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Fig. 1.1 Site Plan, scale aprox. 1:2000

1:2 Site plan



2. Vision and Philosophy

Agora: the Fairground as a new Public Space

The TIF-Helexpo fairgrounds have been part of the people of Thessaloniki's collective imagination for more than seven decades. An urban landmark and a point of reference not only in space, but also in time; shaping the calendar of Thessaloniki with the International Fair, biennial trade shows and seasonal festivals. Yet, lodged in the heart of contemporary Thessaloniki, the 160.000 square meter site looms like a question mark over the city's future: what will be the role of this open expanse of publicly accessible space, apart from hosting the re-imagined complex of TIF? And how could we reconcile an **asynchronous and intensive program**, with a **continuous, living urban reality**?

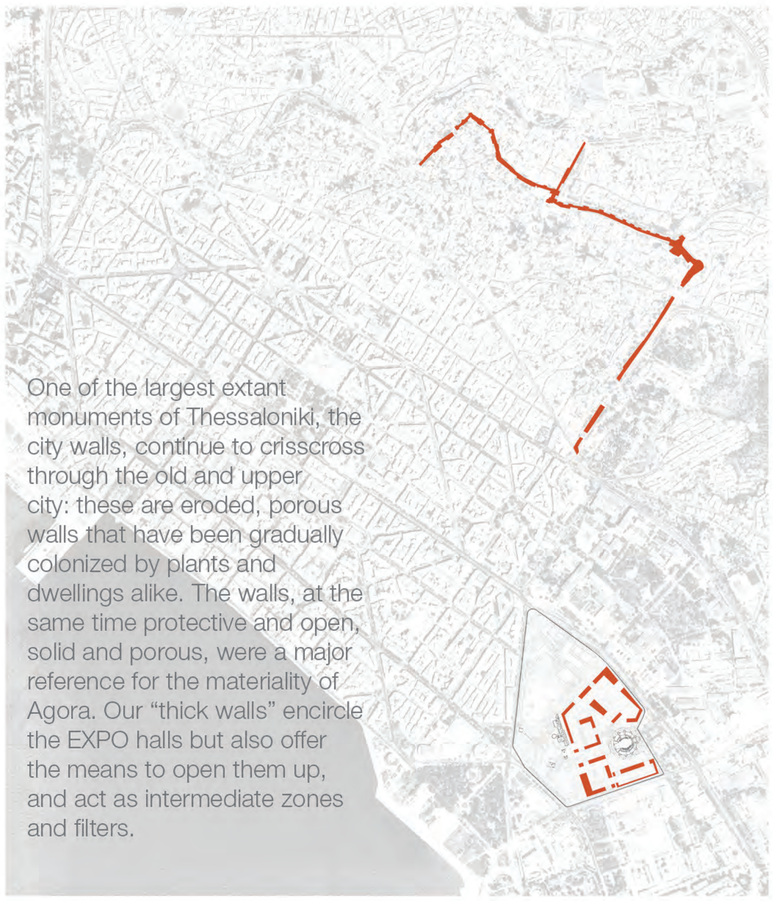
The ConfEx site currently stands as a barrier between the historical city and the eastern districts; the new Special Spatial Plan attempts to free up space to the southwest for a park, and concentrate the buildings while allowing gaps between them. However, no matter the layout, the mere size of the program risks overwhelming the scale of the city surrounding the site. The complexity of the site and program requires a multi-pronged, hybrid approach: simply locating and arranging the program within the site will not be enough. The challenge of the new ConfEx Park calls for a **rethinking of the Expo and Congress typology**, and the creation of a **roadmap** for embedding it within a fractured but lively urban fabric.

The proposal is comprised of 3 strategies. Overlayed, they combine into a new Agora for the city of Thessaloniki:

THE DOORS: The exhibition halls are braced by several, large scale, and full-height hangar doors. These doors form a network between the halls and the park, and allow the **halls to be used as covered outdoor spaces**.

THE THICK WALL: All of the support functions and program are distributed around the exhibition halls, which are kept simple and rational. The support functions are organized in a thick wall, which is **porous with terraces, courtyards, stairs and platforms** for cafes and outdoor activities.

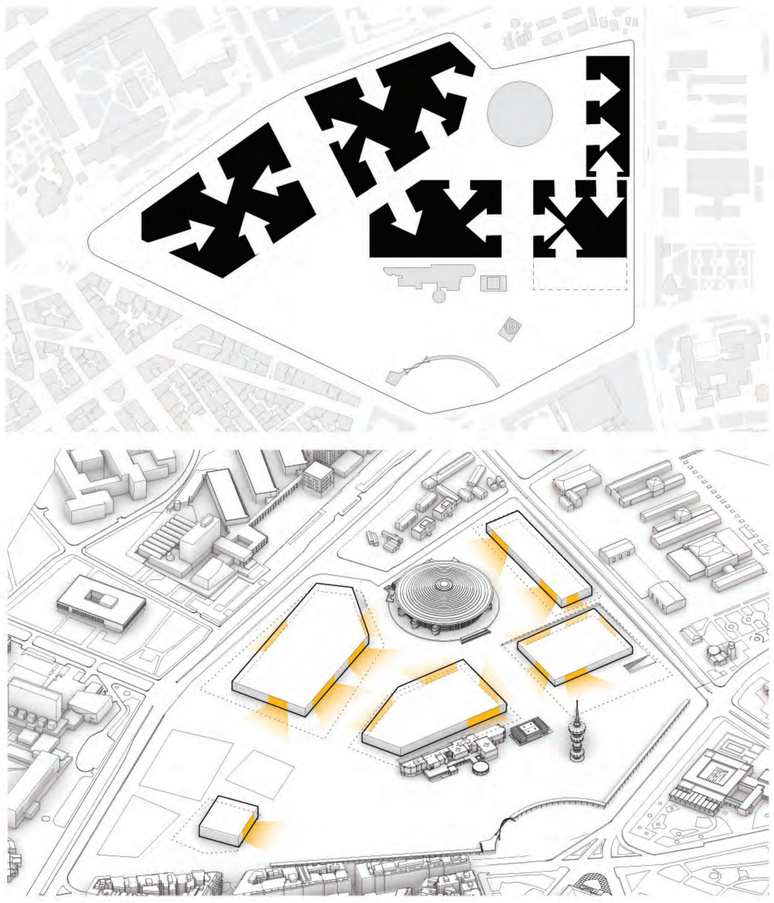
THE CIRCUIT: The top of the thick walls forms a promenade, that is linked via several bridges into an open-air circuit of additional **public spaces and elevated gardens**. The promenade functionally links the upper halls to each other, and to the park.



One of the largest extant monuments of Thessaloniki, the city walls, continue to crisscross through the old and upper city: these are eroded, porous walls that have been gradually colonized by plants and dwellings alike. The walls, at the same time protective and open, solid and porous, were a major reference for the materiality of Agora. Our "thick walls" encircle the EXPO halls but also offer the means to open them up, and act as intermediate zones and filters.

Doors: from barrier to extension

Before specifying shape or structure, the real-size halls are placed into the plots, and subsequently opened up to the park, and to each other through several large hangar-scale doors. A linkage is built, not only between the exhibitions themselves, but most importantly: between the park, the university campus, the business and commercial district, and the EXPO. The **public space is pulled into the buildings**, and the **program extends out into the park**. When the EXPO spaces are not rented out to a fair or show, the doors can open up, and the **space can be leased out/ lent to city institutions and citizens' organizations.**





Thessaloniki ConfEx Park international competition

Thick walls: a Hybrid interface

The AGORA proposal's large footprint allows us to organize the skin of the exhibition spaces into a thick wall/zone that frames the **clean, open interior exhibition space**. The thick wall is broken, punctuated and **populated with a multitude of functions**: public-facing EXPO facilities such as reception desks, ticketing offices and cafes, numerous green courtyards and patios, as well as a multitude of staircases linking the GF to the upper Circuit, and the activities there. The "thick wall" is articulated as an **urban interface**: its scale, materiality, outward-facing functionality, and variety of shades spaces create a **liveable micro-environment**.

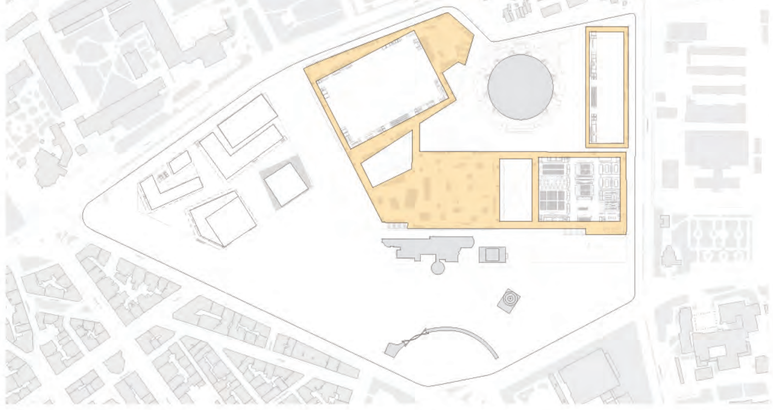
The Circuit: Populating the rooftops

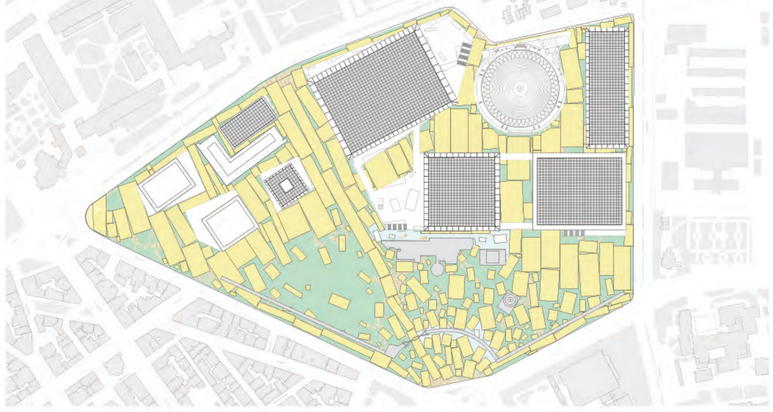
The upper exhibition and congress spaces are simple, glazed spaces, open to the public promenade that is formed above the 'thick walls' below. This promenade is not only an outdoor extension of the upper EXPO halls, but also an extension of the Park: interlinked via several bridges into a Circuit, and flanked by elevated gardens that make use of the generous planting depths allowed by the thick wall zone. The circuit is accessed from three large-scale urban staircases, and by a multitude of individual staircases that penetrate the porous ground floor. Functionally, it will house a variety of temporary/popup communal activities.

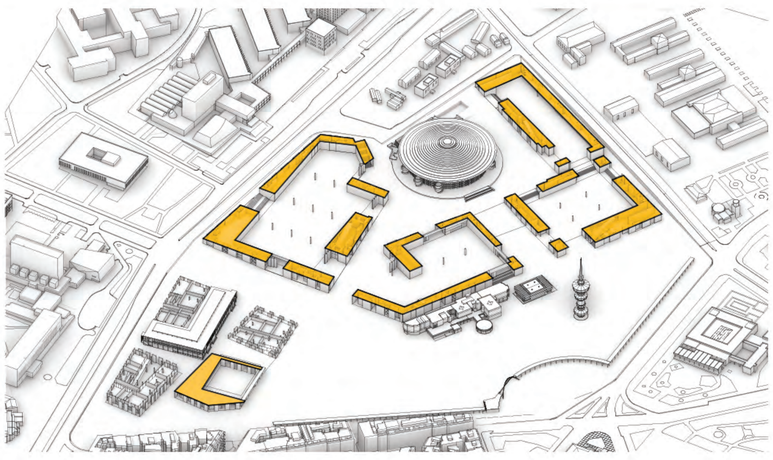
The fairground as new public space

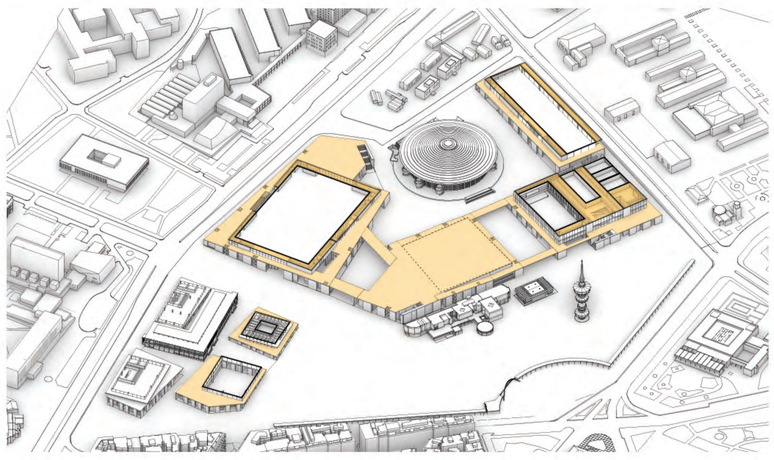
The overlay of the Doors, Thick Walls, the Circuit and the Park, becomes a hyper-flexible urban district: from a completely interconnected and integrated Expo-Conference complex to an open, publically accessible multifunctional space for markets, athletic and cultural events, temporary rentable workshop and atelier spaces, art shows, film screenings - and an endless gradient of in-between states. Interspersed with gardens, patios, and interconnected parks of different sizes and densities, it is multi-modal and adaptable. The fairground will not be a collection of solid, inert boxes, but a permeable, living part of the city.

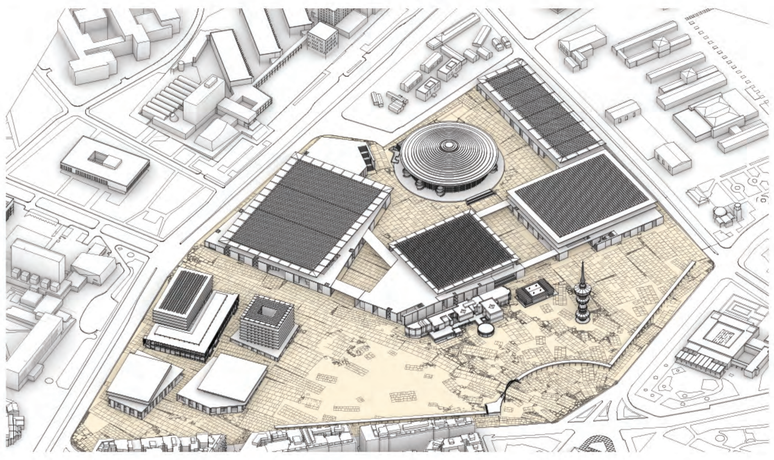


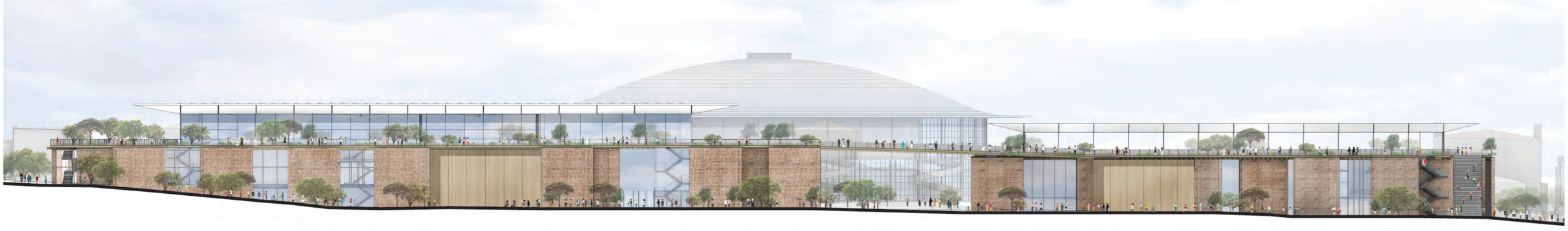














3. Sustainability

Sustainability Overview

The TIF - Helexpo centre is a well-recognised centre with historic, economic and social importance for the City of Thessaloniki. The regeneration masterplan is undeniably an opportunity to revive the area creating a space responding to current climate and social requirements and challenges, setting Sustainability a top priority in the design agenda. The ConfEx Park design is proposing the demolition of the majority of existing buildings (excluding preservation buildings as indicated on the approved masterplan), re-purposing one existing building and redevelopment of the site maximising the efficiency of land use and increasing the environmental performance, resilience and adaptability. The detailed site design is targeting to create a net zero carbon development following the Greek National Energy and Climate Plan (NECP) objectives including mitigation of Green House Gas (GHG) emissions targets for 2030 and 2050.

On the operational carbon dioxide emissions side, the minimisation of fossil fuel use and the removal of onsite combustion heating systems are key features creating a site enabled for a zero-carbon future and limiting local air pollution. Greek grid has a decarbonisation plan for 2030 and 2050. Therefore, building systems options consider the decarbonisation of grid electricity, collective infrastructure opportunities, and local air quality improvement. **Designing for a carbon free future is key on a pioneering high-quality masterplan.**

Existing material or structural elements will be retained, or reused where feasible forming part of the visual improvement of the buildings' attractiveness as viewed within the Park or from the adjacent public viewing platforms. New structural elements will focus on low emboided carbon selections, with a mixed use of timber and concrete/ steel. Opportunities of integration demolition waste such as crushed concrete into landscape have been identified, as one example of the circular site process where residual products of one system become resource for another. With the circular economy approach embodied carbon and watse impact will be reduced. **Designing for long term (100 years) increases the value and space efficiency.**

On a holistic design as the proposed, energy and carbon reduction measures consider health and wellbeing. Thermal comfort performance, being one of the priorities, targets maximum occupant's satisfaction, a highly weighted aspect for the mixed use masterplan with short term accommodation (Hotel), workspace (offices) but also outdoor usable spaces, exhibition and conference areas. Green areas supporting biophilia and water elements of the landscape areas provide soundproofing and improved air quality while offering shading and evaporative cooling. **Designing for people is a vital aspect for a vibrant urban hub, the TIF – Helexpo 2026.**

Designing for Social Value

Social value is the key principle for the design development. To respond to the brief requirement on creating a space for economical growth, attracting local, national but also international attention, while addressing recent and future challenges rising from the pandemic or other social economic challenges, the design uses the UN Sustainable Development Goals (SDG) as a holistic framework to identify the local, city and national needs. The UN SDG are referenced and used in shaping the National Energy and Climate Plan (NECP, December 2019) . **9 out of 17 goals** have been identified as key areas of focus. A bespoke periodic table including 75 features has been created to capture design aspects.



f.1 United Nations Sustainable Development Goals



f.4 Bespoke UN SDG periodic table with key sustainability features

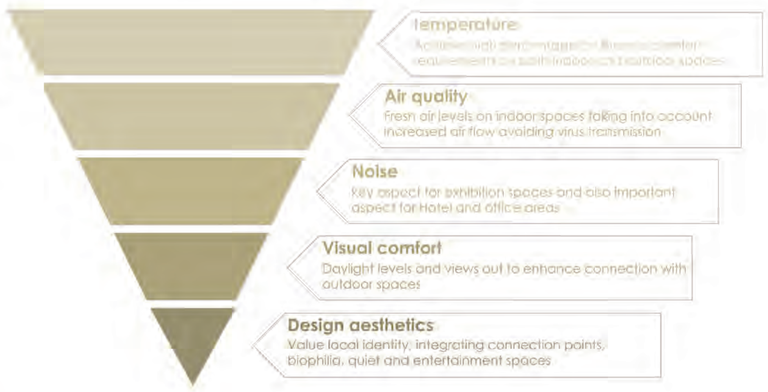
Health and Wellbeing

SDG Goal 3: Ensure healthy lives and promote well-being for all ages. A healthy living style, encouraging mobility and well-being through an accessible masterplan that is both walkable and useable by sustainable transportation methods such as cycling, is being promoted in the ConfEx Park design. The infrastructure accommodates the use of electric scooters and bikes allowing future adaptability when those means become widely available in the City of Thessaloniki. The park is envisaged to be used by local community transforming and extending the existing cycling network to a safe linkage from Egnatia to University or City centre.

Green mobility is enhanced with the provision of safe public realm for all pedestrians with sign posted to international safety standards including promoting car free zones in the ConfEx Park. Reduction of car circulation within the park reduces excessive noise across the site, aligning with well-being.

Elimination of all forms of pollution from the site to be achieved through adoption of clean fuel technologies for power/heating/cooling production. Bioclimatic design, using orientation and creation of self shading buildings along with external shading details such as overhangs, reduces building heating and cooling loads minimising plant sizing and emissions while offering mitigation of overheating. The design incorporates carparking and the infrastructure design proposes the promotion of electric transport through EV charging points once electric vehicles become widely used in Greece. To improve further the air quality and noise levels, abundance of landscaping and biophilia will filter and reduce levels of PM2.5 and PM10 air pollution within the park. The water element is highly weighted for mental health and the ConfEx landscape integrates it in the design, with outdoor ponds, assisting with a safe and efficient year-round natural water management through the public realm and within the mixed-use developments.

f.2 Health and Well-being hierachy



During construction works the team envisages that all site works, and post legacy construction/repurposing work are conducted in accordance with environmental impact assessment recommendations, especially on land contamination remediation requirements.

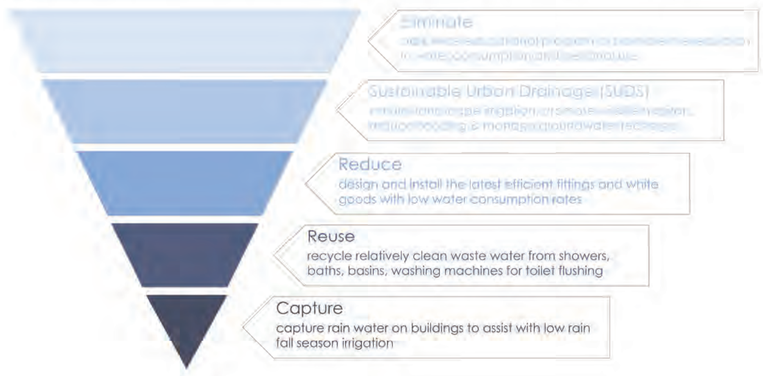
Water strategy

SDG Goal 6: Ensure availability and sustainable management of water and sanitation for all

The water strategy for ConfEx Park provides safe and efficient water supplies through the public realm and within the buildings. The design will respond to the increase water-use across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the risk of future water scarcity.

Site wide infrastructure and building potable water will be designed to highest efficiency standards including low flow sanitation fittings in buildings. Landscape irrigation consumption will be first minimised through carefull collection of plants and then met by an efficient system integrated to rainwater and greywater systems. Grey water to be integrated on the buildings, especially on the Hotel area which is characterised of a high intensity water consumption use but also in the food and beverage areas. Provision of metering and monitoring water consumption is key on the design to avoid unintended leakage.
Lastly, touch free drinking points will ensure water access to all visitors.

f.3 Water hierarchy from most cost effective measures to less



Energy strategy

UN SDG Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all

Buildings will meet the nearly zero energy targets of the Greek national legislation (KENAK) aligning with the Greek commitment of 42% reduction in carbon emission by 2030 and zero carbon by 2050. The passive design measures in the energy hierarchy reduce the energy demand and therefore the expenses. The following step will be to provide the energy efficiently. Thus, systems design support electrification (use of heat pumps) which is prominent on the energy trends.

Currently, the Greek grid has been making substantial progress. Overall, the carbon intensity has been reduced to more than half, carbon factor of 0.577, compared to 1990s levels.

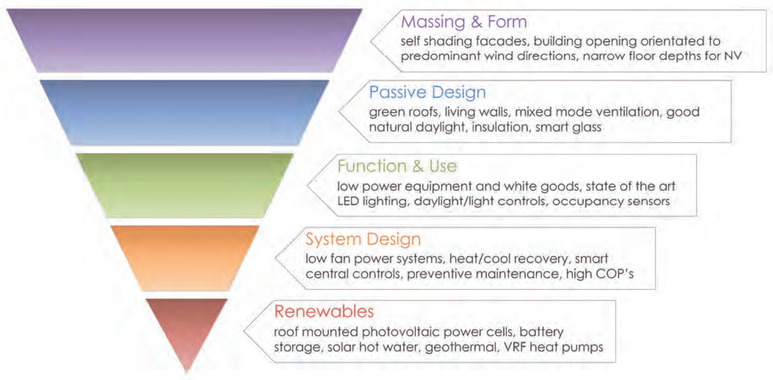


f.6 Bespoke Healthy Builgings periodic table with key features respoding to the mixed use Park.

The Renewable Energy Sources proportion of the energy generation is targeted to be more than 60% as per the National Energy and Climate plan in 2030 and lignite phase out from electricity production will be completed by 2028.

As a last step, a range of renewable technologies throughout the business, exhibition and conference centre including photovoltaics on majority of rooftops but also a dedicated PV pergola, solar hot water and battery storage are proposed. The design is developed with the potential to deliver an annual nett positive operational energy usage. On site generation with renewable technologies reduces future utility bills for landlords and rentals within the Park.

f.5 Energy hierarchy from most cost effective measures to less



Designing for the community

UN SDG Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Key targets for the development include the creation of a community but also a business centre with oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprise. During operational stage, the Park should encourage implementation of a site wide employment policy of using primarily local companies and personnel for all positions and levels within the different enterprises, as well as use of local and regional consumable resources from building materials to food.

UN SDG Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

The site infrastructure will be upgraded responding to climate needs. Delivering a nett zero operation is the primary target. For the, leading, future exhibition space, digital connectivity is crucial in the advertisement but also in the functionality of the space. It is proposed that the village to be fully covered with the latest mobile technology framework with the facility to update the system in future regional/country wide upgrades.

UN SDG Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

ConfEx Park design will adopt a waste design and operational hierarchy aimed at reducing the amount of solid waste during construction and operation. It is proposed that the site waste strategy with be captured in a waste management plan adopted by all construction companies and the owner/operators for the Park.

Following the circular economy approach, a high proportion of the construction waste will be diverted from landfill. Lastly, as per the Health and wellbeing periodic table for the site, air quality for the local community PM2.5 and PM10 levels for the ConfEx Park should meet with World Health Organisation recommendations.

UN SDG Goal 12: Ensure sustainable consumption and production patterns. The ConfEx Park, being a landmark of Thessaloniki, could be an example for the sustainable consumption of the whole City of Thessaloniki. A comprehensive education plan for the Park to be implemented to educate visitors, and occupants of the Business area, in efficient natural resource consumption levels and implementation.

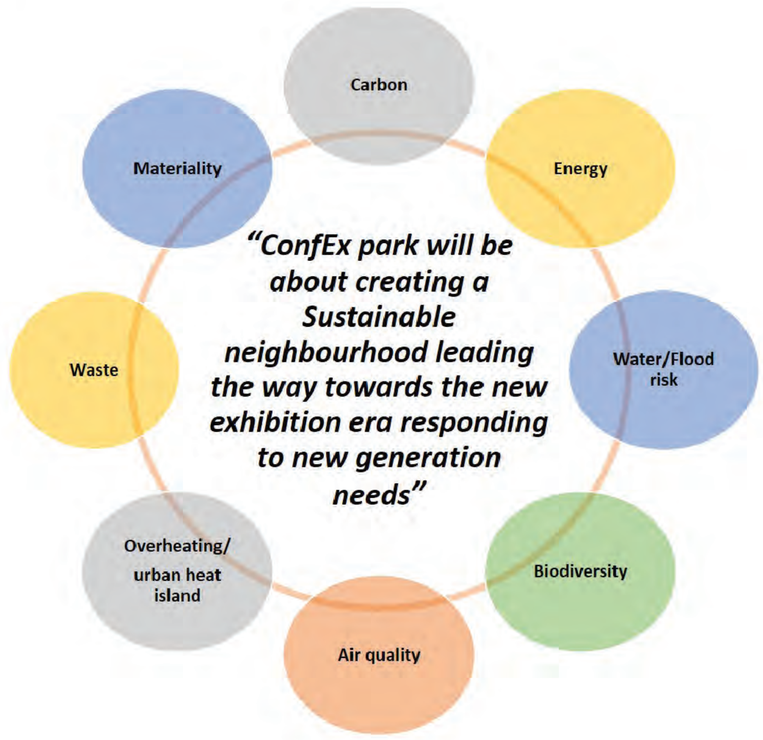
UN SDG Goal 13: Take urgent action to combat climate change and its impact

The Holistic approach of ConfEx Park design responds to Greece Climate Change Action Plan such as:

- Reduction of Green House gas emissions through construction and operation,
- Selection of materiality in order to eliminate localised heat island effect, reducing summertime heat temperatures in the local community
- Integration of Sustainable Drainage Systems to avoid flooding issues.

UN SDG Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

The approved masterplan has already identified dedicated green areas and the detailed design maximises planted spaces with green areas integrated on buildings with green roofs. The landscape design to encourage the reintroduction of local wildlife species of birds in the heart of Thessaloniki.

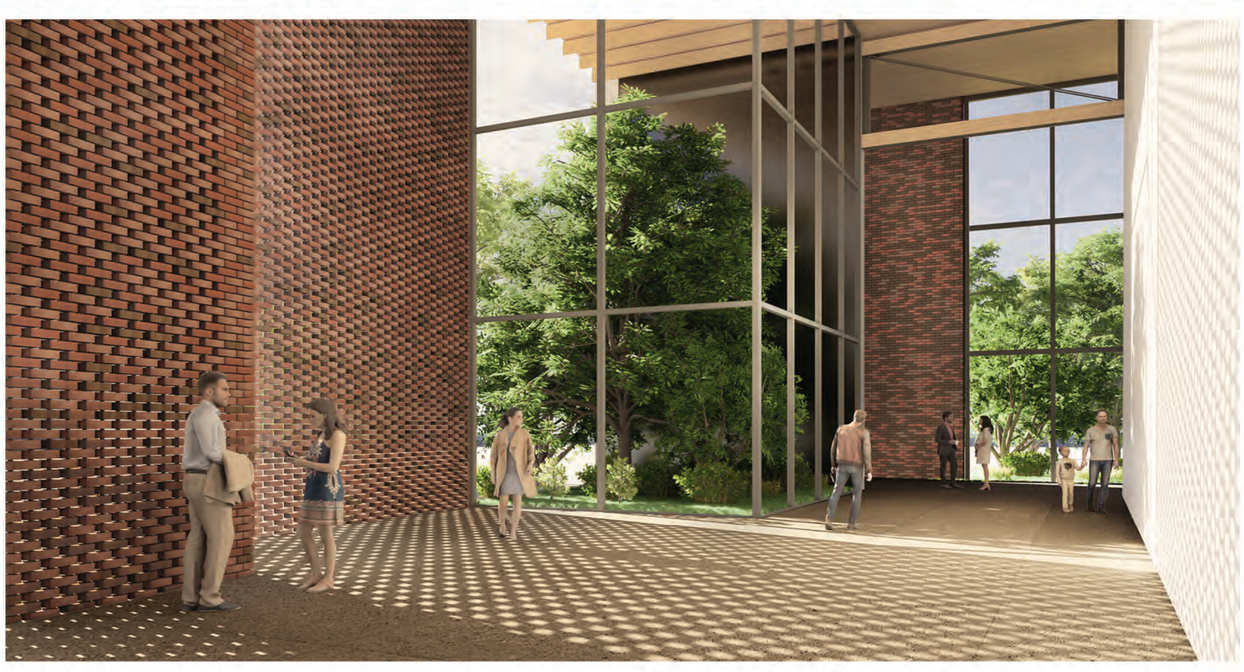


Green Certification

The project has the opportunity to reinforce the sustainability strategy and holistic approach by targeting a green certification. Internationally and well known in the Greek market certification includes LEED for New Construction and LEED for Neighbourhood Development.



Left: The lobby spaces, with plentiful natural ventilation, between-inside-and-outside courtyards and sunlight, as well as the Solar Terrace, are spaces born out of the 'Healthy Places and Buildings' bespoke Framework, put together for ConfEx.



5. Technical & Structural

General Structure Strategy

The structural strategy for the project can be divided into 4 main categories: Exhibition spaces (including Congress), underground structures, supporting areas around the exhibition spaces and the Business Park.

The proposed structure and materiality have been developed prioritising sustainability, cost and buildability; maximizing prefabrication for speed of construction while providing high-quality aesthetics that would allow keeping the structure largely exposed and therefore minimizing additional finishes and cost.

Exhibition and Congress

The exhibition spaces generally work on two levels, with an open plan and the requirement to maximize the flexibility while keeping the structure efficient and within the height constraints of the project. Whilst a completely column-free space would give maximum flexibility to the space, the magnitude of the structure that would be required to span between 80 to 90 meters would drive the project cost and its aesthetics, while it would be challenging to keep the structure within the height constraints of the masterplan.

The challenge is therefore to find a good balance between cost, flexibility and functionality while achieving the height constraints of the project. Considering the above, a 40m span structure is proposed which provides enough flexibility for a world-class exhibition space while allowing for a sustainable and cost-effective structural solution. A combination of timber and steel trusses is proposed to cover the exhibition spaces, distinguishing between the different typologies for the lightweight roofs and the level-1 structure that supports the upstairs exhibition space. A combination of primary elements spanning 20m between columns and secondary elements spanning 40m in between the primary beams achieves a great balance of structural hierarchy, by keeping the size and form of the primary and secondary beams identical. The above applies both to the proposal of level-1 and Roof structures.

Lightweight Roofs

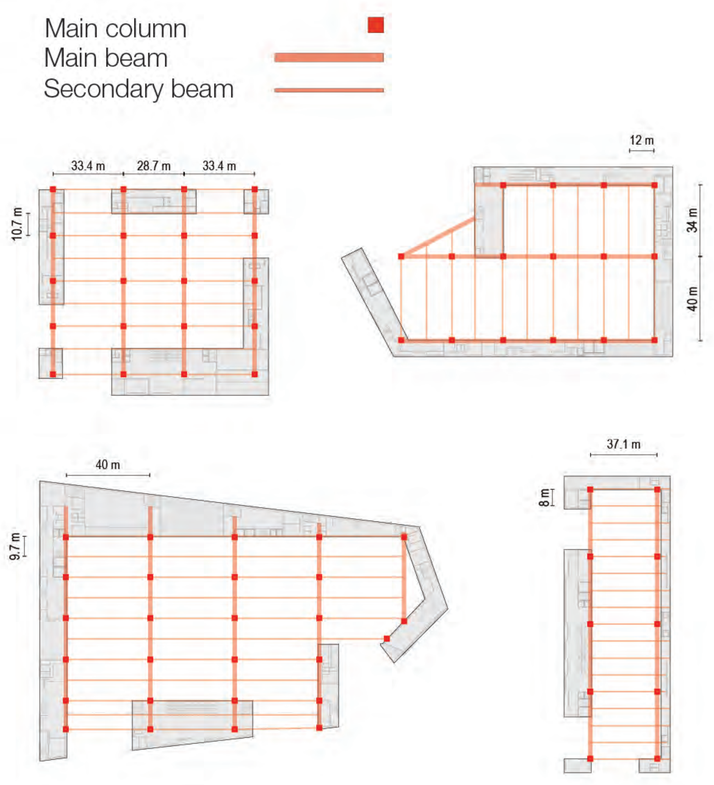
A Bow-tie system with GlueLam beams and steel cable tensors is proposed for the Roof structures. The elegant structural solution achieves the long spans while minimizing structural depth and visual impact of the elements. CLT panels are proposed in between the bow tie beams forming the surface of the structural slab. The CLT panels will be exposed, giving a warm atmosphere to the space.

Level-1 Structure

For the main exhibition buildings (sector I1, I2, 2 and IV1), a heavier steel truss and CLT floor solution are proposed for the level-1 floor in order to control the structural depth, while providing support to the larger loadings required for the exhibition space above. The steel trusses are formed with standard I section on the upper cord, lower cord and vertical elements. The diagonals are instead proposed with high-stress tension bars. This solution maximises the structural efficiency while minimizing the visual impact of the trusses. The exhibition spaces are surrounded by auxiliary elements that provide service areas, toilets, amenities and vertical circulation. These spaces are proposed in a more standard timber frame and CLT construction due to the more manageable spans that the spaces require.

Basement Structures

The in-situ concrete basement structures generally contain car parks and plant spaces. A typical 7.5m car-park column grid is suggested in order to minimize the cost while keeping the structure efficient considering the high loads required for the ground floor, both for the exhibition and for the external areas. From a structural point of view and particularly from a cost, buildability and sustainability perspective, maximizing larger one-level basements across large areas of the site would be preferable than having individual two-story basements for the different buildings or functions. A separate two-story basement would take longer to build, would require a deeper excavation and therefore a larger risk of damaging archaeological findings and would also require a considerably larger amount of expensive retaining walls. A single story with a larger area would in contrast minimized the combined perimeter of the basements and therefore will require the minimum amount of retaining walls while reducing the depth of the excavation and reducing the construction programme and cost.



Right: Schematic diagram of main structural elements in Halls
Below: The ceiling where CLT slabs are visible and the hybrid steel/ wood trusses.



Brick Walls

Brick walls are proposed all over the project as the main materials for the façade of the buildings. Partially, the material could come from the demolition of the existing building reducing the embodied carbon and maximising the sustainability credentials of the projects. The proposed walls can be perforated (brick lattice) in order to meet the architectural intent, creating a screen and filtrating the light. Two approaches can be further developed for the proposed reclaimed brick feature walls:

- Traditional load-bearing brick walls: The proposed walls could be built in a traditional way with hand-laid bricks. This option could be used in load-bearing walls that could provide both a structural and architectural function to the auxiliary buildings around the exhibition spaces. This low-tech alternative is likely to be cost-efficient and available for low-skill technology. A single, double or triple bond typology would be developed depending on the structural requirements of each wall type.
- Prefabricated brick panels: Alternatively, the proposed brick walls could be formed with prefabricated panels within a steel frame and substructure. This alternative would maximise the speed of construction and would allow for higher control of the wall finishes.

For both options, horizontal restrains are proposed in order to reduce the free height of the walls and therefore reducing the required wall thickness. A series of tensor rods are proposed to tie the walls to the adjacent buildings, reducing the wall vertical span to circa 5m.

Timber

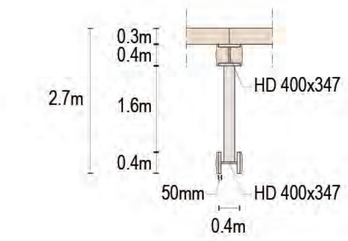
The use of timber across the project structure is proposed in order to prioritise the sustainability of the project, achieving a high-quality look and feel while minimizing the need for additional finishes and, allowing for maximum prefabrication while keeping the weight of the structure light. Maximizing the timber use reduces the embodied carbon of the building compared to any alternative in traditional materials like steel or concrete. Thessaloniki, unlike Athens, is situated advantageously near countries with extensive forestry industry and production of structural wood (such as Bulgaria, Romania, etc), allowing for low-carbon impact transportation of structural wood elements. Thessaloniki has therefore the potential, with ConfEx, to pioneer a new model for sustainable construction within Greece that deviates from the unsustainable, standard reinforced concrete one.

However, should the engineered timber be challenging to procure for the local market, or should it cause significant complications with local building regulation, the proposed schemes have been developed to allow flexibility; therefore a change in materiality would be possible without major architectural or structural impact on the proposed scheme. A combination of steel and concrete could be explored as alternatives in the next stages of the project if required, with wood remaining only in secondary and visible structures.

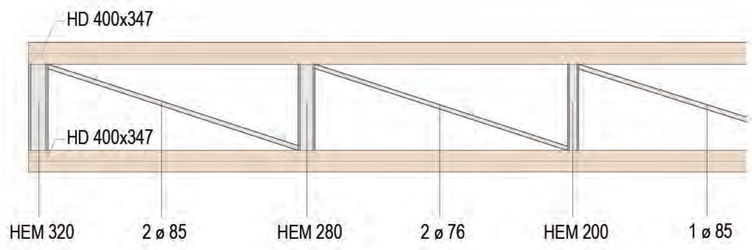
Business Park

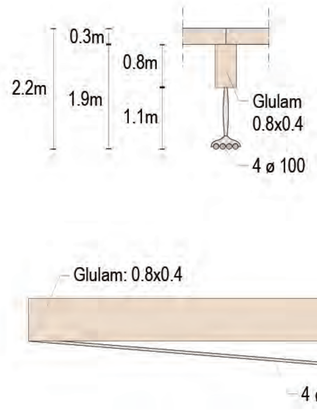
The Multipurpose hall within the business park has similar requirements to the exhibition spaces and therefore a similar solution is proposed. The rest of the buildings within the business park can be formed with a smaller column grid and therefore an engineered timber frame typology is proposed. The timber structures can be left exposed and would allow for a large degree of prefabrication and therefore reducing the construction programme. The structure is proposed as a combination of glulam frames with either CLT or timber joist floors.

As mentioned before, the proposed engineered timber solution can be replaced by more standard steel or concrete solutions should the timber prove difficult or expensive to procure. In addition to the proposed timber use and reclaimed walls (and especially floor) materials, the proposed reuse of the existing buildings within the business park will further increase the sustainable credentials of the proposal. Reusing existing buildings where possible is currently the best strategy for the built environment to positively contribute to the climate emergency and minimize the embodied carbon of new projects.

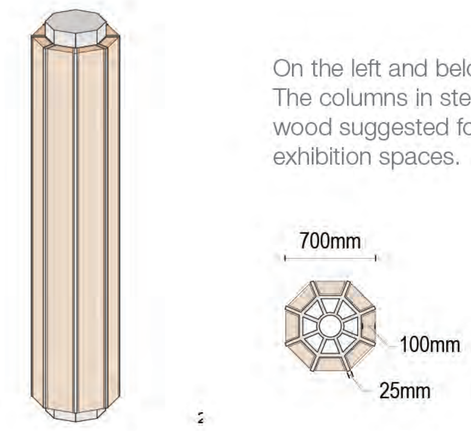


On the left and below: The heavier steel truss stiffened with wood and the CLT floor solution

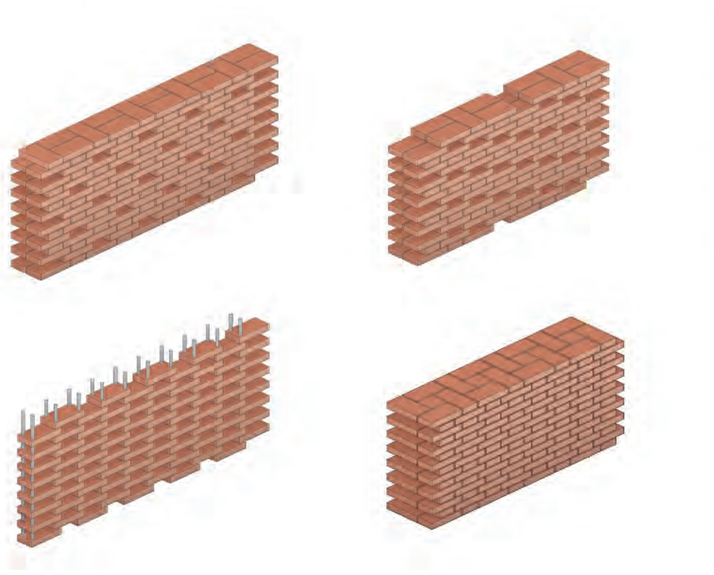




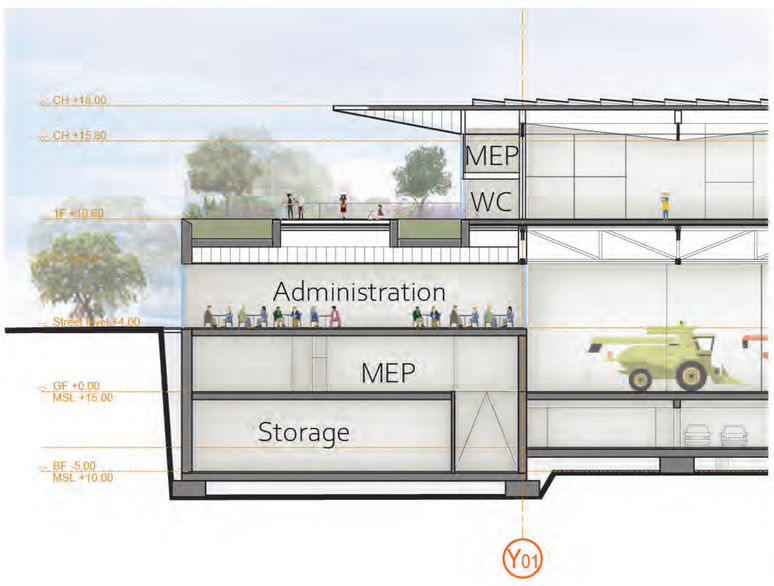
On the left and below: The Bow-tie system with GlueLam beams and steel cable tensors proposed for the Roof structures.



On the left and below: The columns in steel and wood suggested for the exhibition spaces.



Above: Different arrangement for the screen wall in bricks
Below: a portion of one of the sections of the Exhibition buildings with the two different types of beams on the lower level and on the roof.



Below: Typical Halls networks strategy

Overall Mechanical, Electrical and Public Health Services Strategy

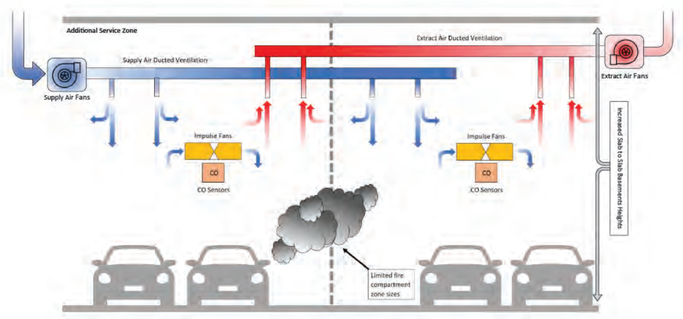
The business park contains a mixture of spaces with different energy profiles. Therefore, we recommend the four business park buildings share one central plant to allow waste energy recovery and minimise plant areas, equipment size and cost. This centralised strategy will assist the park in achieving Net Zero carbon in operation.
The commercial leased spaces shall require the landlord or operating company to bill tenant energy use, and could expose them to bad debt that is not desirable. We recommend that central and decentralised energy strategies are investigated in the initial design stages to understand carbon emission savings and operational or commercial challenges, to optimise the development to the client requirements. The Business Park, Exhibition and Congress buildings design concepts are compatible with both central and decentralised plant strategies. We have based the building services concept design on the idea that each building would have dedicated systems. However, we would recommend exploring centralised or shared systems, such as fire protection and life safety power generation to reduce capital, maintenance and operational costs, as well as reducing overall plant space.

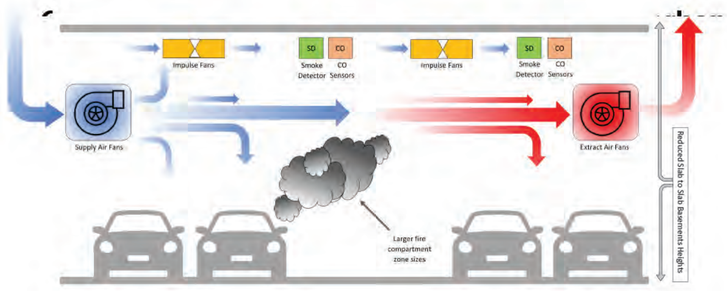
Air Conditioning Strategy

The energy strategy shall avoid the direct use of fossil fuels so that it is future-proof and become more sustainable as the national electricity grid decarbonises. Air source or ground source heat pumps shall generate heating and cooling energy centrally in each building, as well as allow waste heat recovery. Thermal storage shall ensure the systems operate at optimum efficiency and maximise the use of waste heat recovery. A distributed condenser water system within the business park connected to the local commercial tenant plant shall recover waste heat for use in the proposed hotel to produce domestic hot water and meet the swimming pool heat demand.

Car Park Ventilation

The basement car park ventilation system shall be zonal, minimising plant and vent shaft sizes, utilising impulse fans for intelligent smoke and carbon monoxide ventilation control. This avoids the requirement for large and expensive fire-resistant ductwork reducing the basement slab to slab height and cost of construction.





Ventilation Strategy

Exhibition halls shall be conditioned by all air ventilation systems providing heating and cooling. These systems shall be variable volume and demand-controlled to increase energy efficiency. Furthermore, the ventilation design shall recover waste thermal energy and allow free cooling and night-time cooling of the spaces, reducing energy demand and carbon emissions. The large congress hall shall also have dedicated all air ventilation systems to provide air conditioning. Minimum fresh air ventilation systems shall be provided in lobby, foyer, ancillary, office and back of house spaces where the local terminal units shall condition the spaces. Retail and F&B units shall have local ventilation plant provided by the tenant within their premises, connected to the façade. F&B units shall also have riser space to distribute ducts to roof level where tenant plant space shall be provided for tenant kitchen extraction-ventilation plants. WC ventilation systems shall be provided at upper levels or roof levels with plate heat recovery and integrate reversible heat pumps with the ventilation plant. Basement areas shall be served by general and smoke ventilation systems.

Infrastructure

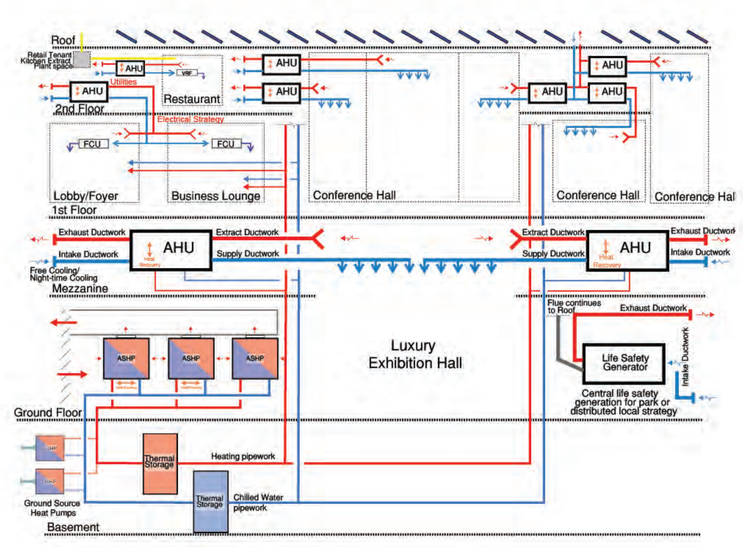
The MEP design shall minimise the landlord central plant ownership and explore opportunities for utility companies to adopt distribution end equipment where possible.

Electrical Systems

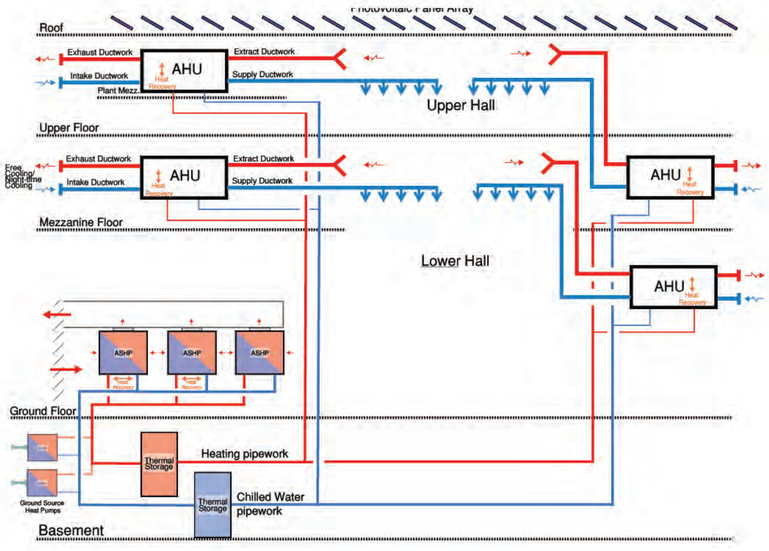
Incoming power shall be distributed from local substations at basement level to transformers and switchgear rooms before being routed to local distribution boards serving various spaces. Life safety backup power generation can be central or distributed in buildings depending on ownership. Photovoltaic panels shall generate electricity within the development and export to the wider grid. An array of central batteries shall optimise operation minimising the use of carbon-intense primary energy helping to achieve Net Zero in operation.

Public Health Systems

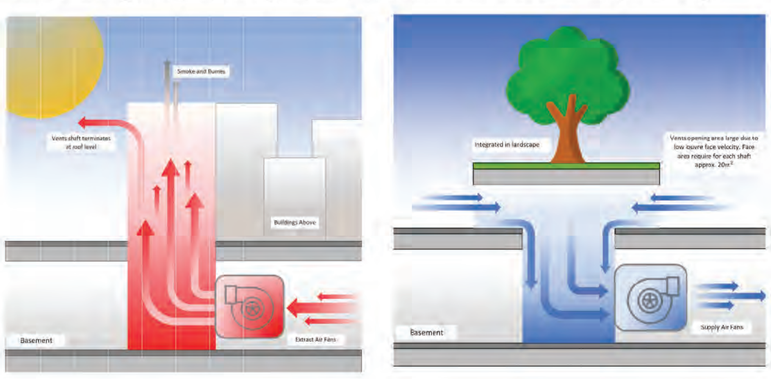
Rainwater harvesting and grey water recycling shall reduce the consumption of potable water. Water-efficient fittings shall further increase water efficiency.



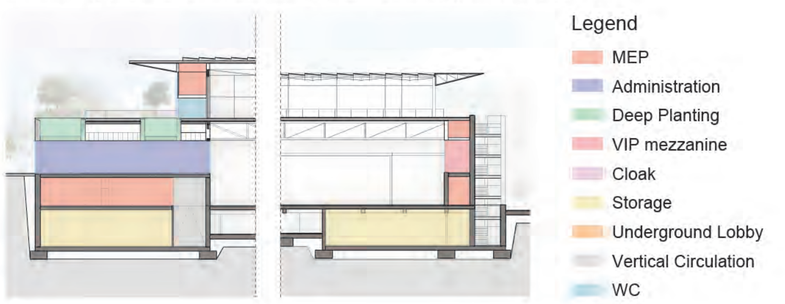
Above: Congress MEP strategy diagram
Below: Typical sector building MEP strategy



Below: Integrating underground ventilation into the landscape design



Below: Typical sector building MEP strategy in the section.



6. Materiality & Economy

LANDSCAPE

Building Green Networks

The ConfEx site is surrounded by a very distinct geomorphology of green networks. To the northeast lies the imposing mount Chortiatis, which at 1,201 meters defines the eastern border of the city. Directly to the North lies the Aristotle University campus. To the west spreads a dense urban green network, that is however not directly connected to the site. Finally, to the South, there is the extensive coastal front. This unique placement means that the new ConfEx park can/should function as the link which will connect the green parts of the city, and will transform them into a fluid Green Network of spaces. The design speaks through a multidimensional narrative, where different types of smaller plazas, parks, clusters of trees as well as the mountain and the sea create a flexible opportunity for sustainable development inside the urban context of Thessaloniki. Our prime landscape design gesture is the creation of a dense forest park into the city, which follows the strategy of an individual microclimate area. Towards the north side, our design maintains high tree canopies, overlayed on an urban multifunctional network of hardscaped plazas. These canopies are also used to highlight the Promenade, which connects the green corridor of Thessaloniki from the Beach towards the University campus. Smaller vegetated islands spread into the plot, tightening Thessaloniki's green network, and in combination with the 'spolia' re-assembled hardscape, create micro-scale urban living spaces.



Neighborhoods

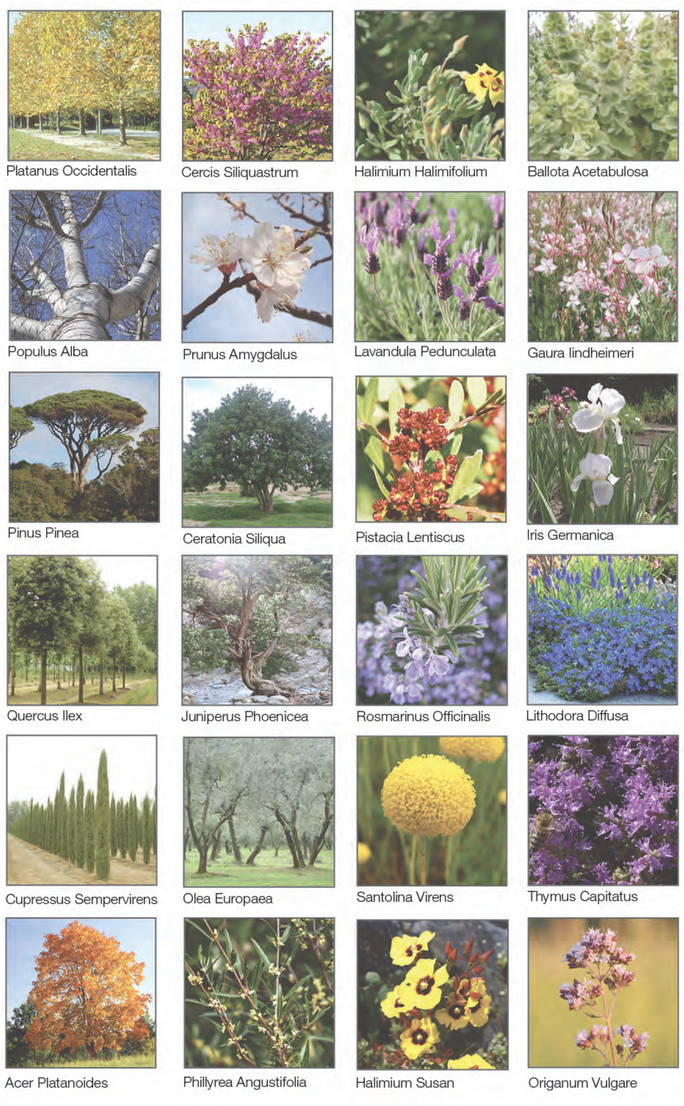
The entirety of the TIF site is an interconnected landscape: the landscape is articulated in different zones, or neighbourhoods. The transition between the neighbourhoods happens gradually, through incremental material and vegetation change (hardscape vs softscape, porosity, scale) and through programming:

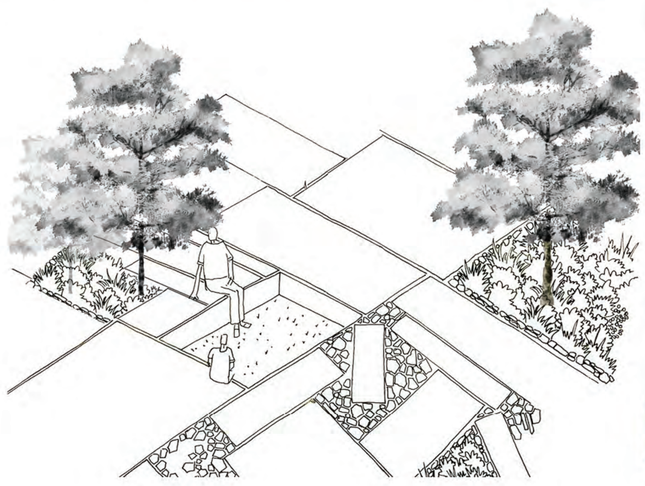
1. Welcome Plaza: The apex of the plot, where most pedestrians will arrive from the city centre, and the Sintrivani metro station.
2. EXPO Plaza: The heart of the EXPO district, to be used as a flexible outdoor exhibition area linking all sectors. It is typified by the several "deep walls" and green niches that surround it, as well as several sheltered public plazas under the eaves covering the EXPO buildings' hangar doors, and the bridges.
3. Arch Plaza: Probably the most representative part of the site in the city's collective memory of the Fairground. Mostly hardscaped, but shaded by a small green grove, and the preserved portico 'suspended' in a reflective pool offering evaporative cooling in the hot summer months.
4. City Courtyards (A,B,C): A series of alternating courtyards in a checkerboard pattern, flanked by arcades and trees. Full of cafes, restaurants and shops, they form the urban interface between TIF and the historical centre.
5. Promenade: The Promenade follows the main remaining trace of Hébrard's master plan, from YMCA Park, via Arch Plaza and through TIF, all the way to the Aristotle University campus. It is a linear but not rigid avenue, lined with tall-canopy trees.
6. Forest Garden: The densest, and in a way "wildest" part of the master plan. The forest garden is covered in a loose grid of tall-canopy trees such as red pines, and the floor is an uninterrupted softscape, with the occasional paved platform or path.
7. Art Garden: The art garden is at the same time a functional extension of the art museum, and a flexible outdoor "living room". The hardscape is broken into a series of interconnected islands, that function as linked outdoor rooms for conversation, relaxation, small events, etc.
8. Event Garden: The Event Garden is a hybrid place: a large flexible plaza that is surrounded, and sparsely penetrated too, by vegetation. It is the functional extension of the Luxury exhibition and Congress hall, but it can also host outdoor concerts, open-air cinemas, and any other activity that thrives in an open outdoor space.
9. Water Garden: The Water Garden is an urban canyon, formed by the space between EXPO Hall II, and the MMCA. A thin surface of water is interrupted by paved platforms hosting sculpture and outdoor art installations,
10. Green Circuit: the Green Circuit is the loop of elevated promenades that surround the upper floor exhibition halls, and Congress. They function as outdoor exhibition spaces, but also as an open public network linking together green shaded areas, cafes (from the exhibitions), restaurants and thematic plazas with public activities.
11. Workshop Plaza: Part of the Green Circuit, the Workshop Plaza is located on top of Exhibition II and next to the Solar Terrace. It is a public laboratory for participatory activities, outdoor seminars, experiments in urban farming, etc.
12. Solar Terrace: The Solar Terrace (see Fig.2 in sustainability section) is an outdoor large-scale pergola covered in solar panels like the rest of the EXPO rooftops. The main difference is that this panel array (floating above a thin surface of water) is open to visitors, and functions as a centre for experiential learning centred on urban sustainability, and the lifecycle operation of the Fairgrounds complex.
13. Theatre Plaza: The theatre plaza offers an uninterrupted, perimetrally planted rooftop, for large-scale open-air activities. These could either be public or directly connected to the function of the upper floor of EXPO Hall 1.

SOFTSCAPE

An urban Mediterranean ecosystem

A grid system of trees is integrated in the forest which follows and compliments the plates/spolia strategy: thus creating a variable (in terms of tree species, foliage density and colour) tree canopy. Long axes of tree canopies maintain the main character of the forest park. Its variety is succeeded with 'interruptions' in the tree canopy that allow the eye gaze to be led towards the sky and receive glimpses of the surrounding plazas, through openings in the green mass. At specific points the grid is interrupted by other planting species, creating green-cushioned pockets around paved plates, thereby offering different spaces/experiences in the forest. Large indigenous persistent and deciduous trees inhabit the forest, and spread into the plot in direct composition with smaller trees enriching the creation of a Mediterranean grove. The plants proposed for the forest and the vegetated islands are mainly indigenous Mediterranean, and with very low irrigation needs that can be almost fully covered by ConfEx's water reclaiming/reuse systems (see sustainability chapter). Garrigue species and low-height grasses other Mediterranean higher shrubs are combined together, into a robust ecosystem that will thrive in Thessaloniki's climate.





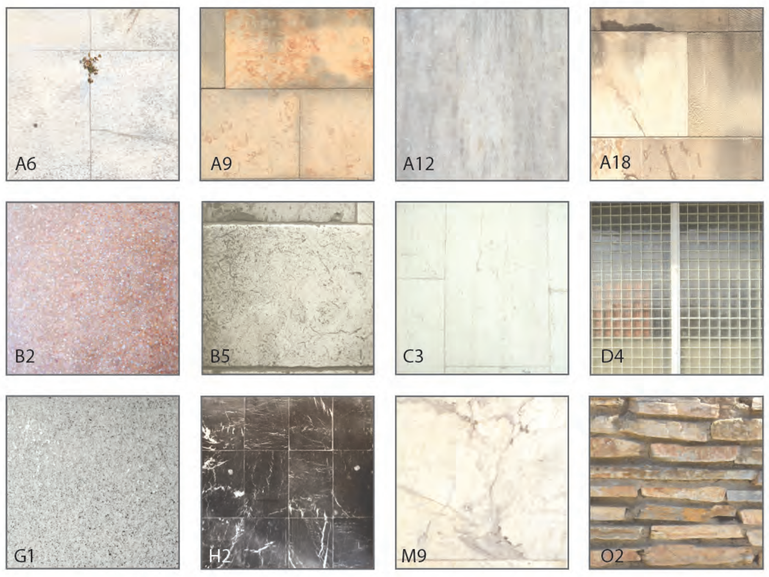


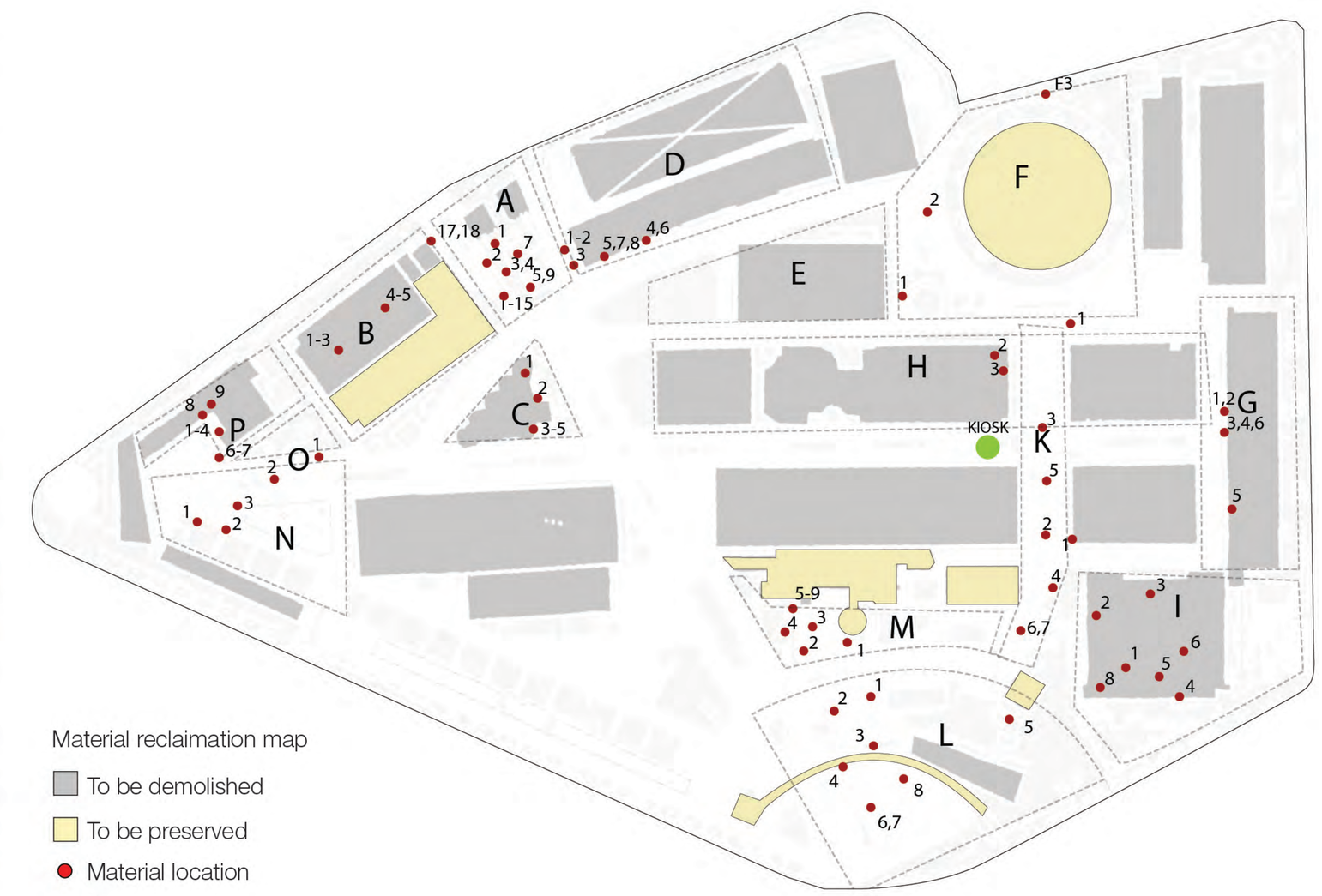
Above: The use of the hardscape and the spolia in the landscape
On the right: The 1st floor plan with the description of the terraces, Green Circuit spaces, and the solar garden.



Demolition materials

Our Landscape Palette is composed not only from the native plants and the trees but from demolition materials, providing a sense of belonging to the surrounding place. By promoting a sustainable material management approach in the construction we aim to reuse the demolition materials that we find in situ such as concrete, marble, wood, stone, plastic, glass, brick and enhance as well the variety in the materiality. This palette of demolition materials is with regards to the process for pulverizing demolition material and for use it in new concrete slabs/plates or in spolia paving in between the plates for hardscape pavement.





Re-using existing buildings

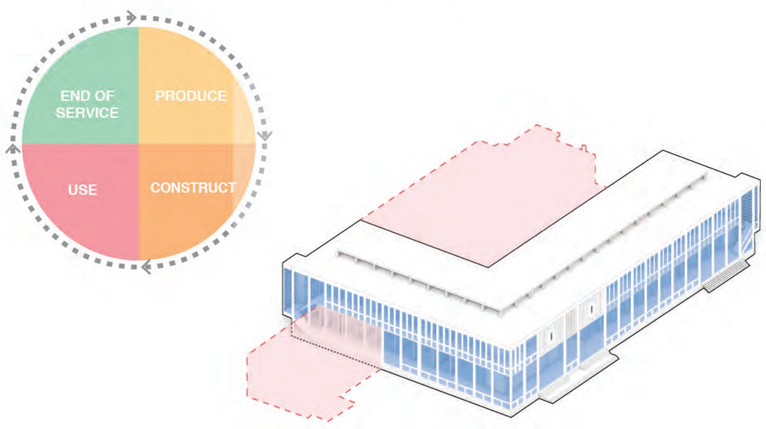
The business complex and the Hotel are located in the third sector as per Master plan guidelines. One of the first considerations was the **restoration to its original state, and preservation of 'Pavilion 1'**: a two-story modernist building from 1956, designed by architects N. Efesiou and A. Symeon. The building is a rare remaining example of post-war fairground architecture in Greece. It has a unique concrete frame façade, and its size and position within the master plan allow its incorporation into the new mixed-use business district as a retail/F&B space. Reusing the existing building capital and materials found on-site to the greatest degree possible is not just a matter of **historic continuity**, as we add new layers to a complex city fabric, but also part of a multi-pronged sustainability strategy with the aim of **reducing waste production, and the embodied carbon** load of the project as a whole.











Brick and wood

Our "thick walls" encircle the EXPO halls but also offer the means to open them up, and act as intermediate zones and filters. Brick, in its many iterations (1. single layer suspended brick screen – 2. two-layers perforated masonry wall – 3. three-layers solid masonry wall) allows us to create these ambiguous zones, filtering the light through, populating them with green courtyards, intermediate "threshold" spaces and extroverted program activities. Today, brick is widely used in Greece and therefore easy to procure locally. It is also well known for its affordability, reliability, resilience, beautiful ageing and solid performance when employed as a structural material. In combination with the proposed wooden structures and overhangs, brick screens and walls can be built without the need for any additional finishes: natural materials, that age naturally and help tie the building to the living, breathing materiality of the city.

Below Kyriakos Krokos,Byzantine Museum, Thessaloniki





No	Description	SECTORS I & II Plot Area (I) = 39.397,11 m² Plot Area (II) = 16.339,68 m²			SECTOR III Plot Area = 20.034,00 m²		SECTOR IV Plot Area = 13.971,22 m²		SECTOR V Plot Area = 58.900,71 m²		TOTAL Plot Area = 161.769,04 m²	
		Proposed by Competitor (SECTOR I)	Proposed by Competitor (SECTOR II)	Programme Requirements (SECTOR I & II)	Proposed by Competitor	Programme Requirements	Proposed by Competitor	Programme Requirements	Proposed by Competitor	Programme Requirements	Proposed by Competitor	Programme Requirements
A. General Metrics												
A1	Above Ground GFA (m²)	37.720,36	9.476,54	max 48.500	27.225,04	max 26.750	16.972,29	max 16.500	250	max 250	91.644,23	max 92.000 excl. preserved bldgs
A2	Below Ground Parking use GFA (m²)	19.320,87	10.493,92	-	19.532,97	-	11.694,54	-	0	-	61.042,30	-
A3	Below Ground other Aux uses GFA (m²)	9.178,75	6.561,42	-	6.503,06	-	2.994,96	-	0	-	25.238,19	-
A4	Net Floor Area NFA (m²)	37.027,68	9.305,72	-	26.055,39	-	16.605,99	-	222,00	-	89.216,78	-
A5	Building Coverage ratio (%) & Area (m²)	97,5% - 25.987,50	90% - 11.263,83	-	57% - 11.438,53	max 60% - 12.020,40	73,8% - 10.317,44	-	0,005% - 250	-	36,6% - 59.257,3	max 45% - 64.000 excl. AAMTH – pres.bldgs
A6	Gross Volume above Ground (m³)	334.480,25	99.331,06	-	139.555,22	-	115.604,70	-	875	-	689.846,23	-
A7	Foundations Footprint (m²)	27.986,04	18.318,74	-	20.841,03	-	14.894,19	-	255	-	-	-
A8	Façade (m²)	17.183,44	4.396,01	-	19.545,60	-	6.999,62	-	245	-	-	-
A9	Exterior Openings (m²)	806,68	591,07	-	1.690,14	-	476,81	-	25	-	-	-
A10	Accessible Roof surface (m²)	9.726,10	11.634,92	-	3.219,32	-	3.422,87	-	0	-	-	-
A11	Inaccessible Roof surface (m²)	28.515,62	0	-	13.033,49	-	14.861,95	-	250	-	-	-
A12	Green Roof surface (m²)	1.868,03	1.661,24	-	9.984,77	-	472,20	-	0	-	-	-
A13	Balconies / Open Covered Areas (m²)	2.399,46	957,17	-	11.714,92	Hotel: max 40% of GFA	1.071,68	-	0	-	-	-
B. Programme Area												
B1	Exhibition Center Area (m²)	35.740,94	9.476,54	47.000	-	-	-	-	-	-	-	-
B2	Administration Offices Area (m²)	1.479,42	0	1.500	-	-	237,61	-	-	-	-	-
B3	Hotel (m²)	-	-	-	7.688,80	7.250	-	-	-	-	-	-
B4	Commercial Complex / Retail–Recreation (m²)	-	-	-	9.209,95	9.000	-	-	-	-	-	-
B5	Commercial Complex / Offices (m²)	-	-	-	7.051,52	7.000	-	-	-	-	-	-
B6	Multi-purpose Hall (m²)	-	-	-	3.774,77	3.500	-	-	-	-	-	-
B7	Conference Center Area (m²)	-	-	-	-	-	11.183,88	10.500	-	-	-	-
B8	Luxury Exhibition Hall Area (m²)	-	-	-	-	-	6.050,80	6.000	-	-	-	-
B9	Cafeteria (m²)	-	-	-	-	-	-	-	250	250	-	-
B10	Underground Parking Area (m²)	19.320,87	10.493,92	12.500	19.532,97	25.000	11.694,54	15.000	-	-	-	-
B11	Underground Storage Area (m²)	6.957,15	3.900,4	12.000	5.270,97	3.500	2.482,90	2.000	-	-	-	-
C. Open Areas												
C1	Provide Area of Roadways (m²)	-	-	-	-	-	-	-	3.372,90	-	-	-
C2	Provide Area of Pedestrian Pathways (m²)	-	-	-	-	-	-	-	7.475,45	-	-	-
C3	Provide Area of other Hardscape (m²)	-	-	-	-	-	-	-	61.154,14	-	-	-
C4	Provide Area of green Landscape without underground buildings (m²)	-	-	-	-	-	-	-	25.043,94	-	-	-
C5	Provide Area of green Landscape over underground buildings (m²)	-	-	-	-	-	-	-	1.958,63	-	-	-
C6	Provide Area of other Landscape (m²)	-	-	-	-	-	-	-	9.357,17	-	-	-
C7	Provide Area of Water Features (m²)	-	-	-	-	-	-	-	3.480,00	-	-	-
C8	Provide Area of other structures (m²)	-	-	-	-	-	-	-	322,01	-	-	-

AGORA

The Fairground as a new Public Space

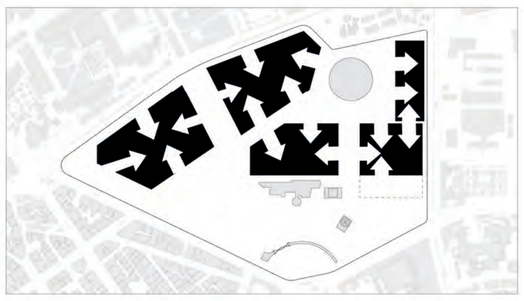
The TIF-Helexpo fairgrounds have been part of the people of Thessaloniki's collective imagination for more than seven decades. An urban landmark and a point of reference not only in space but also in time; shaping the calendar of Thessaloniki with the International Fair, biennial trade shows and seasonal festivals. Yet, lodged in the heart of contemporary Thessaloniki, the 160.000 square meter site looms like a question mark over the city's future: what will be the role of this open expanse of publicly accessible space, apart from hosting the re-imagined complex of TIF? And how could we reconcile an **asynchronous and intensive program**, with a **continuous, living urban reality**?

The ConfEx site currently stands as a barrier between the historical city and the eastern districts; the new Special Spatial Plan attempts to free up space to the southwest for a park and concentrate the buildings while allowing gaps between them. However, no matter the layout, the mere size of the program risks overwhelming the scale of the city surrounding the site. The complexity of the site and program requires a multi-pronged, hybrid approach: simply locating and arranging the program within the site will not be enough. The challenge of the new ConfEx Park calls for a **rethinking of the Expo and Congress typology**, and the creation of a **roadmap** for embedding it within a fractured but lively urban fabric. The proposal is comprised of 3 strategies. Overlayed, they combine into a new Agora for the city of Thessaloniki:

THE DOORS: The exhibition halls are braced. by several, large scale and full-height hangar doors. These doors form a network between the halls and the park, and allow the **halls to be used as covered outdoor spaces**.

THE THICK WALL: All of the support functions and program are distributed around the exhibition halls, which are kept simple and rational. The support functions are organized in a thick wall, which is **porous with terraces, courtyards, stairs and platforms** for cafes and outdoor activities.

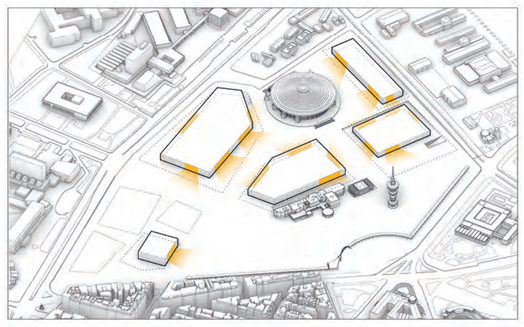
THE CIRCUIT: The top of the thick walls forms a promenade, that is linked via several bridges into an open-air circuit of additional **public spaces and elevated gardens**. The promenade functionally links the upper halls to each other, and to the park.

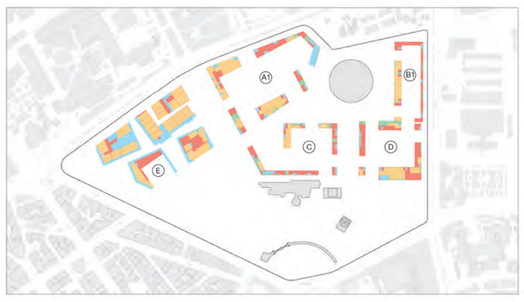


DOORS: FROM A BARRIER TO AN EXTENSION

Extend the park inside - and the program outside the buildings

Before specifying shape or structure, the real-size halls are placed into the plots and subsequently opened up to the park, and to each other through several large hangar-scale doors. A linkage is built, not only between the exhibitions themselves, but most importantly: between the park, the university campus, the business and commercial district, and the EXPO. The **public space is pulled into the buildings**, and the **program extends out into the park**. When the EXPO spaces are not rented out to a fair or show, the doors can open up, and the **space can be leased out/lent to city institutions and citizens' organizations.**

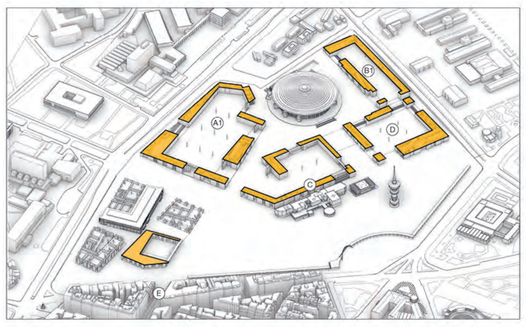


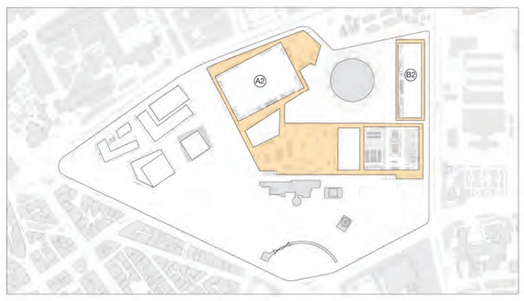


THICK WALLS: A HYBRID INTERFACE

A flexible urban fairground activated with functions

The AGORA proposal's large footprint allows us to organize the skin of the exhibition spaces into a thick wall/zone that frames the **clean, open interior exhibition space**. The thick wall is broken, punctuated, and **populated with a multitude of functions**: public-facing EXPO facilities such as reception desks, ticketing offices and cafes, numerous green courtyards and patios, as well as a multitude of staircases linking the GF to the Green Circuit, and the activities there. The 'thick wall' is articulated as an **urban interface**: scale, materiality, outward-facing functionality, and variety of shaded spaces create a **liveable micro-environment**.

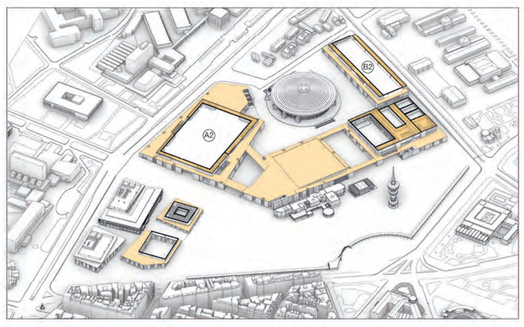


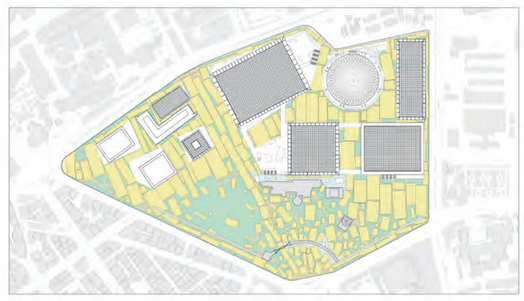


THE CIRCUIT: POPULATING THE ROOFTOPS

The entirety of the complex turns into a potential public space

The upper exhibition and congress spaces are simple, glazed spaces, open to the public promenade that is formed above the 'thick walls' below. This promenade is not only an outdoor extension of the upper EXPO halls, but also an extension of the Park: interlinked via several bridges into a Circuit, and flanked by elevated gardens that make use of the generous planting depths allowed by the thick wall zone. The circuit is accessed from three large-scale urban staircases, and by a multitude of individual staircases that penetrate the porous ground floor. Functionally, it will house a variety of temporary/popup communal activities.

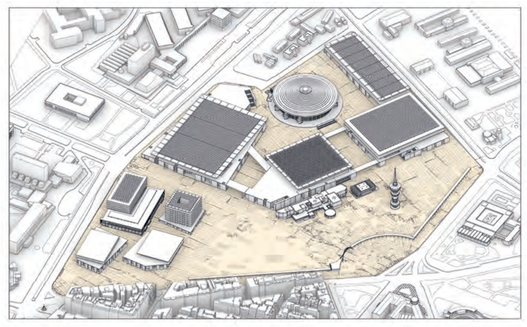




AGORA: THE FAIRGROUND AS A NEW PUBLIC SPACE

Assembling a new, organic part of the city

The overlay of the Doors, Thick Walls, the Circuit and the Park, becomes a hyper-flexible urban district: from a **completely interconnected and integrated Expo**-Conference complex to an **open, publically accessible multifunctional space** for markets, athletic and cultural events, temporary rentable workshop and atelier spaces, art shows, film screenings - and an endless gradient of in-between states. Interspersed with gardens, patios, and interconnected parks of different sizes and densities, it is multi-modal and adaptable. The fairground will not be a collection of solid, inert boxes, but a permeable, **living part of the city**.



EXPO VERSION 2.0

A new format for a new global reality

At any moment before 2020, any ConfEx proposal would have to offer a credible answer to the problem of linking an EXPO to the urban fabric. Post-corona, the question is drastically reformulated: could the **multifunctional urban EXPO format** be the future, in an industry that is drastically re-shaped by the pandemic and the resulting wide adoption of digital event formats? A series of expert interviews with industry leaders point to the same direction as the main idea of AGORA does: we need to invent a **very open, hyper-flexible, adaptable EXPO** that is not a standalone independent program, but rather **becomes an active component of a living city fabric**. With ConfEx, Thessaloniki not only has the opportunity to reclaim part of the city but also to draw **the roadmap for the future of the Fair and Conference industry**.

"Fairgrounds need to find new [...] hybrid business model. You cannot have big halls that are empty three-quarters of the time because you are waiting for these one or two big events. It's not feasible financially but it's also not feasible from an urbanist standpoint. The question is **how to make a fairground infrastructure that is a part of the city.** *Some fairs are going in the direction of consumer experience products, for example, immersive art, which is a big market, or in the direction of larger corporate events. Or they go for temporary usages like vaccination centers or storage – it's a pop-up culture; it's a temporary use culture. [...] You don't have to fence anymore. It needs to be part of the city. What if the fairground was interwoven with other city functions? No more strict separations."*

T.S. Experience Strategy Expert

"Will there be trade shows? Will there be concerts? Tv shows? Will there be sports events and so on and so on? You absolutely have to include public events [...] The maxim that you **always have to try to reach is flexibility.** *You want to build something that is able to host as many potential live events as possible. [...] business travel will be much more damaged than tourism travel. The question is, how can we adapt to and cater to the new needs of the post-corona time?"*

C.G. former CEO of one of the world's leading Fairs

NEW BARYCENTER

A network for (in)formal gatherings

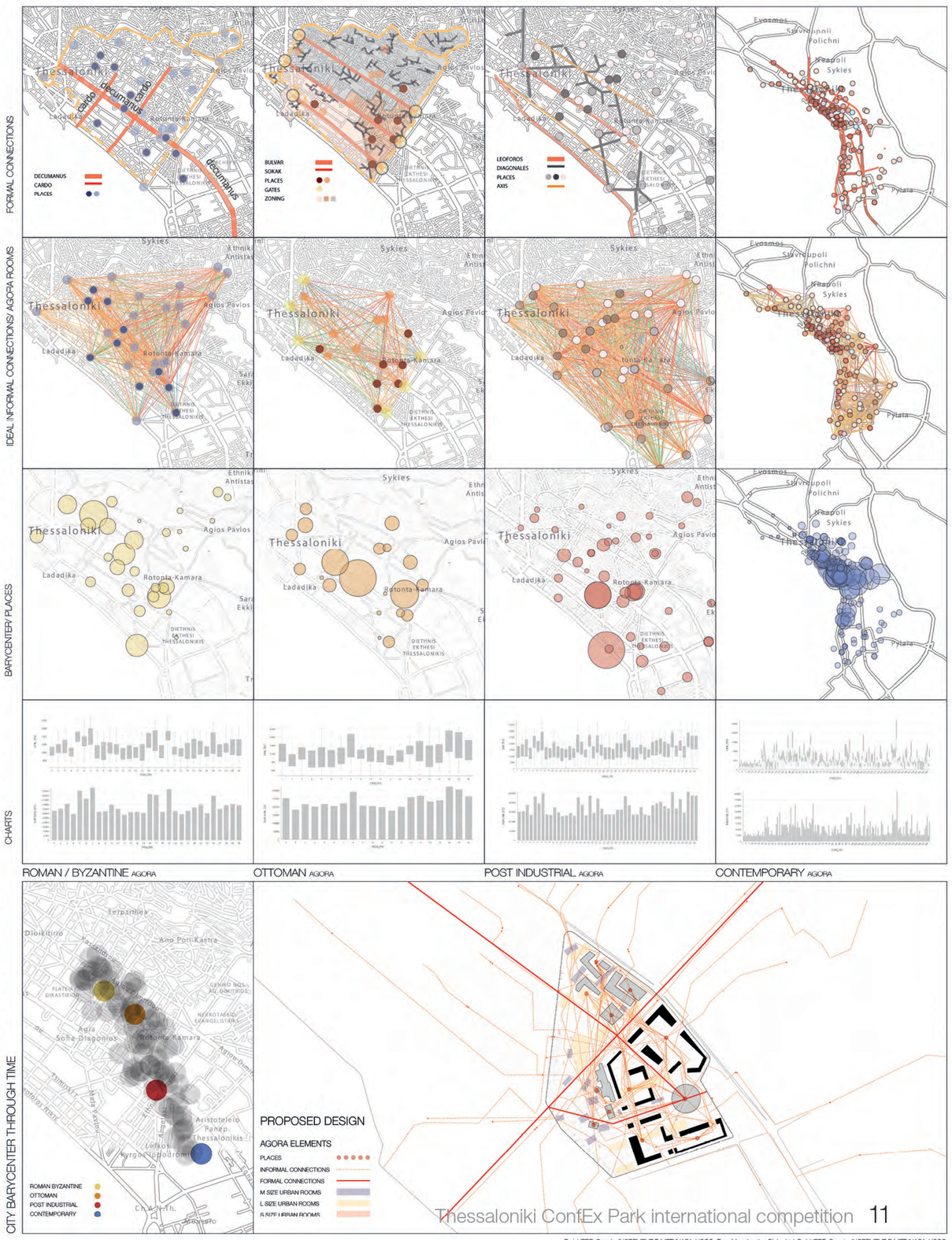
Mapping Agora as it has taken place in Thessaloniki, equals **mapping the network of voids that connect public locations**. 'Agora' is a void 'between'. The ancients defined it as the city's barycenter that exists between public places of importance: governmental, educational, religious centers, as well as the arts and sports. The diagrams identify the **gradual displacement of the city's barycenter** towards what is today the ConfEx site. It becomes evident, that since the Roman times, Thessaloniki has been gradually expanding the boundaries of public experience, **withholding past networks and adjusting them** into more complex schemes. The design takes under consideration the potential of the ConFex location to become the south anchor of the future social core of Thessaloniki.

Rather than treating ConfEx merely as another destination, as another cluster of public buildings, the design develops the entire site as a densification of the experience of Agora itself, opening it up to a dynamic public life. For this purpose, the site is organized under the example of the hybrid nature of Agora, and the dualities that arise out of the narure: spatially uniting but also defining separate zones, and being simultaniously a network of 'rooms' and a network of 'routes'. Within the site, the future Agora organically develops in the form of a **dense cluster of 'urban rooms'** of different sizes, in sequences, at an important intersection of essential routes. Therefore, the plan inspires at once 'movement and stasis', 'formal and informal' gatherings, blurring their difference, and making all kinds of human encounter possible. Examples of urban rooms of this kind, historical and as found in Thessaloniki, inspire the design. Being an urban void, with neither program nor predefined purpose of its own, historic Agoras have existed in many forms; as plazas between public buildings (**ορχήστρα**), as plazas subdivided in multiple urban rooms around gradually multiplying public buildings (classical Greek), as decumanus and cardo (Roman), as boulevard and sokak (Ottoman), as alcove or as cabinet inside a hostess's house that opens to the public (salone, 16th AD, Italy), as area between the bed and the wall (la ruelle –18th AD, France).

Those examples are different in scale and location. However, they share in common, that they are **empty thresholds**, and as such, powerful to **incubate 'formal and informal' gatherings at once**. Ultimately, ConfEx establishes afresh all of the essential elements of Agora, -places, urban rooms, formal and informal connections- into a network that expands towards the current center.







Esri, HERE, Garmin, INCREMENT P, METI/NASA, USGS; Terra Mapping the Globe Ltd, Esri, HERE, Garmin, INCREMENT P, METI/NASA, USGS

SUSTAINABILITY
Generating Social Value

The Thessaloniki ConfEx park master plan regeneration offers an unprecedented opportunity to increase the **social value and sustainability** of the area. Social value is created when buildings, places and infrastructure support environmental, economic and social wellbeing, and in doing so improve the quality of life of people. On the other hand, sustainability focuses on the same parameters as social value, but the outcome is measured against the improvements on climate change. Sustainability is interlinked with social value and is at the forefront of any new development or major renovation following the European and international targets urging for climate change mitigation. As such, the proposed Thessaloniki Confex park master plan design, has focused on adhering to all national and European policies and legislations in order to be a point of **reference and of outstanding performance, leading the way to the new exhibition spaces era**.

The Agora master plan offers social wellbeing values such as increased space/material quality, security, and an area to interact **encouraging community involvement** while respecting the local aesthetics and **historic value**. Economical values include additional local employment opportunities and widening the range of skills in local community while benefitting the environment by creating an excess of green spaces and biodiversity; improving the air quality and supporting the reduction of carbon emissions of the whole site. The UN sustainability goals have been used as a holistic framework to determine the needs of the local community and create the social value and sustainability scope of the master plan. In total, the design responds to **nine of the United Nations Sustainable Development Goals**. A bespoke project 'Sustainable Periodic Table' has captured 75 sustainability design features making it one of the most sustainability-centred urban designs for exhibition spaces.

The carbon footprint of the proposed master plan will be reduced with strategies developed both for construction and operation phases. On the operational side, the infrastructure design, ensures that the buildings will adopt efficient design hierarchies (energy, water and waste) through features of **significant impact with the least amount of financial investment**. Bioclimatic design respecting the Thessaloniki climate is adopted followed by efficient systems choices. Renewable technologies have been used throughout the site such as air source heat pumps, photovoltaics, solar hot water and energy storage to assist with the roadmap towards a net-zero carbon master plan. On the construction side, our **circular economy approach** will minimise construction waste (efficient choice of materials, reuse and retention of existing buildings) and reduction of embodied carbon by using locally sourced materials. Lastly, to respond to the recent worldwide crisis, Agora puts on the forefront the healthy-buildings aspects highlighting once again the interconnection between sustainability and social value. All infrastructure choices and design principles address requirements for air quality, acoustics, noise, light, and thermal comfort.

SOCIAL VALUE	SOCIETY	ENVIRONMENT	ECONOMY
LOCAL	Local identity Community Engagement	Green spaces Biodiversity	Skills Employment
CITY	Public spaces Security and safety Usages diversity Community networks	Air quality	Accessibility Small business
GLOBAL		Carbon emissions	

RETURN OF INVESTMENT ↑ INCREASING CAPITAL COST ↓

ENERGY

1. Massing and form
Self shading facades, building opening oriented to predominant wind directions, narrow floor depths for natural ventilation.

2. Passive design
Green roofs, living walls, mixed mode ventilation, good natural daylight, insulation, smart glass.

3. Function and use
Low power equipment and white goods, state of the art LED lighting, daylight/light controls, occupancy sensors.

4. Systems design
Low fan power systems, heat/cool recovery, smart central controls, preventive maintenance, high COP's.

5. Renewables
Roof mounted photovoltaic power cells, battery storage, solar hot water, geo-thermal, VRF heat pumps.

WATER APPROACH

1.Eliminate
Park wide educational program to promote the reduction in water consumption and personal use.

2.Sustainable Urban Drainage (SUDS)
Natural landscape irrigation, promote wildlife habitats, reduce flooding & managegroundwater recharge.

3.Reduce
Design and install the latest efficient fittings and white goods with low water consumption rates.

4.Reuse
Recycle relatively clean waste water from showers, baths, basins, washing machines for toilet flushing.

5.Capture
Capture rain water on buildings to assist with low rain fall season irrigation.

HEALTH & WELLBEING

1.Temperature
Achieve high percentage on thermal comfort requirements on both indoor and outdoor spaces.

2.Air quality
Fresh air levels on indoor spaces taking into account increased air flow avoiding virus transmission.

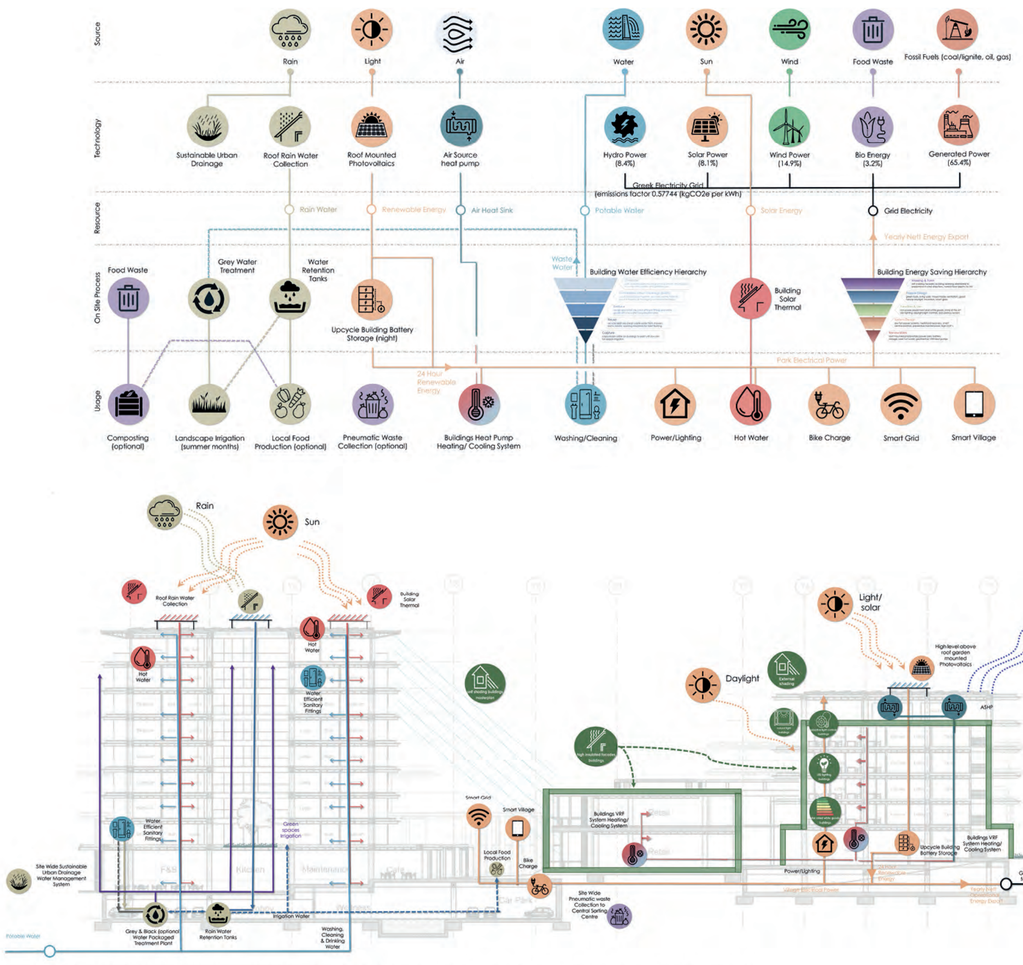
3.Noise
Key aspect for exhibition spaces and also important aspect for Hotel and office areas.

4.Visual comfort
Daylight levels and views out to enhance connection with outdoor spaces.

5.Design aesthetics
Value local identity, integrating connection points, biophilia, quiet and entertainment spaces.



SUSTAINABILITY FRAMEWORK: ConfEx/Agora selection of United Nations Sustainable Developlent Goals



INFRASTRUCTURE STRATEGY: Energy/Water strategy and application to the master plan

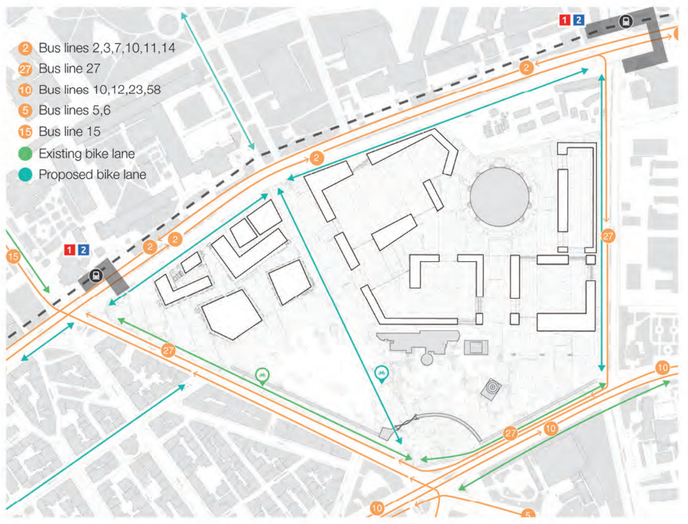



Fig. 2 The Solar Terrace: a shaded sollar trellis for environmental education and outreach activities


Fig. 3 EXPO lobbies: between inside and outside, open, bright spaces with green courtyards

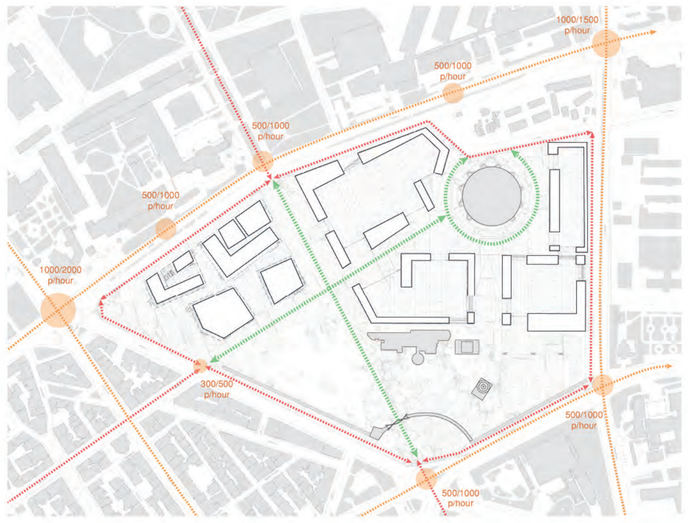
HEALTHY PLACES FRAMEWORK: excerpt from strategy guidebook developed specifically for the ConfEx master plan

Transcribed with ConfEx Park international competition



MOBILITY - ACCESS
Convergence: interface with present and future public transportation interface

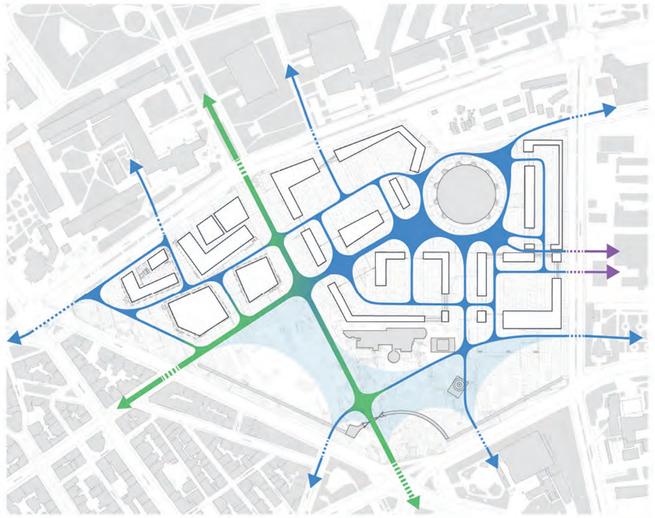
The TIF-Helexpo Fairgrounds are already well connected to **bi-directional bus lines**, and will be covered by two major metro stations in the near-future: Sintrivani/Ekthesi and Panepistimio on lines 1 and 2, offering unprecedented high-capacity access to ConfEx. The new fairgrounds, Agora, will interface with the current and near future public transportation network through strategically located plazas and promenades. Agora will also form a central node in the **bicycle route network** connecting the southeast city and new Paralia, with the historic and cultural center to the west. The **extension of the two existing bicycle routes** around and through the site, as well as the provision of bicycle parking, will form a new hub. This hub will not only serve the Aristotle University campus but also the cultural/museum pole to the south, as well as ConfEx itself, thereby becoming a crucial node in Thessalonikis's nascent bicycle network.



URBAN BARYCENTER: Pedestrian flows around the site

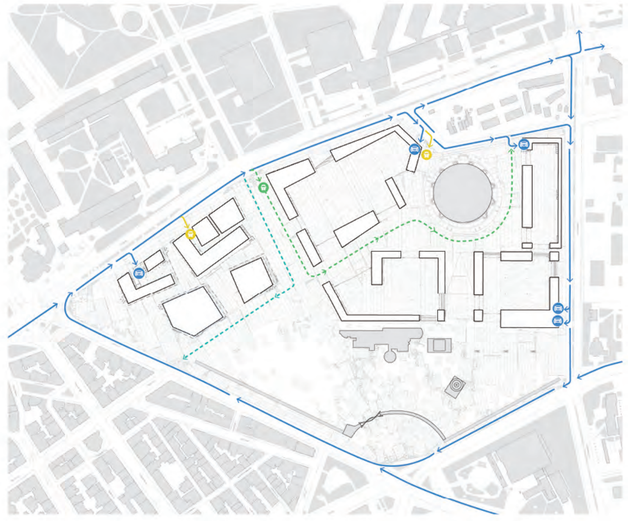
Pedestrian **flow counts** in 8 main intersections around the TIF Fairgrounds reveal the primacy of Sintrivani square, but also offer some hints at the "barrier" nature of the current plot: flows directly from the city center (Al. Svolou street) are currently blocked, since there is no easy access through the site. Similarly, pedestrian flows from the seafront and museum district (Leoforos Stratou) are much lower than those along Egnatia Avenue and the University complexes. The opening up of the plot's perimeter and the auxiliary street envisioned by the master plan, will create **two new axes** that criss-cross the site. These are the Hébrard Park axis connecting the seafront to Aristotle University, and Al. Svolou street, leading straight into the heart of the historic center of Thessaloniki. Still, the southern part of the site towards the cultural hub and the army corps, is harder to link up with the north side, Sintrivani square and the dense urban fabric that starts there. Thereby, one of the main goals of Agora is to offer a multiplicity of routes throughout the site, utilizing not only the landscape and the gaps between the buildings but also the buildings themselves.





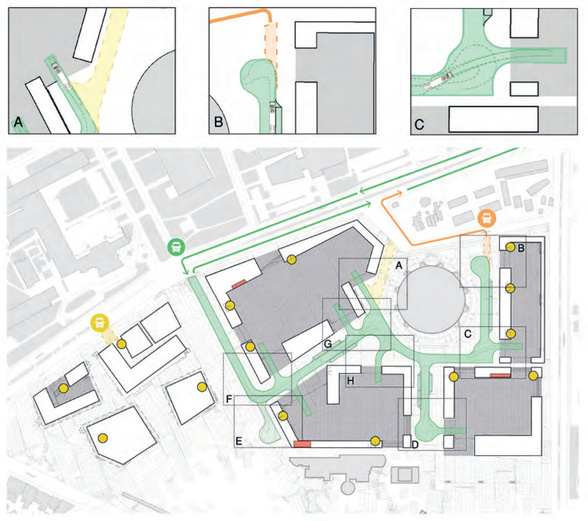
STITCHING NEW NETWORKS: Pedestrian flows through the site

While the 'Special Spatial Plan' places the building zones (sector I, II, III and IV) to emphasize the **two cardinal axes**, it otherwise does not address connectivity to the south and east of the site. Through the periodic opening of the halls to the park, a **network of through-passages** and interlinked covered plazas will be created, drastically increasing the permeability of the site and its pedestrian usage. When the hangar doors are open, connections do not only happen across the cardinal axes (Hébrard axis and Al. Svolou street) but allow for a more fluid, **continuous and organic apporpriation of the site**. Diagonal routes through the site will be possible, thereby linking the University directly connected to the museum hub and the southwestern residential districts via a mixed outdoor and covered route. This unstructured spatial appropriation, and free movement through the new ConfEx park, will facilitate its gradual appropriation and 're-population' but the people of Thessaloniki. Currently direct access to the west is blocked by the military facilities, but Agora proposes **provision for future connection** in case the facilities move to another location.



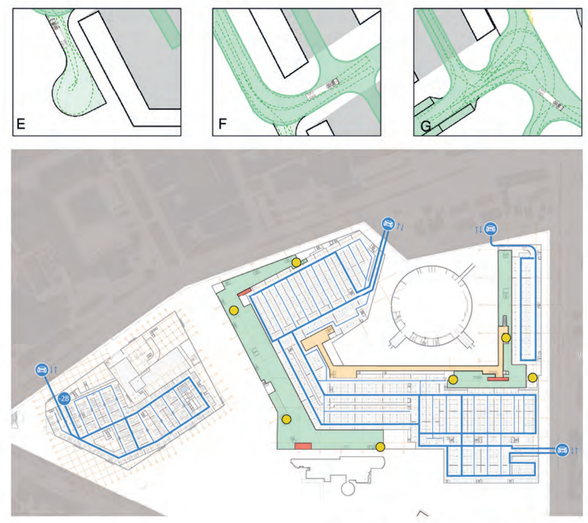
REDIRECTING: Car and light vehicle flows into the site and parking

The accesses into the car parks take into consideration the existing traffic configuration and utilises existing access points where possible limiting the extent for significant junction upgrades and traffic signaling as far as possible. The prime concern of the car access strategy is to **direct car flows away from the direction of the city center**. The main approaches to the site are through Egnatia Avenue (direction towards Airport). From Egnatia, one can directly access the Business Center Parking and the **auxiliary route for emergency vehicles**. Continuing on Egnatia, vehicles can take a right turn and circulate around the whole plot through Lampraki street, 3rd September street, and Leoforos Stratou, closing the clockwise loop. The other three parking entrances (sectors I1, I2 and IV) are located on Lampraki and 3rd September streets respectively. The design of the emergency route has been developed to accommodate large fire tender traveling at speed during and emergency while acting as a key walking and cycling connection during the day-to-day operation.



DELIVERING: Heavy vehicle paths integrated into landscape

Delivery and heavy goods vehicle (HGV) access takes place through a **dedicated HGV route**, seamlessly integrated into the landscape, next to the emergency access route coming in from Egnatia Avenue. The HGVs can freely access all exhibition halls on GF level, and use the eleven delivery bays provisioned onto the landscape. Six turning loops are part of the route, allowing HGVs to turn around at any point, and exit through the same route that they entered: the Egnatia node. Alternatively, it is possible to have a continuous counter-clockwise loop, with **HGVs exiting from the right of AAMTH**, to Lampraki street. We recommend one minor traffic readjustment: the conversion of Grigoriou Lampraki into a two-lane street, so that HGVs can be again outbound through Egnatia, and completely avoid approaching the city center. Finally, there is a **ramp for light delivery vehicles** to the delivery bays under the Business Center, as well as an alternative access to the left of AAMTH if deemed operationally desirable.

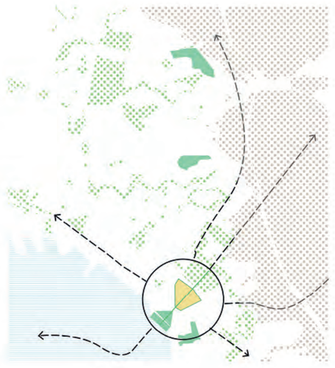


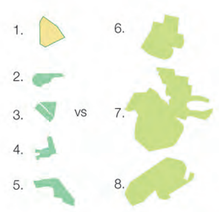
UNDERGROUND LINK: EXPO connection, storage and parking

The basement level is multifunctional, like the GF level. It houses five car parking areas (three of them interconnected), **two large storage zones** for the EXPO and Congress program, and a sequence of **underground lobbies and passages**, offering alternative connections to all 3 EXPO buildings, as well as the luxury exhibition and Congress. The storage zones are equipped with strategically located **freight elevators** (two clusters per building), as well as **internal ramps**, giving direct access to the GF exhibition spaces from the basement storage. The connection of the different parking areas is highly beneficial both from an economic standpoint (reduction of retaining walls up to 30%, all EXPO parking stays at only 1B floor minimizing excavation into archaeological strata) and functional (interoperability between storage areas). Underground parking was designed in accordance with Greek and UK guidelines, and in addition follows the latest Greek fire regulation, in terms of compartmentation and fire egress staircases.

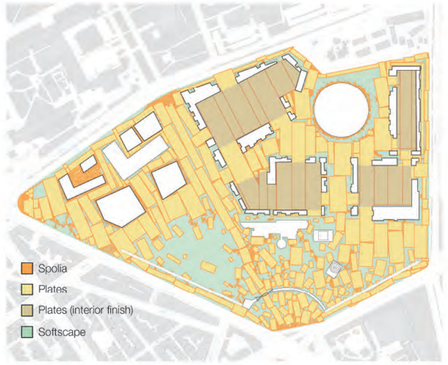
LANDSCAPE
Building Green Networks

The ConfEx site is surrounded by a very distinct geomorphology of green networks. To the northeast lies the imposing mount Chortiatis, which at 1,201 meters defines the eastern border of the city. Directly to the North lies the Aristotle University campus. To the west spreads a dense urban green network, that is however not directly connected to the site. Finally, to the South, there is the extensive coastal front. This unique placement means that the new ConfEx park can/should function as the link which will connect the green parts of the city, and will transform them into a fluid Green Network of spaces. The design speaks through a multidimensional narrative, where different types of smaller plazas, parks, clusters of trees as well as the mountain and the sea create a flexible opportunity of sustainable development inside the urban context of Thessaloniki. Our prime landscape design gesture is the creation of a dense forest park into the city, which follows the strategy of an individual microclimate area. Towards the north side, our design maintains high tree canopies, overlayed on an urban multifunctional network of hardscaped plazas. These canopies are also used to highlight the Promenade, which connects the green corridor of Thessaloniki from the Beach towards the University campus. Smaller vegetated islands spread into the plot, tightening Thessaloniki's green network, and in combination with the 'spolia' re-assembled hardscape, create micro-scale urban living spaces.





Thessaloniki's urban parks are on average much smaller than those of **Athens**. Their main advantage is, however, proximity to each other. This brings up the possibility of creating an urban green network: 1) ConfEx, 2) Alsos Sikeon, 3) YMCA Park, 4) Pedion Areos, 5) Meteora Park, 6) National Garden, 7) Filopappos and Acropoli, 8) Likavitos



HARD SCAPE
Spolia: re-using, and re-assembling the site

The Fairgrounds have both a spatial, and a material history: ConfEx should be the next chapter in living history, and not yet another erasure. The site is covered in a **variety of beautiful mineral materials**, from grey veined marble and sandstone blocks to granite wall panels and terrazzo flooring. These materials were catalogued and mapped, in order to be re-combined in the new hardscape. This idea of **spolia** (remnants of previous tectonic layers becoming part of the living tissue of new construction) is typical of Greece, and especially Thessaloniki: a palimpsest of historical phases, materials, and cultures. The new hardscape is comprised of two types of paving. The first type is **large plates (from 2x1 m to 5x5m)** from reconstituted concrete, using as aggregates the crushed demolition material. The second type is 'spolia': **loosely assembled salvaged stone and concrete components**, either entire or broken, layered, stacked and piled. While the plates are smooth, the spolia surfaces are porous and permeable, gradually fading into the **softscape/vegetation**. Nevertheless, **all final surfaces are continuous and barrier free**. The cataloguing and assembly of the spolia pavement could also constitute the first in a series of **participatory design workshops**, with the intent of involving local denizens as well as architecture students from Aristotle University into the shaping of this new part of Thessaloniki.

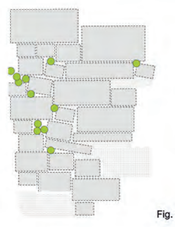
SOFT SCAPE
An Urban Mediterranean Ecosystem

A grid system of trees is integrated into the forest which follows and compliments the plates/spolia strategy: thus creating a variable (in terms of tree species, foliage density and color) tree canopy. Long axes of tree canopies maintain the main character of the forest park. Its variety is succeeded with 'interruptions' in the tree canopy that allow the eye gaze to be led towards the sky and receive glimpses of the surrounding plazas, through openings in the green mass. At specific points the grid is interrupted by other planting species, creating green-cushioned pockets around paved plates, thereby offering different spaces/experiences in the forest. Large indigenous persistent and deciduous trees inhabit the forest, and spread into the plot in direct composition with smaller trees enriching the creation of a Mediterranean grove. The plants proposed for the forest and the vegetated islands are mainly indigenous Mediterranean, and with very low irrigation needs that can be almost fully covered by ConfEx's water reclaiming/reuse systems (see sustainability chapter). Garrigue species and low-height grasses other Mediterranean higher shrubs are combined together, into a robust ecosystem that will thrive in Thessaloniki's climate.



Fig. 4 EXPO Plaza. From AMTH, looking towards the business center during an "open doors" event. Hall C is to the left, and Hall A1 to the right.





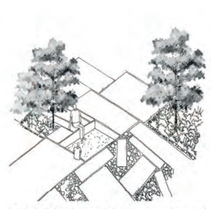
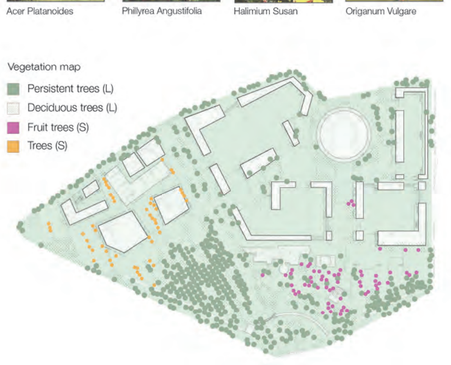


Fig. 5 A green living room: plates, spolia and vegetation

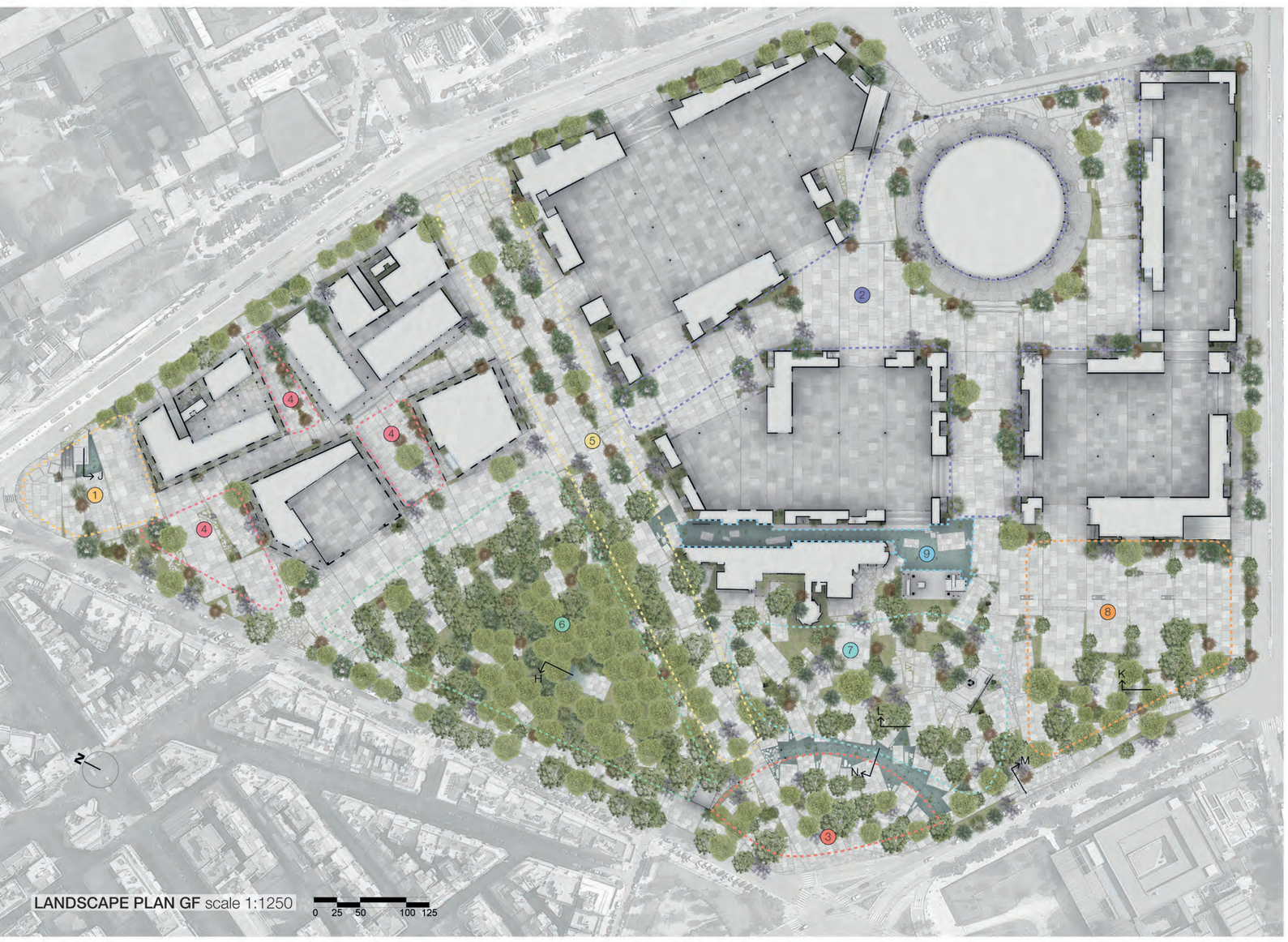
The Landscape Palette is not only composed of the native plants life, but also from repurposed demolition materials from the site. By promoting a sustainable material management approach in the construction, we aim to reuse the demolition materials that we find in situ such as concrete, marble, wood, stone, plastic, glass, brick etc. The Spolia strategy described above is supplemented by the reconstitution strategy: pulverizing demolition material and using it as aggregate in the construction of the 'slabs' that comprise most of Agora's hardscape. A small wooden kiosk (●) that is currently on-site will also be relocated and re-used as the cafe in the forest garden area.



NEIGHBORHOODS
Park functional and material zoning

The entirety of the TIF site is treated as an interconnected landscape: the landscape is articulated in different zones, or **neighborhoods**. The transition between the neighborhoods is not clear cut, and happens gradually, through **incremental material and vegetation change** (hardscape vs softscape, porosity, scale) and through programming:

1. Welcome Plaza: The apex of the plot, where most pedestrians will arrive from the city center, and the Sintrivani metro station.
2. EXPO Plaza: The heart of the EXPO district, to be used as a flexible outdoor exhibition area linking all sectors. It is typified by the several "deep walls" and green niches that surround it, as well as several sheltered public plazas under the eaves covering the EXPO buildings' hangar doors, and the bridges.
3. Arch Plaza: Probably the most representative part of the site in the city's collective memory of the Fairground. Mostly hardscaped, but shaded by a small green grove, and the preserved portico 'suspended' in a reflective pool offering evaporative cooling in the hot summer months.
4. City Courtyards (A,B,C): A series of alternating courtyards in a checkerboard pattern, flanked by arcades and trees. Full of cafes, restaurants and shops, they form the urban interface between TIF and the historical center.
5. Promenade: The Promenade follows the main remaining trace of Hébrard's master plan, from YMCA Park, via Arch Plaza and through TIF, all the way to the Aristotle University campus. It is a linear but not rigid avenue, lined with tall-canopy trees.
6. Forest Garden: The densest, and in a way "wildest" part of the master plan. The forest garden is covered in a loose grid of tall-canopy trees such as red pines, and the floor is an uninterrupted softscape, with the occasional paved platform or path.
7. Art Garden: The art garden is at the same time a functional extension of the art museum, and a flexible outdoor "living room". The hardscape is broken into a series of interconnected islands, that function as linked outdoor rooms for conversation, relaxation, small events, etc.
8. Event Garden: The Event Garden is a hybrid place: a large flexible plaza that is surrounded, and sparsely penetrated too, by vegetation. It is the functional extension of the Luxury exhibition and Congress hall, but it can also host outdoor concerts, open-air cinemas, and any other activity that thrives in an open outdoor space.
9. Water Garden: The Water Garden is an urban canyon, formed by the space between EXPO Hall II, and the MMCA. A thin surface of water is interrupted by paved platforms hosting sculpture and outdoor art installations,
10. Green Circuit: the Green Circuit is the loop of elevated promenades that surround the upper floor exhibition halls, and Congress. They function as outdoor exhibition spaces, but also as an open public network linking together green shaded areas, cafes (from the exhibitions), restaurants and thematic plazas with public activities.
11. Workshop Plaza: Part of the Green Circuit, the Workshop Plaza is located on top of Exhibition II and next to the Solar Terrace. It is a public laboratory for participatory activities, outdoor seminars, experiments in urban farming, etc.
12. Solar Terrace: The Solar Terrace (see Fig.2 in sustainability section) is an outdoor large-scale pergola covered in solar panels like the rest of the EXPO rooftops. The main difference is that this panel array (floating above a thin surface of water) is open to visitors, and functions as a centre for experiential learning centered on urban sustainability, and the lifecycle operation of the Fairgrounds complex.
13. Theatre Plaza: The theater plaza offers an uninterrupted, perimetrally planted rooftop, for large-scale open-air activities. These could either be public or directly connected to the function of EXPO Hall A2.













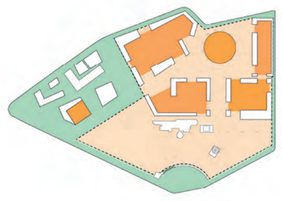




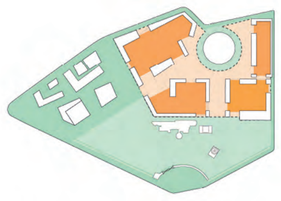
EXHIBITION

Adaptable, multi-modal operation

The Exhibition halls (sector I, II and luxury in IV) operate on a spectrum of modes. On one end of the spectrum, there is a fully integrated mode that combines all EXPO buildings with AAMTH and the park itself; this would respond to yearly or biennial events of maximum capacity such as The International Fair. On the other end of the spectrum, the ConfEx site is operating in fully open public mode: the halls are continuous with the park, and function as covered public spaces for markets, athletic and cultural events, temporary rentable spaces, film screenings, etc. Between the two ends, there is a wealth of intermediate modes that lie between private and public operation, and able to host more than 8 large-scale events independently. Pairings between EXPO halls are seamless, via the hangar doors (GF level), via the underground passage (B1 level), or the bridges (1F level).



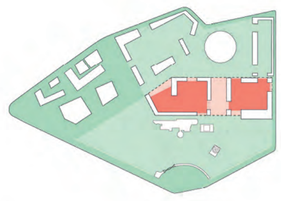
1) Special integrated mode: All halls, GF and 1F, the AAMTH, MMCA, Congress building, as well as the Forest garden, Art garden and events garden are secured and access controlled for a single, large scale event.



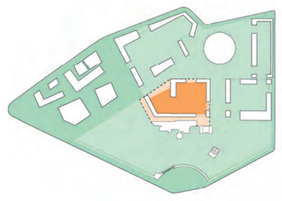
2) Full capacity mode: all EXPO halls and the Congress center interconnected for a large fair. AAMTH is independent, and the park is also fully open and accessible. The areas under the bridges are used as entry/checkpoints.



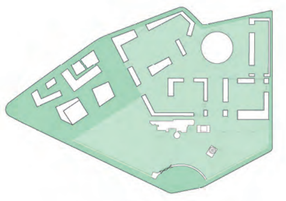
3) Mixed mode: two separate events are taking place. One uses a link-up between halls I₁ and II, while the other uses halls I₂ and the Luxury / Congress complex, while the park remains open. The Events Garden can be temporarily access controlled.



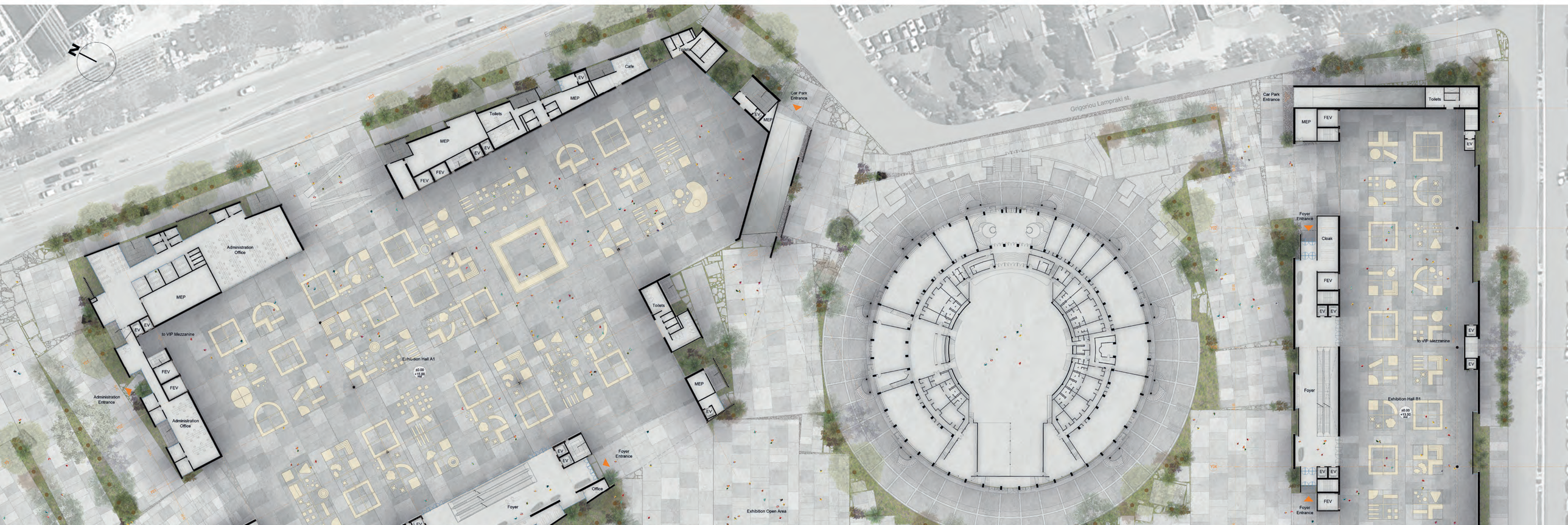
4) Hybrid mode: event hosted in Hall II and Congress. The other Expo halls are open to the park and turned over to public space operation. The open-air area between Hall II and Congress is used as an outdoor event area.



5) Hybrid mode (variation): Hall II is linked up with MMCA, while the rest of the park, as well as EXPO spaces, operate with the hangar doors open, as public spaces.

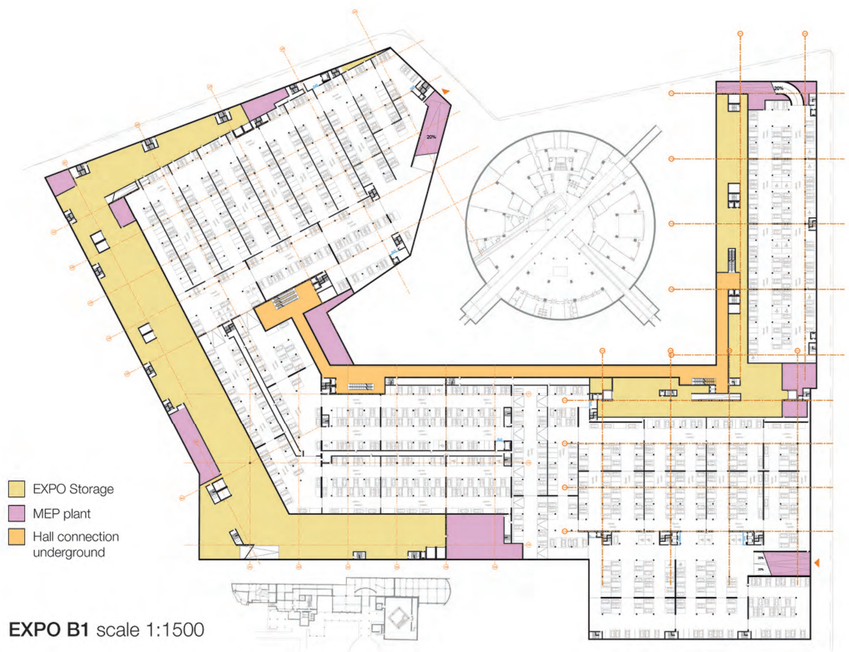


6) Fully public mode: no fair event is taking place, but all expo halls are accommodating public usages such as markets, workshops, classes, rehearsals, temporary workspace rentals, etc.



EXPO PLAN GF scale 1:500

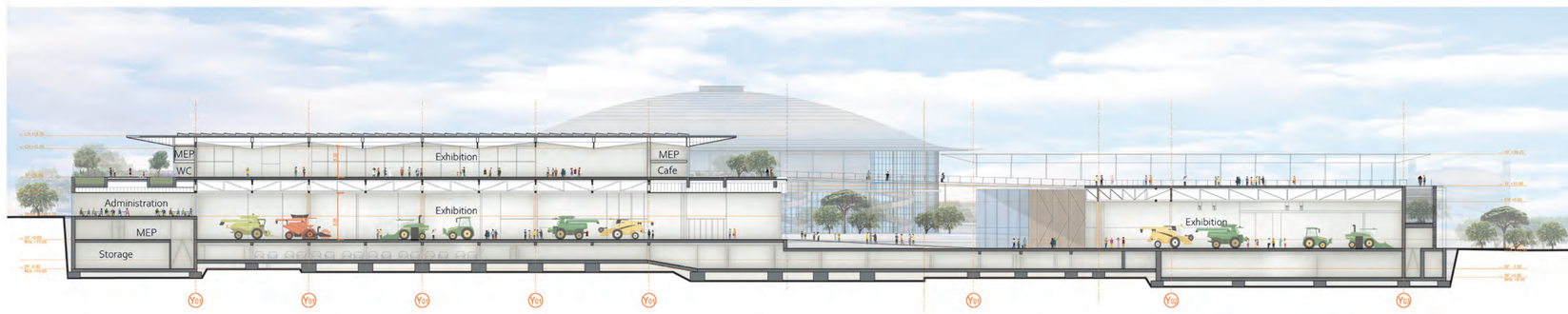
0 10 20 50



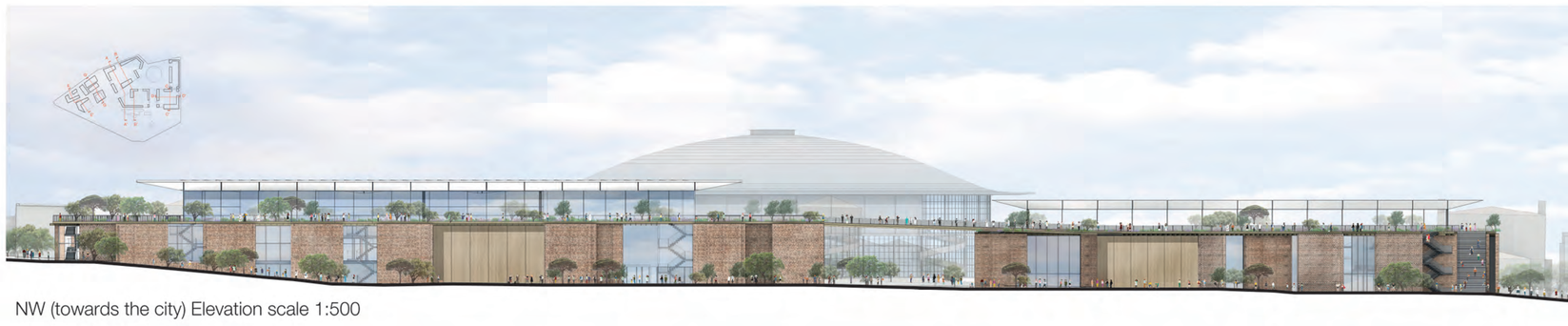
EXPO B1 scale 1:1500

Expo Basement: linked and multifunctional

The basement of ConfEx is organized into two main entities: the EXPO-Congress basement and the Business Park basement. Each sector (I,II,III, IV) could have an individual basement independently accesses. However, that would require extensive retaining works (a much larger retaining wall area) and 2 basement levels for most sectors. Instead, we recommend linking the EXPO basements structurally and functionally: this also unifies and drastically increases the flexibility of the EXPO storage facilities. For more information please see the MOBILITY and STRUCTURE narratives.



Section A-A' scale 1:500



NW (towards the city) Elevation scale 1:500



Fig. 6 EXPO Hall C, looking towards Hall A1: Public mode function, hosting markets. Interior, exterior, and interior again: a succession of layers of courtyards, inner gardens, shady halls, open avenues

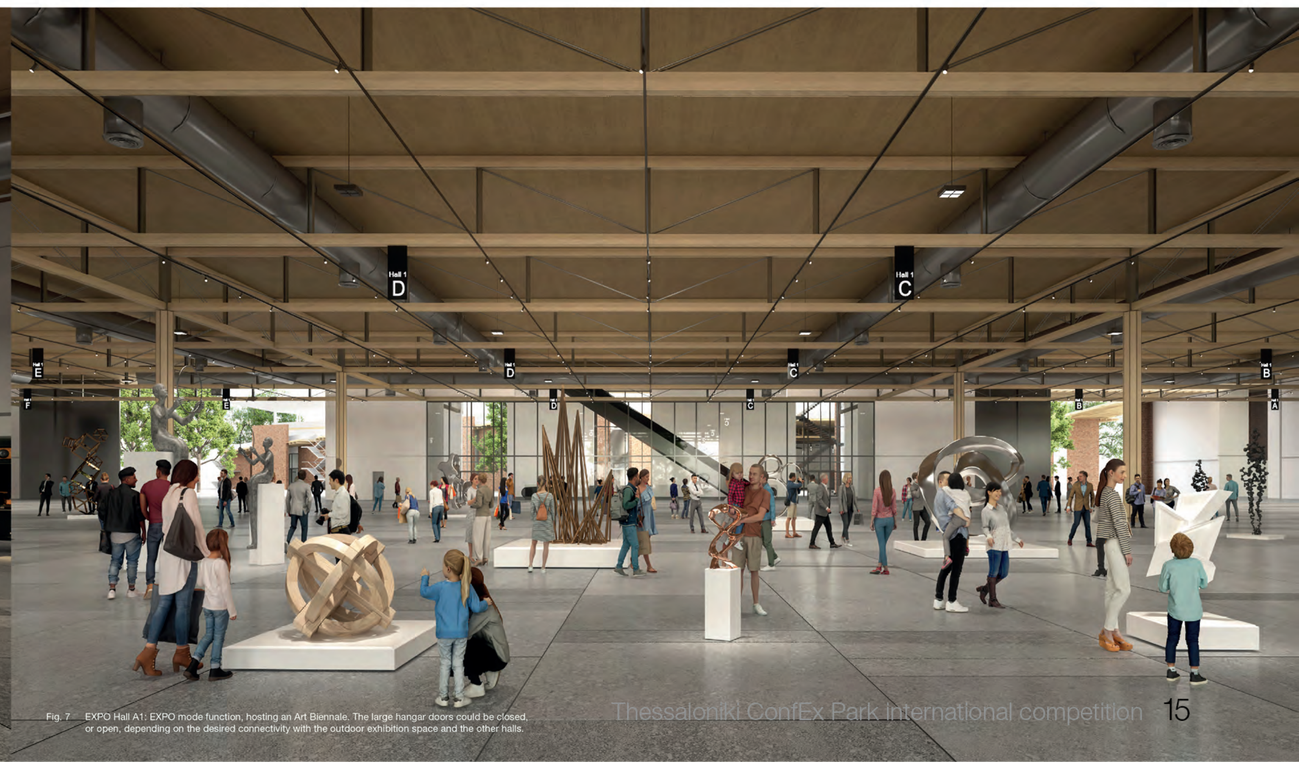
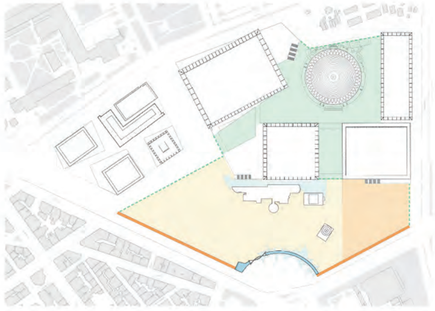


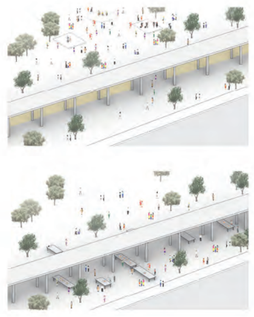
Fig. 7 EXPO Hall A1: EXPO mode function, hosting an Art Biennale. The large hangar doors could be closed, or open, depending on the desired connectivity with the outdoor exhibition space and the other halls.

PARTITIONING

An open, accessible and secure site

ConfEx will be an open, public park. There is however a requirement for access control, either during very large events, or sometimes, during the night. We propose to extend the **existing entrance portico** by Vourekas, Staikos and Vasileiadis, comprised of a very thin roof supported by a slender colonnade. This **portico is continued along Leoforos Stratou and Aggelaki street**: it will remain open under most circumstances, and facilitate public urban uses such as **shelter for cafe/restaurant tables, markets, stalls**, etc. When needed, the portico can be closed (with exterior roll-blinds stored in the roof, modular fence elements, etc). **The original portico** by the Arch is floated on a reflective pool, eliminating the need for further security enclosure. Finally, in order to not disturb the continuity of the landscape, the sides towards 3rd September street and towards the Business Center will only be closed with **moveable fence elements** which can be permanently stored in one of ConfEx's exterior storage depots. The security perimeter is, like the rest of the proposal, hybrid and adaptable.

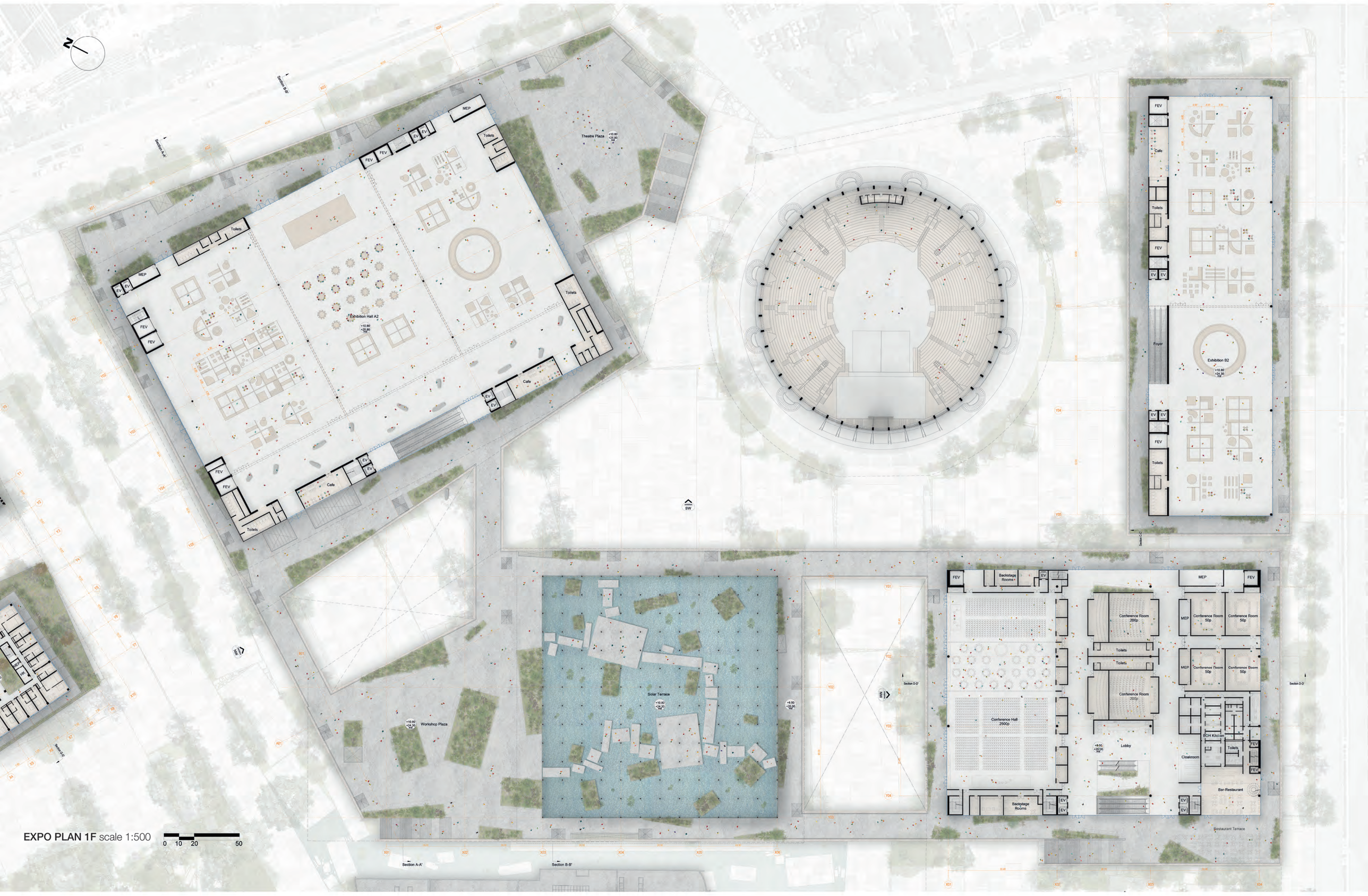




Halls: flexible and adaptable

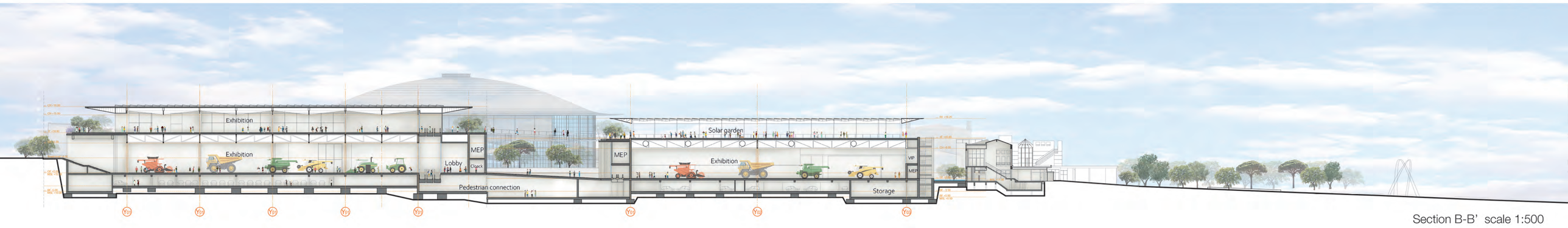
All halls are based on very simple structural grids, with the main spans being 35-40 meters. The spaces are rectangular and rationally subdivided. Foldable partitions can divide them along the structure grid in a variety of arrangements. Most halls will still have individual access to the Park, or the outdoor areas of the Circuit after being partitioned, thanks to the distribution of large hangar doors (GF) and glazed openings (1F). The distribution of elevators and fire egress staircases, which is following the latest Greek regulation, is also ensuring independent vertical access to most arrangements of subdivision for the Halls. **RIGHT:** Different arrangements of Hall A2 in one, three, or six sub-halls.





EXPO PLAN 1F scale 1:500

0 10 20 50



Section B-B' scale 1:500



SW (Expo Plaza) Elevation scale 1:500

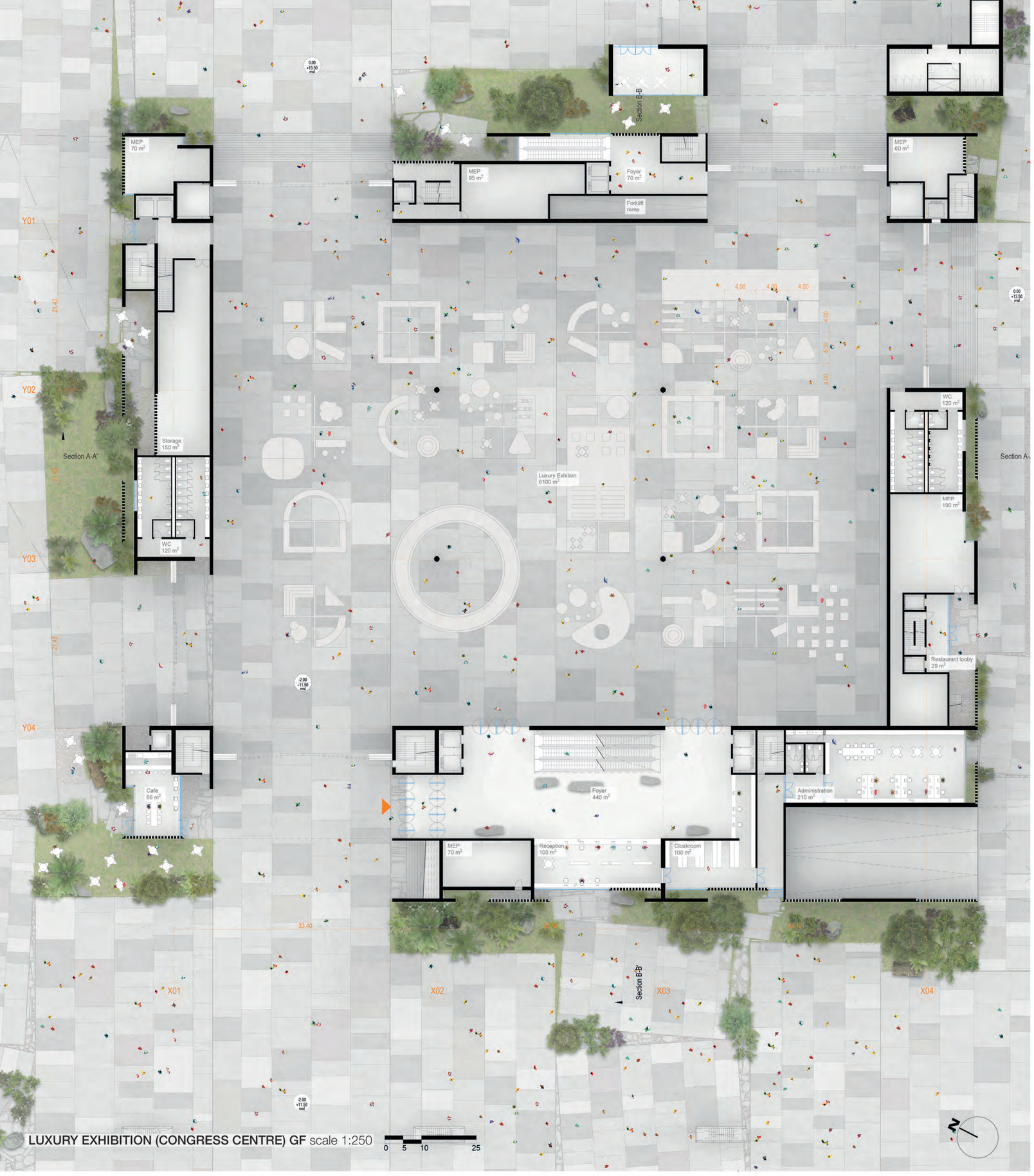


Fig. 8 EXPO Hall A2: Social event mode function, hosting a post-festival banquet for several hundreds of people. The 1F hall opens up to The Circuit, which allows the event to spill out onto a leafy, green terrace garden.



Fig. 9 EXPO Hall A1 and A2: At the edge of the Forest Garden, enjoying the shade and looking towards the EXPO complex with the Arch plaza and the seaside to the right.

Thessaloniki ConfEx Park international competition



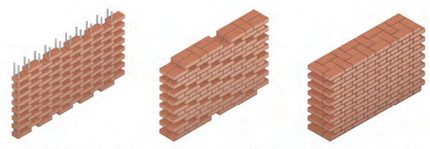
BRICK AND WOOD

Material and memory

Brick, in the case of Thessaloniki, carries **strong cultural connotations** and is a material that is entwined within the city's **living memory**. Unlike Athens that gradually faded to obscurity after the late antiquity, Thessaloniki thrived throughout the late Roman period and became a major metropolis within the Byzantine and later Ottoman Empires. Thessaloniki has a wealth of Roman, Byzantine, and Ottoman architecture executed in brick. One of the largest extant monuments of Thessaloniki, the city walls, continue to crisscross through the old and upper city: these are **eroded, porous walls that have been gradually colonized by plants and dwellings** alike. The walls, at the same time protective and open, solid and porous, were a major reference for the materiality of Agora. Our "thick walls" encircle the EXPO halls but also offer the means to open them up, and act as intermediate zones and filters. Brick, in its many iterations (1. single layer suspended brick screen – 2. two-layers perforated masonry wall – 3. three-layers solid masonry wall) allows us to create these ambiguous zones, filtering the light through, populating them with green courtyards, intermediate "threshold" spaces and extroverted program activities.

Today, brick is widely used in Greece as a light partition material, but as structural masonry or finishing material its usage is rather rare; with some notable exceptions such as seminal architect Kyriakos Krokos (and his Byzantine Museum directly south of ConfEx). Brick is therefore easy to procure locally. It is also well known for its affordability, reliability, resilience, beautiful aging and solid performance when employed as a structural material. In combination with the proposed wooden structures and overhangs, brick screens and walls can be built without the need for any additional finishes: natural materials, that age naturally and help tie the building to the living, breathing materiality of the city.

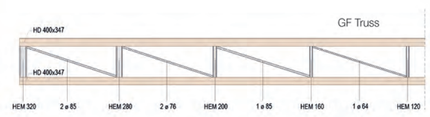




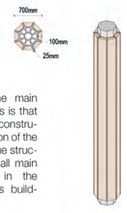
1) Single layer suspended brick screen

2) Double layer structural brick masonry screen

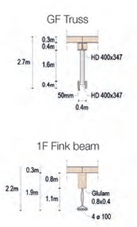
3) Tripple layer structural solid brick masonry



GF/1F Column



The concept for the main load-bearing elements is that of hybrid steel-wood construction. With the exception of the CLT floor slabs and the structural masonry walls, all main structure elements in the EXPO and Congress buildings are of this type.



STRUCTURE STRATEGY

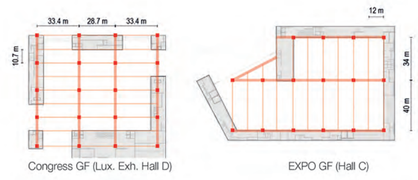
Congress, Luxury Exhibition and EXPO halls

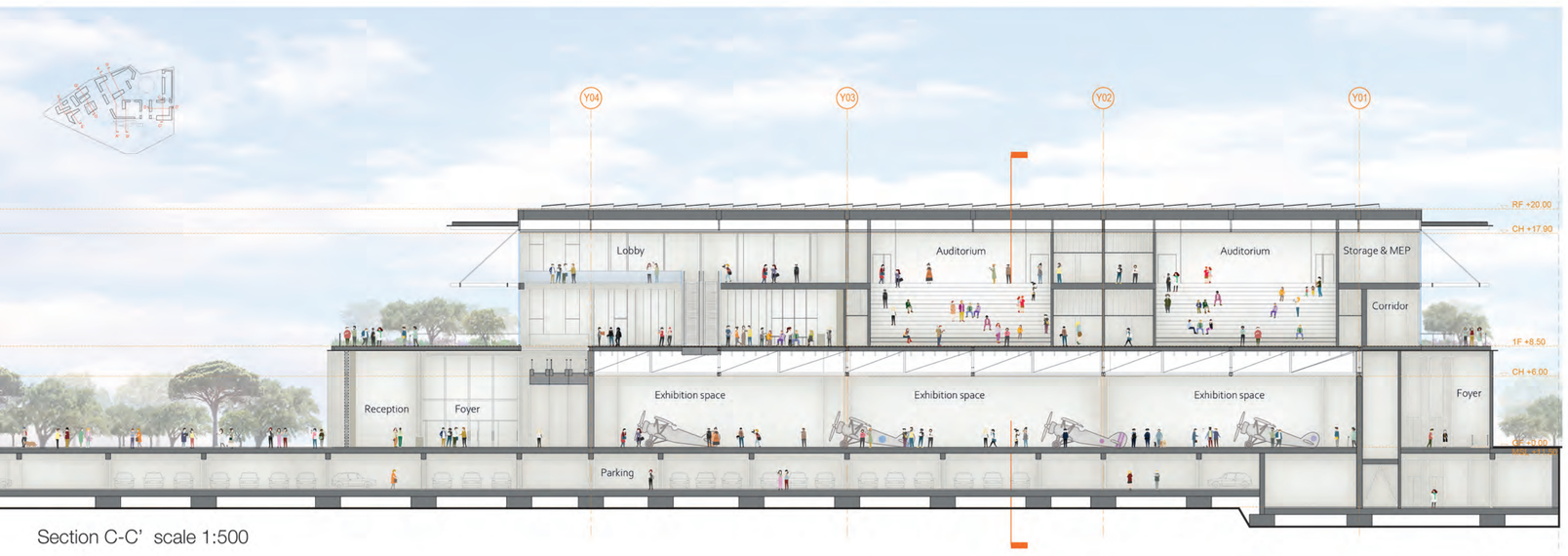
The exhibition spaces generally work on two levels, with an open plan and the requirement to **maximize the flexibility** while **keeping the structure efficient** and **within the height constraints** of the project. Whilst a completely column-free space would give maximum flexibility to the space, the magnitude of the structure that would be required to span between 80 to 90 meters would drive the project cost and its aesthetics, while it would be challenging to keep the structure within the height constraints of the master plan. The challenge is therefore to find a **good balance between cost, flexibility and functionality** while achieving the height constraints of the project. Considering the above, a 40m span structure is proposed which provides enough flexibility for a world-class exhibition space while allowing for a sustainable and cost-effective structural solution. A combination of timber and steel trusses is proposed to cover the exhibition spaces, distinguishing between the different typologies for the lightweight roofs and the upper-level structure that supports the F1 exhibition space. A combination of primary elements spanning 20m between columns and secondary elements spanning 40m in between the primary beams achieves a great balance of structural hierarchy, by keeping the size and form of the primary and secondary beams identical. The same strategy applies to all roof structures.

A Bow-tie system with GlueLam beams and steel cable tensors is proposed for the roof structures. This elegant solution achieves long spans while minimizing structural depth and visual impact of the beam elements. CLT panels are proposed in between the bow tie beams forming the surface of the structural slab. The **CLT panels will be exposed, giving a warm atmosphere to the space**. For the main exhibition buildings (A,B,C,D,E), a heavier steel truss and CLT floor solution is proposed for the level-1 (intermediate) floor in order to control the structural depth, while providing support to the larger loadings required for the exhibition space above. The steel trusses are formed with standard I section on the upper cord, lower cord and vertical elements: the I beams are inlaid with CLT stiffeners, which also **give the trusses a predominantly wooden finish** feel, with the exception of the diagonal elements. The diagonals are instead proposed with high-stress tension bars. This solution maximises structural efficiency while minimizing the visual impact of the trusses. The exhibition spaces are surrounded by auxiliary elements that provide service areas, toilets, amenities and vertical circulation. These spaces are proposed in a more standard timber frame and CLT construction due to the more manageable spans that the spaces require.

The use of **timber** across the project is not just a design decision, but it also **prioritises concerns of sustainability**: achieving a high-quality look and feel while minimizing the need for additional finishes and, allowing for maximum prefabrication while keeping the weight of the structure light. Maximizing the timber use **reduces the embodied carbon** of the building compared to any alternative in traditional materials like steel or concrete. Thessaloniki, unlike Athens, is situated advantageously near countries with extensive forestry industry and production of structural wood (such as Bulgaria, Romania, etc), allowing for low-carbon impact transportation of structural wood elements. **Thessaloniki has therefore the potential, with ConfEx, to pioneer a new model for sustainable construction within Greece** that deviates from the carbon-intensive, standard reinforced concrete one.

- Main column
- Solar Terrace light column
- Main beam
- Secondary beam





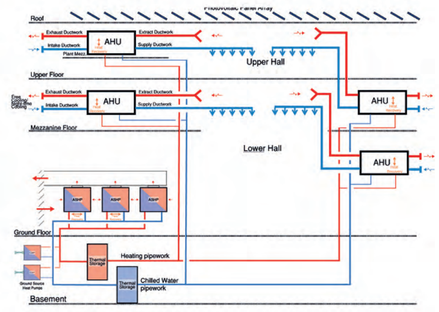
Section C-C' scale 1:500

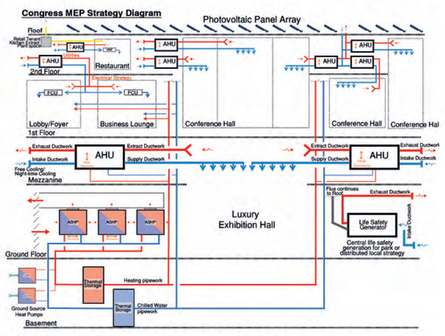
MEP-ENERGY

Congress, Luxury Exhibition and EXPO halls

Exhibition and Congress buildings design concepts are compatible with **both central and decentralised plant strategies**. We have based the building services concept design on the idea that each building would have dedicated systems. However, we would recommend exploring centralised or shared systems, such as fire protection and life safety power generation to reduce capital, maintenance and operational costs, as well as reducing overall plant space. Exhibition halls shall be conditioned by all air ventilation systems providing heating and cooling. These systems shall be variable volume and demand-controlled to increase energy efficiency. Furthermore, the ventilation design shall **recover waste thermal energy and allow free cooling and night-time cooling** of the spaces, reducing energy demand and carbon emissions. The large congress hall shall also have dedicated all air ventilation systems to provide air conditioning. Minimum fresh air ventilation systems shall be provided in lobby, foyer, ancillary, office and back of house spaces where local terminal units shall condition the spaces. Retail and F&B units shall have a local ventilation plant provided by the tenant within their premises, connected to the façade. F&B units shall also have riser space to distribute ducts to roof level where tenant plant space shall be provided for tenant kitchen extraction-ventilation plants.

The energy strategy shall **avoid the direct use of fossil fuels** so that it is future-proof and become more sustainable as the national electricity grid decarbonises. Air source or ground source heat pumps shall generate heating and cooling energy centrally in each building, as well as allow waste heat recovery. Thermal storage shall ensure the systems operate at optimum efficiency and **maximise the use of waste heat recovery**.



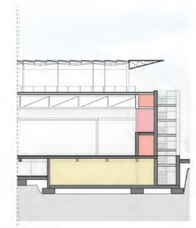


TECHNICAL SPACES

The thick wall strategy, and mezzanines

A ring of ancillary spaces (the 'thick walls') surrounds the main exhibition halls. Due to the height difference with the main exhibition space we are able to accommodate a series of technical spaces (MEP rooms) on this area of the plan, especially on the mezzanine levels with discrete access from the outside and with no impact on the design. On the diagrams below we can see how the red rooms are strategically located in order to have zero impact on the design but at the same time being very efficient with the correct amount of openings to the outside for the intake and out-take of the machines. These ancillary spaces are used interchangeably between MEP and deep planters for high vegetation.

Legend
- MEP
- Administration
- Deep Planting
- VIP mezzanine
- Cloak
- Storage
- Underground Lobby
- Vertical Circulation
- WC



EXPO Hall C



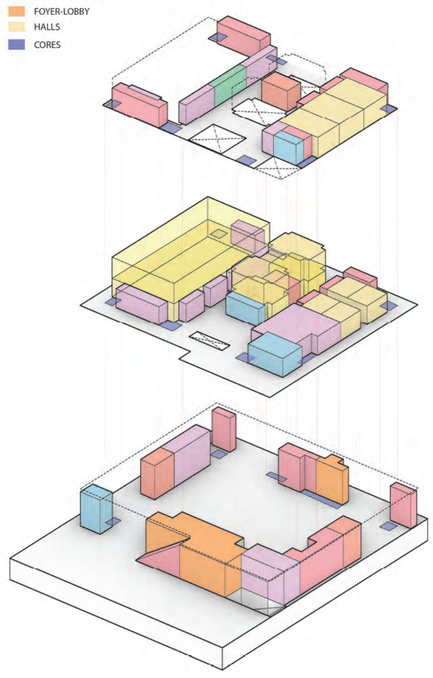
EXPO Hall A1 and A2



EXPO Hall A1 and A2

Congress program composition

- TOILET
- INTERIOR GARDEN
- TECHNICAL ROOMS
- SERVICES (KITCHEN,STAFF ROOMS, ETC)
- FOOD & BEVERAGE
- FOYER-LOBBY
- HALLS
- CORES



HANGAR DOORS

Opening to the landscape

The halls have been designed in order to have an exhibition space that is as fluid, continuous and extendable as possible. To achieve this goal we have large openings which in plan align between adjacent buildings. Every opening will be equipped with extra-large format hangar doors, bottom-supported on embedded rails, and motorised. Whenever the weather allows (which in Thessaliniki means about 9.5 months per year) the main doors can be kept open, maximizing the relation between the exhibition rooms. The door opeining mechanism needs to have a very slow opening and closing speed, due to the large weight of the wings. The Doors are full height and will be custom-madeand clad in pre-aged wood finish on the exterior.





Fig. 10 Approaching the Luxury Exhibition (Hall D) from the Event Garden; to the right, the large stairs leading up to the restaurant and the Congress Halls

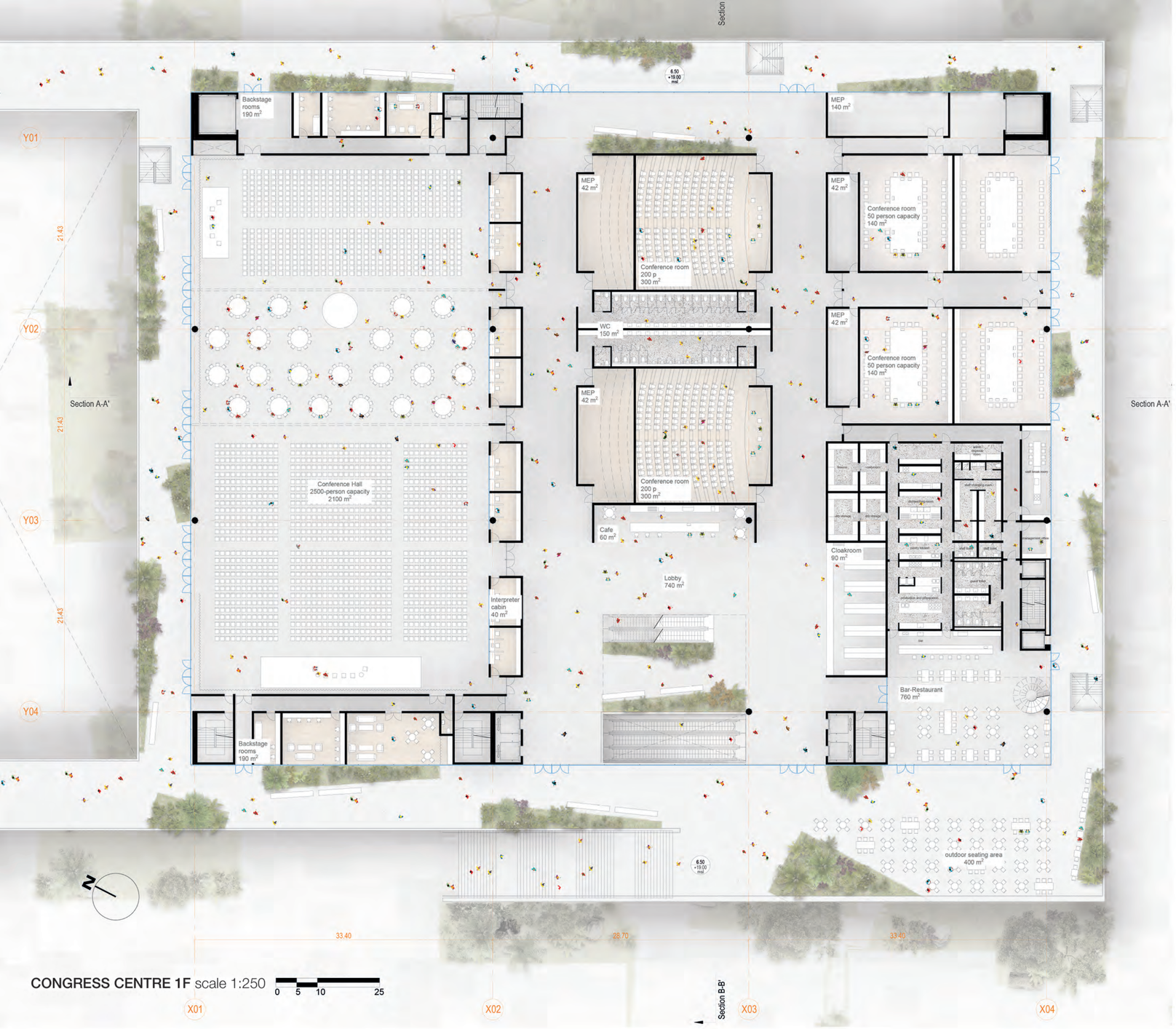
CONGRESS

Flexible, open, multifunctional

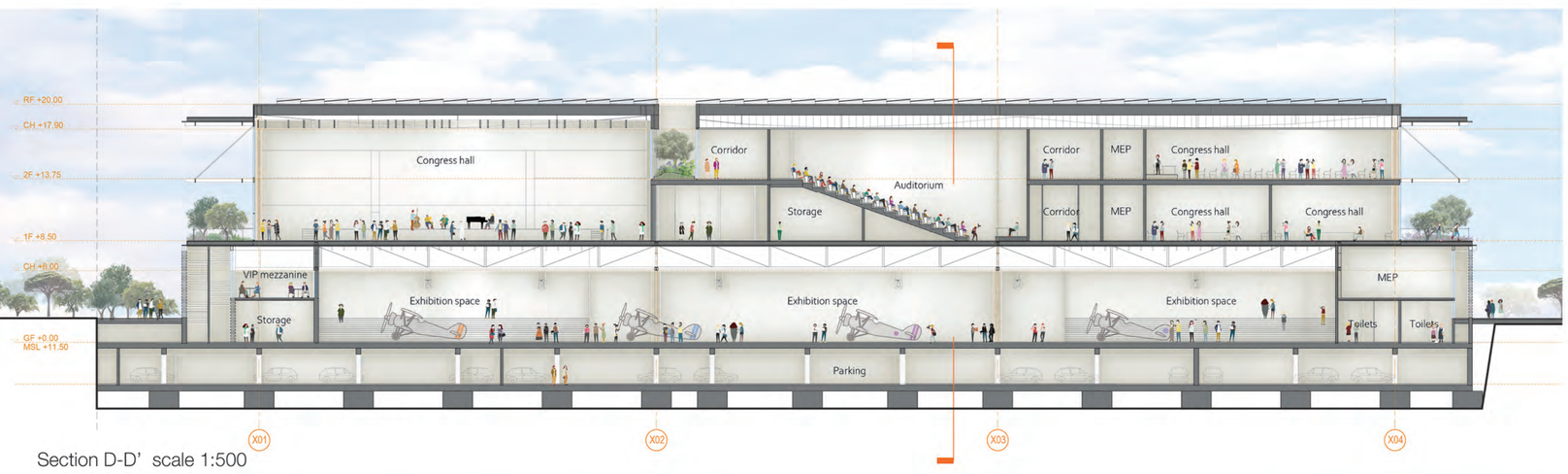
The congress building complex is organized in three levels. The ground floor is sunken 1.5 meters due to the difference in height of the site topography, and in order to be able to vertically fit the program within the 18 meters given by the master plan. A very generous slope, accessible also for trucks, connects the two sides of the building (north higher and south lower). The main hall on the Ground floor has 5 large hangar door openings, making the building accessible from all sides. The central Foyer is situated southwest, with a direct connection to the park, the main exterior exhibition area, the Events Garden, and the cultural/museum district. There is also a smaller secondary foyer on the northeast that facilitates connectivity to the rest of the EXPO halls, both on GF level and through the underground connecting passage. Similar to the other buildings the main hall is surrounded by all the ancillary spaces contained "thick walls". The access to the second level is either by the foyers or by the wide external staircase situated on the South East and directly connected to the park. The second level houses the big conference hall (for 2500 people and subdividable into three smaller units), two conference rooms for two hundred people organize in incline/bleachers, four conference rooms for fifty people and the restaurant on the South corner with a double high space, a mezzanine and a large terrace with a beautiful view to the park and out to the sea. The terrace is part of The Circuit landscape, and it goes around the entire building, punctuated by green islands and relaxing areas with views all around the site. A generous Lobby leads to the third level which contains the higher part of the restaurant described earlier, another cafe, the upper entrances of the stepping conference rooms from the level below, two other conference rooms for two hundred people, and the business lounge. It also offers access to a green patio, that brings bilateral natural light and cross ventilation to the main congress hall.



Fig. 11 The main Congress Hall is flanked by green: on one side from the Circuit gardens, and on the other from the internal courtyard above the technical rooms.



CONGRESS CENTRE 1F scale 1:250 0 5 10 25



Section D-D' scale 1:500



SW (Event Garden) Elevation scale 1:500



NE (Art Garden) Elevation scale 1:500

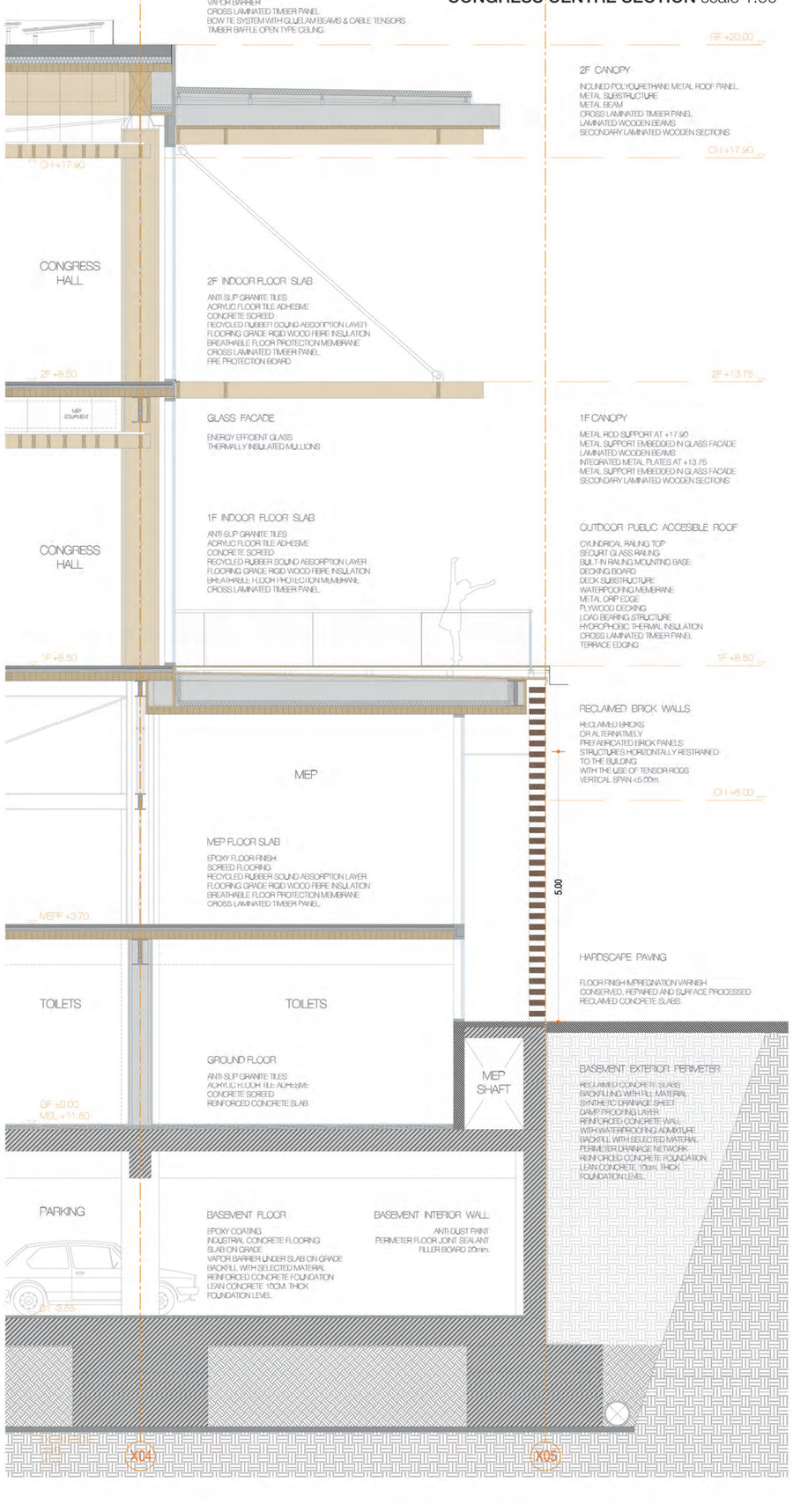


Fig. 12 At the edge of the Event Garden, under the tree shade: looking towards the congress center, the Art Garden and the Solar Terrace

CONGRESS CENTRE 2F scale 1:500



CONGRESS CENTRE SECTION scale 1:50

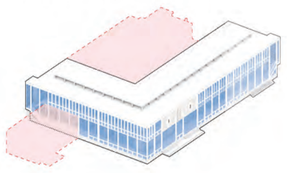


CIRCULAR ECONOMY

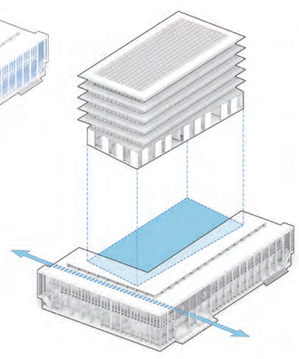
Re-using and adapting existing building capital

The business complex and the Hotel are located in the third sector as per Master plan guidelines. On of the first considerations was the **restoration to its original state, and preservation of 'Pavilion 1'**: a two-story modernist building from 1956, designed by architects N. Efesiou and A. Symeon. The building is a rare remaining example of post-war Fairground architecture in Greece. It has a unique concrete frame façade, and its size and position within the master plan allow its incorporation into the new mixed-use business district as a retail/F&B space. Reusing the existing building capital and materials found on-site to the greatest degree possible is not just a matter of **historic continuity**, as we add new layers to a complex city fabric, but also part of a multi-pronged sustainability strategy with the aim of **reducing waste production, and the embodied carbon** load of the project as a whole.

1) Demolishing post '60s additions and opening-up the front colonade.



2) Adding new retail/office space, offset from the original "L" Pavilion.

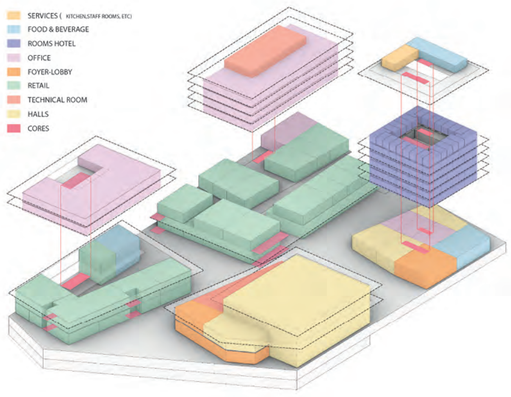


BUSINESS CENTER

An extension of the urban grid

The second important design consideration was to organize the Business center as an **extension of the city fabric, organized around compact, shaded plazas** (the City Courtyards) and paved pedestrian promenades. The need to keep the scale familiar drove the master planning of the Business center towards a distributed approach, with a total of five separate, but adjacent, buildings. Directly to the south of Pavilion 1, the hotel is organized in 9 floors and occupies the south corner with the best view towards the entire site, the park and the sea. On the ground floor, we have the Lobby, the restaurant and the café, the meeting room and some retail spaces, while on the rooftop we have the Hotel café with the panorama terrace with a superb view towards the sea. The rest of the floors house the hotel rooms.

On the northwest corner, and next to the hotel, one can find the Multipurpose Room building. The space is organized in order to have the **main hall openable to the park** (Forest Garden) thanks to a hangar door on the west side, so that it could host every kind of event - and when the weather allows, fully extend its function towards the exterior. The foyer is situated next to one of the City Courtyards. Two more buildings complete the complex. One volume is located on the northeast corner and the other is enclosed by the L shape plan of Pavilion 1. Both share the same layout: retail/F&B space on the 2 lower levels and offices on the upper levels. All the buildings on the business complex share the same façade concept: Lower levels have **shaded arcades, or "thick walls" created by brick screen layers**, while the higher floors have fully glazed façade protected by **deep shading eaves**.

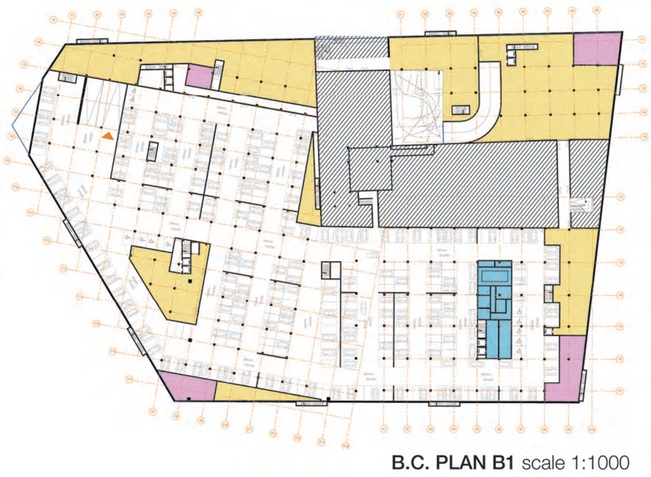


Business Center Basement

While the Main Basement linking all EXPO buildings and the Congress Center is realized on only one level, the basement of business center has a partial B2 floor. Being at the highest point of the plot allows us to excavate more than in the EXPO sectors, and to compensate for the small basement area that the design foregoes, in order to preserve Pavilion 1 (there is no excavation under Pavilion 1 in order to protect its foundation). The second story (B2) contains 261 parking spots while the first level (B1) houses 363 vehicles with a total of 624 cars on the Business Center.



B. C. PLAN B2 scale 1:1000

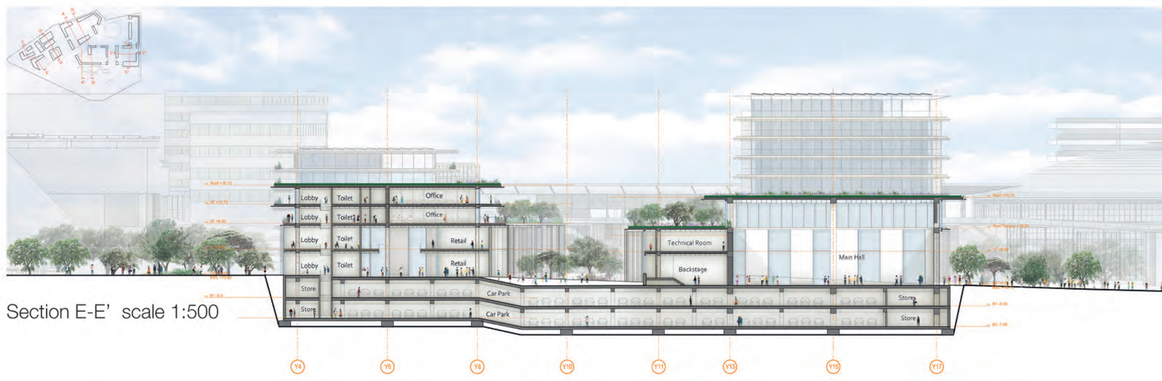


B.C. PLAN B1 scale 1:1000





NE (City Courtyards) Elevation scale 1:500



Section E-E' scale 1:500



SW (City Courtyards) Elevation scale 1:500



Section G-G' scale 1:500



Fig. 13 Sintrivani square, looking into the promenade that runs through the Business Center, and connects the City Courtyards full of evening activity.

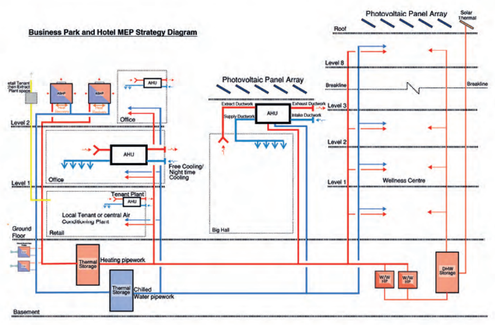
Fig. 14 From the Business center, looking out into the Expo Plaza and the lit-up AAMTH across the Promenade.

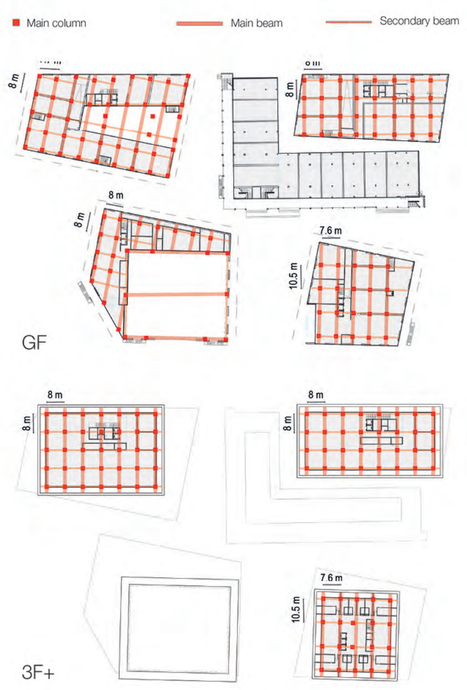
STRUCTURE AND MEP

Business center: retail, F&B, hotel and offices

The Multipurpose hall within the business park has similar requirements to the exhibition spaces and therefore a similar solution is proposed. The rest of the buildings within the business park can be formed with a smaller column grid and therefore an engineered timber frame typology is proposed. The timber structures can be left exposed and would allow for a large degree of prefabrication and therefore reducing the construction programme. The structure is proposed as a combination of glulam frames with either CLT or timber joist floors. A challenge arises from the overlap of two different structure grids, since the GF base is skewed in relation to the upper floors, but a reasonable "combination grid" was found to satisfy the plan.

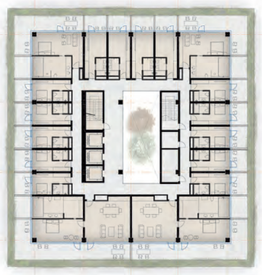
When it comes to Energy strategy, the business park contains a mixture of spaces with different energy profiles. Therefore, we recommend the four business park buildings share one central plant system to allow waste energy recovery and minimise plant areas, equipment size and cost. This centralised strategy will assist the park in achieving Net Zero carbon in operation. The Business Park, Exhibition and Congress buildings design concepts are compatible with both central and decentralised plant strategies and would greatly benefit from energy-exchange schemes among the whole ConEx Agora complex.



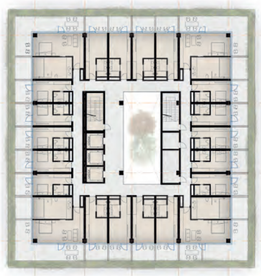




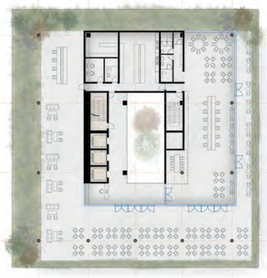
HOTEL 4F scale 1:500



HOTEL 6F scale 1:500



HOTEL TF scale 1:500



BUSINESS CENTRE PLAN 1F scale 1:500



Fig. 15 Peeking out of the large hangar door to the retail Hall A, into the business center and towards Sanitarian square at the back.

Thessaloniki ConExPark international competition