closed and covered but remain subject to a certain programmatic indeterminacy. It is by leaving several options open that, paradoxically, these new constructions prove to be efficient. They respond to the program, but their functional compactness allows them to offer additional spaces. We are following up on old achievements of modern architecture: the right of the users to reappropriate the spaces under the buildings. We must give back to the users what is offered to us by structural performance: the privilege of building light and with less spatial impact.

## Economy

In the current context, in architecture and in all fields, for multiple and obvious reasons, it has become essential to take a serious look at the economy and to include it in any projectual approach. Very often, the importance given to economics translates into a quest for rationality in production.

However, as Bruno Latour points out, since modernity, «under the name of rationality, we have stuck a whole bunch of values that have not been seriously examined» until we forget what we really care about.

In the project we propose, we have explored how to seize economic requirements to transform these constraints into levers, producers of architectural qualities. These qualities are tangible or intangible, prosaic or poetic, constant or unstable, general or specific, creating generosity, which is the strength and uniqueness of a place.

In other words, the objective has been to get out of an imposed normative framework, to free oneself from what is required without rejecting it but short-circuiting it.

To reach these goals, the mobilization of both advanced technical skills and a great subjectivity appears as the best strategy.

The places produced by such an approach, we named them buildings-machines: economic, flexible, adaptable, playful, efficient spaces whose existence rests on the technique.

To paraphrase Latour, in this enterprise the economy will no longer be a means of dominating money or matter but a tool for the incessant exploration of our uncertainties.

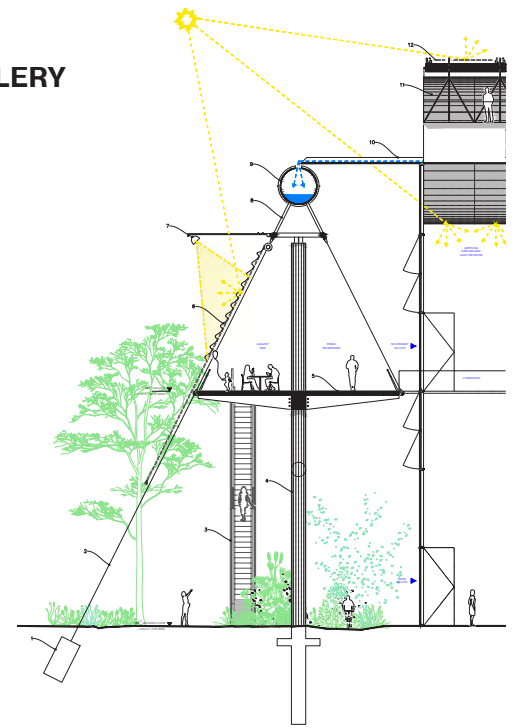
## Low carbon

In order to minimize the carbon footprint of the project, technical solutions will be studied at each phase of the project. A bioclimatic design of the building has optimized the energy efficiency of the project with a high degree of precision to reduce the need for heating, cooling and lighting, and therefore the associated CO2 emissions. The ability of the project to adapt climatically over the seasons gives it the resilience to cope with future climate change. The materials used specifically meet these objectives and will be sourced as best as possible through local channels to contain their grey energy. In the demolition phase, the team will reuse all relevant materials and limit any waste. The resulting carbon footprint is controlled throughout its life cycle, i.e. over the next 50 years.

## Bioclimatic strategy

The project is part of an ambitious environmental approach and will address in a comprehensive way the themes of resource saving and comfort. The project is designed to integrate a state-of-the-art scientific approach dedicated to passively satisfying the thermal and visual comfort needs of the occupants. Thus, the project will have an optimized bioclimatic autonomy and will only use energy consuming systems in an essential way. The quantification of environmental phenomena related to human comfort (temperature, sun, wind, natural light, etc.) will be the subject of comparative studies allowing the impact of decisions on the project to be measured throughout the design process. The comfort targets will be based on the evaluation criteria stipulated by the European standards for thermal comfort EN 15251 and visual comfort EN 17037 (already expressed in the competition documents).

## THE GALLERY

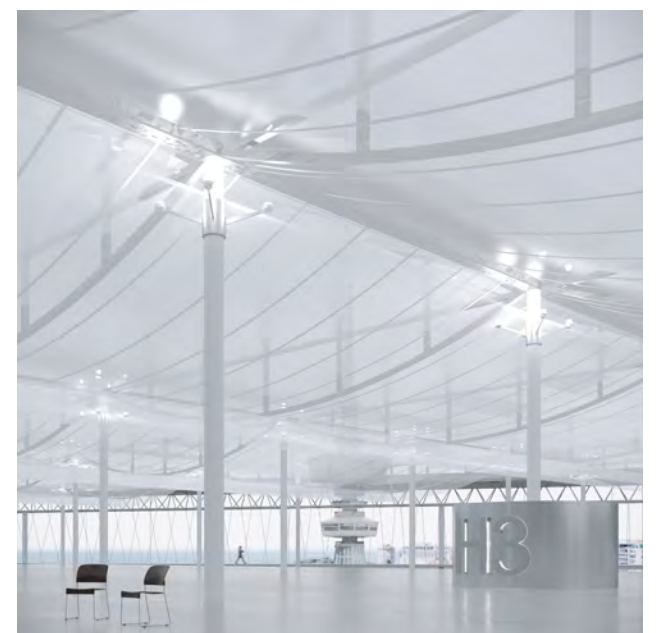


The pedestrian walkway that borders the park is much more than a simple link. It is an equipped line that is perpendicular to the slope and parallel to the North-South axis between sea and mountain. Deliberately oversized, it is measured on the scale of the territory. It contains an external development (at the upper level) and is crowned by a sculptural gutter cylindrical. This line interposes itself between park and buildings.

The value of the bridge is also scenographic, as it allows users to rediscover the landscape from different angles and heights. It is both a distributive and ecological «exchange», whose scale of appropriation is as domestic as it is territorial. It is a place of welcome, both diffuse and structuring, like the waterways that structure this landscape.

Composite, the gallery combines the robustness of concrete for the structural works (posts and deck) and the finesse of steel for all the suspension and support works of the aqueduct.

## EXHIBITION CENTER



The new Exhibition Center must be an emblematic building. Such a status is not limited to the production of an architectural «image», but more profoundly in its organizational legibility, an immediate understanding of the building for all audiences and exemplary environmental performance. The new Exhibition Center offers available and generous spaces. In this sense, it is

# Performance

## Amplify

Before designing buildings, we conceive receptacles, large infrastructures that support and welcome at the same time. Something robust and perennial, but which does not transmit an image of rigidity either.

above all a living vessel, a kind of mutant ship. We want the new Exhibition Center to be able to accommodate surprises, new cycles and regeneration. We want the new Exhibition Center to be a percussive exquisite corpse born of the confrontation of programs and structures.

The new Exhibition Center is part machine building, part industrial hall, part white cube. It is above all a monumental, yet airy velum covering a large, open floor to allow for maximum versatility.

The metal structure supporting the canopy of light seeks its dimensional and economic optimality between minimum support points, prefabrication and economy of material. It organizes a series of large halls of 30m width, each one being bordered by a line of carriers extending from North to South. The new roof is divided into three translucent layers. A curved glazing resting on the longitudinal supporting rows, a horizontal plane in opalescent polycarbonate and the last one filtered by a PTFE membrane, ensuring the diffusion of a soft and homogeneous light. The curvilinear curve of the roof carries several images: a sail inflated in the wind, a marquee for events, a luminescent bubble topping the building. The amplification is as much spatial as constructive.

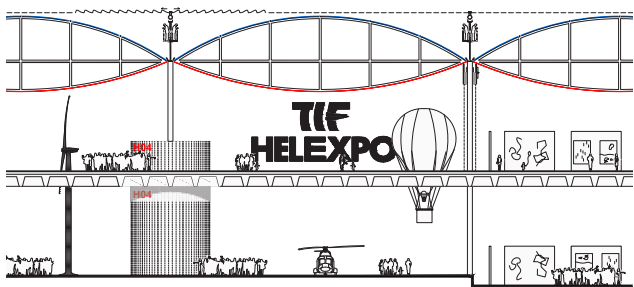
The combination of these three translucent layers creates a well-insulated system that lets the sun and light through. The last membrane diffuses the light, which is now more homogeneous, to the exhibition spaces.

In winter, the height of the outer layer of the vault is used to capture the rays of the low sun. The diffusion effect of the last membrane also serves to distribute the solar heat gain, which is now almost 25% higher in winter than it was before. The intermediate air layers act as insulators (overall U-value 0.4) and retain the heat stored inside. In summer, an efficient solar protection (TV 0.25) is deployed above the roof to control solar gain in a very efficient way. The facades on either side of the cushions are openable in height to evacuate rising hot air and generate efficient cross ventilation.

Accessibility for exterior maintenance of the roof and glazing is made possible by a rolling ladder in the roof. The cavities do not need to be accessible for maintenance. The cavities do not need to be accessible for maintenance, as the blowing device makes it possible to dispense with any interior maintenance.

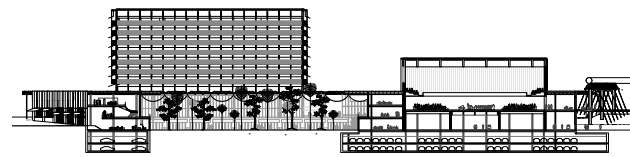
This roof complex allows to reach optimal winter thermal performances by means of ventilated and pressurized buffer spaces, of the «closed cavity» type.

The blowing device as well as the smooth PTFE fabric make it possible not to require interior maintenance. Only the exterior glazing needs to be cleaned from a removable ladder.



As spectacular as it is, this new roof is placed under a concern of economy. Just as the structure supports it. It is made of standardized elements, with which, for example, industrial greenhouses are built, which guarantees a reasonable cost, both for the work and for its maintenance.

### BUSINESS CENTER AND HOTEL



The business centre is a complex building on a sloped site, which mediates the grain of the city and the vast scale of the expo. We respond directly to the existing complexity of axes, routes and pedestrian paths, weaving new relationships between the congress centre and our new park, connecting mountain with sea.

A key concept of the new masterplan is to strengthen the mountain-sea axial relationship. Parallel bridges tie the different elements of the project together offering a space of circulation and intensity of activities along the park flank.

We utilise these upper walkways and park boulevards to create a strong connection between the Business Centre and The Congress Centre.

The two monumental Rooms (the Multipurpose Hall and the Conference Hall) are connected physically by these bridges.

A colonnaded row of shops and the entrance to the Multipurpose Hall face the main entrance to the congress centre to the south.

The building respects an important diagonal connection to the Rotunda through the courtyard and the new park.

There is a last axial connection between the Hagia Sophia at the end of the tree lined avenue filled with cafes and shops, which continues into the shared square and congress centre. This axis is terminated with a view of the monumental cupola of the basketball arena.

In order to deal with the complexity of the site we have developed the project as a permeable courtyard building, consisting of cascading streets and piazzas at a human scale. The building is at the confluence of several key axes and has a responsibility to its neighbours in each direction. The main arterial route to the north, the congress centre to south, the metro square to the west and the park facing the expo centre to the east. As such, our building is a building without a back; approachable from all sides. Our courtyard acts as rotational element, connecting pedestrians to the surrounding buildings and park.

We have been influenced by examples which act simultaneously as building and system. Our inspiration for the project comes partly from the Bezesteni market of Thessaloniki in which a low rise ring of shaded shops address the street and create a frontal condition from every side to the large volume behind. We have attempted

to maintain the human scale of the site with the creation of the light roof which surrounds a low rise courtyard.

The hotel and hall are volumes with more complex spatial requirements. As such, they break through the roof line to create monuments in the cityscape. This cohesive form and identity, with its composition of flexible inside/outside spaces and monuments evokes the Mezquita of Cordoba, where courtyards, tower, places of worship, study and ritual are unified together in a single building.

The design of the roof evokes some of the endlessness of the expo halls while simultaneously evoking the joy and human scale of the market. While all three buildings of the overall expo masterplan are unified in their heights and strong identity, our building functions as a complex urban system while maintaining a strong coherence as its own building.

The business centre is comprised of four different programmatic elements: shops, offices, a Multifunctional Hall space and a hotel. The series of cascading piazzas, inhabited plinth of shops and generous shaded roof acts as an inside-outside space for restaurants, cafes, markets and gatherings.

The hotel is the landmark on the city side of our site, sitting on a plinth of rentable shops and offices which generates civic activity on the lower floors. A processional stair leads visitors from the metro square to a raised lobby above the height of our roof with views over the sea where people can drink, eat and make their way up to their rooms. The majority of rooms offer an outdoor space and all rooms face either the mountains or the sea. Most of the rooms also profit from a view of the trees in the courtyard and the park. The building is capped with a rooftop pool and other recreational facilities.



The performance hall is the second landmark building of the site. Because of the low-rise nature of our development this has presence on all four sides of the building and acts as a monument within the park and as a landmark from the main road. The entrance to the hall faces the entrance to the congress centre, creating a lively exhibition square which is also the primary route into the park from



# Eco-nomy

Being economical means reducing or limiting expenditure.

means reducing consumption, limiting what costs.

means mastering the management of goods, of any complex set.

means reducing the number of means of expression.



the east-west access. We have raised the theatre onto the upper floor to provide an elevated balcony which connects to the bridge, looking out onto the park and the sea. Both of the foyer of the Congress Centre and the Multipurpose Hall are at the same height and share the same balcony on the bridge. Rising the Hall to the level of the Egnatia street allows an efficient connection between the Hall and this street for logistic purposes. Shops, in line with the Bezesteni market typology, create a crust around the building while a smaller hall sits below, inhabiting the deepest part of the plan.

All shops on the site can be accessed directly from street level. All shops are shaded on the inside by our roof system and have a more traditional series of awnings facing the city.

All offices are arranged on top of the plinth from the street at the height of the metro square. We developed these with a very flexible, free plan and double height spaces in which mezzanines can be filled in and fit out. All volumes are narrow in plan and allow for natural daylight, cross ventilation and permeability between the buildings.

We see the Business Centre a part of the city, being a stepstone between the urban context and the Expo site.

The business Centre uses a range of 5 different materials:

- White steel for lightweight spanning elements
- Concrete for the structure,
- Aluminium profiled plates and curtain wall for the facades,
- Cathedral glass for the light roofs,
- Green fabric for the velarium's of the roof and the tents of the hotel and shops.

The structure of the roof is made of thin profile of white steel. The covering is made of cathedral glass. Around the courtyard green "velarium's" are hung underneath the roof.

The whole project is made of very rational and flexible concrete plates and columns. The multipurpose hall contains two exceptions for its structure: a waffle concrete structure for the ceiling of the small Room and a steel structure for the roof of the big Room.

Three type of facades compose the project.

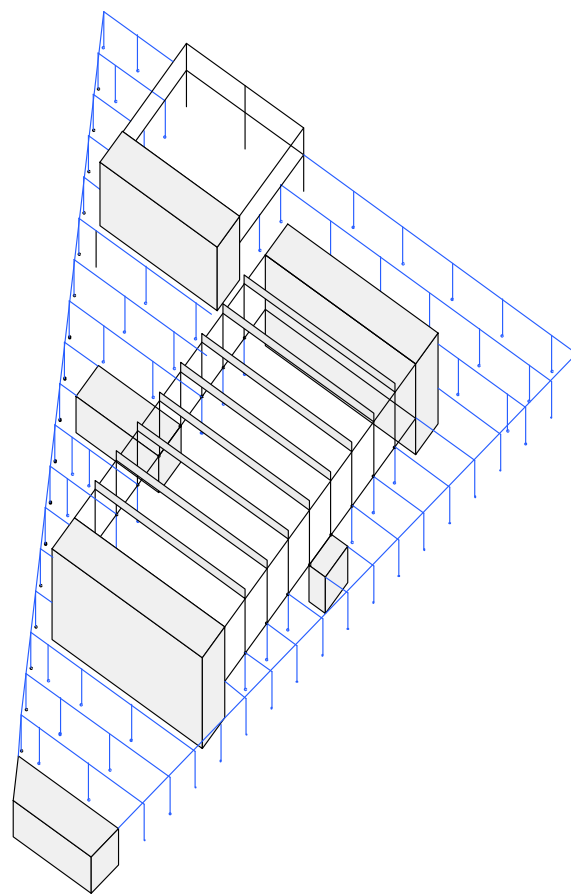
The "émergence" of the multi -purpose Hall is made

of aluminium plate with extruded thin strips. This material is also found on the two façades facing the street and the city.

The "émergence" of the Hotel is made of light white steel balconies structure. Green tents are also hung to this façade offering an extra shading system for the Hotel.

The facades of the shops and office are made of aluminium curtain wall protected by the shading of the trees, green tent on the ground floor and the green "velarium's" of the Light Roof.

## Conference Center



The conference center is a program that maintains an ambivalent relationship with the city. An urban and public by essence, it is also an enclosed program, which must offer optimal conditions of comfort, visibility and acoustics. The proposed plan seeks to take advantage of this ambiguity to create a building that is both open and closed, urban and interiorized. We have schematized these two conditions (openness and closure) through what are called «white spaces» and «black spaces».

The white space is a space of porosity, continuity, lightness and indeterminacy. It is above all a space of exposure, but also of wandering. It is open to the city (to the west) and to the large park (to the east). It is made of a light and rational metallic structure. We tried to implement a great economy of means and materials: an economical and regular frame of 8m x 13m50 based on tubular posts. The diffuse light from the North spreads evenly through a series of light and repetitive sheds with a span of 8m. This orthogonal and regular grid is also visible on the west façade of the Conf. Center. This facade is presented to the city as a series of linear halls, echoing the tight parcel structure. Depending on the programming proposed inside the building, this façade can open up to create a continuous flow between the city and the park.

It is also composed of light and inexpensive materials such as sheet metal and polycarbonate. The black spaces, on the other hand, are spaces whose use is determined. They include, of course, the conference rooms, located on the floor, but also a set of dark spaces (projection areas, technical rooms, toilets, black boxes, storage areas, kitchen, etc. ...). The «black spaces» are built in concrete and have very few openings. This materiality affirms the permanent and structuring character of these programs. It also underlines the weight of the conference rooms that are located on the floor. However, the use of concrete is reasoned and limited.

It is the impression of mass obtained from a certain economy of material. The choice of positioning the heaviest programs on the first floor may be surprising. But, like the Palazzo della Regione in Padua, it seemed relevant and desirable to suspend the 'big box' high up in order to create a great porosity of the whole system. This big black box finds in fact a qualitative, open, urban and civilized relationship with the big park through the gallery.

The choice to treat the whole program with these two types (white and black) allows to create a system at the same time simple, rational but also evolutionary in time. The two types of spaces complement each other in terms of thermal performance and light and sound conditions. They allow to lose very little space and to avoid any use of intermediate spaces. The exterior facades are made of microperforated sheet metal, polycarbonate and glass, giving the whole a transparent and light appearance. The facades on Aggelaki Street have a system of blackout awnings that give rhythm to this very urban and busy street.

The two emergences (conference rooms) are covered with large metal panels. This treatment gives them a dimension that is both abstract and light from the city. The opaque parts of the sheds, facing south, are covered with photovoltaic panels, allowing to optimize this condition and to make it fully productive for the whole site.







E

Table with the space program given  
and the space program realized



PROGRAMME	GIVEN SURF	PROPOSAL SURF
<b>EXHIBITION CENTRE</b>		<b>82 200</b>
<b>Exhibition centre</b>	<b>47 000</b>	<b>46 700</b>
Ground-floor level exhibition space	30 000	26 800
Above ground-floor level exhibition space	17 000	17 900
Foyer	incl	450
WC	incl	600
Snack bar / canteen / cafeteria	incl	700
Utility rooms	incl	100
VIP Mezzanine	incl	150
<b>Administration offices</b>	<b>1 500</b>	<b>1 500</b>
<b>Underground</b>		<b>31 000</b>
Storage space	12 000	12 000
Parking		19 000
<b>Open-air exhibition space</b>	<b>3 000</b>	<b>3 000</b>
<b>BUSINESS CENTRE</b>		<b>30 330</b>
<b>Hotel</b>	<b>5 675</b>	<b>5 700</b>
Reception	115	110
F&B	600	600
Roofgarden	200	200
Meeting / event spaces	150	150
Wellness facilities	350	350
Hotel Rooms	4 060	4 090
Maintenance and Operations	200	200
<b>Multi-purpose hall</b>	<b>3 500</b>	<b>5 170</b>
Public Spaces	450	950
Halls	2 100	2 750
Backstage	150	120
Auxiliary	400	450
Unassigned Areas	400	900
<b>Commercial complex</b>	<b>16 000</b>	<b>15 860</b>
Retail / Recreational / Services	9 000	8 800
Offices	7 000	7 060
<b>Underground</b>		<b>3 600</b>
Storage space	3 500	3 600
Parking		1 088
<b>CONGRESS CENTRE</b>		<b>18 740</b>
<b>Single level conference hall</b>	<b>3 000</b>	<b>3 130</b>
Stage area	3 000	2 830
Control room	incl	300
<b>Conference rooms</b>	<b>1 400</b>	<b>1 670</b>
<b>Luxury exhibition hall</b>	<b>6 000</b>	<b>6 850</b>
<b>Entrance, conference and exhibition foyers</b>	<b>3 000</b>	<b>3 330</b>
Foyer space	incl	1 400
Reception and registration	incl	340
Cloackroom	incl	150
WC	incl	400
Business lounge	incl	360
Café	incl	180
Control rooms	incl	100
VIP mezzanine	incl	400
<b>Administration / Event organizers offices</b>	<b>200</b>	<b>400</b>
<b>Public bar-restaurant</b>	<b>900</b>	<b>960</b>
Seating area	400	535
Kitchen / Catering area	500	425
<b>Underground</b>		<b>2 400</b>
Storage space	2 000	2 400
Parking		
<b>PARK</b>	<b>4 250</b>	<b>4 100</b>
<b>Cafeteria</b>	<b>250</b>	<b>100</b>
<b>Preserved buildings</b>	<b>4 000</b>	<b>4 000</b>
<b>TOTAL NET SURFACE</b>		<b>135 370</b>
<b>TOTAL NET SURFACE ABOVE GROUND</b>	<b>92 425</b>	<b>95 370</b>





F

A3 copies  
of the drawing panels



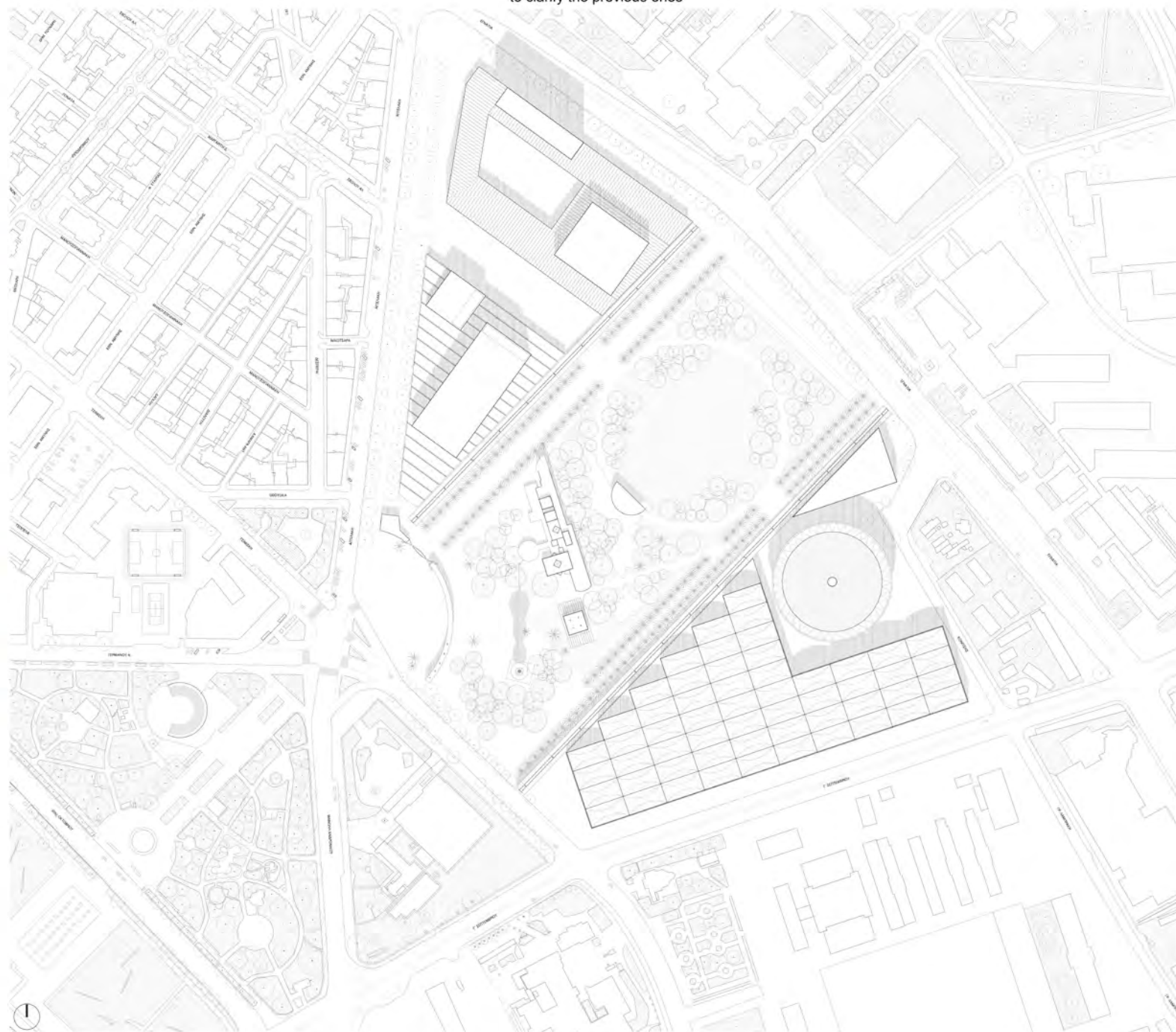
H3





Aerial view of Thessaloniki ConfEx Park

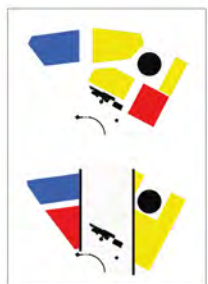
**A new urban fragment**  
 to clarify the previous ones



**1. Ball joint**  
 The site is compressed between 4 different conditions: (1) the historic city, (2) the urban extension, (3) the mountain and (4) the city.



**2. A Central Park**  
 An oversized park visually connects the sea and the mountain. It is the centre of the ConfEx Park but also an iconic public space on the scale of the city.



**3. Slightly rotated masterplan**  
 The central position of the park aims to enhance the masterplan qualities for openness and porosity while slightly turning them around the park.



**4. Urban tissu**  
 On both sides of the central park, the programs adjust themselves to the city grid and topography, emphasizing the unique form of the city.



**5. Link**  
 The new ConfEx Park project can be seen as a new urban fragment in the rich history of Thessaloniki, but it also has to fight against the surrounding fragmentation. All in all, this new fragment opens up new lines, beyond its own perimeter of intervention.  
 I University of Macedonia - II Residential area - III Temple of Foundation / Swimming pool / Park - IV Institutional buildings / Museums - V University Sport Center - VI 3rd Army Corps - VII Royal Theatre Park - VIII ConfEx Park - IX Aristotle University - X Station



**6. Continuity and porosity**  
 > the N-S connection between the sea and the mountain is cut by the area formed by the ConfEx Park and the military corps  
 > opportunity to increase urban continuity between the different open and public spaces of the site  
 > opportunity to qualify the transversal connection between the sea and the mountain



**7. Landmark**  
 > the programme is addressed to several scales, addressing both to the near and the far with iconic existing figures  
 > opportunity to develop specific elements of the architecture of the event



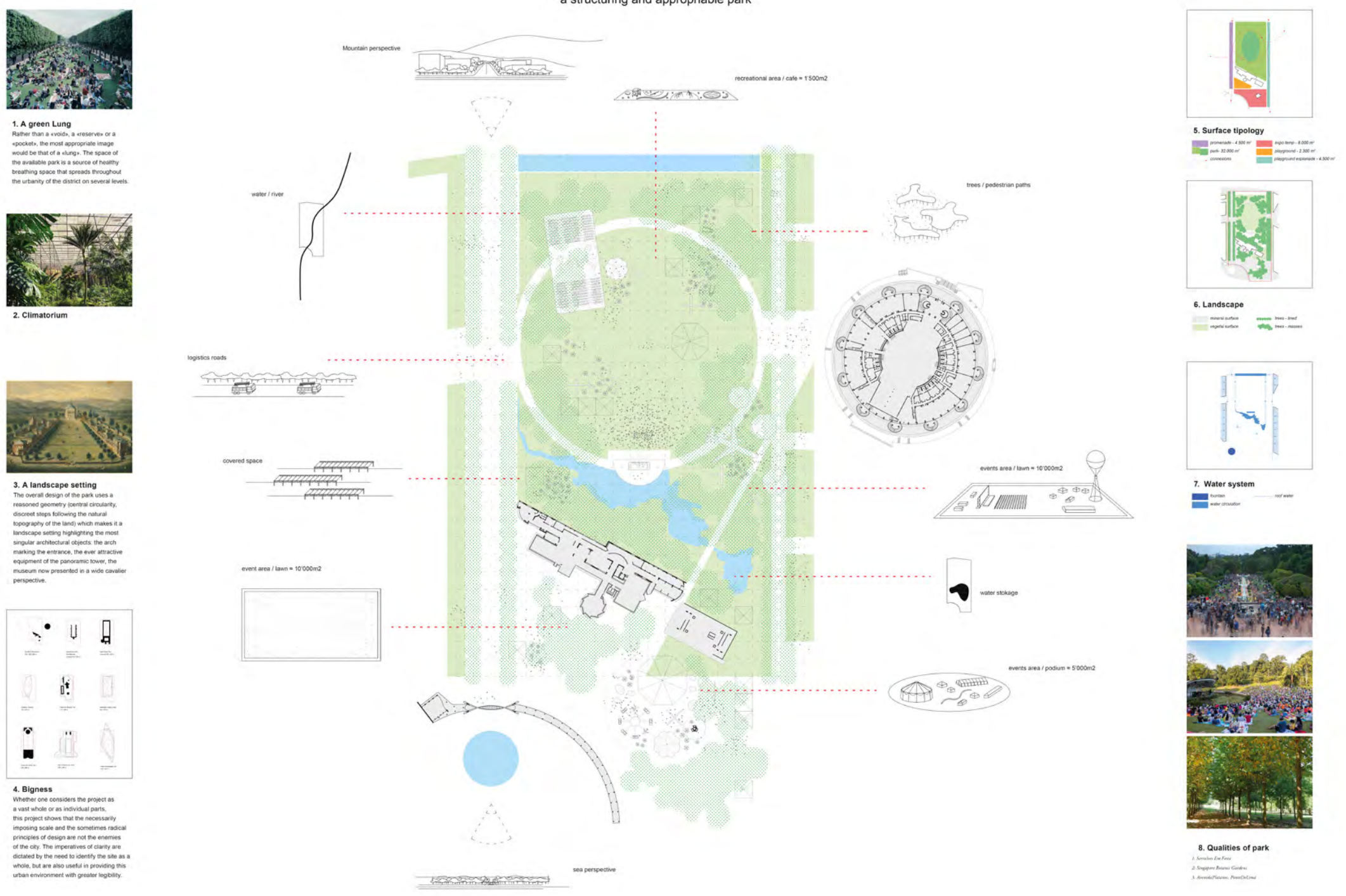
**8. A structuring park**  
 The central park asserts itself as the structuring urban element of the project. Crossing and enhancing the topographic axis of the site, it is immediately asserted by its scenographic value. Wherever he or she is in the park, the visitor finds the sensation of facing the sea or the hill.





View from the central park of Thessaloniki ConfEx Park

### The Central Park a structuring and appropriable park







Business Center

Congress Center

Central park



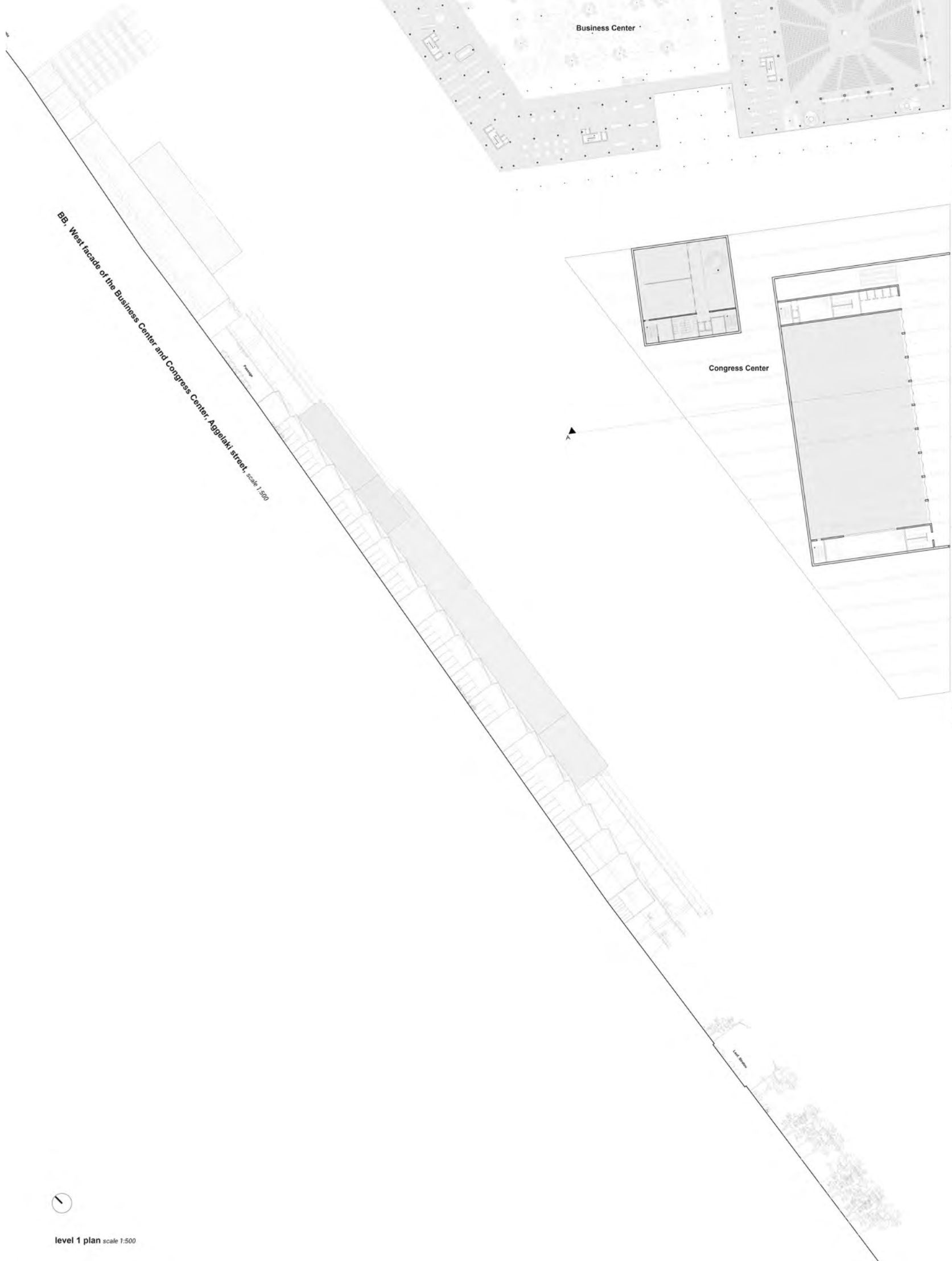




AA, Longitudinal section of the site west-east, scale 1:500



CC, East facade of the Central Park, scale 1:500

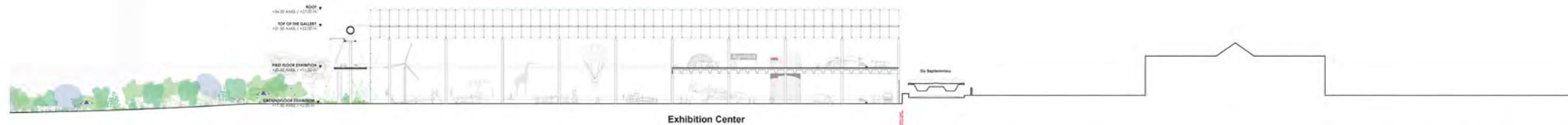


BB, West facade of the Business Center and Congress Center, Aggelaki street, scale 1:500



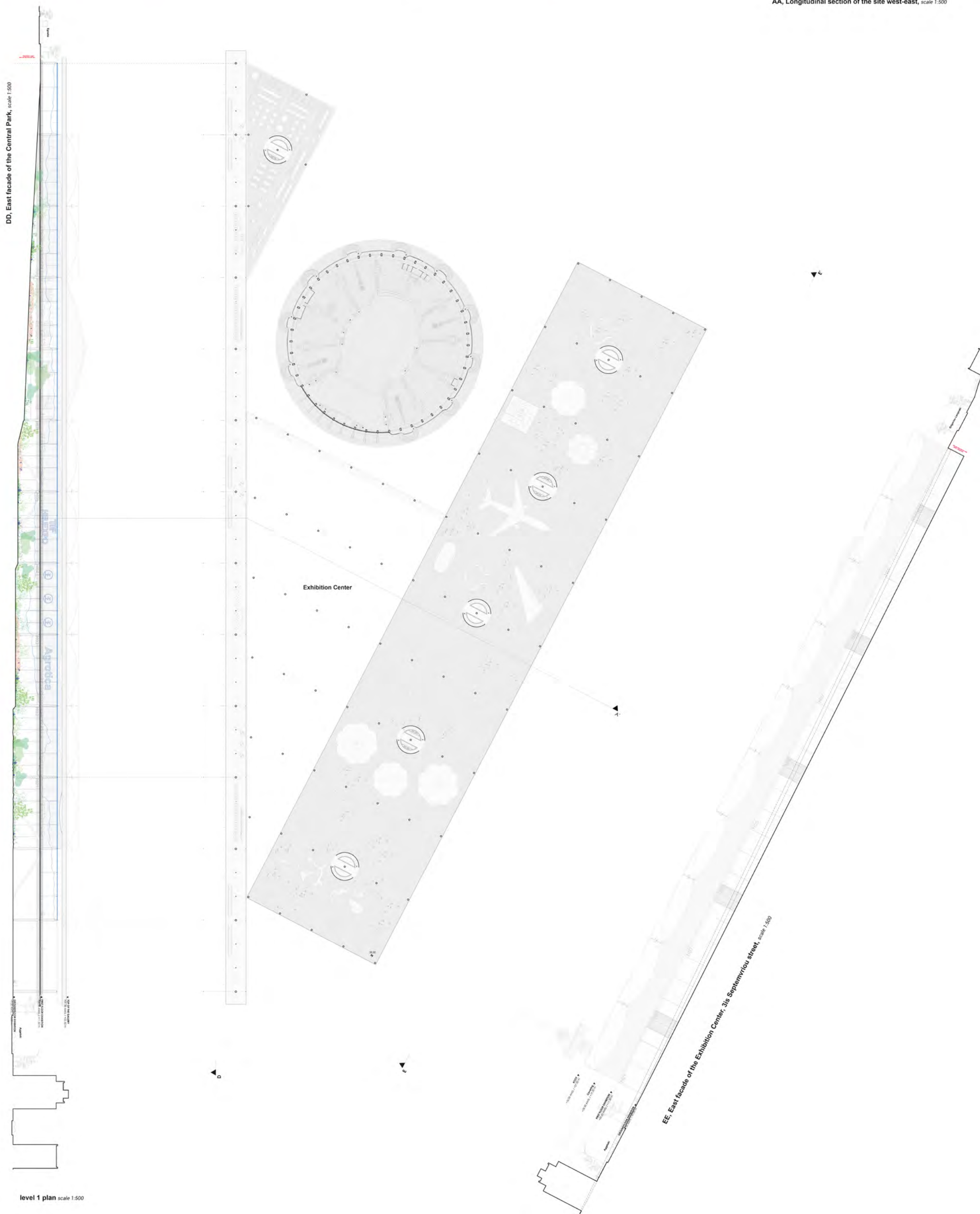
level 1 plan scale 1:500





Exhibition Center

AA, Longitudinal section of the site west-east, scale 1:500



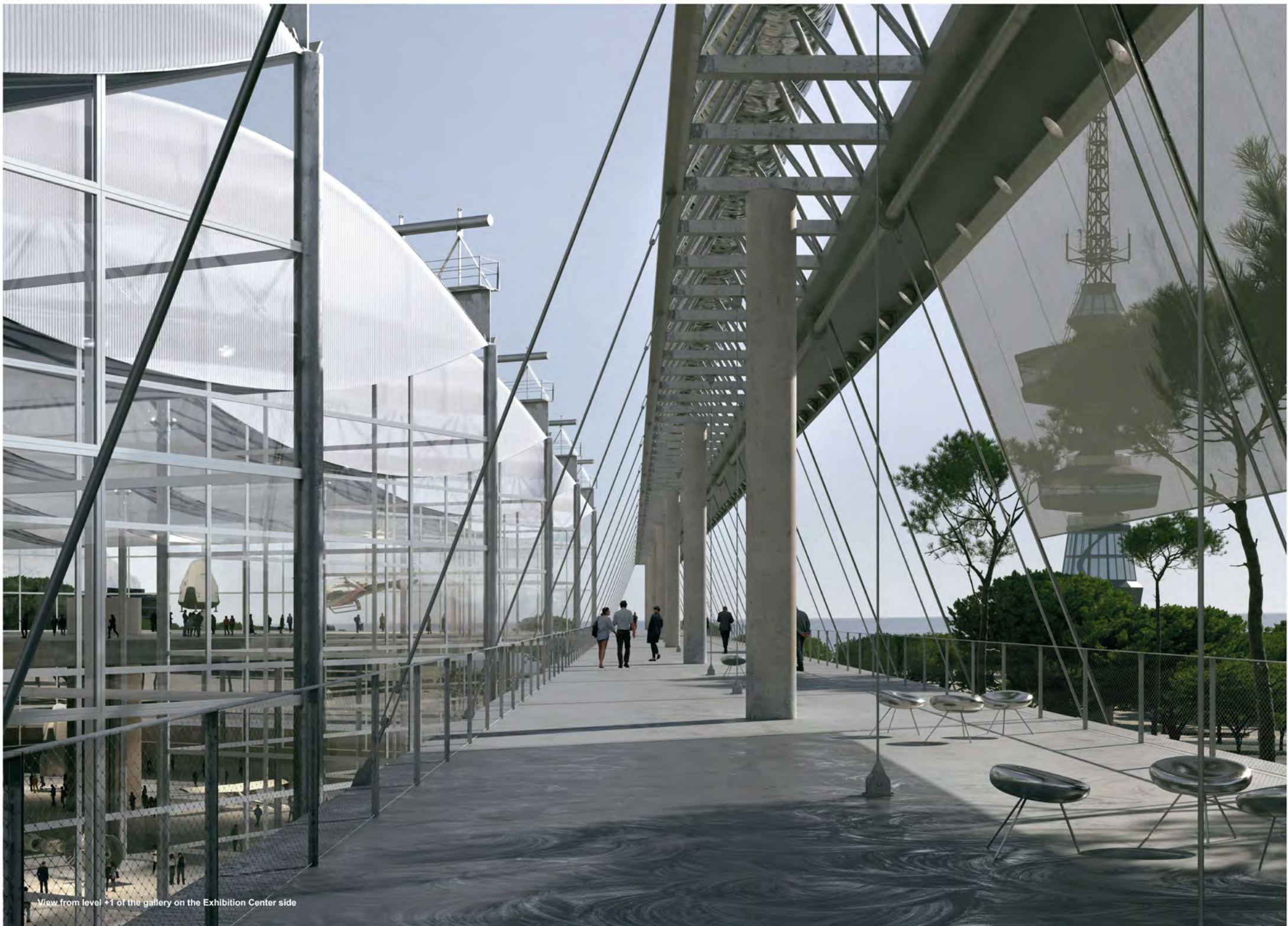
DD, East facade of the Central Park, scale 1:500

Exhibition Center

EE, East facade of the Exhibition Center, 3is Sypremvriou street, scale 1:500

level 1 plan scale 1:500





View from level +1 of the gallery on the Exhibition Center side

## The factories

the equipped pedestrian mall



### 1. A three-dimensional project

This concept is already based on a first strong idea: a project is not limited to designing buildings. There is always an additional dimension that is built outside the intervention area. In this case, we can speak of a triple dimension: scenic, architectural and landscape.

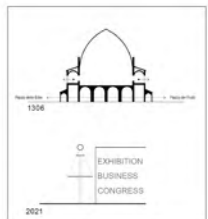
Engraving Crystal Palace, London, Joseph Paxton, 1851



### 2. Supporting structure

the footbridges take on the function of a symbol of technology and science. A drainage channel functions as a large continuous beam with spans of 30m. The filigree connecting fabric is suspended from this element and stabilised horizontally by the vertical walkways.

Public bath in Bellinzona, Aurelio Gaffetti, 1970



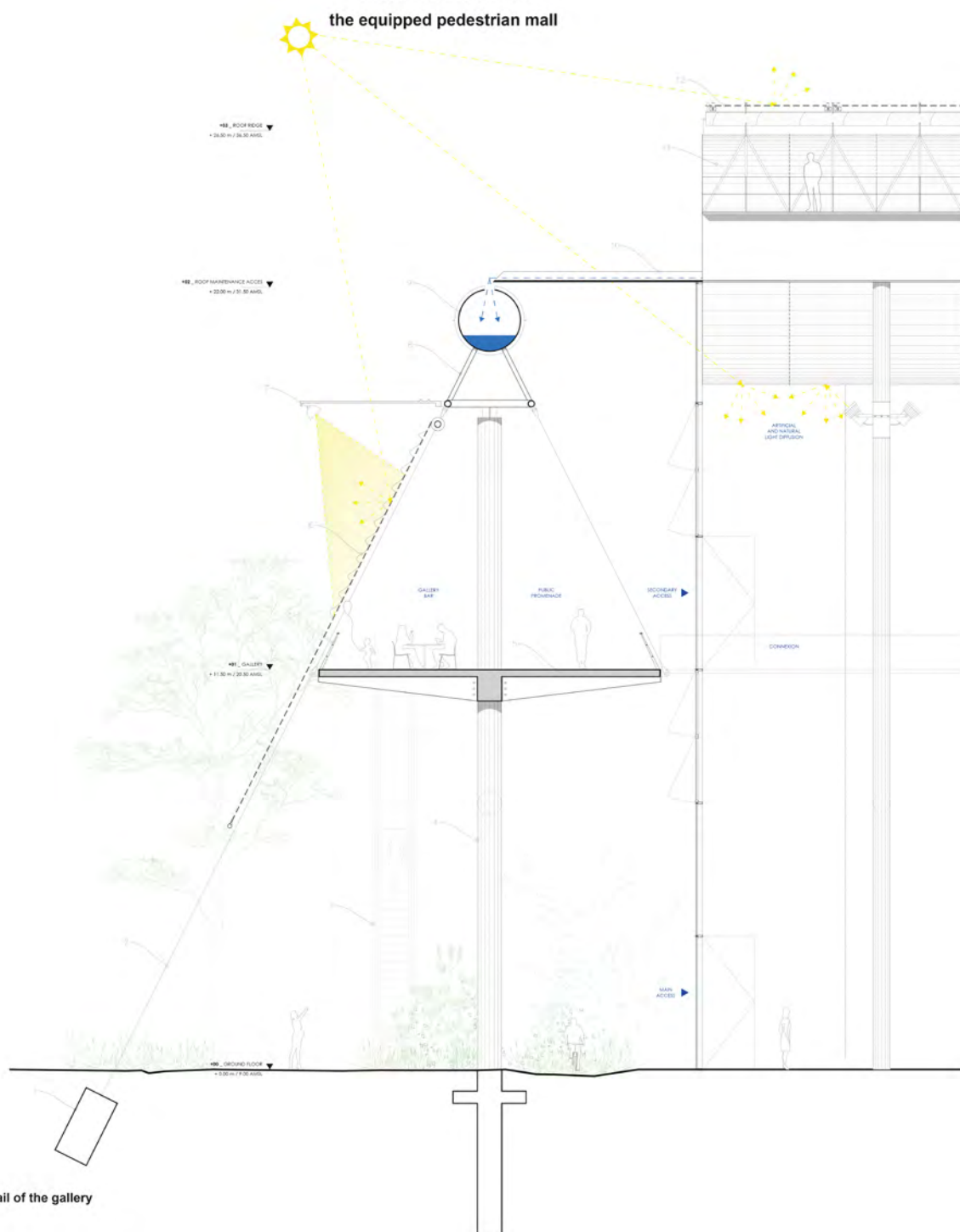
### 3. Openess & connection



### 4. Line of uses

Both lines and signs, these galleries serve several functions: as display supports, as panoramic stands reinforcing the scenography of the central park, and as distribution areas for the exhibition hall and the business centre. They can also host temporary programmes.

Principle detail of the gallery



5. Use gallery  
 Palazzo della Ragione, Padua, 1306



6. Protected gallery  
 Raimbaut, Stuttgart, 1997

#### Legend detail

1. Concrete block
2. Cable railing
3. Escalator
4. Round concrete column
5. Concrete footbridge deck
6. Sunscreen roller blind
7. Light projector
8. Steel truss beam
9. Rainwater collection system
10. Gutter
11. ETFE cushion
12. Solar shading system



7. transformed resource  
 top: Madia Line Olympic Village, Munich Hans Haller, 1971  
 bottom: Pipeline, water drainage



8. Climate controller  
 Judo Eco Park, Taiwan, Philippe Rahm, 2009





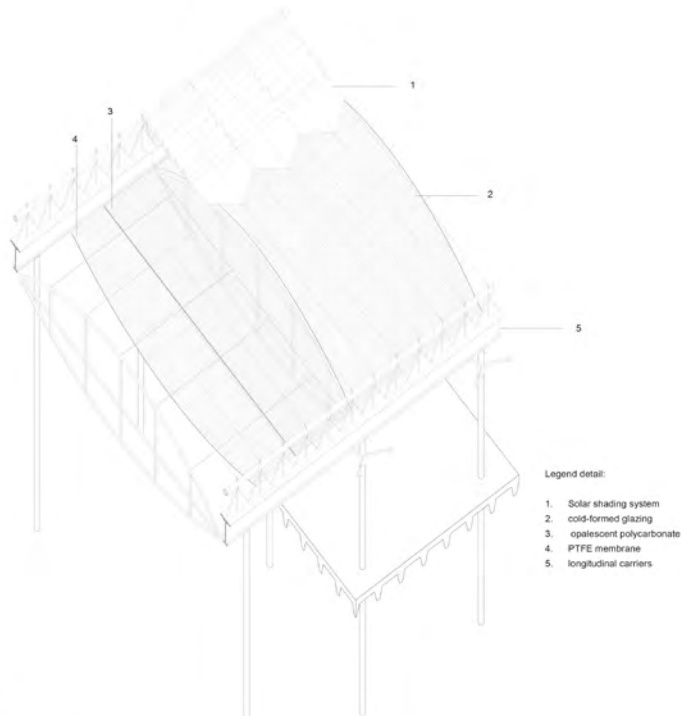
View of the facade of the Exhibition center from 3is Septemvriou street

### The Exhibition Center



View of interior of Exhibition Center

zv



- Legend detail:
1. Solar shading system
  2. cold-formed glazing
  3. opalescent polycarbonate
  4. PTFE membrane
  5. longitudinal carriers



View of interior of Exhibition Center



**1.A clean, functional and light structure**  
 The project for the exhibition hall is based on the idea of a one-piece building, defined above all by the expressiveness of its structure.  
 Like the Bibliothèque sainte Geneviève in Paris, the new Exhibition Centre is above all a living vessel, a kind of mutant ship. The new Exhibition Center is a combination of a 'machine building', an industrial hall and a 'white cube'. It is a monumental velum in terms of its dimensions, but bathed in natural light thanks to the materiality of its roof.  
 photo Bibliothèque sainte Geneviève in Paris



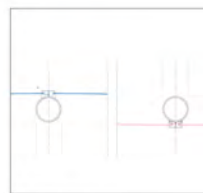
**2. Velum**  
 The large roof evokes a bubble suspended above the exhibition spaces. The curvilinear curve of the roof carries several images: a sail inflated in the wind, a tent for events, a luminescent bubble covering the building. The amplification is as much spatial as constructive.  
 Archive photo Paradis' Hall, Gent Belgium  
 Open structure with steel



**3. Agricultural greenhouse**  
 The new roof consists of three translucent layers. A cold-bent glazing the glass bends under its own weight resting on the longitudinal bearing rows, a horizontal plane in opalescent polycarbonate and the last one filtered by a PTFE membrane, ensuring the diffusion of a soft and homogeneous light.



**4. Sun protection**  
 In summer, a high-performance solar protection system (TV 0.25) is deployed above the roof to control solar gain in a very efficient manner.



**5. Glass detail**  
 Spectacular though it may be, this new roof is still placed under a concern for economy. Just like the structure that supports it, it is made of standardised elements, which are used in industrial greenhouses, for example, and this guarantees reasonable costs for the structure and its maintenance.



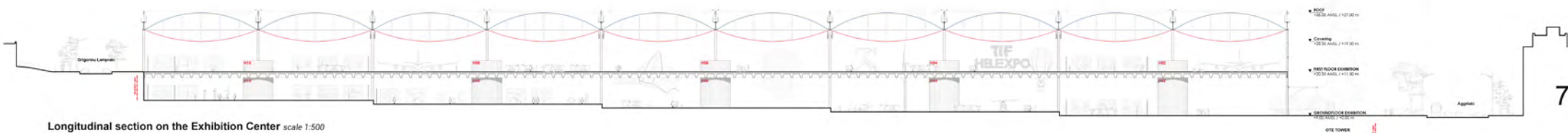
Program organisation  
 top: level +1  
 bottom: groundfloor



structure and access  
 top: structural framework  
 bottom: access



Plan of parking level (-1)



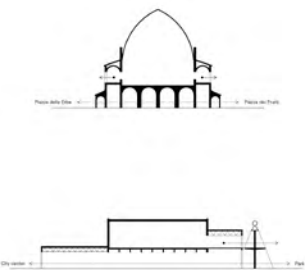
Longitudinal section on the Exhibition Center scale 1:500



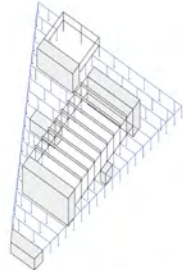


View of the east facade of the Congress Center, Aggelaki street

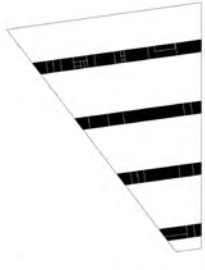
### The Congress Center



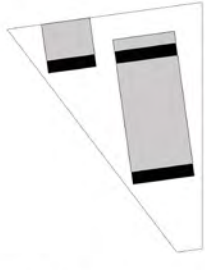
**1. Openness and relation to the Park and the City**  
 On the top, Palazzo della Ragione, Padova;  
 On the bottom, section of the Conf. Centre



**2. Simple repetitive structure**



**3. The Expo Hall (ground floor)**  
 White space (flexible) vs Black Space (pre-



**4. The Conf. halls (upper floor)**  
 Visible permanent box connected to the footbridge and the park



**5. Access and flows - Conf. Halls**  
 (1) access from the street via main entrance, (2) access to the small conf. situated on Gt. +1, +2, (3) access to main conf. hall on 1st floor via the foyer, (4) outside extension on the galerie



**6. Access and flows - Exhibition space**  
 (1) access from the street to the reception desk, (2) cloakroom, (3) exhibition space (covered by sheds), (4) exhibition platform (underneath the big box), (5)



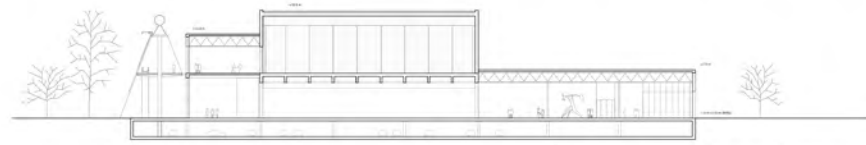
**7. Access and flows - Open Public exhib.**  
 (1), (2) and (3), possible transversal connections between the city and the park functioning as open exhibition «passages».



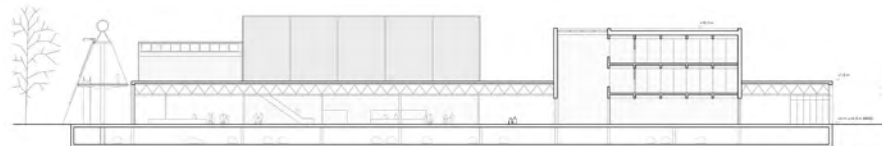
View of interior of Congress Center



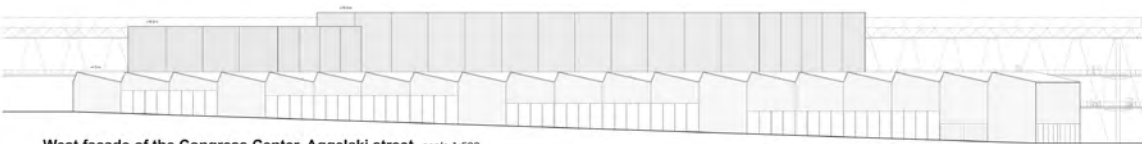
Plan of parking level (-1), scale 1:1 000



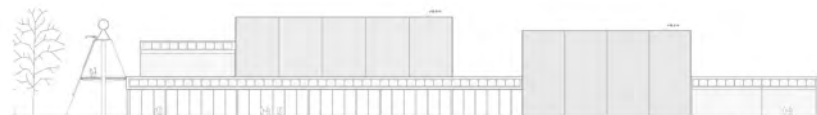
Cross section on the Congress Center, scale 1:500



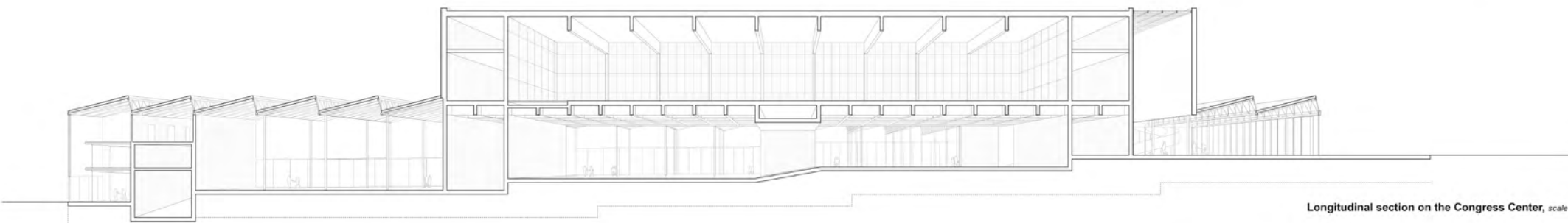
Cross section on the Congress Center, scale 1:500



West facade of the Congress Center, Aggelaki street, scale 1:500



North-East facade on the Congress Center, scale 1:500



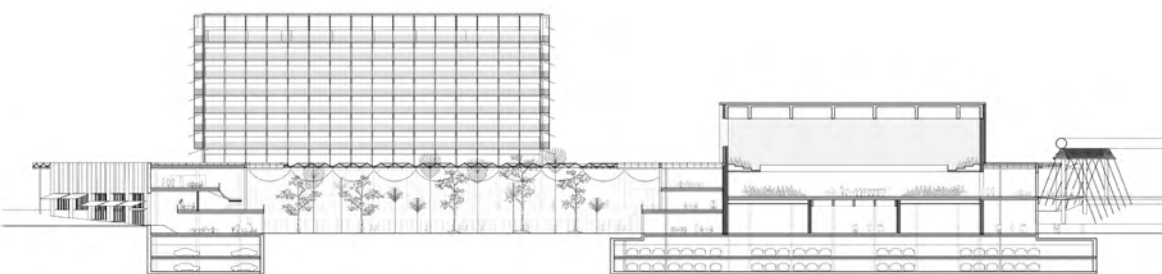
Longitudinal section on the Congress Center, scale 1:250



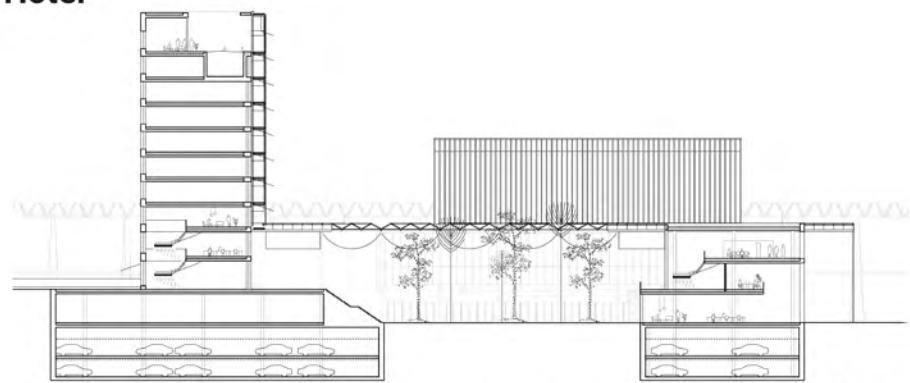


View of Business Center from the intersection of Aggelaki and Egnata street

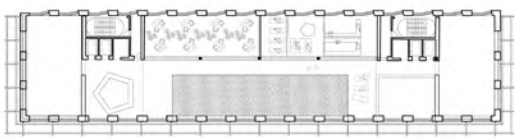
### The Business Center and the Hotel



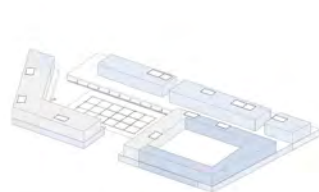
Longitudinal section on the Business Center and the Hotel, scale 1:500



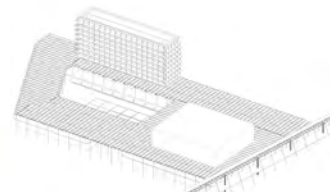
Cross section on the Business Center and the Hotel, scale 1:500



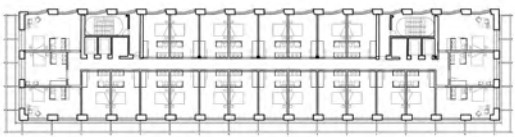
Plan of level +10 - Hotel spa, scale 1:500



Levels +2 to +3 - Hotel offices and lobby



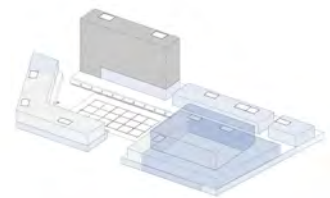
Business Center roof



Plan of level +4 - Hotel bedrooms, scale 1:500



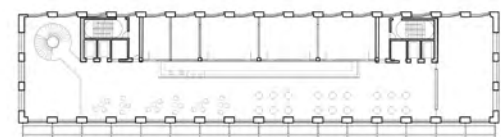
Level +1 - Hotel retail



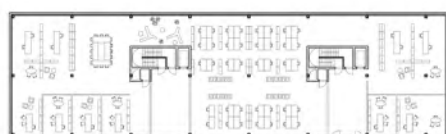
Levels +4 to +10 - Hotel bedrooms



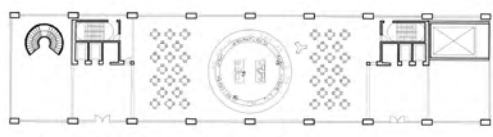
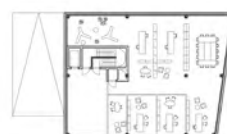
Hotel, view from the courtyard



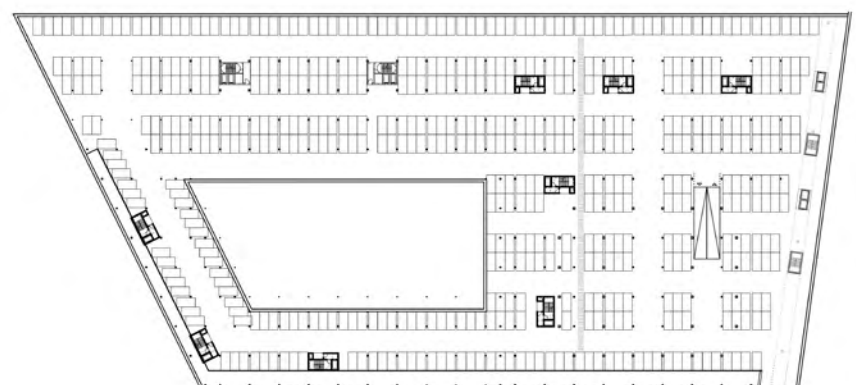
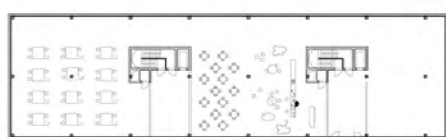
Plan of level +3 - Hotel lobby, scale 1:500



Plan of level +2 - Hotel offices, scale 1:500



Plan of level +1 - Hotel retail, scale 1:500



Plan of level -1 & -2 - Hotel parking, scale 1:500