EXPO ALBANIA

STEVEN HOLL ARCHITECTS
in collaboration with AGNIESZKA KURANT
April 2024

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STEVEN HOLL ARCHITECTS
AGNIESZKA KURANT
Atelier4
Markgraph
ARUP
STOSS Landscape
April 2024

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Vision Statement

STEVEN HOLL
Principal, Steven Holl Architects

Our aim is to create a new iconic center for Tirana and to position the capital of Albania as the most desired metropolitan destination for conventions in Eastern Europe.

In collaboration with artist Agnieszka Kurant, we developed an architectural language that gives her artistic concepts an inspiring spatial dimension. The proposed iteration of the "End of Signature" body of work will collect signatures from local Tirana communities and assemble them into a wandering line, traversing the rectangular volumes of the expo center and shaping their vaulted roofscape in mass timber construction. The structure of the expo center is not only ecologically innovative but reinforces economical and re-sourceful use of materials and construction.

The program of the expo center is envisioned to attract technology and telecommunication companies, financial institutions, healthcare organizations, art, trade, energy and e-commerce organizations while promoting the cultural identity of Albania. Local heritage, like Albania's 3,000-year-old wine culture, is celebrated with our proposed wine hotel, demonstration vineyards, and wine trade festivals that will be hosted in the new venue.

The ecological park reuses excavated earth to create mounds as acoustic buffers and supports biodiversity with the recycled water feature. With flexible outdoor gathering spaces, the landscape invites exhilarating experience for the public.

AGNIESZKA KURANT
Artist

The End of Signature investigates the ineffable value of social capital and the fact that the most important problems that humanity is currently facing can only be solved if we act together, as a collective intelligence. The project in Tirana will consist in developing the building in the shape of the signature or several signatures of various communities of people living in Tirana: a collective intelligence of a multitude of people.

Various fields, from biology to astronomy to computer science to neuroscience, have shown that intelligence is never individual. Everything in the world could be seen as emerging from the interactions between millions of molecules, more-than-human organisms, or members of human societies. Collective intelligence can be observed in slime molds, termite colonies, social movements, cities, the internet, liquid crystals, the evolution of culture, and even inside our brains. It is a phenomenon where novel forms emerge out of complex systems in nonlinear and unpredictable ways.

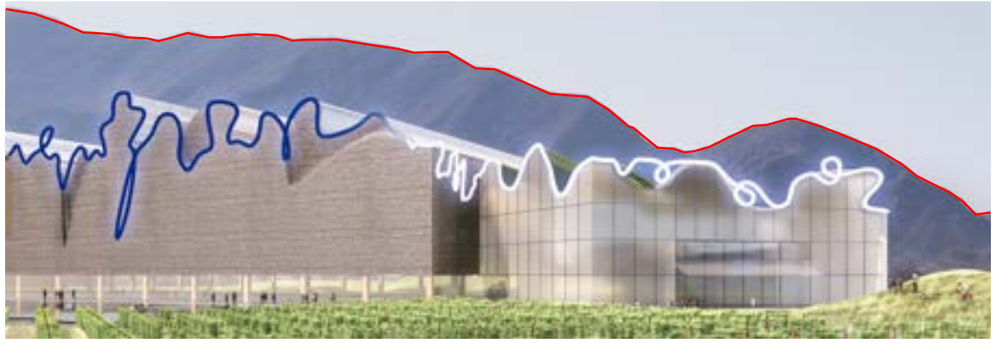
To create "The End of Signature," Kurant works with computer scientists who employ artificial intelligence algorithms (neural networks) to transform and fuse a group of signatures into a single, collective signature. The works are animated, continuously signing and re-signing, or signing and then erasing themselves; they undergo perpetual transformations.

Art Drives Architecture

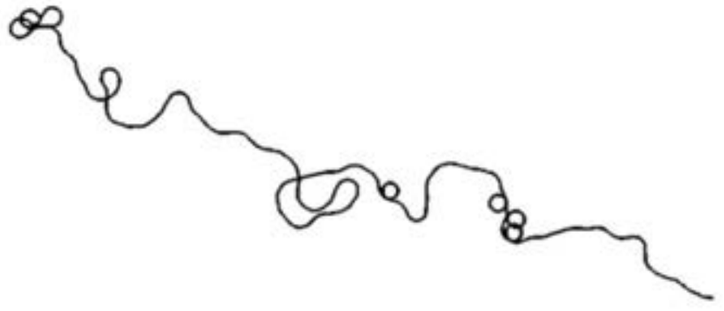
Community Participation
The End of Signature

The End of Signature questions the myth of artistic creativity as an individual process and explores the decline of handwriting — its gradual replacement by keystrokes via technological devices. Over time these works will change their status as fossils of technology (handwriting) no longer in use. In the near future, handwriting may become obsolete, while individual authorship might be gradually replaced by hybrid, collective forms.

The work functions as a collective graffiti, questions the ideology of individualism and proposes to rethink the human and more-than-human worlds from the point of view of plural subjectivity and collective agency.



Signature at Roofline of Expo

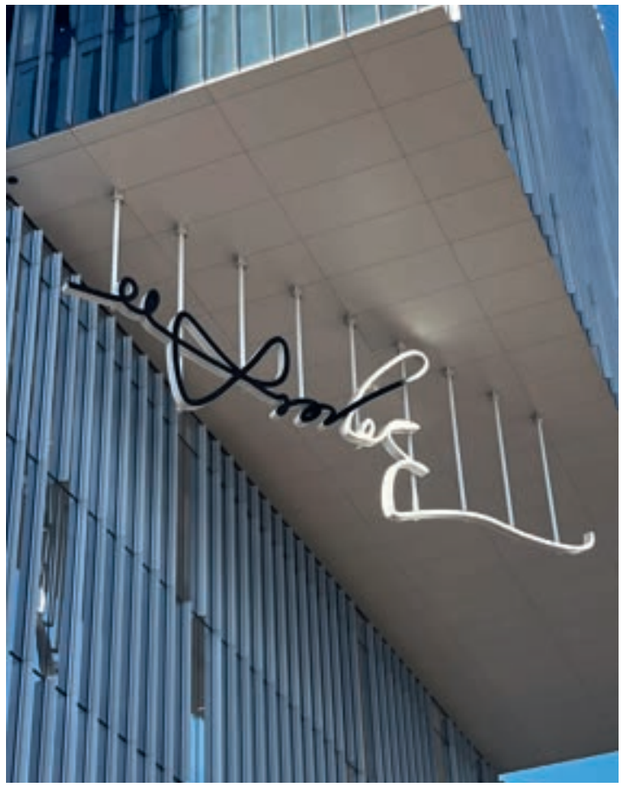


Collective Signatures Visualized

Art and Architecture Collaboration

The iteration of this art project in Tirana will consist of developing the signature or several signatures of various communities of people living in Tirana. Signatures of members of these communities – residents living in this neighborhood, in the vicinity of the building; members of the Albanian artist community; all the people who will be working in this building; all the people who contributed labor and capital to the creation of this building, et al. will be collected and then fused using Artificial Intelligence into collective signatures. These signatures will then be produced as LED light signs which are not static but rather write and unwrite the signature line. The lights will change color and these color changes can be changed by the local community. The color changes can reflect the events in the life of these communities, in a similar manner that colors of the Empire State Building in NY are changing to celebrate or commemorate significant days, in Albania they can signify Summer Day, Nevruz Day, Independence Day, Liberation Day, National Youth Day, etc. These signatures become collective graffiti, which will undergo perpetual transformations, sign and resign or sign and erase themselves.

Community Participant Writing Signature



MIT, Cambridge, 2021

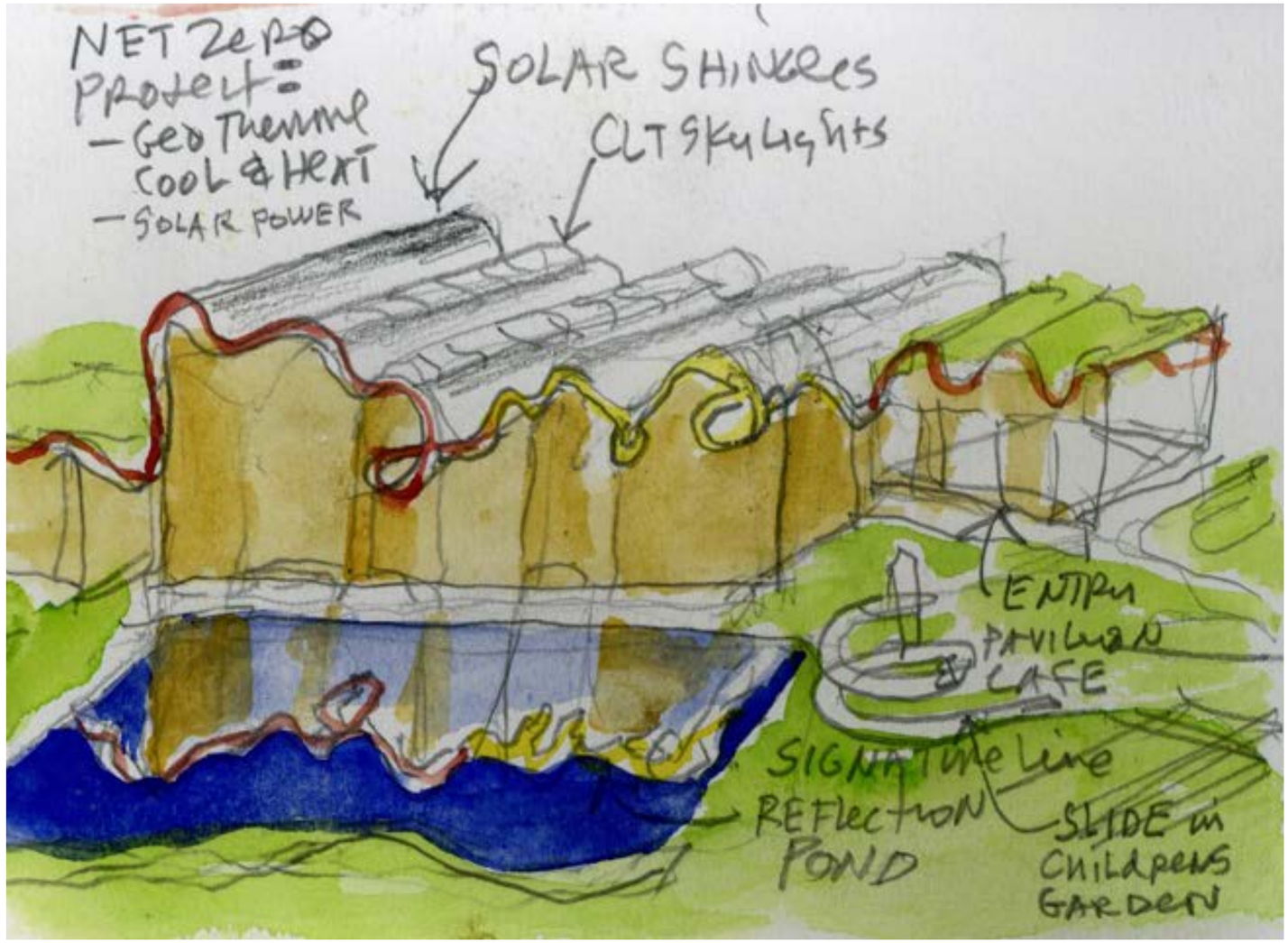
MIT, Cambridge, 2021

Solomon R. Guggenheim Museum, New York, 2015

To create “The End of Signature,” Kurant works with computer scientists who employ artificial intelligence algorithms (neural networks) to transform and fuse a group of signatures into a single, collective signature. The works are animated, continuously signing and re-signing, or signing and then erasing themselves; they undergo perpetual transformations.

The work questions the myth of artistic creativity as an individual process and explores the decline of handwriting — its gradual replacement by keystrokes via technological devices. Over time these works will change their status as fossils of technology (handwriting) no longer in use.

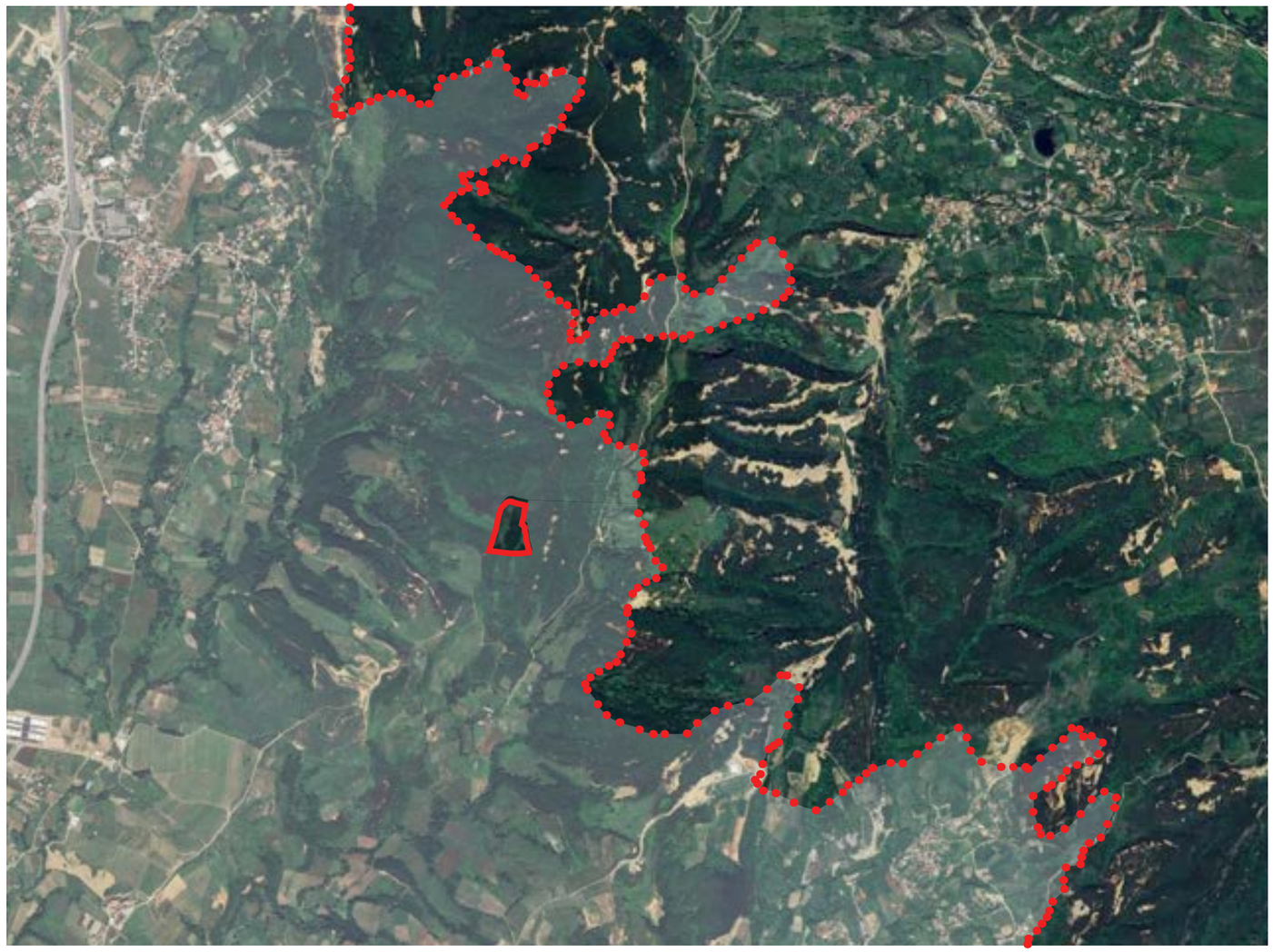
Bird's Eye View



First realized by Agnieszka Kurant on the Guggenheim Museum in New York City, 2015, we take this concept in an entirely spatial dimension, extending the "line" into the roof of the Expo hall.Agnieszka's plan is to collect signatures of the local Tirana community to make a signature line unique for this location; therefore what is shown is not the final signature/roof line, but rather a concept for what it could look like. Included in our proposal now shows the preliminary concept of how an acrylic tube line with colorful LED lights could shape the roof and unify the three orthogonal volumes.

The signature line informs the undulated roof sections supported in mass timber trusses which shape the green and PV solar roofs and skylights. The signature will be continually/perpetually signing and re-signing the building, with the effect of black or blue ink flowing through the signature line and then erasing itself with white light. The effect is visible both during the day and at night and the LED light flows through the acrylic tube lines.

Northern Mountain Range

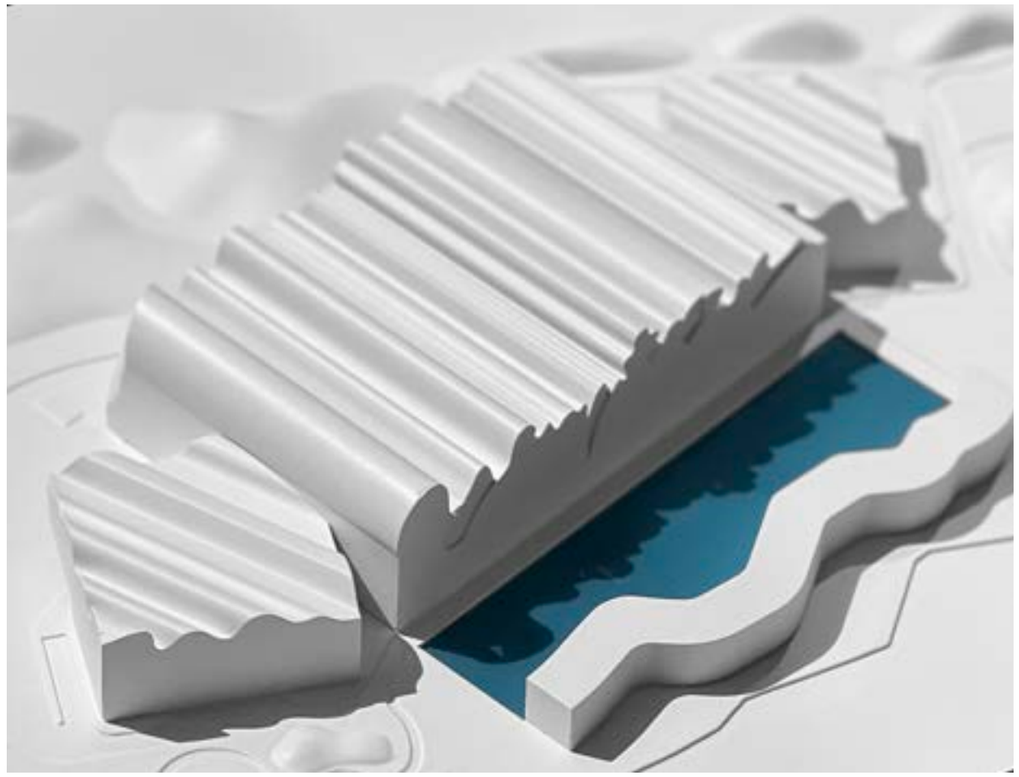


Parallels of Signature and Mountain Range

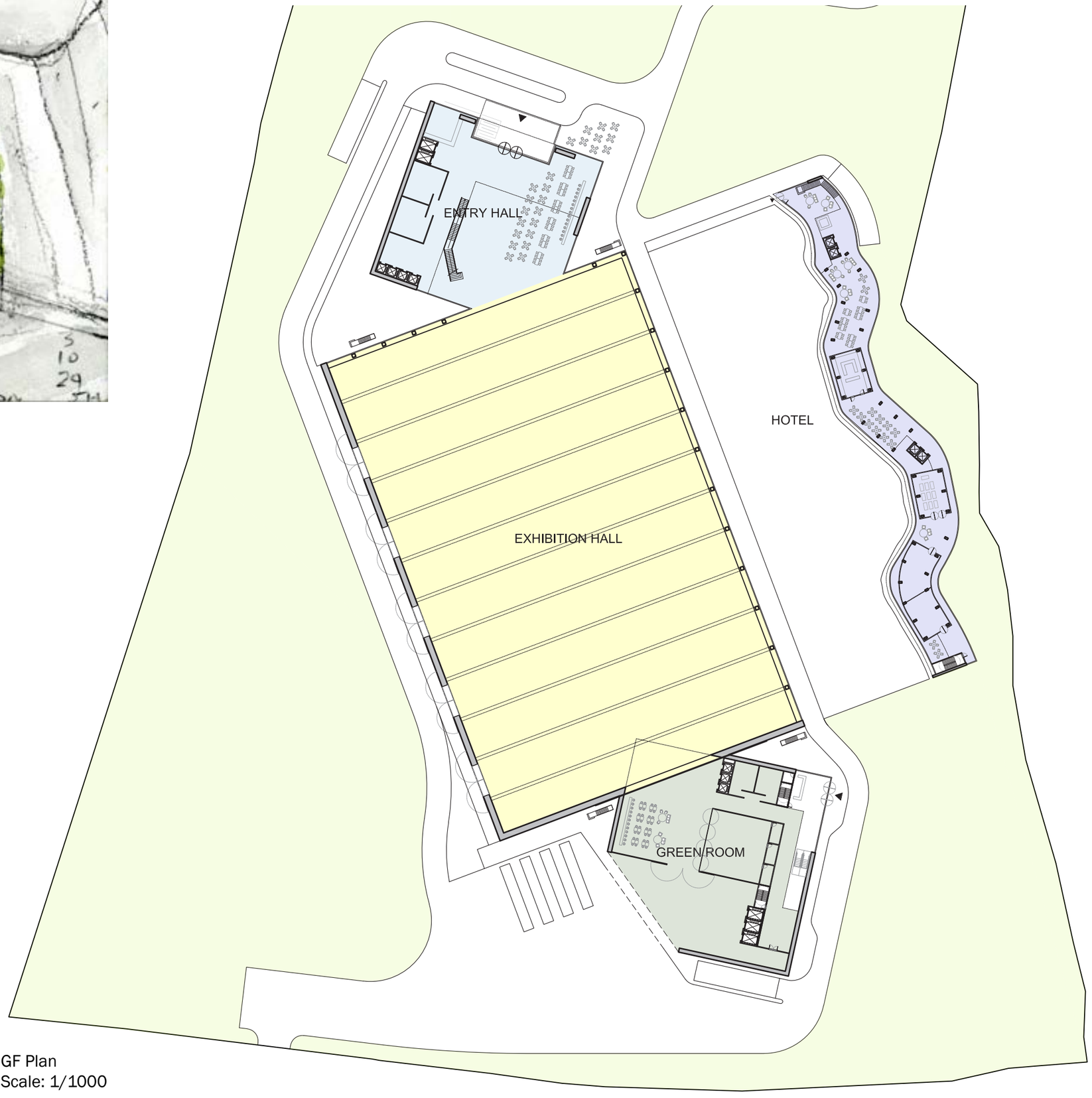
The lines of the mountain ranges parallel that of the hand through the act of writing a signature.

Placemaking, Design Proposal

Building on Tirana's tradition of orthogonal, rigorous State urban planning, a cluster of 3 GREEN/SOLAR PV OVERLAPPING VOLUMES organize the program with spatial energy, establishing a playful relationship with the site.



Entry Hall



GF Plan
Scale: 1/1000

CLT truss modules are positioned at different heights according to the rhythm set by the "signature line," making it a truly unique space.

Arrival View

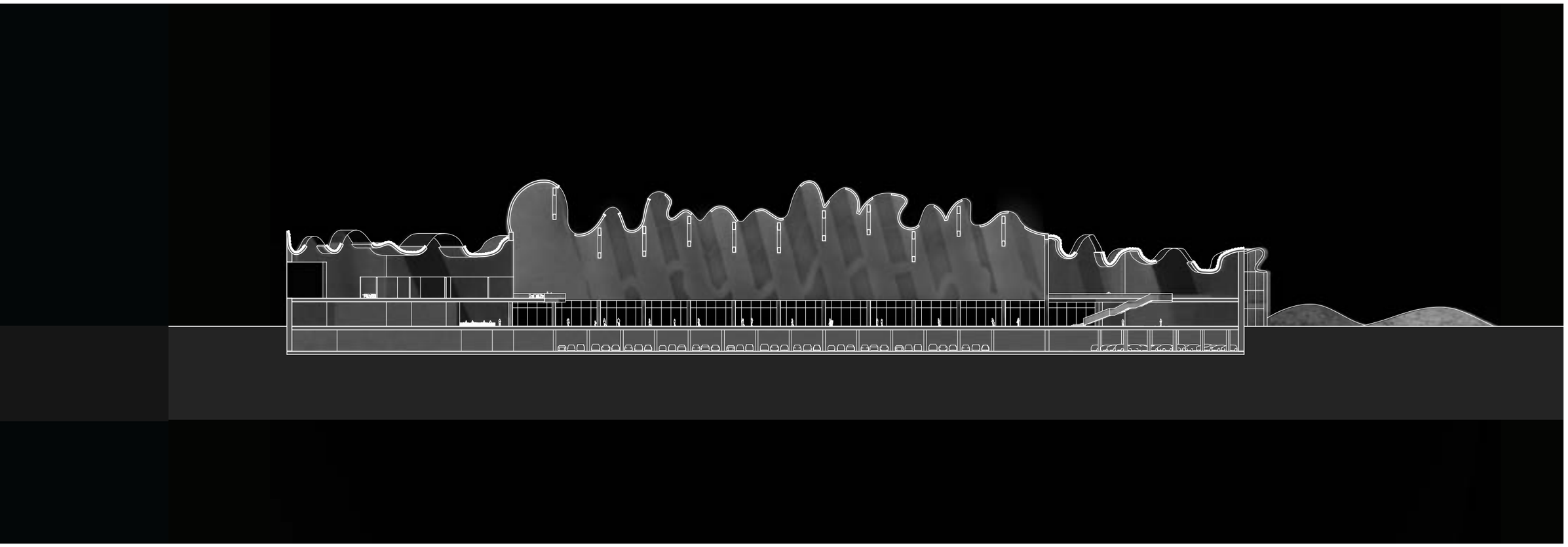
Entry Hall

Entry Hall and conference square interlock with the Main Hall at a 3/4 angle and open up a space that connects the ground floor circulation throughout the building. The entry hall's openness towards the main hall creates open sight lines that span vastly throughout the building and parallel the sight line relationship between the building and the surrounding mountain ranges.

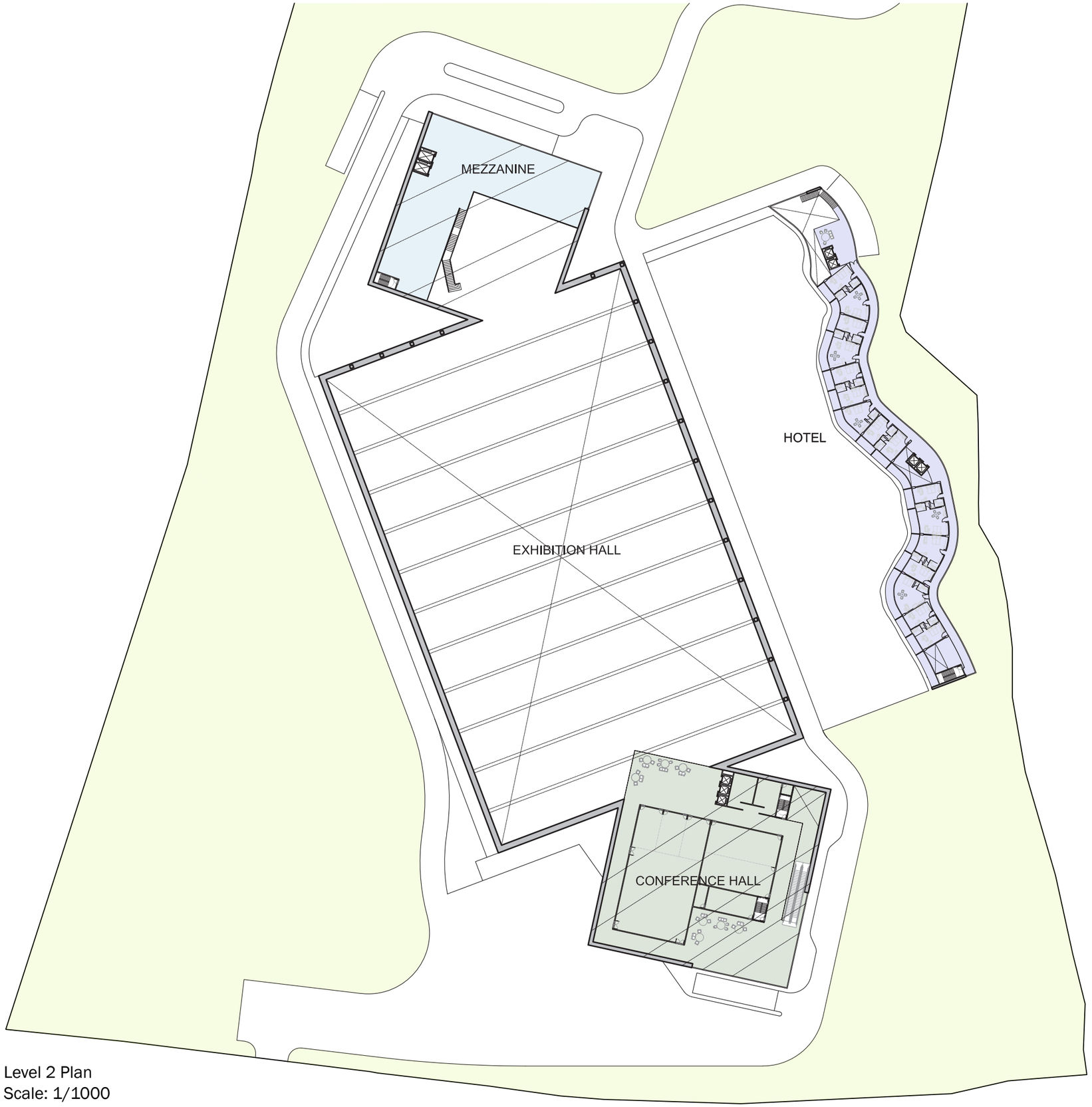
View Into Main Entry Hall- Spatial Energy, Interlocking Spaces at Arrival and Main Halls

At a 80 x 120 meter area, the current proposal is comparable to the scale of the Frankfurt Hall by Hscher Jehle architects which is an example of a large-scale mass timber structure with the same overall span of 78 meters. However, the weightlessness of our proposed design is based on the carefully studied height and overall proportions of the ceiling.

Messe Frankfurt Hall 11



The vaulted ceilings and placement of the trusses at varying heights will be reationalized according to the signature line specifically produced for Tirana. This longitudinal section is conceptual.
Scale: 1/1000

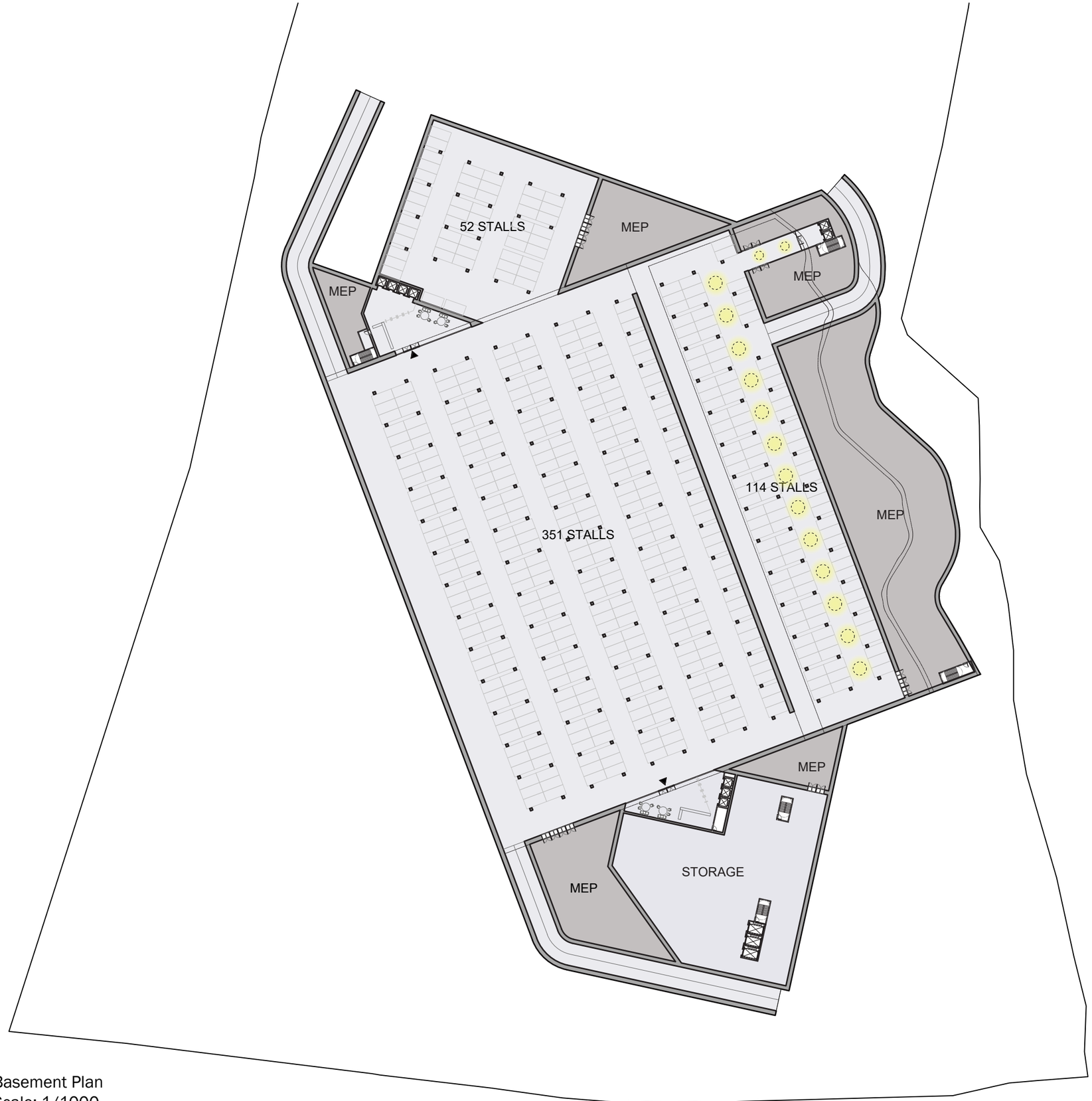


Level 2 Plan
Scale: 1/1000

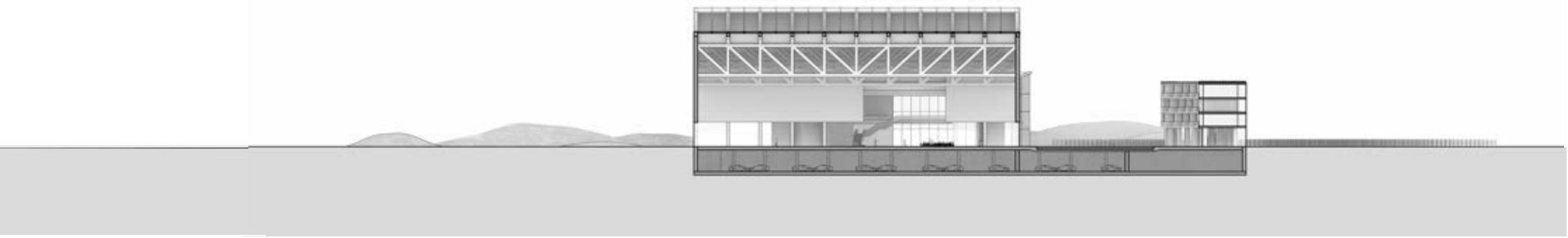
View of Naturally-lit Conference Center

Skylights above the lower level path cast light connecting the journey in the lower level to the exterior of the building. The north and south 3/4 rotated volumes possess glowing translucent glass facades which serve as orientation devices, for ease of access point identification.

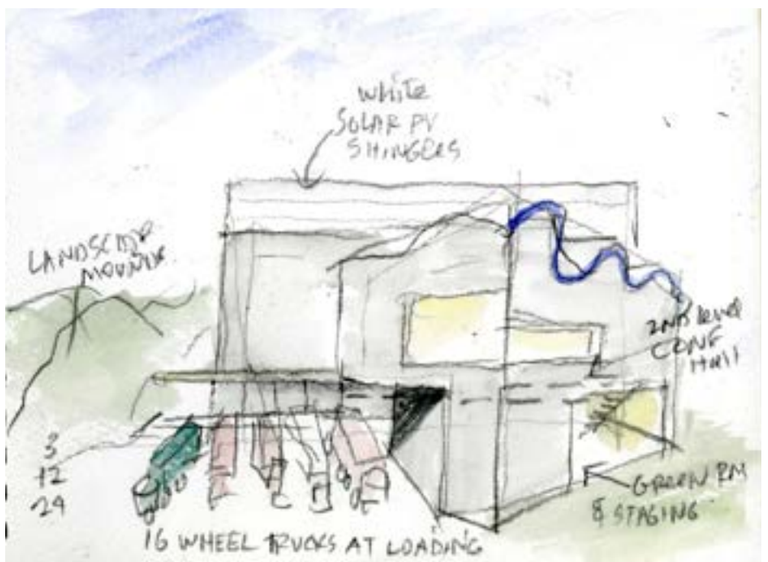
Nelson Atkins Museum of Art, basement opening
Steven Holl Architects



Basement Plan
Scale: 1/1000



The Transversal Section Sh
Scale: 1/1000



Service + Access Loading

Parking Lot Service + Access

MEZZANINE EXHIBITION SPACE 1F

OUTDOOR EXHIBITION AREA

LOBBY & EXHIBITION SPACE GF

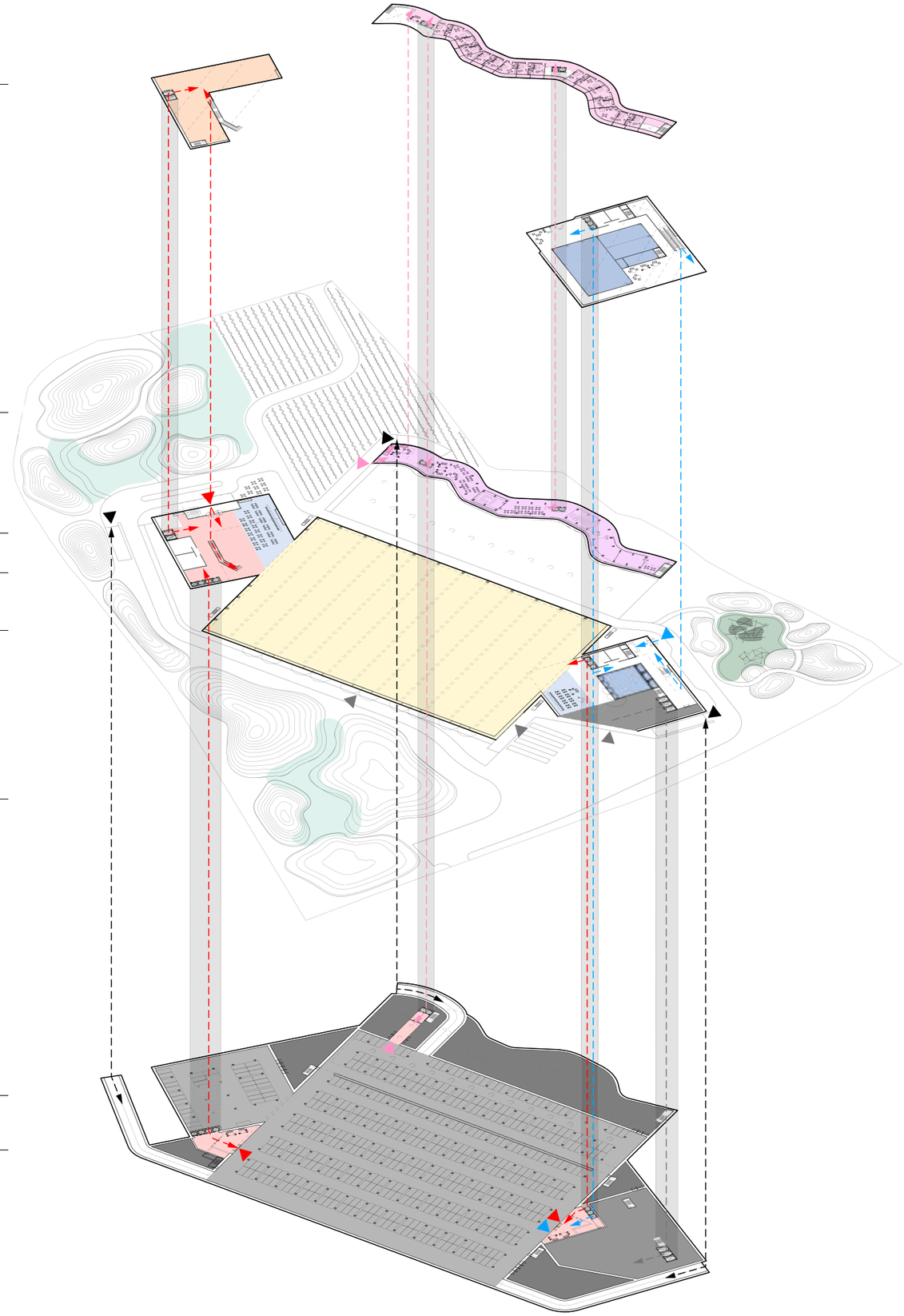
RESTAURANT & LOUNGE GF

MAIN EXHIBITION HALL GF

OUTDOOR EXHIBITION AREA

PARKING B1

MEP & SERVICE B1



1F - 3F HOTEL

1F CONFERENCE HALL

GF HOTEL AMENITY

CHILDREN'S PLAYGROUND

GF MULTIPURPOSE ROOM

GF RESTAURANT & LOUNGE

GF LOADING AREA

B1 MEP & SERVICE

B1 - B2 STORAGE

- MAIN EXHIBITION HALL / 10,000 m²
- ENTRY HALL / 1,989 m²
- MEZZANINE EXHIBITION SPACE / 1,075 m²
- HOTEL / 2,577 m² (3 FLOORS)
- HOTEL AMENITY / 1,572 m²
- RESTAURANT & LOUNGE / 787 m²
- CONFERENCE HALL / 3,622 m²
- OUTDOOR EXHIBITION AREA
- CHILDREN'S PLAYGROUND
- STORAGE / 4,068 m² (3 FLOORS)
- PARKING / 14,659 m² (517 PARKING SPOTS)
- MEP & SERVICE / 3,965 m²

- MAIN HALL ENTRY / CIRCULATION
- HOTEL ENTRY / CIRCULATION
- CONFERENCE HALL ENTRY / CIRCULATION
- SERVICE ENTRY / CIRCULATION
- PARKING ENTRY / CIRCULATION

The Main Hall and wine hotel relate to each other as the pond creates reflections between the two facing structures. The hotel is comprised of CLT planes and openings which make it light and airy compared to the lifted yet grounded materiality of the hempcrete Main Hall

Lookout From Hotel Room Balcony Across the Mountain View Corridor

Materiality

White PV Solar Shingles are installed incrementally along sections of the signature roof of the main hall. These solar panels will function to bring energy to the enture building and deem it a net-0 proposal. Hempcrete will be used for the entire walls of the main hall, entry hall, and conference hall. Hempcrete is a sustainable alternative for concrete made of the inner core of hemp plant and lime base. The strong, durable material provides a healthy and sustainable environment. Cross-Laminated-Timber (CLT) will be used to construct the adjacent hotel and will contribute to the layers of sustainable materiality for the Tirana project.

1- White PV Solar Shingles

2- Hempcrete

3- Cross Laminated Timber

4- Vision Glass

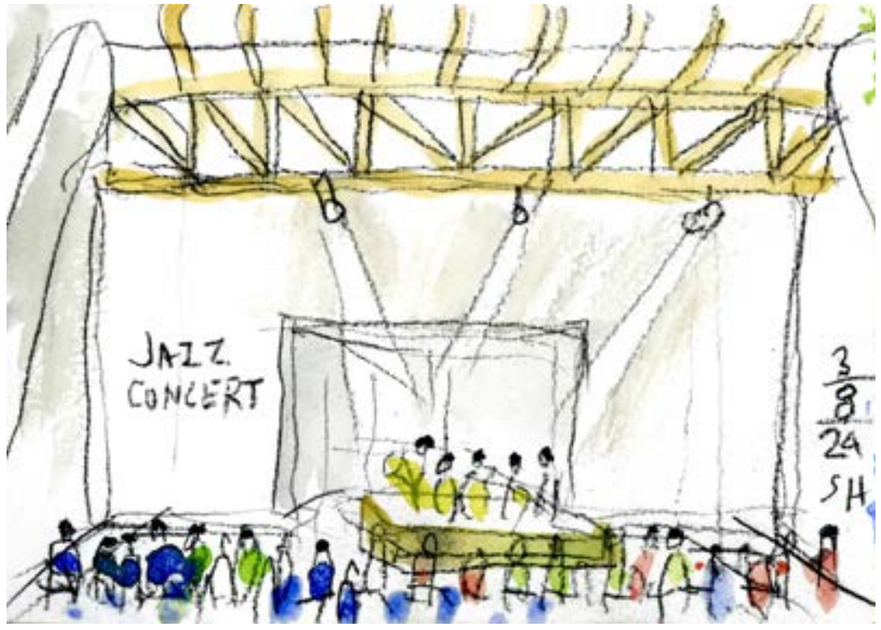
5- Translucent Glass


1 + 4
2
4
3
3
5

Event Design:
Captivating Key Stakeholders and Demographics

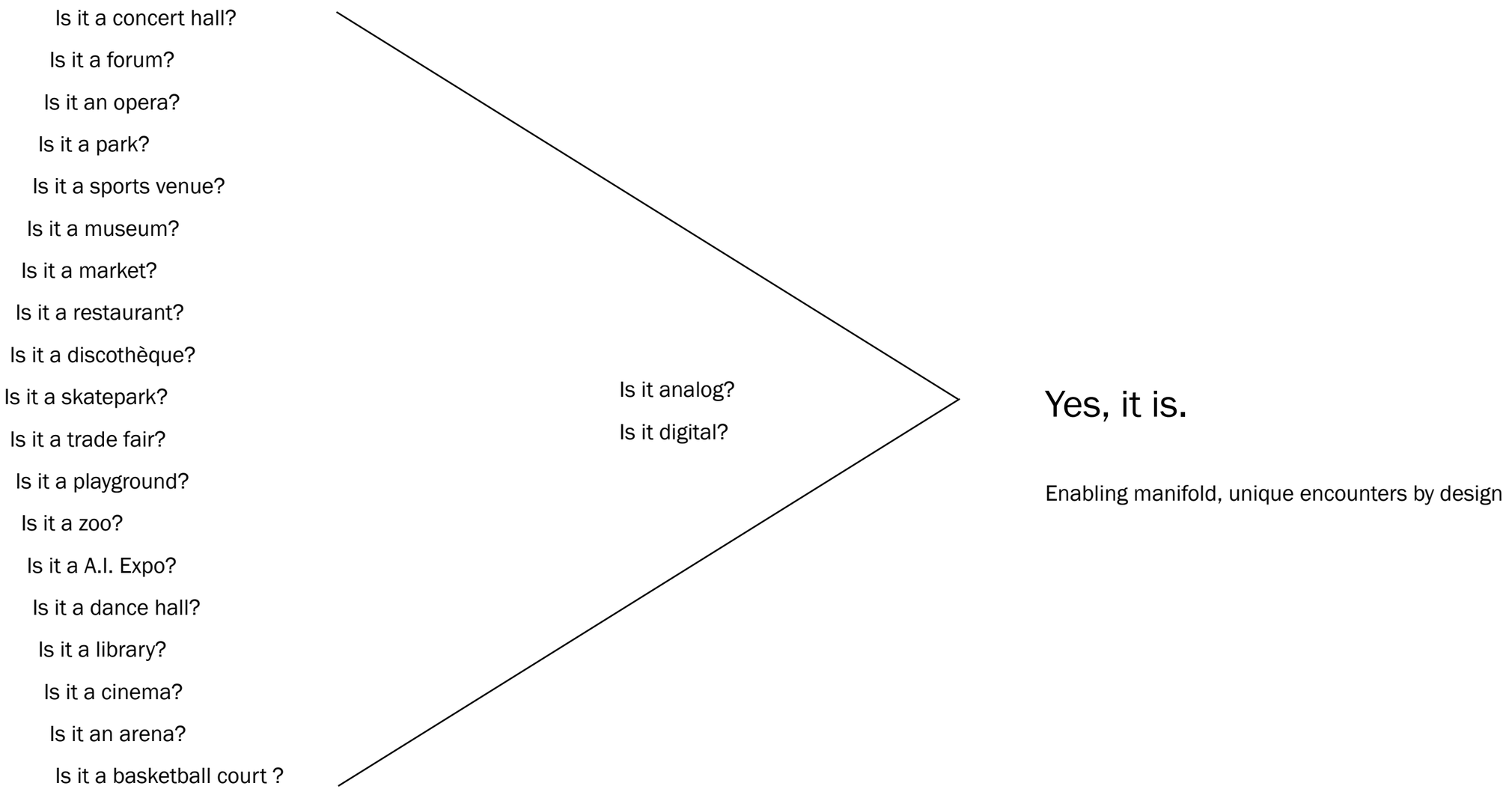
MICE (meetings, incentives, conferences, and exhibitions) in Albania
As a vehicle for taking Albania’s MICE industry to the next level, we aim for Expo Albania to successfully couple year-round use with landmark architecture and imaginative permutations of event space. Such an event space would provide impactful experiences for foreign investors, industry veterans, and ambitious young entrepreneurs.

For the proposed exhibition and event design, our team worked closely with Markgraph, who's portfolio includes high profile projects such as Mercedes-Benz Paris 2018 and the 2023 Viega Sphere showroom. We envision our proposal serving as a gathering point for companies such as Open A.I., Nvidia, Microsoft, and Google. These conventions would be similar to Google's Could Next 2024 event in LA and Open AI's DevDay developer conference this year in San Fransisco. These award-winning events and designs utilize a balance of cutting edge technology and analogue experience to engage a broad spectrum of audiences in shows across industries such as tech, climate resilience, and construction. The team at Markgraph are tastemakers who are dead-on when it comes to captivating young audiences.



GRAND HALL MAJESTIC SPACE FOR VARIOUS PROGRAMS

Main Hall- Cultural Event



For Expo Albania to extend its cultural reach beyond its physical premises, virtual and physical participation must be seamlessly integrated. We envision the Main Hall as serving as a space for the most compelling experience for organizers, exhibitors, and most importantly, visitors through the use of virtual and physical materials, for which the hall's vast space allows for. Here, In our experience, younger generations have resonated with intentionally balanced phygital and shytech principles thereforeinterweaving physical and digital engagement is key. Included in this booklet are some of the experiences we envision could take place in our proposal for EXPO Albania.

Markets/Conventions/Small Business/Trade or Agricultural Summits in Participative Arrangement at the Main Hall

The open plan of the main hall, its tall ceiling height and timber truss system, and its blackout curtains and room panneling make is a vast space that can transform from a space filled with natural light into an artificially-lit event during hany hour of the day. The proportions of the hall and natural light allow it versatility to foster both analogue exhibitions as well as digital events.

Emerging Technologies for a Future-Proof EXPO Albania
For Expo Albania, our team aims to utilize evolving technologies to meet visitor preferences and exceed their expectations. Markgraph is well-known in the exhibition design industry to be a pioneer of media integration. Having received notable accolades, they are experts in conceptual design and produce avant-garde solutions while providing dependable productions. Markgraph's series of Mercedes Beacon projects serve as a testament to our holistic approach as they've included immersive stages, with sensory experiences, kinetics, coupled with media and movement of cars and actors.

Visual Art Fairs/Biennial Exhibitions Envisioned in an Immersive Environment


World Summit AI

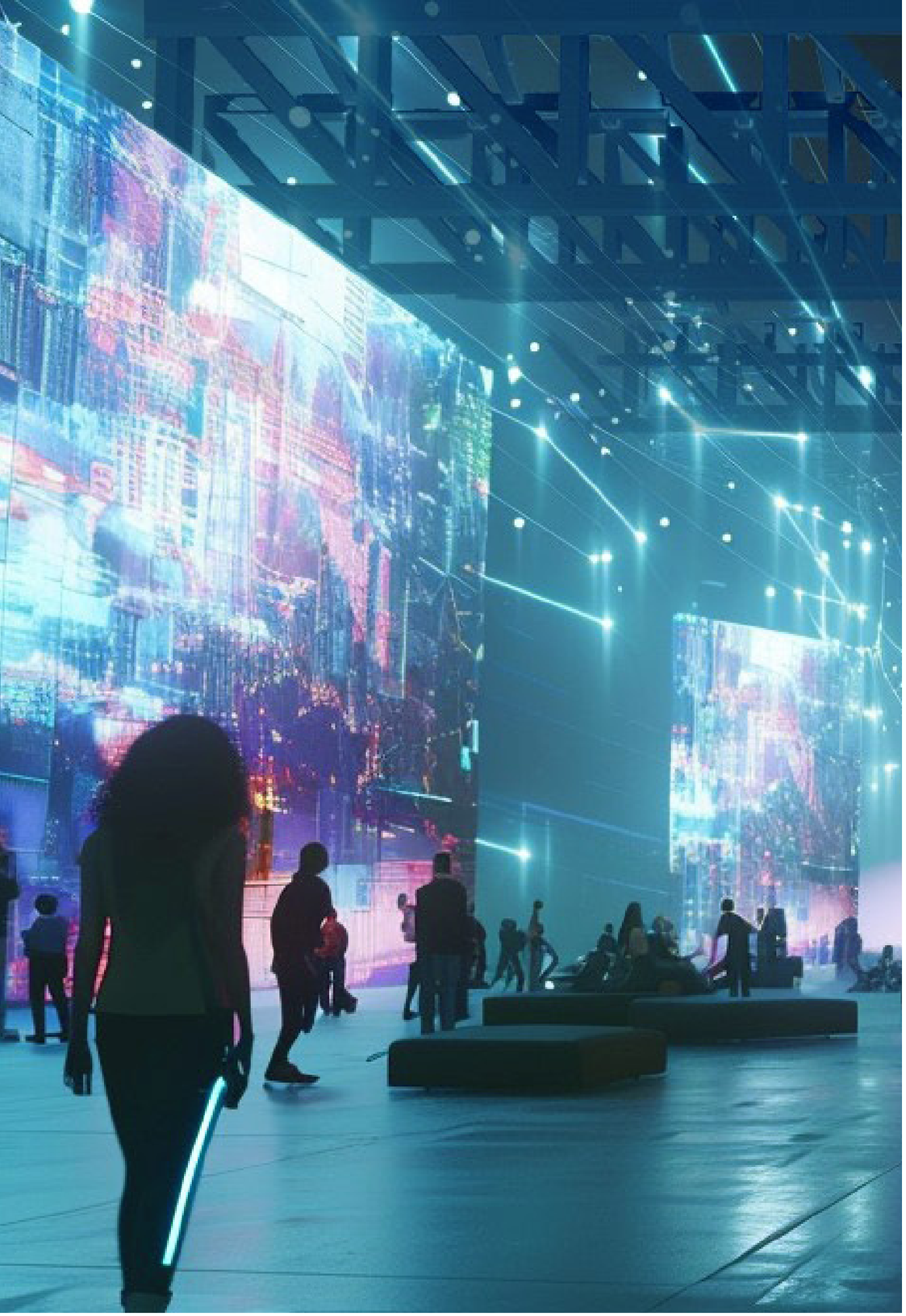
Phygital Experience to Shytech Principles

First and foremost, Expo Albania's physical presence will be what defines its character and reputation. While visitors can be highy engaged in immersive **phygital experiences** - at other times it is most effective to steer clear of digital interventions, when a completely analog environment delivers the highest impact. **Shytech principles** are becoming more and more relevant in exhibition design, as young visitors expect media and digital tasks to fade into the background, so they can more directly engage with event experience. Future Congresses for science and technology will promote innovation and will attract not just technology companies, but telecom, financial and e-commerce companies, and healthcare organizations.

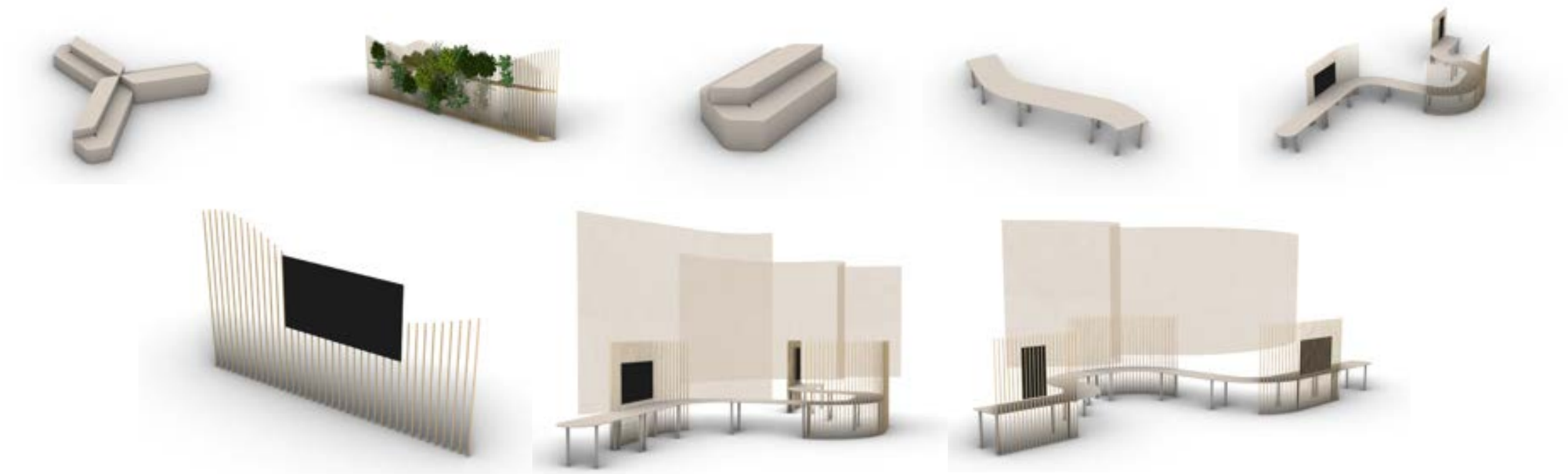
Future Congress Rendering for Albania EXPO Main Hall

Main Hall- Trade Fairs/ Product Launch Events Flexible, Immersive

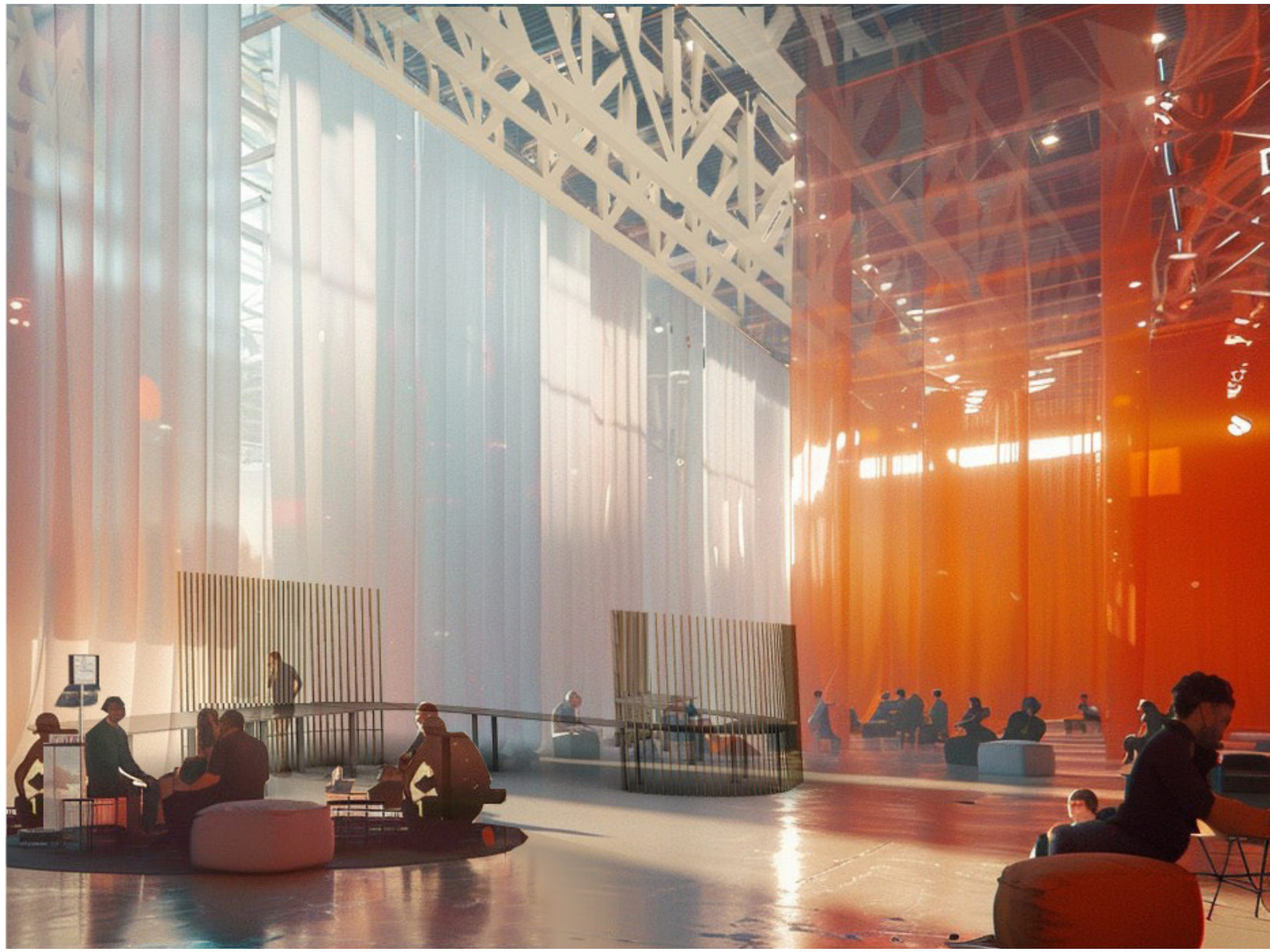
Model View Facing the Wine Hotel, Entry Hall, and the Main Hall.



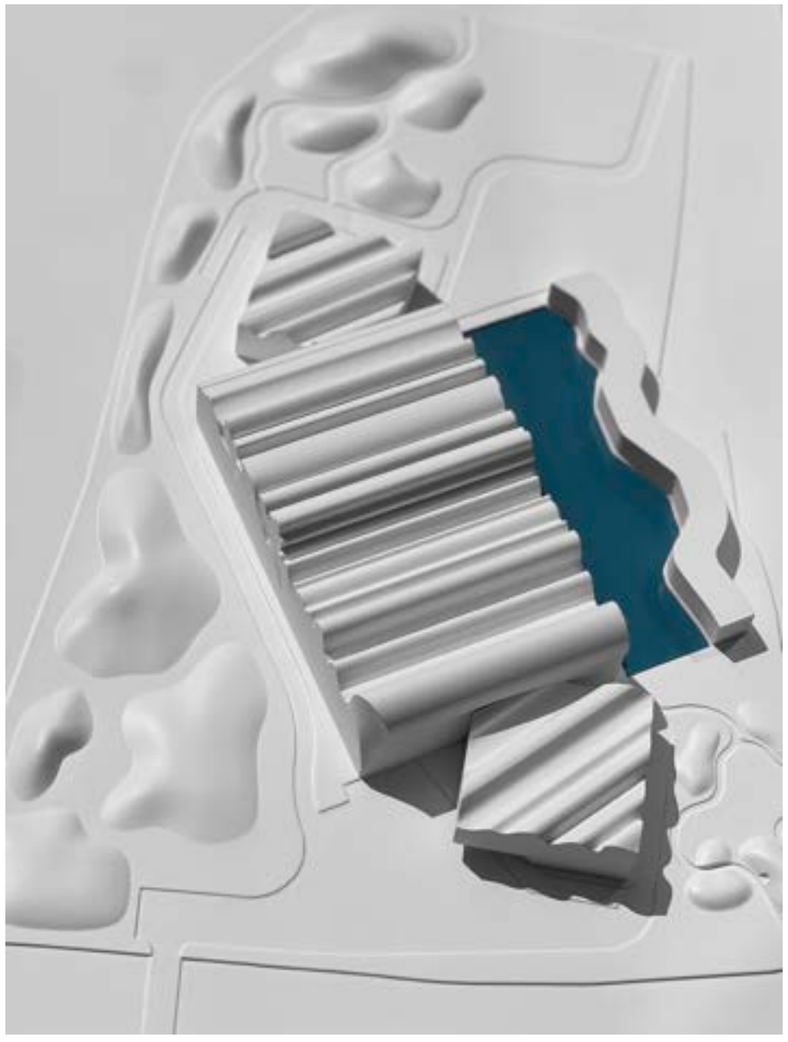
Digital Art/Immersive Experiences



The Modular Set can be arranged in different ways in order to fulfill the needs of the space, creating presentation modules, lounges, room dividers, etc.



Immersed View with Modular Furniture



Music Festivals- Concert, Club, Lounge

Inside-Outside Connection: Hybridization of the Space Through the Activization of The Outdoor Space

Community Space- Indoor Park, Warm

Catalyzing Urban Connections and Regional Growth

Site Connectivity at a Regional Level

Metropolitan Draw
Highlighted a Few Notable Neighboring Expo Centers

The New Expo Center as a Metropolitan Draw

Lower density sites, such as the one proposed, are excellent opportunities for placemaking. Steven Holl Architects and Atelier4 are well-aligned with the client in unlocking Expo Albania’s potential as a locus for economic activity, social connections, and cultural exchange. To bolster Albania's growing economic sectors and cultural goals, we aim for a new convention center that effectively links to key sectors of the Albanian economy, is well-aligned with other planning initiatives (e.g. Tirana 2030), actively responds to public and regional transportation opportunities, and provides access to services and amenities for the local community. Most impotantly, the broader aim is to create a new iconic destination and position the capital of Albania as the most desired expo center among cities that are hosts, like Belgrade and Zagreb Fairs, Thessaloniki, Sofia, Bucharest and Warsaw Centers.

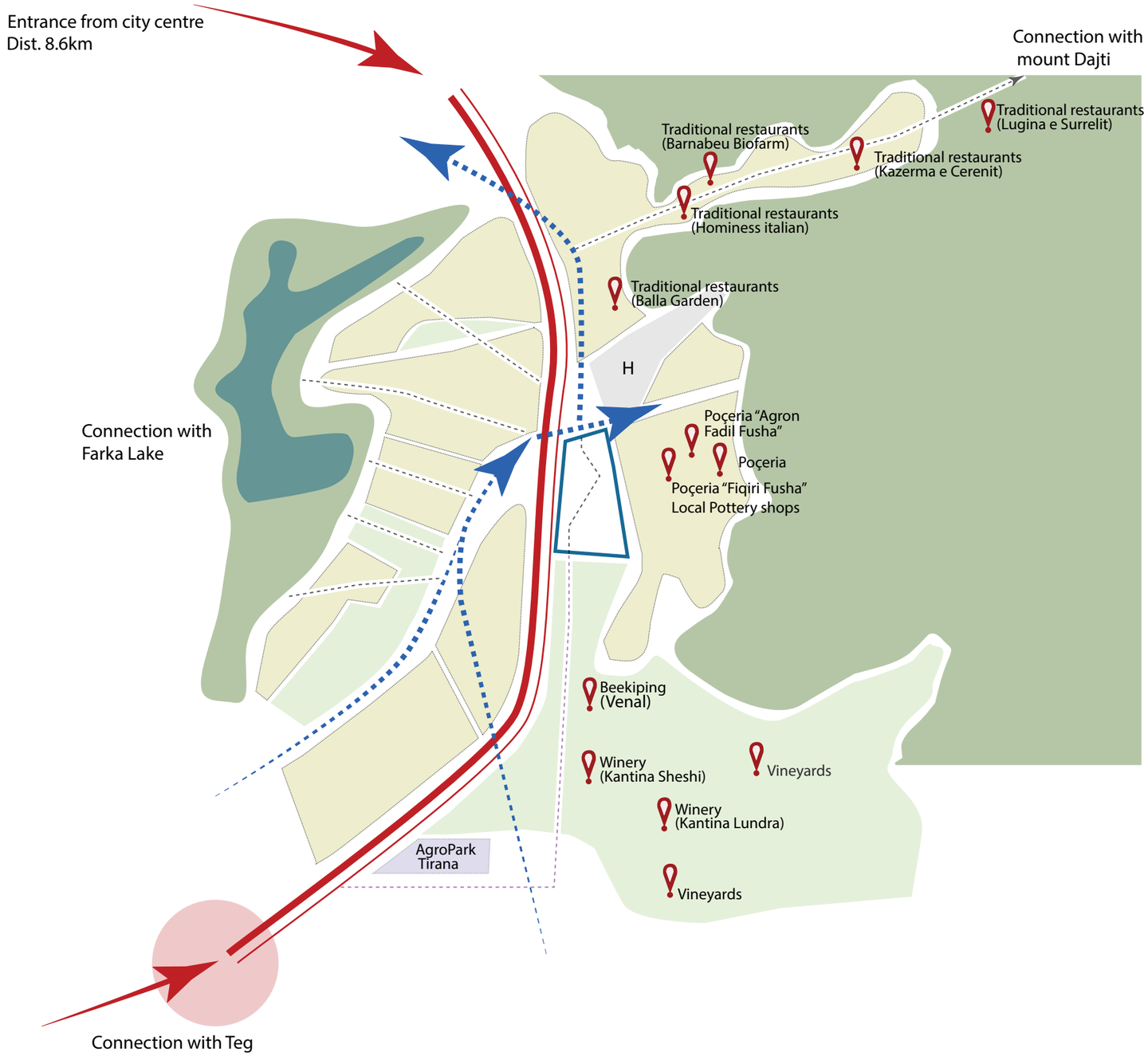
URBAN ANALYSIS
Urban axis & key elements

The site provides direct connectivity to the city center via The East Ring, seamlessly linking it to The Big Ring road of the city, ensuring efficient access to and from the urban core. In addition to these primary thoroughfares, other essential axes are activated to establish connections with the city, including dedicated bike lanes and pedestrian pathways. Public transportation is facilitated by leveraging existing bus
routes passing through the area, which serve as extensions of the urban lines, fostering communication with the periphery. Another existing axis is specifically designated for logistical purposes, ensuring clear delineation of access routes. The shuttle buses operating near the expo site provide convenient connections to the airport, city center, and the expo grounds.

The area is characterized by a diverse array of functions, including vineyards, guest houses, pottery, restaurants and agrotourism facilities, each contributing to its unique local character. This rich tapestry of experiences intertwines with the envisioned silhouette of the new development, anticipated to draw a discerning demographic attracted to its distinctive blend of urban amenities and rural charm. Moreover, other natural landmarks such as Shumoku Canyon add another layer of interest to the area, offering visitors a diverse range of experiences beyond its scenery. These features collectively enhance the allure of the region, positioning it as a compelling destination for both residents and tourists seeking a multifaceted and enriching environment to explore and enjoy.

Legend:

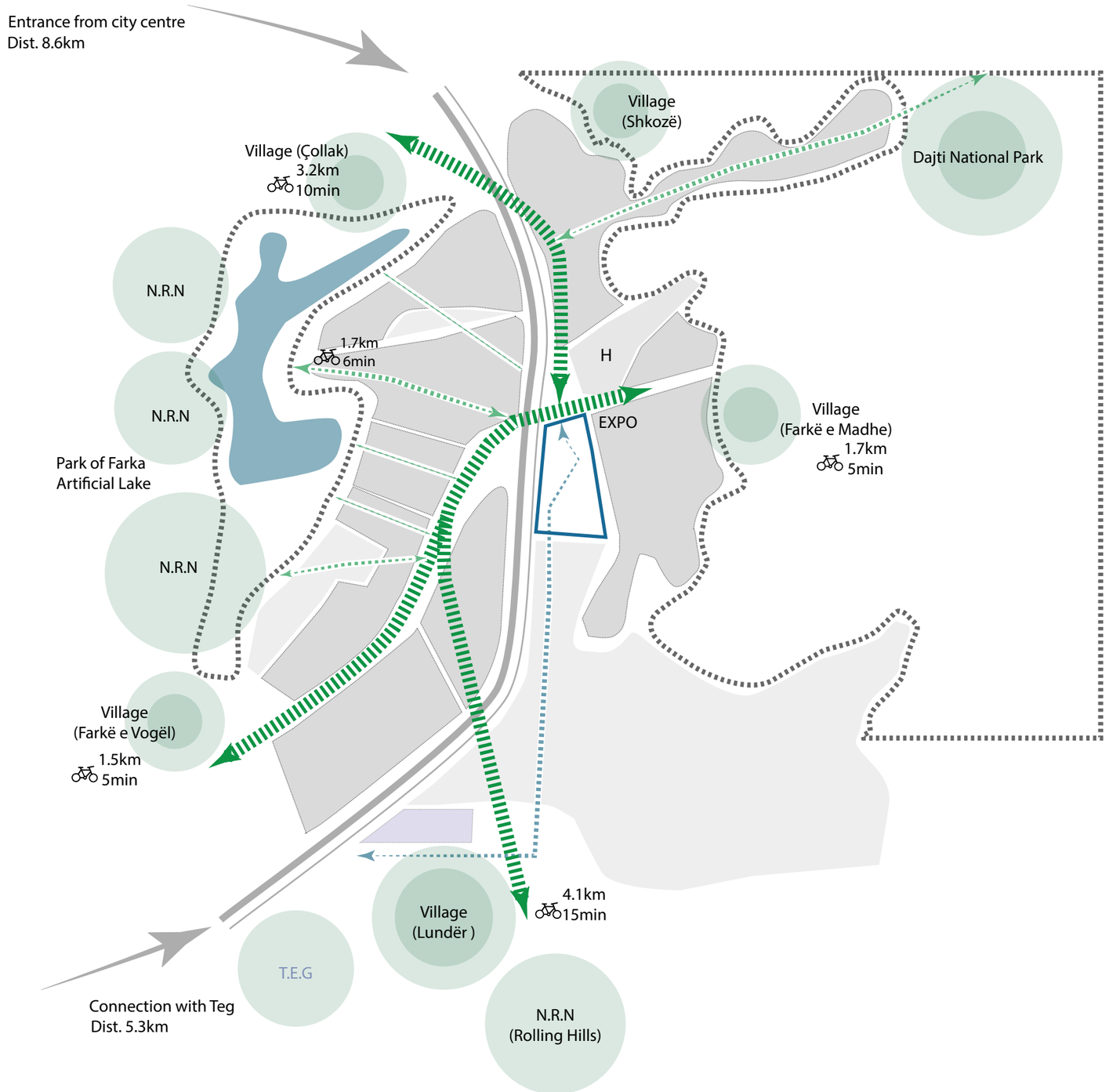
- Expo site
- Farka Lake
- Protected Buffer Zone
- Important Infrastructural Centre
- The East Ring axis
- The most important road axis (bus lines, bike lanes and pedestrian)
- The pedestrian axis & secondary connections
- Logistics porposed route
- Urban area
- Agricultural area
- Important regional element locations (Agriculture; Gastronomy; Pottery)



URBAN BIKE NETWORK :
BIKE LANES

The 2021 A Sustainable Mobility Guide for Tirana proposes city-wide bicycle lanes, divided into three phases for routes connected to the city, with a parallel network encompassing scenic routes outside Tirana. Expo Albania evolve could explore possible connections between this comprehensive plan. At the local scale, Expo Albania can create new connections to key destinations such as Farka and Dajti Mountain.

Expo Albania will form important connections to the South-Western and Northern Bus Terminals via the northern half of the Ring Road, as well as the connection to the South-Eastern Bus Terminal via the southern half of the Ring. Another key node near the Expo Albania site is TEG, the largest shopping center in Albania that attracts shoppers from Tirana and neighboring cities destination for customers from Tirana. The South-Eastern Bus Terminal has been relocated at TEG mall which will accommodate the long-distance buses from South-Easter cities of Albania. The new train station is another crucial link, connecting to the rapidly growing city of Durres, which is gradually integrating into the Tirana metropolitan area. According to Tirana 2030, additional shuttle service connecting the airport and to the city are anticipated.

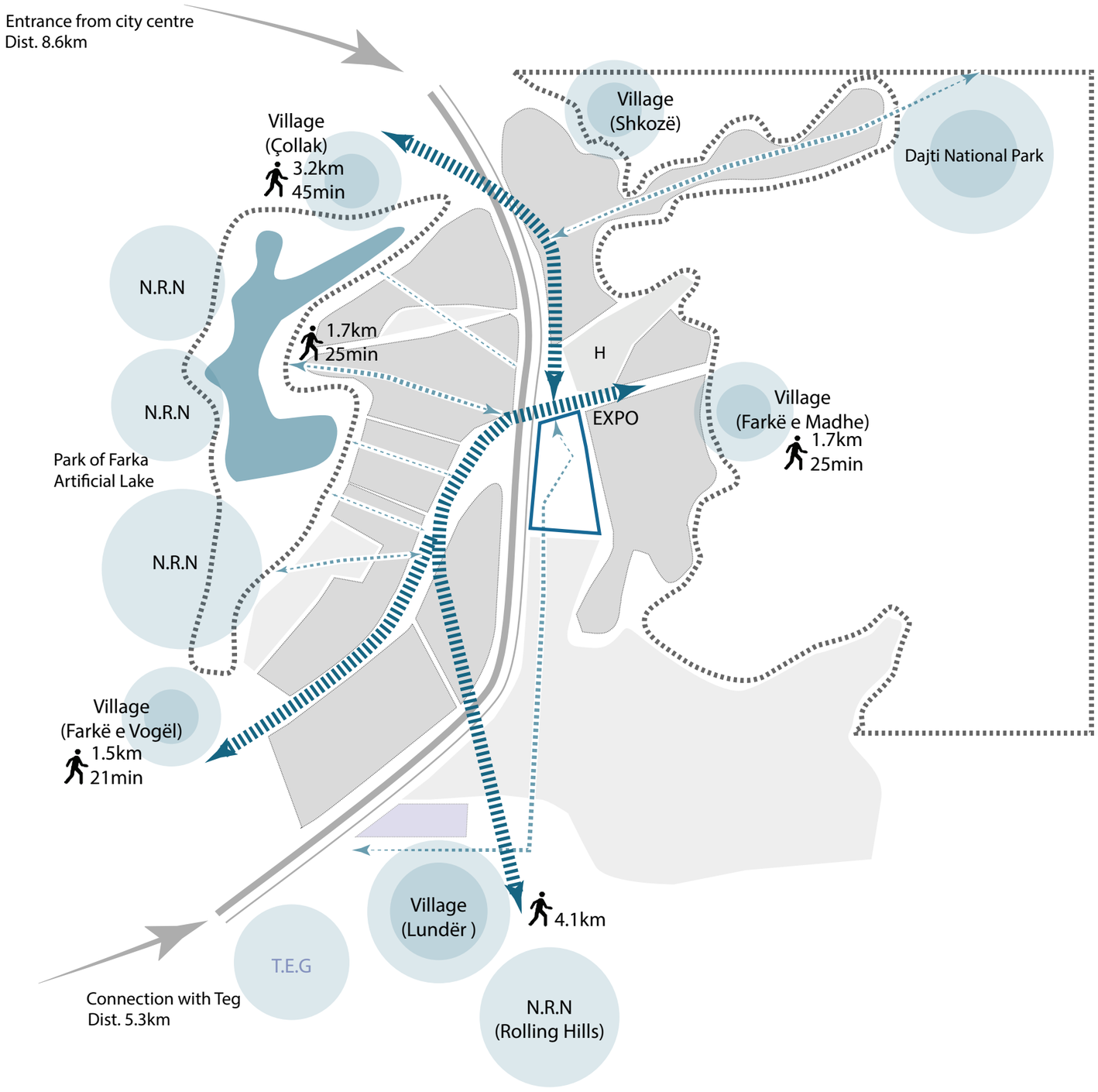


Legend:

- Farka lake
- Protected Buffer Zone
- Main bikes flow points (Existing urban areas)
- Main bikes flow points (New residential areas)
- The East Ring axis
- Main bike corridors
- Bike corridors & scenic routes
- Urban area
- Agricultural area

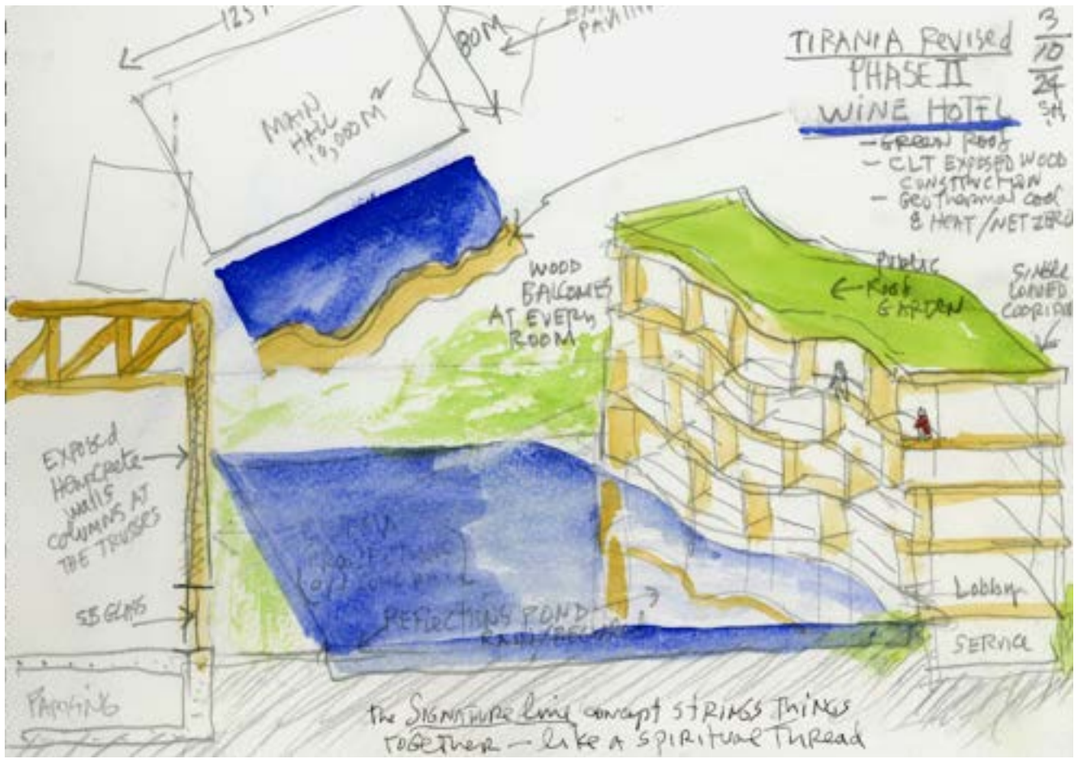
URBAN PEDESTRIAN FLOWS:
PEDESTRIAN FLOWS AND CONCENTRATIONS

The proximity to Farka Lake and local neighborhoods facilitates easy access to the site, offering pedestrian passages along the picturesque views of Farka Lake and existing roads, all converging to the site. However, a challenge remains due to the presence of the highway, creating a barrier between the site and Farka Park. In this scenario, an existing roads (2) crossing the highway (1) is utilized as an axis to propose spaces for pedestrian passage and bike lanes. These urban links primarily refer to the close surroundings and approximate distances of these poles, effectively extending the city center's pedestrian and bike network.



Legend:

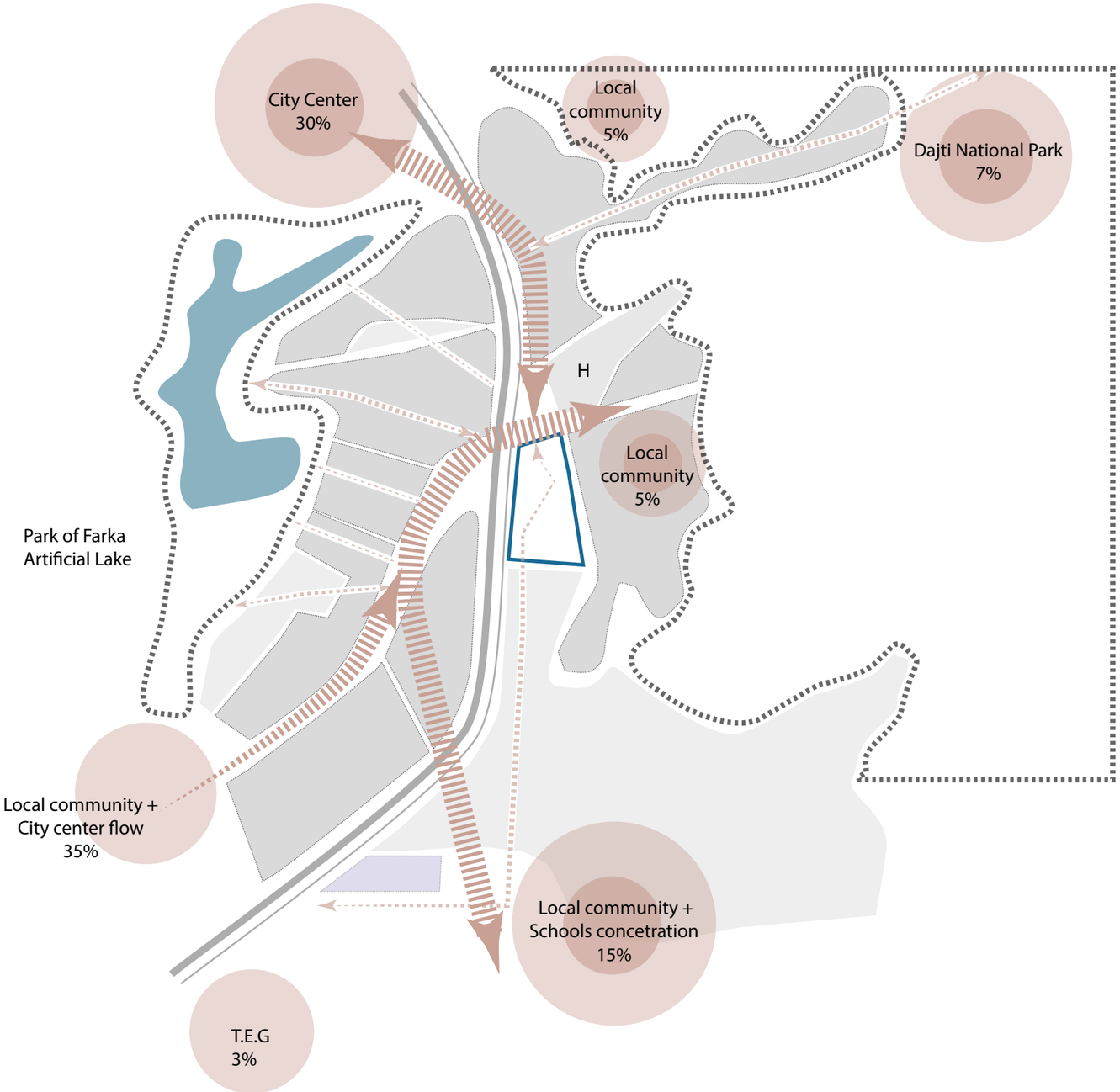
- Farka lake
- Protected Buffer Zone
- Main pedestrians flow points (Existing urban areas)
- N.R.N — Main pedestrians flow points (New residential areas)
- The East Ring axis (1)
- The most important road axis (2)
- The pedestrian axis & secondary connections (3)
- Urban area
- Agricultural area



Elements of the Site

POINTS OF INTEREST:
CONCENTRATIONS POINTS AND FLOW

Diagrammed are local points of interest with percentage points that indicate the expected percentage flow of people that are projected to interract with Expo Albania. Analyzing the most important road axis allowed us to design the optimal circulation for the site plan. An intricate study of pedestrian, bike, car, and public transport usage and roads enabled us to funnel circulation into the site ideally.



Legend:

- Farka lake
- Protected Buffer Zone
- Urban concetration points
- The East Ring axis
- The most important road axis
- The pedestrian axis & secondary connections
- Urban area
- Agricultural area

EXPO
— Promote Tirana as a regional hub for networking, culture, tech and commerce;
— Create possibilities and capacities for mixed-use functions,
— Key nexus in the city's dynamic role;
— Maximize the production of renewable and green energy;
— Main exhibition hall;
— Mezzanine exhibition spaces;
— Outdoor exhibition area;
— Flexible space for meetings, conferences & events.
— Trade and export promotion

YOUTH
— Tech conventions;
— Concerts;
— Contemporary art fairs;
— Workshops;
— Recreational spaces for children;
— Transgenerational gathering points

Tourism Community
— 3-4 star hotel;
— Restaurants & kiosks;
— Infrastructure for transportation networks; roads, ports, and airports.
— Tourism Infrastructure

Environmental Policy
— PV Solar Roof
— Vineyard;
— Green spaces;
— Storage & Logistics;
— Parking;
— Distribution, service areas & connecting spaces;
— Reception desks & ticketing;

Circulation Diagram

PEDESTRIAN CIRCULATION

VEHICULAR CIRCULATION

COACH CIRCULATION

SERVICE CIRCULATION

EASTERN RING

RRUGA DEMOKRACIA

DEMONSTRATION VINEYARD

ENTRY HALL

HOTEL

POND

EXPO HALL

CONFERENCE

PLAYGROUND


RRUGA DEMOKRACIA
EASTERN RING
DEMONSTRATION
VINEYARD
ENTRY HALL
HOTEL
POND
EXPO HALL
CONFERENCE
PLAYGROUND

Albania as a travel destination has gained significant traction in recent years. While tourist influx from Eastern European nations have steadily grown in the last decade, the year 2022 marked a significant surge in visitors from other eastern European and Balkan countries. In response to Albania's growing nature tourism industry, proximity to the Dajti Mountain can become a strong link for Expo Albania. Mount Dajti us a prominent tourist attraction with numerous sports and recreational activities such as hiking, picnicking, gondolas, and outdoor film festivals. At the foothills of Dajti, there are also important natural landscape features like Shumoku Canyon and the Crown of Peaks, frequently visited during expeditions. Moving forward, our design proposal for Expo Albania, already strongly inspired by the Dajti ridgeline, can seek to stand out as a landmark destination connected to natural attractions.

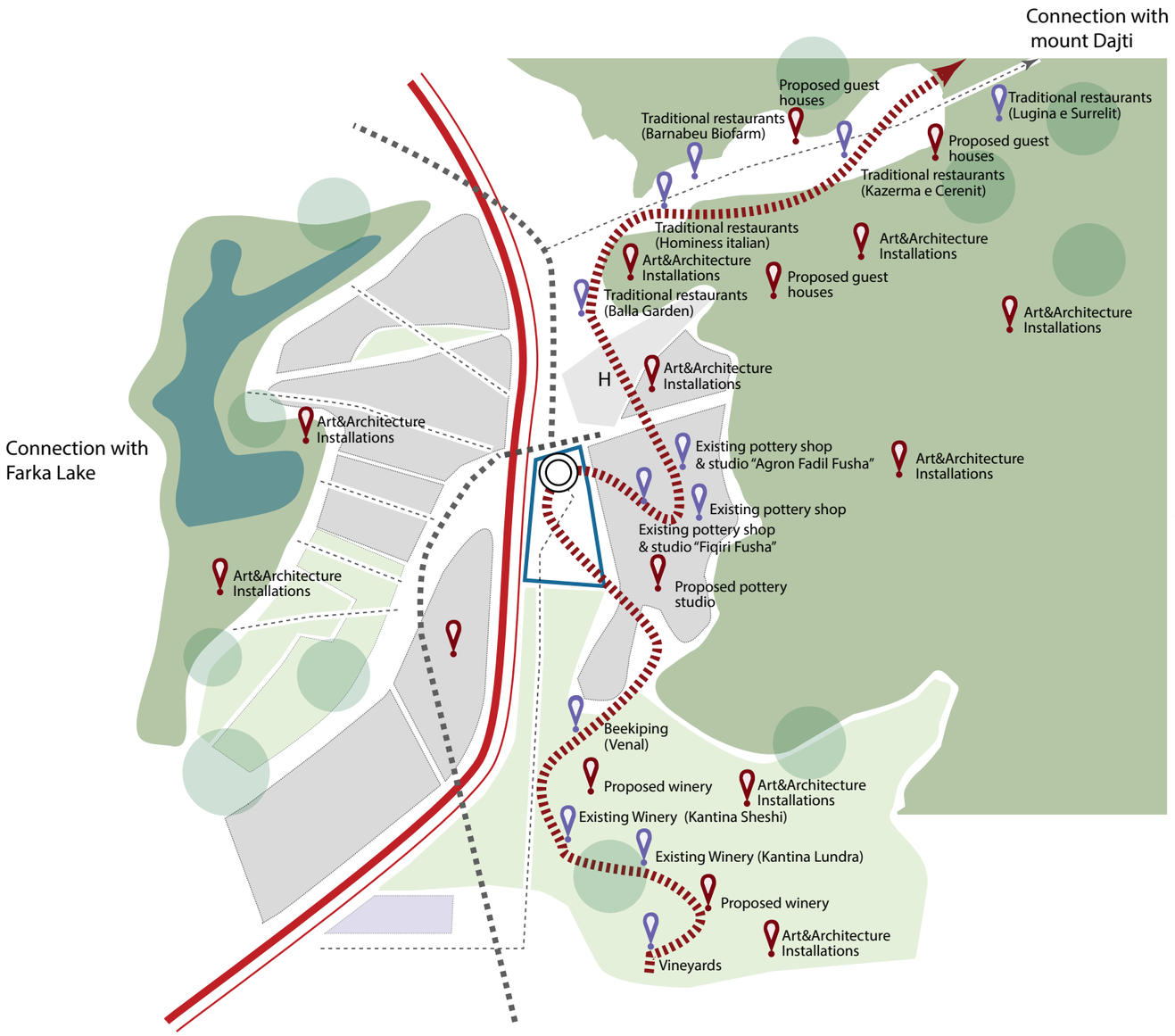
The region hosts a variety of activities, each adding to its distinct local ambiance: Vineyards stretch across the landscape, producing grapes for local wineries and contributing to the region's viticultural heritage. Pottery studios showcase local craftsmanship, producing handmade ceramics that reflect the region's artistic traditions. Restaurants serve up authentic cuisine made from locally sourced ingredients, inviting residents and tourists to savor the flavors of the land. Agrotourism facilities offer immersive experiences, allowing visitors to participate in farm activities and learn about rural life firsthand.

"Nari Lundër" Agritourism, Tiranë

Lundër vineyards, Tiranë

TOURISM:
TOURISM ATTRACTIONS AND POTENTIAL

In the area surrounding the site, positioned between Farka Lake and Mount Dajti, with a blend of rapid urbanization and green expanses, our proposal aims to create a dynamic landscape seamlessly integrated with its surroundings, creating a harmonious balance of human presence with the respect for the environment. Through a cultural interactive itinerary, marked by art installations and architectural landmarks as stop point, it creates an expansive experience that celebrates the forest connectivity with the lake, mountains and art works with Expo being at its centre. To enrich its development process, we complemented the technical site analysis with an "emotional assessment" intertwining the landscape's cultural memory and the community's deep-rooted connection with the land, agrotourism facilities, pottery studios and shops, restaurants, etc. The project promotes multifunctional and an integrated space use, setting an appropriate balance between architecture and nature while respecting local activities, memory, and the landscape's beauty.



Legend:

- Farka lake
- Protected Buffer Zone
- Other Tourism points
- The East Ring axis
- The most important road axis
- The pedestrian axis & secondary connections
- Urban area
- Agricultural area

Aligning with Albania Expo Initiatives
The Expo Albania site offers possible connections to existing planning initiatives such as Tirana 2030’s strategic projects, “The Fourth Green Ring” and Metrobosco “The Green Crown”. The nearby Farka Lake is an area of significant landscape value and already serves as a public realm. Treating the site as an integral part of Farka Park could be an interesting point of departure for creating series of green spaces and public community gathering points that continues to foster growth and development in Albania like "The Fourth Green Ring" has. In this context, a very important element could be Metrobosco, "The Green Crown (Kurora e Gjelbërt)” of the city referred also as Metro Bosko-The orbital forest, which encompasses Farka Lake and surrounds the entire city, providing character to the urban landscape.

"Tourism & Youth Activation" focuses on leveraging the proposed itinerary to cultivate tourism and engage youth in the cultural landscape. Through art and architecture exhibitions integrated into the itinerary, with Expo as its focal point, we aim to create dynamic spaces that evolve with new projects and installations. These exhibitions serve as catalysts for tourism, attracting visitors drawn to the vibrant cultural and natural scene. Moreover, by incorporating interactive elements and youth-oriented activities, we foster a sense of ownership and participation among the younger generation, ensuring their active involvement in shaping the cultural identity of the area.


Arrival View

Further Art Possibilities

As the itinerary continues to evolve, with the Expo as its cornerstone, it becomes a platform for cultural exchange and creative expression, enriching the tourism experience and empowering the youth to contribute to their community's development. Below are some reference suggestions for artistic elements, implemented in Chateau la Coste, created by some of most prominent architects and artists. Though quite different in nature to Expo Albania due to Chateau La Coste being primarily a private enterprise while Expo Albia is a public building that possesses goals of fostering growth and business development in Albania.

Louise Bourgeois, "CROUCHING SPIDER"

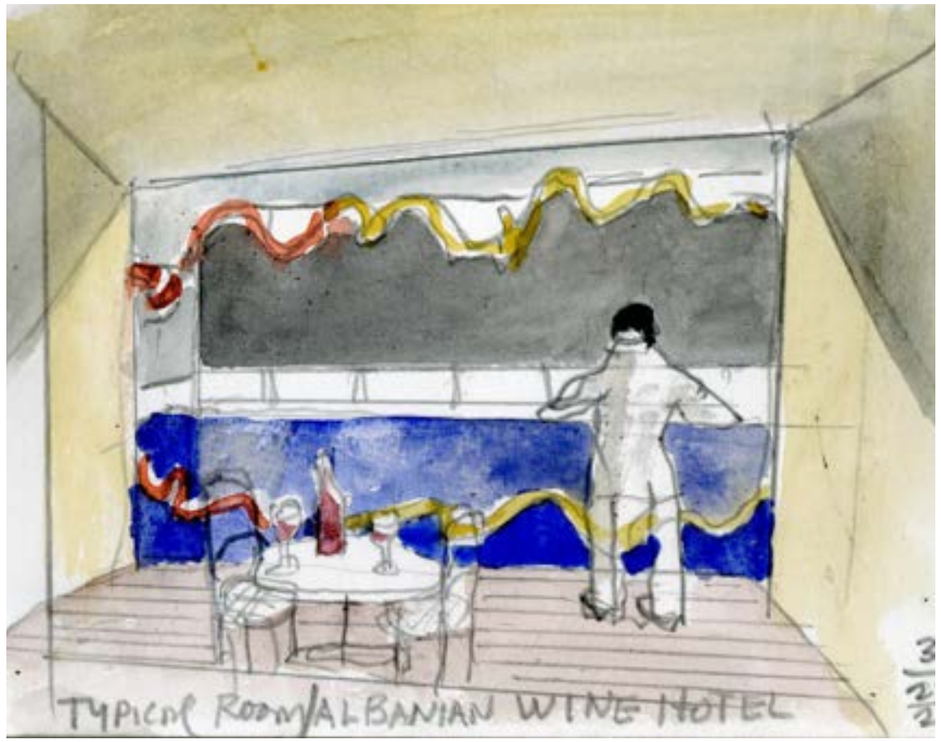
Tom Shannon, "DROP"

Wine Hotel; Demonstration Vineyard

Wine Hotel and Central Landscape Pool Connected to Recycled Grey Water System

Wine Hotel

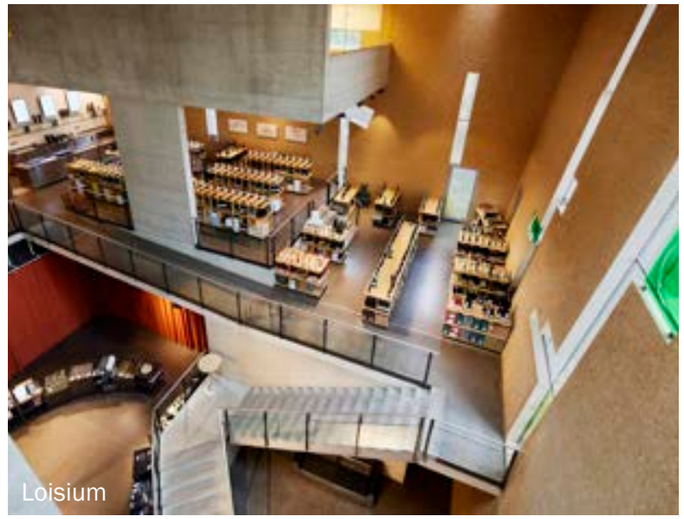
Expanding on aspirations for the new convention center, we propose a wine hotel addition which could lead to regional growth. This proposition aims to bolster Albania's prosporous and historically influential production and export of wine. The wine hotel would have views towards the surrounding mountains as well as inside the inner court and pond reflections. The wood materiality of the hotel would harmonize perfectly with the reflectivity of the pond, the earthness of the hall's hempcrete materiality and the grounded, expansively surrounding mountain ranges.



Each hotel room has a private balcony overlooking the wine-yards and the mountain range.

Hotel Exterior Demonstration Vineyard

Kantina Lundra, Tiranë



Loisium

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Loisium Hotel- Langenlois, Austria 2005

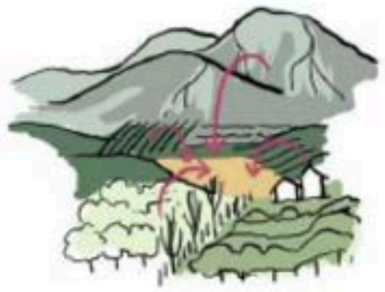
Loisium Hotel- Langenlois, Austria 2005
As precedent, SHA designed a wine hotel and adjacent conference space in Langenlois, Austria. The use of earth-like materials and palette in the project create a sensible connection between the hotel, the landscape and vineyard, and the context of the community. For Tirana's EXPO center, the connection between the outdoor qualities of the landscape, the experience in the building, and the relationship between the inner reflective pond courtyard and the views towards the mountain all merge to create a palette that is sensible to the site and experience of space.

Wine Expo in Main Hall

Wine Expo in Main Hall

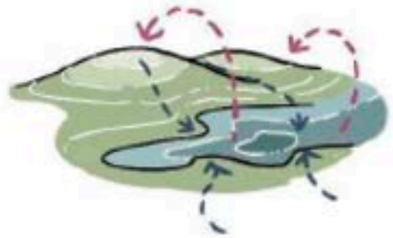
Loisium Hotel Expansion- Langenlois, Austria 2020
The Loisium project is so successful that SHA realized Phase 2 with 40 more rooms and a conference center. The expansion is a celebration of the wine heritage of Austria, and the traditional vaults system of ancient wine culture. The windows in the hotel room direct the views towards the surrounding landscape and demonsttration vineyard, much like our proposal for Expo Albania. The expansion hotel is also adjacent to an ecological pond.

Exhibition Vineyard and Wine Hotel Open to the "View Corridor"



Unique Landscape Features
From Natural and Cultural Context
Borrow Scenery and Mountainous
Landscape as Background

Create Connectivity Within
the Site (Architecture: Landscape)



Recycling Material from Excavation
Blue Green Infrastructure to Promote Sustainability

Diverse Activities/Amenities For All Ages
Flexible Spaces For Large Scale Expo
Events and Small Scale Local Activities

Create A Destination For
Year-Round Activities

Our proposal creates pockets of rainwater accumulation, increasing biodiversity within the green spaces, and altering the site and building positioning to consider water accumulation directions and wind and solar optimization. These additions to the site will have major local impact, much like the Albanian "One Million Trees" initiative which pioneered in public awareness and engagement. Embracing the plan of planting two million trees in Titana, or the Orbital Forest, is a promise made by Mayor Veliaj promoted even in the Tirana 2030 urban plan presentation.

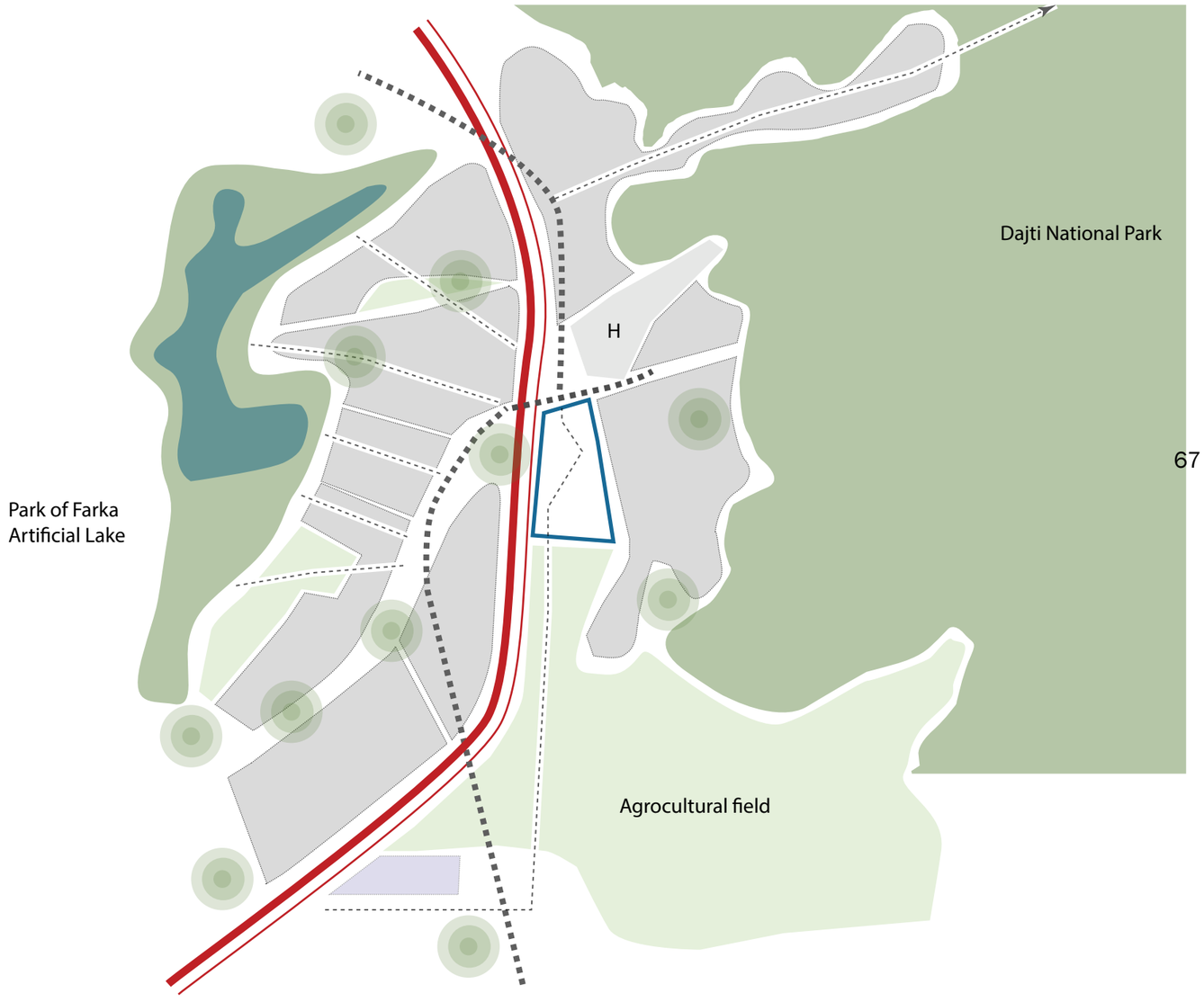
A Resilient Public Realm

A public realm where culture and enterprise thrive is also one that is maintains environmental longevity. SHA is well-prepared to help Expo Albania become a resilient venue with elegant, cost-effective resilient technologies.Our team has realized projects locally and globally that rely on sustainable water and energy management methods including geothermal heating and cooling, well water, HVAC, and integrated stormwater management. With extensive experience in realizing over 13 LEED-certified projects and a JUST 2.0 label from the International Living Futures Institute, SHA is prepared to realize a convention center that exceeds sustainability milestones with innovative, bespoke green building strategies that represent the core values of Expo Albania.

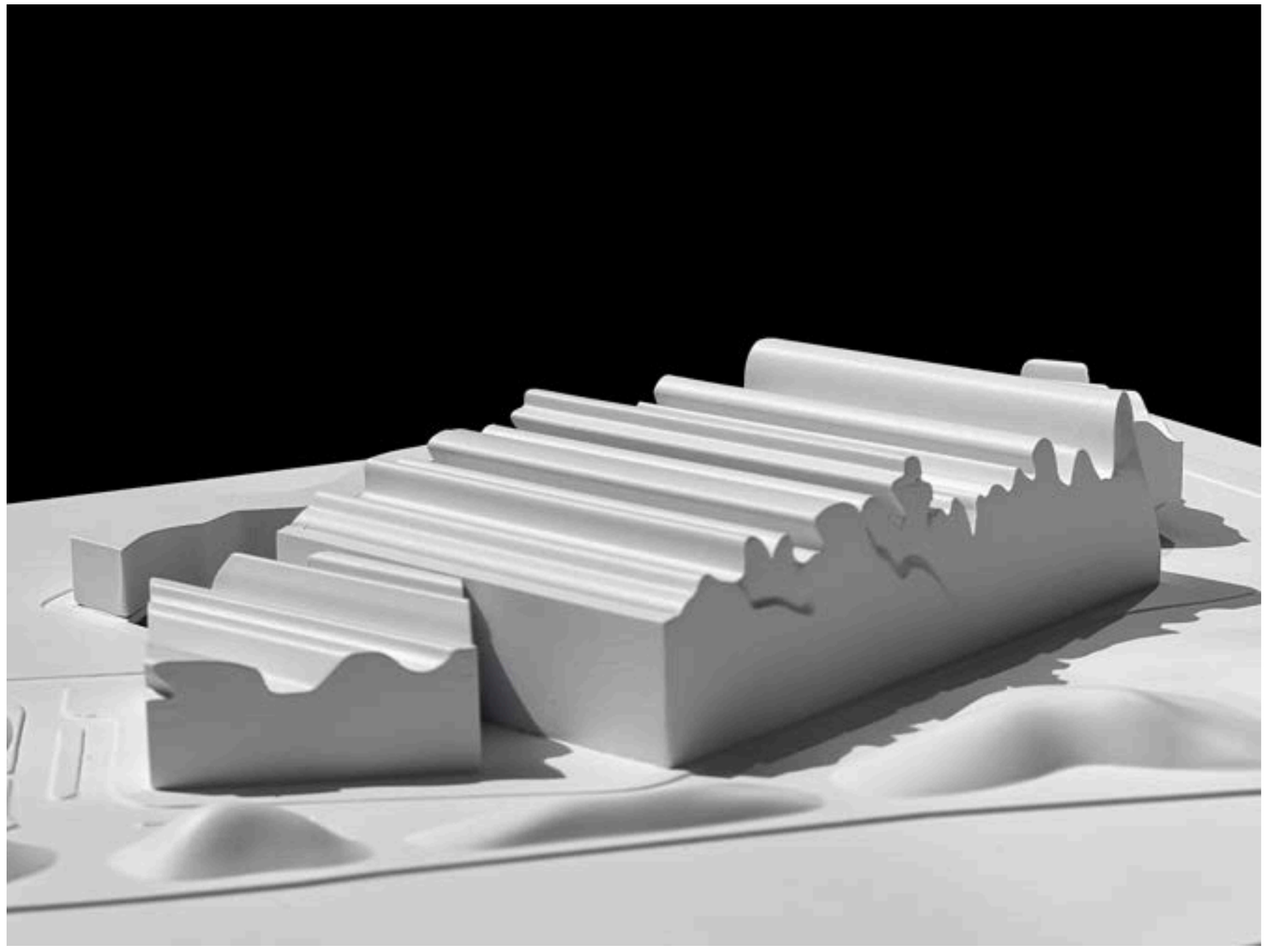
Regional Tourism Engagement - Farka Lake and Dajti Mountain Range

GREEN ANALYSIS
GREEN CENTRES AND BUFFER ZONE

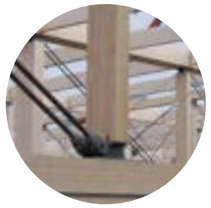
Positioned amidst the alluring landscape of Farka Lake and Mount Dajti, this area has experienced rapid urbanization. Dominated by vast green expanses, including vineyards and farmlands, the road leading towards the site offers striking views. Two buffer zones, surrounding Farka Lake and Mount Dajti's park, ensure the preservation of ecological balance while offering tranquil surroundings. The urban proposal aims to preserve and enhance the surrounding environment, emphasizing the growth of green spaces and the integration of both internal and external areas for the benefit of the community. Additionally, we seek to seamlessly merge the site with the green context, erasing the perception of the "property line" and creating a harmonious blend with the Expo site, urban development, and adjacent natural landscapes.



Legend:
- Farka Lake
- Protected Buffer Zone
- Green spaces in urban areas
- The East Ring axis
- The most important road axis
- The pedestrian axis & secondary connections
- Urban area
- Agricultural area



1. HEMPCRETE /
RECYCLED BUILDING MATERIALS

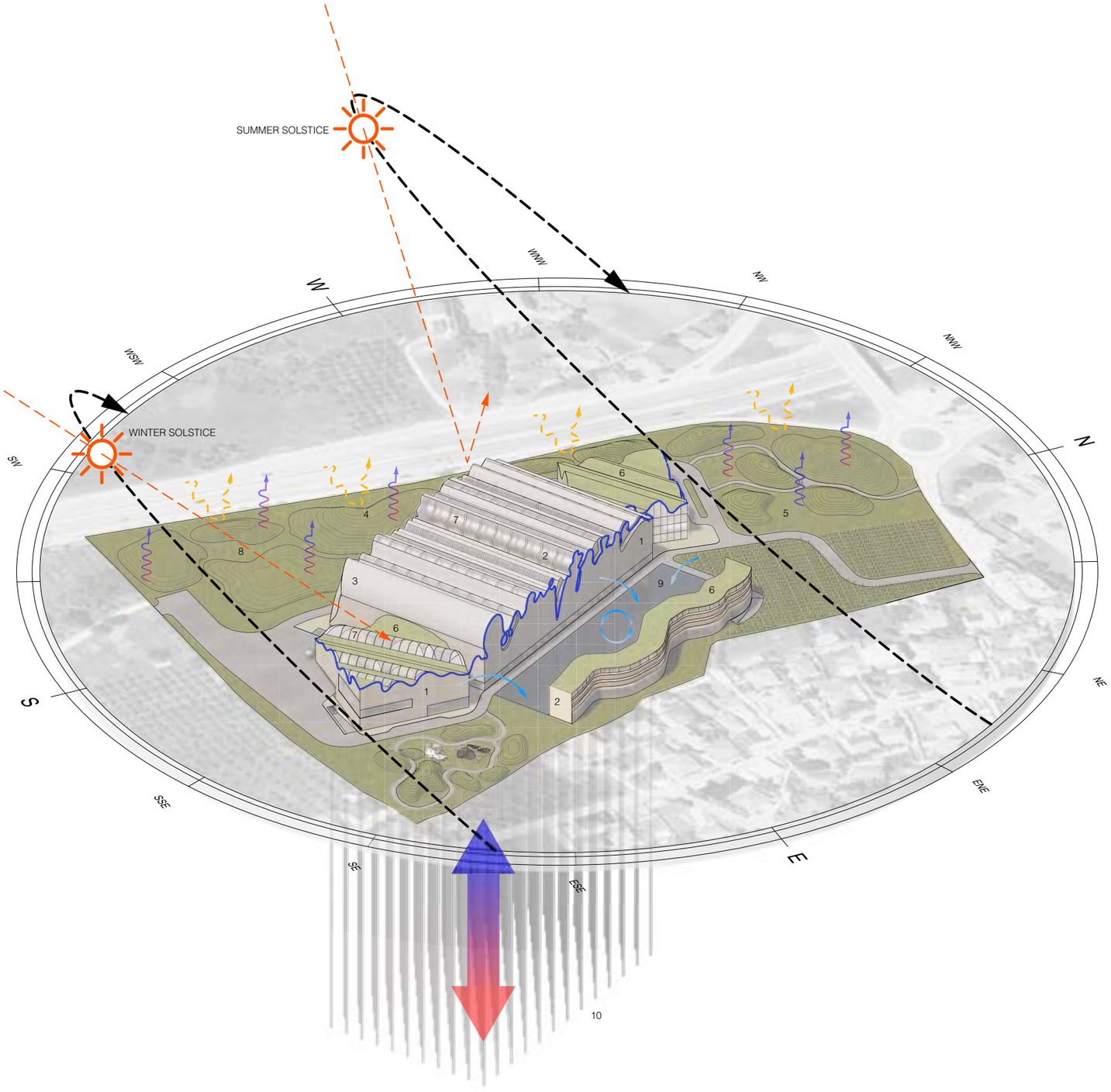


2. CLT WOOD /
RENEWABLE SOURCES MATERIALS

3. SOLAR PV SHINGLES

4. NOISE CONTROL WITH
LANDSCAPE MOUNDS

5. RESTORATIVE LANDSCAPE /
REWILDED GROUND COVER

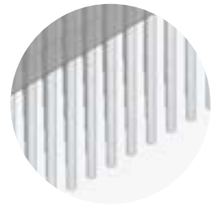


6. GREEN ROOFS

7. HARVESTING NATURAL LIGHT
AND VENTILATION

8. BIODIVERSITY

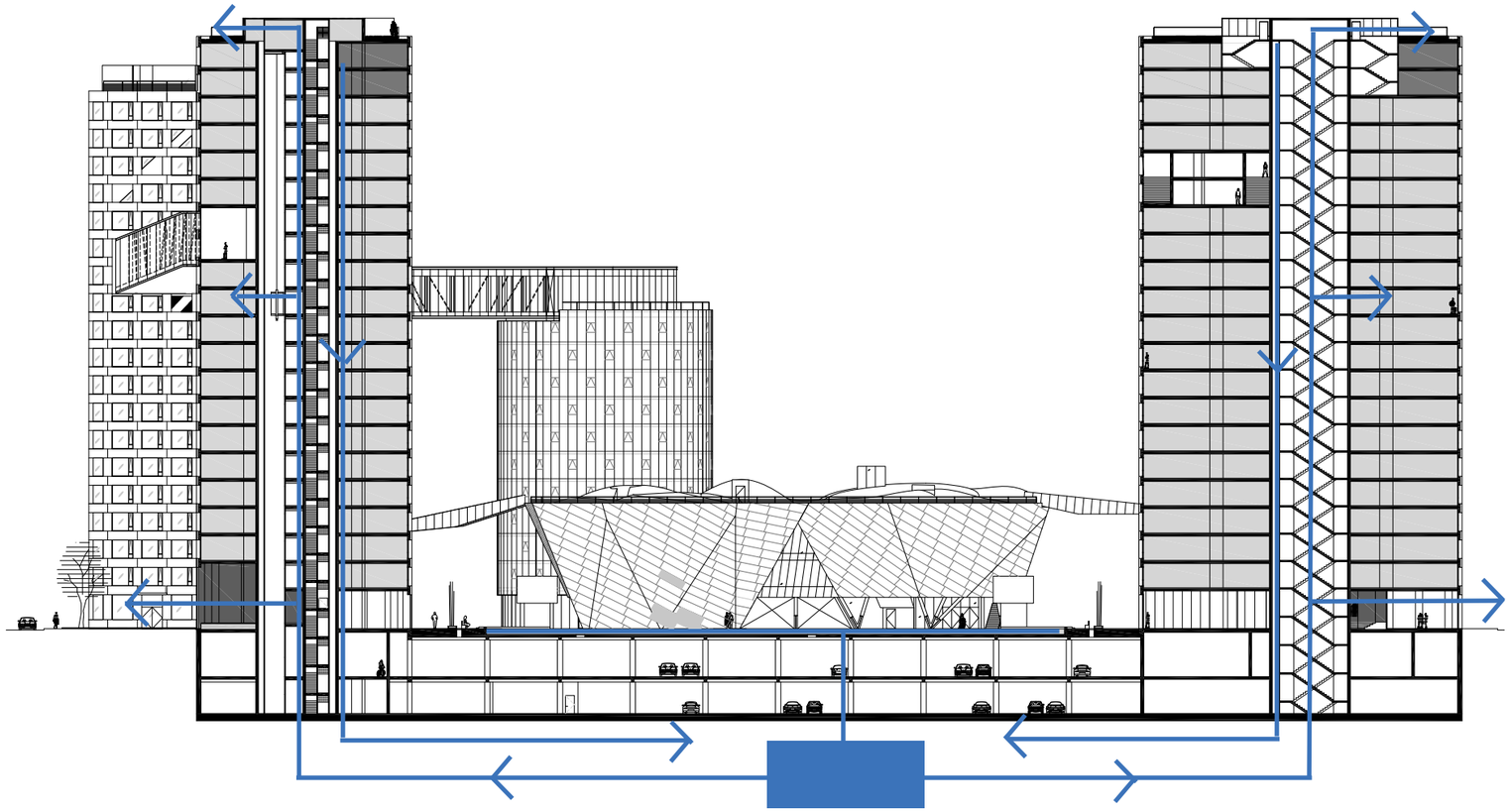
9. RECYCLED WATER POND
AND RAINWATER COLLECTION



10. GEOTHERMAL
COOLING AND HEATING

View of Recycled Grey Water System Pond, Expo Albania

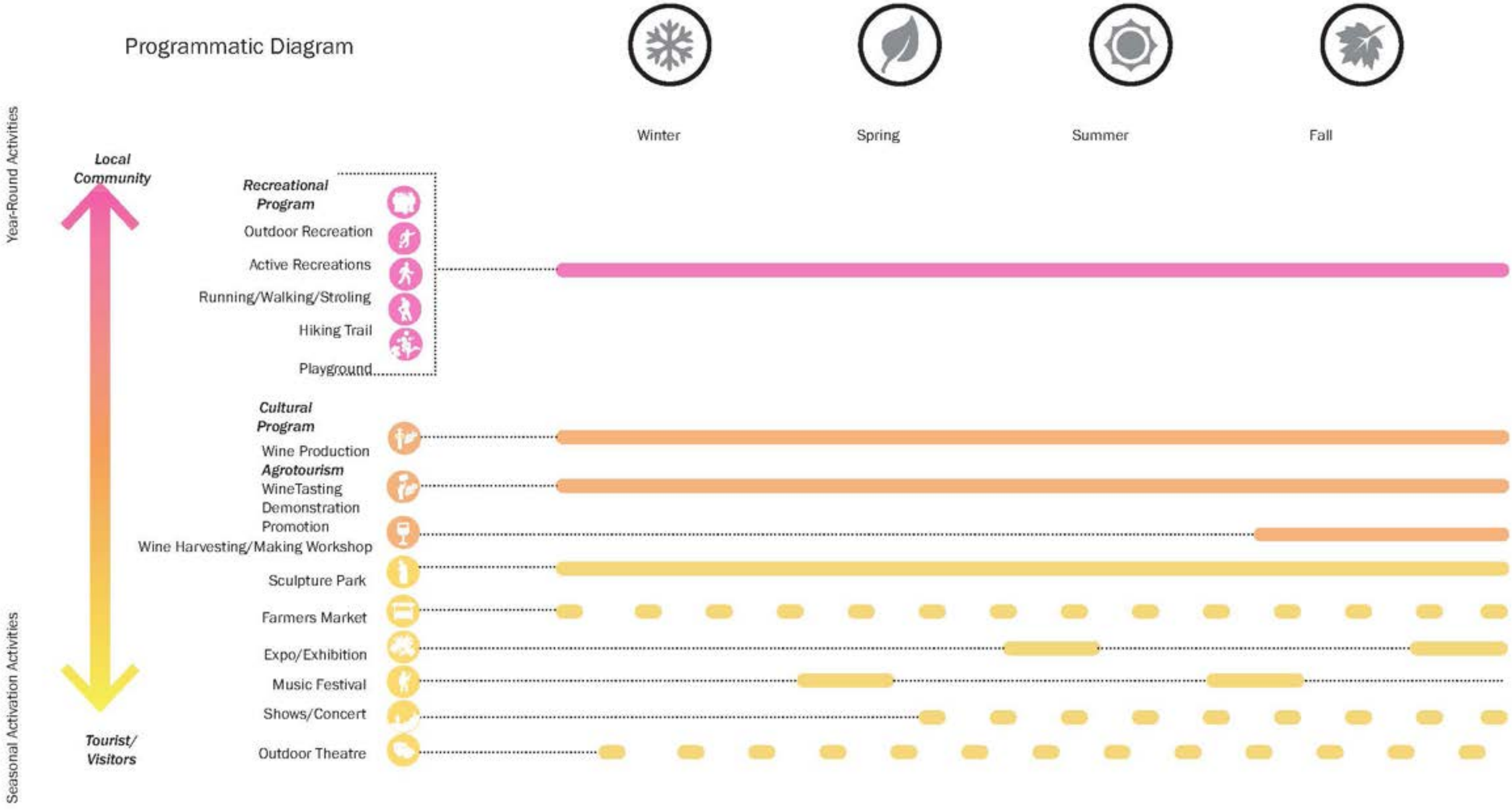
Linked Hybrid, Beijing China 2009 Steven Holl Architects



Recycled Grey Water System

Our previous project Linked Hybrid built in Beijing China in 2009 utilizes the same recycled grey water system that we have designed for Expo Albania. The system connects to all apartments of the hotel to ultra-violet zap for a clear central landscape pool. Essentially, the UV zap removes any contaminants used in the units of the hotel and recycles the water into the ecological pond. This system has worked perfectly for years and saves water as well as ensures that the 50 cm deep reflective pond is always clean and clear. The system requires no maintenance and the pond naturally freezes in colder temperatures. The natural grasses in the pond are lillies are a public attraction.

Programmatic Diagram



Pedestrian paths are weaved through the landscape, offering access to the Center's building and connecting several outdoor spaces designed to support year-round activities. These include a multipurpose amphitheater for large-scale gatherings, concerts, and festivals, and a lawn that can host events such as wine tasting and harvesting demonstrations. The landscape will also offer moments for public art and sculpture installation to be viewed and enjoyed by the public.

In that vein, when these outdoor spaces are not being used by the Expo Center, they can be used by the local community: larger spaces can be converted into sports and recreational fields for daily use, and smaller, pocket spaces— typically reserved for outdoor exhibitions—can instead be used as small parks for the community to enjoy at their leisure.

Integrated Amphitheatre on Landscape Terrain

Entrance Scenic Vineyard, Wine Production Workshop, Wine Tasting,
Farmers Market

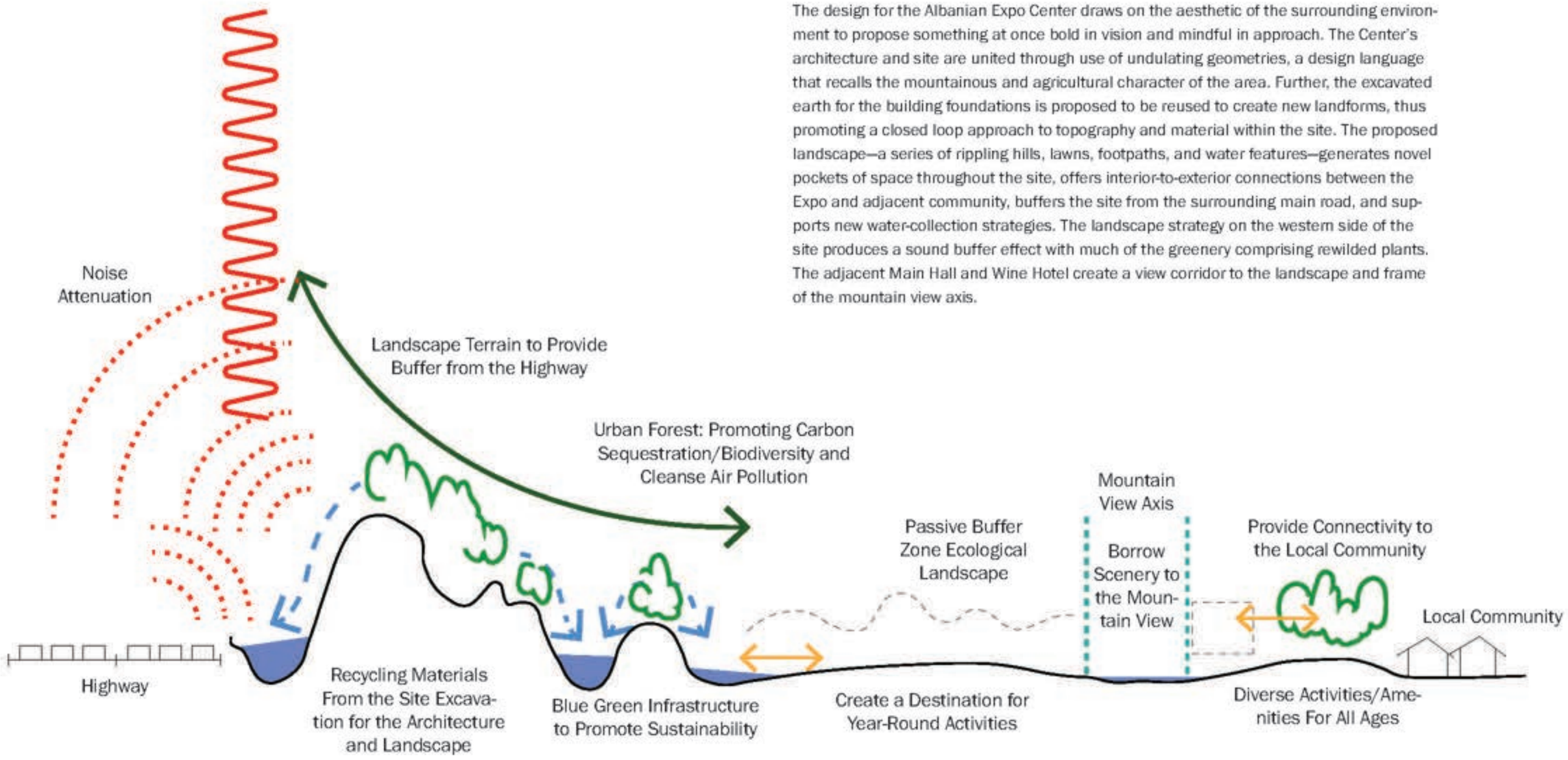
Outdoor Events Area - Food Truck Activated Commerce

Reflecting Pond (Rainwater Collection and Water Recycling)
EXPO Activities Extension

Permanent Outdoor Art Exhibition Integrated into Landscape Terrain

Children's Playground Open to Neighboring Communities

Landscape Elements



The design for the Albanian Expo Center draws on the aesthetic of the surrounding environment to propose something at once bold in vision and mindful in approach. The Center's architecture and site are united through use of undulating geometries, a design language that recalls the mountainous and agricultural character of the area. Further, the excavated earth for the building foundations is proposed to be reused to create new landforms, thus promoting a closed loop approach to topography and material within the site. The proposed landscape—a series of rippling hills, lawns, footpaths, and water features—generates novel pockets of space throughout the site, offers interior-to-exterior connections between the Expo and adjacent community, buffers the site from the surrounding main road, and supports new water-collection strategies. The landscape strategy on the western side of the site produces a sound buffer effect with much of the greenery comprising rewilded plants. The adjacent Main Hall and Wine Hotel create a view corridor to the landscape and frame of the mountain view axis.

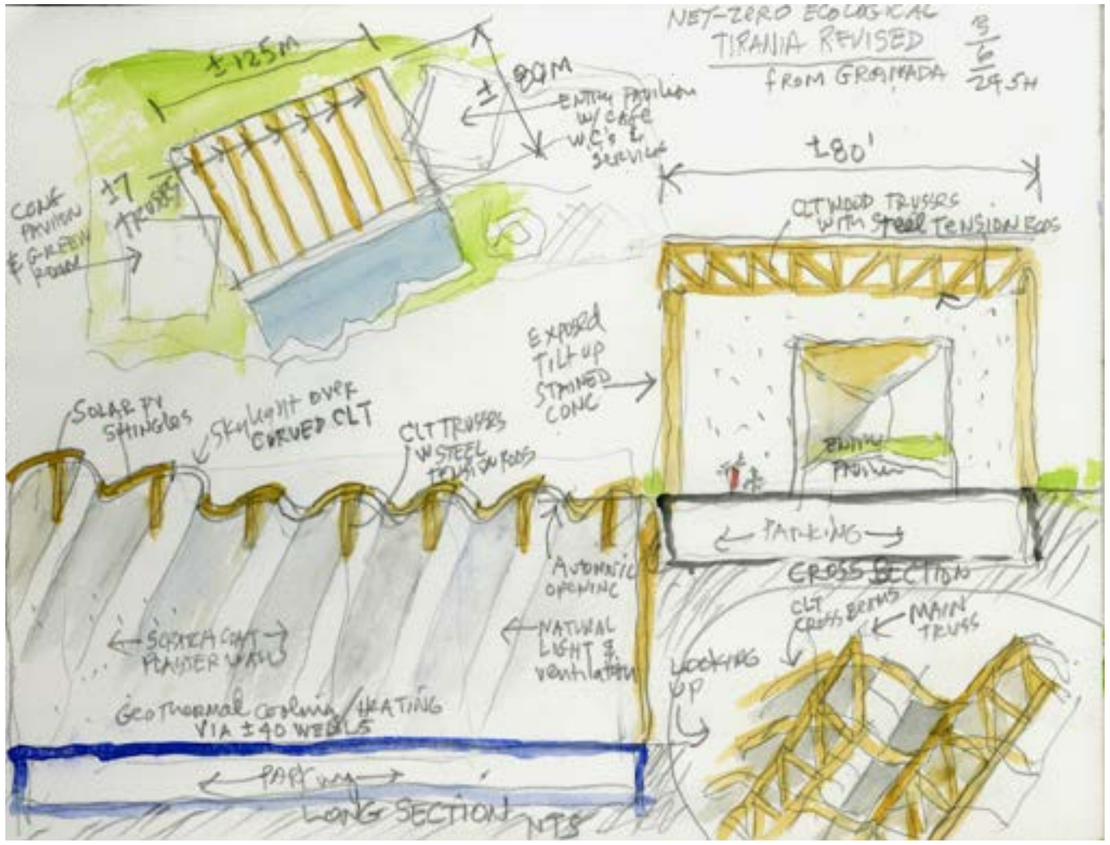
The design honors the character of its setting, translating its familiar verdant peaks into a rolling landscape that will add both social and ecological value to the area. The proposed landscape is resourceful in its approach to sustainability, establishing several new topographical low points for blue-green infrastructure installations. These installations will collect stormwater in the form of rain gardens and bioswales, lining the periphery of the site with lush plantings. In addition, earth excavated during the building's construction will be reused to create the site's landforms, establishing a closed loop in material resourcing for the project's topography.

Landscape Mounds, Sculptures, Installations and Pedestrian Circuits

Mountain View Axis

These parks can be designed for children as well, broadening the community's greater playscape. The landscape design for the Albanian Expo will provide a range of amenities and activities through its many interconnected outdoor spaces—from physical recreation to passive entertainment—thus offering enjoyment for users of all ages, across the entire community. In serving both the Expo and the wider community, the site will have use year-round, regardless of the Expo's schedule. The site's design—a visual echo of the surrounding environment—will implement dynamic topography to create a landscape of social significance and sustainability.

Building Structure and Economy



Long Span Timber Trusses

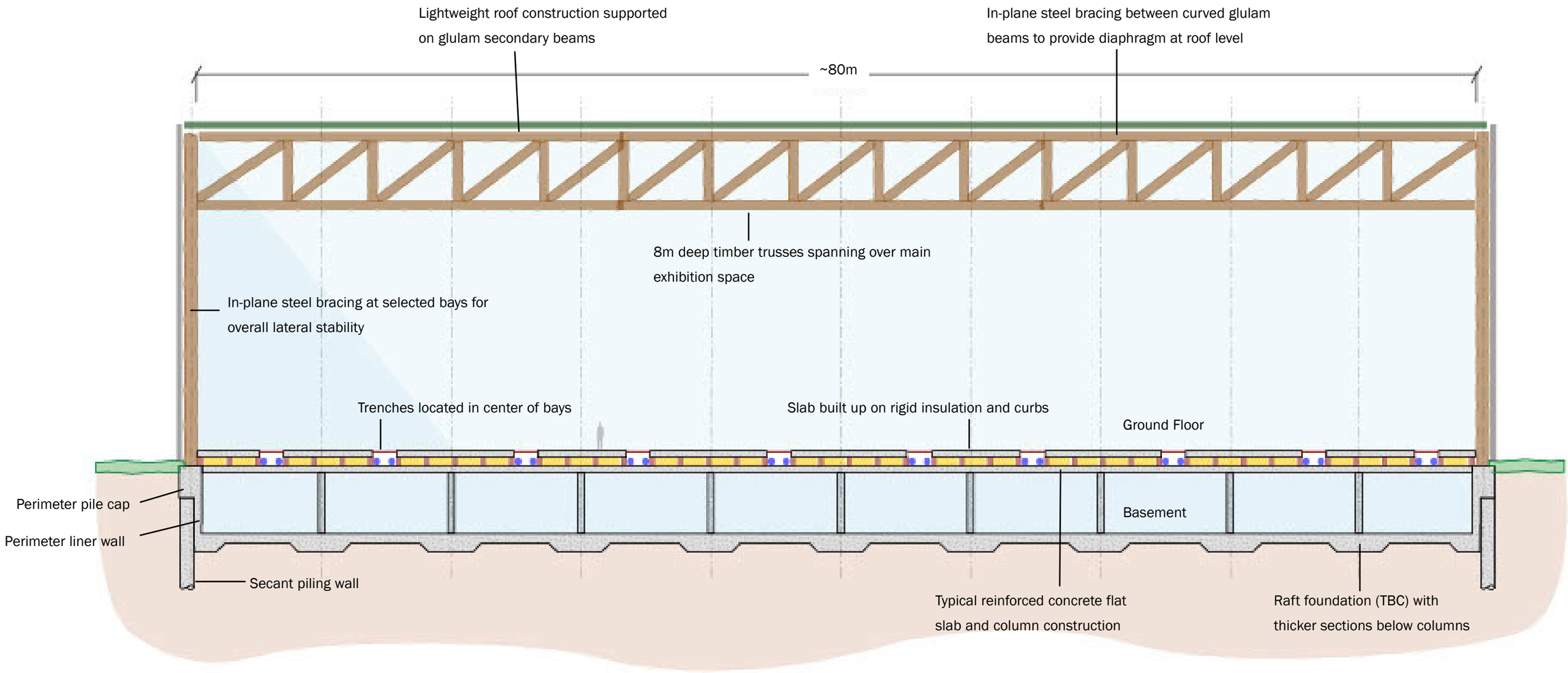
Timber Frame Construction

Steven Holl Architects worked closely with ARUP Engineers on the constructibility of the proposal. These are the key drivers for the use of timber as the primary structural material for Expo Albania.

- The use of timber as the primary structural material will reduce the overall embodied carbon footprint of the development compared to a conventional reinforced concrete construction
- The long span exhibition area cannot be achieved in an economical reinforced concrete frame, but timber trusses are well suited to creating the space required.
- The project presents unique opportunities to innovate with engineered timber as a building material in the Albanian market
- Associated occupant well-being advantages if the timber structure was expressed in areas
- Prefabrication, quality control and speed of construction

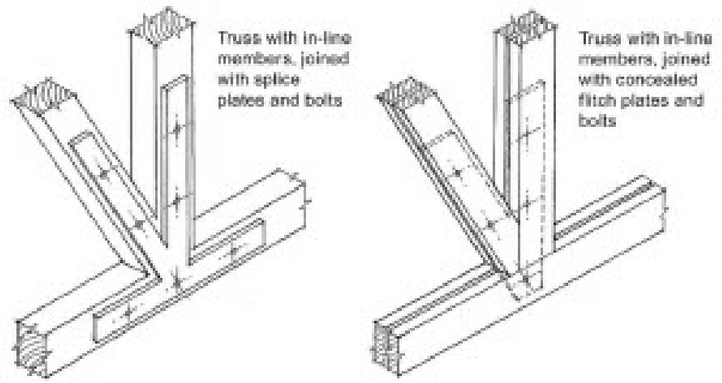
Timber Frame Construction Precedent
Sky Believe in Better Building, London, UK

- Arup designed the UK's first multi-storey timber commercial office building for BSkyB.
- The buildings glulam timber frame, CLT floor slabs and stability core helped to cut embodied carbon by 120% and was much lighter and quicker to construct than a conventional concrete frame.
- Glulam columns on a typical 6x8m grid.
- Primary glulam beams spanning 8m are provided either side of the glulam columns.
- CLT floor planks span between primary glulam beams.
- The CLT planks are typically continuous over two bays (12m).
- Within the cores, CLT walls work compositely with the glulam columns to form cantilevered 'I-beams' which transfer the stability forces to the ground.
- A 60 minute fire rating was achievable with charring so the timber can be left exposed without the need for sprinklers.



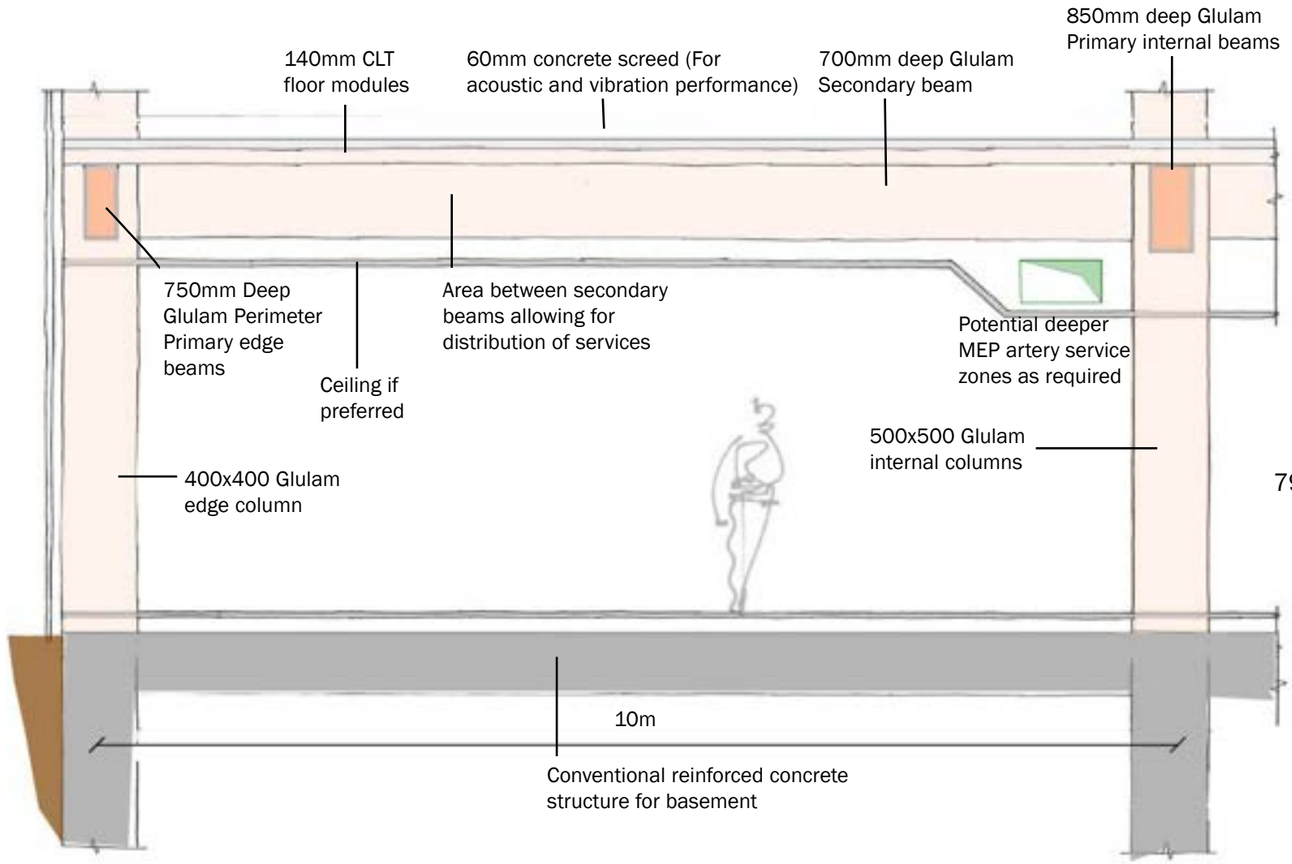
-It is proposed to construct a secant pile wall around the site perimeter for the basement excavation.
-The site water table level is assumed to be close to existing ground level. This requires a foundation perimeter solution to manage water during the basement construction, which the secant pile wall will provide.
-A raft slab with local thickening at columns is considered to be the most appropriate foundation solution.
-A full geotechnical assessment will be required to determine the most appropriate foundation solution.

Connection Detail Options

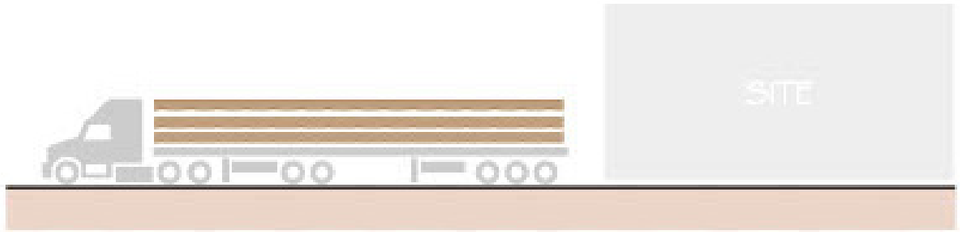


Connection Detail Example- Steel Diagonals introduced to reduce weight WIEHAG Timber Construction GmbH

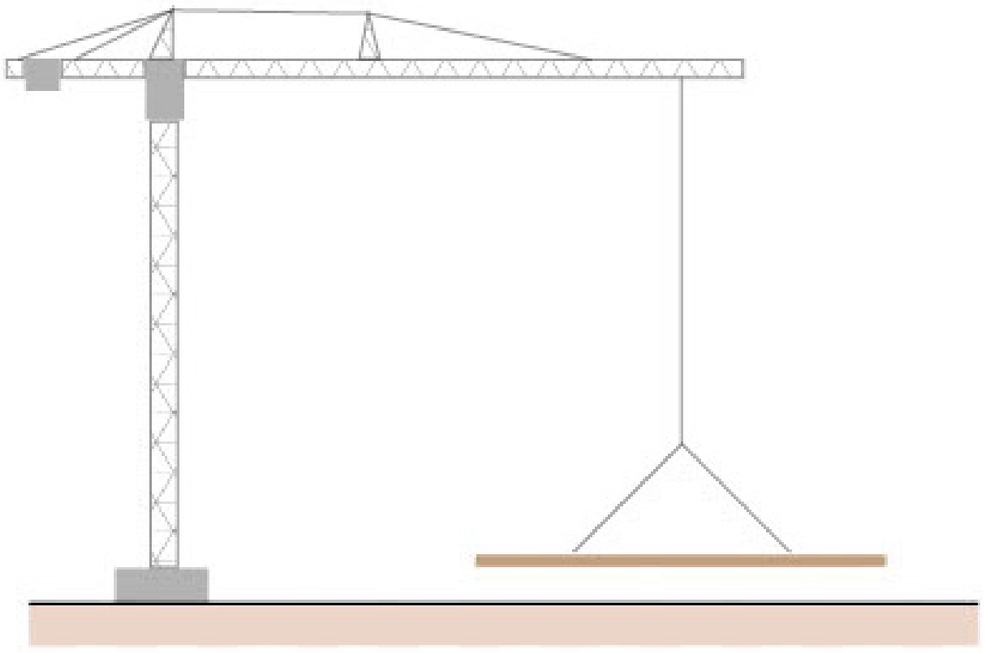
Connection Detail Example- Concealed steel flitch plates WIEHAG Timber Construction GmbH



Timber Truss Assembly Process

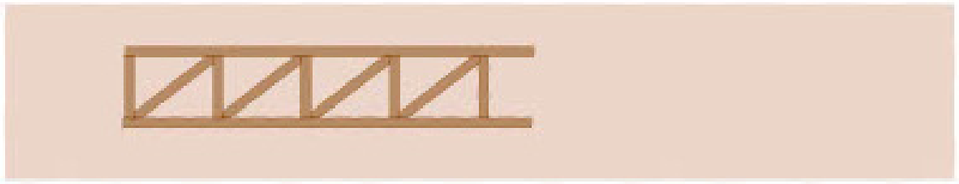


1. Timber truss members delivered to site on flatbed truck. The size of truss chords shall be limited to 1/3 of the overall 80m assembled truss length.

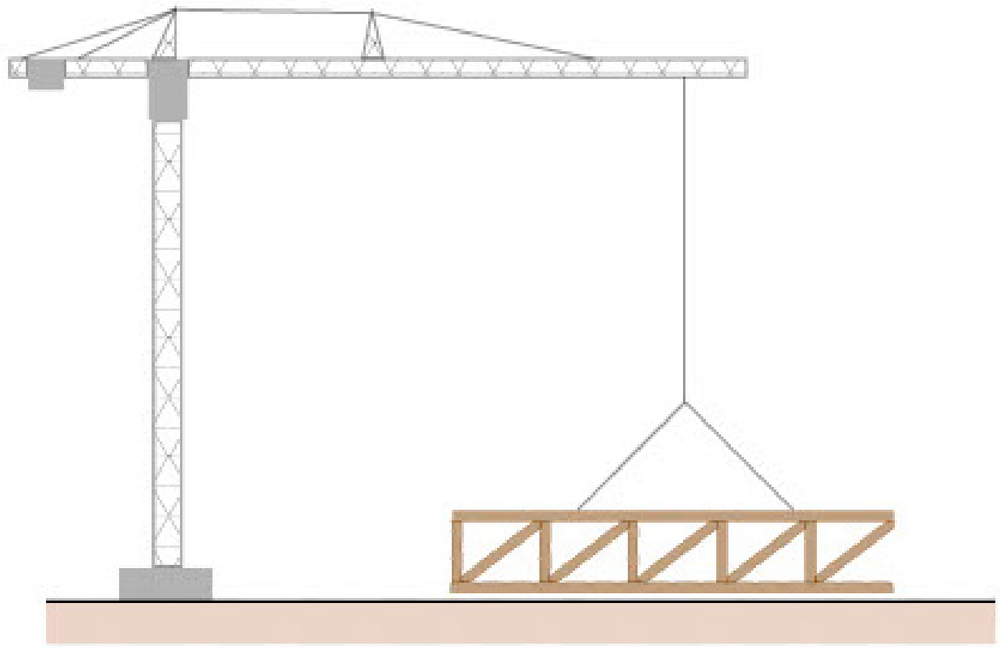


2. The truss members are lowered onto the ground for assembly using a tower crane.

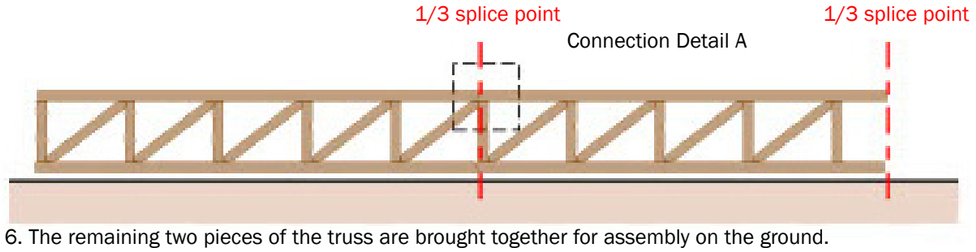
3. The vertical and diagonal truss members are assembled with the bottom chord on the ground.



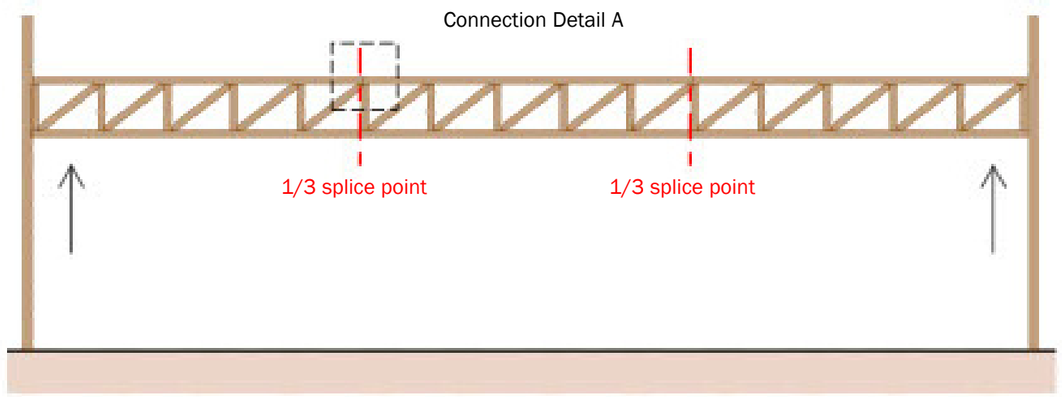
4. The top chord is assembled with the remainder of the truss section.



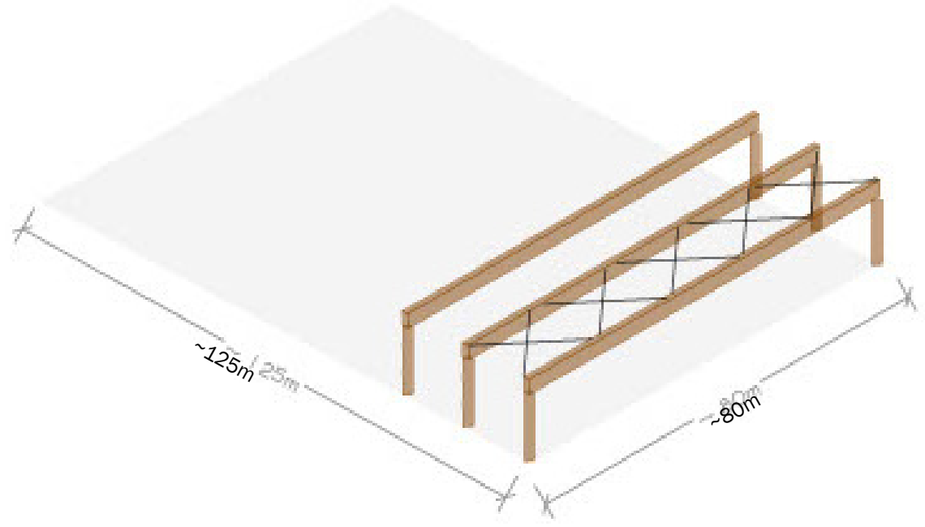
5. The truss elements are raised in the vertical plane with a tower crane to facilitate connection and proceed with the assembly process.



6. The remaining two pieces of the truss are brought together for assembly on the ground.



7. The overall truss section is lifted into place and connected to its supporting columns.

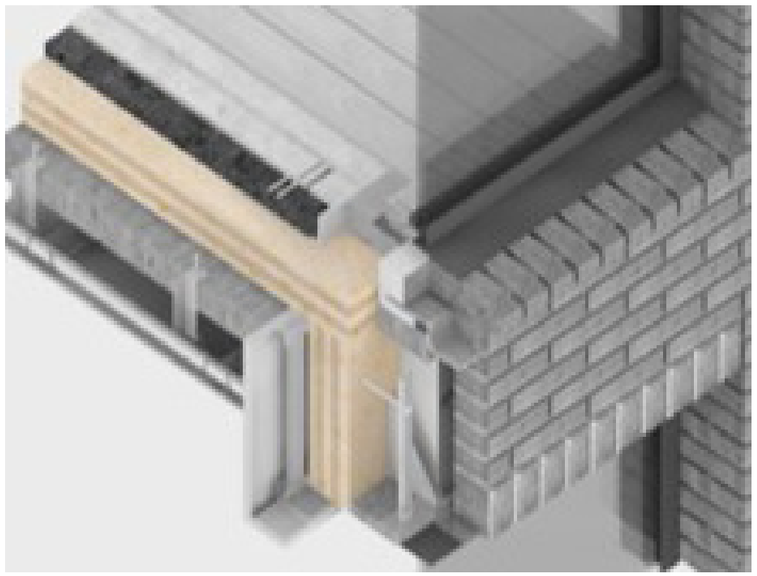


8. Temporary roof btacing is installed to provide torsional restraint in the temporary case until the final roof diaphragm is constructed.

Facade Material:

Timber Structures- Code & Fire Considerations

Applicable design codes for the timber superstructure as per below
EN1995-1-1 Design of Timber Structures; Common rules and common rules for buildings
EN1995-1-2 Design of Timber Structures; Structural fire design
Within EN1995-1-2 there are two basic approaches to protect a structure from fire, either of which may be employed here
Insulation or Encapsulation - typically achieved with gypsum plasterboard
Sacrificial Exposed Timber - Structural timber chars at a predictable rate when exposed to fire. The surface initially burns creating a layer of char, which has insulative properties comparative to those of the traditional gypsum layer. Structural members are designed to allow for a layer of char to develop in the case of a fire, whilst maintaining structural stability throughout.



Hempcrete is a natural composite formed from a blend of lime and hemp. Lime is mixed with hemp hurds, which are grown without pesticides and with minimal water. This lime-hemp blend results in lightweight, eco-friendly concrete. Hempcrete can be used to build self-insulating walls, roofs, screeds, and façades. Hempcrete is ideally suited as a non-load bearing material cast around the primary structural frame and is well suited for use on the façade of the building perimeters.

Benefits

- Excellent thermal and acoustic insulation properties
- Breathable material, allowing moisture to pass through without trapping it
- Hempcrete is a carbon-negative material. During its growth, hemp absorbs CO2 from the air, retaining the carbon and releasing oxygen. According to EN 15804 calculations, hempcrete stores about 90% more CO2 than is released during production, resulting in a total carbon emission of –90%.

"Obolin," located at the Art Omi Sculpture and Architecture Park in upstate New York was fabricated from on sheet of CLT using a 7-axis robotic arm. The sculpture marks the exact locations of the sun during the Equinox and Summer and Winter Solstices. The materiality is the same as our proposed Wine Hotel.

1. Introduction

The Expo Albania sustainability narrative has been developed to maximise the development's potential to address the prioritization of sustainable design principles for the project. The strategy demonstrates a high level of ambition for sustainability with a trajectory towards a regenerative scheme with ecological gain. As a result, exceeding expectations for biodiversity and local energy generation is being emphasised on the site.

2. Proof of Concept

Sustainability within the built environment has become increasingly important in the recent decades. Measures to reduce the whole life carbon of the building are explained at a high level below.

2.1 Climate of the Expo

The Expo is in the capital city of Tirana, Albania with temperatures ranging from 32.7°C in summer and 1.7°C in winter.

2.2 Passive design

To create a "net-zero Exhibition centre", passive design considerations must be considered to reduce the buildings energy load. This in turn can lower the buildings operational and embodied carbon.

Examples of passive design measures that will be implemented on the site include:

- Considering orientation and form with relation to daylight and solar gain.
- Use external shading to reduce solar gain in buildings e.g., landscaping.
- Optimise space allocation for natural ventilation where possible. Include windows that can fully open (safely) and vents.
- Optimise façade performance – e.g., U-values, air tightness.
- Make use building thermal mass. Expose structure to absorb heat during day and release heat at night when cooler.
- Landscaping to provide shading / reduce solar load / improve insulation /create breezes.

2.3 Active measures

Where passive design measures are not possible, efficient active measures can be utilised to heat, cool, ventilate and light the buildings on the site.

2.3.1 Heating Ventilation & Air Conditioning (HVAC)

- All electric based heating & cooling system – VRF or hydronic system to be considered vs. all air system. – consider embedding pipes into the slab for radiant heating/cooling.
- Air side heating/cooling recovery – ventilation systems with heat recovery can be used on the it site to avoid wasting heat/coolth.
- Energy efficient ventilation design – Low specific fan power (SFP) air handling units (AHUs) should be selected where feasible.
- High efficiency plant.
- Size plant appropriately – no oversizing.
- Pipework / ductwork sized for low pressure drop.

2.3.2 Lighting

- Expo Lighting – An assessment of the indoor environmental quality is essential to ensure the levels of natural and indirect lighting are sufficient for the planned exhibits.
- Low energy LED lighting in conjunction with daylight/absence/occupancy controls.

2.3.3 Electrical

- Energy management / BMS system - monitor and control the usage of the systems/lighting within the buildings to allow for a more controlled energy saving method. – smart metering.
- Cables sized for low voltage drops/ low energy losses
- High efficiency electric motors
- Low loss transformers / UPS systems
- Where required, Lifts with high efficiency motors and regenerative breaking
- Energy Star rated computer equipment, photocopiers, etc.
- Auto shut down facility.

3. General Sustainability

3.1 Whole life carbon

Whole life carbon (WLC) emissions are the entire amount of carbon produced by any built asset. To achieve a "carbon-neutral Exhibition centre" it is important to understand the WLC implications of the design and minimise its carbon impact.

WLC emissions result from the form, materials, construction methods, and operation of a building over its entire life, including its demolition and disposal. To understand a project's total impact, we must assess both the anticipated operational and embodied emissions (defined below) over the whole life of the asset. To reduce lifetime emissions, WLC assessment needs to be part of a building or asset's initial design specification so that clients and investors and designers can agree on the most sustainable solution.

- Operational carbon is the emissions generated by a building's heating, cooling, ventilation, and overall energy use, as well as water use.
- Embodied carbon emissions are associated with materials and energy used to construct and maintain the building throughout its lifespan (material extraction, manufacture, transportation, construction, maintenance, replacement, demolition, and end of life).

3.2 Circular economy

A circular design framework enables you to futureproof your project. Developed by Arup and the Ellen MacArthur Foundation, the Circular Building Design Toolkit brings together strategies, case studies and tools for designing more circular buildings, meaning reduced waste and carbon for a healthier planet and healthier people. The principles of the Circular Economy have been translated into a prioritised set of strategies and actions relevant for real estate projects. These include:

- Build nothing – Refuse new construction where possible.
- Building for long term value – Increase building utilisation, design for longevity, adaptability, and disassembly.
- Build efficiently – refuse unnecessary components and increase material efficiency.
- Build with the right materials – reduce the use of virgin materials, reduce the use of carbon intensive materials and design out hazardous/polluting materials.

Further details on the strategies under this framework can be found in the Circular Buildings Toolkit.

3.3 Renewable Energy

To improve energy efficiency and reduce operational carbon emissions on site, considerations must be made into the integration of renewable energy sources, implementation of energy storage, and targets to be set to achieve certain standards / certifications. One such method of this is to increase the proportion of renewable energy supply on-site. A target for this project could be to serve the building entirely by on-site or near-site renewable technologies such as:

- Photovoltaics – There is potential for roof mounted, ground mounted or building integrated (e.g., building façade) photovoltaic (PV) systems on the site. PV shingles are a prominent feature of the Architectural design for the Expo roof. Albania has a high solar energy potential for solar thermal and solar power.
  - PV energy could be considered for electric vehicle charging for staff cars, electric bicycles / scooters.
- Solar thermal – System with a buffer tank per building for heated water storage. To be considered in conjunction PV strategy mentioned above.
  Air source heat pump – Electrification of heat using energy from the air. A centralised ASHP system with high coefficient of performance (COP) can be utilised to meet the heating and cooling needs of the scheme. ASHPs can be located on the roof of the new buildings in the development, with a heating/ cooling pipework distribution serving all buildings via the new below ground spaces.
- Albania benefits from a large proportion, >90%, of its electricity power being generated by hydroelectric power stations, a renewable energy source, making an all-electric design preferable for the scheme. Electricity should be used rather than gas for any cooking in the building.

Other technologies which were considered but deemed not viable for Expo Albania at this stage include:

- Ground source heat pump (GSHP)/Geothermal deep well – Geotechnical assessment, permissions, and environmental constraints are required on site to determine the viability of GSHPs.
- Wind power – could be generated by either micro wind turbines attached to the roof of each building, or standalone mast-mounted wind turbines. The nature and location of the site must be considered to evaluate whether these wind power options would be feasible.
- Water source heat pump – Potential of exploration into WSHPs should there be a local body of water in proximity to the site. Water quality assessment, permissions, and environmental assessments are required on site to determine viability.
- Biogas fuel heating with combined heat and power (CHP) – Heat and power generation via anaerobic digestor and centralised CHP plant. Viability assessment required.
- District heating – District heating from potential waste heat sources to be explored.

3.4 Water

Conservation of water is the overall objective for the project. Through precautionary measures, water can be conserved in multiple areas. Reduction in water waste can be accomplished through effective engineering systems and designs, and adjustments in human behaviour. The impacts of the reduction in wastewater are vital.

3.4.1 Water Use

The most simple and effective method to conserve water and prevent water waste is to minimise the amount of water used. This can be complete through actions such as those listed below:

- Install water-efficient fittings and fixtures – such as low-flow taps, waterless urinals and low-flush toilets.
- Implement micro-irrigation – which is an irrigation method with lower water pressure and flow that uses 20 50% less water than conventional sprinkler systems (US EPA).
- Install water metering and submetering in all possible spaces to enhance water consumption monitoring and leak detection and repair.
- Incorporate water usage reduction – as a key project design component as part of new buildings and retrofits.
- Engage staff and programme participants – in responsible water usage and water consumption reduction at a building level and beyond by providing water consumption information and inviting inquiry and feedback.
- Minimise potable water use – by implementing rainwater harvesting systems.

3.4.2 Stormwater/Rainwater

- Discharge to ground – (deep borehole soakaways) for all storm events up to two-year return period. This leads to significant savings in attenuation tanks/ excavation and export of contaminated land and reduction of stormwater run-off to public sewers.
- Utilise rainwater harvesting – such as greywater for WCs, to reduce stormwater run-off to public sewers, reduce potable water demand and reduce irrigation demand.
- Integrate Sustainable Urban Drainage System (SuDS) – features with landscaping strategy, where suitable, using elements such as green roofs, rain gardens, permeable paving, bioretention systems and Stockholm tree pits. This leads to a reduction of stormwater run-off to public sewers, reduction in irrigation demand and water treatment/quality benefits.
- Complete investigations into the land – to obtain information on existing wells or possible water sources.

3.4.3 Resilience

- Build resilience into water storage systems.
- Promote built (grey) and natural (green) flood protection infrastructure – to protect buildings by reducing or eliminating the impact of fluvial, pluvial, reservoir and coastal flooding.
- Perform routine maintenance and upgrade of water infrastructure – to reduce likelihood of failure.

3.4.4 Water collection & reuse

- Rainwater harvesting/capture and storage – Rainwater harvesting system for use with WCs in buildings where appropriate. Use of re-cycled filtered rainwater from hard-standing roof areas to reduce the reliance on the public mains.
- Indoor water reuse system – The recycling of water from a variety of sources to reuse in another setting. For example, later used for agriculture, toilet water and irrigation etc.
- Outdoor potable water use – On-site irrigation may not be required, but where required potable water use should be reduced or eliminated. If irrigation should be required, the concept of reuse should be the first protocol considered.
- Sustainable Drainage Systems (SuDS) – Involves the leverage of the on-site water strategy to support biodiversity. This is explained in further detail in the biodiversity section.

3.4.5 Water storage & irrigation

Irrigation should be avoided or limited at all costs. The water retained or in excess that is held in the water storage can be used as a recyclable source for the surrounding land. The water storage via artificial or nature-based solutions with the goal of slowing runoff, moving, and using water from viable sources.

3.4.6 Leak detection

A form of water conservation. To avoid wastewater & the need for extra water treatment as a result.

3.5 Biodiversity

Biodiversity is the variety of life on earth in all its forms. It is the key resource upon which all communities and future generations depend, and it underpins the health of the planet. A further decline in biodiversity would have detrimental impacts on not only the human race but the world itself. As a result, small measures made to not only sustain biodiversity, but to regenerate it on the site would assist in the global responsibility for restoring the wildlife.

3.5.1 Sustainable Drainage Systems (SuDS)

Involves the leverage of the on-site water strategy to support biodiversity. There is huge potential to maximise the use of SuDS features throughout the Expo site. Examples of such features include:

- Green/blue roofs – These are roofs that are adapted or designed to support plants. They are areas of living vegetation, installed on the top of buildings for a range of reasons including visual benefit, ecological value, enhanced building performance and the reduction of surface water run-off.
- Bio-retention planters – these are used to collect stormwater/surface water run-off. They are often vegetation planted between solid vertical walls. This allows for large quantities of water to be retained and stored due to the depth of the planters/its roots.
- Tree pit systems – Tree pits are a form of bioretention system that collect and soak roof run-off into soil and drainage layers in the tree pit. They enable SuDS when space is limited or only available close to buildings. Tree pits attenuate surface water runoff underneath by utilising the void within the root zone of each tree. The SuDS tree pits will be provided with drain down pipes which will convey flows downstream.
- Swales – Swales are shallow, flat bottomed, vegetated open channels designed to convey, treat, and often attenuate surface water run-off. They can enhance the natural landscape and provide aesthetic and biodiversity benefits. They are designed to slow the water thereby facilitating sedimentation, filtration through the root zone and soil matrix, evapotranspiration and infiltration into the underlying soil.
- Dry Detention Basins – Detention basins are surface storage basins or facilities that provide flow control through attenuation of stormwater runoff. They also facilitate some settling of particulate pollutants.

3.5.2 Nature Based Solutions

Nature based solutions is the integration of the building with the natural environment. It involves creating accessibility for nature to survive in parallel to the building's façade. An example of nature-based solutions includes the addition of plants to the building's façade, green roofs, green walls and planting trees. These solutions assist in minimising the negative impact the built environment has on biodiversity.

3.5.3 Introduce pollinators and integrate new interventions

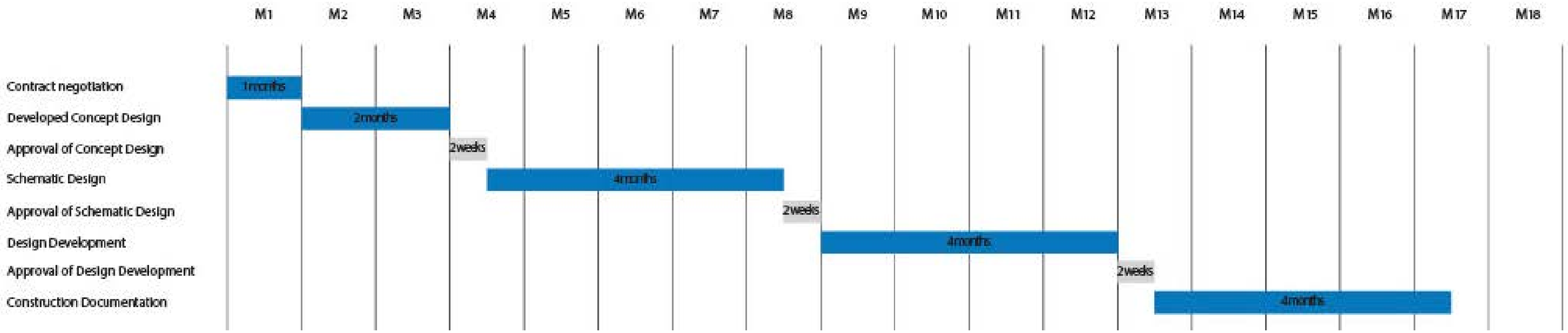
The increase of the bee count and in turn the flora & fauna in surrounding areas. Bird & bee boxes to be considered.

Appendix of Technical Documents

Roberto Bannura, Partner in Charge

Roberto Bannura, Partner in Charge Steven Holl, Principal and Project Designer

Design work plan



It is our understanding that the project might be separated into multiple development stages but our assumptions is that the design scope of work for the entire project will be treated as a single design effort. We assume that (following mobilization) each phase will commence immediately after submission of the preceding phase subject to Clients written approval. These design management strategy guarantees the cohesive design and resolution of all issues in one comprehensive process, culminating in reliable design documentation process. In SHA's and AT4's combined experience, this strategy has proven to be the most soft cost and time effective strategy for phased projects.

The above schedule is based on the assumption that the deliverables in each stage meet the Client’s requirements that are pre-defined and agreed by both parties prior to each submission, following the standard of detail according to the usual market standards in Albania. The Client will provide timely approvals within the scheduled time frame.

Agnieszka Kurant- Previous Work

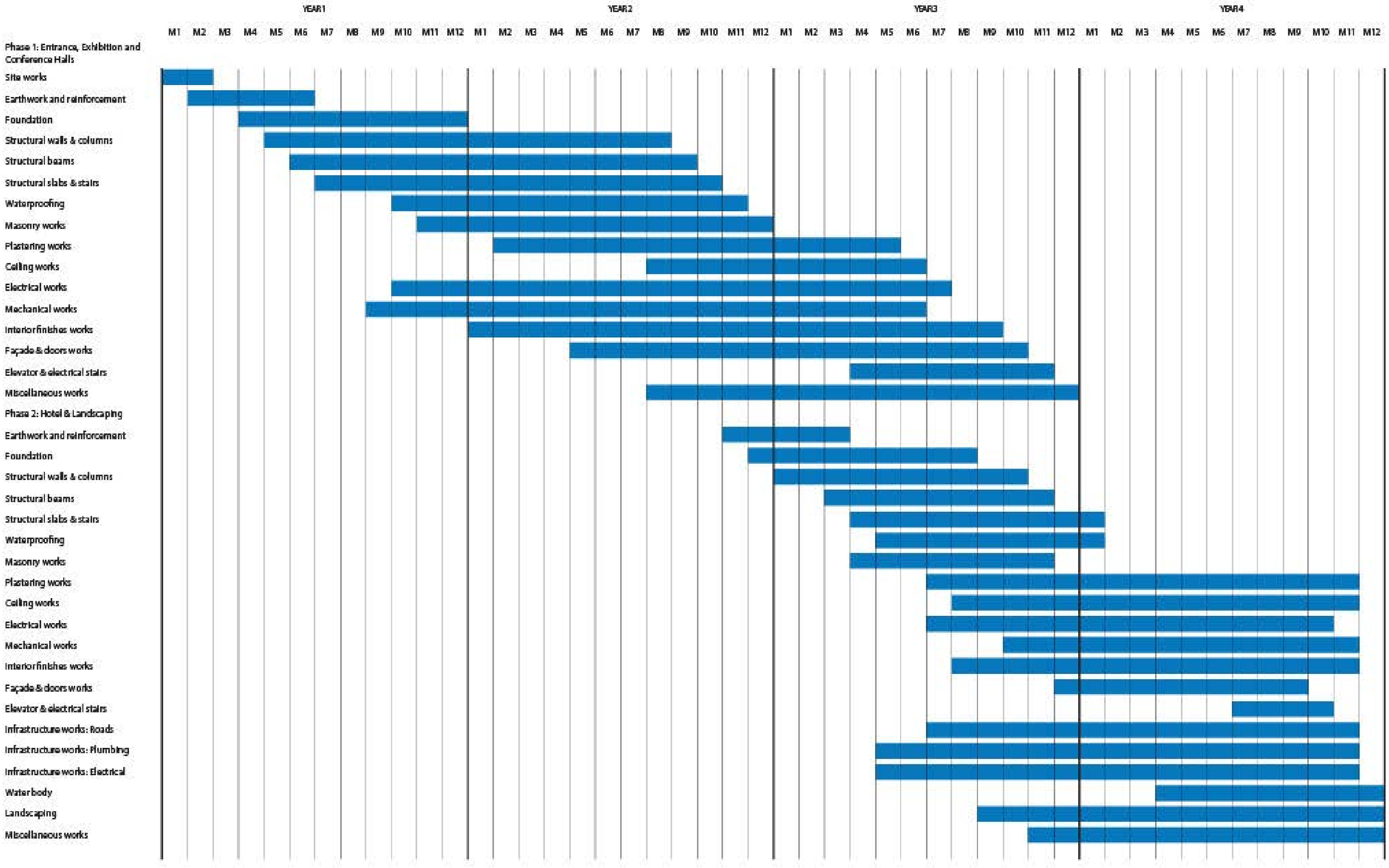
Post-Fordite, Colorful Amalgamated Rock

Agnieszka Kurant is a conceptual artist who investigates collective intelligence, nonhuman intelligences (from microbes to Artificial Intelligence), and the future of labor and creativity. Her works oscillate between the digital, mineral and biological, between natural and artificial, life and non-life, sentient and nonsentient. Kurant often produces unstable, evolving forms, which emerge out of multitudes of agencies: millions of molecules, microbes, animals or humans. She often collaborates with scientists and academics, from biologists and physicists to computer engineers and anthropologists. The artist has previously crowdsourced her sculptures, paintings and installations to human and nonhuman agents: termite colonies, bacterial colonies and millions of members of social movements. Her works question the ideology of individualism and propose to rethink the human and more-than-human worlds from the point of view of plural subjectivity and collective agency.

A.A.I., The Colorful Termite Mounds

Chemical Garden, Colorful Aquarium
Nonorganic Forms

Implementation plan



Preliminary Cost Estimation

Blue- Phase 1
Red and Green- Phase 2

PRELIMINARY DESIGN			
EXPO ALBANIA			
Item	**Description**	**Total / ALL**	**Total / €**
UNDERGROUND CONSTRUCTION — PHASE 1			
	Area = 23,336 M²		
1	STRUCTURE AND REFINISHING WORKS	1,164,933,120.0	11,201,280.0
2	MECHANICAL SYSTEMS WORKS	145,616,640.0	1,400,160.0
3	ELECTRICAL SYSTEMS WORKS	145,616,640.0	1,400,160.0
	TOTAL	**1,456,166,400.0**	**14,001,600.0**
EXHIBITION HALL & ENTRANCE HALL — PHASE 1			
	Area = 11,873 M²		
1	STRUCTURE AND REFINISHING WORKS	864,354,400.0	8,311,100.0
2	MECHANICAL SYSTEMS WORKS	222,262,560.0	2,137,140.0
3	ELECTRICAL SYSTEMS WORKS	197,566,720.0	1,899,680.0
	TOTAL	**1,284,183,680.0**	**12,347,920.0**
CONFERENCE HALL — PHASE 1			
	Area = 2,313 M²		
1	STRUCTURE AND REFINISHING WORKS	168,386,400.0	1,619,100.0
2	MECHANICAL SYSTEMS WORKS	43,299,360.0	416,340.0
3	ELECTRICAL SYSTEMS WORKS	38,488,320.0	370,080.0
	TOTAL	250,174,080.0	2,405,520.0
TOTAL PHASE 1		**2,990,524,160**	**28,755,040**
HOTEL — PHASE 2			
	Area = 4,717.5 M²		
1	STRUCTURE AND REFINISHING WORKS	392,496,000.0	3,774,000.0
2	MECHANICAL SYSTEMS WORKS	88,311,600.0	849,150.0
3	ELECTRICAL SYSTEMS WORKS	98,124,000.0	943,500.0
	TOTAL	**578,931,600.0**	**5,566,650.0**
LANDSCAPING — PHASE 2			
	Area = 47,531.5 M²		
1	ROAD WORKS	49,923,900.0	480,037.5
2	GREENING	39,475,280.0	379,570.0
3	REFLECTING POOL	8,168,160.0	78,540.0
4	HYDROTECHNICAL + ELECTRICAL INFRASTRUC-TURE	394,680,000.0	3,795,000.0
	TOTAL	**492,247,340.0**	**4,733,147.5**
TOTAL PHASE 2		**1,071,178,940**	**10,299,798**
TOTAL PHASE 1 + 2		**4,061,703,100**	**39,054,838**

Cost of Art Work not included and subject to further consultation with fabricators in following stages of the project.

Technical specifications

Structure

CLT - Cross Laminated Timber

- Lightweight roof is key design consideration, planting/green roof to be minimal.
- Trusses will be glulam and could potentially include tension members as diagonals to reduce weight/ cost.
- Transverse spacing of trusses will be at approximately 10 metres and overall lateral stability of the roof provided by steel bracing elements).
- All CLT structures shall be fire resistant according to FLS engineer indications.
- All visible CLT structures shall meet industry-standard finishes and tolerances.

Hemprete

- Storage Store hempcrete materials, including hemp core and lime, in a dry environment, protected from direct sun exposure. It is critical that the lime binder is stored in a 100% dry location.
- Safety — Wear protective clothing, gloves and eye protection to avoid injury when handling, mixing and during installation.
- Preparation — Wall sizing to be coordinated with structural engineer.
- Mixing — Mix hemp & lime binder according to structural enginners indications.
- Forming — The form boards should be secured to the structural framing at the desired distance from the frame using structural screws.
- Pouring — Hempcrete should be poured into the form boarded cavity according to structural engineers specs. The material should be leveled out, and then firmly tamped into place using a tamping tool.

Building Services & Sustainability

Passive Design

Examples of passive design measures that will be implemented on the site include:

- Optimise space allocation for natural ventilation where possible. Include windows that can fully open (safely) and vents.
- Optimise façade performance – e.g., U-values, air tightness.
- Make use building thermal mass. Expose structure to absorb heat during day and release heat at night when cooler.
- Landscaping to provide shading / reduce solar load / improve insulation /create breezes.

MEP

- All electric based heating & cooling system – VRF or hydronic system to be considered vs. all air system.
- Air side heating/cooling recovery.
- Energy efficient ventilation design – Low specific fan power (SFP) air handling units (AHUs).
- High efficiency plant.
- Pipework / ductwork sized for low pressure drop.
- Geothermal heating/cooling with integrated radiant system.
- Grey water recycling.
- Rainwater collection.
- Underfloor air distribution system.
- Access flooring for power and data distribution (Grand Hall).

MEP:

- Geothermal heating/cooling with integrated radiant system
- Grey water recycling
- Rainwater collection
- Underfloor air distribution system
- Access flooring for power and data distribution (Grand Hall)

Exterior Spaces

- Reflecting Pool — Black pool plaster on concrete topping, on rigid insulation, over prefab drainage matt, over Sarnafil or equivalent membrane on structure sloped to drain. Toping to be bluestone rounded and sloped into pool to allow freezing.
- Paving on Grade — 50mm local stone on Sarnafil or equivalent waterproofing system on concrete structure where above program.
- Site Stairs — 50mm local stone on Sarnafil or equivalent waterproofing system on concrete structure.
- Landscaped mounds — Rewilded grasses and vineyard as per site plan. Consider allowance for locally sourced urban furniture, children's playground and additional exterior programmatic elements.

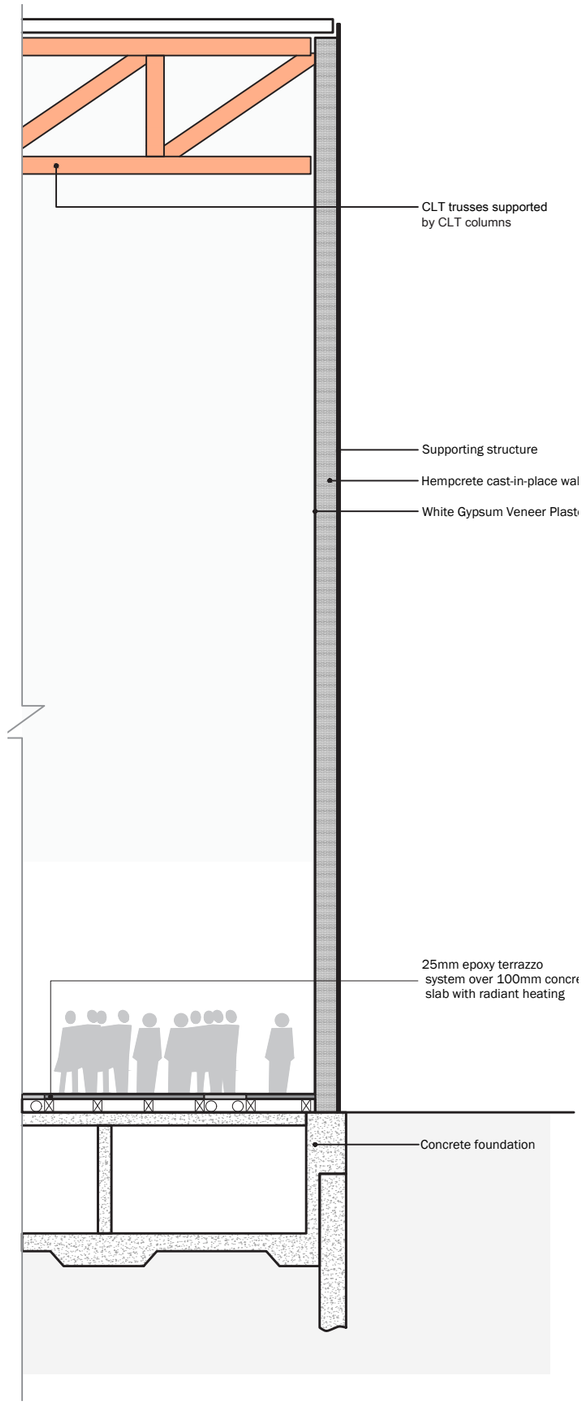
Grand Hall

- Exterior Walls — Hampcrete cast-in-place with charcoal integral color
- Glazing — Clear Double glazed IGUs with aluminum frames. Foldable top-hung doors for segments facing the pond. Hot bent curved glass glazing as required
- Soffits — 5mm thick aluminum, open-joint, mill finish, powder coated
- Guardrails — 19mm clear laminated glass
- Roof — Cold fluid-applied waterproofing with PV cells for solar collection. Skylight segments to be double glazed IGU glass, hot-bent for curved applications

Arrival Hall and Conference Center Volume

- Exterior Walls — See Glazing
- Glazing — Clear and acid-etched Double glazed IGUs with aluminum frames – Foldable top-hung doors for segments facing the pond. Hot bent curved glass glazing as required. Recessed entry vestibule. Laminated acid-etched glass canopy. Frameless revolving doors.

Exhibition Hall



- Soffits: — 5mm thick aluminum, open-joint, mill finish, powder coated.
- Guardrails — 19mm clear laminated glass
- Roof — Cold fluid-applied waterproofing with PV cells for solar collection. Skylight segments to be double glazed IGU glass, hot-bent for curved applications. Bead-blasted stainless steel Roof Flashing.

Interior Spaces:

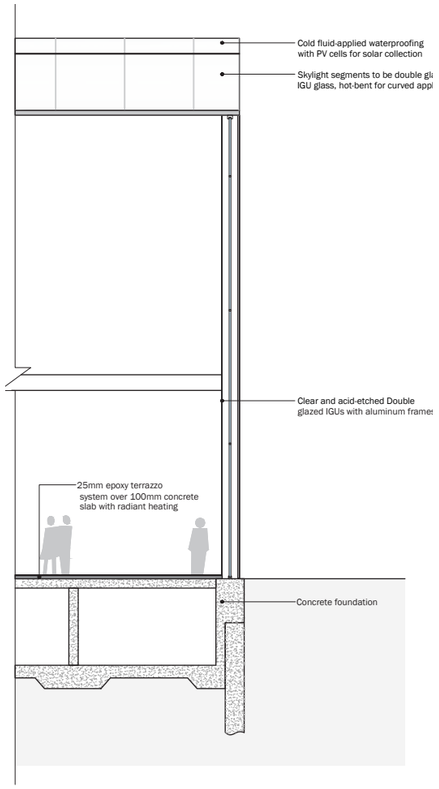
- Floors — 25mm epoxy terrazzo system over 100mm concrete slab with radiant heating.
- Walls — Interior GWB with White Gypsum Veneer Plaster and acoustic plaster where required
- Ceilings — Exposed CLT structure and acoustic plaster under roof slab segments (Grand Hall). Acoustic Plaster under roof slab segments (Arrival and Conference Halls)
- Doors — Glass frameless doors
- Stairs — Architectural stairs with white terrazzo steps and bead-blasted stainless steel handrails with stainless steel cable.
- Ramps — Architectural ramps with white terrazzo topping and black steel handrails with stainless steel cable.
- Elevator: Locally available and same type and capacity for similar projects in the region

Service Support Spaces:

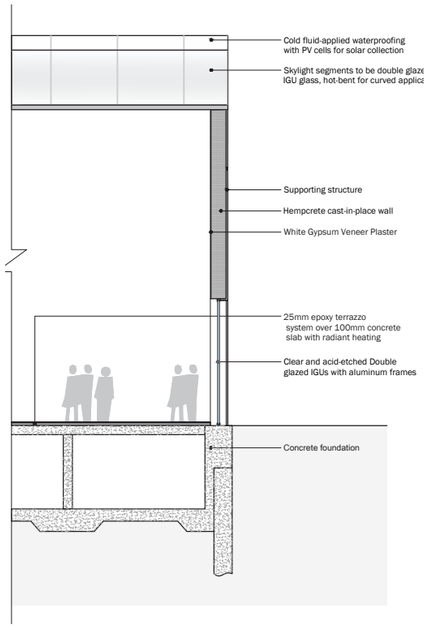
- Floors — Polished Concrete.
- Walls — Painted to all unfinished surfaces.
- Ceiling — Exposed concrete.

Bathrooms/Preparation areas:

- Floors — Custom tiles over 100mm toping slab with radiant heating/cooling.
- Walls — Custom tiles.
- Ceiling — Painted gypsum wall board.



Conference\Hall, Section Diagram



Entry Hall, Section Diagram