



ARCH 402
SPRING 2019



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IHSAN DOGRAMACI BILKENT UNIVERSITY
DEPARTMENT OF ARCHITECTURE





ARCH 402
SPRING 2019



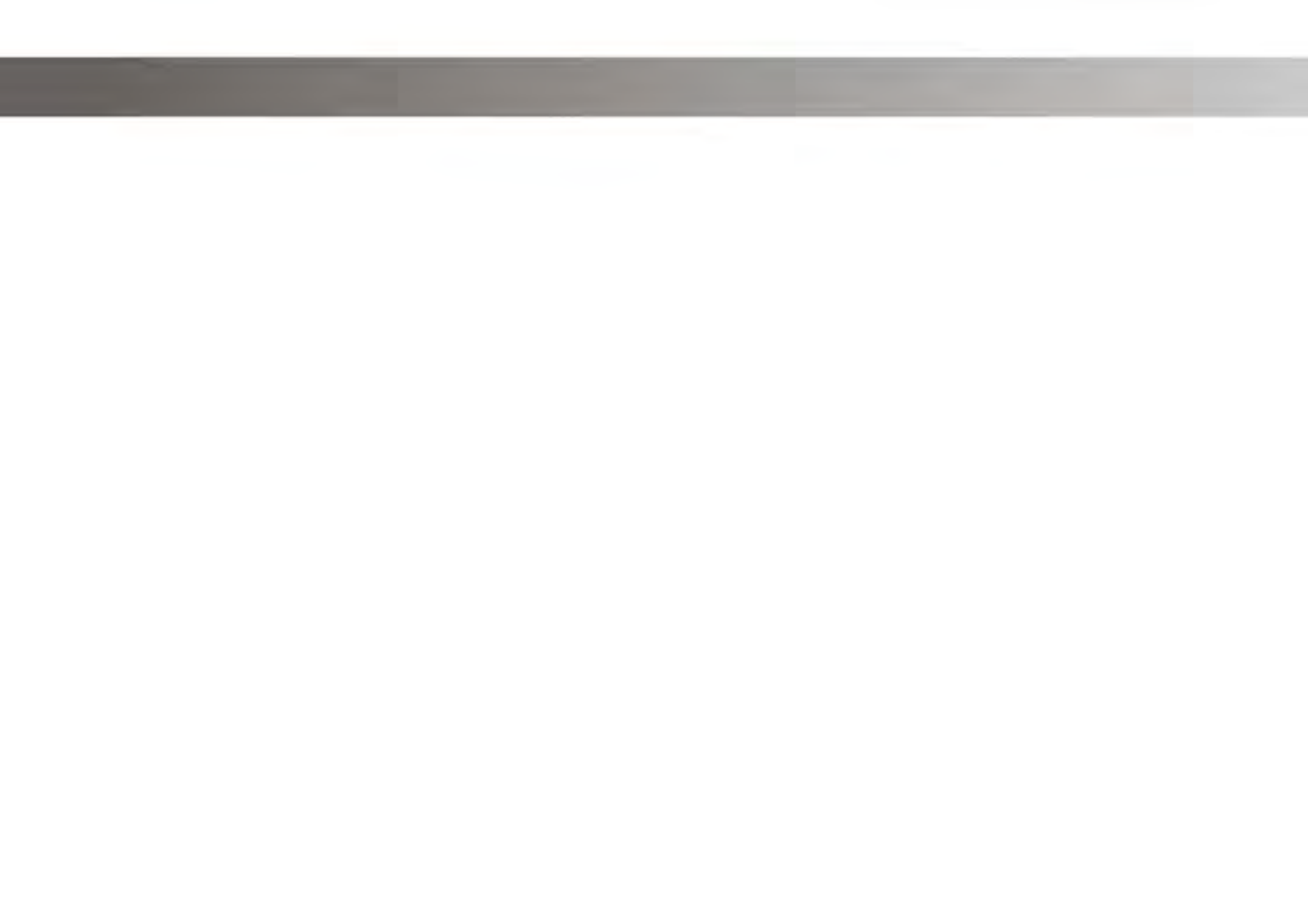
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Site Analysis





Why Do Site Analysis?

Site analysis and data synthesis cannot be separated from the design process as it the first stage of architectural and urban design methodologies. It includes analytic research, the interpretation of the context and its surroundings, and the display of the critical properties of the site. As it is an essential part of the design, the conclusions reached have the potential to generate concepts about the next step. Thus, after the groups were formed, the examination of site conditions had taken place. The survey based data collected within the real life context had led to future stages of physical analysis. Such contents as hydrology, topography, land and building conditions, infrastructure, circulation and cultural characteristics were taken into consideration.

Among the parts of data collection, photographic evidence for future interpretations and made on-site sketches were integrated with the gathered information. In order to get familiar with the local characteristics, not only was Prague 7 inquired, but also the surrounding districts were acknowledged. To add more, since careful observation of the surroundings has the potential to provide design strategies, therefore, during the site trip the following questions were asked: Why is this feature important? What kind of potential does it have? Can any forms be derived from it? Lastly, keeping these questions in mind and evaluating them have brought benefit in the design development. In the following pages, features and characteristics of Prague which established within the presented designs are demonstrated.

Building Conditions



The general condition of the buildings is indicated on the map with the color chart. Brown colored buildings are determined as in poor condition in terms of their physical state and aesthetics. Yellow ones characterize buildings in questionable conditions. The blue tone shows the structures in a good condition, from which some were built considerably recently.



Design conclusions

The protection of buildings may vary according to the land arrangement of each project. It is recommended that those, which are in poor condition, are reorganized, whereas the ones determined to be in good condition, should be kept. However, conservation of the buildings with the questionable condition depends on the scope of the project, the individual design approach of each of the project participants and whether or not is the proposed function more valid and beneficial than in the past.



Viewpoints



8

2

5

3

4

1

6

7

Region 1



Region 2



Description:

- Highways
- Post industrial
- Existing factory
- Old Bridges vs. Modern Bridge
- Traffic
- Pollutants
- Connection to the zoo & Prague 18
- Train & metro station



Region 3



Description:

- Park
- Aquarium
- Sports Arena/Concert Hall
- Lake/Ice skating
- Variety of activities
- High density of people during summer
- Walkable distances



Region 4



Description:

- Post-industrial
- Mixed use buildings
- Medical center
- Bridges
- Strict geometry of grid
- Residential



Region 5



Description:

- Modern buildings
- Archipelago
- Highly polluted (Due to waste products)
- Post industrial
- Potential for greenery

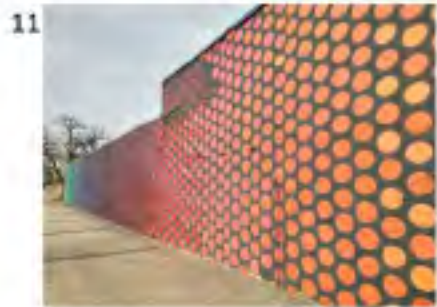


Region 5



Description:

- Tram line is passing through
- Existing bazaar
- Highly polluted (Due to waste products)
- Post industrial
- Mixed use



Region 7



Description:

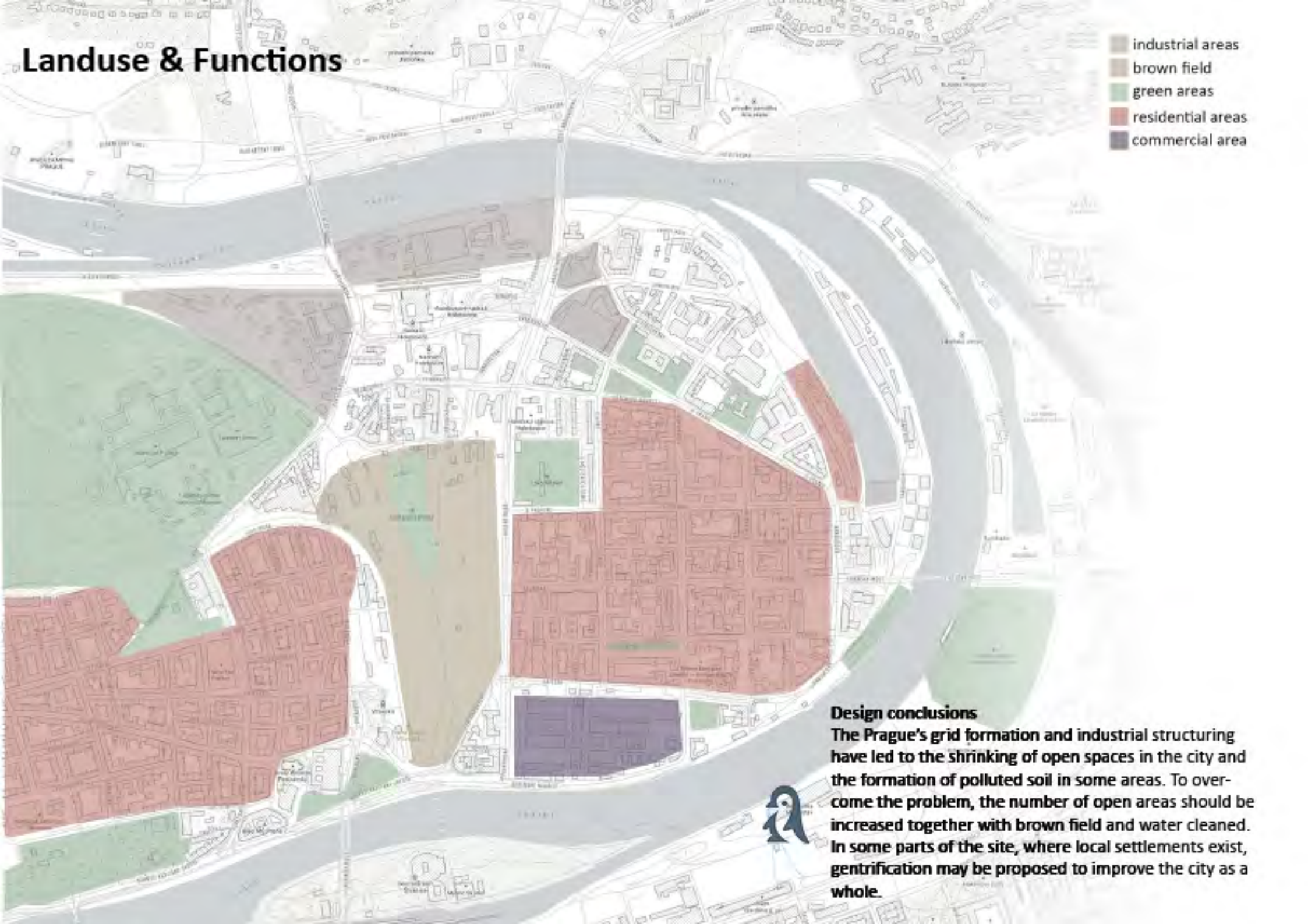
- Sports Facilities
- Island
- Green
- Preferred by locals
- Potential good views
- Connects Prague 1 to Prague 7
- Potential area for swimming/water sport activities

Region 8



Landuse & Functions

- industrial areas
- brown field
- green areas
- residential areas
- commercial area



Design conclusions

The Prague's grid formation and industrial structuring have led to the shrinking of open spaces in the city and the formation of polluted soil in some areas. To overcome the problem, the number of open areas should be increased together with brown field and water cleaned. In some parts of the site, where local settlements exist, gentrification may be proposed to improve the city as a whole.





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Within the terrain, the city layout is a combination of many facilities. Yellow dots represent areas of entertainment and culture, black ones stand for governmental buildings, blues for open spaces, and red marks show residential part.

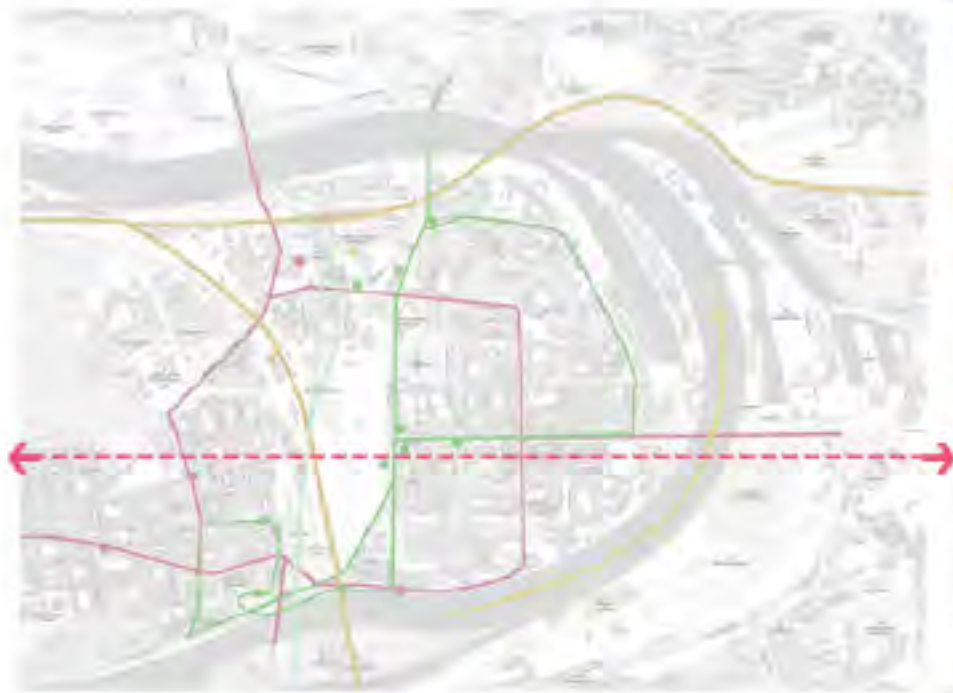
Design conclusions

In order to re-evaluate the existing characteristics in the site, the related features can be linked within each other by the integration of a bigger amount of open spaces. New solutions can also be produced to enable a more efficient use of these spaces.



- health
- sports
- park
- art misc.
- education

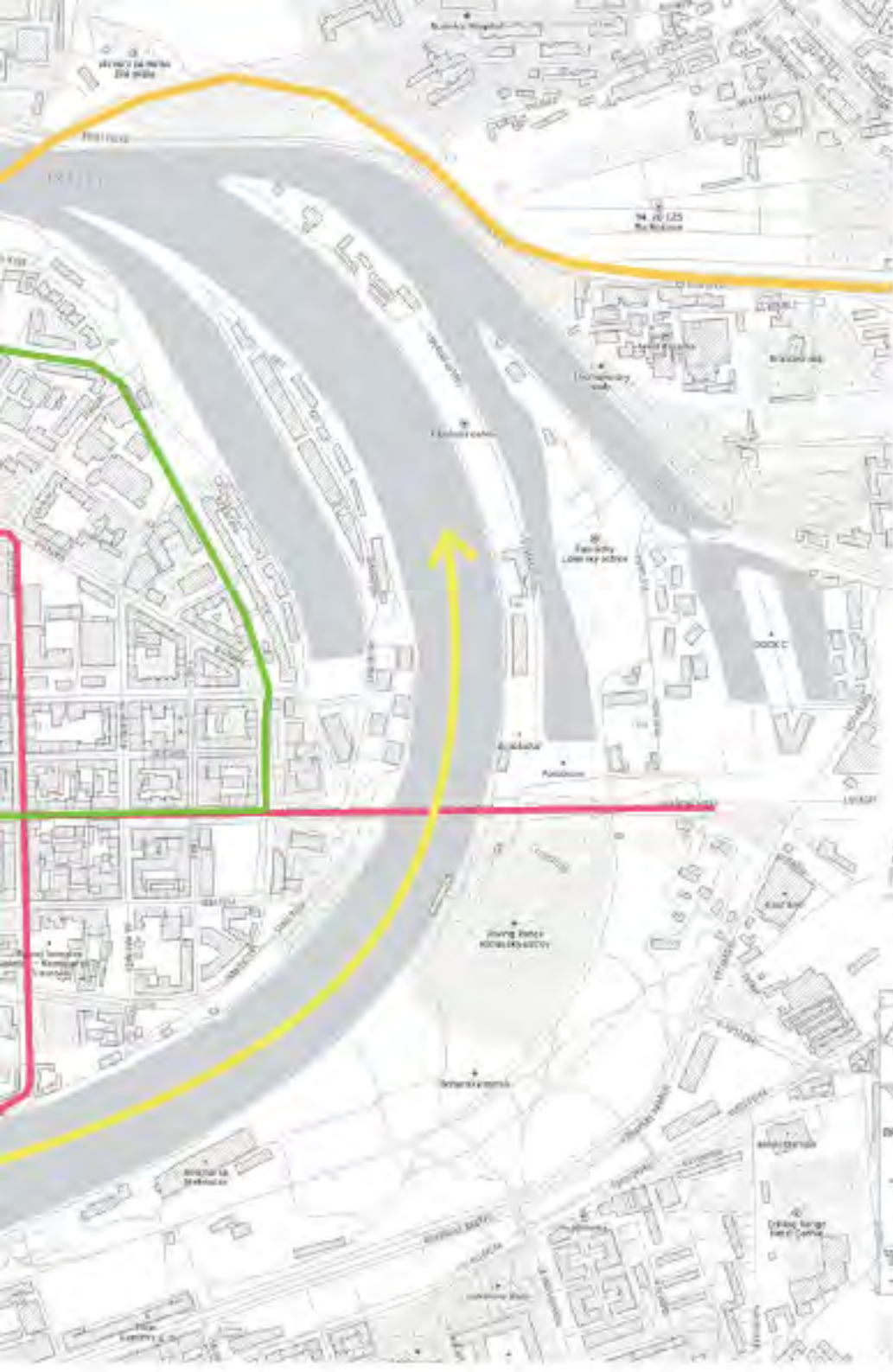
Public Transportation



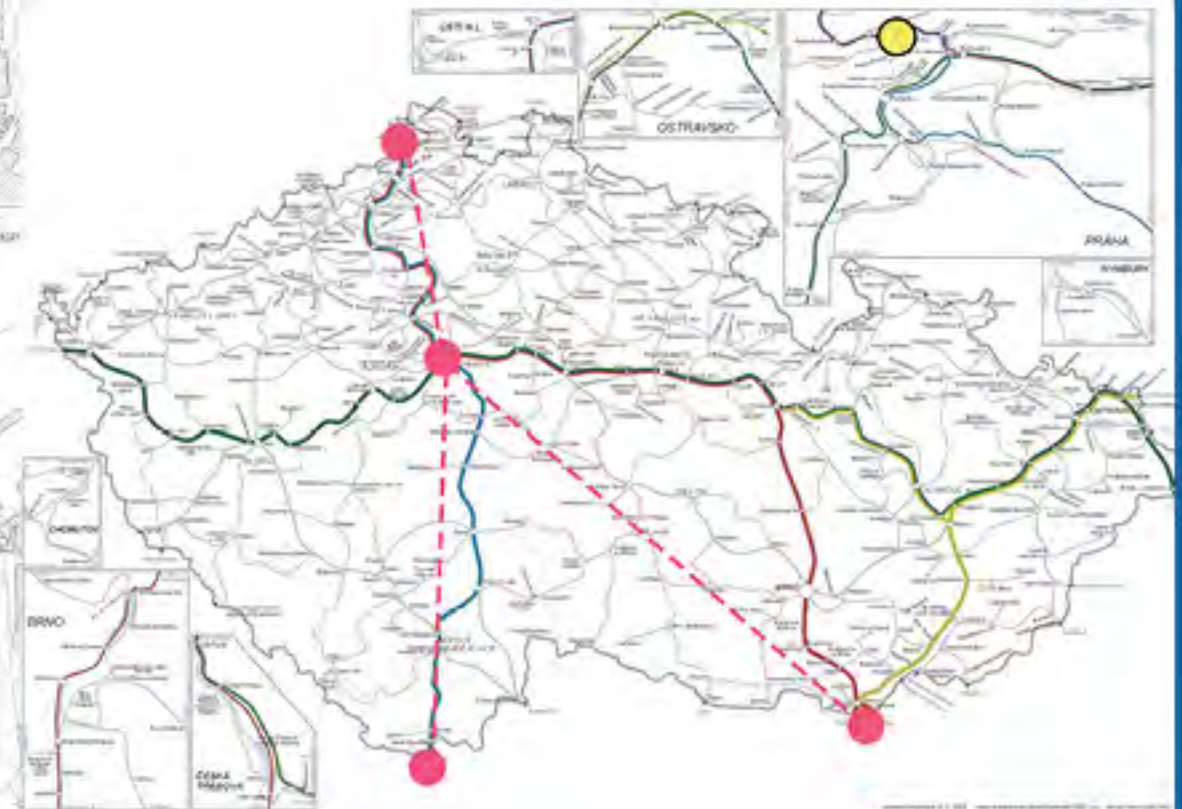
Design conclusions

Since there is no direct connection in terms of transportation between Prague 6-7-8, generating either additional public transport stops or reconsidering the existing ones may improve the communication within the mentioned neighborhoods.





Although there is a developed transportation program in the Prague, transportation lines pass indirectly even within the neighboring destinations (which increases the time travelled). The main roads divide the terrain into several perpendicular parts and provide crossing to the other side of the river with the bridges. However, it is set up in a pattern that does not match the pedestrian ways. Prague 7 train station Nadrazi Holesovice acts as one of the nodal points in linking different regions of Czech Republic. (bottom right diagram)



Private & Pedestrian Circulation

The main roads and pedestrian paths should interact better with each other. As an alternative to indirect roads more direct paths can be proposed, thus, the time spent on travel may be decreased. Pedestrian paths can be proposed for more a walkable riverside and better integrated vacant spaces. Moreover, rather than offering paths based on the existing grid, creating safer and more enjoyable travel experiences will generate a higher standard for living beings within the city life.





Noise Pollution



The sound density in the area, determined by taking into account distance of the places to the roads and the properties of the surrounding buildings. Red areas represent the high noise pollution (the main roads and crowded settlements near it). The level of pollution decreases as the color transits to green. Streets far from roads are marked in green to represent low noise pollution.

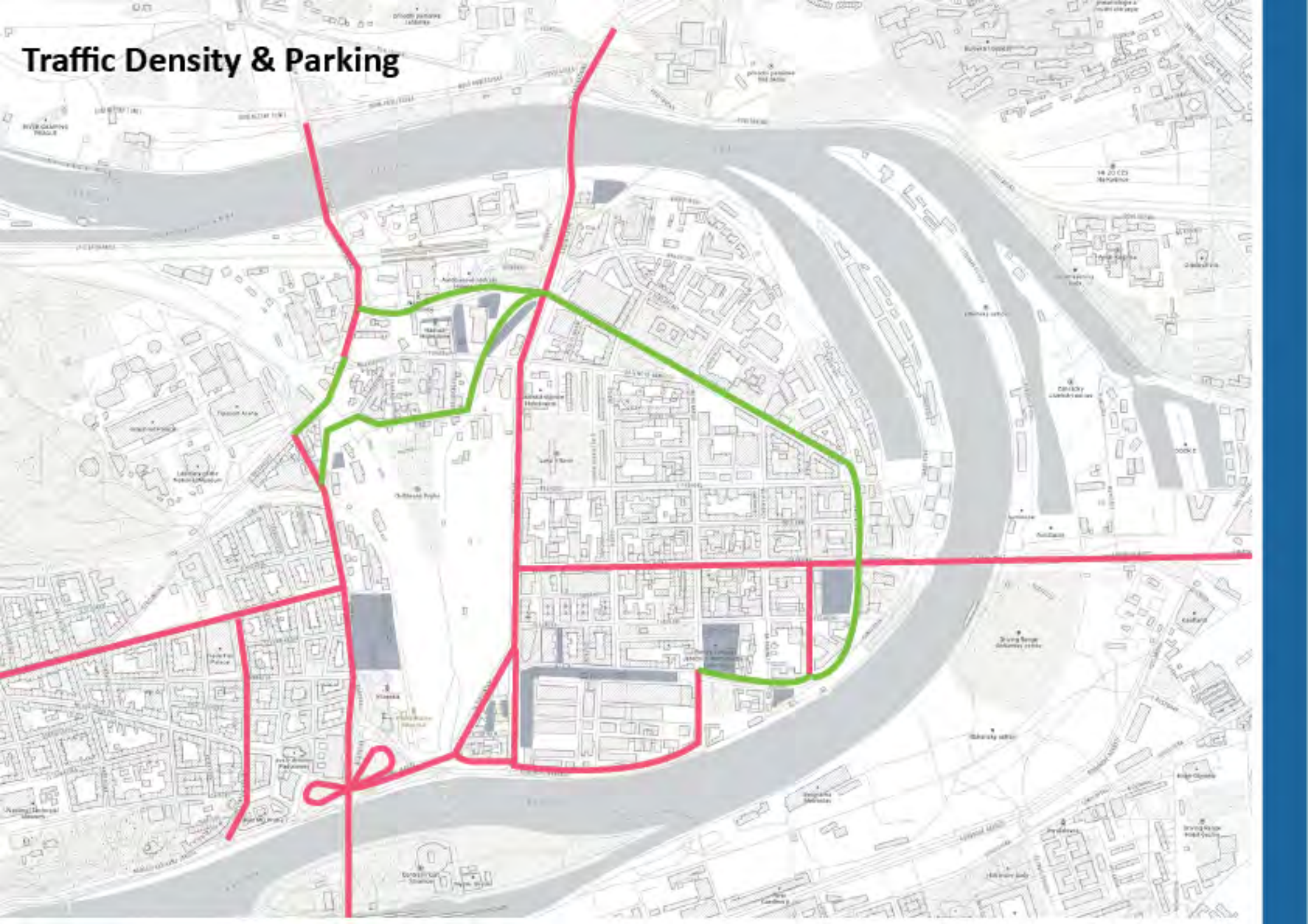
- below 40db
 - up to 50db
 - up to 55db
 - above 75db
- ((())) major noise congestion



Design conclusions

According to the sound pollution map, a layout can be arranged according to the characteristics of the functions and the degree of being affected by sound.

Traffic Density & Parking



Topography

1148 ft

1089 ft

1034 ft

982 ft

933 ft

887 ft

845 ft

806 ft

542 ft

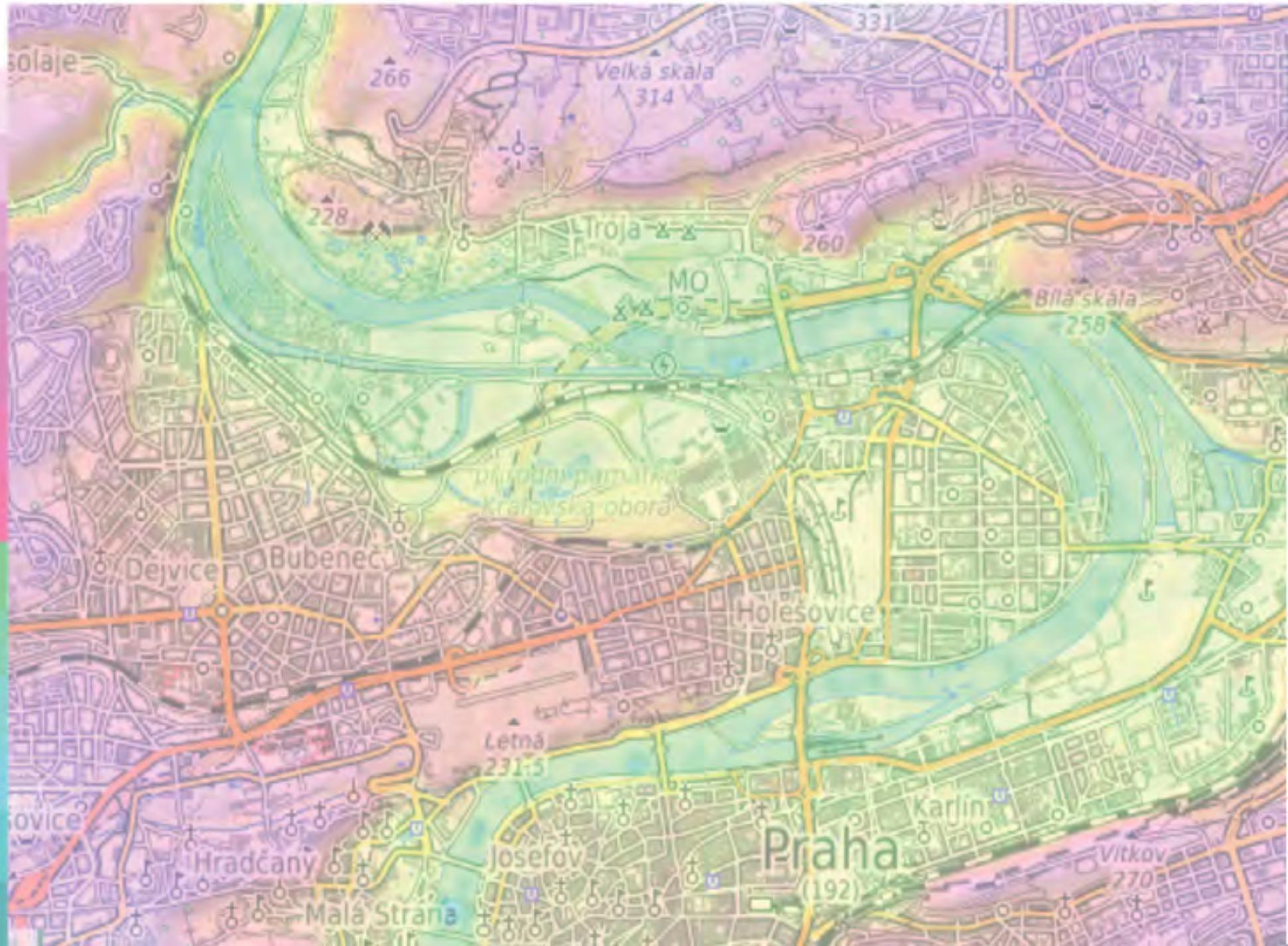
534 ft

528 ft

524 ft

521 ft

519 ft



Flood & Hydrology

Different regions of Prague, including Prague 7, face the problem of annual flooding. The diagrams on the right indicate that the land surrounding Prague 7 is affected by the rise of water levels. The hydrology map (right bottom) shows the direction of the underground water flow.

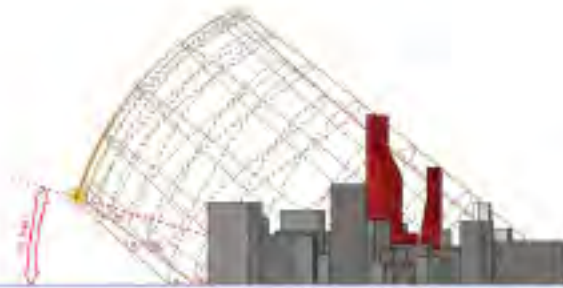
Design conclusions

To overcome the problem, increasing the number of fixed & mobile barriers, closures, pumping systems and safety valves in the canalisation network may be proposed.

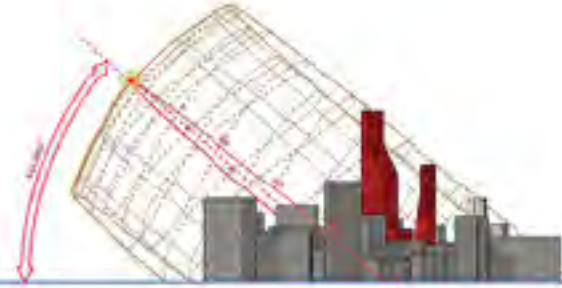
According to the flow of underground water channels, one of the approaches might be to separate Prague 7 into smaller islands with its own drainage system.



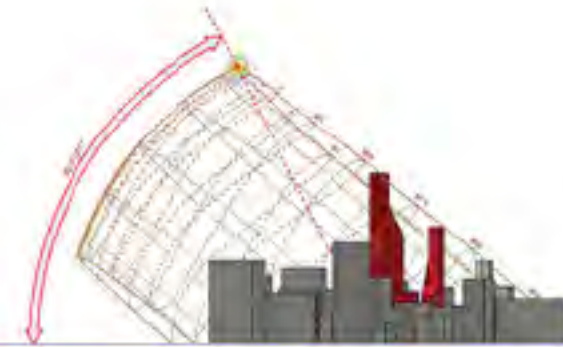
Sun Movement



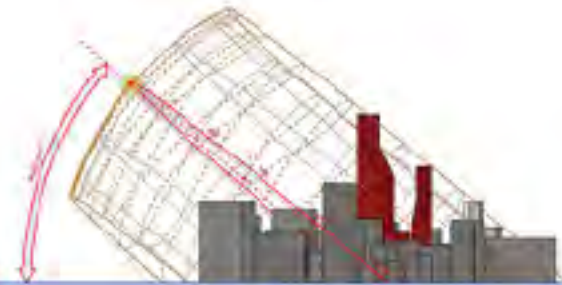
Winter



Spring



Summer

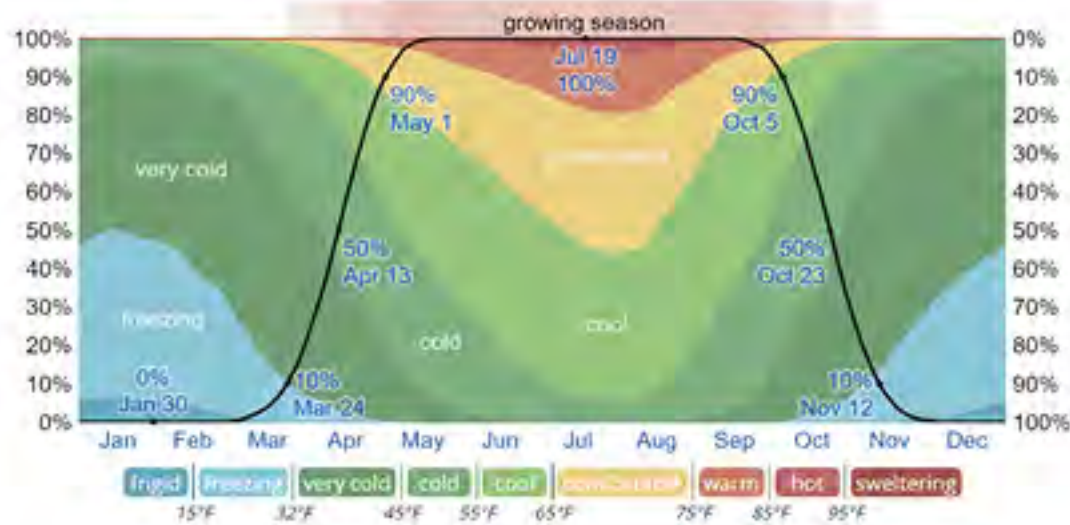


Fall

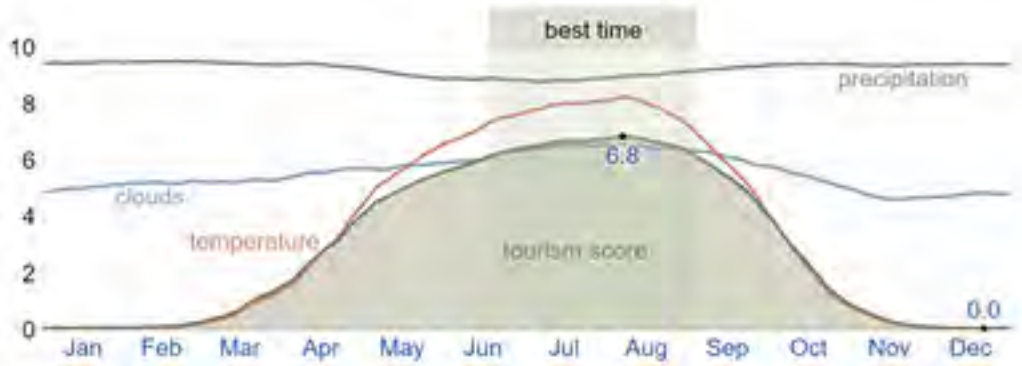
The diagrams show the angle of sun within different seasons. Natural light is one of the most important elements to be considered in an architectural project. The layout, the facade and the interior arrangement of the buildings should be directly proportional to the function of each of the spaces designed. The facade and the roof design techniques can also vary on each side according to the angle

of the sun and the light requirement of a space. The calculation of the shadows (shown in the sun diagram) helps to optimize the amount of dark areas and support the formation of positive spaces.

Temperatures



The Prague's temperature graph represents the variety of temperature in degrees throughout different seasons of the year. It shows that the weather generally stays within the diapason of 0-18 C (32-65 F) in the colder seasons and 18-30 C (65-75 F) in the months with higher temperature range.



Design conclusions
 Due to the conditions stated above, a variety of open, semi-open and closedspaces should be integrated within the design.

Shadow Study



The building levels generally do not exceed 5 stories, therefore, the existing urban developments do not cast dark shadows on the streets or on the neighboring buildings. Which means that light can easily penetrate inside the existing structures during the day.





Design conclusions

While designing and creating a concept lighting strategies have to be carefully developed in order to not only have a self sufficient design with a good quality space but also emphasize the dominating characteristics and various typologies of Prague 7.

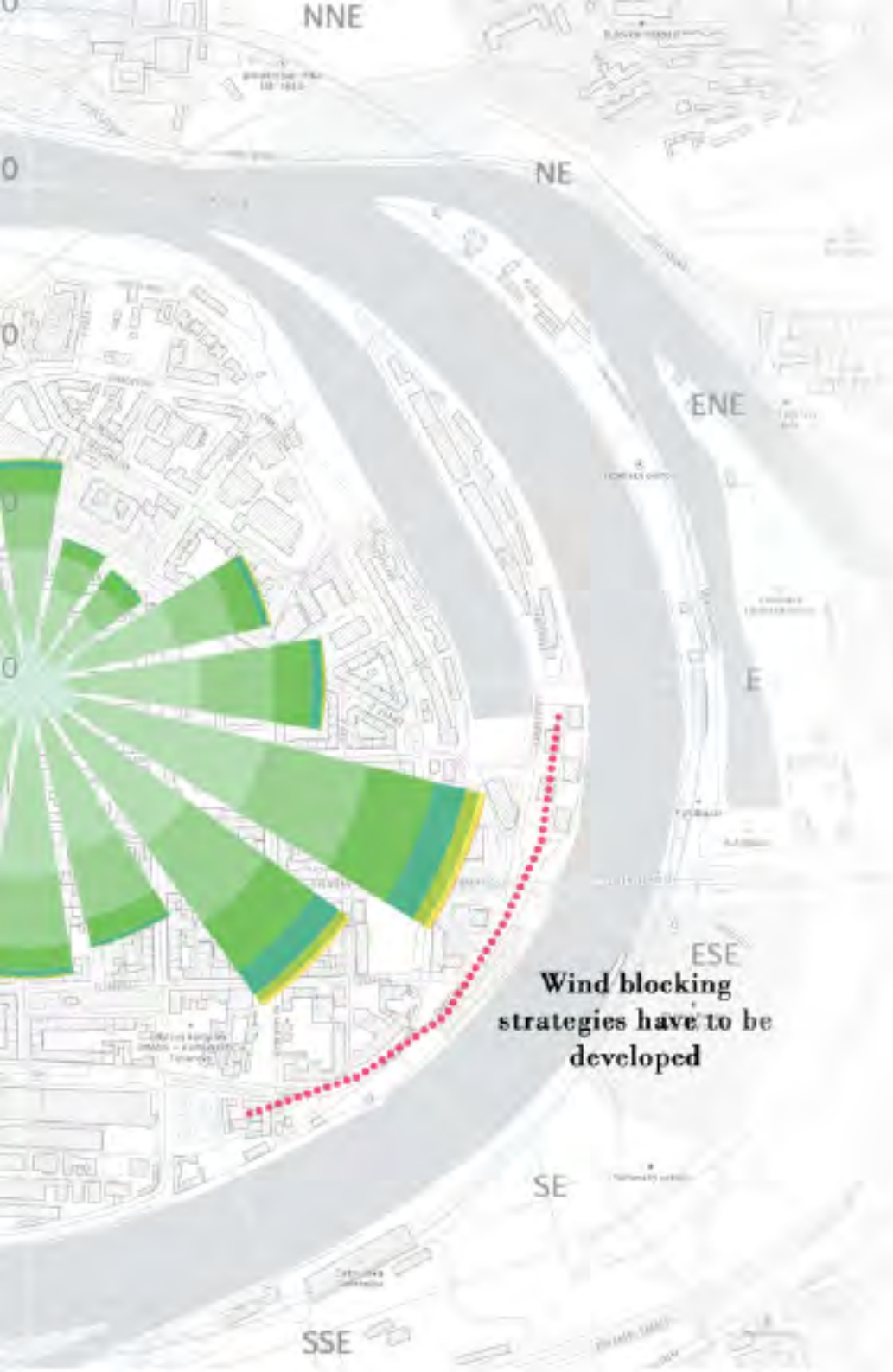


Pollution (Soil, Water, Air) & Wind



Air Quality Index



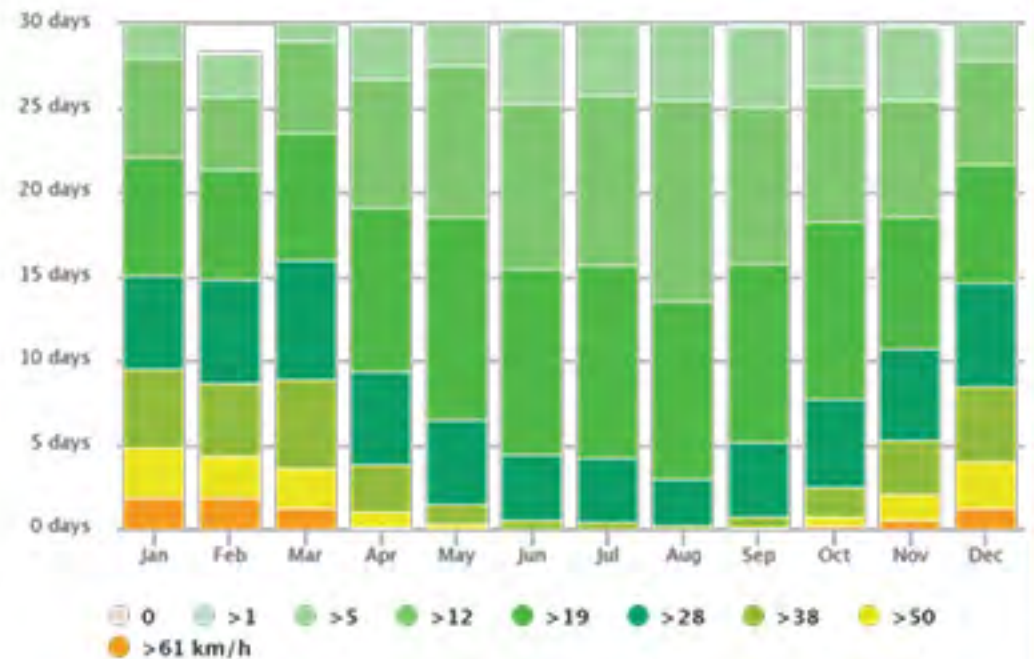


Because of the cold land climate, the location of wind corridors should be reconsidered in order to decrease the discomfort caused by prevailing winds.

Design conclusions

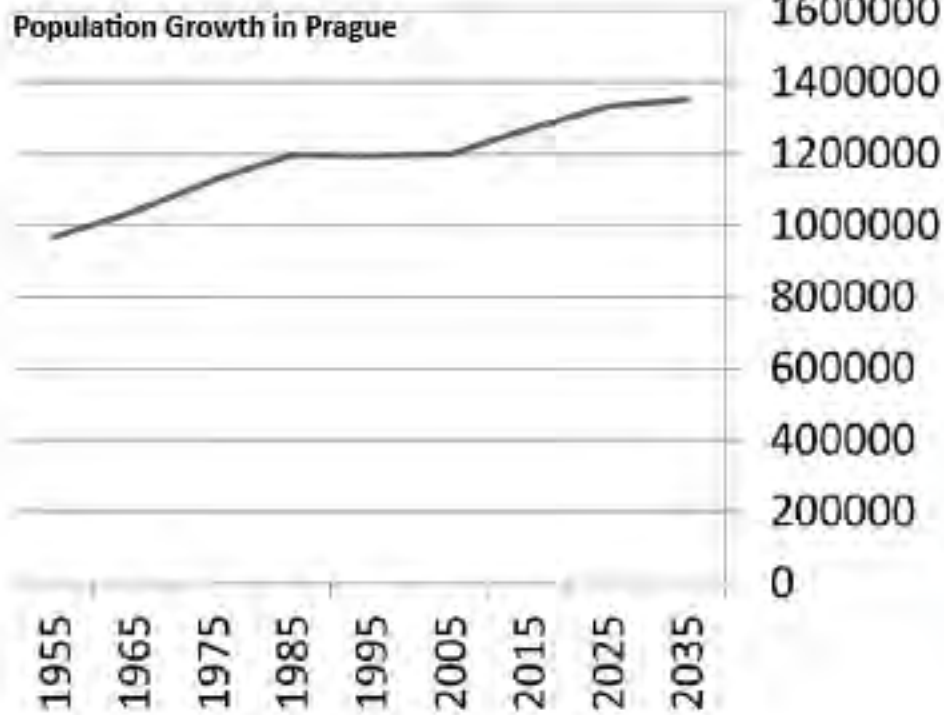


The tourism score is increasing in the summer, therefore, the investments and projects proposes options for winter sports to keep the country's economic and socio-cultural life alive in all seasons can increase this score also in winter.



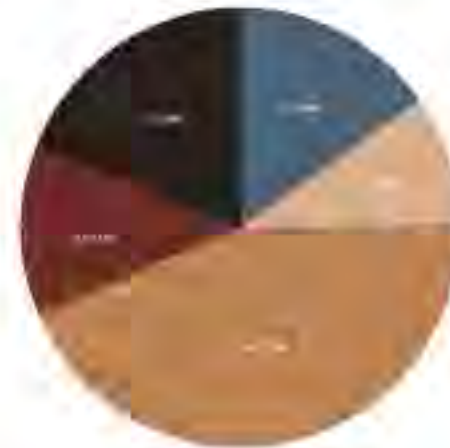
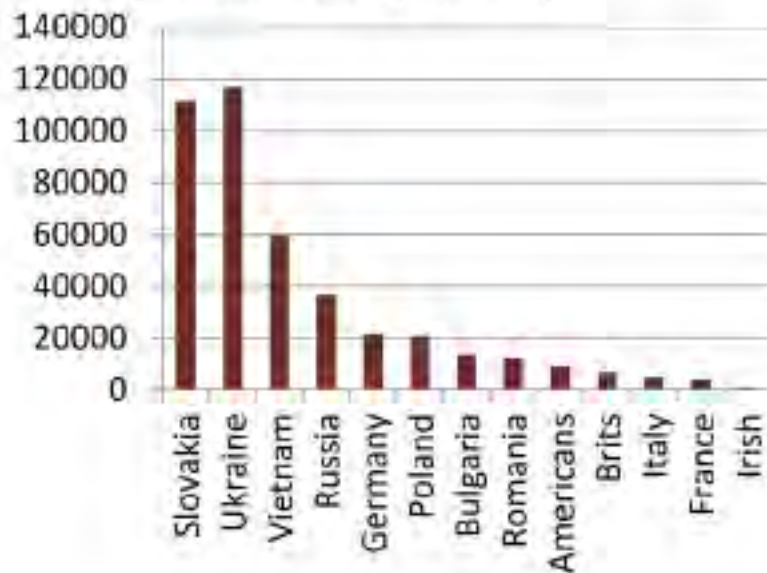
Demographics

Population Growth in Prague



Even though the population growth is calculated to be around 1400000 in the year of 2035, the total number of people together with official/unofficial residents of Prague cannot be estimated due to the drastic rise of immigrants/tourists from different continents arriving to the city annually. Despite that, Prague 7 has a unique characteristic of hosting mainly the locals and at the same time having a considerably low percentage of tourists whereas Prague 1 is occupied mostly by foreigners.

Foreigners Distribution by nationality



Age categories

- 0-14 years
- 15-24 years
- 25-54 years
- 55-64 years
- 65 years and older



Population distribution

- Foreigners
- Locals

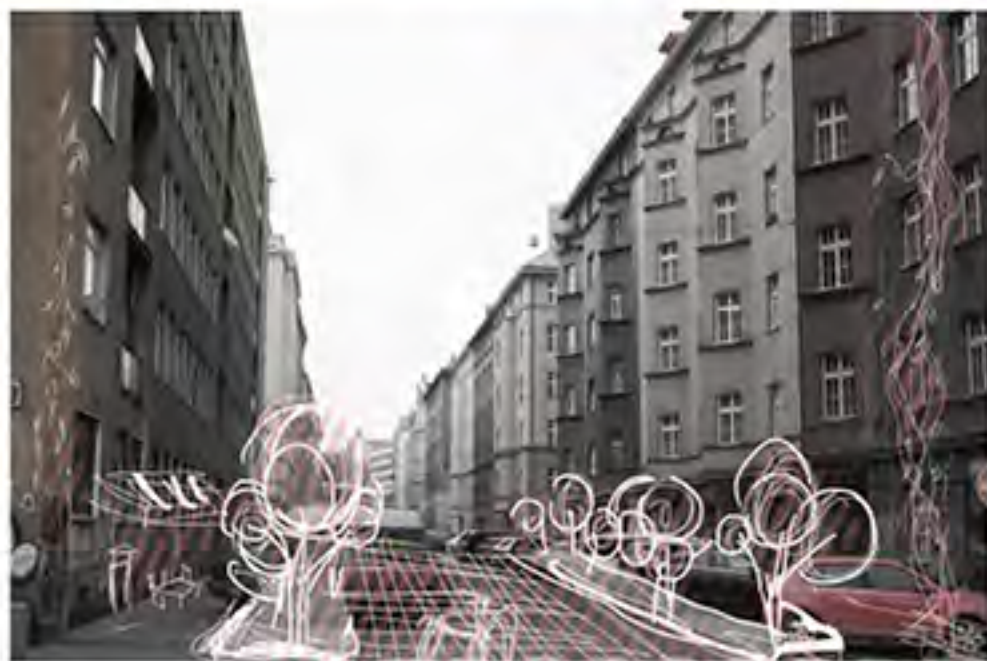
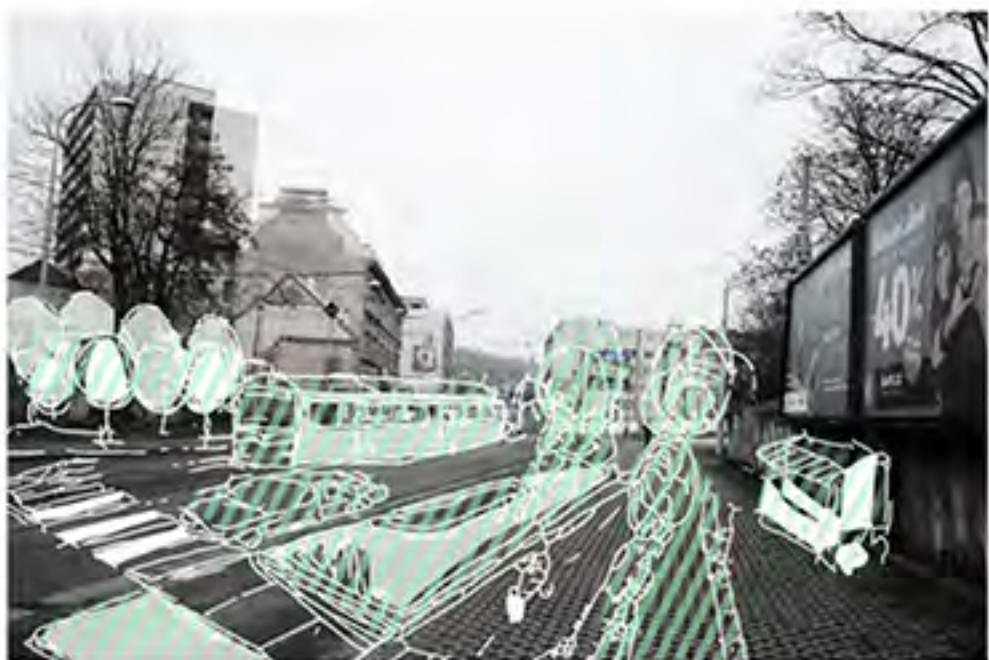


Design conclusions

With the considerable rise of population and the amount of immigrants, the highlighted areas may act as potential corridors for widening Prague in terms of functions that one can assume as necessary.



LITERATURE REVIEW



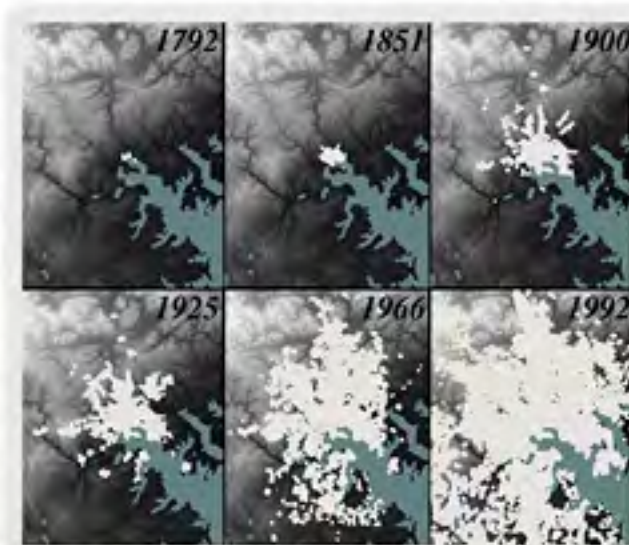
LIMITS OF GROWTH

Social and Economic Limits to Growth
Ecological Limits to Growth

Growth is only desirable when it is sustainable. From an economical point of view, as demand increases, the supply also increases in accordance. However, as the sources are scarce, there is a limit to how much can be supplied. In urban limits of growth, the scarcity can be approached from different aspects, such as infrastructure, goods & services, transit network etc. There is also an ecological capacity of urban development. Water sources, air quality, the environmental consequences of human activity might define the ecological limits. When uncontrolled, growth becomes sprawl and with the increasing urban population (with more than half of the world's total population living in cities) it becomes even more challenging to control growth and the rate of growth. When urban limits of growth is reached, de-growth is encouraged. Degrowth promotes a form of society and economy that aims at the well being of all and sustains the natural basis of life. Urban degrowth can be achieved by densification of texture, defining mixed use functions, improving transit networks and planning smarter cities at multidimensional levels.

CASE:
Urban Sprawl in Baltimore:

Growth is tightly correlated with accessibility and the opportunities of transportation. In the growth pattern of Baltimore, it can be observed that before the railroads were established around 1900's, the growth was quite constrained. After the ringroads were built around 1960's, the sprawl became more severe and the growth started to follow a less controlled pattern.



Prague follows a similar sprawl pattern in the east-west orientation.



TRANSFORMATION OF THE OUTSKIRTS



PAST

AGRICULTURAL OUTSKIRTS
HOMOGENEOUS TOWN
CLEAR BOUNDARIES

PRESENT

URBAN SPRAWL
LESS AGRICULTURAL LAND

FUTURE

DYNAMIC PRODUCTIVE LANDSCAPE
RESILIENT SPACE
MIXED USE
DIVERSIFICATION

(Image taken from [www. http://futurearchitectureplatform.org](http://futurearchitectureplatform.org))

Transit Oriented Development

TOD is the creation of compact, walkable, pedestrian-oriented, mixed-use communities centered around train or public transport systems. By TOD, the radius of the zones that are accessible through public transportation are drawn within the walkable distance of 200 to 800 meters and dense, mixed use functions are defined around these nodes. Hence, as the accessibility increases through the city, public transport is encouraged while the ultimate dependence to the private vehicles are decreased considerably.

Depending on the means of public transport and the existing texture of the city, the defined radii can change. The dense areas can develop independent from each other while they might also constitute continuous urbanization patterns as they intersect with each other.



Elements of TOD

Walk: high quality pedestrian paths for increased mobility

Cycle: increased network of cycling tracks and safety for cyclists.

Connect: a densified network of routes for increased access to goods, services and public transport.

Public transport: high quality transit to reduce dependence to private vehicles

Mixed use: a mixture of residential and non-residential land use activates public spaces.

Shift: Disincentives for private vehicles (e.g. reduction in parking spaces) shift the habits of the people.

Densify: As urban texture gets denser around transit, public transportation becomes more available the people.

Compact: instead of expanding, redeveloping th existing fabric reduces distances travelled and emissions.

The highest densities should be reserved for those sites closest to frequent transit facilities.



Coordinating development density and transit service type creates higher efficiencies.



Benefits of TOD

People live within 1 km of a transport system

Joint government and private sector development

Neighborhood revitalization

Growth generation and economic development

Increased affordable housing

Increased land values, rents and investment returns





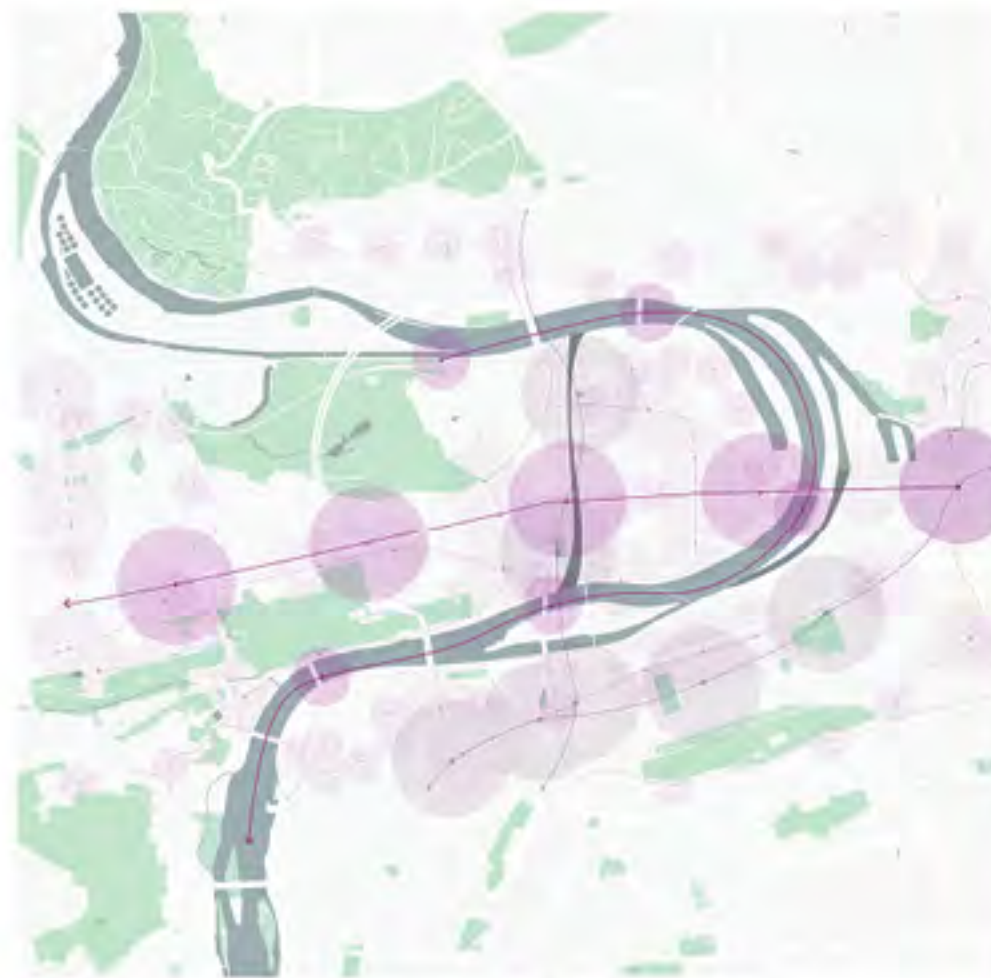
(Image taken from <https://www.treehugger.com/urban-design/transit-oriented-development-key-better-cities.html>)



Existing Transit Network in Prague

- metro line
- tram line
- bus line
- metro zone
- tram zone
- bus zone
- ▨ transit gaps

There is a relatively connective transit network in Prague, however, there are transit gaps in some of the central parts. New stations to be proposed here and the densification of mixed use structures around those stations can both diminish the sprawl by promoting inward densification and increase accessibility by promoting a more connective transit network.



Proposed Transit Network

- proposed metro line
- proposed river transportation
- proposed metro zone
- proposed river transportation zone

The transversal axis of metro line is developed in the site, however, there is not adequate longitudinal transit definition. This gap in transit connectivity can be eliminated by proposing a new metro line and transportation along the river. Hence, through the accessibility of those previously remote areas, and an integral urban development plan, densification of those zones with mixed use structures can be achieved.

SMART GROWTH

“Smart growth” is development that supports economic growth, strong communities and environmental health. It covers a range of development and conservation strategies that help protect cities’ health and natural spaces and make our communities more attractive, economically stronger, and more socially diverse.

Growth is “smart” when it gives us great communities, with more choices and personal freedom, good return on public investment, greater opportunity across the community, a thriving natural environment, and a legacy we can be proud to leave our children and grandchildren.

The principles below are considered the foundation of smart growth approach.

1. Mix land uses
2. Take advantage of compact building design
3. Create housing opportunities and choices for a range of household types, family size and incomes
4. Create walkable neighborhoods
5. Foster distinctive, attractive communities with a strong sense of place
6. Preserve open space, farmland, natural beauty, and critical environmental areas
7. Reinvest in and strengthen existing communities & achieve more balanced regional development
8. Provide a variety of transportation choices
9. Make development decisions predictable, fair and cost-effective
10. Encourage citizen and stakeholder participation in development decisions



NEW URBANISM

New Urbanism is an urban planning theory which promotes “the creation and restoration of diverse, walkable, compact, vibrant, mixed-use communities” to reclaim all aspects of real estate development and urban planning as it improves the quality of life in neighborhoods. New Urbanism fuses civic facilities essential to Daily lives of the communities within easy walking distance of each other. Furthermore, it has traces of T.O.D as it encourages increased use of trains and lightrails over highways and roads. New Urbanism also deals with fixing and infilling cities to promote compact towns and neighborhoods.

THE PRINCIPLES OF NEW URBANISM

1. Walkability
2. Connectivity
3. Mixed-Use&Diversity
4. Mixed Housing
6. Traditional Neighborhood Structure
7. Increased Density
8. Smart Transportation
9. Sustainability
10. Quality of Life



LANDSCAPE URBANISM

"In pairing landscape with urbanism, landscape urbanism seeks to reintroduce critical connections with natural and hidden systems and proposes the use of such systems as a flexible approach to the current concerns and problems of the urban condition."

Denis E. Cosgrove. *Social Formation and Symbolic Landscape*. (Kent: Croom Helm, 1984) 13.

Landscape Urbanism is an urban planning theory which focuses on designing landscapes rather than buildings and infrastructure. This approach provides public health while it rehabilitates social forms, economics, soil and water. Landscape Urbanization theory correlates between environment with health, quality of life. The potential view of landscapes can offer a pleasurable view as relief from urban life and mental stresses. Furthermore, publicly accessible green spaces can improve health of working-class neighborhood while increasing the walkability. Walkability is crucial in landscape urbanism as it promotes healthy life style and increases physical activity. Landscape Urbanism can trigger architectural promenade while it creates an opportunity for some kind of informal unplanned social contact. Landscape urbanism is often considered as age-friendly as it boots up social-contact between different participatory groups.



Design Implications of Landscape Urbanism

Process Over Time: Landscape Urbanism Engages with Vast Scales—Both in Time and Space. There should be phases in design in order not only solve past and present problems but also problems of future potentials.

Horizontality: Design should start with horizontal plane and then should transformed into three dimensional world to work on topography.

Working Methods and Techniques: Adapting landscape techniques into urban life to solve contemporary problems with natural solutions.

The imaginary: To add social value and attract urban people, the design should be interdisciplinary and creative.



(Image taken from [www. http://futurearchitectureplatform.org](http://futurearchitectureplatform.org))

1 COMMUNITY OPEN SPACES

2 ECOLOGICAL LANDSCAPES

3 WATER MANAGEMENT

4 PRODUCTIVE LANDSCAPES

5 TRANSITIONAL LANDSCAPES



SCOPE

Landscape urbanism prepares fields for action and stages for performance.

- Community Seeds
- Creative Interventions
- Physical Activities
- Optimizing the space

Landscape urbanism embraces ecology and complexity. Landscape urbanism recognizes the remedial possibilities inherent in the landscape.

Developing, distributing and optimum use of water resources under defined water polices and regulations.

Productive landscape on the outskirts with a dynamic character, becomes a resilient granary of the self-sufficient city.

- GROWTH
- KNOWLEDGE
- FOOD
- ENERGY

Temporary spaces that clean soil and enable new forms of social life and creative displays.

STRATEGIC INTENTS

- Playgrounds
- Local Landscapes
- Recreation Areas
- Plazas
- Sports fields
- Jogging Paths
- Walkable Streets
- Bicycle Lane

- Biodiversity
- Enhancing natural habitat
- Ecological Corridors
- Afforestation
- Constructed Wetlands
- Soil Remediation
- Nature Parks
- Successional Road
- Vertical Green Gardens
- Greenhouses

- Flood Water Management
 - Dam
 - Polder
 - Deepening River
 - Straightening River
 - Dike
- Water Sensitive Design
 - Retention Pond
 - Green Belt
 - Rain Garden
 - Porous Pavements
 - Bioswale
 - Riparian Zone Filter

- Landuse Readjustment for Landscape zone.
- Identity
- Urban Agriculture zone
- Public Space
- Hydroponics
- Algae Culture
- Research Landscape

- Transportation Network
- Event landscapes
- Hard-scapes
- Urban Meadows
- Transition Hubs supported with open & green spaces.

POSSIBLE RISKS IN THE FUTURE



EASY ADAPTATION OF THE SPACE

ENVIRONMENTAL
TEMPERATURE RISE - DROUGHT

OR

SOCIAL
AGING OF POPULATION

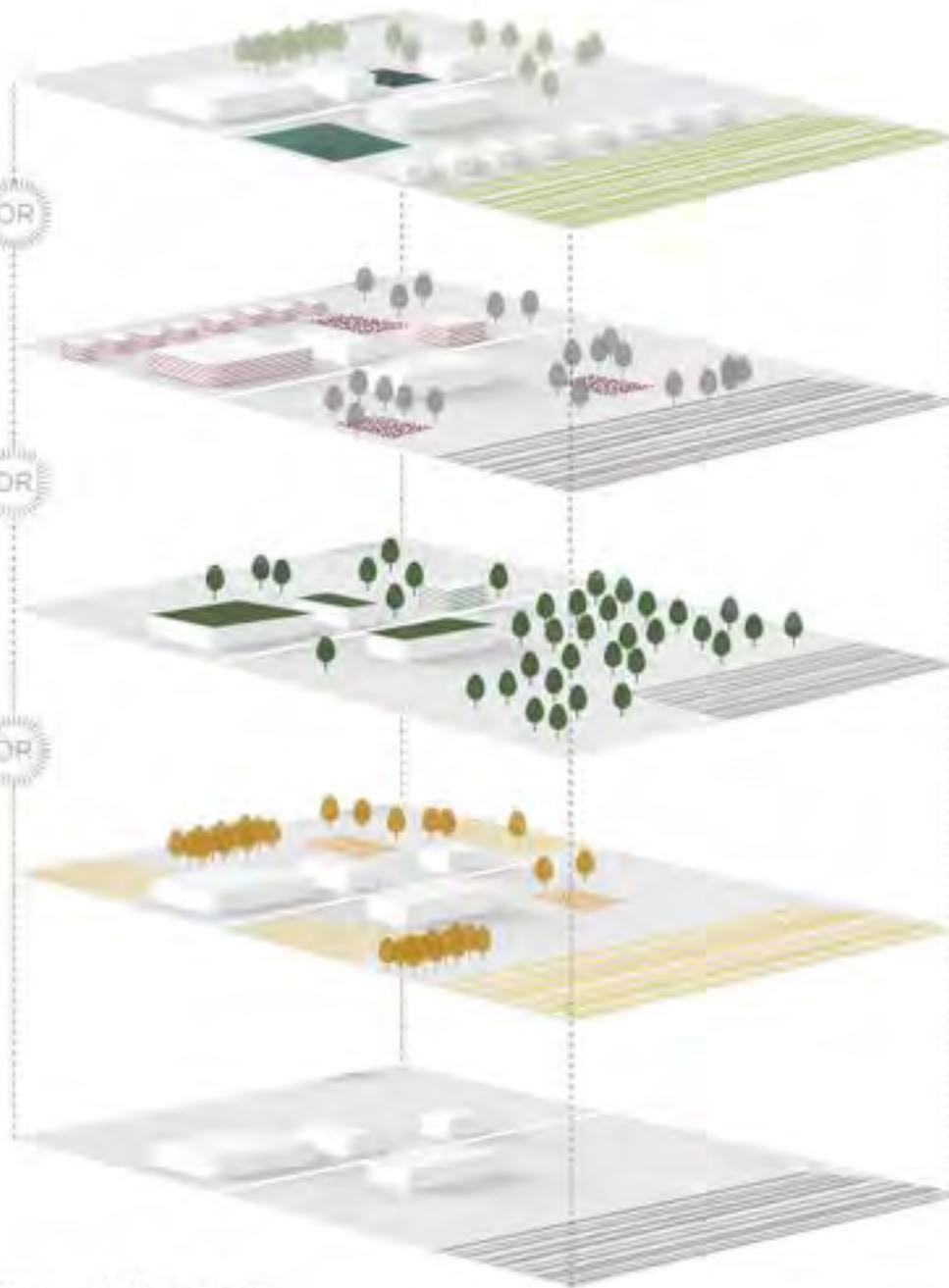
OR

ECOLOGICAL
MORE PEOPLE - POLLUTION

OR

ECONOMICAL
ECONOMIC CRISIS

RESILIENT SPACE



IRRIGATION SYSTEMS
MORE GREENHOUSES
DIFFERENT CROPS

MORE SOCIAL INFRASTRUCTURE
MORE COMMON AREAS
MORE PUBLIC OPEN SPACES
MORE HOUSES

MORE CLEANING PLANTS
MORE TREES
MORE OPEN SPACES
GREEN ROOFS

MORE PASTURES
MORE GROWING FIELDS
MORE ORCHARDS
MORE COMMUNITY SPACES
MORE GARDENS

BROWNFIELD REMEDIATION

Contaminated soil is one of the problematic issue to be remediated in the developing site. These lands are defined as Brownfield sites which are previously developed and has a potential to redeveloped. It is a land that has been used for industrial purposes and now derelict and fills with hazardous waste and pollutants. Brownfield remediation has several process which depends on the future planned use of the site, because required application is varied according to land use. For instance, site which is allocated to residential requires higher standards than commercial areas.



All brownfield sites need to be assessed by an experienced environmental consultant before they can be redeveloped. This involves an analysis of the soil, groundwater and surface water through testing for hazardous compounds, and ensures that appropriate measures are taken to reduce identified risks and liabilities.





Remediation of a brownfield site is the removal of all known contaminants to levels considered safe for human health. Redevelopment can only take place after all environmental health risks have been assessed and removed.

Bioremediation
Phytoremediation
In-Situ Chemical Oxidation



Redeveloped land
Estimated redevelopment on
Brownfield land

Wetlands

Wetlands filter out excess nutrients and dangerous pollutants in rain and storm water runoff and to a lesser extent river water. The most damaging of these impurities, such as toxic metals and excessive nutrients, come from agricultural and industrial activity. Wetlands also trap natural sediment and organic matter.

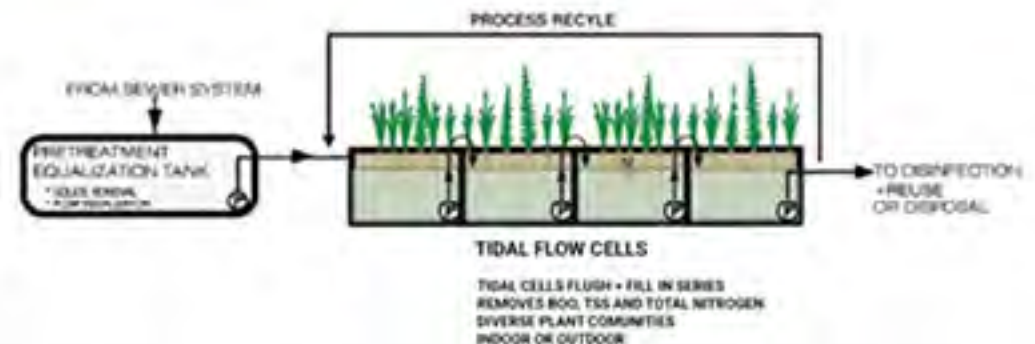
In some small cities, wetlands are being built as wastewater treatment plants. "A study by the Georgia Water Quality Control Board... showed that water heavily polluted with human sewage and chicken offal was designated clean after passing through 2.75 miles of swamp forest." (U.S. Government Council on Environmental Quality, 1978, p. 23). The Environmental Protection Agency (2006, p.1) has data showing the Congaree Swamp in South Carolina removes a quantity of pollutants from the watershed equivalent to that which would be removed by a \$5 million treatment plant. It should be noted that the swamp provides far more recreation opportunities than the average municipal water treatment facility.



Living Machines

The Living Machine is an intensive bioremediation system that can also produce beneficial byproducts, such as reuse-quality water, plants and plant products—for building material, energy biomass and animal feed.

Aquatic and wetland plants, bacteria, algae, protozoa, plankton, snails and other organisms are used in the system to provide specific cleansing or trophic functions. The tidal process operates outdoors in tropical and temperate climates. In colder climates, the system of tanks, pipes and filters may be housed in a greenhouse to prevent freezing and raise the rate of biological activity.



*Living Machine is a trademark and brand name for a patented form of ecological sewage treatment designed to mimic the cleansing functions of wetlands.

Eight Principles for Designing Living Machines

- 1. Microbial Communities:** The primary ecological foundations of living machines are predicated upon diverse microbial communities obtained from a wide range of aquatic (marine and freshwater) and terrestrial environments. In addition, organisms from chemically and thermally highly stressed environments are critical.
- 2. Photosynthetic Communities:** Sunlight powered photosynthesis is the primary driving force of these systems. Anaerobic phototrophic microbes, cyanobacteria, algae, and higher plants must be linked in a dynamic balance with the heterotrophic microbial communities.
- 3. Linked Ecosystems and the Law of Minimum:** At least three distinct types of ecological systems need to be linked together to produce living machines that carry out self-design and self-repair through time. Such systems have theoretical ability to span centuries and possibly a millennia.
- 4. Pulsed Exchanges:** Nature works in short term/ long term pulses which are both regular and irregular. This pulsing is a critical design force and helps maintain diversity and robustness. Pulses need to be intrinsic to the design.
- 5. Nutrient and Micro nutrient Reservoirs:** Carbon/Nitrogen/Phosphorus ratios need to be regulated and maintained. A full complement of macro and trace elements needs to be in the system so that complex food matrices can be established and allowed to "explore" a variety of successive strategies over time. This will support biological diversity.
- 6. Geological Diversity and Mineral Complexity:** Living machines can simulate a rapid ecological history by having within them minerals from a diversity of strata and ages. The geological materials can be incorporated into the sub-ecosystems relatively quickly by being introduced as ultra-fine powders which can be solubilized over short time frames.
- 7. Step Gradients:** Step gradients are required within and between the sub-elements of the system. These include redox, pH, humid materials, and ligand or metal-based gradients. These gradients help develop the high efficiencies that have been predicted for living machines.
- 8. Phylogenetic Diversity:** In a well-engineered ecosystem all phylogenetic levels from bacteria to vertebrates should be included. System regulators and internal designers are often unusual and unpredictable organisms. The development of various phyla has arisen to a large extent from the strategic exploration of the total global system over a vast period of time. This time can be compressed with the consequences of this evolution.

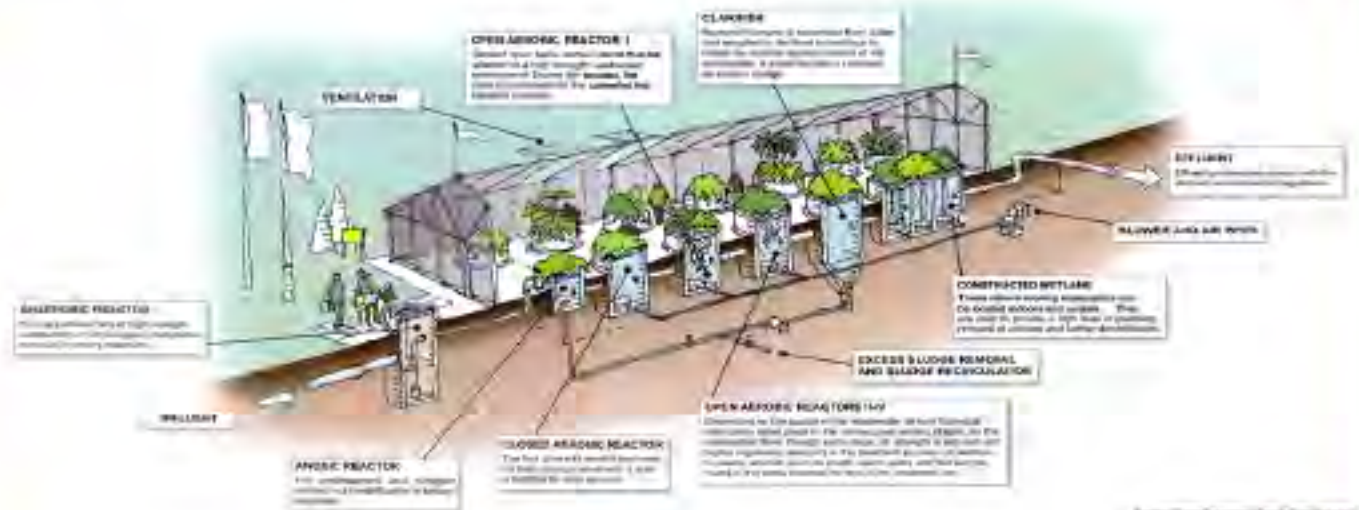
From Eco-Cities to Living Machines



Principles
of Ecological
Design



Nancy Jack Todd
and John Todd



The scale of Living Machine systems ranges from the individual building to community-scale public works. The possibility of the local and small scale implementation, as well as the possibility to achieve it indoors (for temperature control and maximum efficiency) are reasons for which the system is interesting.

Example

Advanced water treatment in Budapest that uses more traditional technology to treat sewage from 1,600,000 residents.



The purified water produced by the Living Machine technology is cleaner than the Danube River (where it is discharged). This photo shows the incoming waste water, the water during the treatment process and the discharged water.

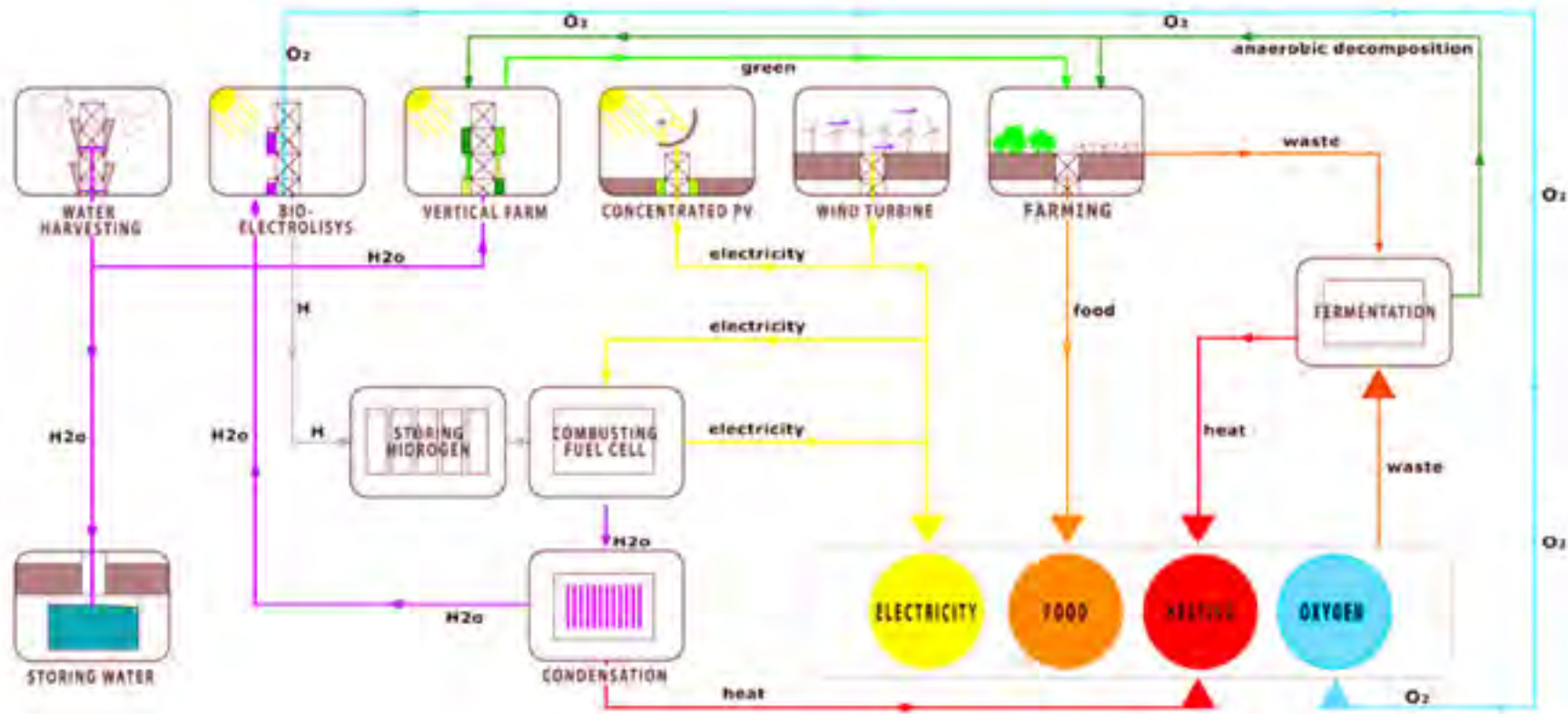
Before the water is discharged, it is treated with UV light. The quality of the water would exceed the environmental standards for discharge into an inland lake.



Economically and energetically, living machines make enormous sense. They are cost competitive in some areas of food growing and in purifying concentrated wastes. In that living machines avoid hazardous chemicals and are pollution-free in operation, they appeal to environmentalists.

The greatest hindrance to widespread adoption of living technologies arises, ironically from the very phenomenon they are intended to solve; the estrangement of modern cultures from the natural world. Nature remains invisible to so many people. We anticipate that the aesthetic and emotional qualities of living machines in addition to their functional and economic soundness will hasten their acceptance. They can be designed to be beautiful- evocative of the deep harmony found in nature. New economies that are outgrowth of the wisdom of the natural world would create a new and hopeful dimension for the future.

The living machine as a concept, can be extended to see the building or the city as a whole re-imagined as a biological ecosystem, learning from nature to produce similar systems or cycles, intended to be sustainable and efficient, fulfilling the energy and food necessities of the occupants while effectively managing the waste products.

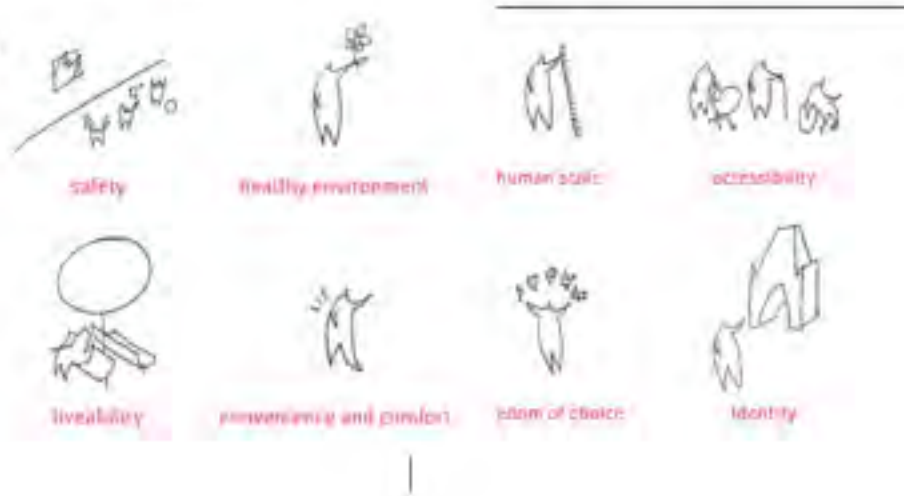


Healthy Street Design

Designing urban streets to minimize auto-dependency and promote safe, sustainable alternatives can help address several challenges that cities struggle with around the world, including:

- Traffic Violence
- Physical Inactivity and Chronic Disease
- Poor Air Quality
- Economic Inefficiency
- High Energy Consumption
- Climate Change
- Noise Pollution
- Poor Quality of Life
- Inequity

key attributes



users

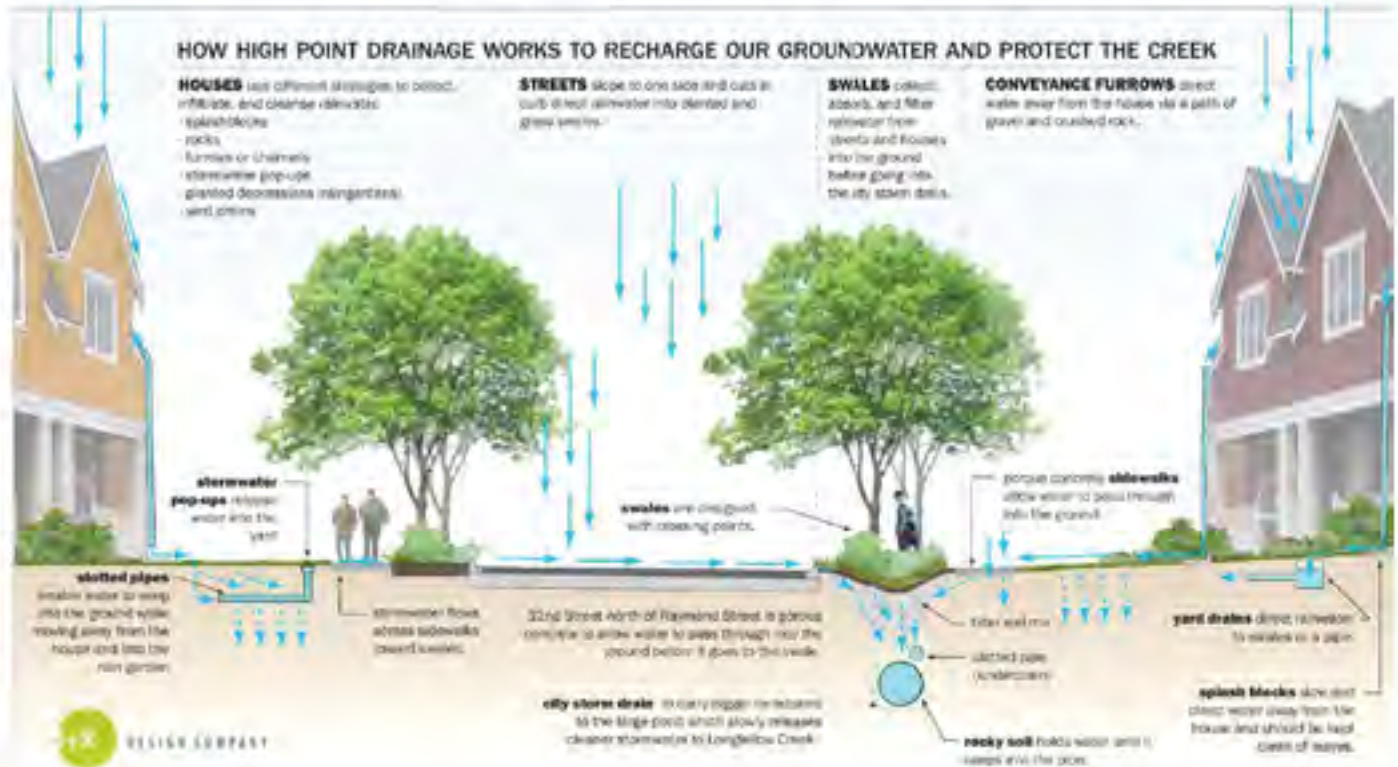


Elements to be considered:



Frontage Zone, Clear Path, Street Furniture, Buffer Zone

Green Infrastructure as Water Management Systems in Streets



References & Visual Sources

From Eco-cities To Living Machines: Principles Of Ecological Design
Nancy Todd-John Todd- North Atlantic Books- 2004

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<https://www.nytimes.com/2011/03/21/nyregion/21grid.html>
<https://www.english-collnet.org/geography/world-population/urban-areas.htm>
<https://99percentinvisible.org/article/can-free-cities-gridlock-rain-drive-reclaim-urban-roadsweys/> <http://www.toddtraverse.org/>
<http://aqueductfutures.wordpress.com/2013/03/04/ways-to-manage-stormwater-2/>
http://manual.uprisia.co/uploads/assets/STRATEGIE-MANUAL_brochure.pdf
<http://www.livingmachines.com/>
<https://www.archdaily.com/76571/efficient-living-machine-alexandro-liberati/1-244>
<https://theecologist.org/lifeimage/cali/0/0/136016.png>
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<https://pinterest.com/ny/photo/3234065>
<https://cityhallwatch.wordpress.com/2015/03/22/living-machines-water-treatment/#more-29959>
<https://sciencing.com/do-wetlands-purify-water-758398.html>

LEED NEIGHBORHOOD DEVELOPMENT

LEED Neighborhood Development (LEED-ND) is a set of environmental standards for land development where "LEED" stands for Leadership in Energy and Environmental Design. LEED is an United States-based ratings system which aims to integrate smart growth strategies, urbanism and green building principles into neighborhood design. LEED ND can be composed of fractions of neighborhoods, whole neighborhoods or multiple neighborhoods. In order to rate neighborhood developments, LEED formed four main categories to ensure high quality of life for citizens: Location & linkage, pattern & design, green infrastructure and design & innovation.

"What LEED-ND really does is to bring everything together and create coherence across all the specialties," said John Norquist, CNU president and CEO, and also a member of the LEED-ND Core Committee.

LEED rating systems vary from building construction & design, interior design to neighborhood design. Unlike other LEED rating systems, LEED ND 'places emphasis on site selection, design and construction elements that bring buildings together into a neighborhood and relate the neighborhood to its landscape as well as to its local and larger regional context'. LEED ND has a potential to be more flexible within the limits of growth as it has a tendency to inspire well-connected neighborhoods. Furthermore, as it considers the entire community, it can prevent formation of new sprawls.



Why are municipalities interested in LEED ND?

Economics

Communication



Metrics



Impacts



LEED ND VALUES

LESS BAD

- Energy
- Water
- Resources
- Health
- Land Use
- Natural Systems

MORE GOOD

- Health and Wellness
- Fostering Community
- Economic Growth
- Social Justice
- Connection with sources and disposal
- Connection with natural landscape and agriculture
- Beauty, civic pride...

LEED ND CRITERIA



(Image taken from <http://twinhillscalgary.ca/guidelines/>)

LEED NEIGHBORHOOD DEVELOPMENT

SMART LOCATION & LINKAGE (30 Possible Points)



- Choose environmentally sound location
- Reduce need to drive
- Use less land to create more benefits
- Conserve Energy, water and other...
- Natural sources

Neighborhood, Pattern Design (39 Possible Points)



- Smart Location
- Proximity to water and waste water infrastructure
- Imperiled species and ecological communities
- Wetland and waterbody conservation
- Walkable Streets
- Affordable housing
- Transit facilities
- Local food production
- Universal accessibility

Green Construction and Technology (31 Possible Points)



- Construction activity Pollution prevention
- Energy Efficiency in building
- Reduced water use
- Building reuse and adaptive reuse
- Reuse of historic buildings
- On site renewable innovations

Innovation & Design (6 Possible Points)



- Innovation in Design
- LEED Accredited Professional

LEED CERTIFICATION

Part 1: Preliminary Review:

Part 2: Certification of approved plan

Part 3: Certification of a completed project



CERTIFIED
40 - 49 POINTS



SILVER
50 - 59 POINTS



GOLD
60 - 79 POINTS



PLATINUM
80+ POINTS



Planning for Environmental Risk
Anticipate future issues



Culture + Heritage
Promote the social, cultural and historic life of communities



Wellbeing
Enhance health and happiness for all



Sustainable Transport
Reconcile mobility with wellbeing



Land + Ecology
Develop in harmony with natural systems



Self Sufficiency
Promote local jobs and prosperity



Energy + Carbon
Reduce energy use and carbon emissions



Materials + Waste
Use materials wisely, with as little waste as possible



Water
Treat water as a precious resource



Sustainable Performance
Monitor and measure performance



SO WHAT?



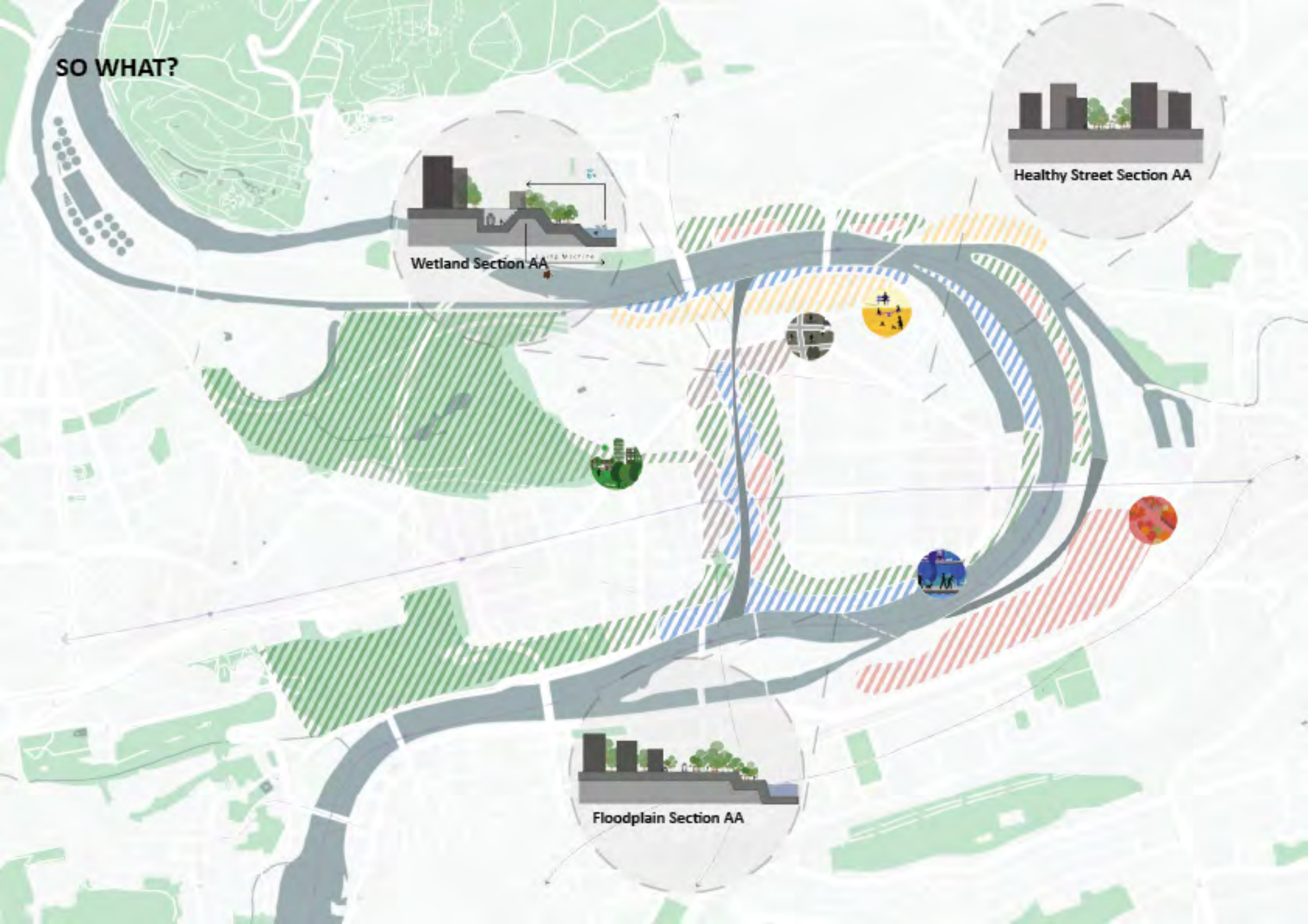
Wetland Section AA



Healthy Street Section AA



Floodplain Section AA





Ecological Landscapes / Water Management

- Unifying existing greenary
- Wetland: 1. Cleaning the river
2. Brownfield Remediation
- Living Machine: Works with the same logic as wetland and will be used to clean-up dirty city runoff
- 1. Steep topography runoff from the city
2. Flood management plains



Community Open Spaces

- 1. Taking advantage of the unifying quality of the river
- 2. Decreased density



Productive Landscapes

- Large open available space
Possible water supply from the river
Easy access for redistribution of good



Transitional Landscapes

- Passage from softscape to hardscape



Transit Oriented Development (T.O.D.)

- Increased connectivity & density



LEED® FOR NEIGHBORHOOD DEVELOPMENT

110 TOTAL POINTS POSSIBLE



SMART LOCATION & LINKAGE

27 POSSIBLE POINTS

PREREQ 1	Smart Location	REQ
PREREQ 2	Imperiled Species and Ecological Communities	REQ
PREREQ 3	Wetland and Water Body Conservation	REQ
PREREQ 4	Agricultural Land Conservation	REQ
PREREQ 5	Floodplain Avoidance	REQ
CREDIT 1	Preferred Locations	5 - 6
CREDIT 2	Brownfield Redevelopment	1 - 2
CREDIT 3	Locations w/ Reduced Automobile Dependence	4 - 5
CREDIT 4	Bicycle Network and Storage	1
CREDIT 5	Housing and Jobs Proximity	1 - 2
CREDIT 6	Steep Slope Protection	1
CREDIT 7	Site Design for Habitat / Wetland & Water Body Conservation	1
CREDIT 8	Restoration of Habitat/Wetlands and Water Bodies	1
CREDIT 9	Long-Term Cnsvrtn. Mgmt. of Habitat/Wetlands & Water Bodies	1
TOTAL		16 - 20



NEIGHBORHOOD PATTERN & DESIGN

14 POSSIBLE POINTS

PREREQ 1	Walkable Streets	REQ
PREREQ 2	Compact Development	REQ
PREREQ 3	Connected and Open Community	REQ
CREDIT 1	Walkable Streets	5 - 6
CREDIT 2	Compact Development	4 - 5
CREDIT 3	Mixed-Use Neighborhood Centers	3 - 4
CREDIT 4	Mixed-Income Diverse Communities	3 - 5
CREDIT 5	Reduced Parking Footprint	3 - 4
CREDIT 6	Street Network	1 - 2
CREDIT 7	Transit Facilities	1
CREDIT 8	Transportation Demand Management	1 - 2
CREDIT 9	Access to Civic and Public Spaces	1
CREDIT 10	Access to Recreation Facilities	1
CREDIT 11	Visitability and Universal Design	1
CREDIT 12	Community Outreach and Involvement	1 - 2
CREDIT 13	Local Food Production	1
CREDIT 14	Tree-Lined and Shaded Streets	1
CREDIT 15	Neighborhood Schools	0
TOTAL		30 - 36



GREEN INFRASTRUCTURE & BUILDINGS

29 POSSIBLE POINTS

PREREQ 1	Certified Green Building	REQ
PREREQ 2	Minimum Building Energy Efficiency	REQ
PREREQ 3	Minimum Building Water Efficiency	REQ
PREREQ 4	Construction Activity Pollution Prevention	REQ
CREDIT 1	Certified Green Buildings	3 - 4
CREDIT 2	Building Energy Efficiency	1 - 2
CREDIT 3	Building Water Efficiency	0 - 1
CREDIT 4	Water-Efficient Landscaping	1
CREDIT 5	Existing Building Use	1
CREDIT 6	Historic Resource Preservation and Adaptive Reuse	0 - 1
CREDIT 7	Minimized Site Disturbance in Design and Construction	0
CREDIT 8	Stormwater Management	3 - 4
CREDIT 9	Heat Island Reduction	0
CREDIT 10	Solar Orientation	0
CREDIT 11	On-Site Renewable Energy Sources	2 - 3
CREDIT 12	District Heating and Cooling	0
CREDIT 13	Infrastructure Energy Efficiency	0
CREDIT 14	Wastewater Management	2
CREDIT 15	Recycled Content in Infrastructure	0 - 1
CREDIT 16	Solid Waste Management Infrastructure	1
CREDIT 17	Light Pollution Reduction	1
GRAND TOTAL		15 - 22



INNOVATION & DESIGN PROCESS

6 POSSIBLE POINTS

CREDIT 1	Innovation and Exemplary Performance	3 - 4
CREDIT 2	LEED Accredited Professional	0 - 1
TOTAL		4 - 5



REGIONAL PRIORITY CREDIT

4 POSSIBLE POINTS

CREDIT 1	Regional Priority	2 - 3
TOTAL		2 - 3

GRAND TOTAL

63 - 81

40-49 POINTS: CERTIFIED 50-59 POINTS: SILVER 60-79 POINTS: GOLD 80+ POINTS: PLATINUM!
 FOR MORE INFORMATION SEE THE LEED REFERENCE GUIDE FOR GREEN NEIGHBORHOOD DEVELOPMENT

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- "What Is Smart Growth?" Smart Growth America, smartgrowthamerica.org/our-vision/what-is-smart-growth/.

CASE STUDIES

PROCESS

By considering the problems of the Prague and the needs of the site, nine different projects was analyzed with different architectural approaches and methodologies. These projects illustrates different solutions and gives references for problems in the Prague. By the basis of the projects different proposals are offered and showed on the Prague map diagrammatically. At the process the main concerns could be categorises as flood problem, water purification, transportation, lack of green spaces and the integration with urban context and green.

**'SOCIO-TECHNICAL CITY':
A DESIGN VISION FOR THE CITY OF THE FUTURE**





LOCATION: Five test locations in Amsterdam, Rotterdam, The Hague, Utrecht and Eindhoven.

STATUS: Started in January 2018

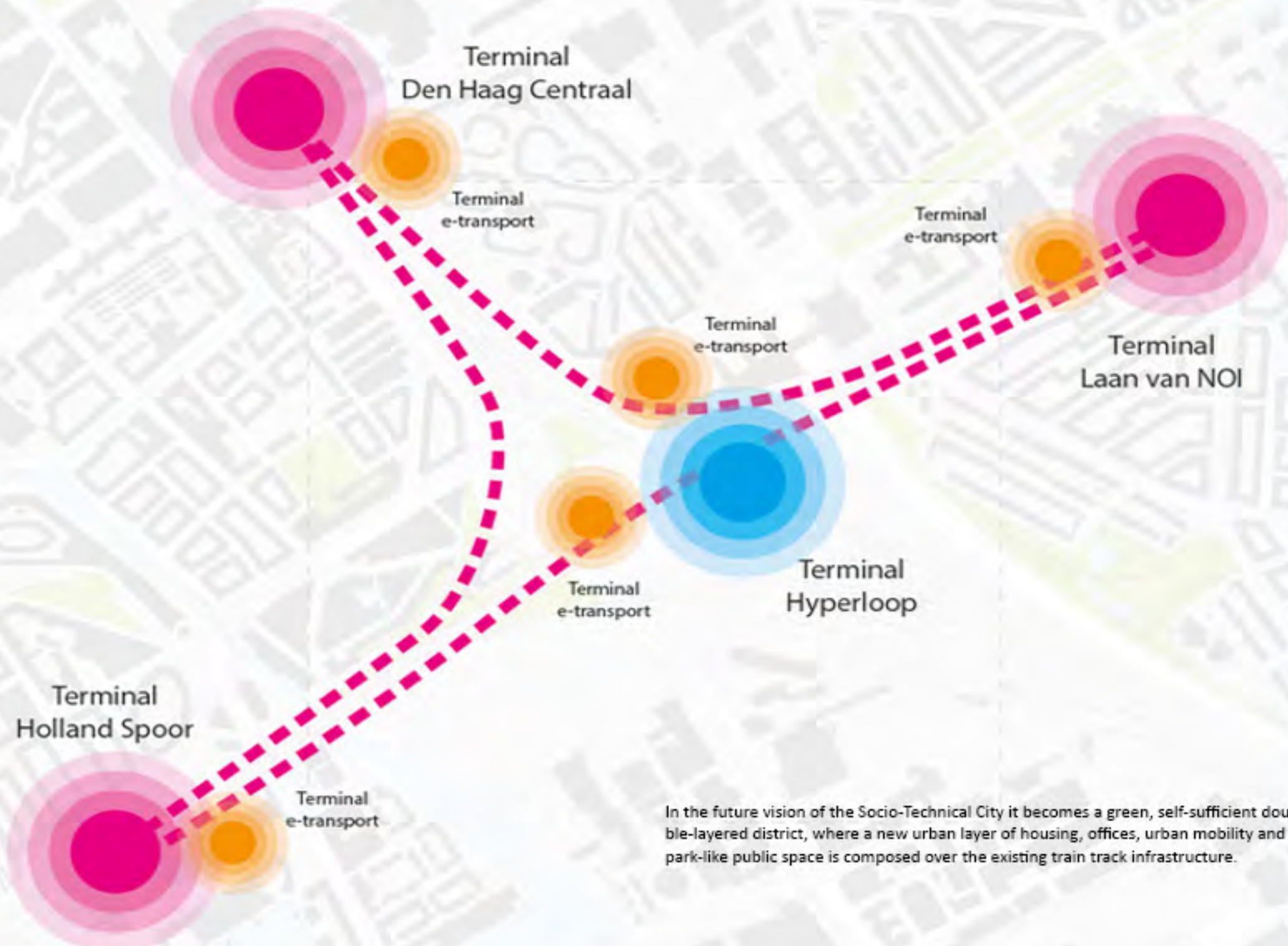
AREA: 1 square km area in the center of the city

OBJECTIVE: The proposal aims to transform the site into a green, self-sufficient district of housing, offices, urban mobility and public spaces over the existing train track infrastructure.

ARCHITECT: UNSTUDIO







Terminal
Den Haag Centraal

Terminal
e-transport

Terminal
e-transport

Terminal
Laan van NOI

Terminal
e-transport

Terminal
Hyperloop

Terminal
e-transport

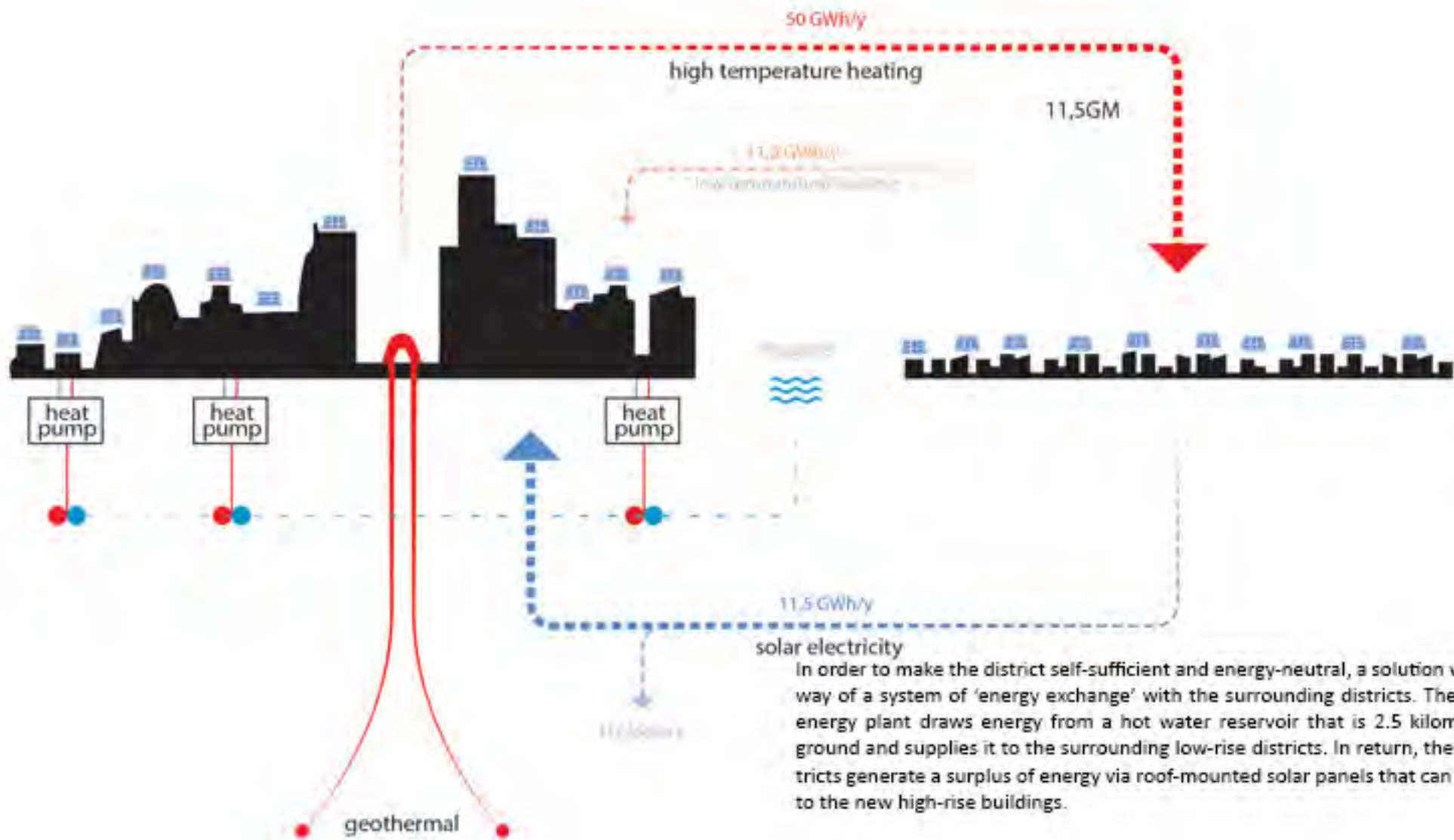
Terminal
Holland Spoor

Terminal
e-transport

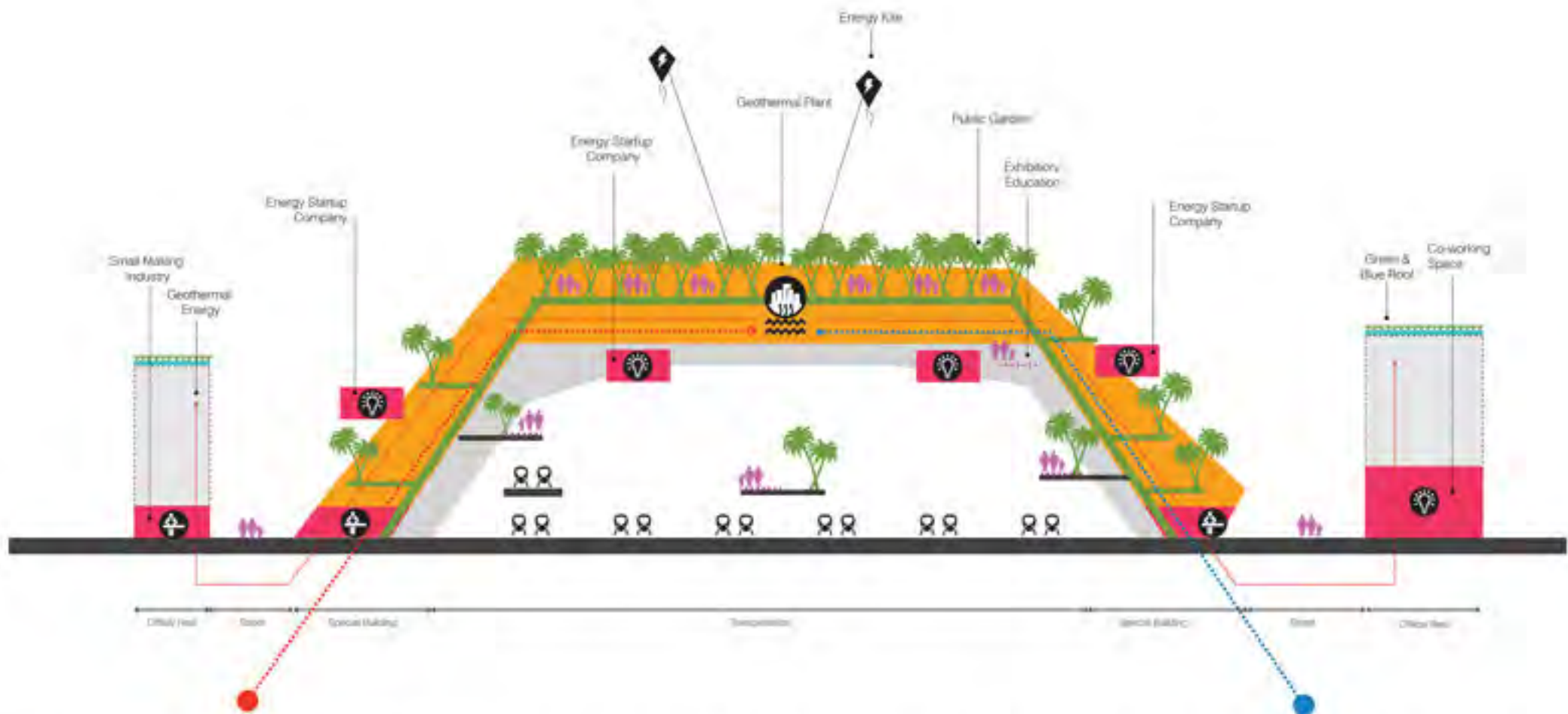
In the future vision of the Socio-Technical City it becomes a green, self-sufficient double-layered district, where a new urban layer of housing, offices, urban mobility and park-like public space is composed over the existing train track infrastructure.

Central Innovation District

Surroundings



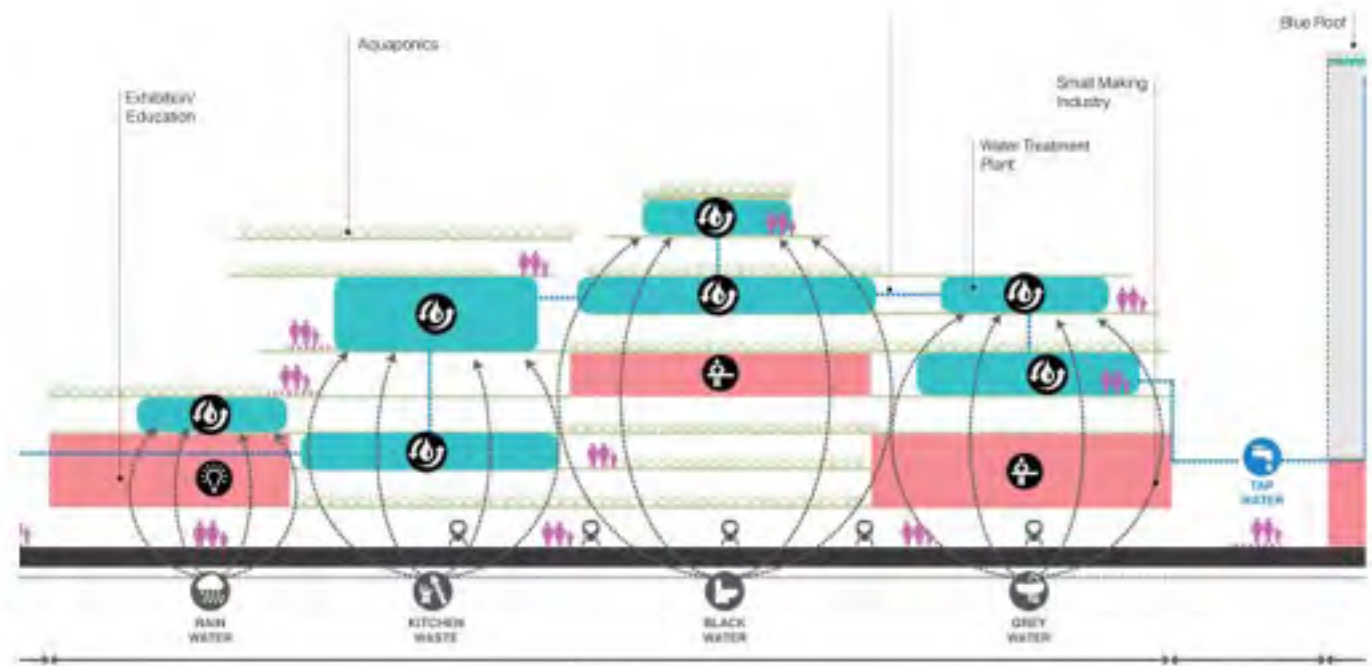
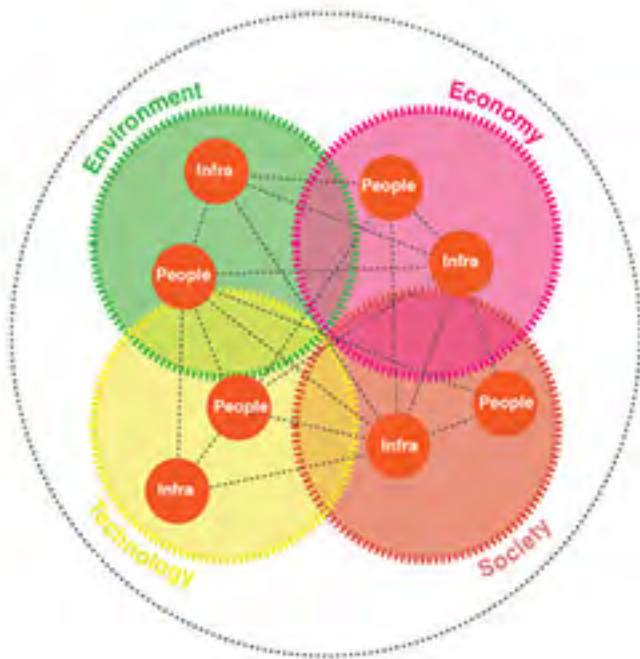
In order to make the district self-sufficient and energy-neutral, a solution was found by way of a system of 'energy exchange' with the surrounding districts. The geothermal energy plant draws energy from a hot water reservoir that is 2.5 kilometers below ground and supplies it to the surrounding low-rise districts. In return, the low-rise districts generate a surplus of energy via roof-mounted solar panels that can be delivered to the new high-rise buildings.



The energy gateway is not only a geothermal power plant, but also a bridge that connects neighbourhoods, a winter garden and co-working space for start-ups. But above all it is a symbol for energy transition: an energy cathedral.

With the elevated urban layer covering the existing railway tracks, our urban vision distinguishes a number of technical 'domains', which refer to the major transition issues of our time: energy, circularity, mobility, climate adaptation / water management and food production. These domains are then each envisioned as 'gateways': physical architectural interventions that offer practical solutions to the problems as well as functioning as attractive symbols for the specific themes - a geothermal power station as an icon for energy transition, a (Hyperloop) station as a landmark for mobility, a Biopolus water treatment plant as a symbol for circularity.





DESIGN IMPLICATIONS:

In the case study, it was proposing a renewal with rehabilitation of the environment and the greenery that is created was connected to other greeneries. So rehabilitation could be done on the old factory site to clean the soil.

The case study included a bridge that connects different part without disturbing the below circulation. The bridge idea could be used with some changes, and the train track below could be encourage to be used.



FORAM - AMPHIBIOUS WATER PURIFICATION





LOCATION: California, USA

ARCHITECT: Bart//Bratke &
Office-DE

YEAR: 2016

STATUS: Competition



Due to its modular system foram can be expanded according to needs. It creates usable place on the sea. Foram consists of five different layers. There are floaters from low density polyethylene boxes that collect the purified water. The raft system is made of wood planks that has different functions for people. On the roof part there is a conduit system for the transportation of the water and at the top part there are desalination tanks with solar pond to create clean water and energy and hydroponics.



SITE PLAN | SCENARIO OF HIGH POPULATION SETTLEMENT

- 01 | View onto FORAM
- 02 | Single raft as boathouse
- 03 | Boat access
- 04 | On Water Experience



SITE RELATIONS | PHYSICAL CONNECTIONS AND ACCESS



SITE RELATIONS | INTERNET OF ENERGY AND WATER

HYDROPONICS



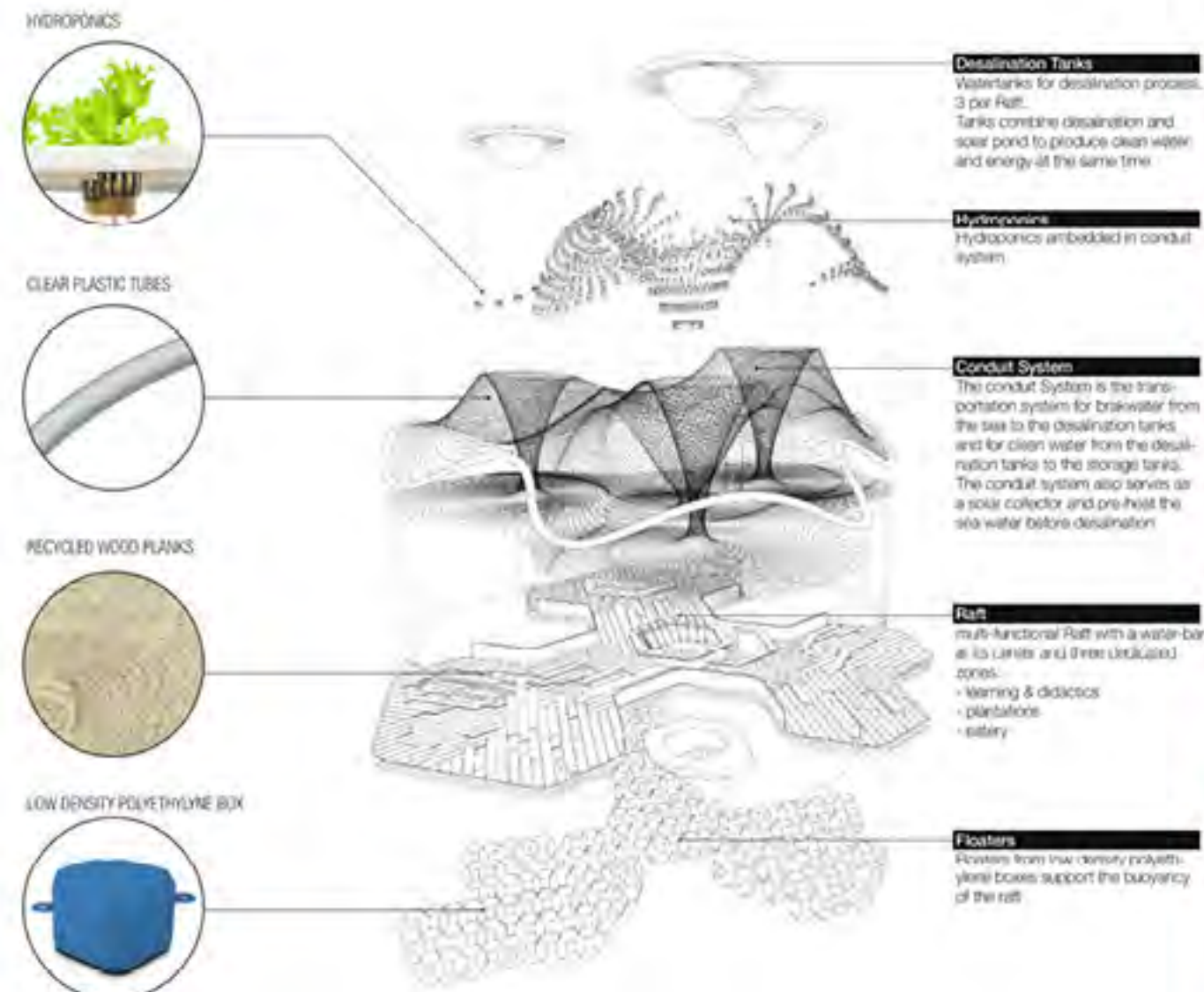
CLEAR PLASTIC TUBES



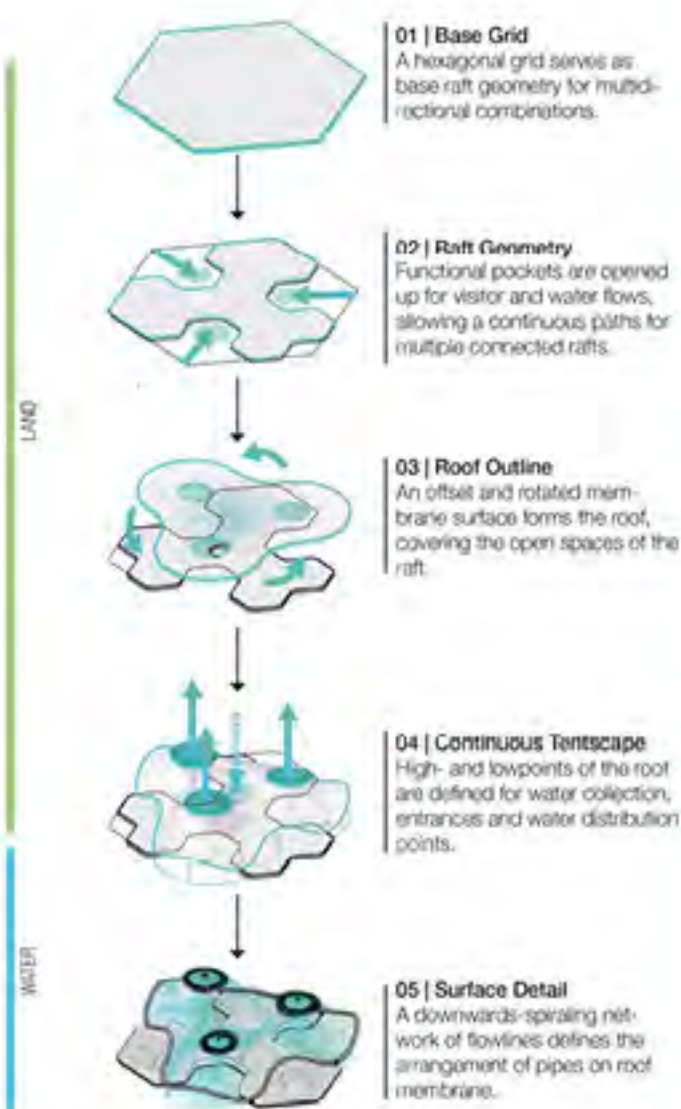
RECYCLED WOOD PLANKS



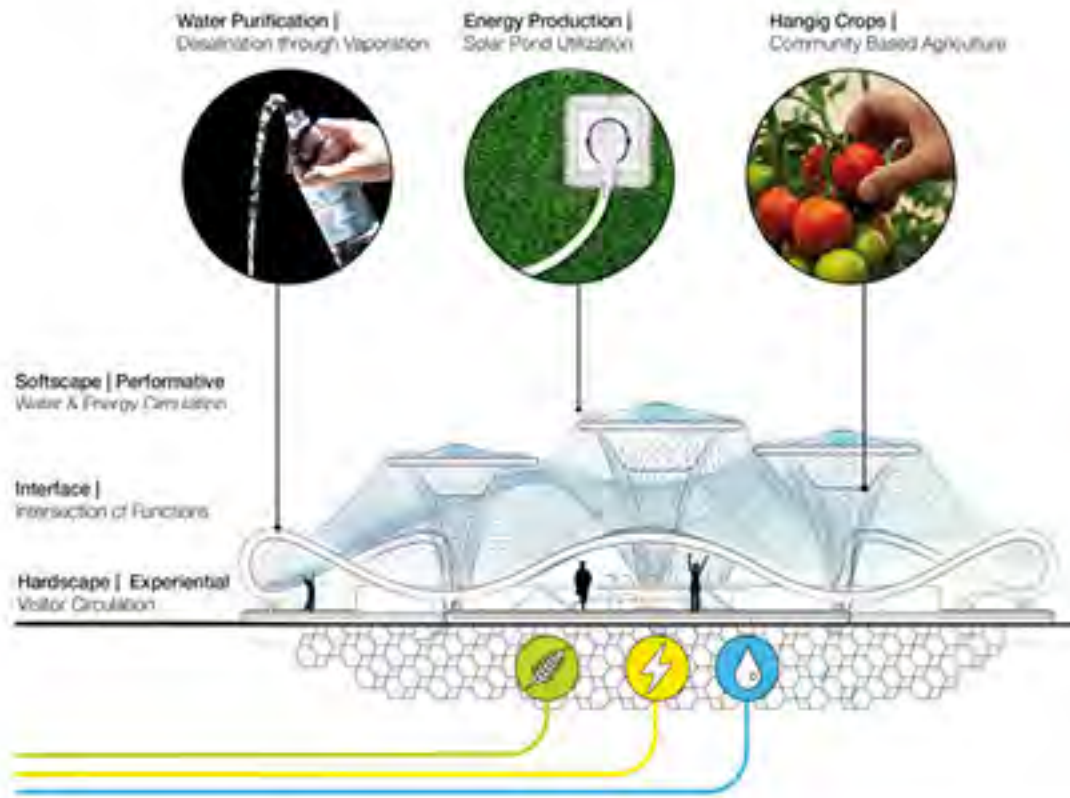
LOW DENSITY POLYETHYLENE BOX



CONSTRUCTION AND COMPONENTS | EXPLODED AXO



DESIGN PARAMETERS | GEOMETRY GENERATION

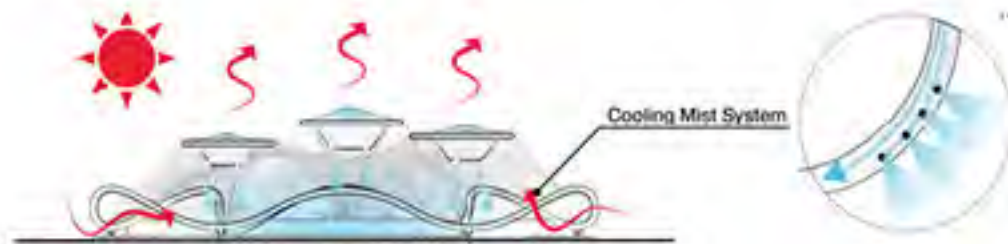


FORAM collects the water and sends it to desalination tanks. The desalinated water is pumped to the storage tanks. The fresh clean water can either be used as drinkable water directly at the fresh water bar, stored into municipality's water network, used on one of the platform's sections for off shore farming or get vaporized to cool down the surrounding and create bioclimate inside the structure.



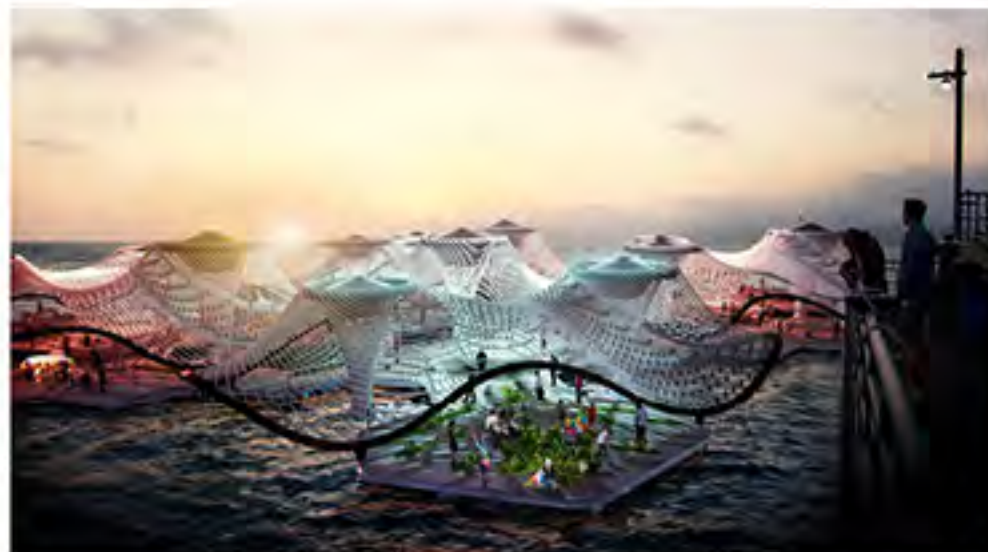
FORAM provides a new relaxation and chill out spot with different functions it has. There are catering learning and farming sections on the pavilion's arms. At the center there is water bar as a central spot of the pavilion.

DIAL INFRASTRUCTURE | GIVING BACK TO THE COMMUNITY



TEMPERATURE | CREATION OF MICROCLIMATE THROUGH SOLAR CHIMNEYS

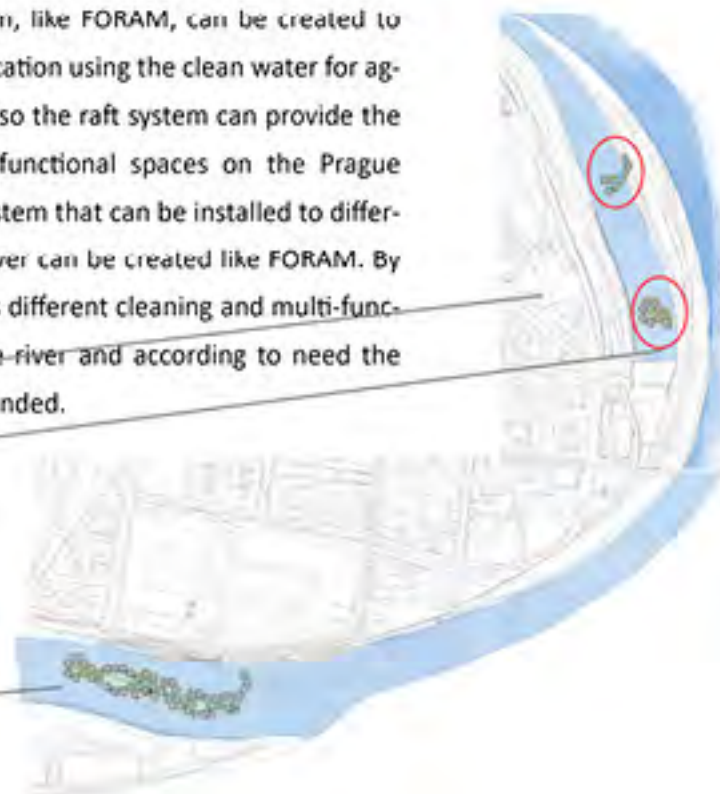




DESIGN IMPLICATIONS



In our site a system, like FORAM, can be created to provide river purification using the clean water for agriculture on site. Also the raft system can provide the usable areas and functional spaces on the Prague river. A modular system that can be installed to different spots on the river can be created like FORAM. By this way it provides different cleaning and multi-functional spots on the river and according to need the system can be expanded.



CHICAGO LAKESIDE MASTERPLAN





LOCATION: Chicago, IL

SIZE: 620 acres

STATUS: completed May 2007

ARCHITECTS: TeamSOM

AWARDS: LEED® ND: Pilot Silver goal
& Sustania Community Award

Masterplan Strategies

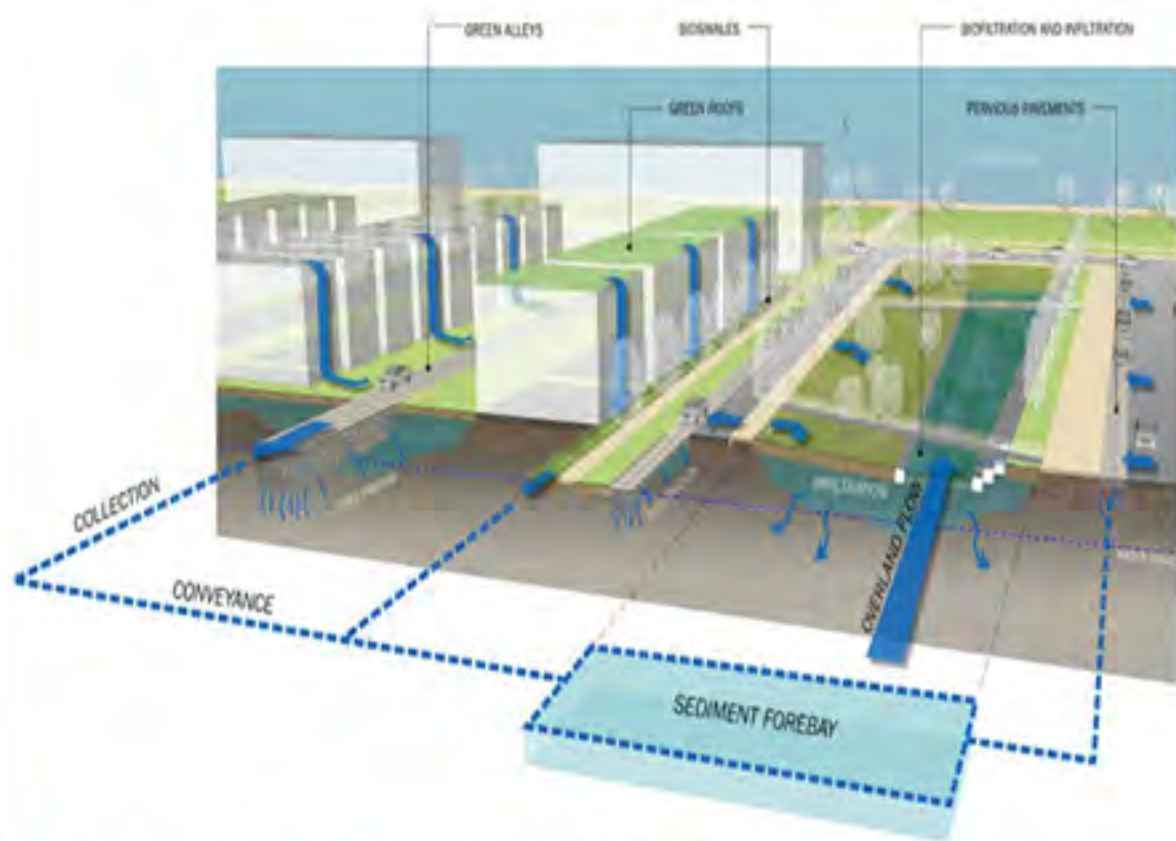


Placing a system of open spaces, parks and recreational spaces in every 3 minute walk circle. Therefore, people can easily reach to a open space in this dense district. It also contributes to the sustaining biodiversity of the area.



The map showing the existing infrastructure of the transportation systems and the proposed ones. A new transportation system, water taxi, is introduced as there can be people coming from lake.

Water Management Strategies



Rainwater infiltration system that emits water by the help of the plants.



Bioswales that collect and clean water naturally as open space features.



Chicago sends an average of 2.05 billion gallons of water to the Gulf of Mexico per day.



Living machine that cleans black and grey water coming from the buildings

This is an example of water harvesting, cleaning, reusing, returning and revitalizing the brownfield by using the power of the water. The water also used for the heating and cooling of the buildings. The Project also reuses the waste water used by the buildings by cleaning them in the living machines located under the buildings.

Energy Production Strategies



73% of Chicago's energy comes from coal. The Project expands options for efficient fuel sources to include: wind, solar, bio-fuel and waste. It is also a zero waste system that recycles and reuses it by eliminating waste to landfills and produces energy from the process.



Aerial view of the site showing the new marina which contributes to the economical aspect energy for the site and the open spaces which are good for the biodiversity of the site.

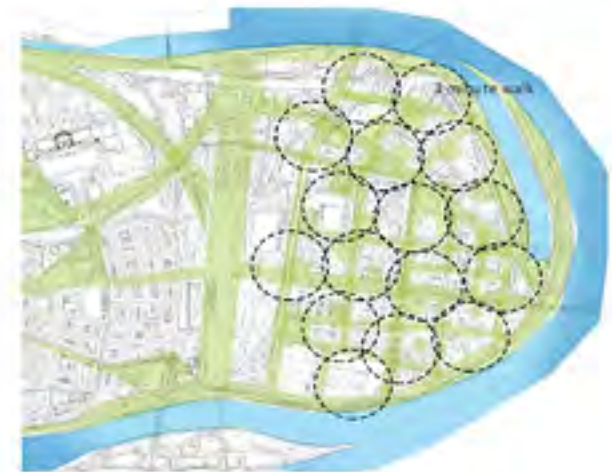
Design Implications



of the area, the wind farm which creates



Sustaining the biodiversity within our site for the sake of the diversity of the plants and animals by extending the greenery and green corridors.



Placing eco-parks, plazas open green spaces and recreational spaces which are cleaning people's minds to the every 3 minute walk distance circles.



Creating a canal that goes through our site in order to clean and fix the nasty soil of the brownfield which was made by the train oils. The canal also contributes positively to the problem of flood that can be occur in our site. Adding new marinas which will enhance the economical aspects of the area. Water taxi is recommended between those marinas.

HYDROELECTRIC POWER STATION





ARCHITECTS: Becker Architekten

LOCATION: Keselstraße, 87435
Kempten, Germany

Size: 1040 sqm

CATEGORY: Energy Plant







Design Idea



Mark raft work,
on job

The starting point of the design considerations was the symbolic representation of the water dynamics, which change from a calm state at the water inlet to the churning and pitching of the water near to the turbines, before subsequently returning to a calm state after the electricity generation.

Further associations included the river-washed rock formations in close proximity to the location of the power plant.



The Iller is a river in Bavaria and Baden-Württemberg in Germany. It is a right tributary of the Danube, 146 kilometres (91 mi) long. Iller has a catchment area of 2,152 square kilometres (831 sq mi). It ranks as the seventh of Bavaria's rivers by water flow, with an average throughput of 75 cubic metres per second (2,600 cu ft/s) at Senden, a short distance upstream from the Danube. The power of the river is used for the production of hydroelectricity via eight power stations with a total net capacity of 51 MW.

On the left banks of the river Iller a new, highly efficient hydro – electric powerstation substituted an older powerstation from the Fifties by now supporting approximately 3000 households with 10,5 million kilowatt – hours of environmentally friendly power per year.



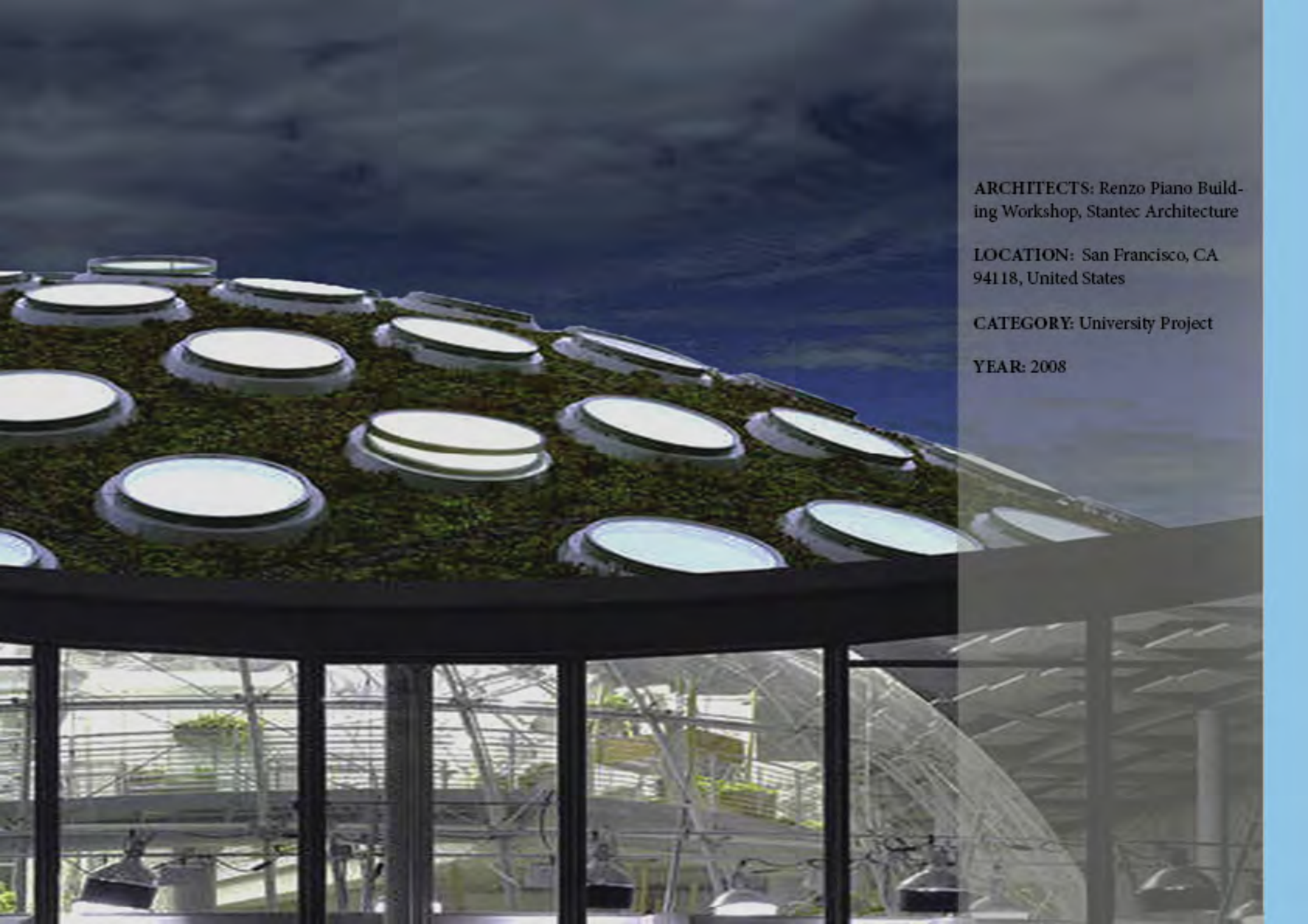
Vltava River in Praha

The Vltava river is the natural axis of the southern half of Bohemia. The source of the river is in Šumava under the Černá mountain at a height of 1,172 metres above sea level. In Praha the average rate of flow of the Vltava river is $145 \text{ m}^3\text{s}^{-1}$ and at the mouth of the river to the Labe river the rate of flow is $150 \text{ m}^3\text{s}^{-1}$.

Considering the hydroelectric power station on Iller river and its average rate of flow, The Vltava river has really big potential to produce energy from water!!

RENZO PIANO'S CALIFORNIA ACADEMY OF SCIENCE





ARCHITECTS: Renzo Piano Building Workshop, Stantec Architecture

LOCATION: San Francisco, CA
94118, United States

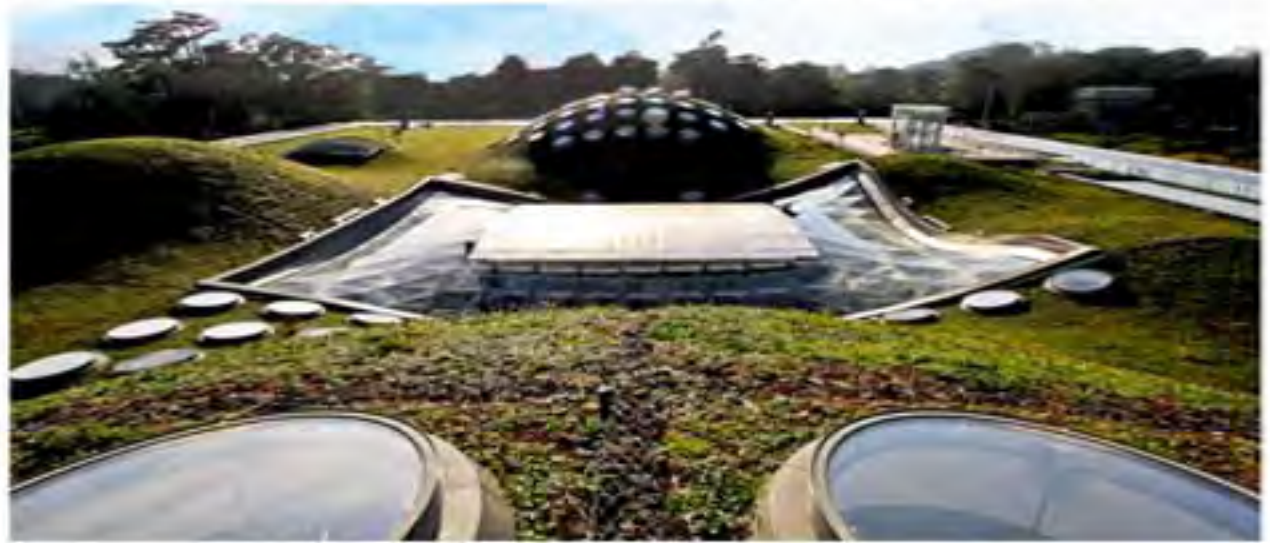
CATEGORY: University Project

YEAR: 2008





The soil's moisture, combined with thermal inertia, cools the inside of the museum significantly, thus avoiding the need for air-conditioning in the ground-floor public areas and the research offices along the facade.



The two main domes cover the planetarium and rain forest exhibitions.

The domes are speckled with a pattern of skylights automated to open and close for ventilation.







This can be a proposed habitat that we can offer in our site



Interior space rendering



- 1 There is already existing habitat in that area which we can integrate with kew houses, to grow vegetables which can be exported to other regions
- 2 This area is brown field which we can integrate with green houses, and aquaponics which we can get benefit of fishes and can create a natural habitat



THE PLANT





LOCATION: Chicago, IL

SIZE: 93,500 square foot

USE: Waste management and energy production

STATUS: Completed in 2011

ARCHITECT: Bubbly Dynamics, LLC

Design Approach



The Plant is a sustainable, self-sufficient building. It promotes economic growth in the surrounding Back of the Yards neighborhood.

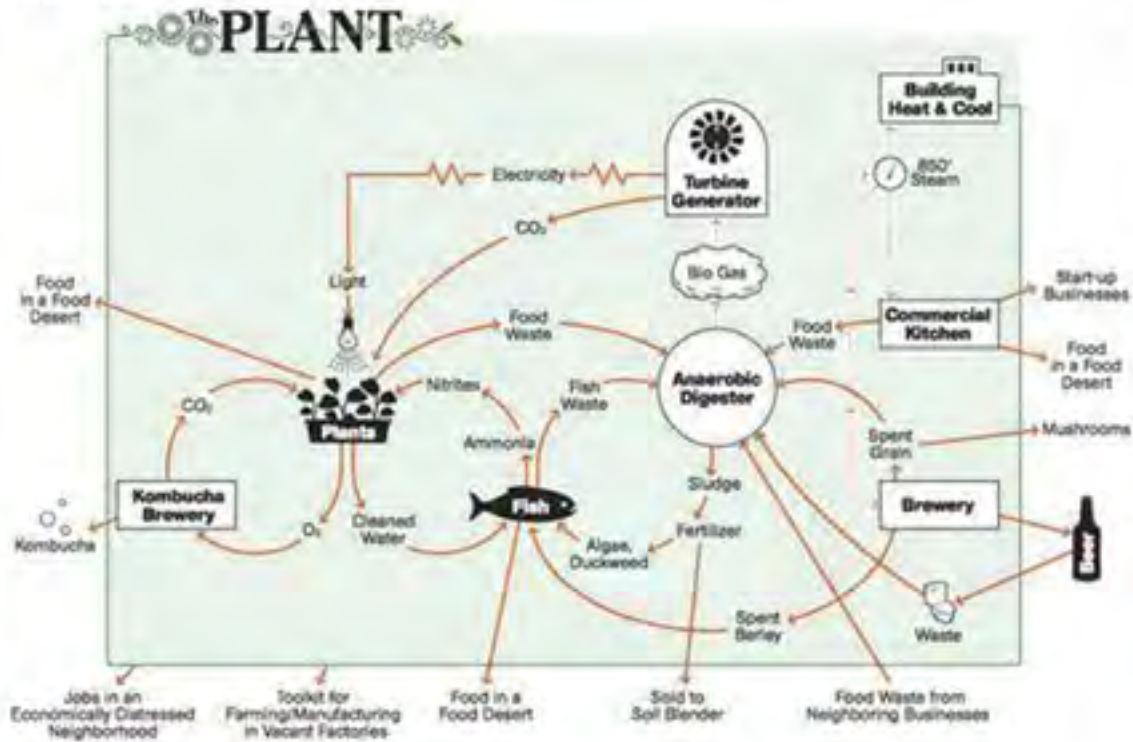
In the heart of the building, anaerobic digester is located that takes food and human waste and turns into biogas for algae and plants.

The gas triggers the generator that produce the lights for plants. In that way, plants produces oxygen and cleaned water for fish. The local community uses the produced fishes and plants in the commercial kitchen.

Waste is collected from neighboring buildings which is used by the anaerobic digester to produce energy to heat and cool not just for self but also for nearby buildings. It creates 125 jobs for economic neighborhood.

In the end of the design, the old runtown building is turned green center of the city.

The Cycle of Production



Design Implications



In our site, there are some bad conditioned and unused industrial buildings that can be turned into "The Plant".

The diagram shows the locations of potential adaptive reused areas. As the South part of the site is closer to the old town and attraction point, this the products of the building can be sold in the bazaar which is an adaptive reuse of old industrial buildings.

One of them can be served as a restaurant that sells the food made by the productions of the plants and fishes. In case of economy, it creates job oppurtunities for local community.

CHEONGGYEcheon RIVERSIDE





LOCATION: Seoul, South Korea

SIZE: 5.84 km

USE: Replacing the highway with open urban green spaces

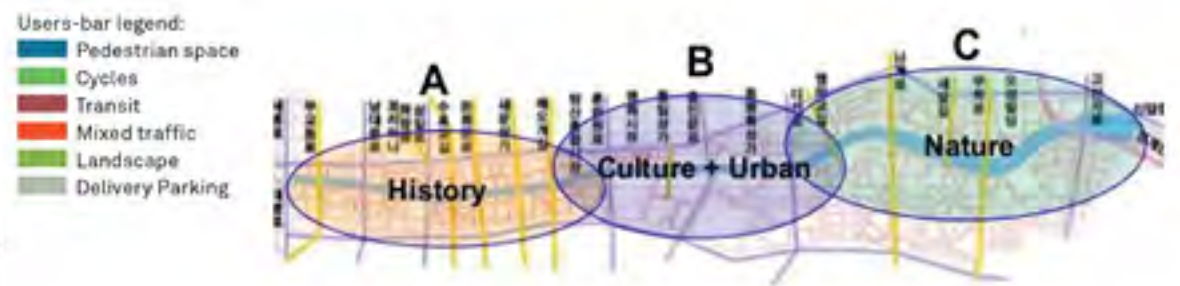
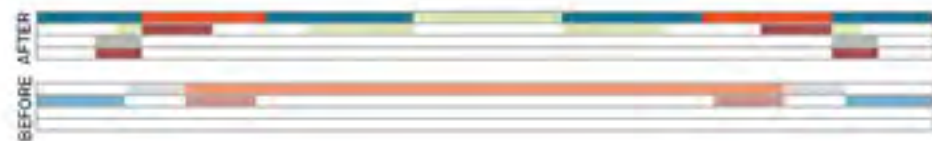
STATUS: Completed in 2005

ARCHITECT: SeoAhn Total Landscape

MASTERPLAN STRATEGIES



The **Cheonggyecheon** project is remarkable for its transformation from a seedy industrial eyesore to a nature-filled public space. The restoration of the Cheonggyecheon aimed to provide people with access to nature in the city as well as to revitalise downtown Seoul's culture and economy by replacing space for cars with space of pedestrians and nature. An elevated highway was demolished and replaced by a linear park along the reconstructed urban stream. The success of the highway removal also promoted further pedestrianisation initiatives around the city, and improvements in the public transportation systems, and helped trigger a number of other highway removals.



The artificial river provides visitors and local residents with a number of ecological benefits. The vegetation and running water provide habitat for fish, birds and insects, whose life increases the attractiveness of the river as a small area of green and blue in downtown Seoul that provides a relaxing place to sit, walk, and play.

DESIGN STRATEGIES

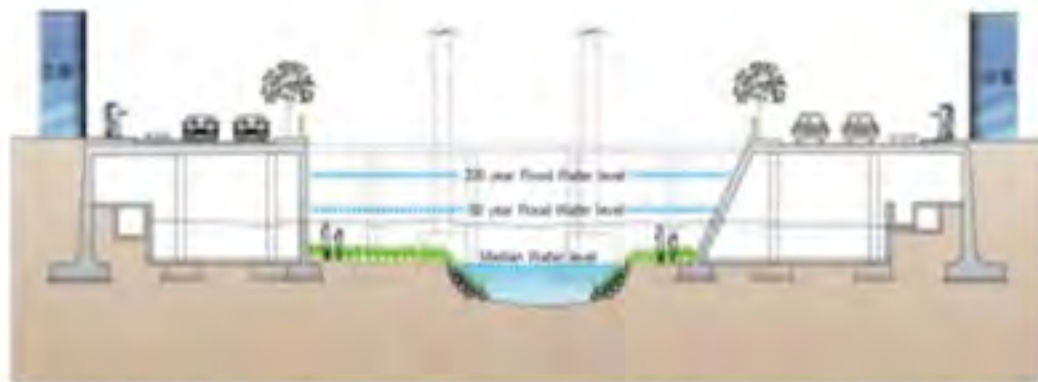


The Seoul Metropolitan Government chose to dismantle the elevated freeway and concrete deck covering the stream. To improve north-south linkages, 22 bridges – 12 pedestrian bridges and 10 for automobiles and pedestrians – were proposed to connect the two sides of the Cheonggyecheon.

The restoration reestablished connections between waterways. The Cheonggyecheon eventually runs into Jungraechon stream, which leads out into the Han River. The wetlands at their meeting point are designated as an ecological conservation area.

The project has successfully enhanced opportunity for people to experience living ecosystems in downtown Seoul.

FLOOD STRATEGIES



<Figure 10> Cross-section view of Cheonggyecheon and estimated flood elevation

Terraced vertical walls give visitors access as water levels change, create seasonal interest as levels submerge and re-emerge, and provide flood protection for the city.

Environmentally, it provides flood protection for up to a 200-year flood event and can sustain a flow rate of 118mm/hr.

The restoration reestablished connections between waterways. The Cheonggyecheon eventually runs into Jungraechon stream, which leads out into the Han River. The wetlands at their meeting point are designated as an ecological conservation area.

DESIGN IMPLICATIONS



Replacing the road with open public spaces and providing pedestrian access & public transportation is beneficial for both socio-cultural and environmental concerns. As well as keeping the local shops and commercials can provide economical profit at the same time preventing gentrification. Creating a cleaning system with canal/wetland and preventing the flood also strenghtens the functional concept.



Providing a multi-functional concept can affect positively all the ordering systems. Also it helps us to selecting functions due to site conditions and nearby existing functions. In that way we can strenghten the relationship with surrounding and we can create nodes for different purposes in a harmony.

SYDNEY FISH MARKET





LOCATION: Sydney, Australia

ARCHITECT: 3XN ARCHITECTS

CLIENT: Urban Growth NSW

Collaborators: GXN, BVN, Aspect Studios, WallnerWeiss

SIZE: 80.000 m²

USE: Market, Retail, Wholesale, F&B

STATUS: Completion 2023 (syf.1)





The Sydney Fish Market establish a world-class “culinary” destination. Main purpose is that integrating the public and contemporary market which will be turning into a landmark, into Sydney’s unique harbour urban landscape. The fish-farm and market will place people at the center of the architectural response, with an emphasis on place-making to encourage a strong sense of community at Blackwattle Bay.

Sydney Fish Market, from its current location in Pyrmont, will be transported to an adjacent jetty at Blackwattle Bay in Sydney Harbor in Bays Precinct. Located in the center of the new market, this magnificent harbor front location will include a variety of restaurants, cafes, bars and food stalls that will rival the best markets in the world and offer Australian products to the world.

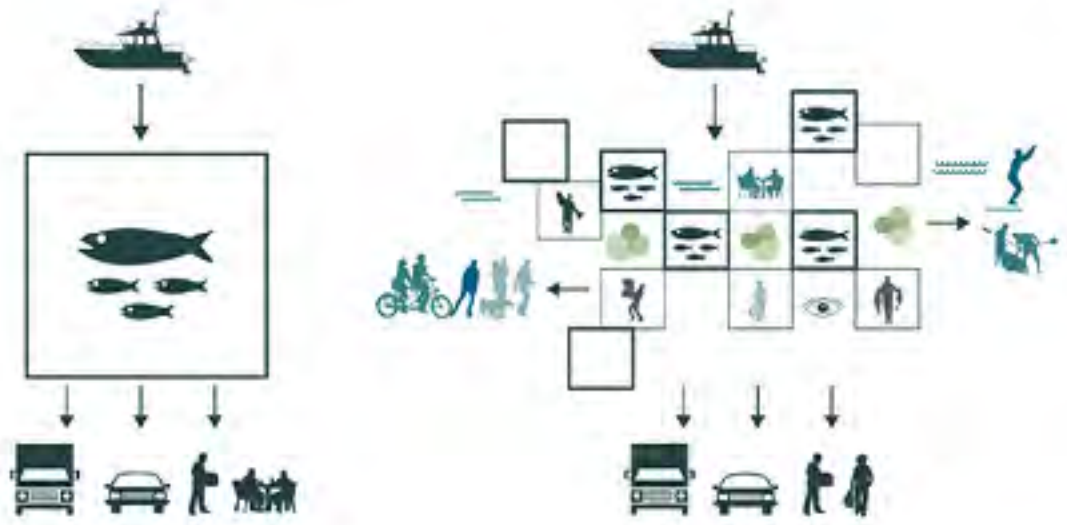
The new market will be located the water and the park and across the promenade. However, instead of allowing the new building to disrupt the link between existing qualities, the design sees the new Sydney Fish Market as a critical component of society: a catalyst for both physically and identity-enhanced relationships. Offers for both domestic and visitors.

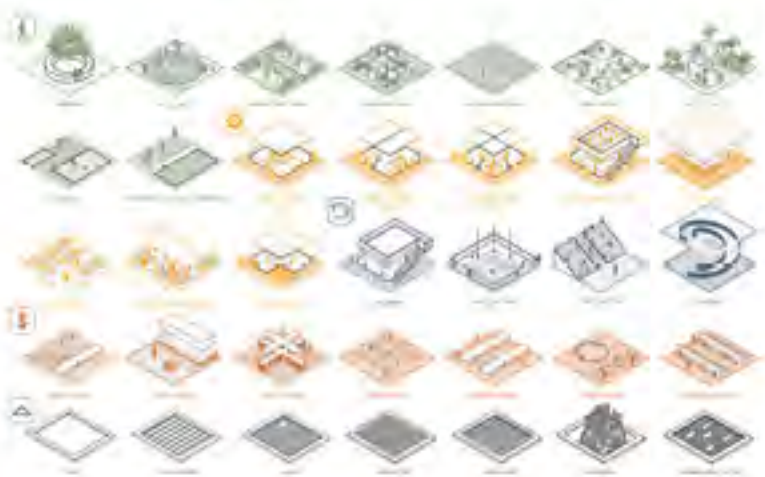


CONNECTION WITH THE CITY:

The coastal pathway is integrated and expanded with roads that encompass the goal and the paths that permeate more intimate interaction through permeation and permeability.

The flows from Bridge Road is separated so that different functional uses can be continued uninterrupted by each other. Strategies that provide ease of use for pedestrians. In order to that separate pedestrian and vehicle flows through a variety of configurations which provide a link to a wider community for markets, and to provide the necessary transport links for the distribution of market products off-site.





At the end of the Blackwattle Bay, the proposed site stands out, asking for a unique response to the functional nature of the market and the integration of the port network and the expansion of Sydney's public water site. Although lock operation is inherently industrial, the aim is to focus on human scale and fine-grained urban form in urban fabric.

"Sydney Fish Market is a beloved institution among Sydneysiders, Australians, and international visitors. Therefore, it was integral to select a design team that will modernize and improve the site while recognizing its long-standing heritage and retain the authentic experience that attracts customers and visitors."
 -Bryan Skepper, Sydney Fish Market General Manager

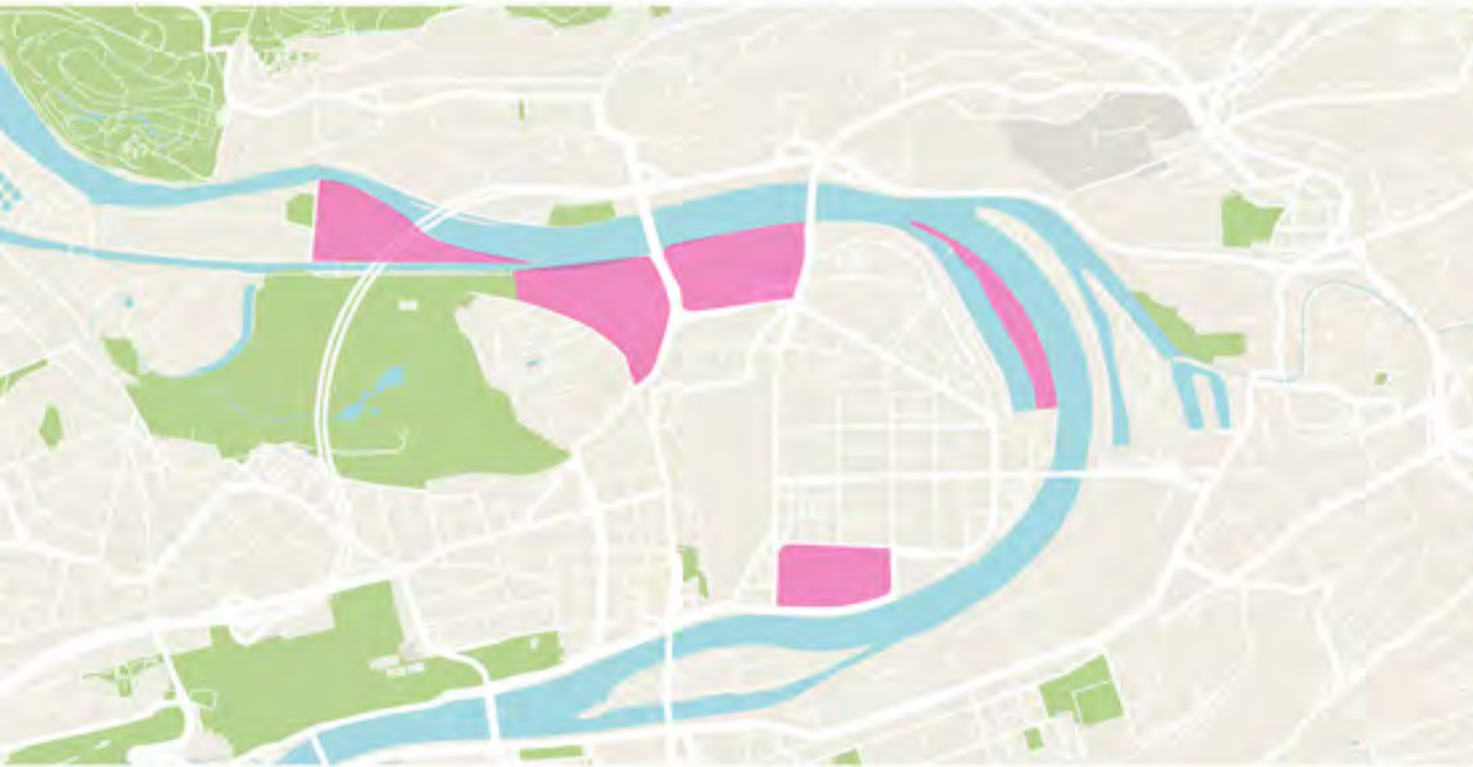




SO WHAT?

By integrating nature into the building, an active link is created between the peaceful green park and the vibrant, social spaces of the markets, drawing the surroundings and its visitors into and through the market towards the water.

Area can be programmed with various indoor and outdoor functionalities, depending on the social needs of market users. It allows for interior and exterior spaces to flex, grow and shrink as needs require. The building becomes a responsive element that changes to meet the current and future needs of the various user groups and stakeholders.



Possible Locations



TRANSFORM THEYANGTZE WATERFRONT WITH FLOOD-FRIENDLY MASTERPLAN



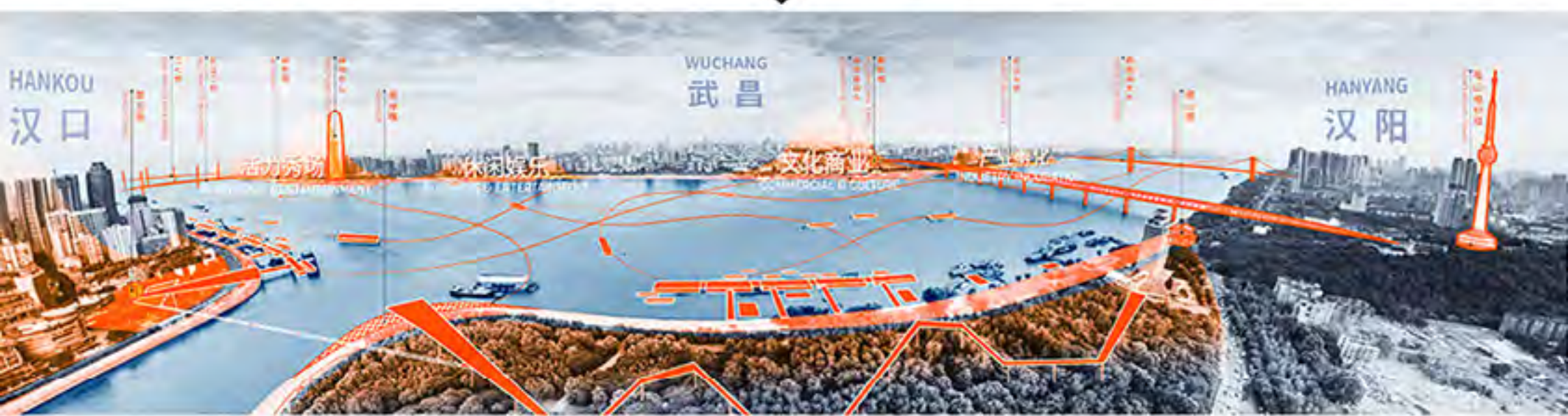
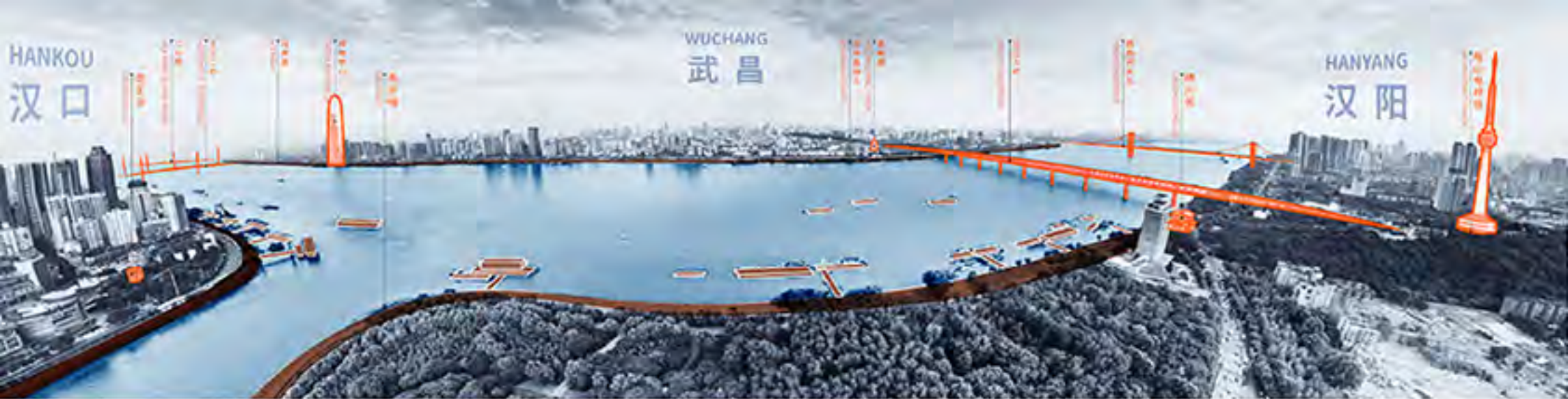


LOCATION: Wuhan, China

ARCHITECT: Sasaki Design

SIZE: 503 hectares



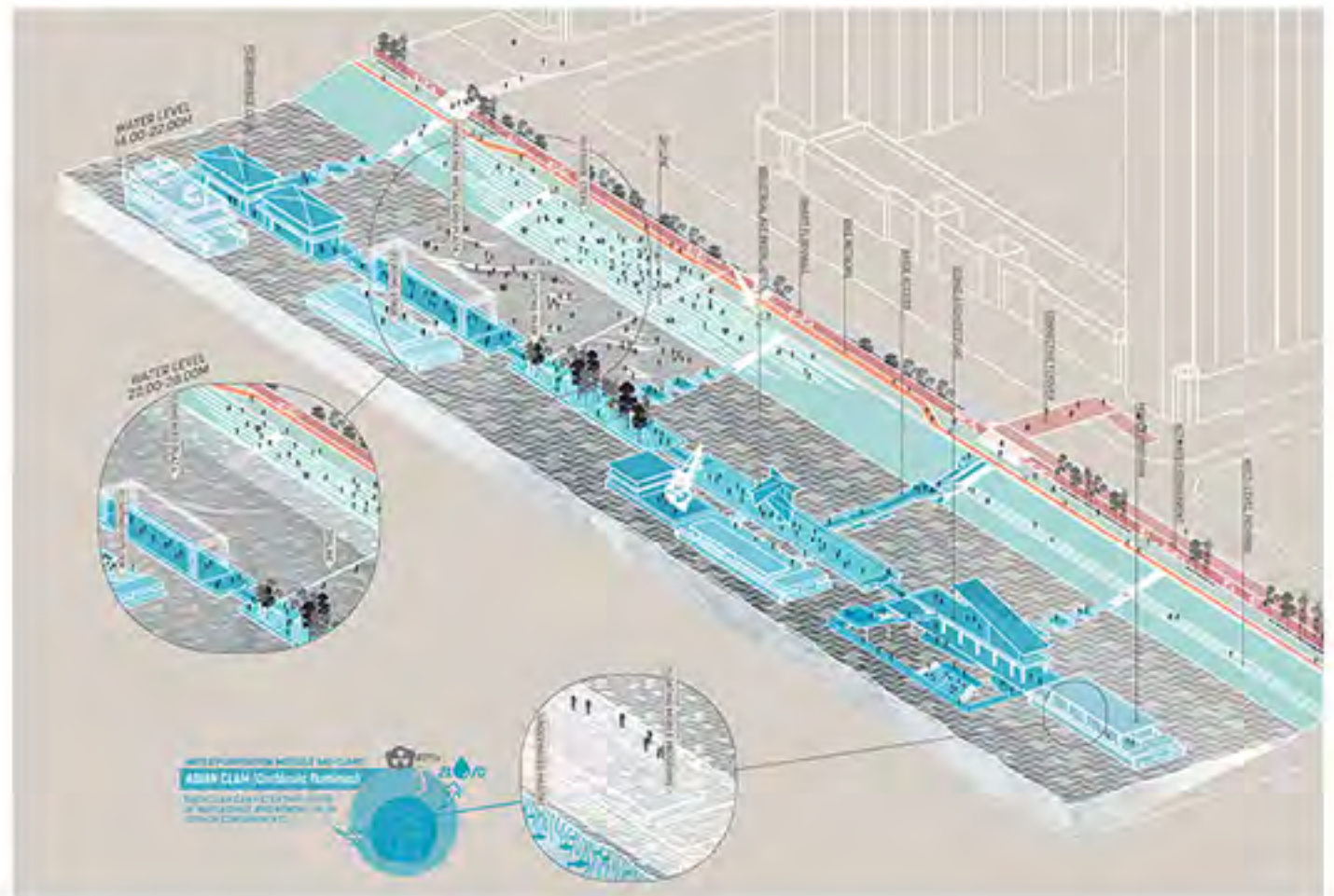


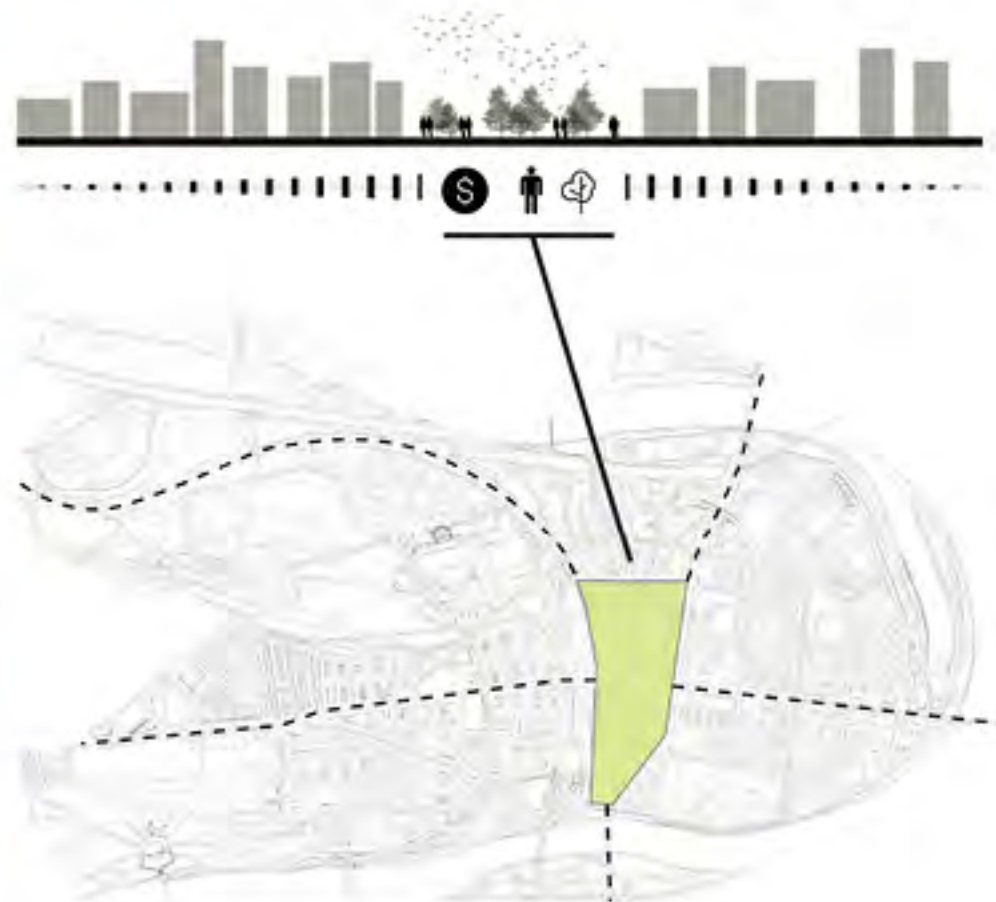
The project focuses on landscape urbanism and seeks to celebrate the river's spontaneity, and incorporate flooding as an essential element. A series of microenvironments host a wide variety of distinct wetland ecosystems, the characters of which evolve throughout the seasons.

Sasaki's scheme taps into the river culture of Wuhan, where people frequent riverfront parks even when they are flooded, thus enjoying intimate contact with the water. With strategic dredging and grading, the design creates microenvironments that hosts a variety of wetland systems, while topography and natural water level fluctuations allow for a rich community of plants to grow.



A series of secondary schemes emerge from the mudflats at mid-high water levels to permit alternative routes for aquatic wildlife, as well as safe corridors for kayaking. During dry months, these stream beds function as informal pathways for visitors to explore. Other recreational spaces are arranged based on careful calculations for dispersing distances for wildlife species, so humans do not intrude on their natural environment. This facilitation of wildlife also includes logs for turtles to loaf on, submerged fish structures, waterfowl nesting platforms, and discreet birding stations.





The area could be revitalized as a wild life hub, it can be a wetland that will be the habitat of species. Bird, fish, etc. could live there and it can be a unique space for children.

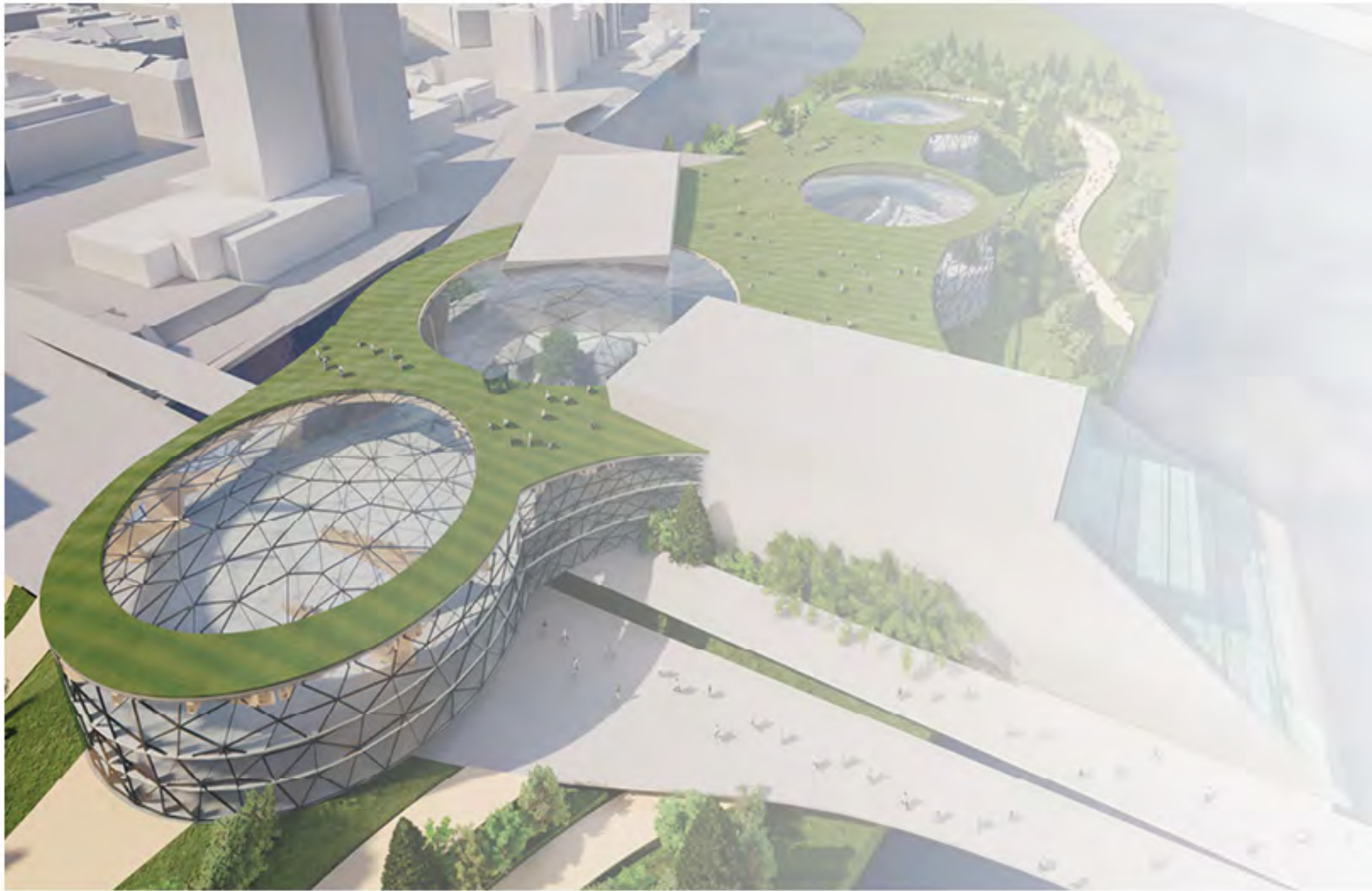
The area could be turned into a "Central Park" in the urban context. The idea could be supported with some technological opportunities. By using phones the park could be turned into a wildlife education center.





PROJECTS

- 1-KAAN KAZANDI_The Dedication
- 2-EREN GOZDE ANIL_Hi! Tech. Headquarters & Metro Stop
- 3-GULTEN MELIKE VAR_G&M Technology, Research and Community Center
- 4-ALI KEMAL KURDOGLU_Hydroelectric & Green Power
- 5-AYSEUR BARUTCU_The "Snitch"
- 6-TUGCE TASER_The Brew link: A Boutique Brewery for Prague
- 7-YASMIN ABDULLAYEVA_Living Creature.. Production Breakdown
- 8-EUF POLAT_
- 9-RUYET SEFERCIOGLU_
- 10-EDA TARAKCI_
- 11-AYSEUR SENEL_
- 12-ECE BURCU GULOGLU_ Sustainable Mix-use in Urban Context
- 13-IPEK BAYSAL_ Sustain Section of Prague
- 14-ALMIRA AKMAN_ The New Habitat
- 15-YAGMUR GUR_ Sustainable Settlement for Performance of Industrial Heritage



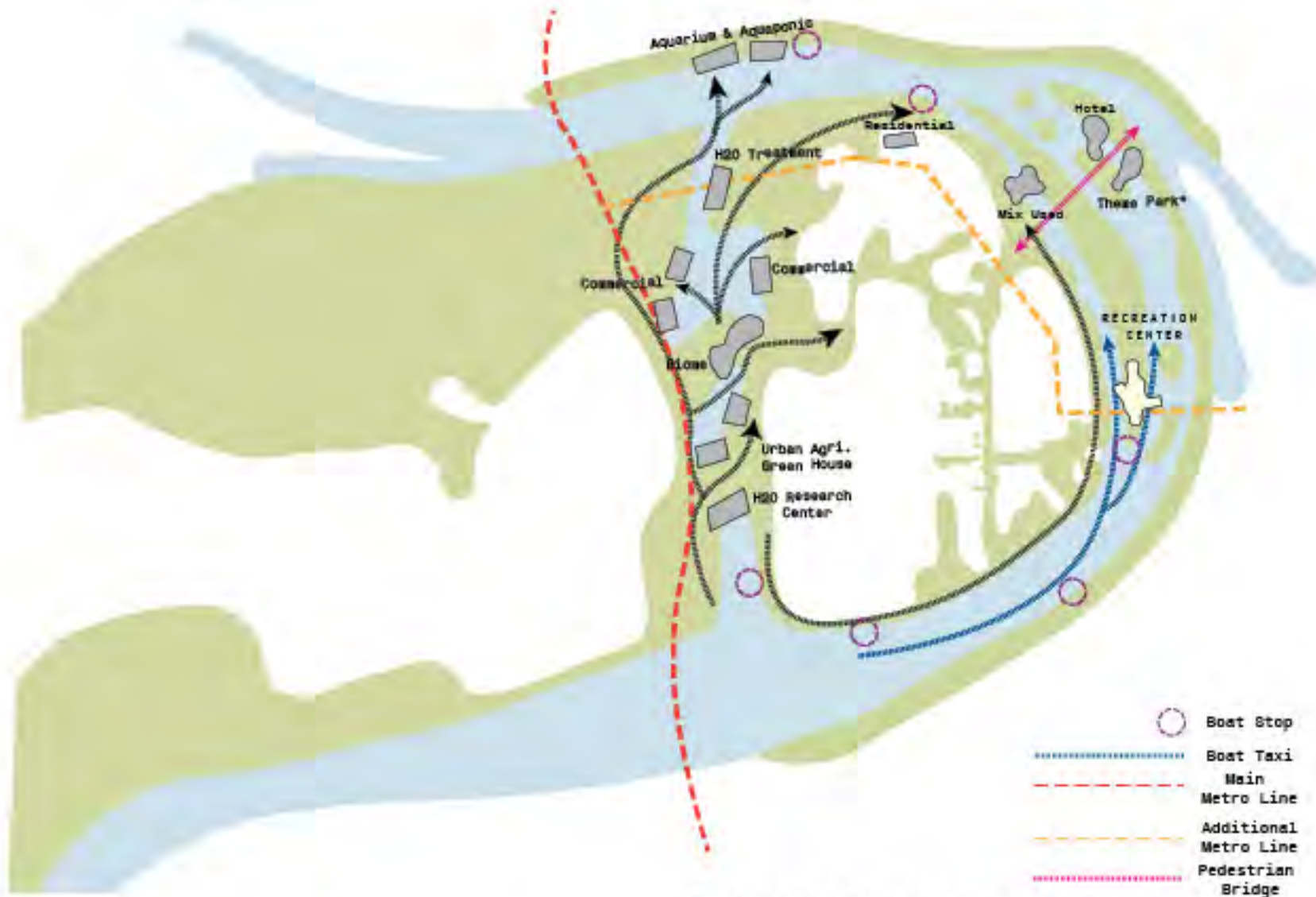
THE DEDICATION

Kaan KAZANDI

The city of Prague suffering from urban sprawl, eco-system and bad living conditions. Therefore, series of renewing elements are needed in that situation. Thus, I have chosen the functions in order to fulfill this need and to sustain the system in this proposed master plan. Since the Prague 7 is quite large, i preferred to provide different solutions for different zones. The middle zone of the Prague 7 suffering from black lands and the earth pollution due to existed old train station, I proposed series of wetland at the south edge of the lake all along to north edge of the lake. In order to create the wetlands, i preferably used the existed river to give an access through to site. I chose series of functions related to eco-system to revitalize the area. H2O research center, H2O treatment center, Urban agriculture and Green houses, Biome and finally commercial buildings placed in that region of Prague 7. Also these functions are helped to me in terms of connecting the existed greenery to proposed greenery. Since the main aim of the master plan create solutions for urban-sprawl, eco-system and bad living conditions, i preferably chose to create "green fingers" in master plan level to propose a solution to fix conditions.



While creating these "green fingers" i used abandoned spaces or existed gathering spaces. Therefore, while creating new solution, I respect to existed city texture of the Prague. Around those green fingers, I pruposed new residential areas where the city needed these residential units. All green fingers meet the east-side of the Prague 7 where an abandoned port existed. This port existed because of an artificial canal but this canal one side open. However, the river stream is opposite this canal. Thus the canal water is slack water and it causes enviromental problems. In order to solve this problem i chose to remove this port and open the river stream. It also contribute the enviromental conditions of this region and attarct the people.



MASTER PLAN CIRCULATION DIAGRAM

With the help of making green fingers and removing the old port give the opportunity to developed circulation in Prague 7. Since the main focus is solving the urban-sprawl and the eco-system related problems these solutions provide better circulation with creating "dog-bones" around Prague 7, great view and eco-friendly enviroment to Prague 7's people.



The selected function is recreation center which includes physical rehabilitation center for people, different sport facilities, workshops for preparing healthy foods and healthy life-style, green-house, bazaar for locally produced healthy foods, retail units and also a green roof. It also has bridges which is a linkage in between west side of Prague 7 and recreation center.



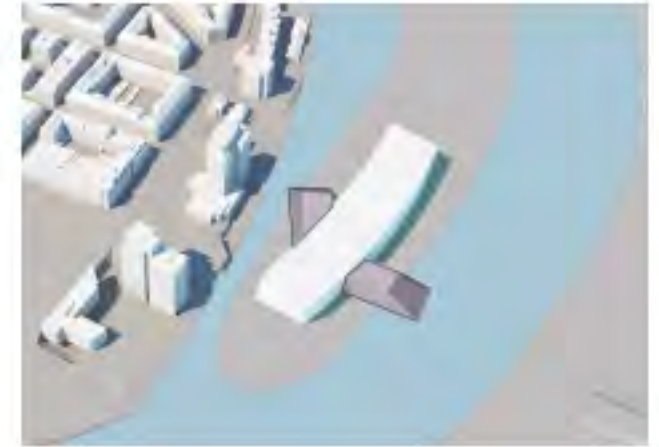
FORM DERIVATION



1. Adding a mass middle of the island in order to create different visual expressions.



2. Mass stretched to river in order to move away from city life and stress and benefit from great view and environmental issues.



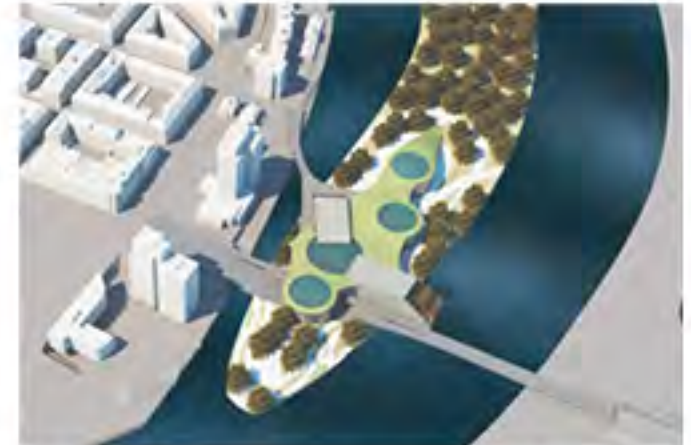
3. Adding primary functions.



4. Adding secondary functions with circular shape in order to maximize the view and the area.

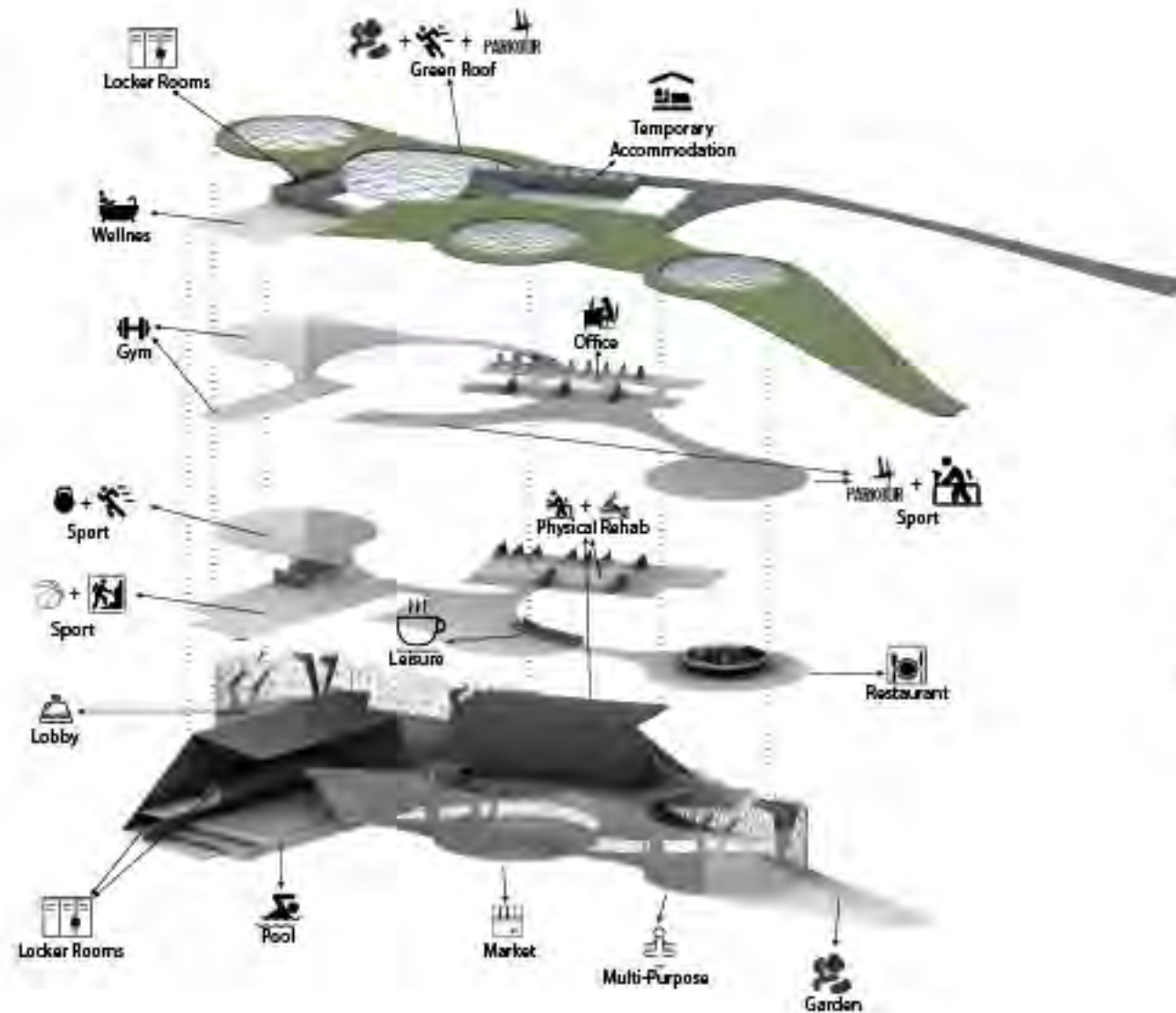


5. Adding green roof in order to create an external life and benefit from sun.



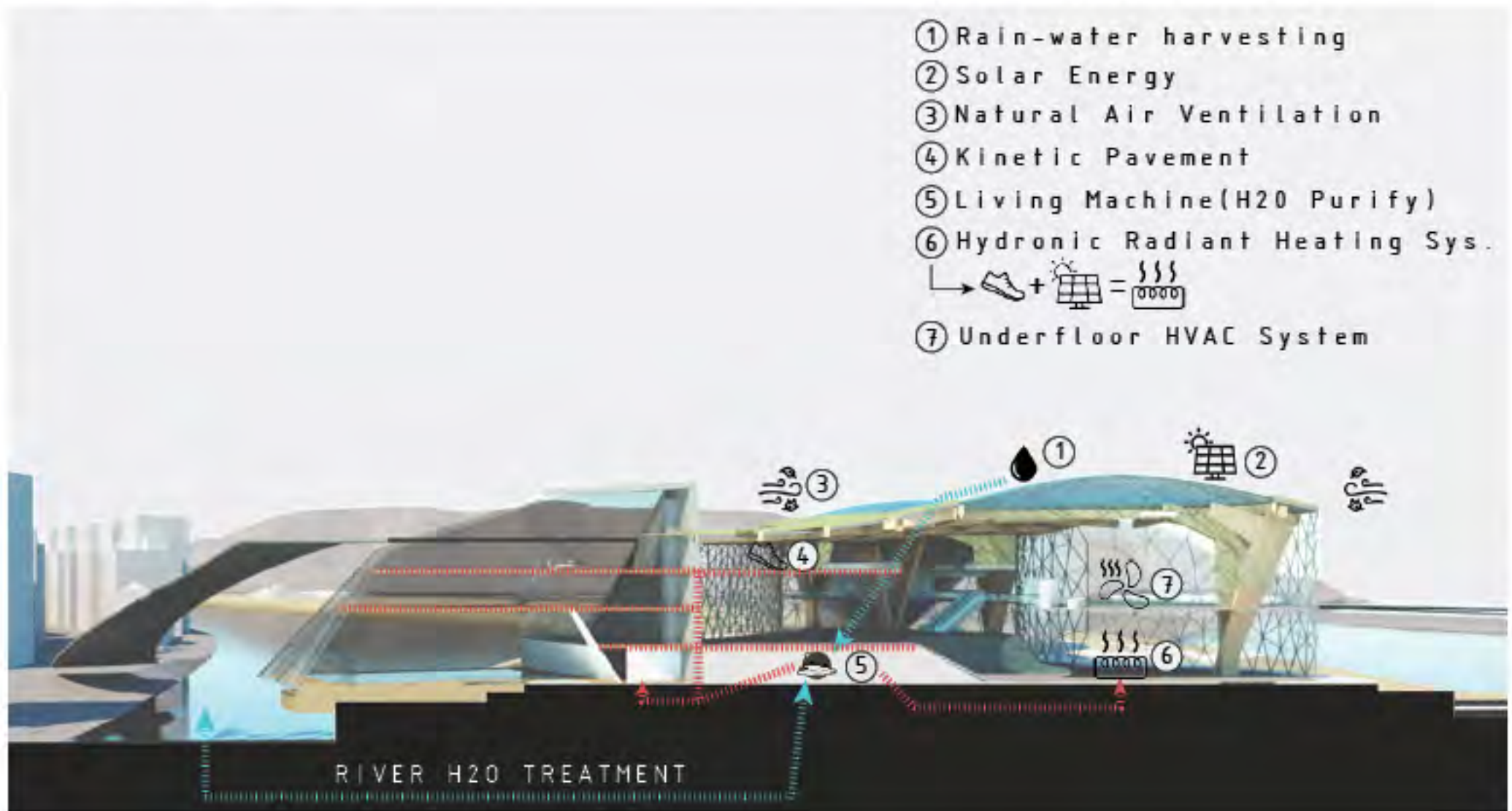
6. Adding landscape elements and bridge in order to complete the relationship with the island and the rest of the city.

EXPLODED AXONOMETRIC FLOOR PLANS



The building has an open plan form includes many function in it. It has an advantage since it is a recreation center. It may requires many configuration as possible for different activities related with rehabilitation and sport as well. Only certain spaces which required defined spaces such as pool, basketball pitch, locker rooms, physical rehab labs, offices and accomodation spaces. Other than that mainly oriented in free plan form.

ENVIRONMENTAL TECHNOLOGIES



Since this building aimed healthy live for people, building itself also respect to the living enviroment and nature. Therefore, many different enviromental aspects are take place in this building in order to contribute the enviroment and become a "green" building.

In order to strengthen the idea of the open plan, the terraced levels are applied into building to provide sufficient visual connection and creating different experiences while making activities. Mainly from all levels people can experience different levels activity. Therefore, visitors can observe activities without any restrictions and they can interact with these activities as well.









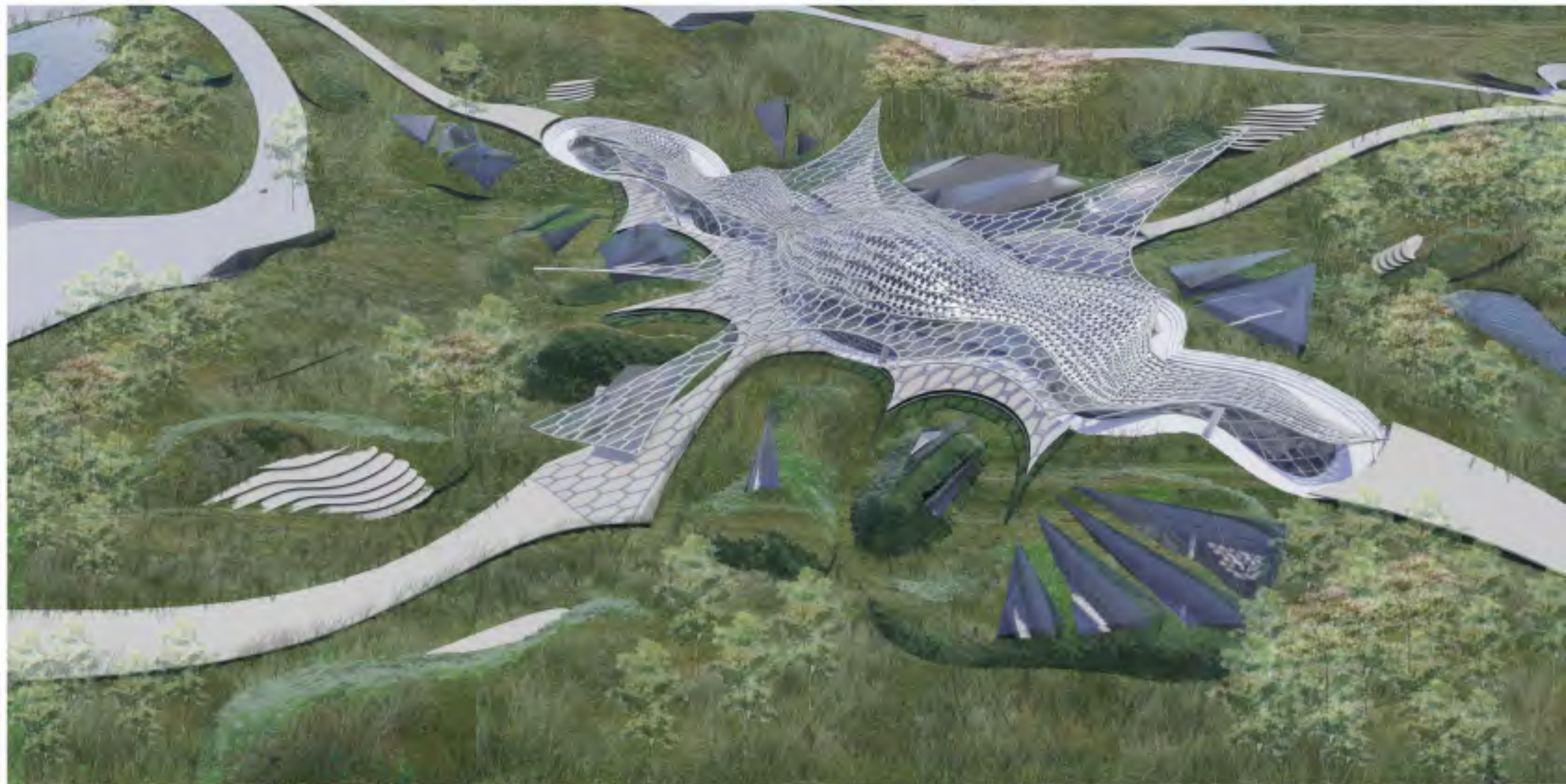
Hi! Tech. Headquarters & Metro Stop

Eren Gozde Anil

In the architectural history of Prague 7, every generation who had used this site, used it negligently and harmed the beautiful nature of the peninsula. What makes this design considerate is that it is an earth integrated building which does not block any views and instead it improves connectivity between east and west of the peninsula by behaving as a gathering node in the landscape while it aims to behave as a bridge between several different nodal points in the site. While improving the pedestrian circulation within the area, it also becomes a solution for the public transportation gap between Prague 6 and 8 by introducing a new metro line between these zones.

As it is located on the brownfield in Prague 7, Hi! Tech. Headquarters & Metro Stop aims to connect the society, to provide comfortable spaces in the cold climate of Prague, to create an environment in which people are encouraged to engage in each other's experiences through visual connection and to improve the soil, air and water conditions within the area. It is carefully situated where several important axis intersect each other and where the external circulation will enable pedestrian access from every possible direction.


In terms of function, it is designed to have an open office system for a high tech. company where people are encouraged to work wherever they would like to as a response to Czech being one of the countries which holds the best hackers in the world. The building has an open plan which enables people to circulate freely. It promises to create landscape internally and externally to enable the people to experience nature through out the year. The metro stop is connected to the interior garden which is designed to let people experience the green space when the weather is uncomfortable to be outside in the park.




1. greenhouse
2. botanical garden
3. market, commercial, elevated park
4. commercial, health center, gym, metro
5. market, fish farm, water purification, metro
6. sports clubhouses
7. Hi! Tech. Headquarters & Metro Stop



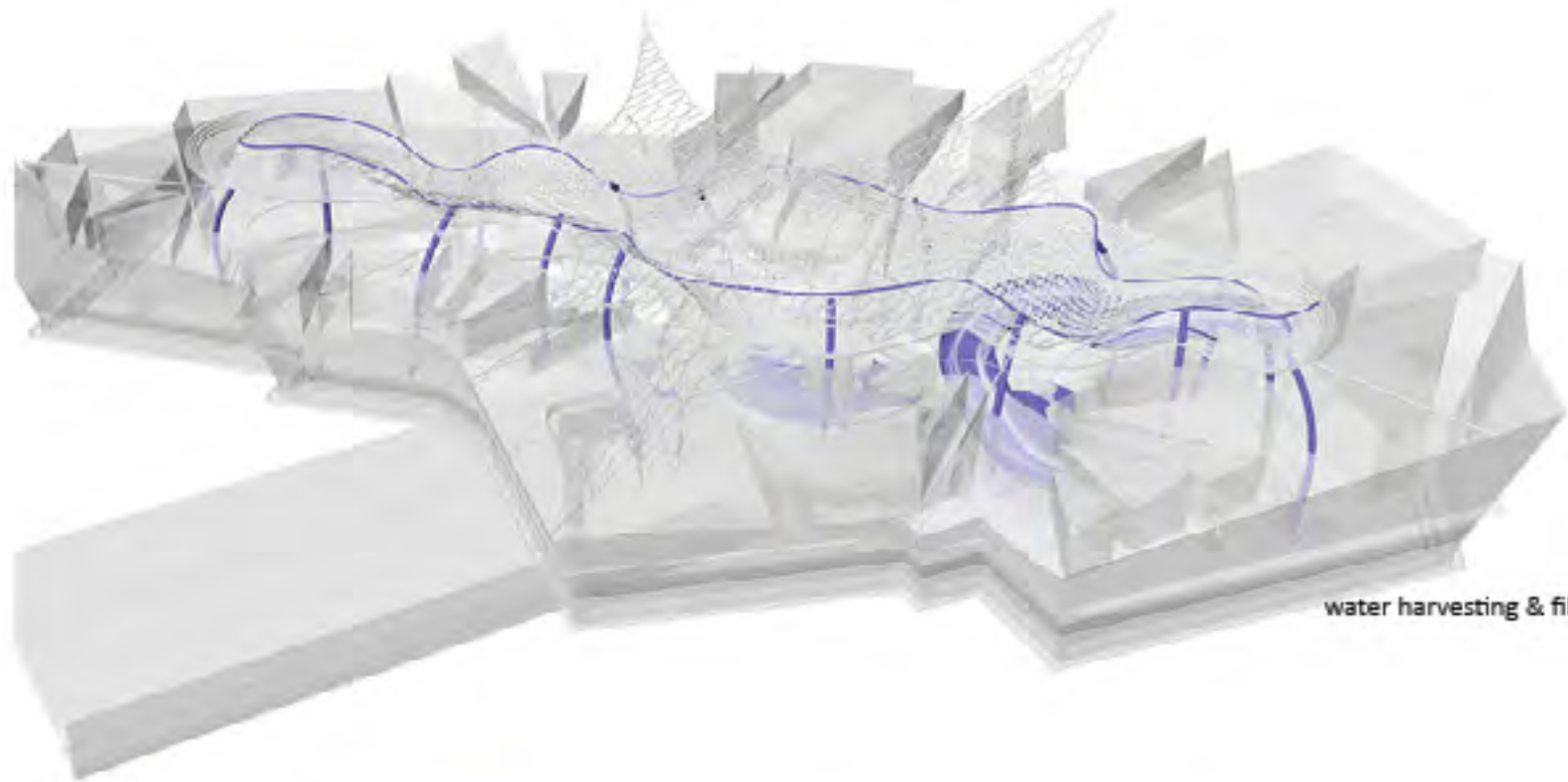



 hydrology

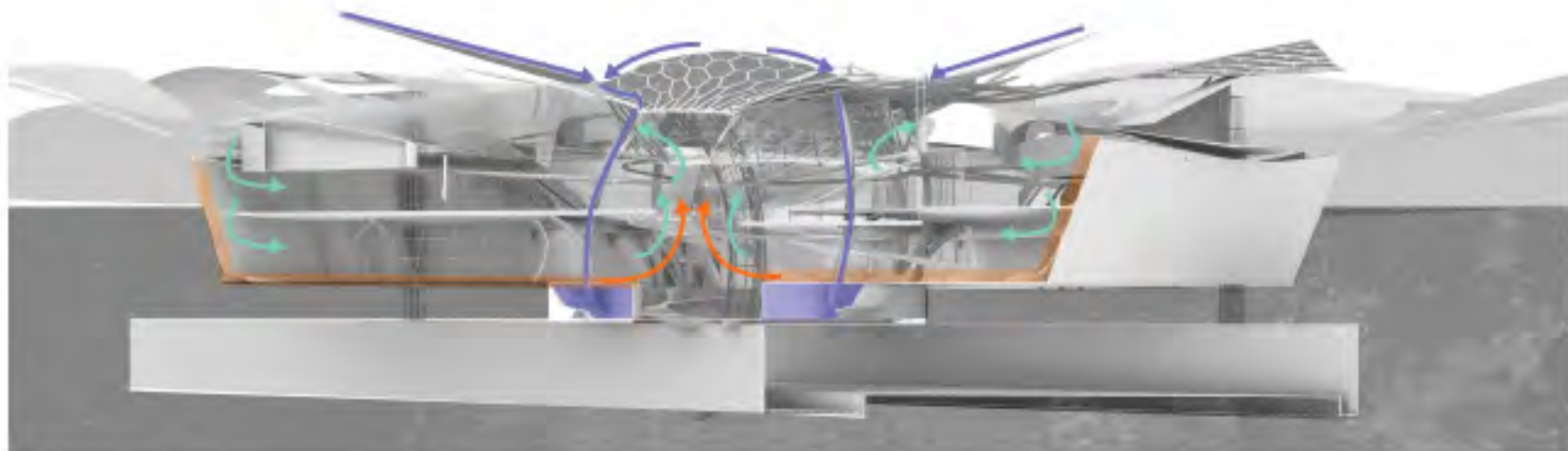


 greenery






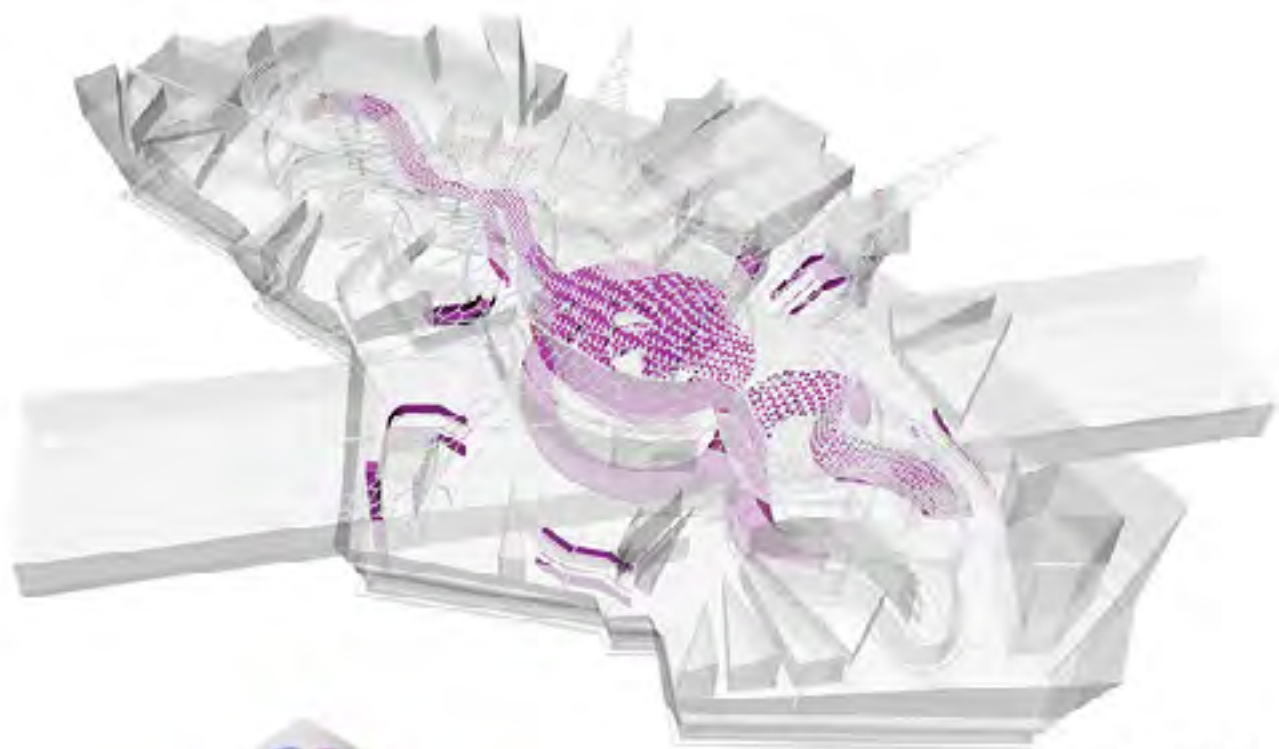
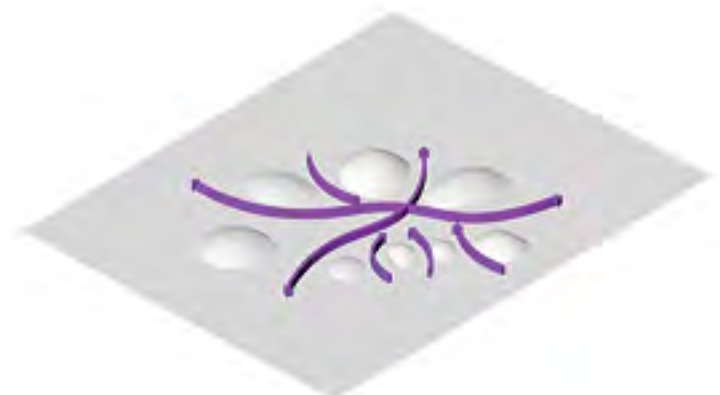
water harvesting & filtration 



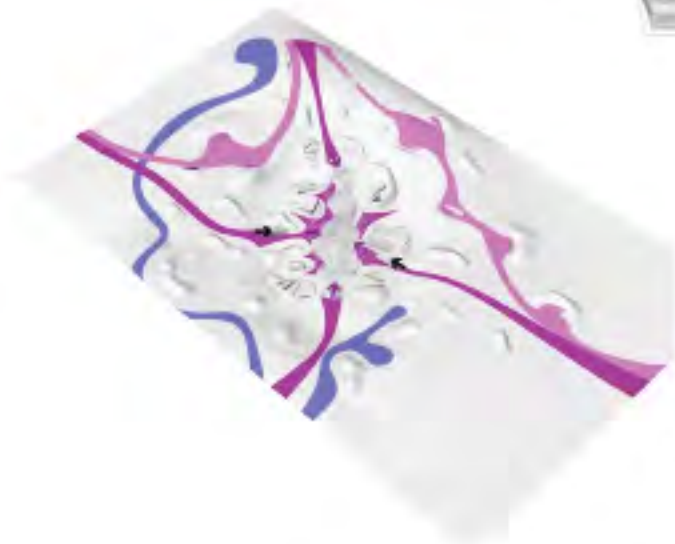
water harvesting 

passive ventilation 

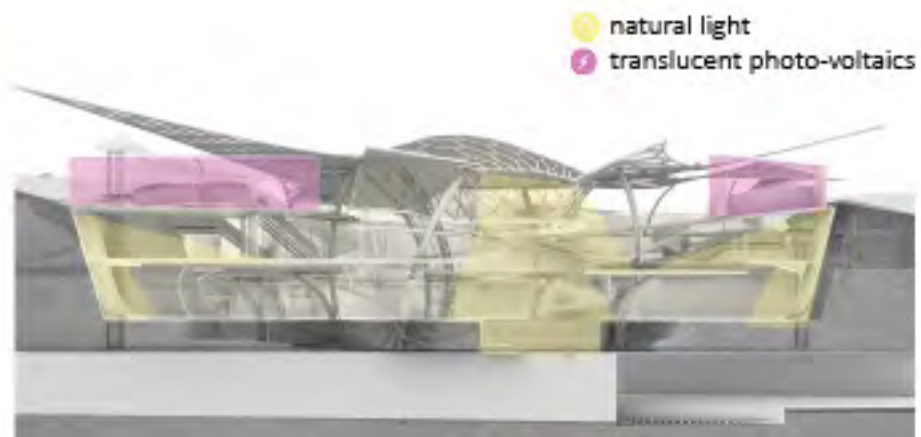
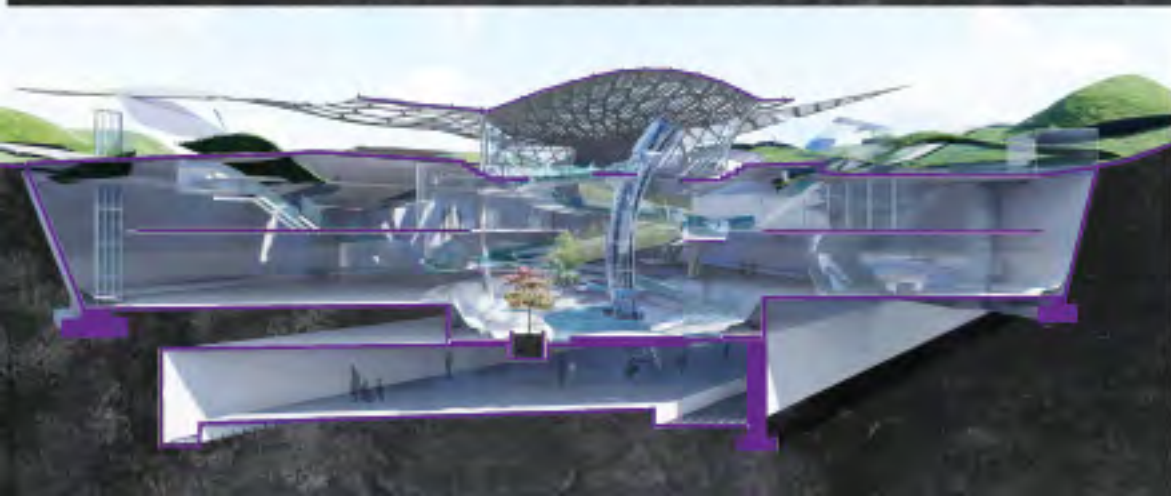
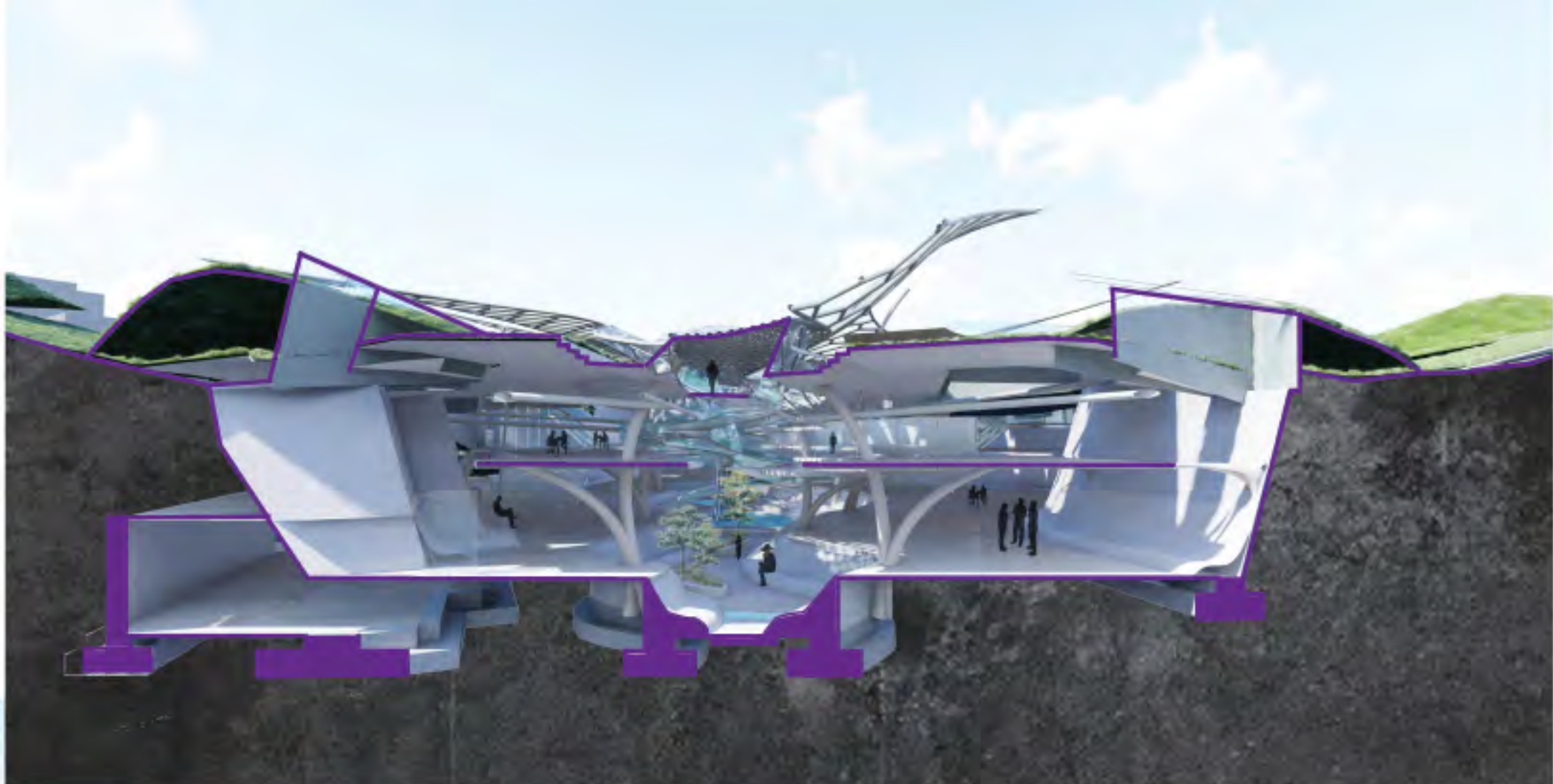
radiant heating 



internal circulation

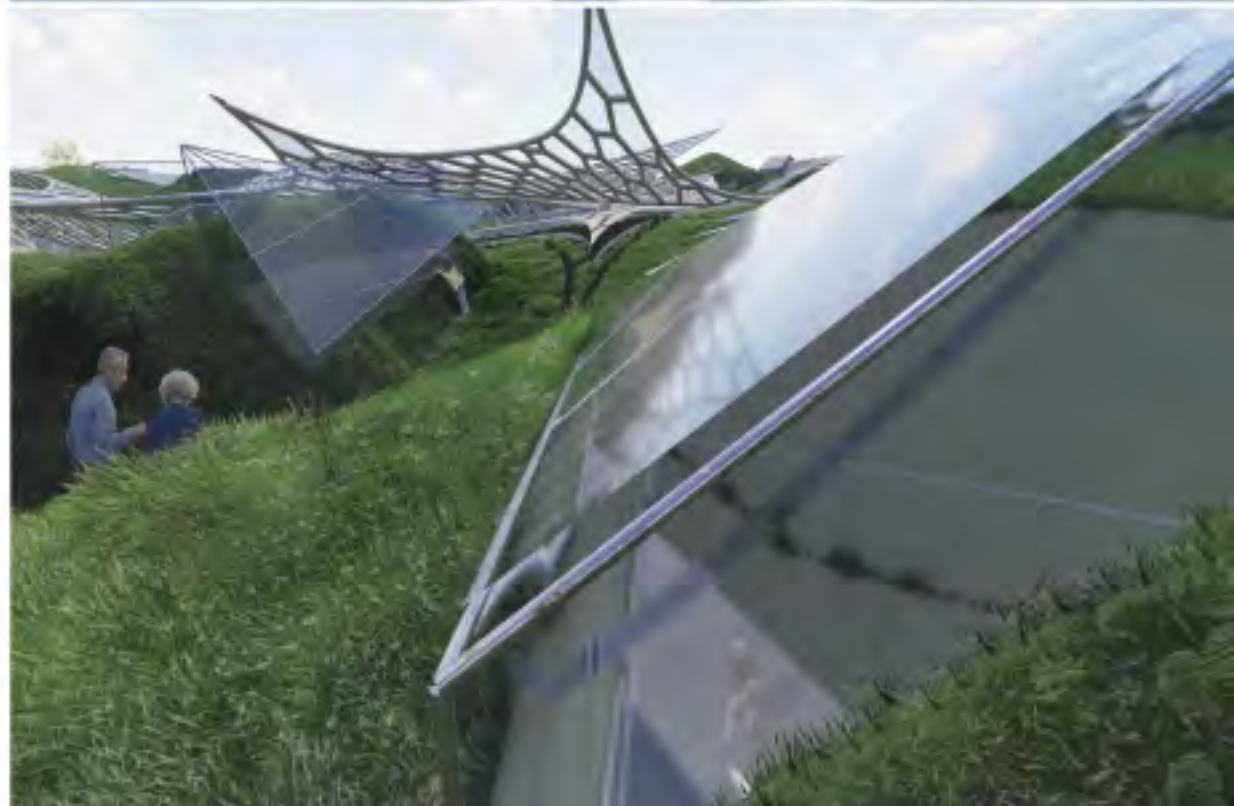


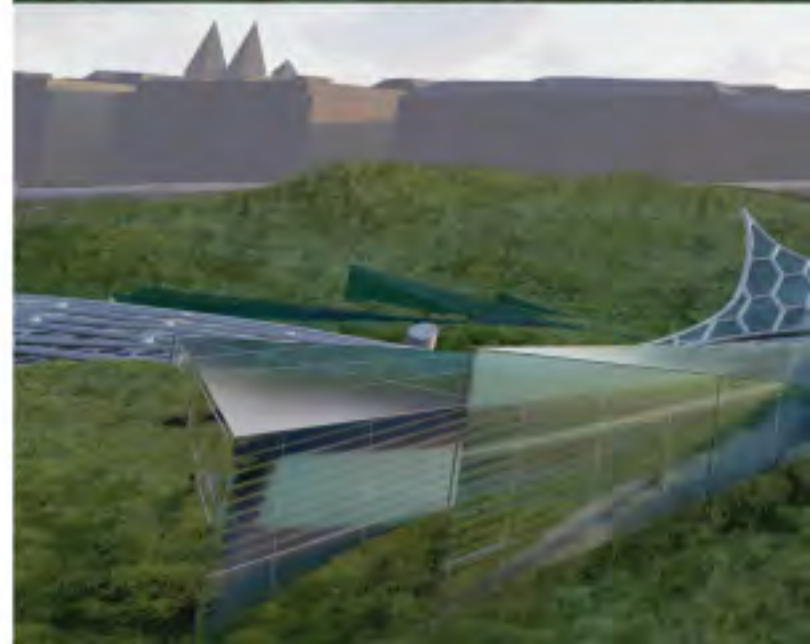
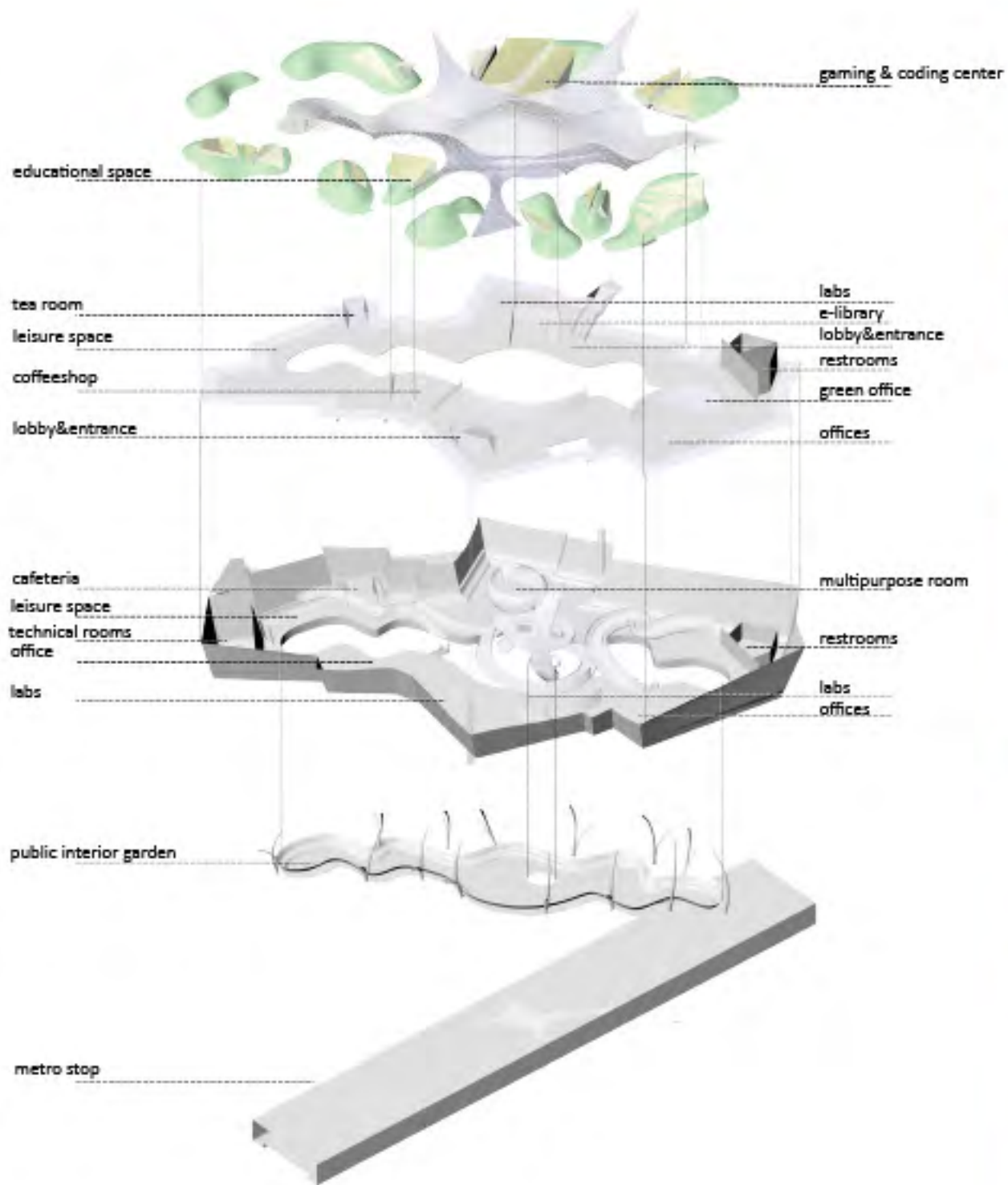
external circulation

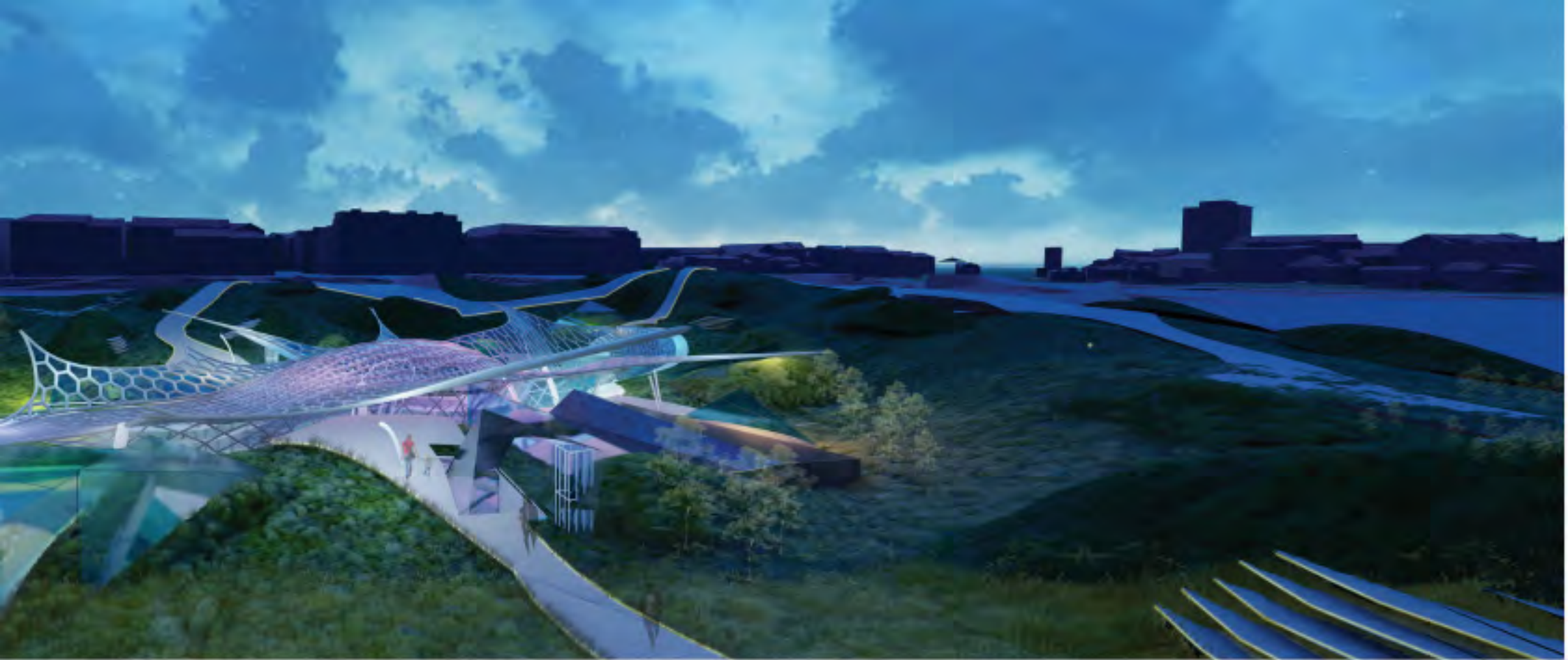


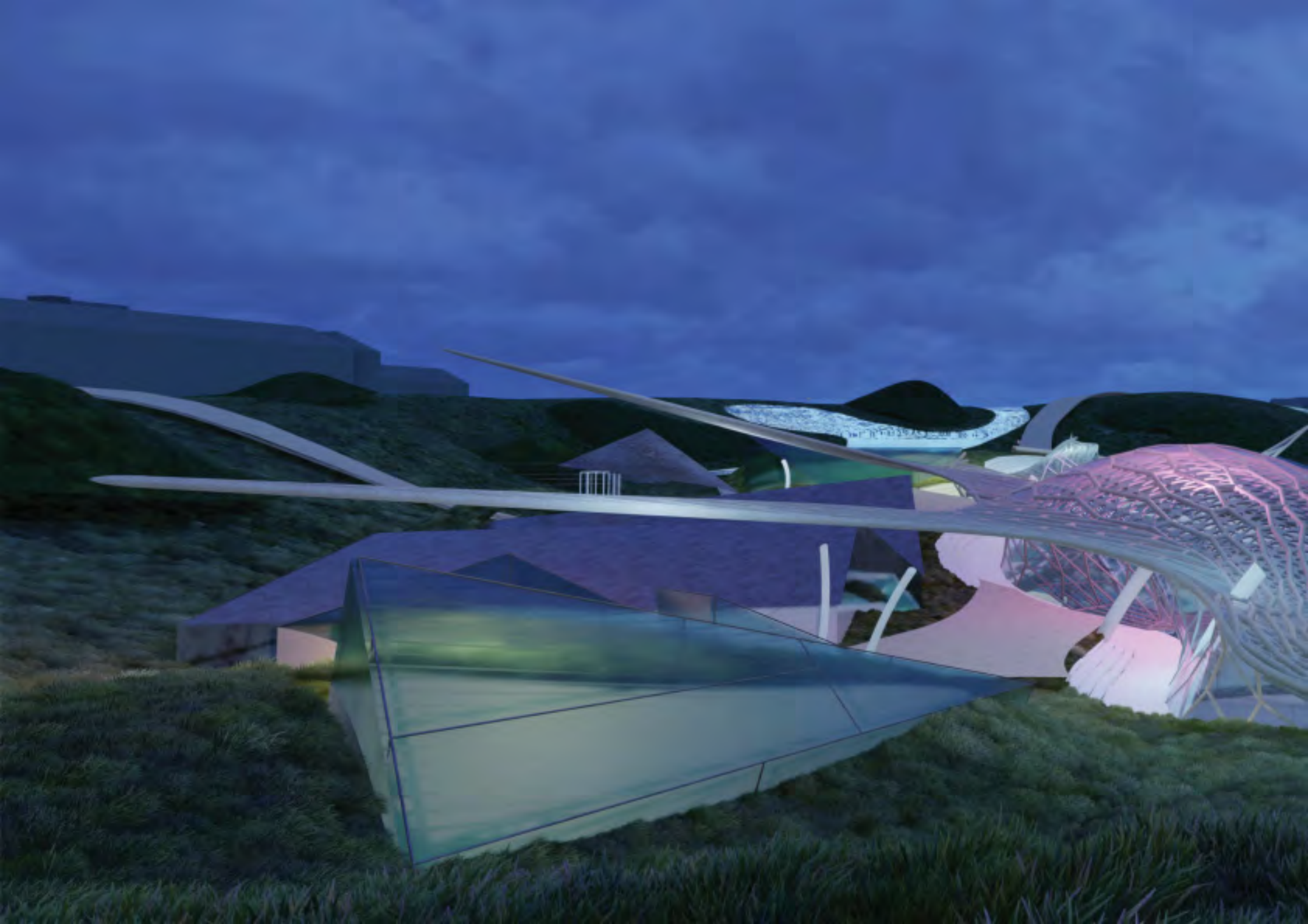
The void in the middle acts as a light shaft to illuminate the interiors. To benefit from the natural light as much as possible light & energy nodes are placed along the perimeter of the building which let light in and collect solar energy by being composed of translucent photo-voltaic panels. These light & energy nodes also behave as indications of existence of a hidden building under the hills.

light & energy nodes

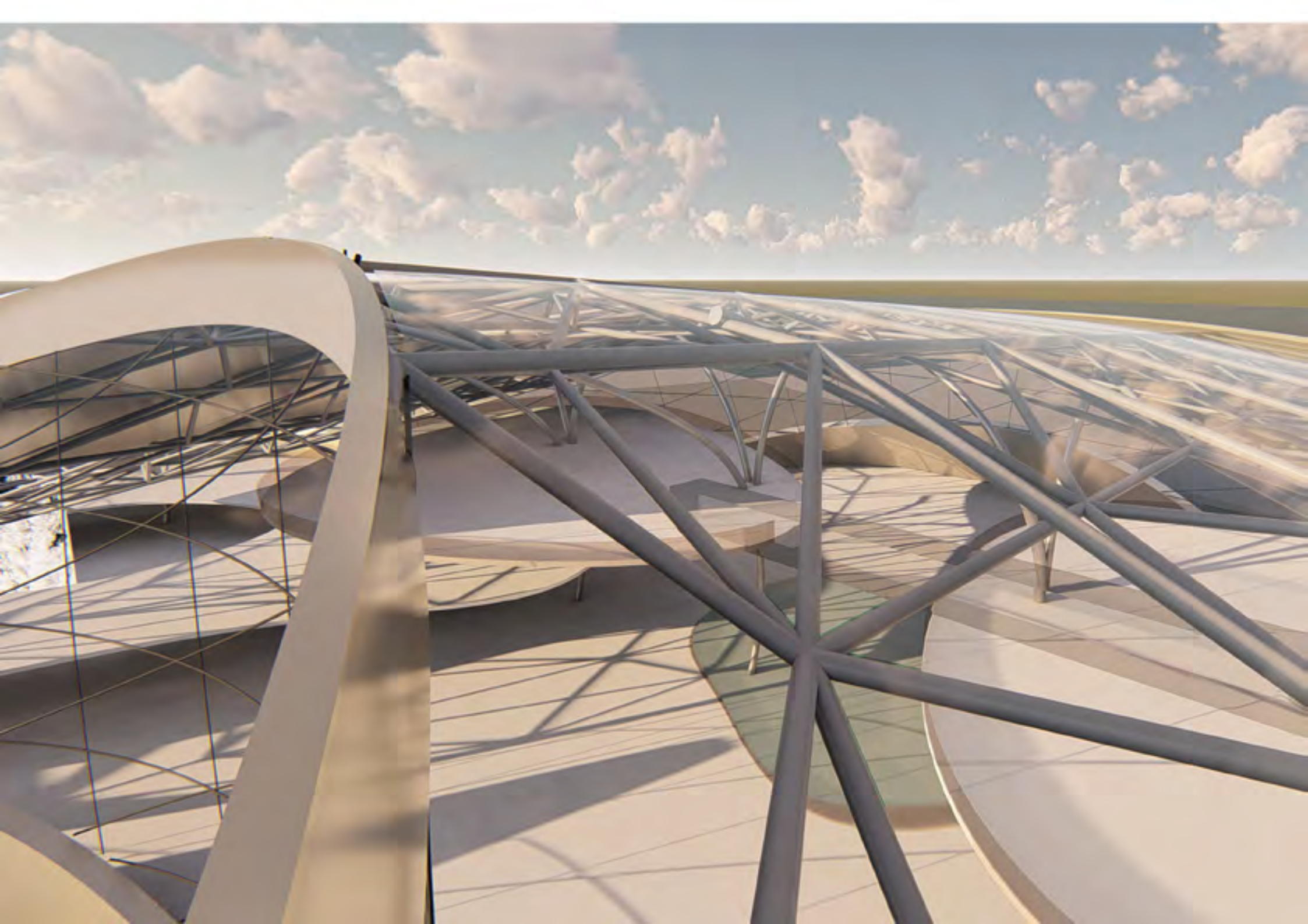












G&M PRAHA

TECHNOLOGY, RESEARCH and COMMUNITY CENTER

Gülten Melike Var

The project, which started out with better nature, better human motto, located in the brownfield of the prague 7, with new wetlands and new green areas. Project which is a technology, research and community center designed to contribute to the development of Prague and to encourage people to experience the technology center's specialties. The project is located in Praha 7, Brown Field. The land has a strategic position to take advantage of the relationship with the river in the north-south direction and to maximize the relations with the environment the master plan suggest with new wetlands, green areas and water elements. In line with the needs of developing technologies and the environment and ther function of the project, GM Technology Center has turned to an environmentally friendly and sustainable design. The entrances, roof slopes and important axes of the building were arranged according to the surrounding, pedestrian and human density, main roads, transportation vehicles and building features around our project area.

KEY PLAN 1/2000

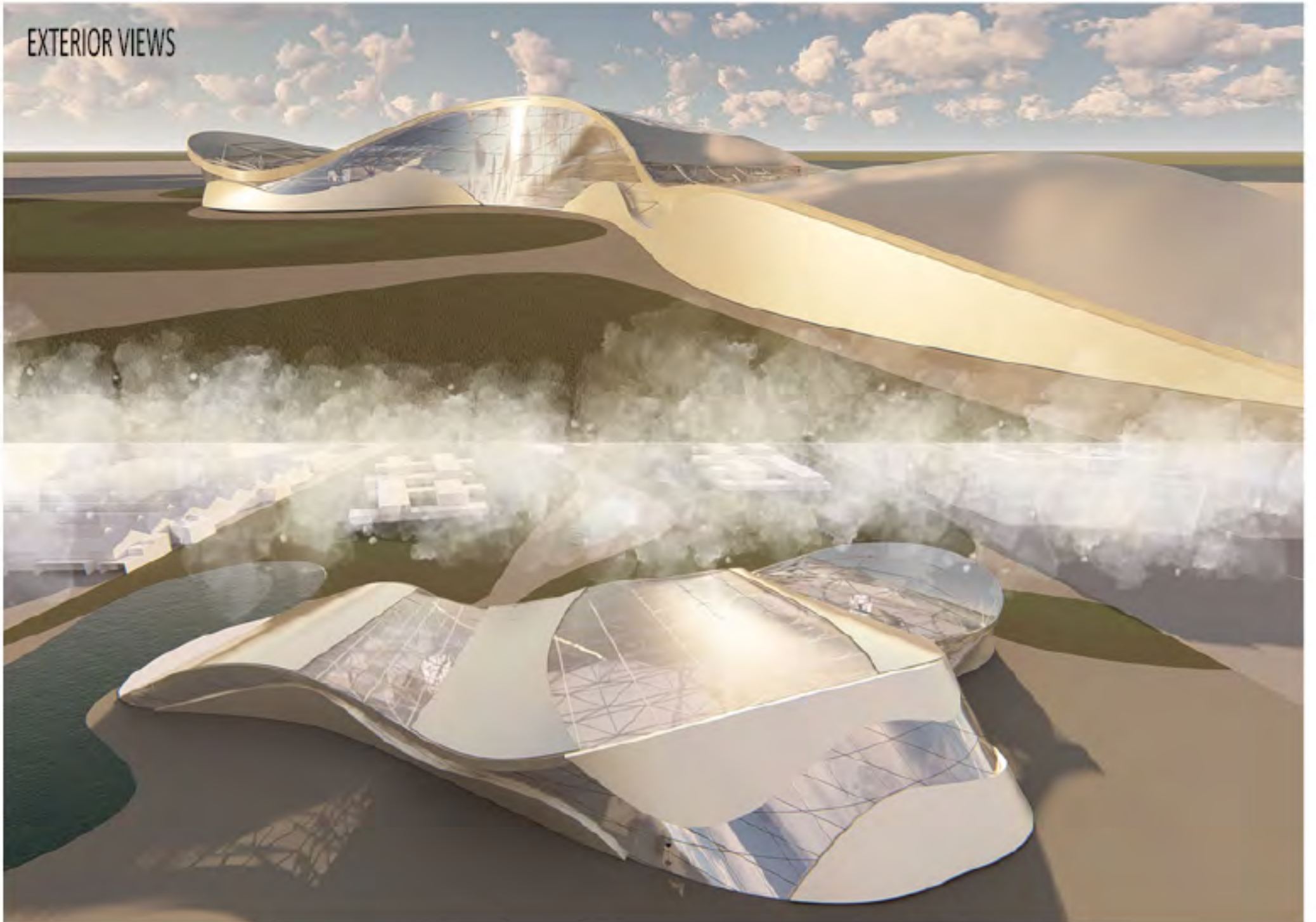


AERIAL VIEW

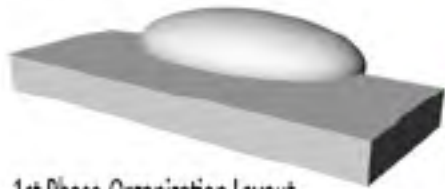
MASTER PLAN 1/2000



EXTERIOR VIEWS



FORM GENERATION



1st Phase-Organization Layout



2nd Phase-Reference Forming



3rd Phase-Environmental Response Form

FUNCTION DIAGRAM

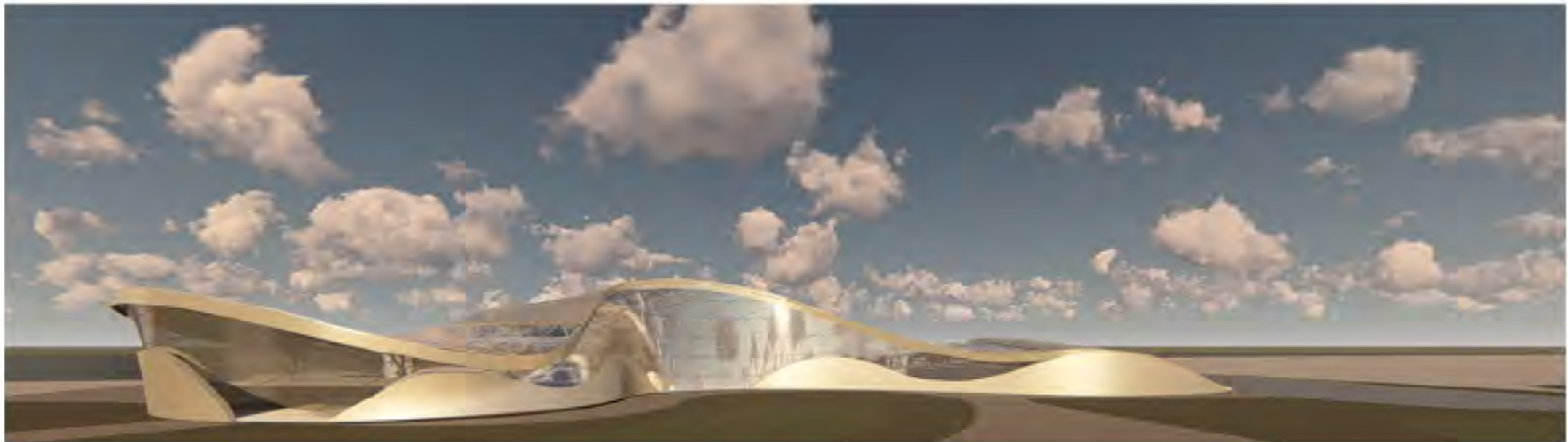
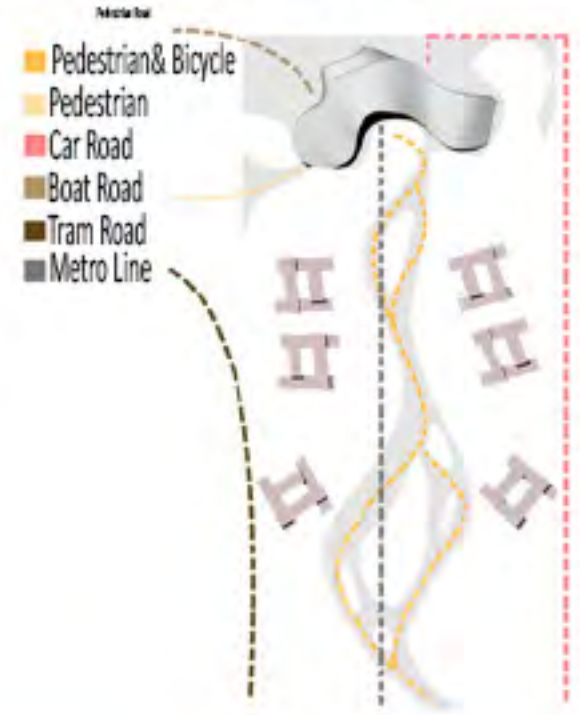
- GM Tech Center
- nursery area
- commercials
- commercials
- entertainment center
- information center
- bazaar



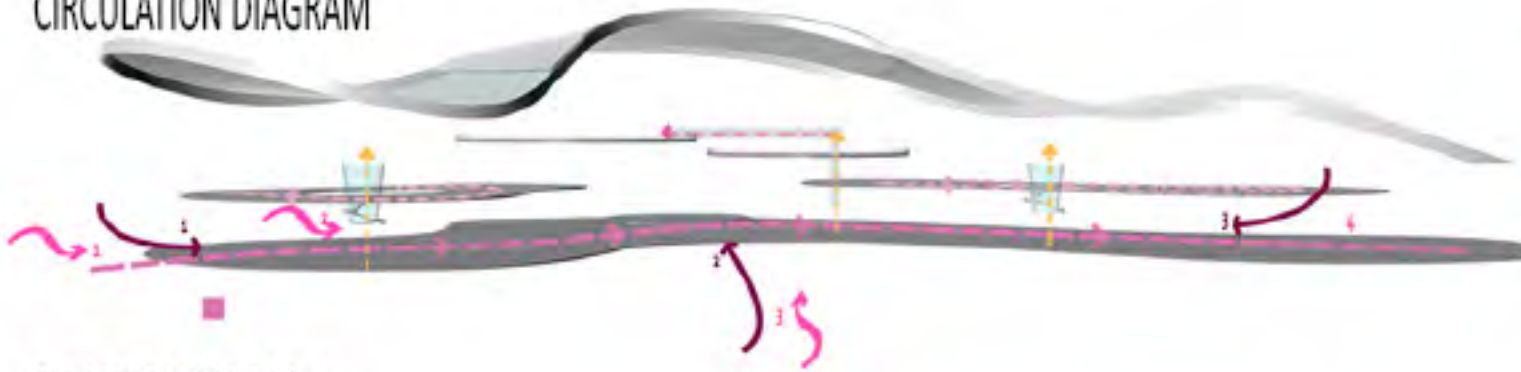
FIGURE&GROUND DIAGRAM



SITE CIRCULATION

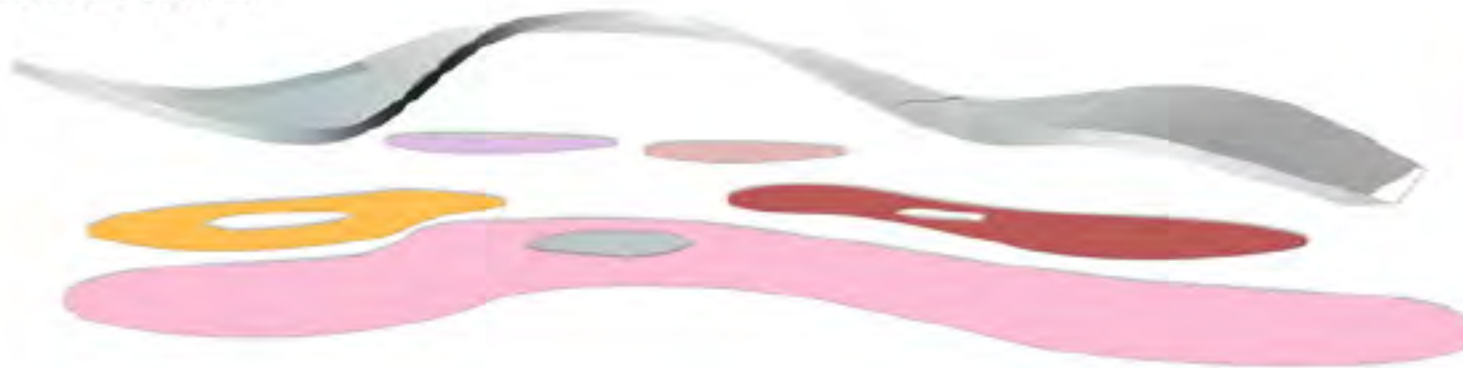


CIRCULATION DIAGRAM



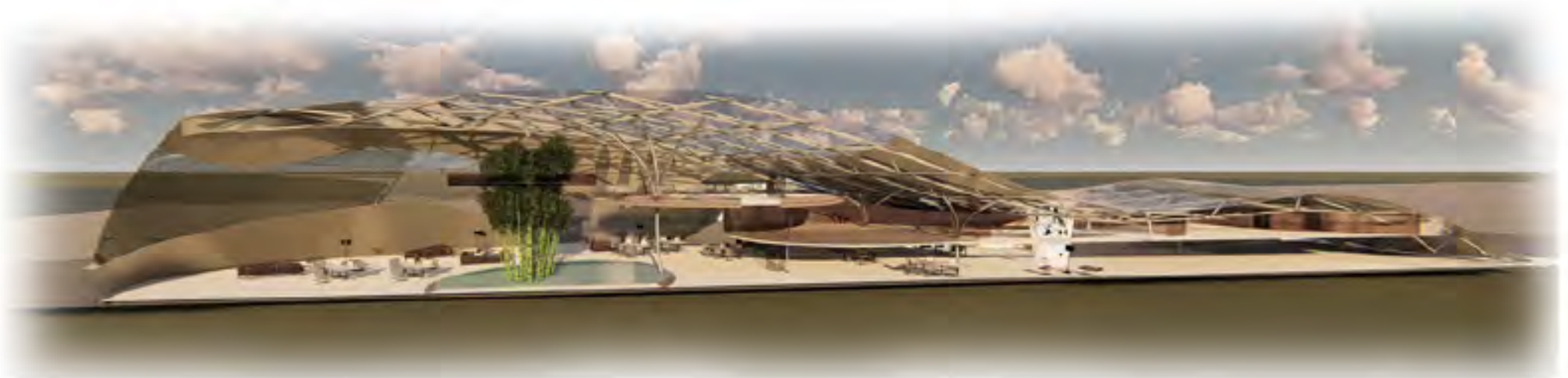
- primary circulation
- primary circulation
- vertical circulation
- secondary site circulation
- 1- from residential entrance
- 2- from site entrance
- 3- service entrance

FUNCTION DIAGRAM



- research labs, studios, offices
- workshops and educational places
- cafe
- technology center, software development
- community center

SECTION PERSPECTIVE



SECTION PERSPECTIVE



EXPLODED STRUCTURE

titanium dioxide cladding
translucent pvc solar panels

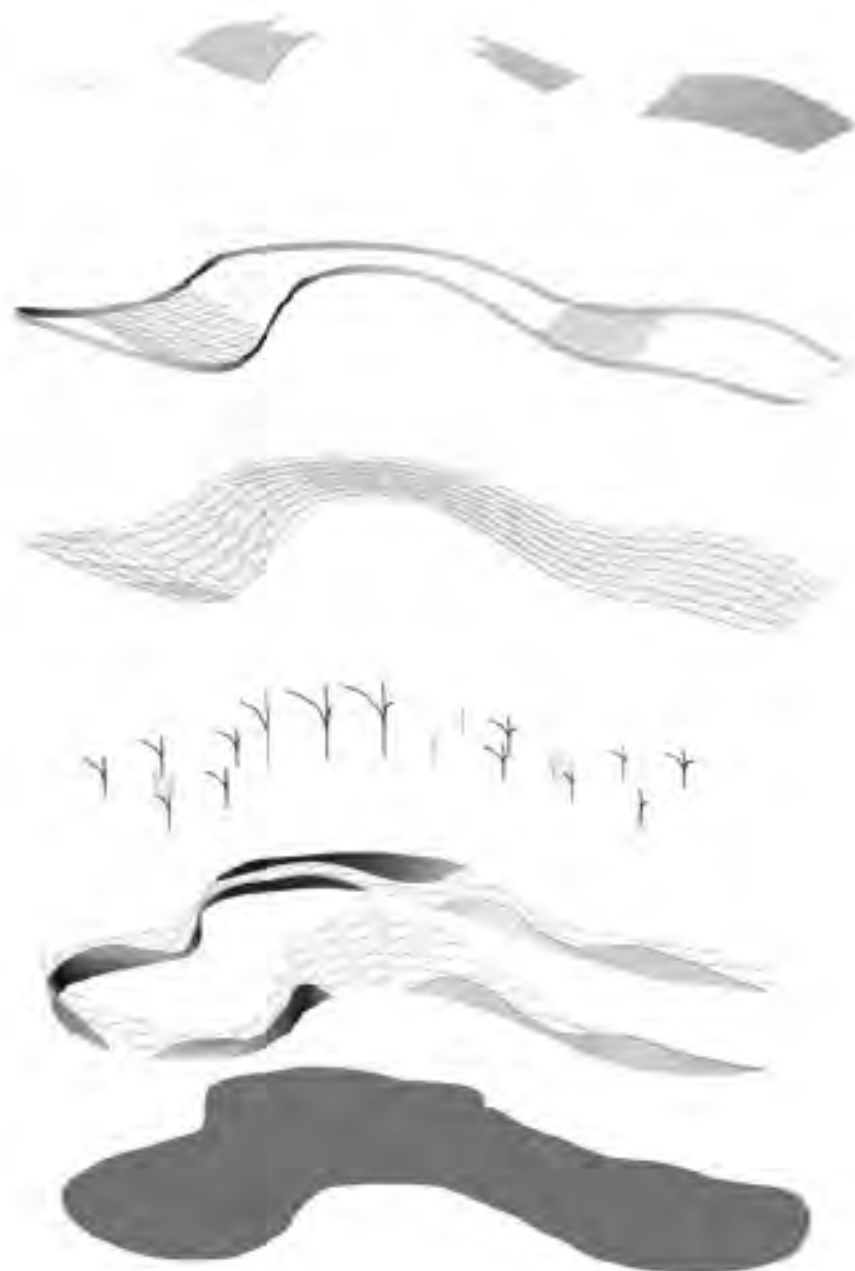
Rain water drainage
and collection pipe system

structural steel space frame

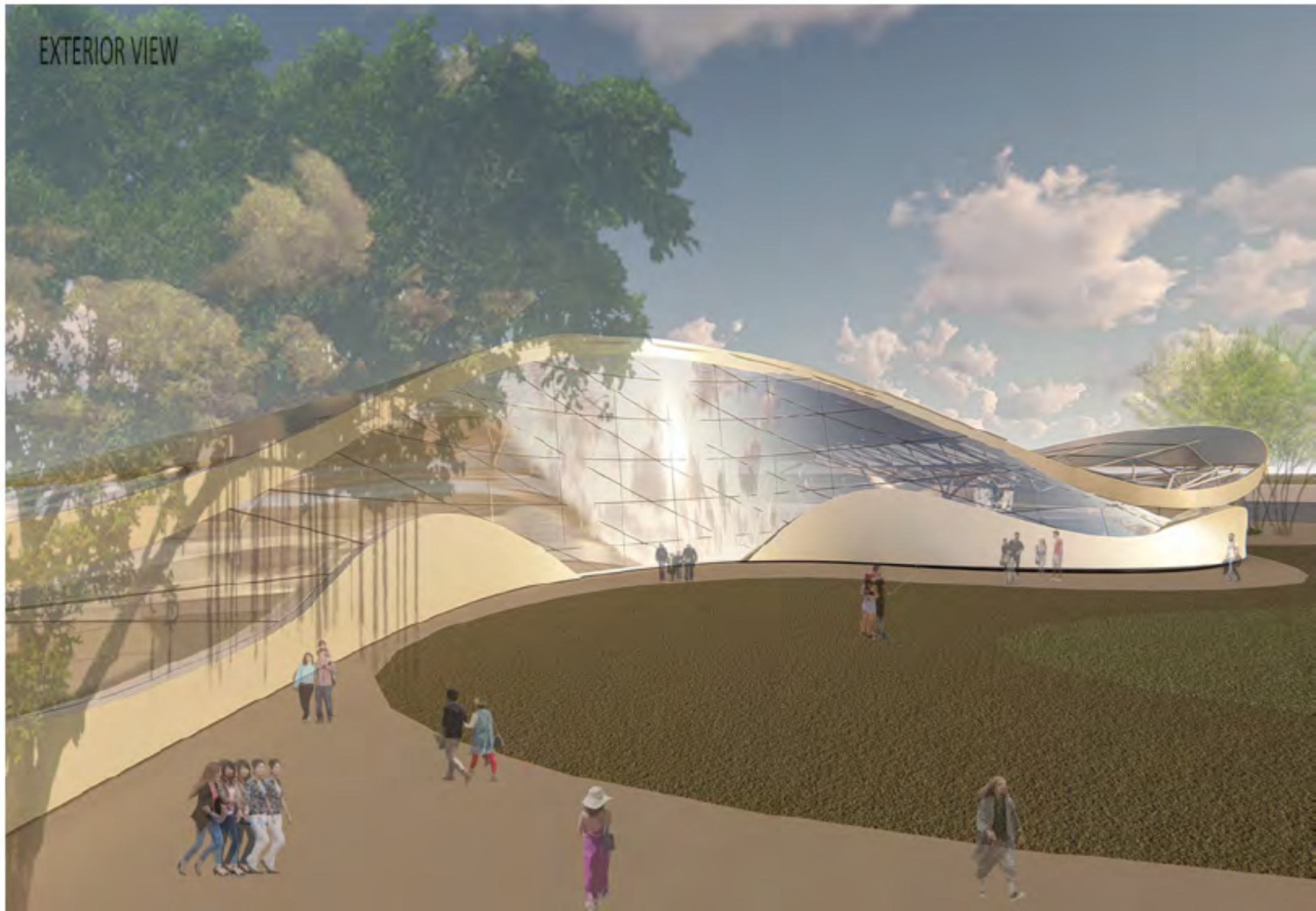
structural steel columns

aluminum second facade
and steel frames

reinforced concrete slabs



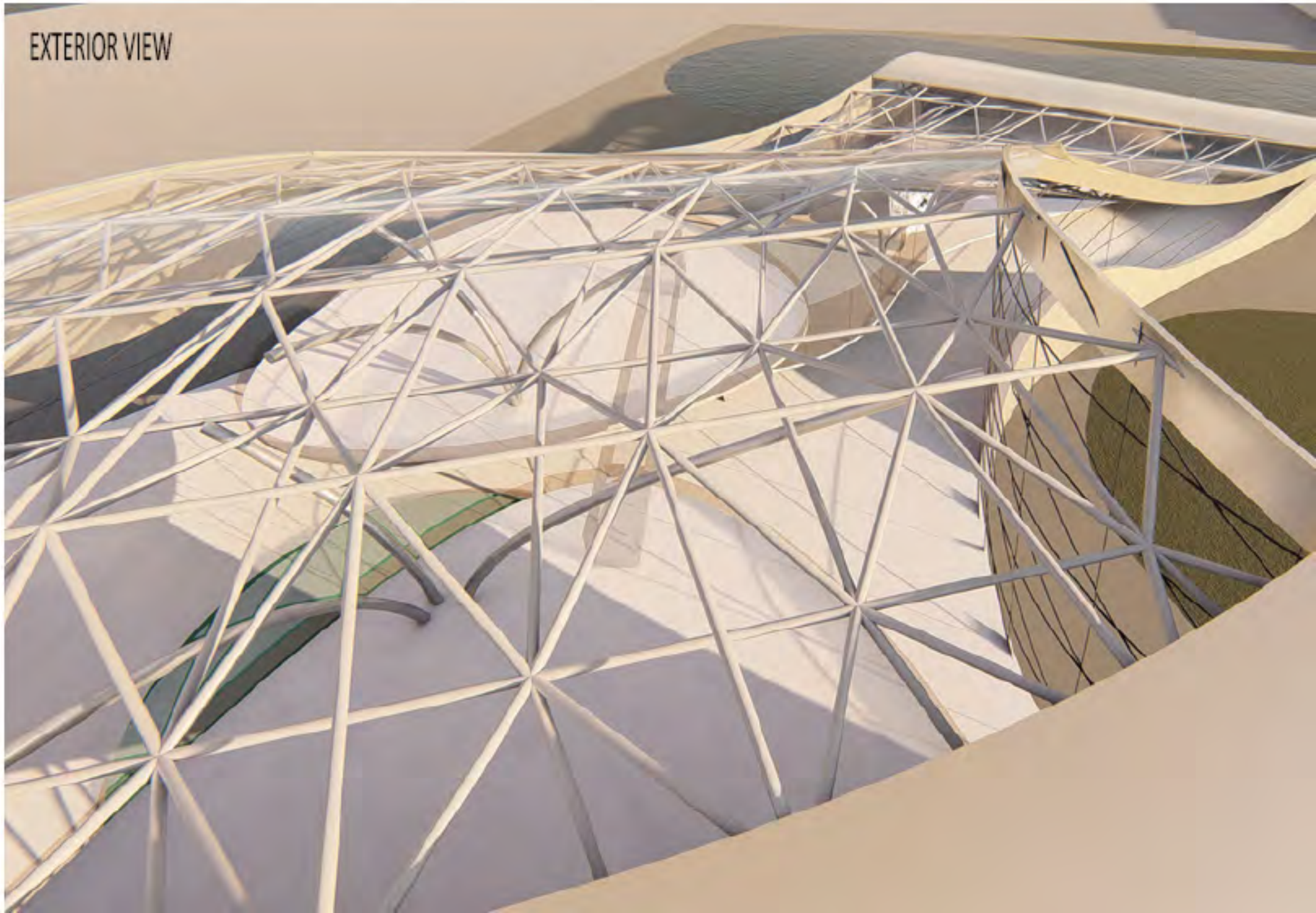
EXTERIOR VIEW



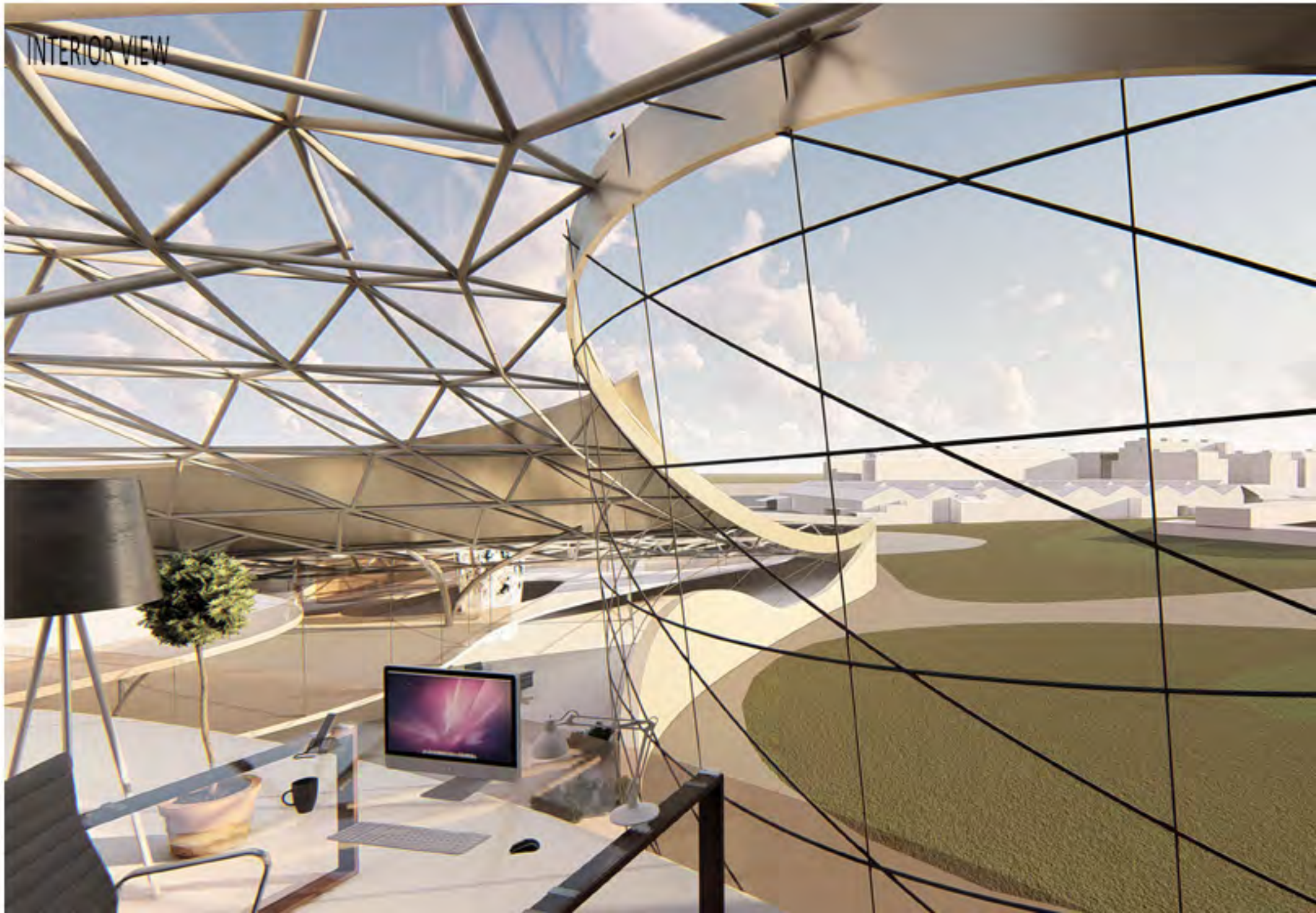
INTERIOR VIEW

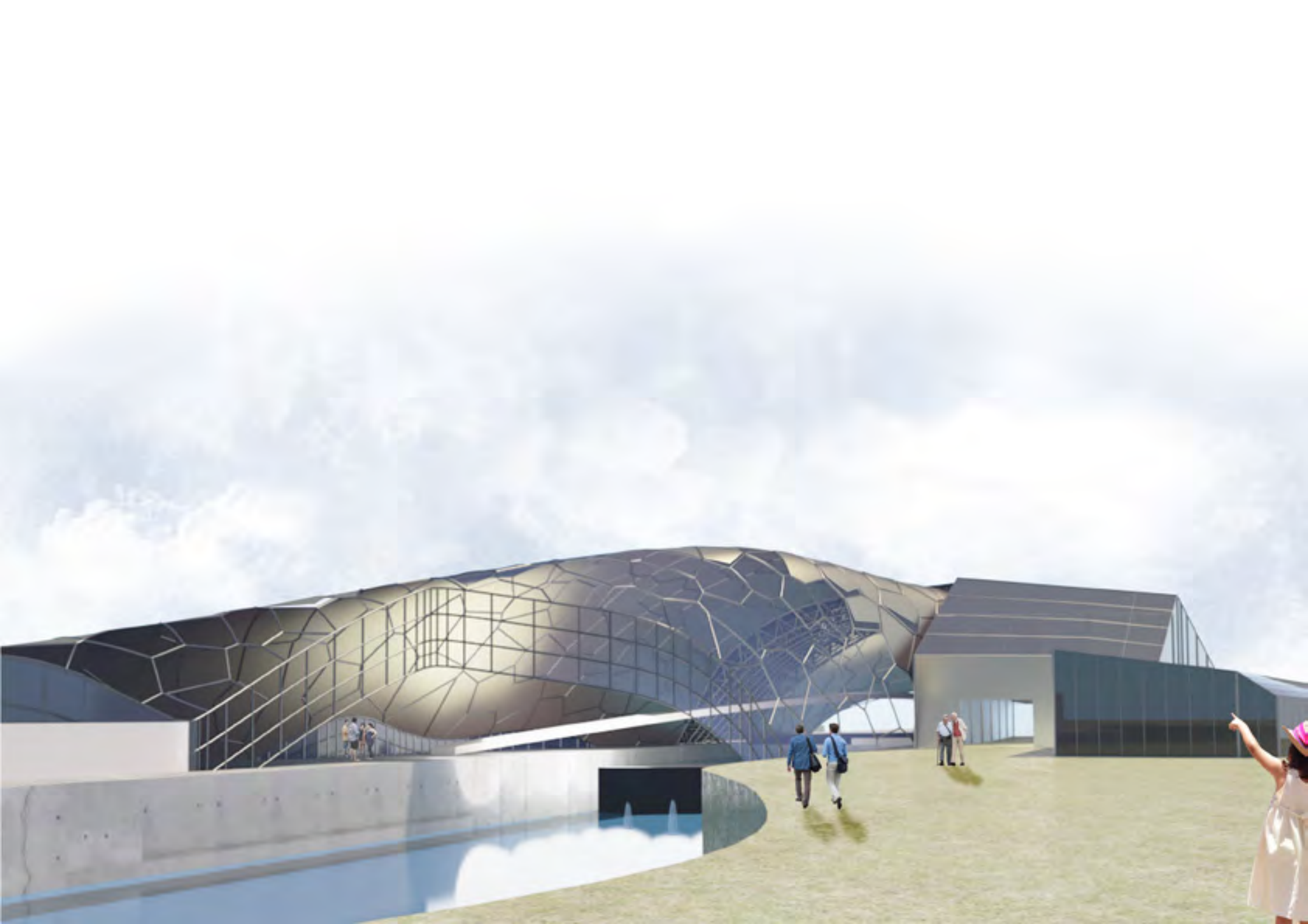


EXTERIOR VIEW



INTERIOR VIEW



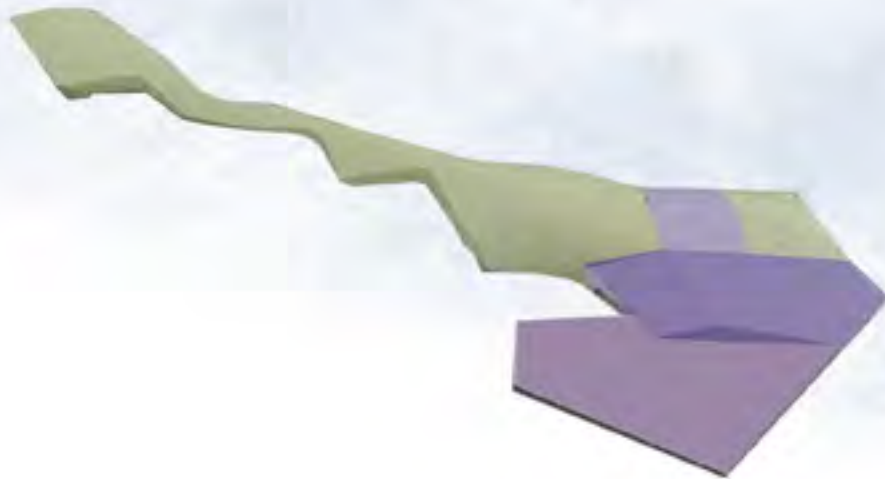


Hydroelectric & Green Power

Ali Kemal Kurdođlu

Vltava River

The Vltava River flows through the center of Prague, and is the waterway around which the city has developed over the past 1000 years. The Old Town and the New Town lie on one side of the Vltava River. In Praha the average rate of flow of the Vltava river is 145 cubic meter per second. According to comparison with Iller River, hydroelectric power station on Vltava River will provide energy to approximately 6000 house in a year.



Iller River

The Iller is a river of Bavaria and Baden-Württemberg in Germany. It has 146 kilometers long. Its average throughput is 75 cubic meter per second. On the left banks of the river Iller a new, highly efficient hydro – electric powerstation substituted an older powerstation from the Fifties by now supporting approximately 3000 households with 10,5 million kilowatt – hours of environmentally friendly power per year.

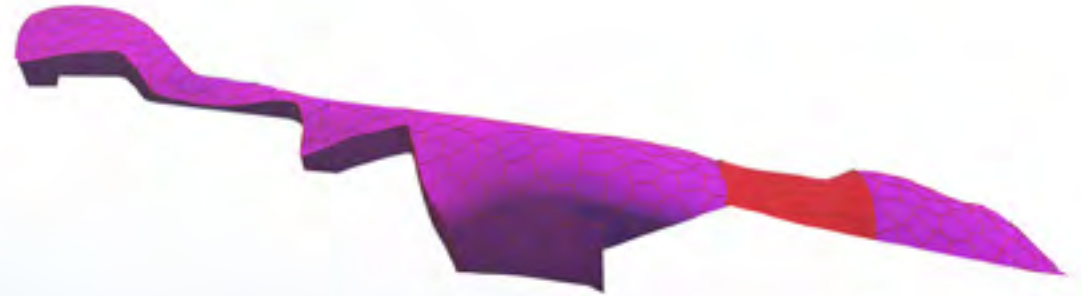




According to research in 2011, Energy consumption per capita in the Czech Republic is 27 percent higher than the EU average. Fossil fuels cover nearly 80 percent of total energy consumption(2011): coal and lignite account for 44 percent, followed by oil with 19 percent and gas with 16 percent. Nuclear power supplies 17 percent of total energy needs. After I have examined research report, I have realized that Vltava River can be a big opportunity to produce energy.

Hydroelectric Power Plant

Has 2 tribunes that produce electric from water and also it has rounded shape ramp. Therefore, it will be easy to all guests see every part of power plant. Also skin of hydroelectric power station become a transition space in order to connect fish pond island and greenhouse.



Entrances and Utilities

info desk

toilets

offices and workers room

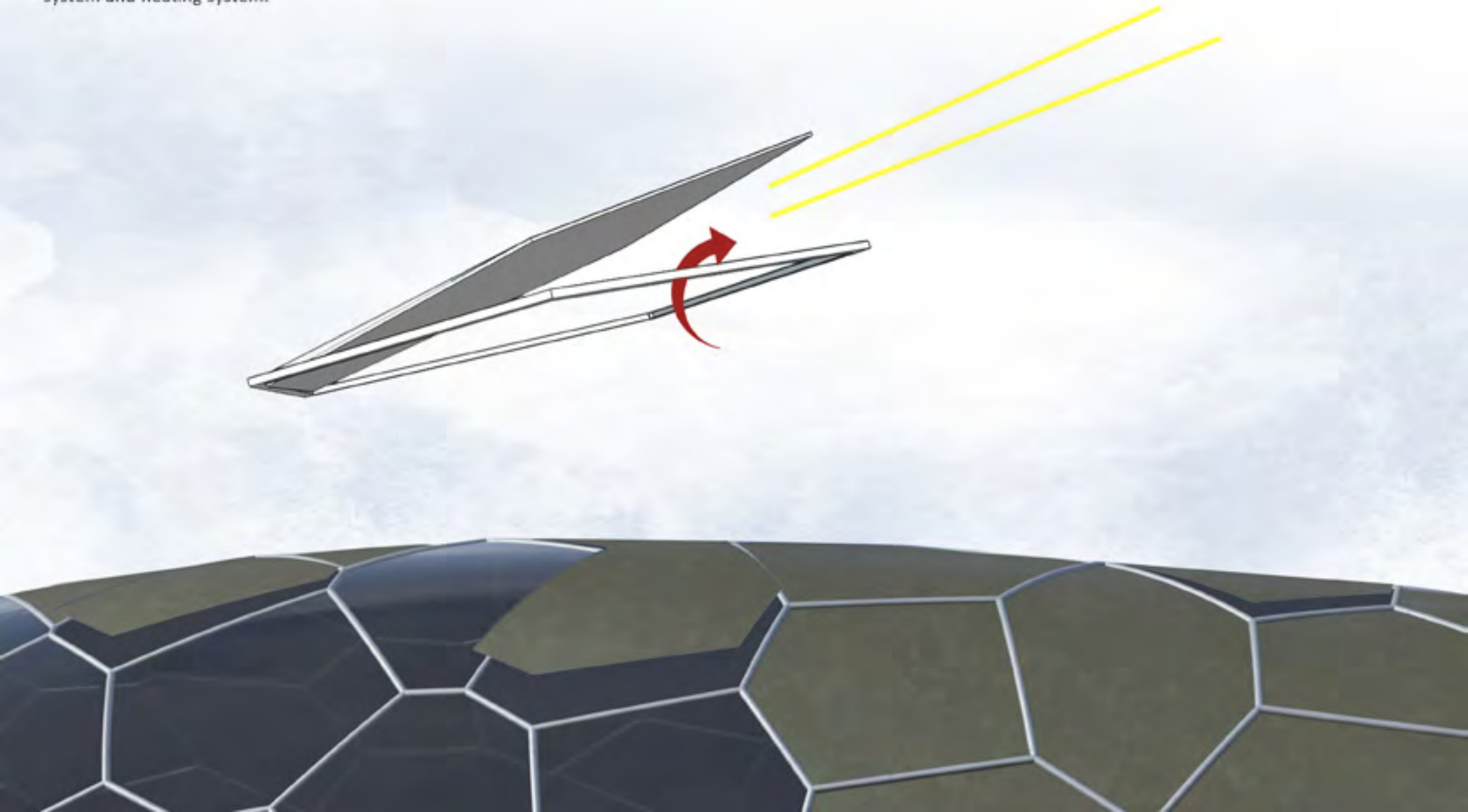


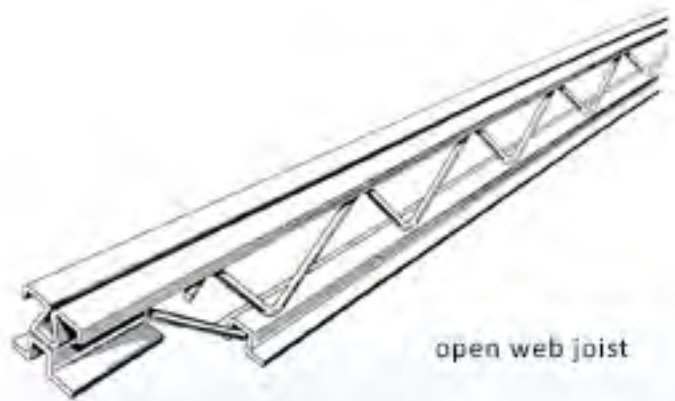
Greenhouse

It has two parts and height of greenhouse increases through the North. South façade of green house covered by glass so it will provide best conditions for plants.

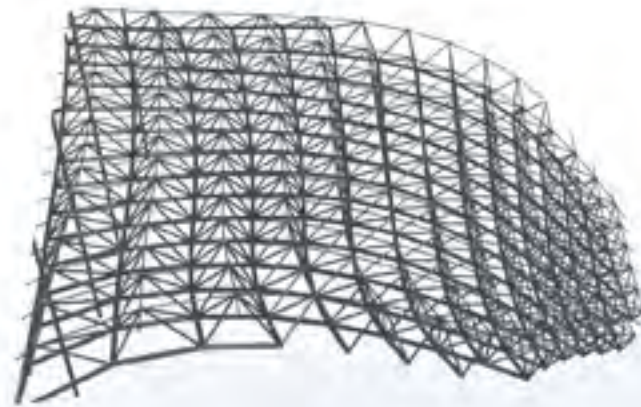


Hydroelectric power plant was covered by composite panels. These panels are openable because according to direction of wind or angle of sun, they can have passive ventilation system and heating system.

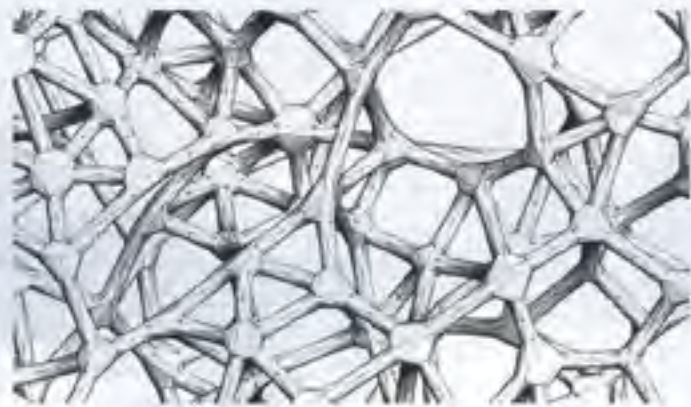




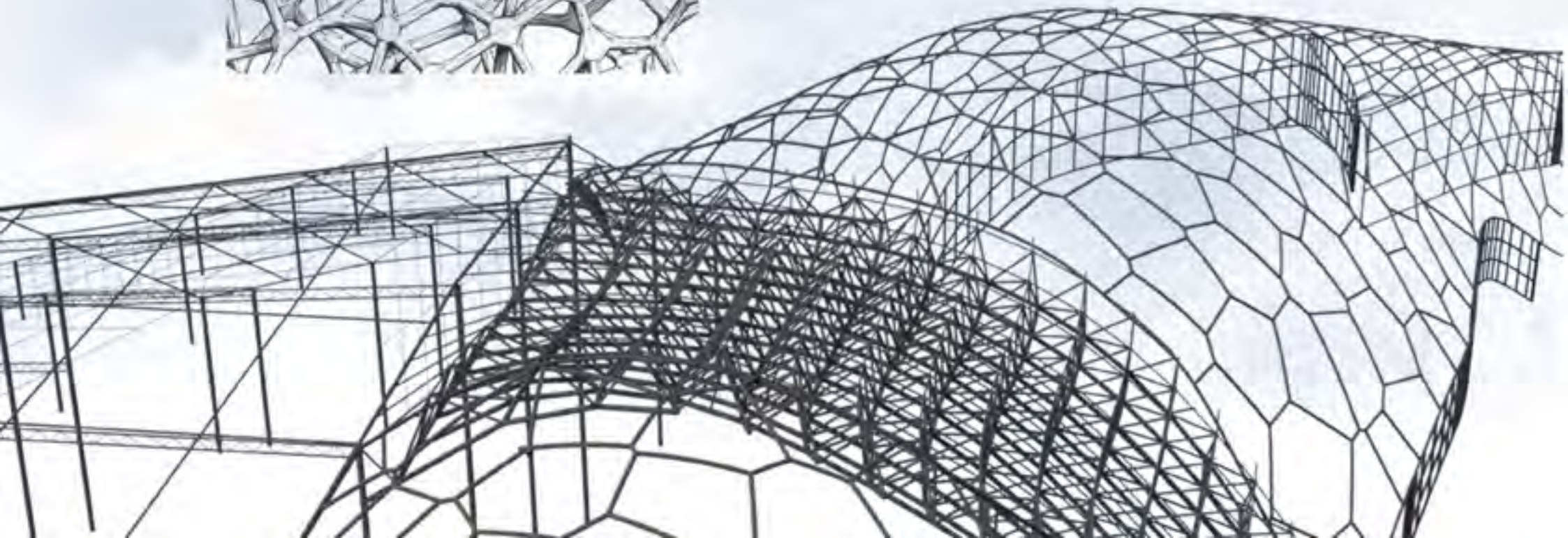
open web joist

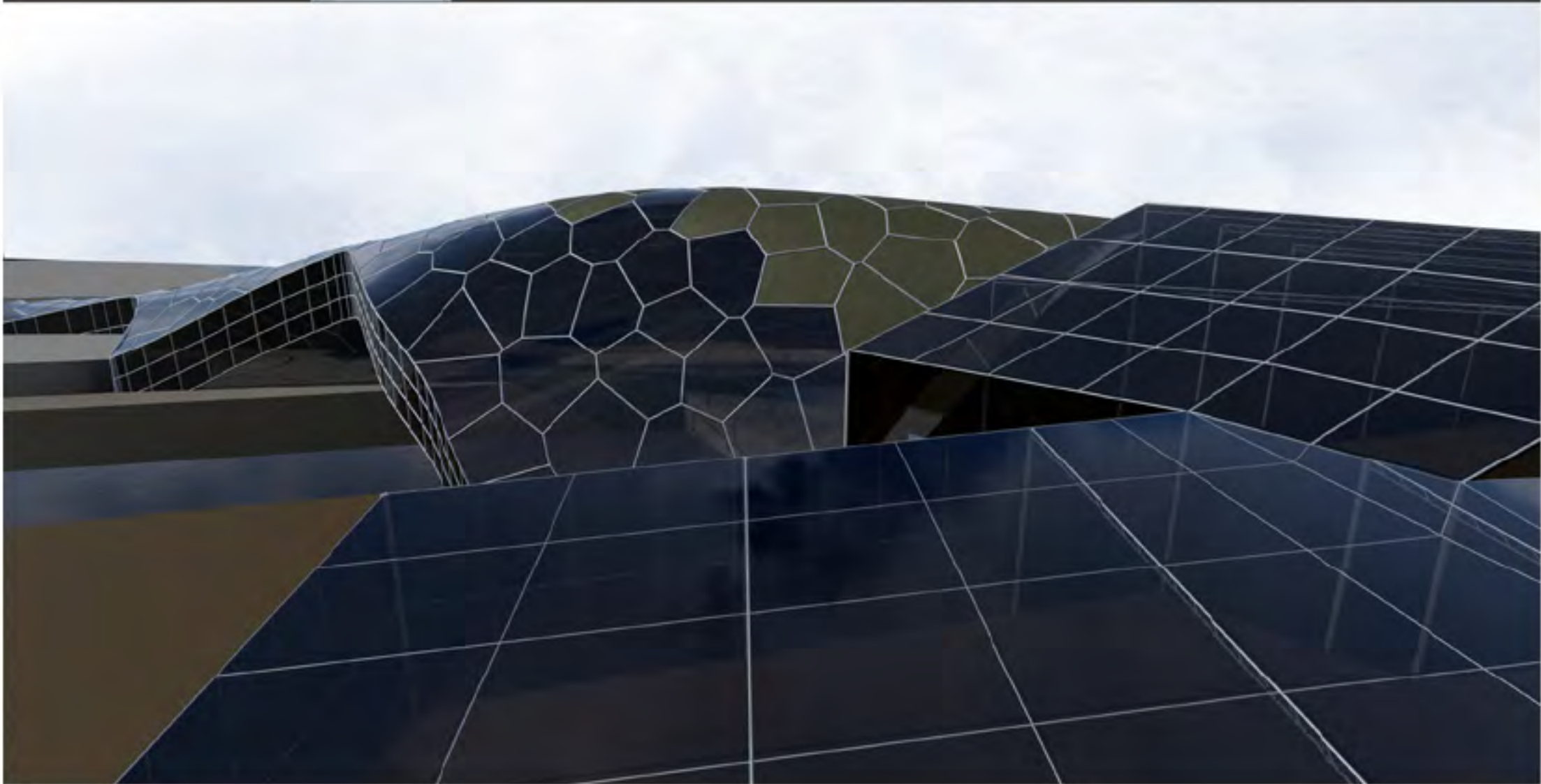
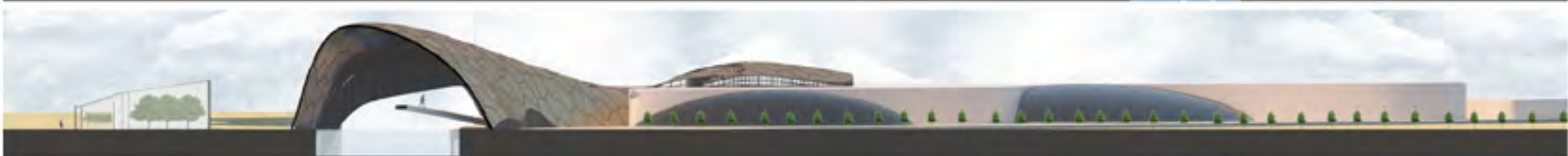
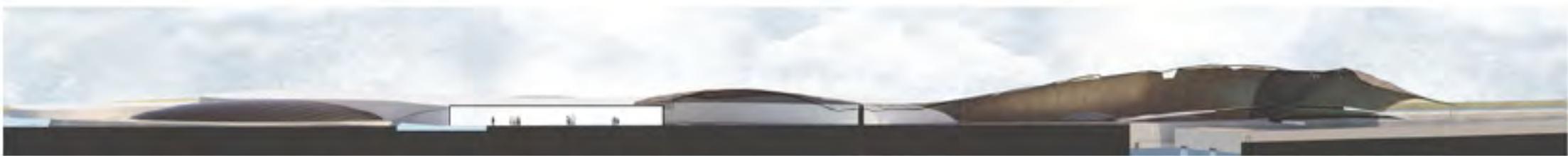


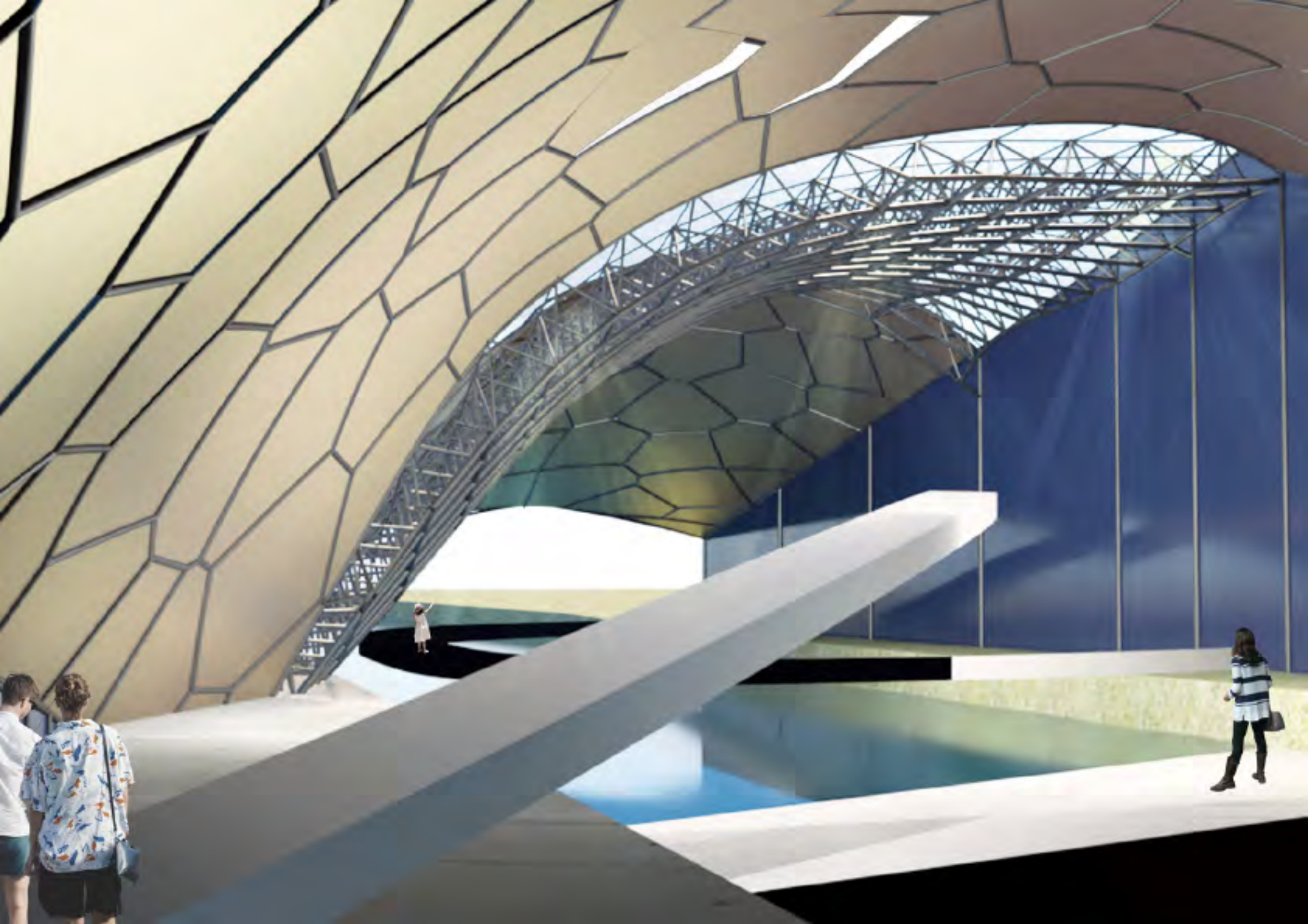
space frame



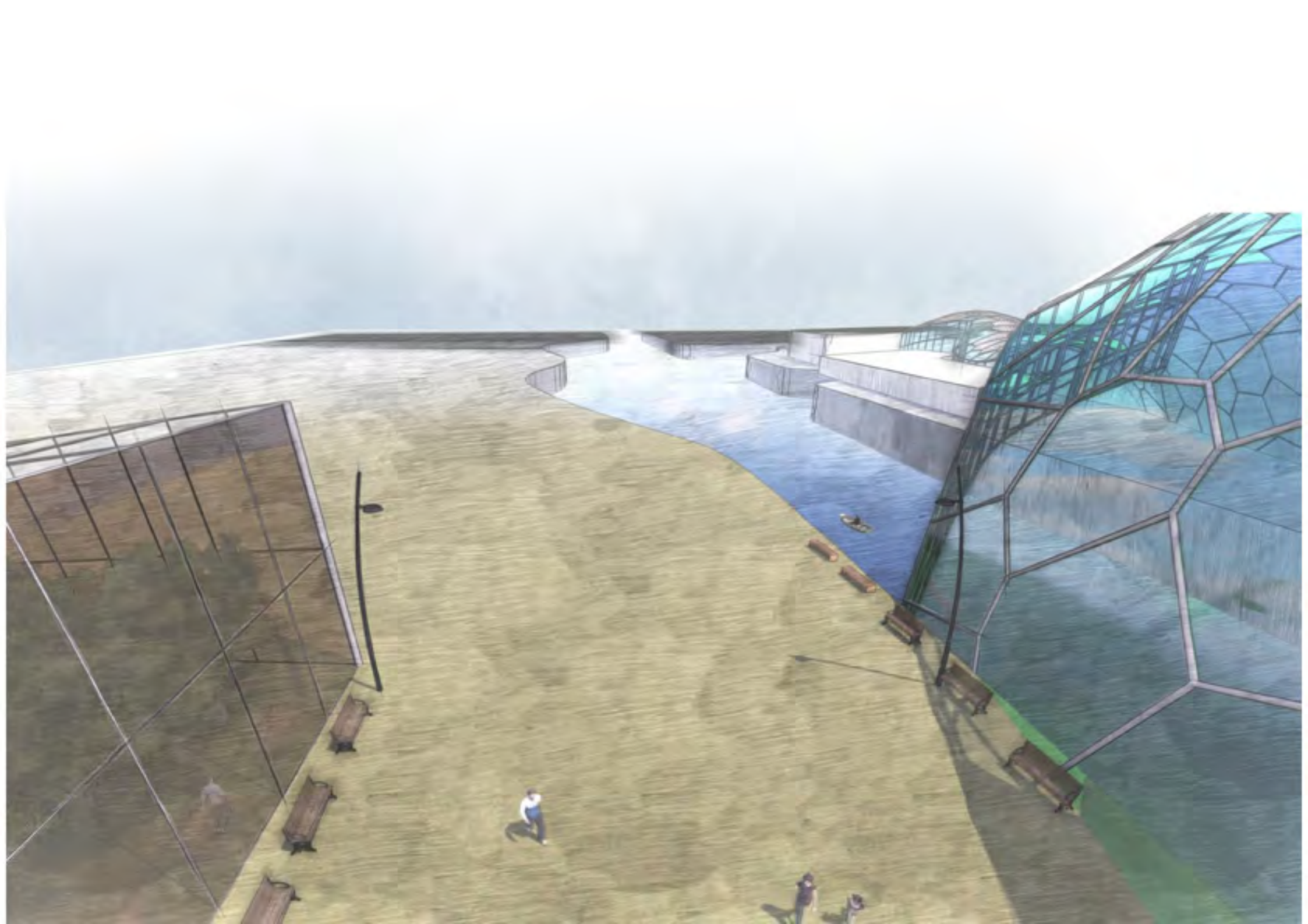
organic exoskeleton

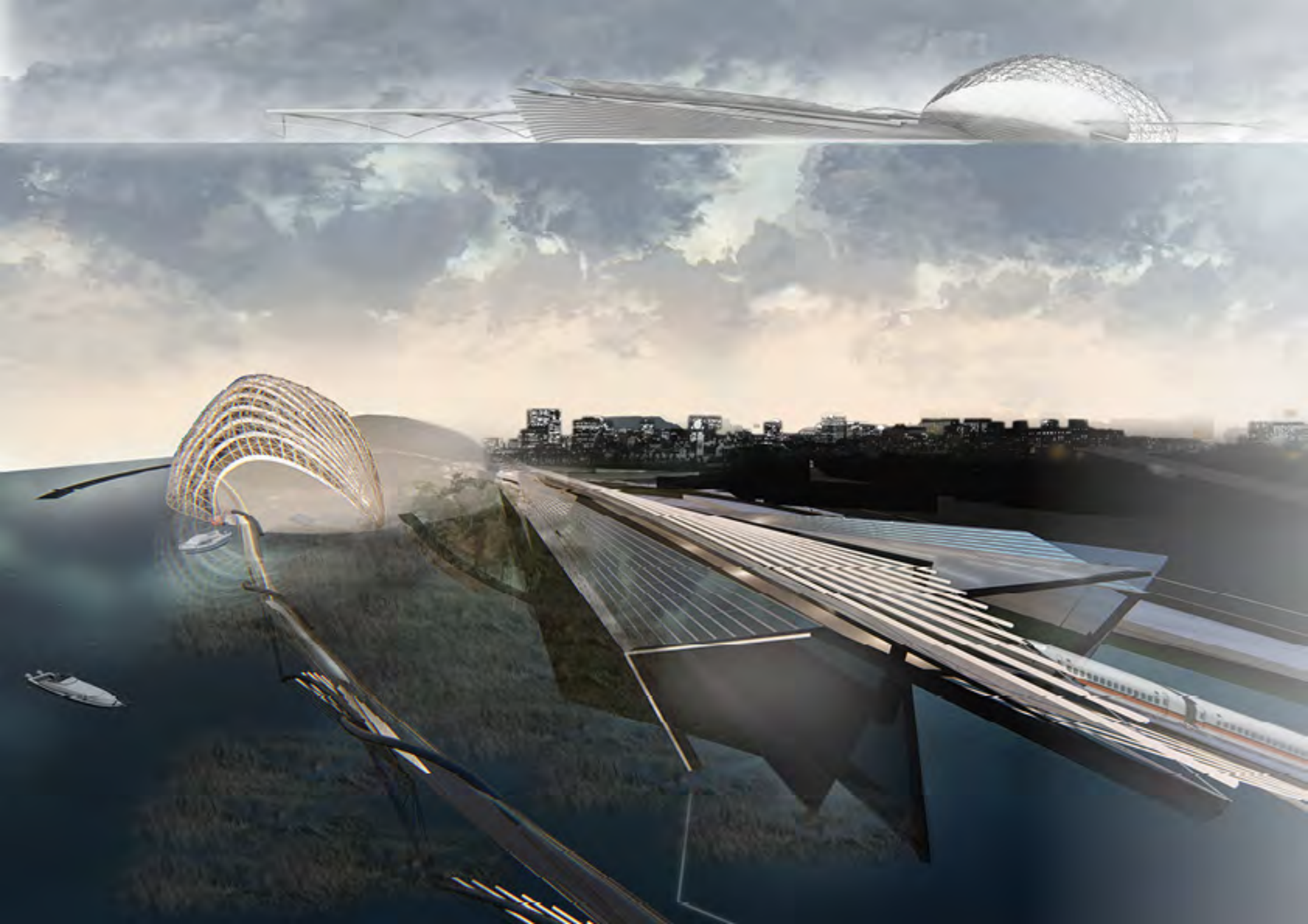










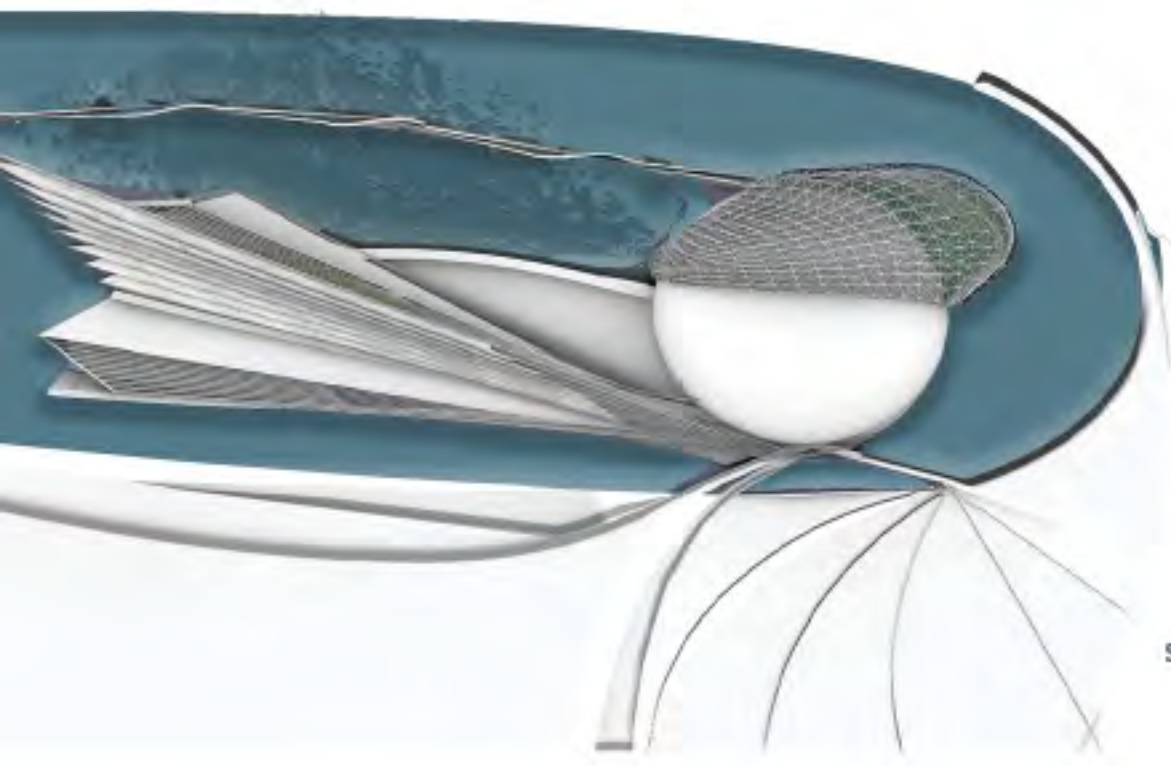


THE "SNITCH"
BY AYSEUR BARUTCU

MY PROJECT IS A HYPERLOOP CENTER PROTOTYPE THAT IS CONNECTING PRAGUE AND BERLIN. THE FUNCTION HAS BEEN DECIDED ACCORDING TO THE NEEDS OF PRAGUE AND PERSONAL INVESTIGATIONS IN THE SITE. IN MY OPINION WHAT PRAGUE NEEDED WAS AN INTRODUCTION TO THE CITY WHICH IT DOES NOT HAVE IN THE MOMENT. I WOULD SAY THAT THE TRANSPORTATION BETWEEN THE OTHER CITIES WERE NOT CAREFULLY THOUGHT SO MY PROJECT CAME UP WHICH ENDED UP AS A "SNITCH".



MASTER PLAN



SITE PLAN

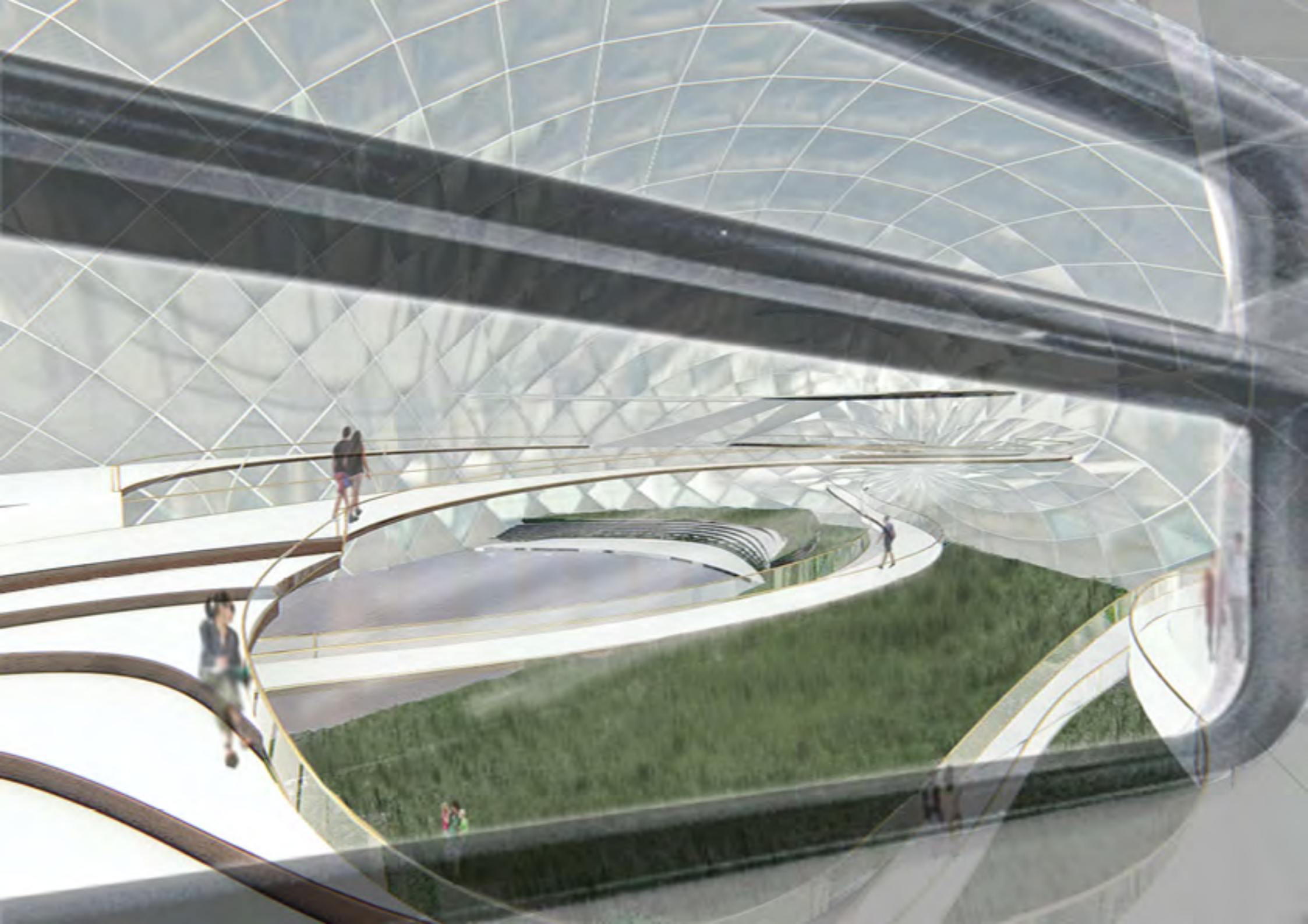


CAR-FREE STREETS



CONTINUOUS GREENERY

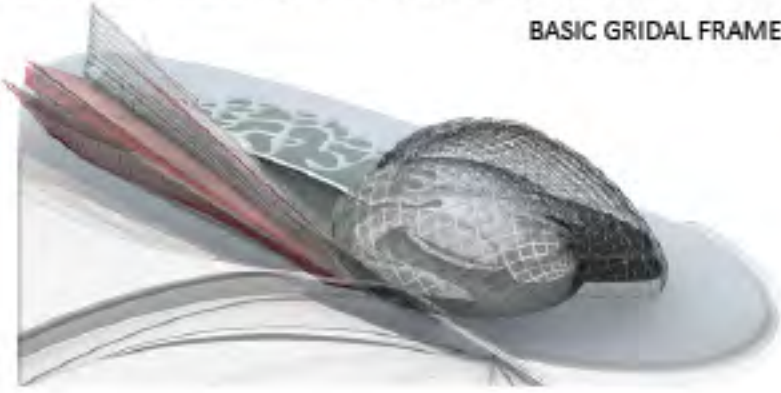




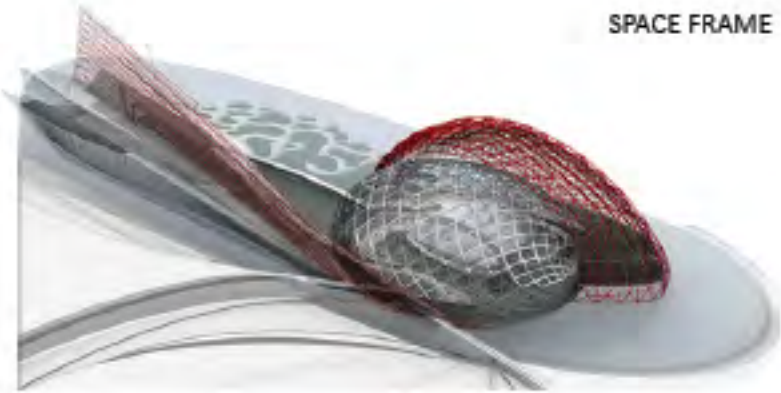
STRUCTURAL DIAGRAMS

STRUCTURE VARY ACCORDING TO NEEDS OF A SHAPE

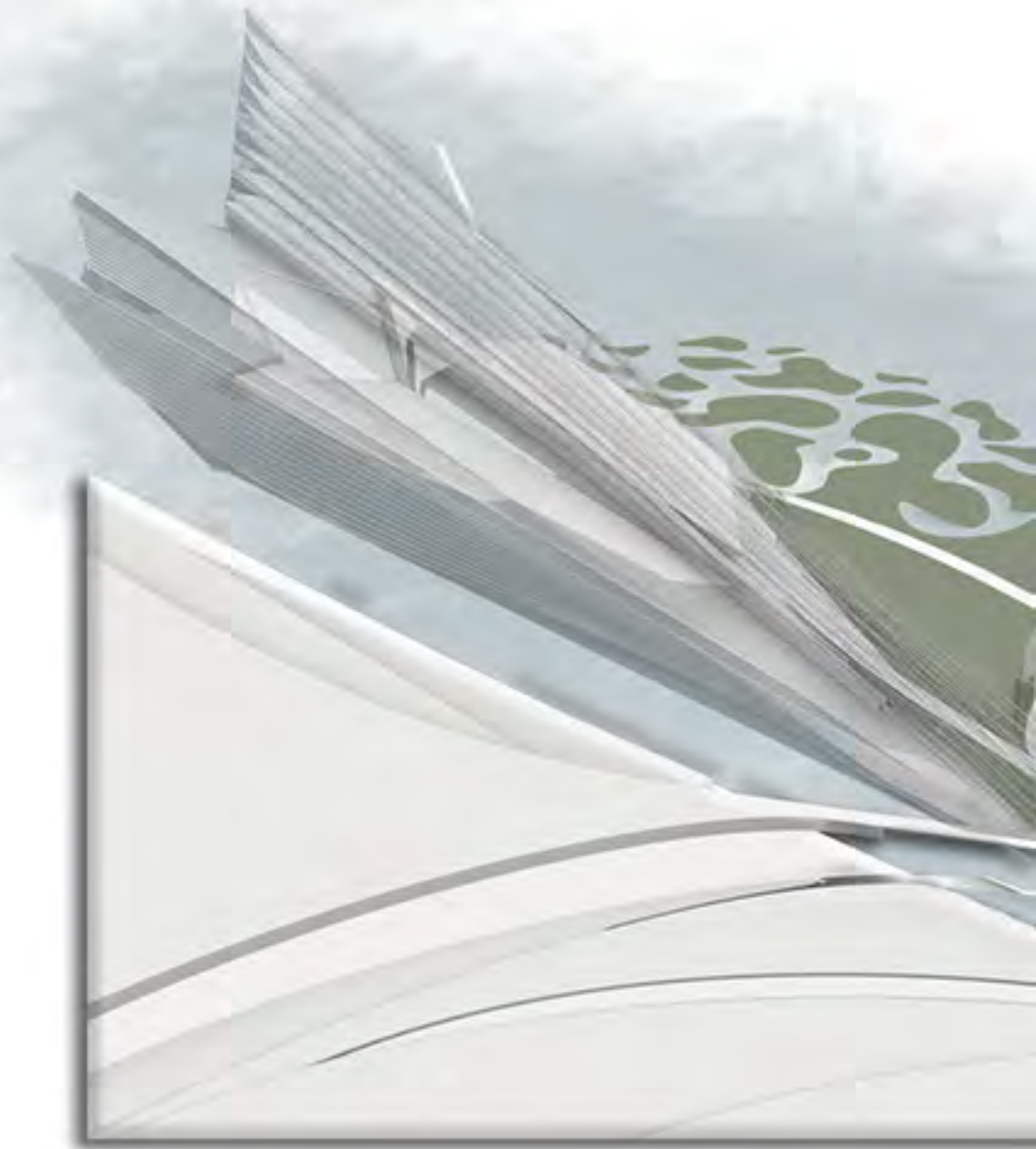
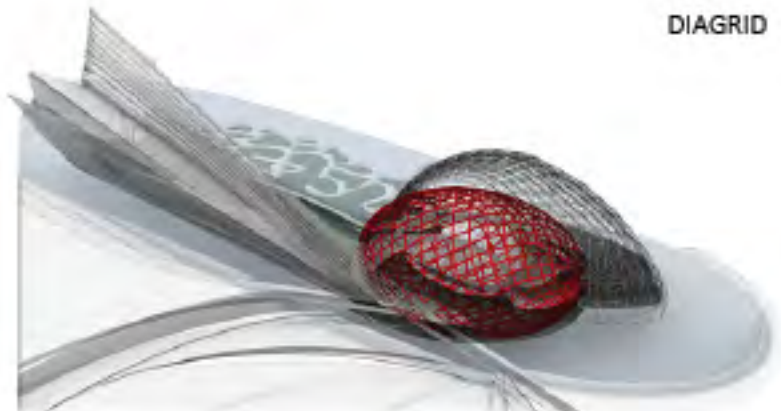
BASIC GRIDAL FRAME

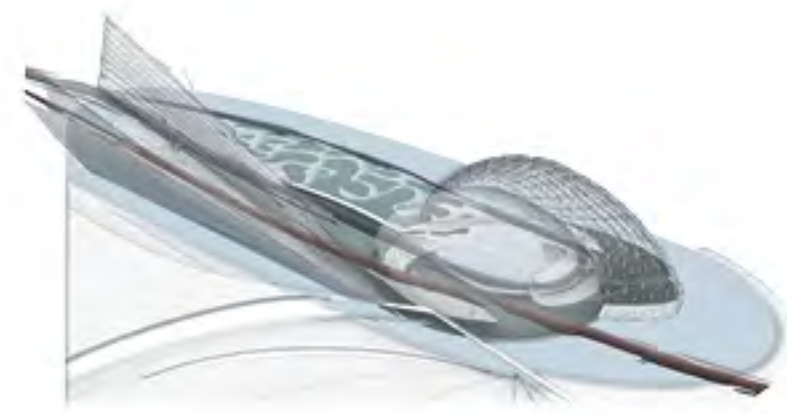
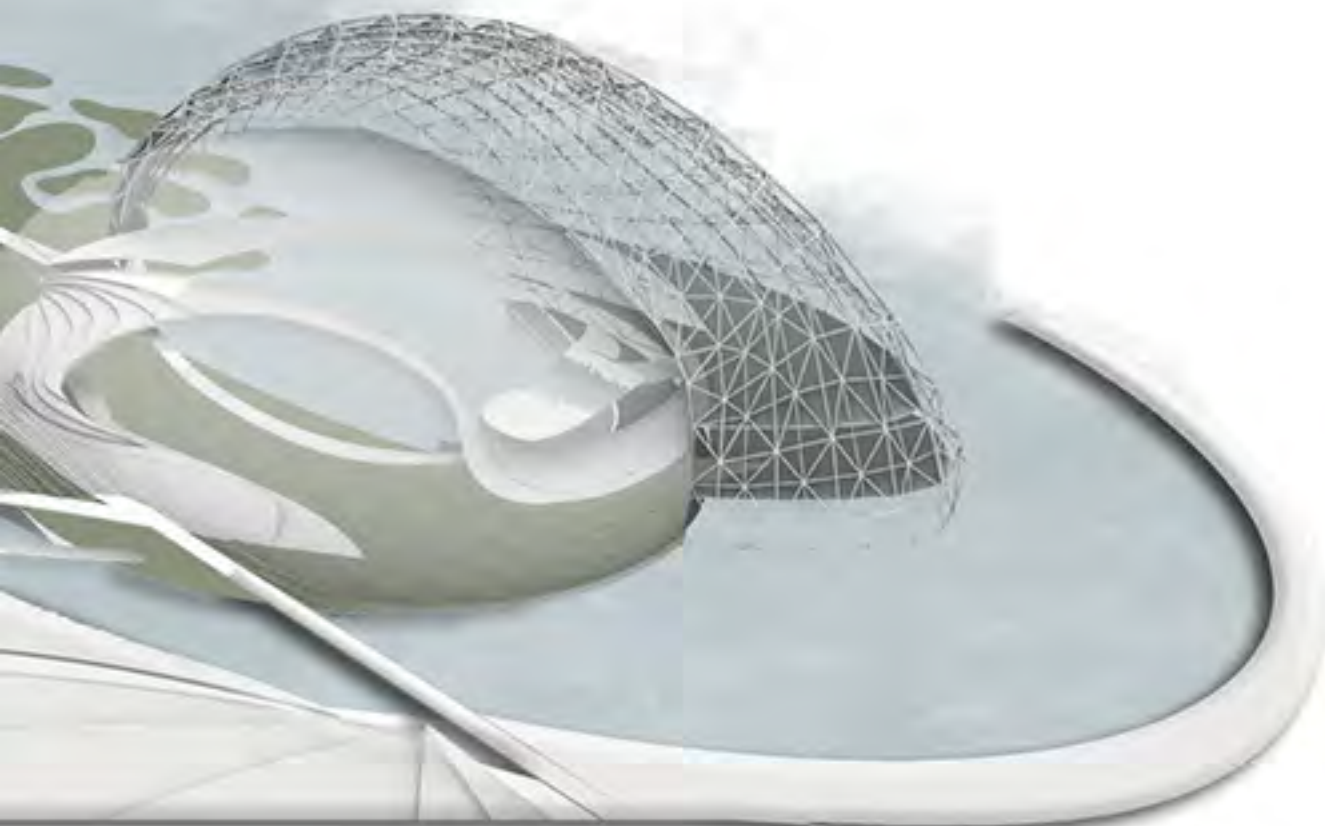


SPACE FRAME



DIAGRID

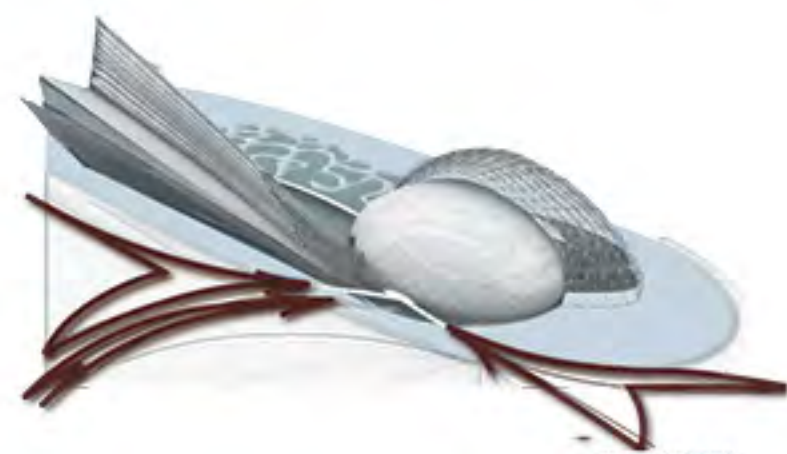




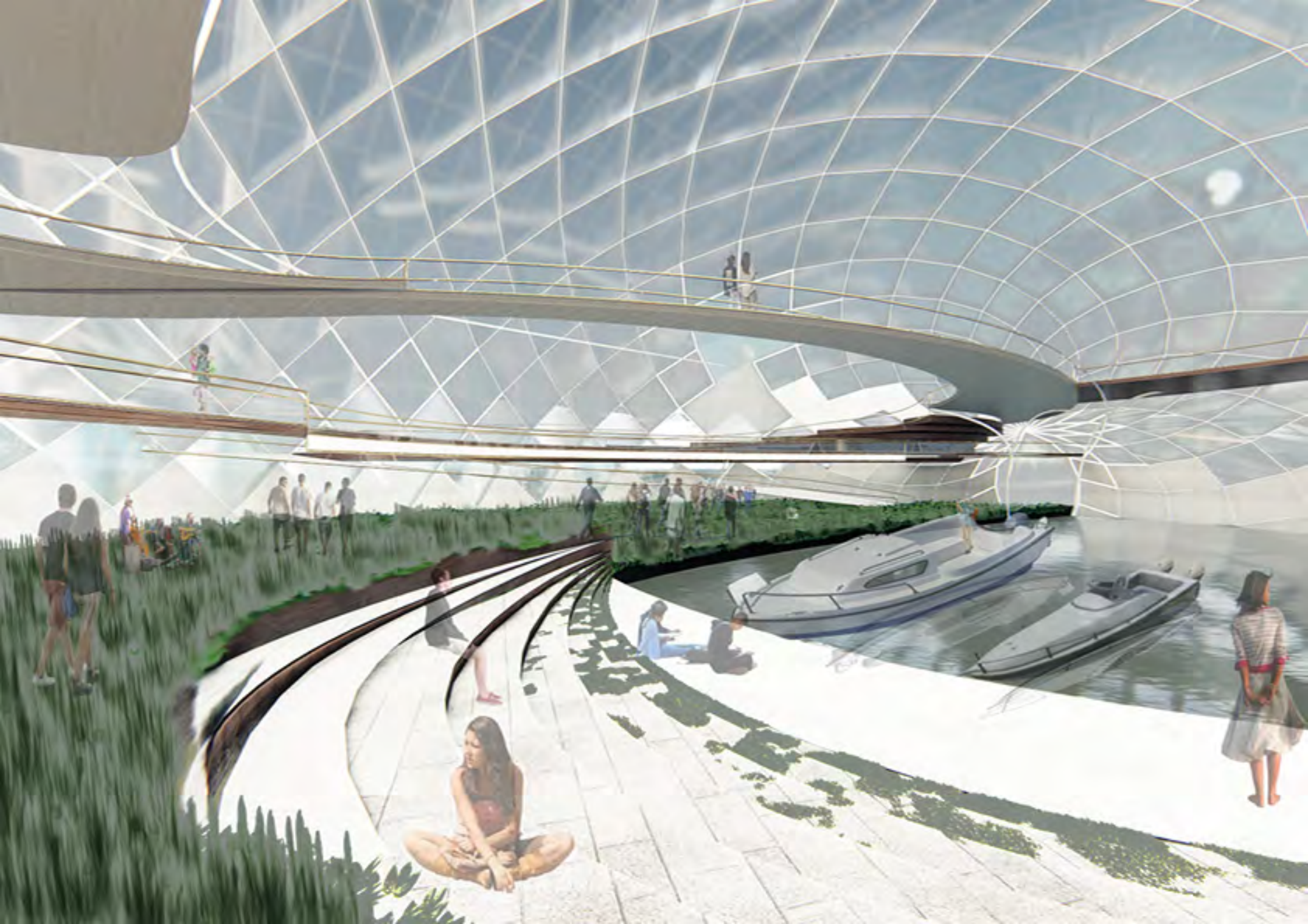
HYPERLOOP AND TRAIN LINES



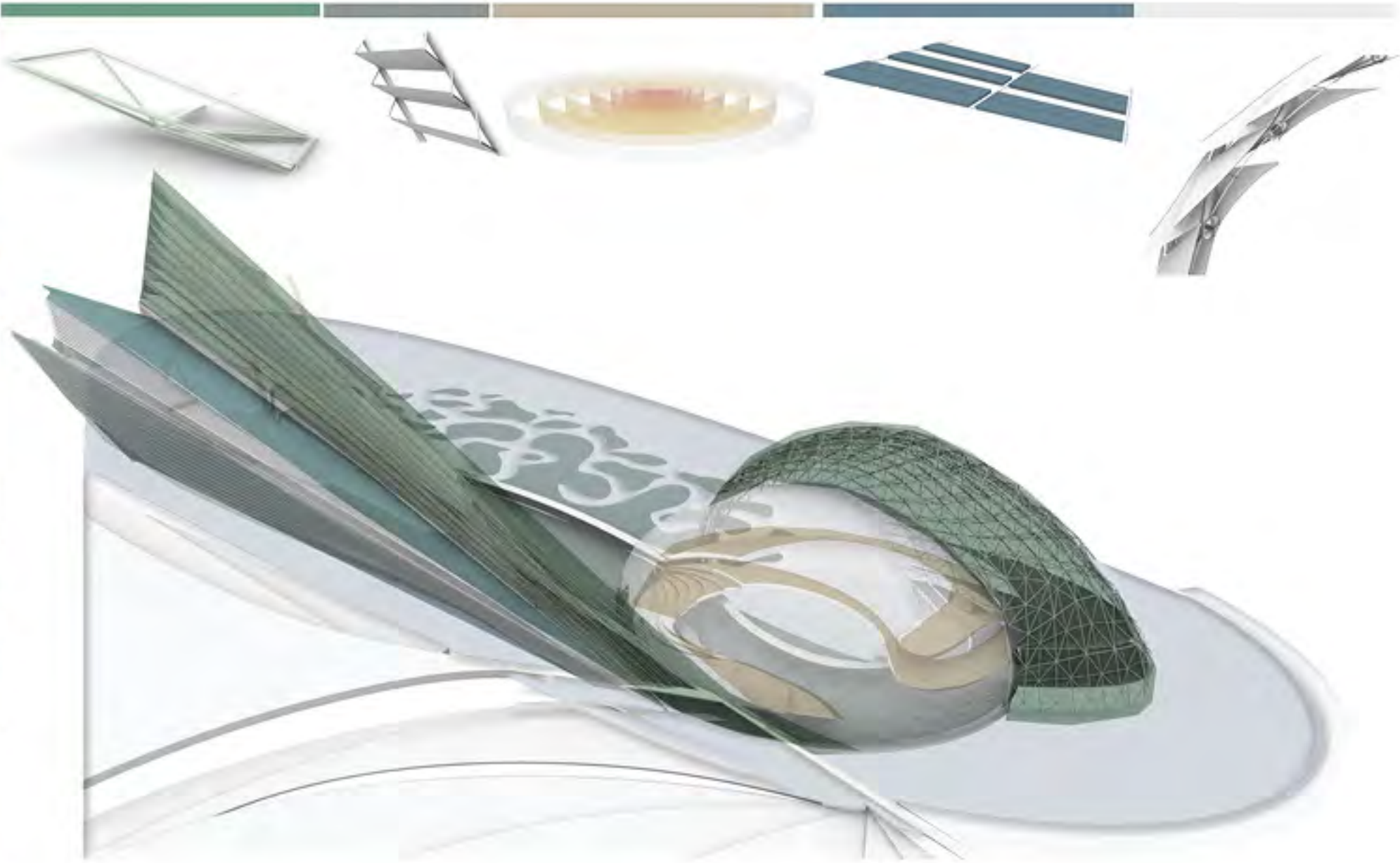
SUN PATH

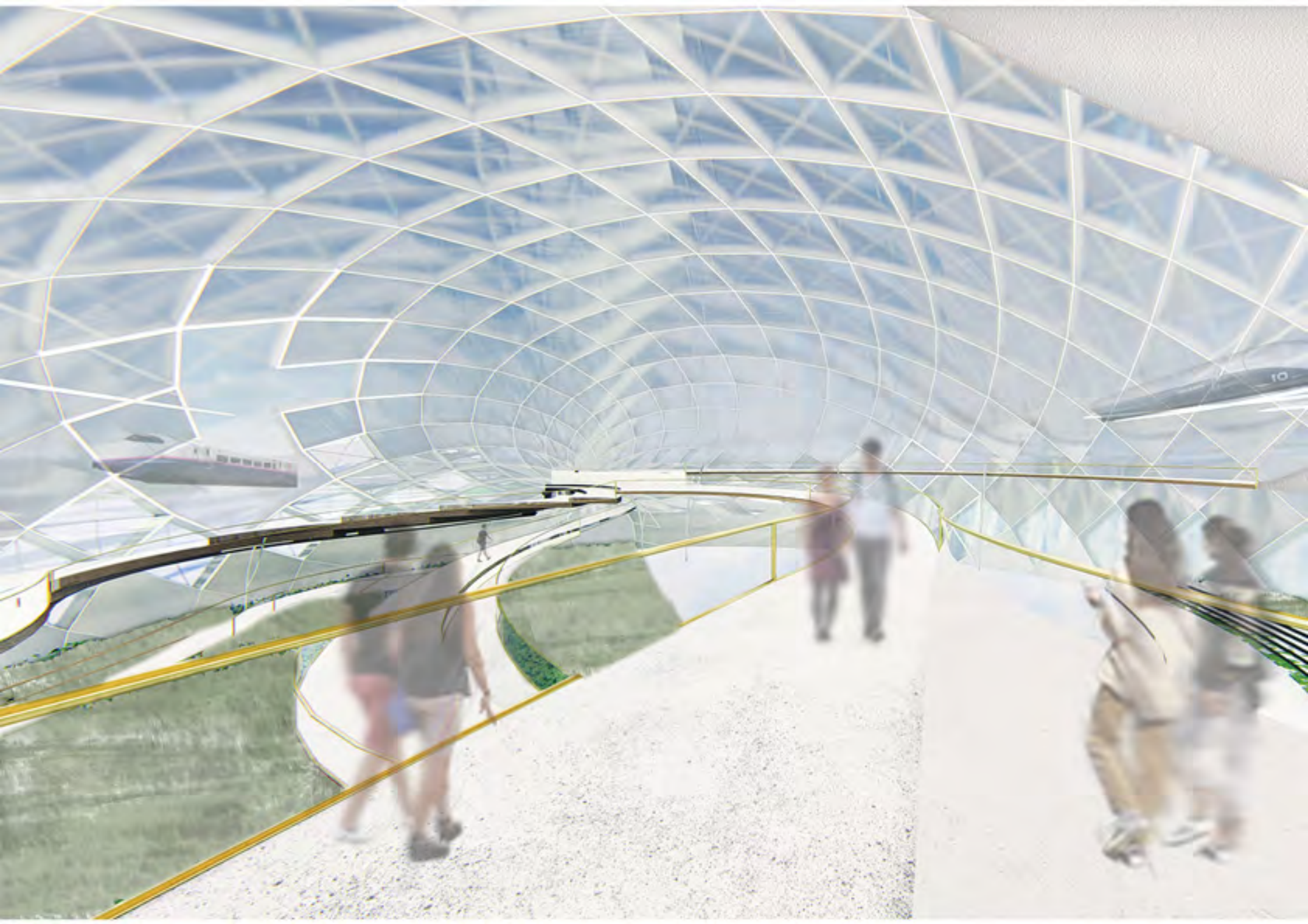


ENTRANCES



ENVIROMENTAL DIAGRAM







HYPERLOOP AND TRAIN

WAITING AREA

CAFE

TECHNICAL SPACE

LIBRARY

OFFICE

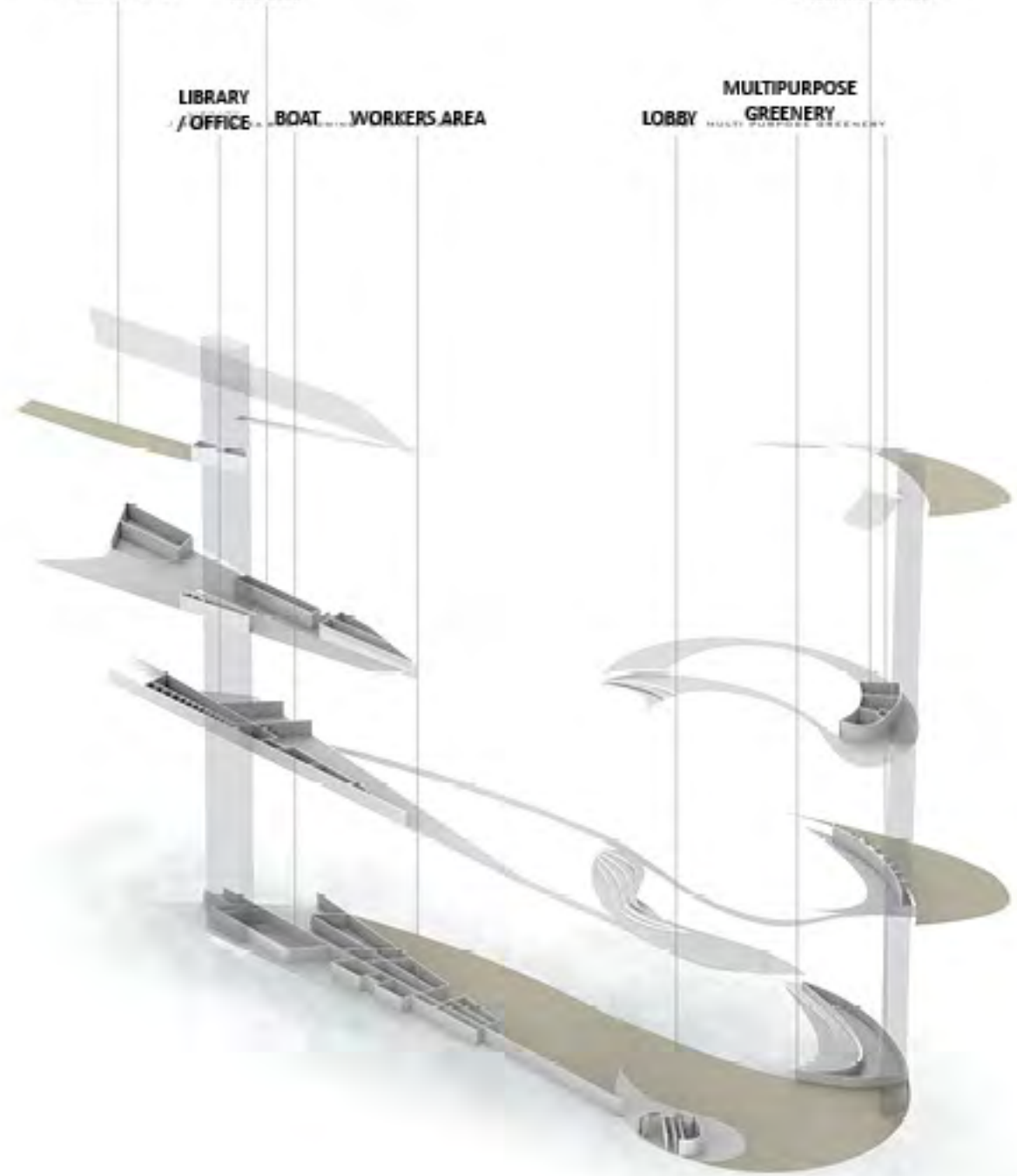
BOAT

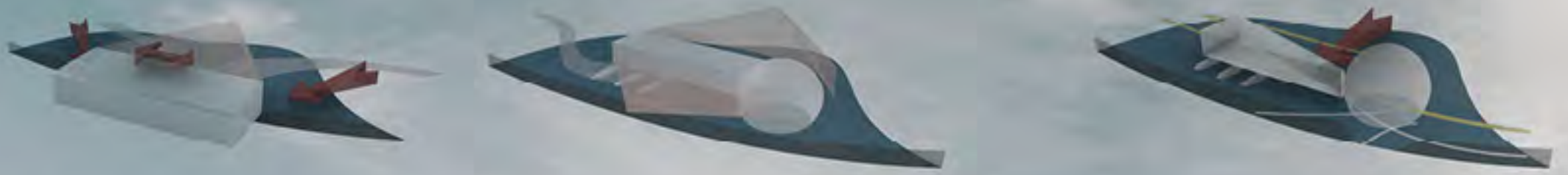
WORKERS AREA

MULTIPURPOSE

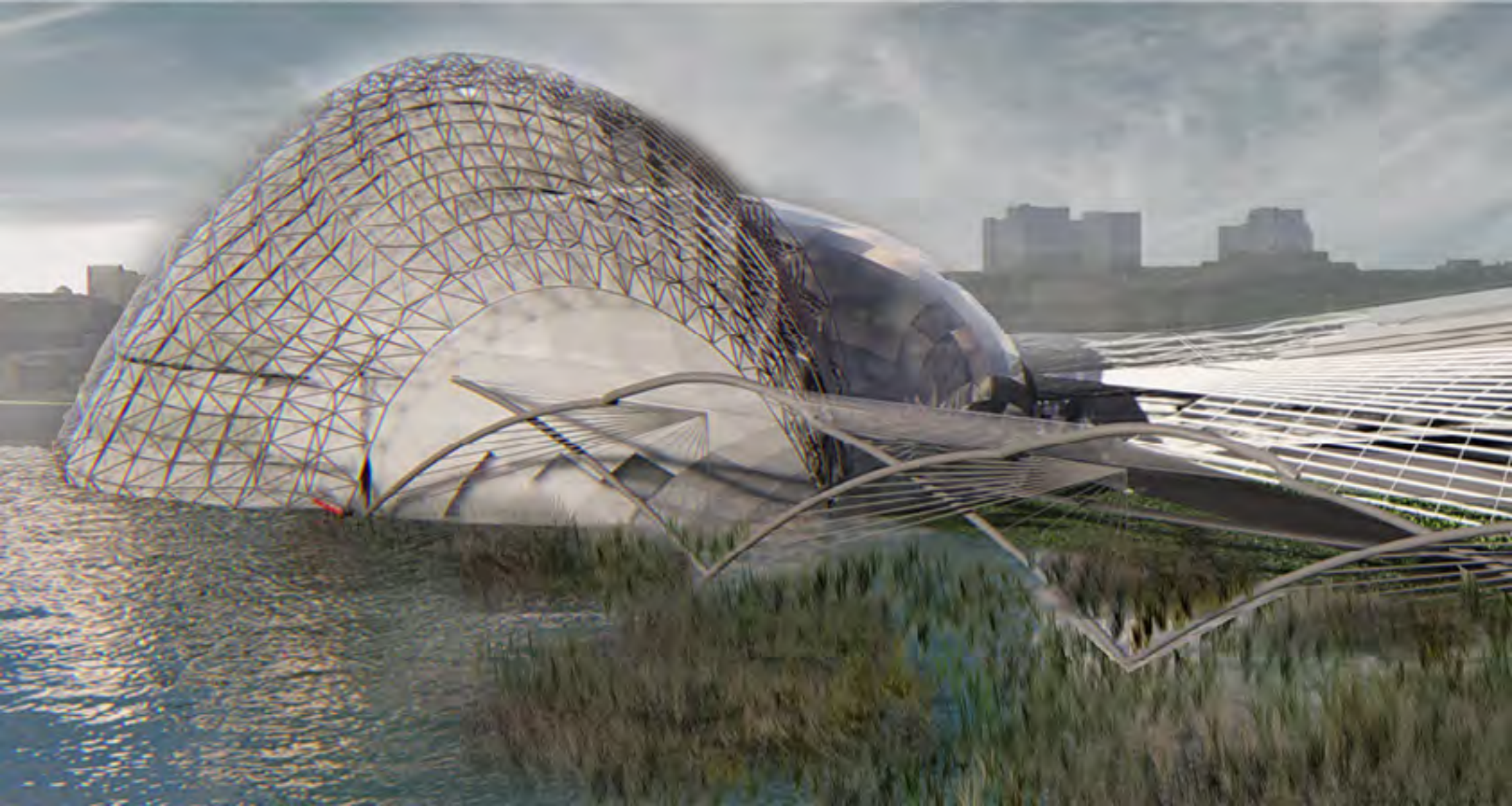
GREENERY

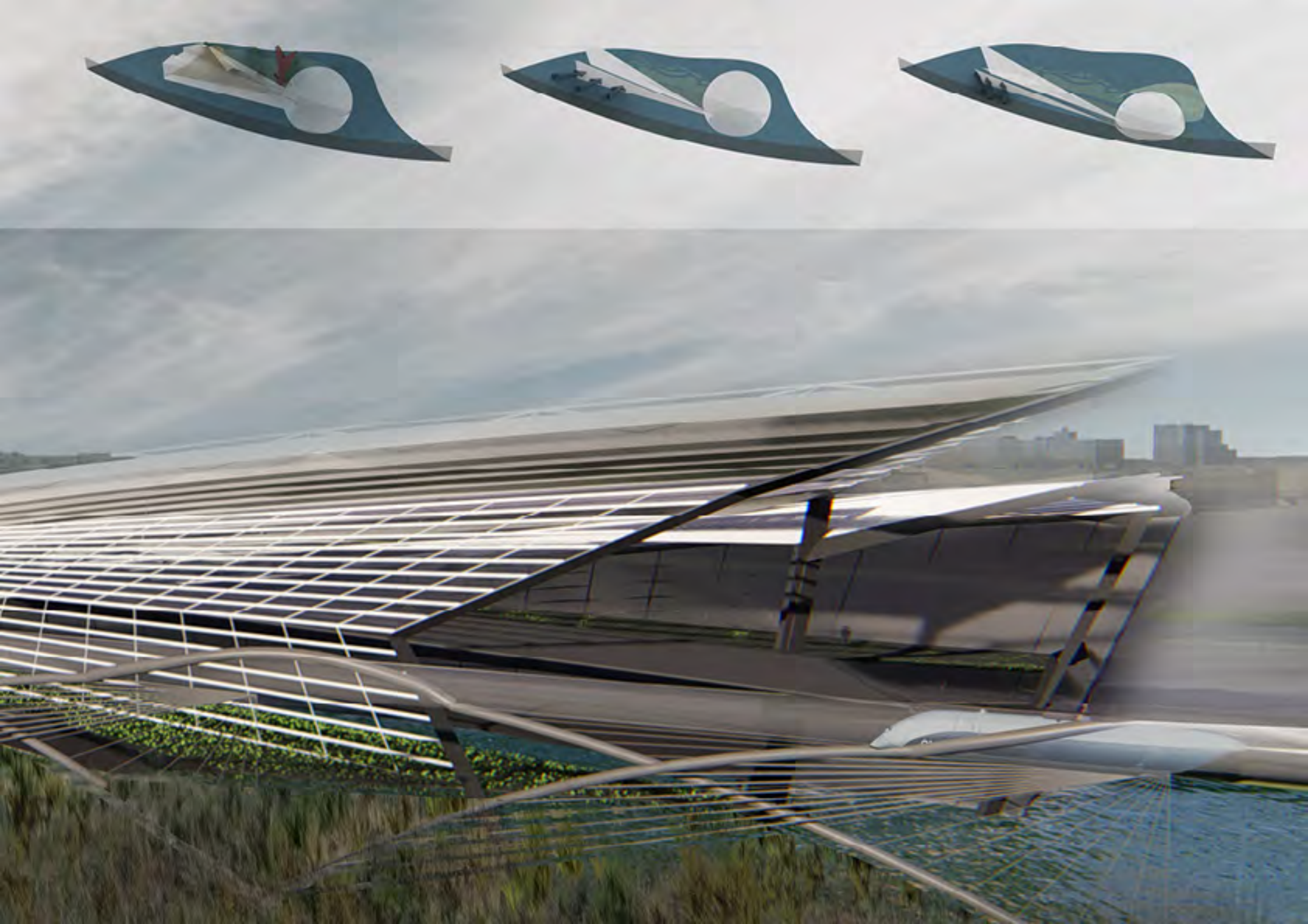
LOBBY

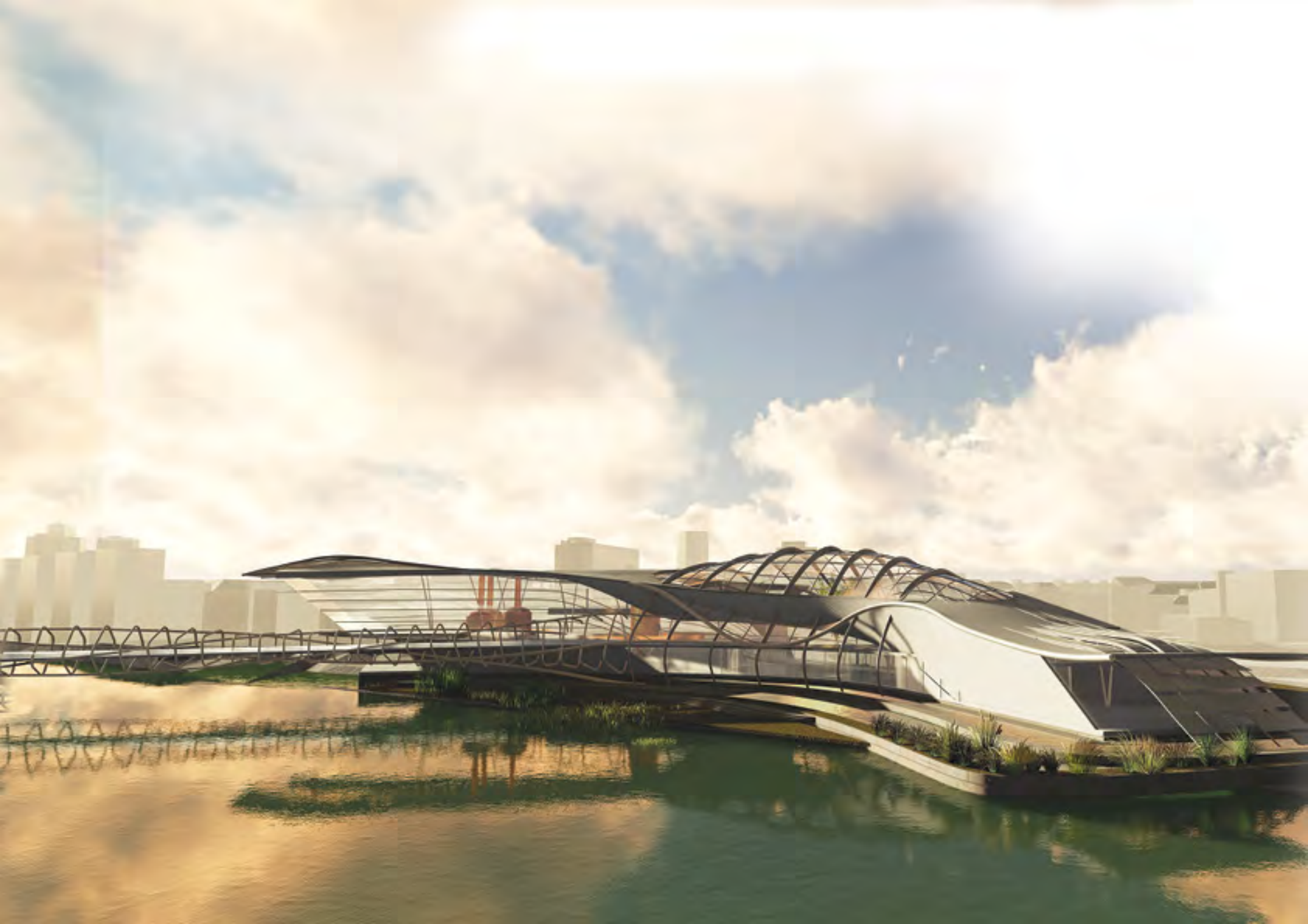




MASSING DIAGRAM







THE BREW-LINK: A BOUTIQUE BREWERY FOR PRAGUE

Tuğçe Taşer

The idea behind the design is providing the new boutique brewery in prague 7 that can be experienced by visitors while it creates a link between prague 7 and 8 with a pedestrian bridge. The aim of the design is to bring a different perspective to general factory concept. It has self sustain system. The beer production is provided by using the barley that is grow in the urban agriculture area at the opposite shore where the pollution is mininum and water is provided by the purification of the wetlands and rainwater. The bridge which is adherent the facade of the brewery provides different experience for people and provides the view to the interior of brewery. The outer and inner beer gardens where the bridge and building meets create relaxion and tasting area for people.

MASTER PLAN

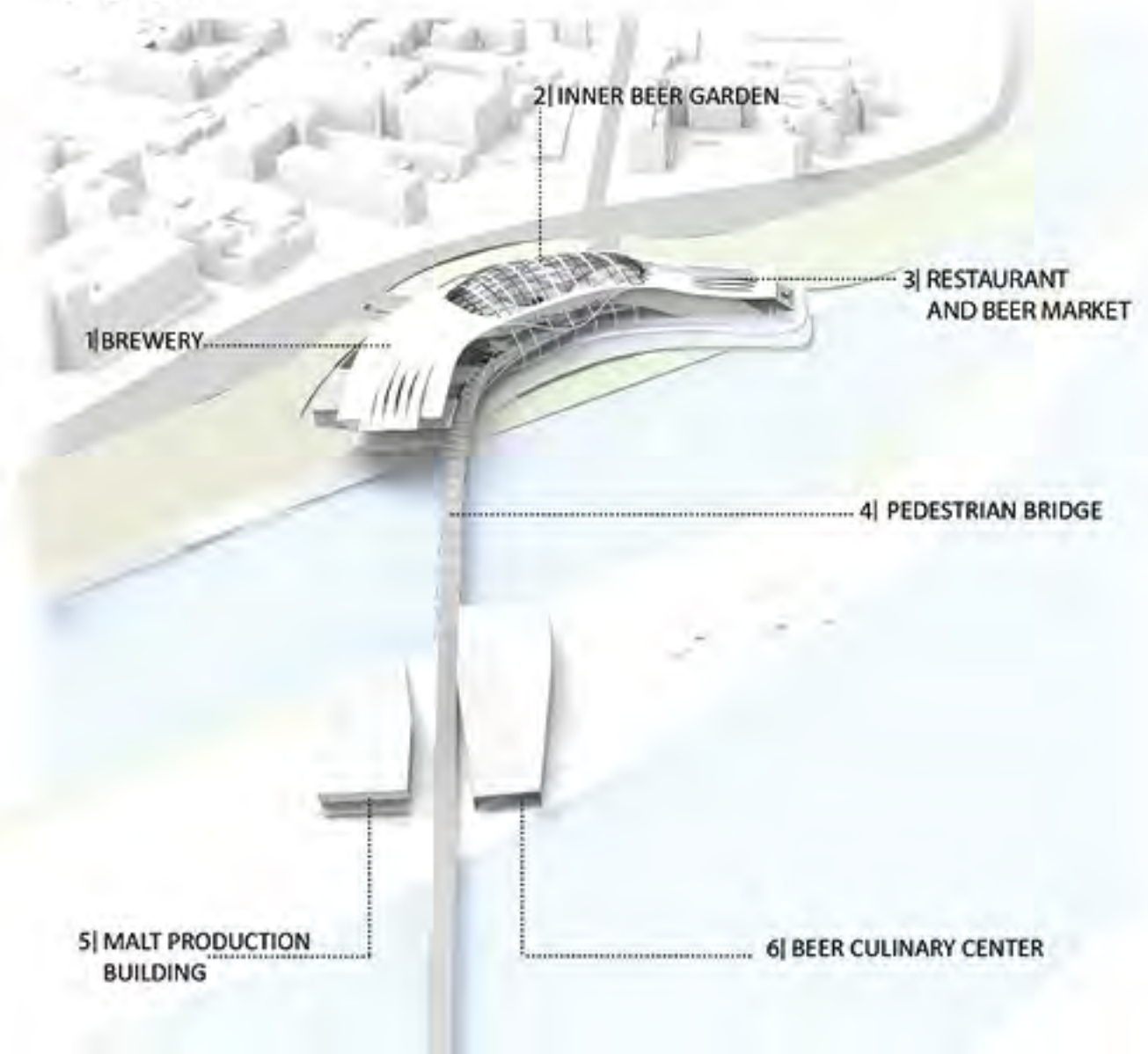


- 1| BREWERY
- 2| COMMUNITY CENTER
- 3| WILDLIFE RESEARCH CENTER
- 4| TRANSIT HUB
- 5| CHILDREN'S SPORT CENTER
- 6| PUBLIC GARDEN AND ORGANIC BAZAAR
- 7| GREEN HOUSES

BREWING PROCESS



SITE PLAN



PROCESS DIAGRAM



Brewery is placed the riverside to provide easy access to barley and bridge is connected to the brewery



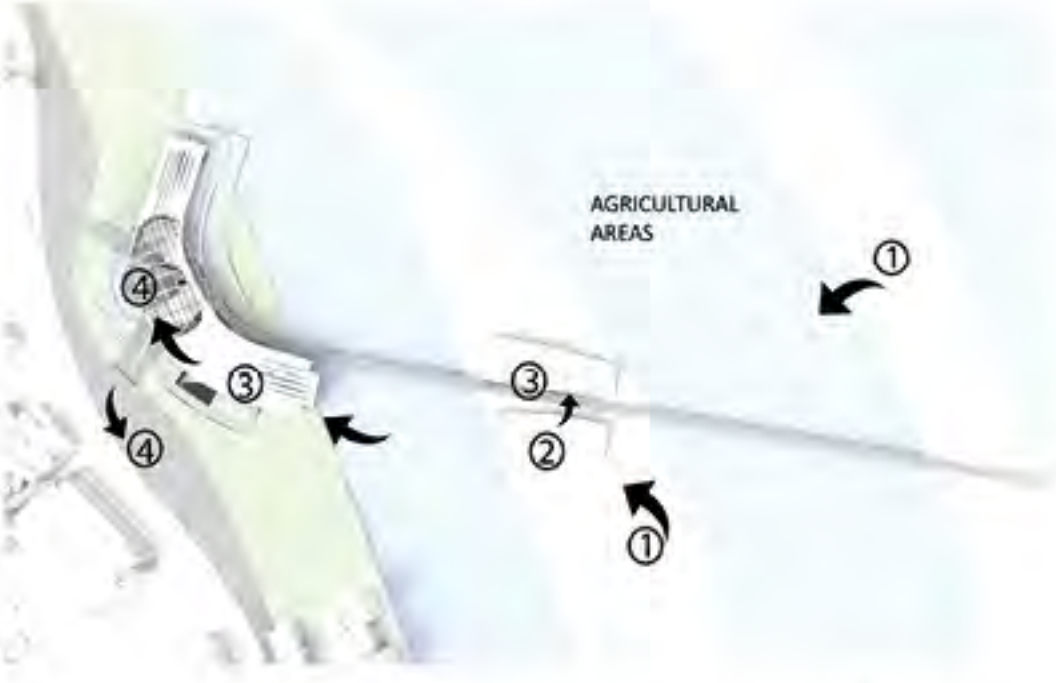
Masses are divided into two parts according to functions and let the bridge link with existing road



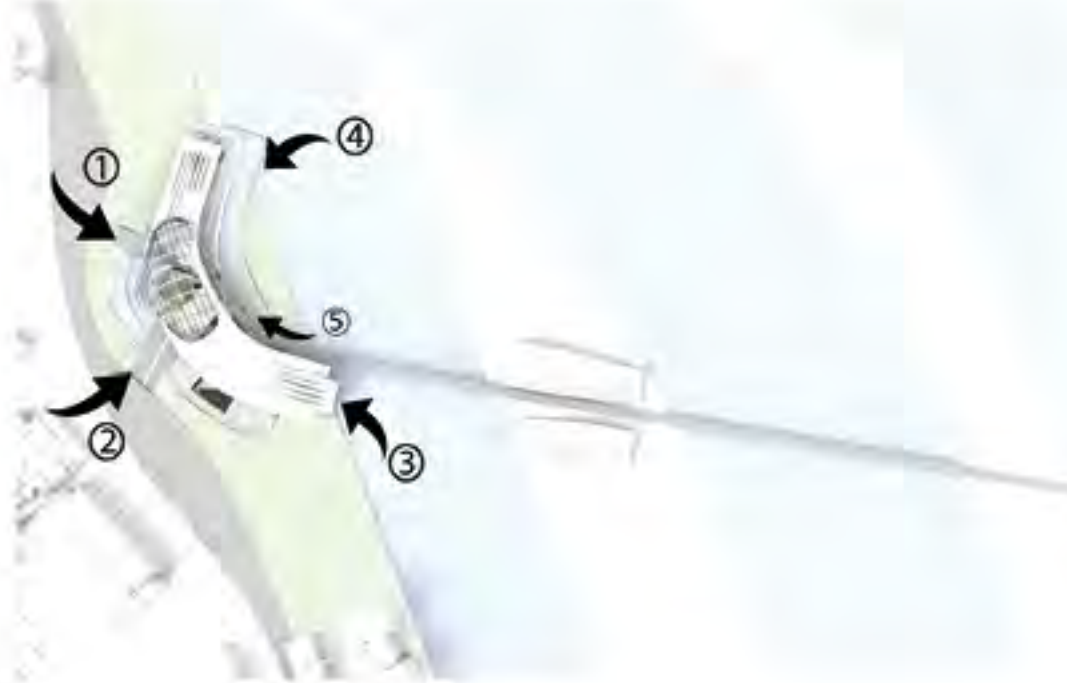
Masses take form to provide the relation between bridge and masses



The inner beer garden is created between two masses and bridge connection is provided.



- ① BARLEY → ② MALT PRODUCTION → ③ BREWERY
- ↗ ④ PRAGUE
- ↘ ④ BEER GARDEN



- ① ENTRANCE TO LOBBY
- ② ENTRANCE TO LOBBY
- ③ BOAT STOP FOR BEER AND MALT TRANSPORTATION
- ④ BOAT STOP FOR VISITORS
- ⑤ ENTRANCE FROM BRIDGE

BUILDING PROGRAM

- ① Inner Beer Garden
- ② Fermentation Area
- ③ Brew House
- ④ Canning Hall
- ⑤ Mill Room
- ⑥ Warehouse and Dock
- ⑦ Staff Room
- ⑧ Storage
- ⑨ Wc
- ⑩ Restaurant
- ⑪ Beer Garden Bar
- ⑫ Kitchen
- ⑬ Kitchen Storage
- ⑭ Beer Market
- ⑮ Beer Market Storage
- ⑯ Lobby
- ⑰ Brewery Exhibiton and Beer Museum
- ⑱ Tap Room
- ⑲ Workshop
- ⑳ Giftshop
- ㉑ Officer's Lounge
- ㉒ Offices

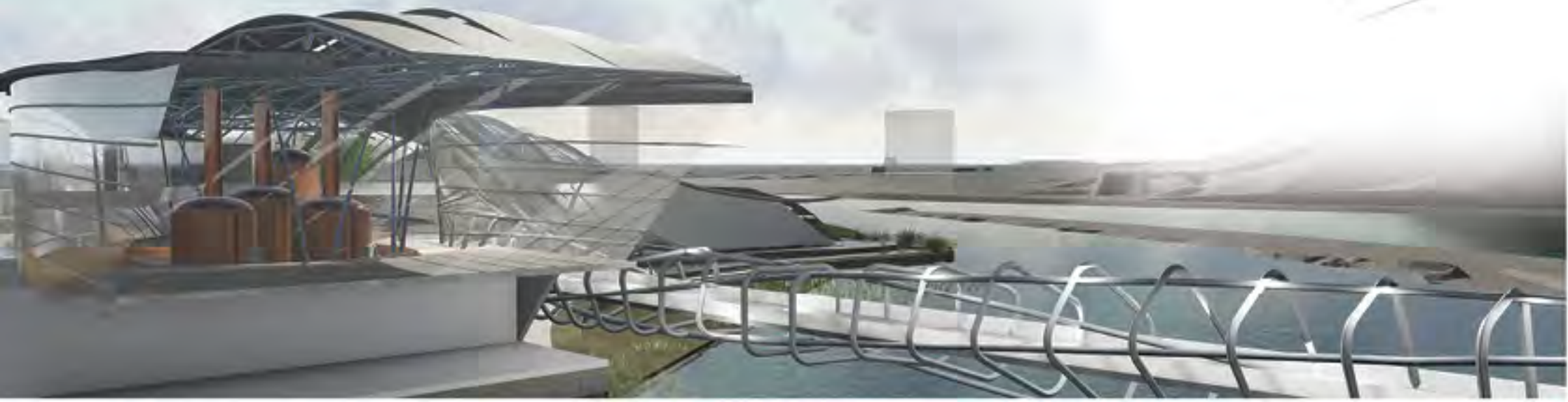
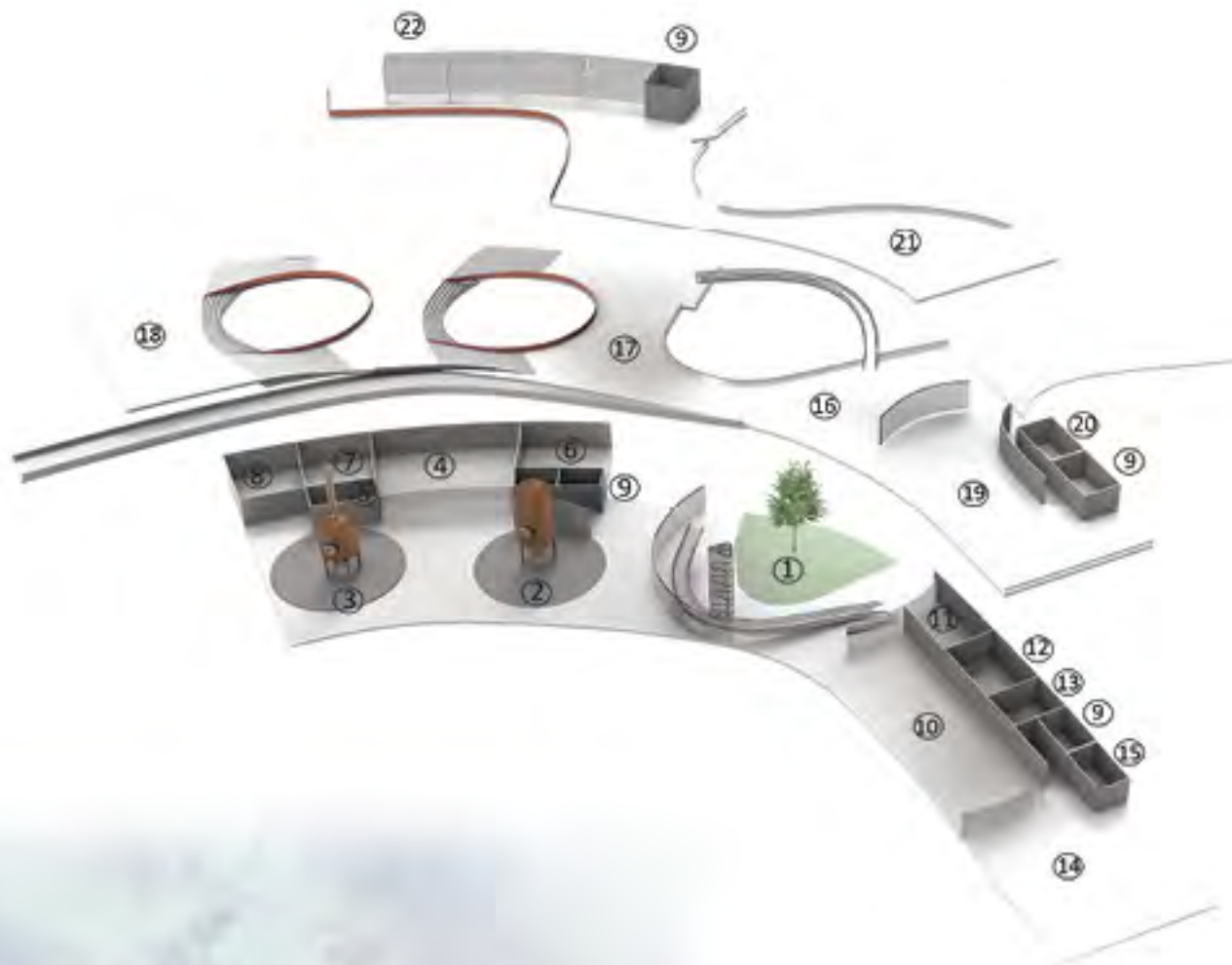




Figure 1

Design gives opportunity to people to experience and inform about the brewery process and beer history by exhibition and beer museum areas. The brewing machines which are placed in the gallery spaces can be observed from each level of the brewery.

Fig 1: Brewery Exhibition Area and Beer Museum

The inner beer garden provides a relaxation space for both visitors and people who just passing between Prague 8 and Prague 7 by pedestrian bridge which is connected to the brewery. The inner beer garden creates semi open space between restaurant part and beer production part therefore, it displays a green hub between two main functions.

Fig 2: Inner Beer Garden

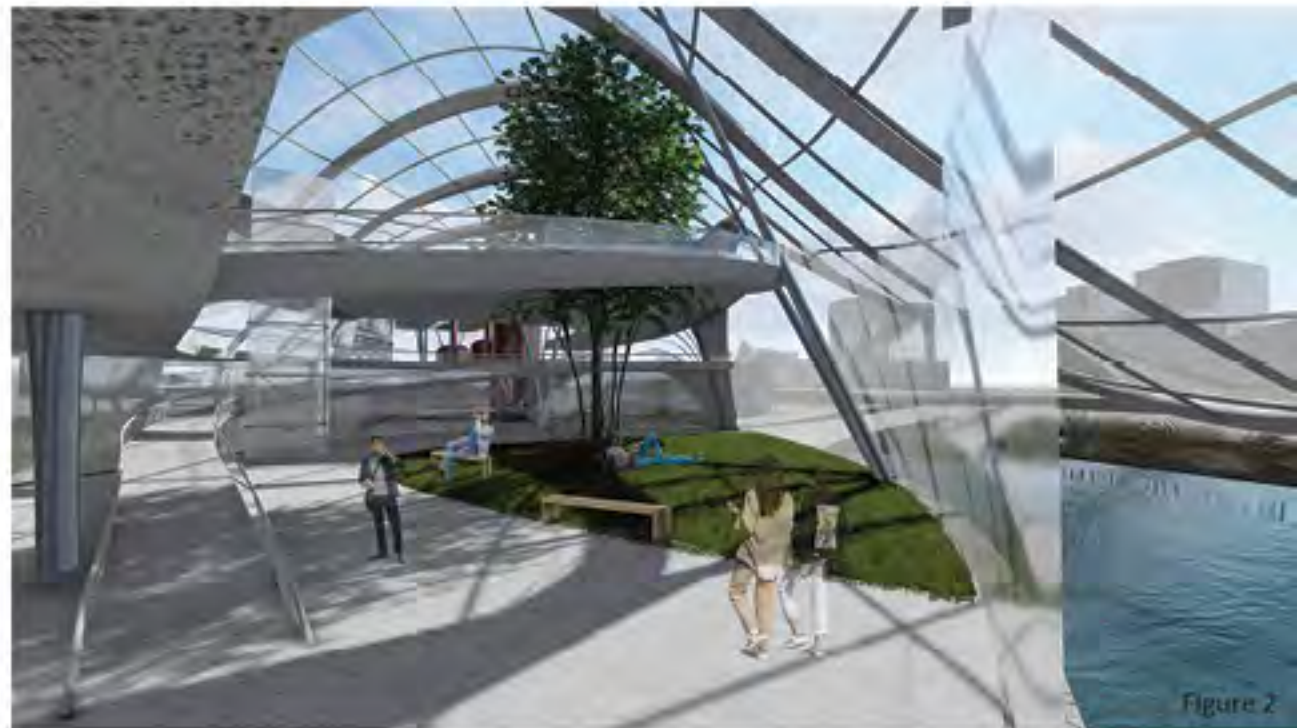
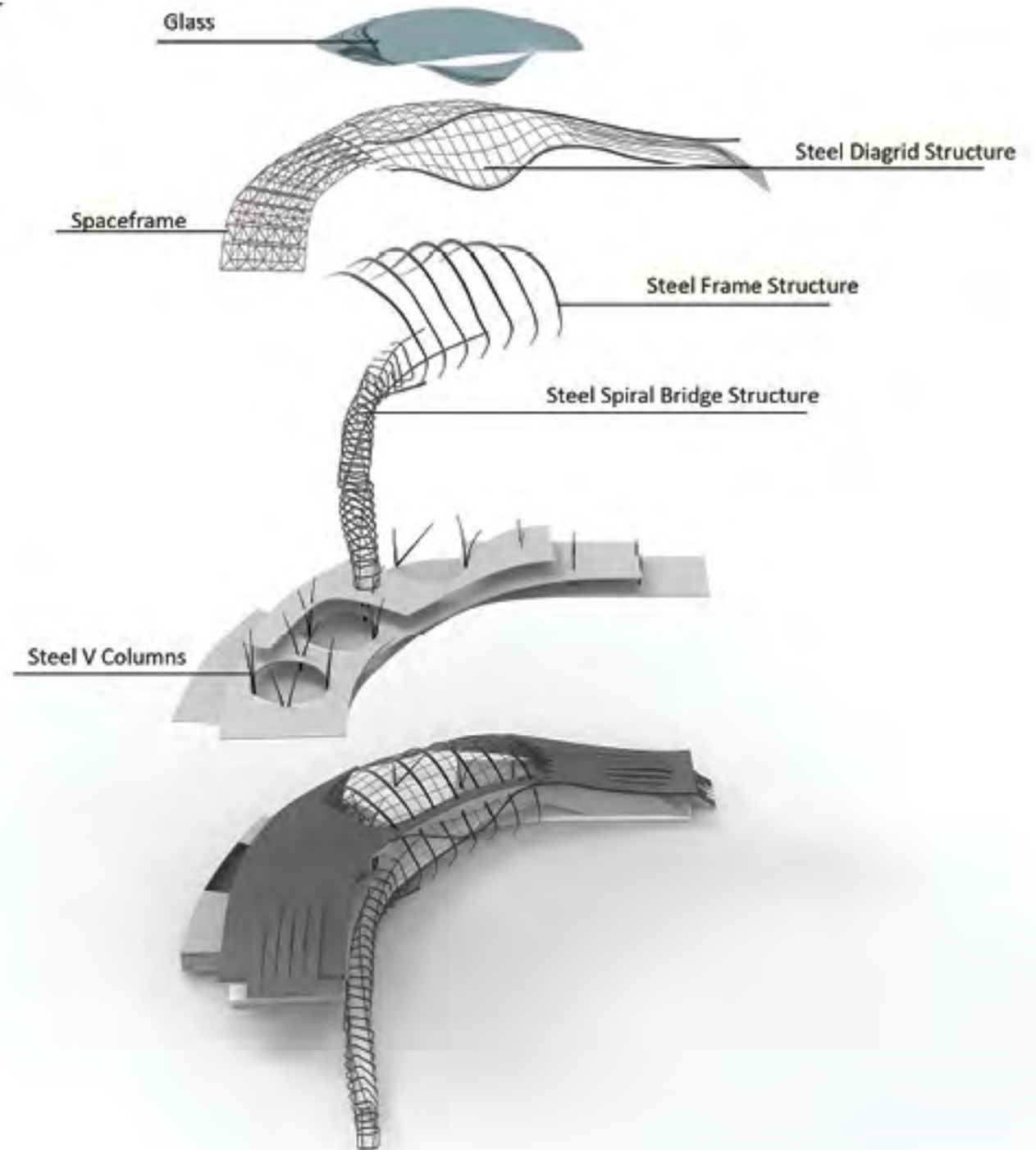
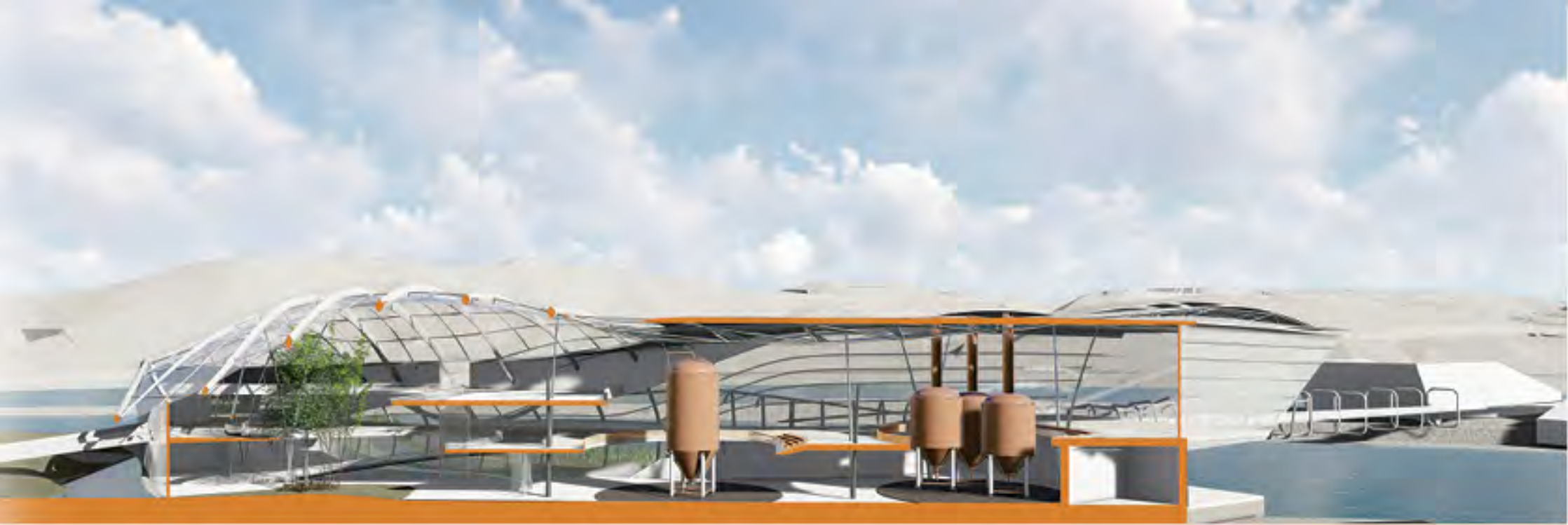


Figure 2



STRUCTURE

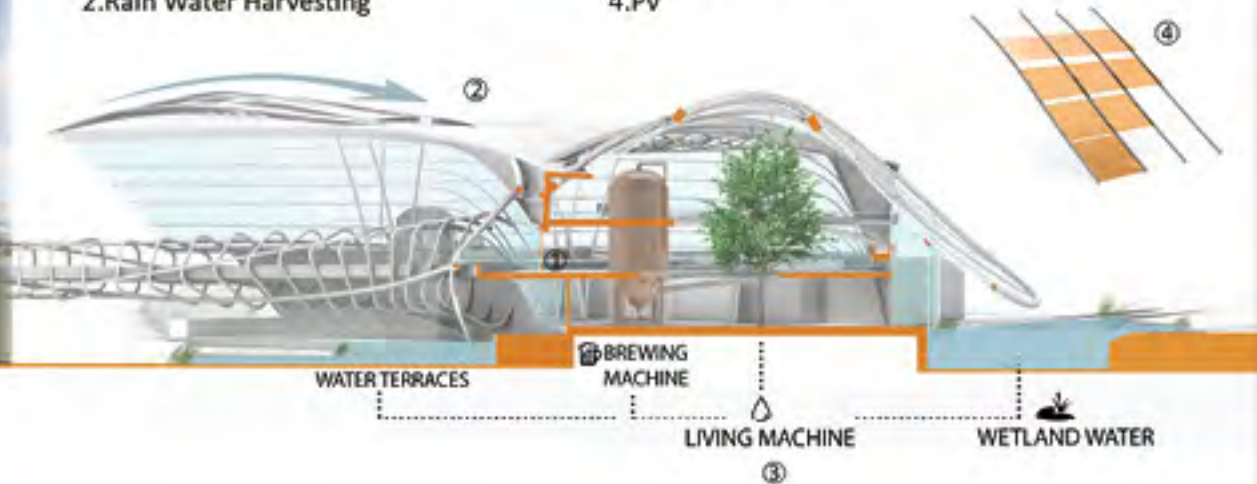


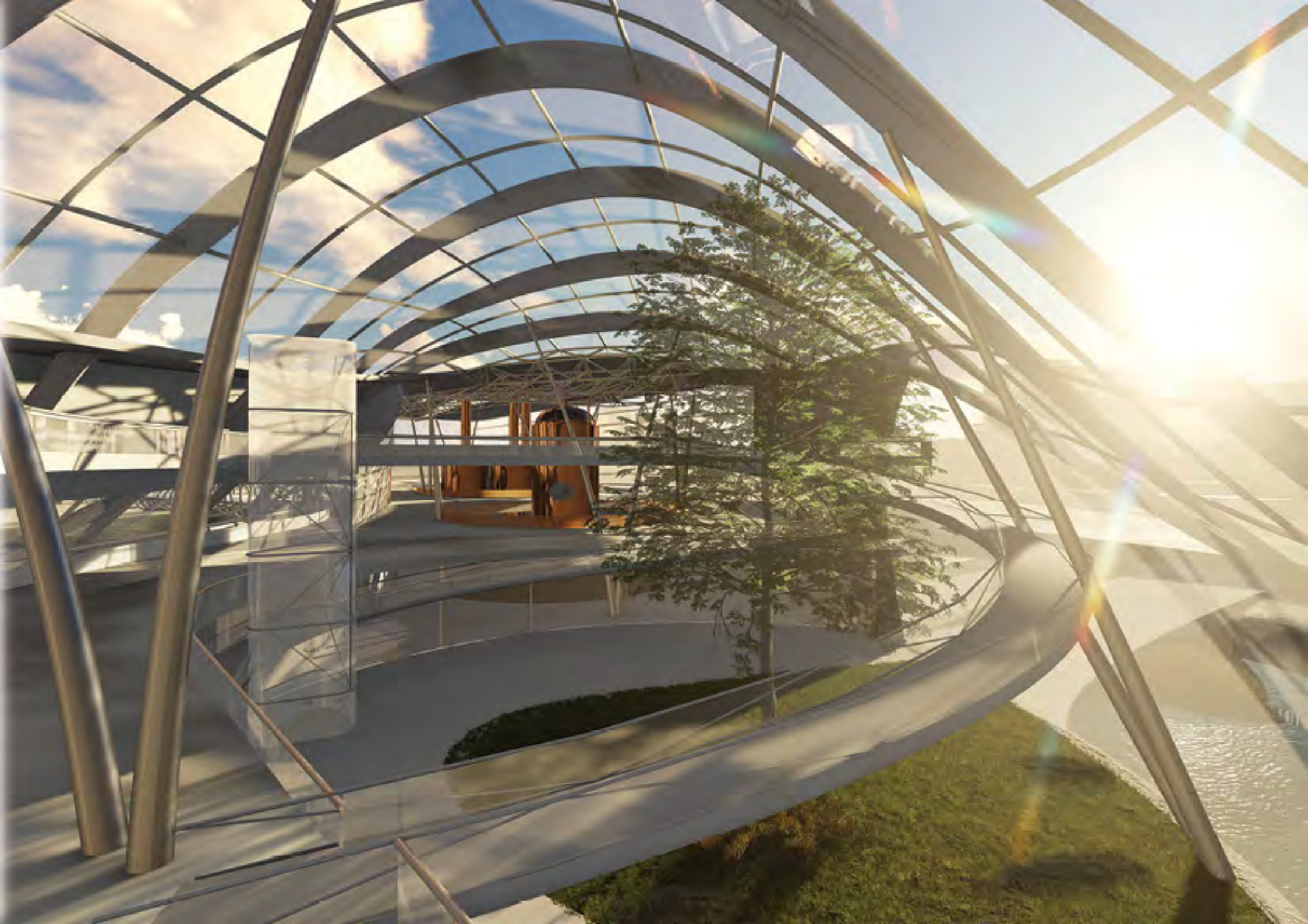


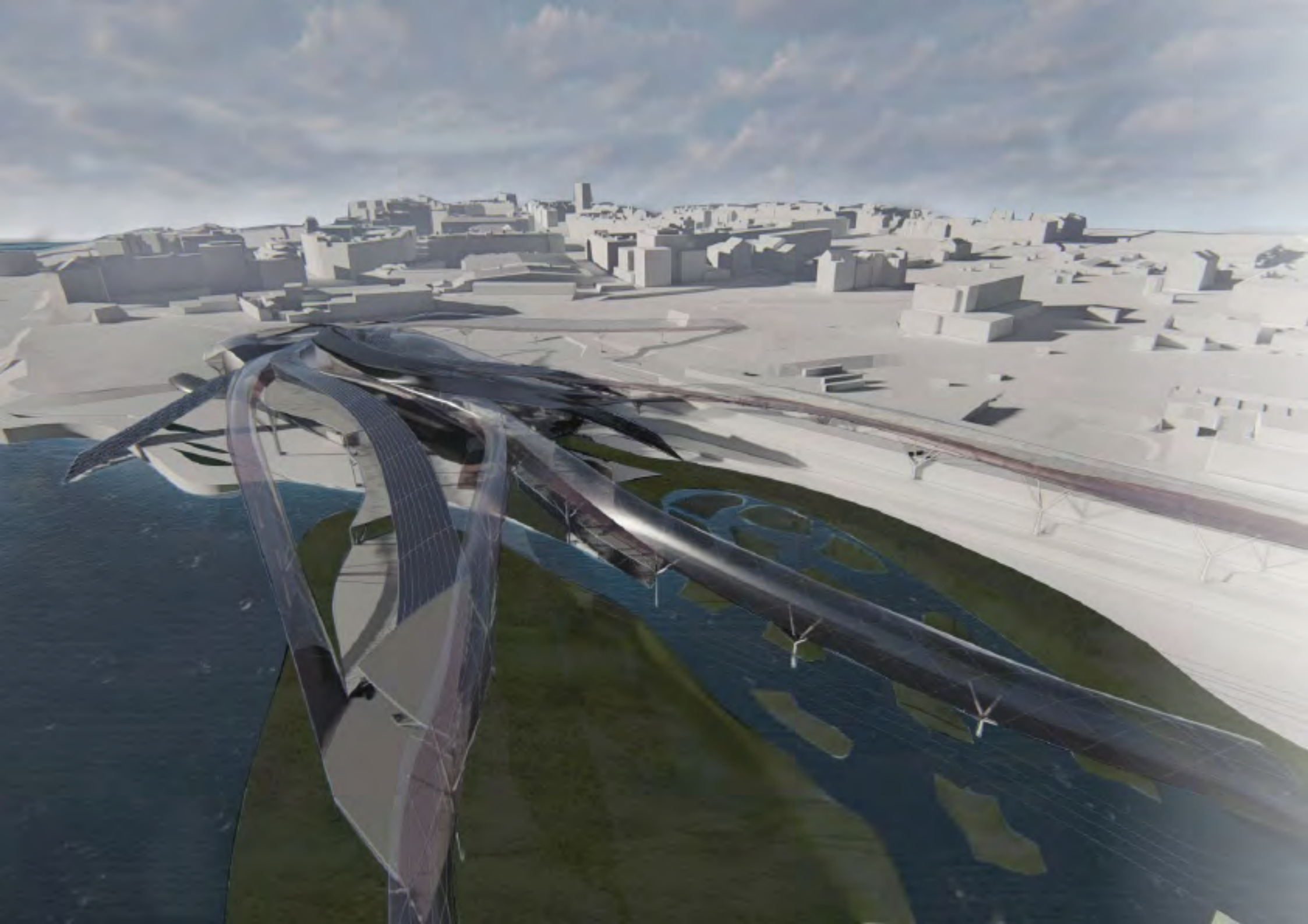
ENVIRONMENTAL SYSTEMS

- 1. Radiant Heating
- 2. Rain Water Harvesting

- 3. Water Purification
- 4. Pv







Living creature: Production breakdown

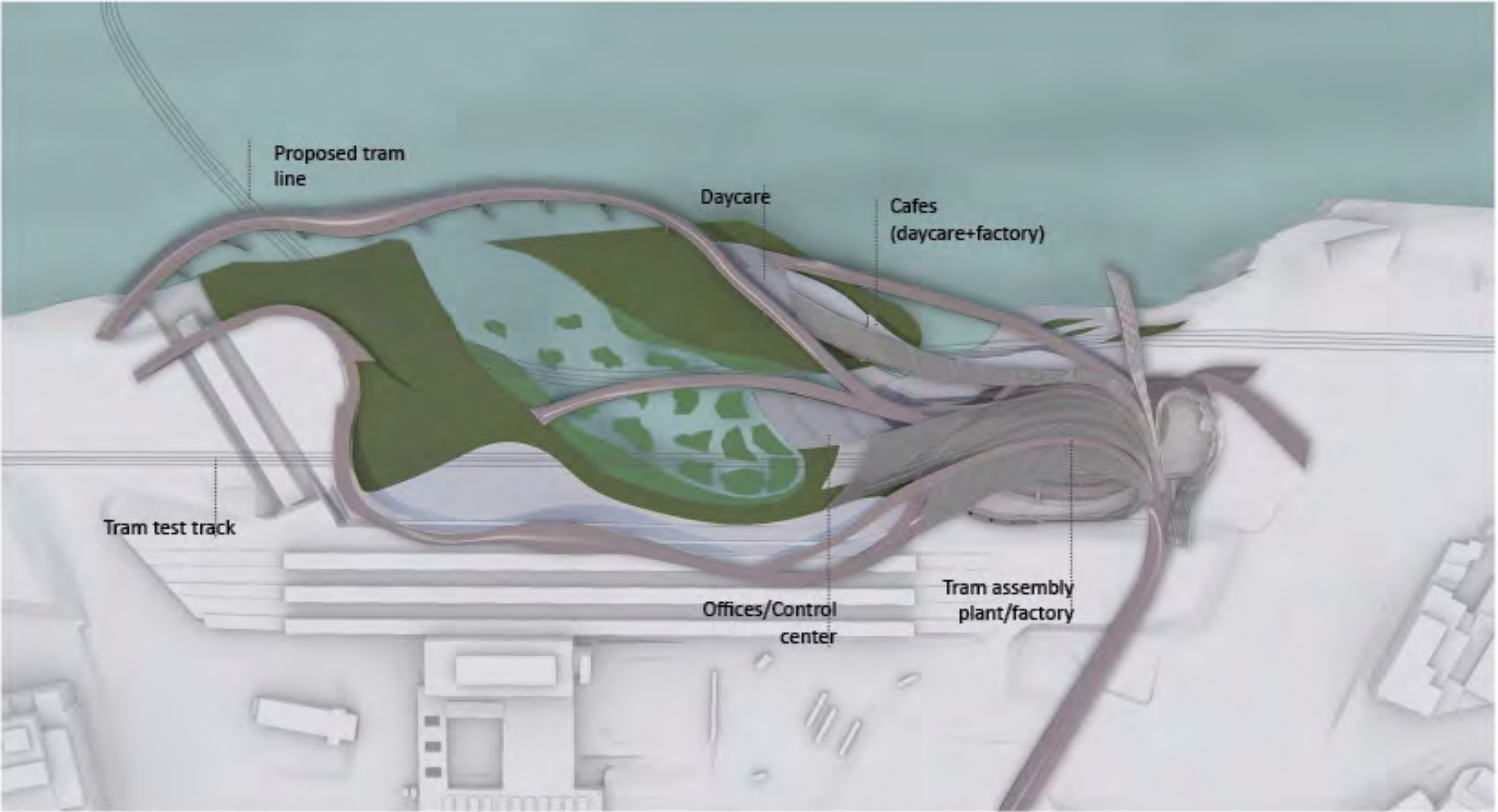
Yasmin Abdullayeva

The project aims to give to the people the opportunity to reunite with the industrial atmosphere of the Prague 7 region, give benefit to the economy of the neighboring areas, providing job opportunities and introducing people of all age to the production line process and the excitement one may have exploring it. The factory exposes the assembly procedure by showing in different scenarios. The concept concentrates on providing freedom in terms of exploring a phenomenon that is considered to have lack of interest from the side of people. The story lines begin at different places for various users without intervening the process of the assembly process in order to create a friendly and playful journey. It includes people that come to the building daily and the visitors. It covers the aspect of usual factories, which have an issue with the workers spending most of their time at work and not being able to see their children by providing a daycare right next to the extended tram line, which will encourage the use of more environmental-friendly transportation.

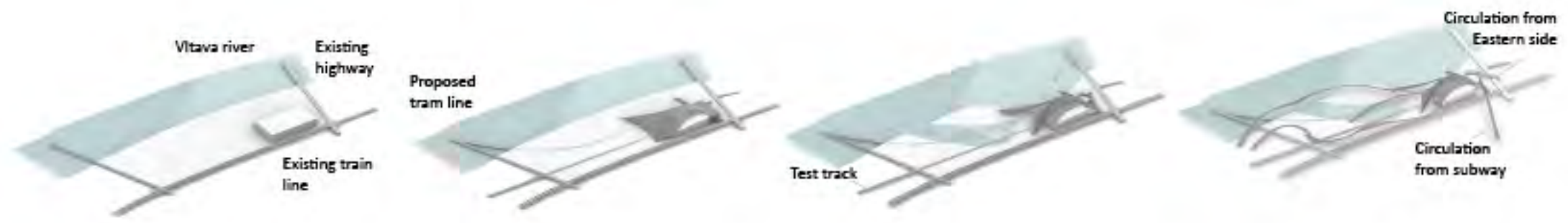
Tram assembly plant will not only decrease the level of unemployment, but also educate future generations to consider the field of tram industry as part of their profession. The workshop for children organized directly for the mentioned purpose will provide a short introductory course for the children of different age categories about the benefits of tram as a public transportation choice with the light touch of construction aspect having children build a small scale tram model.

The concept that is revolutionizing the presented design is the fact that the factory consumes the water that has undergone the process of cleaning (greywater and rainwater treatment) and generates solar energy to be used for the machines used in the production line.

Master Plan



Form Derivation

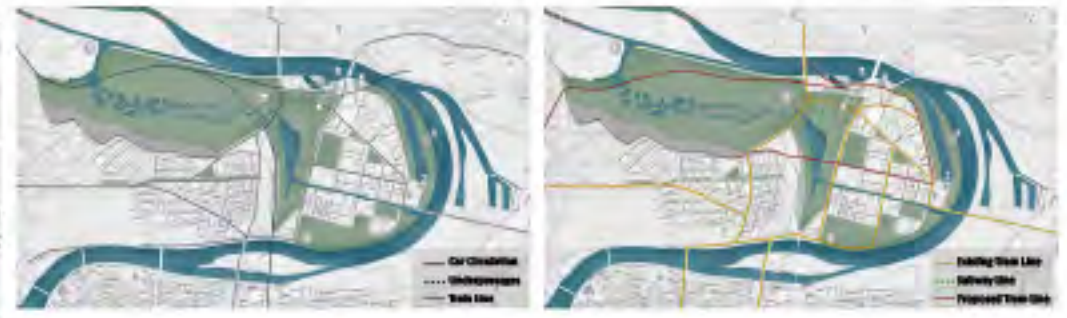


Master Plan



Program

- 1- Water treatment plant 1
- 2- Water treatment plant 2
- 3- Children's center and playground
- 4- Water treatment plant 3
- 5- Tram assembly plant
- 6- Tram innovations expo center
- 7- Tram theme park
- 8- Water treatment plant 4



Environmental Systems

Water Collection

Rainwater Greywater Rainwater



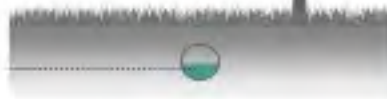
Rainwater Greywater Rainwater



Natural Cleaning



Landscape element
Clean Non-potable
water



Solar Energy Generation

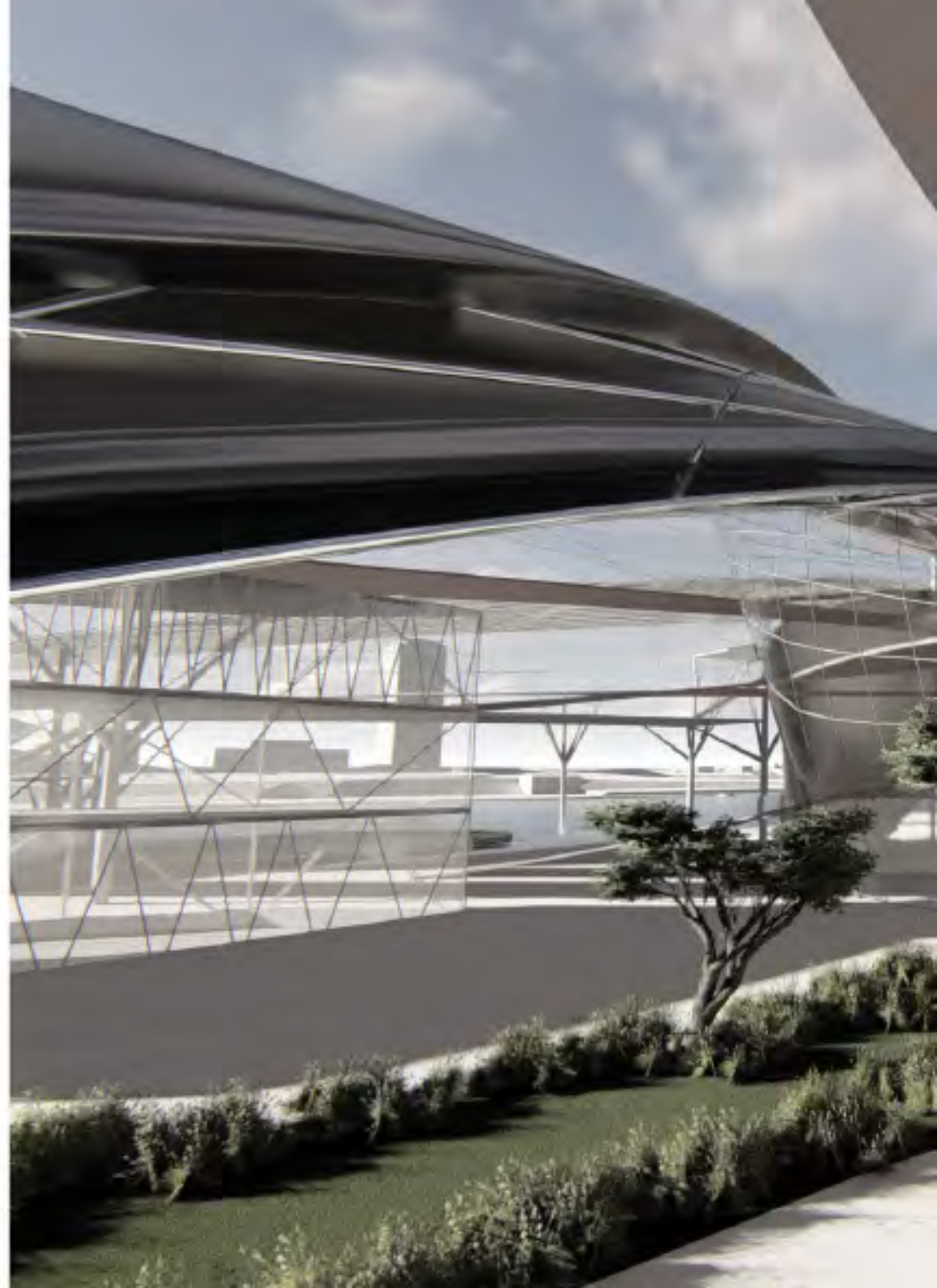
Translucent Pv
Panels

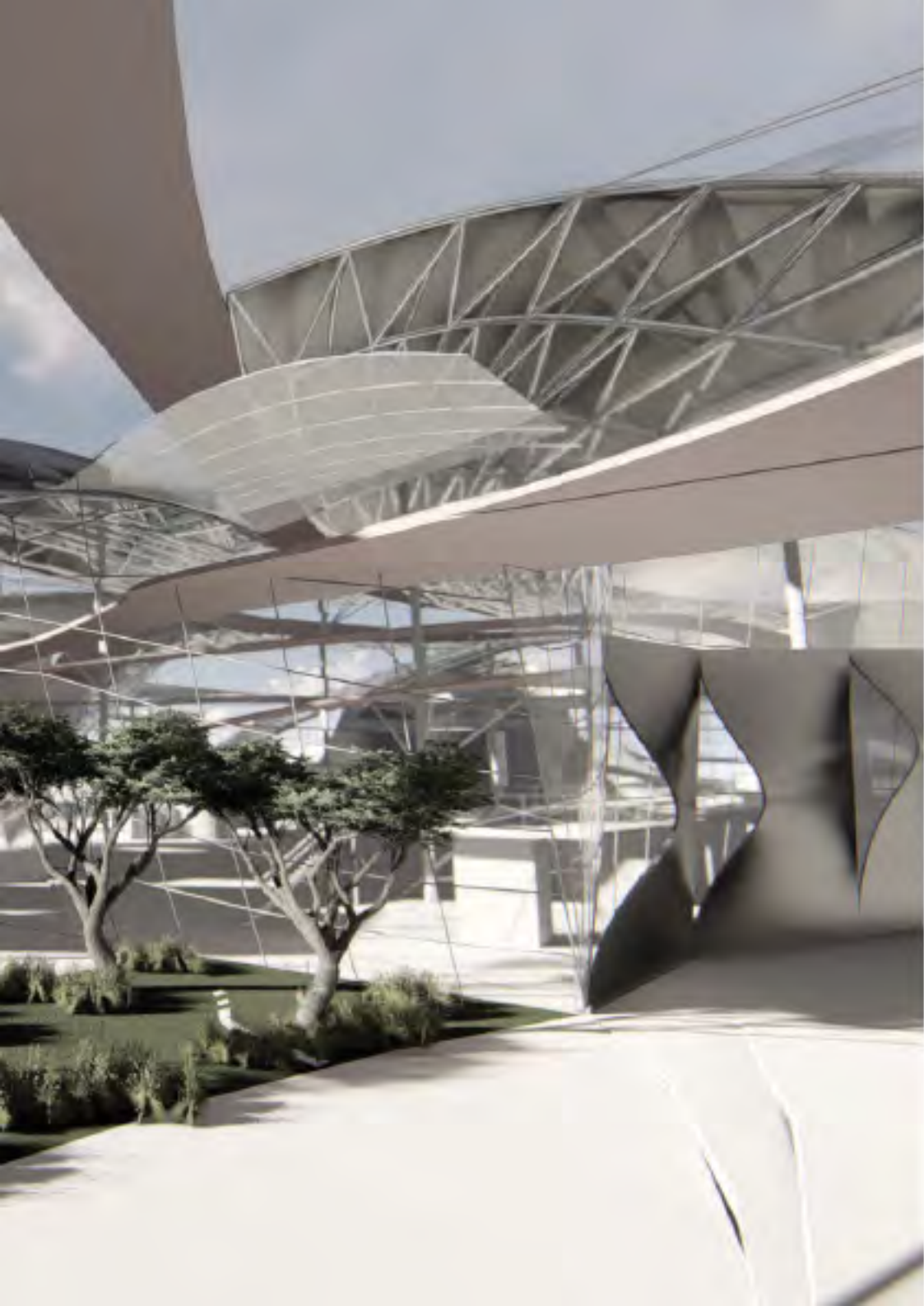


Prefabricated Steel
Frame

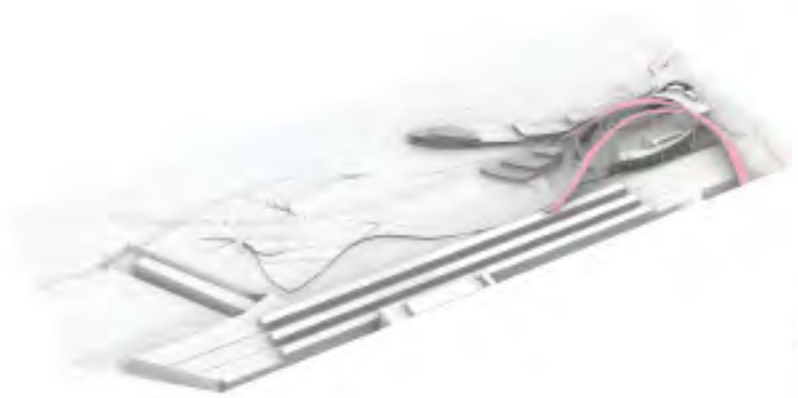


Aluminum

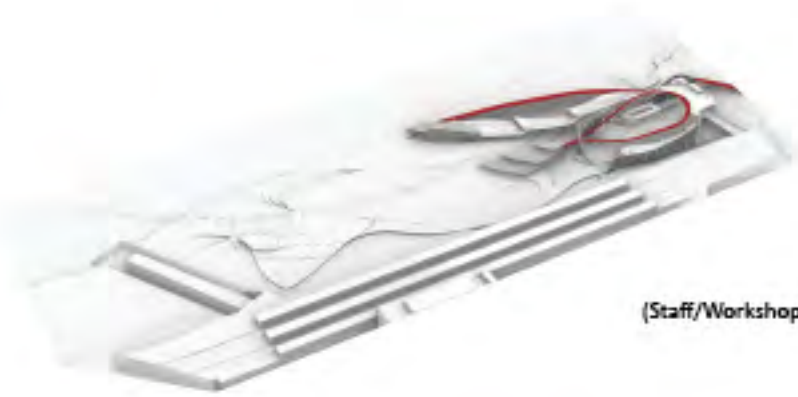




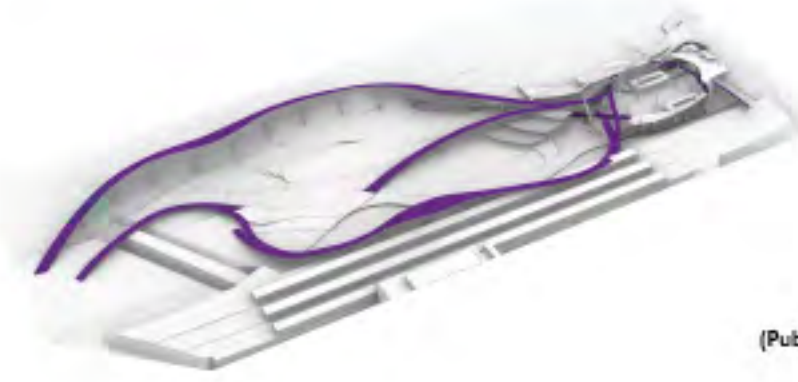
Circulation Layers



Level 3
(Public)

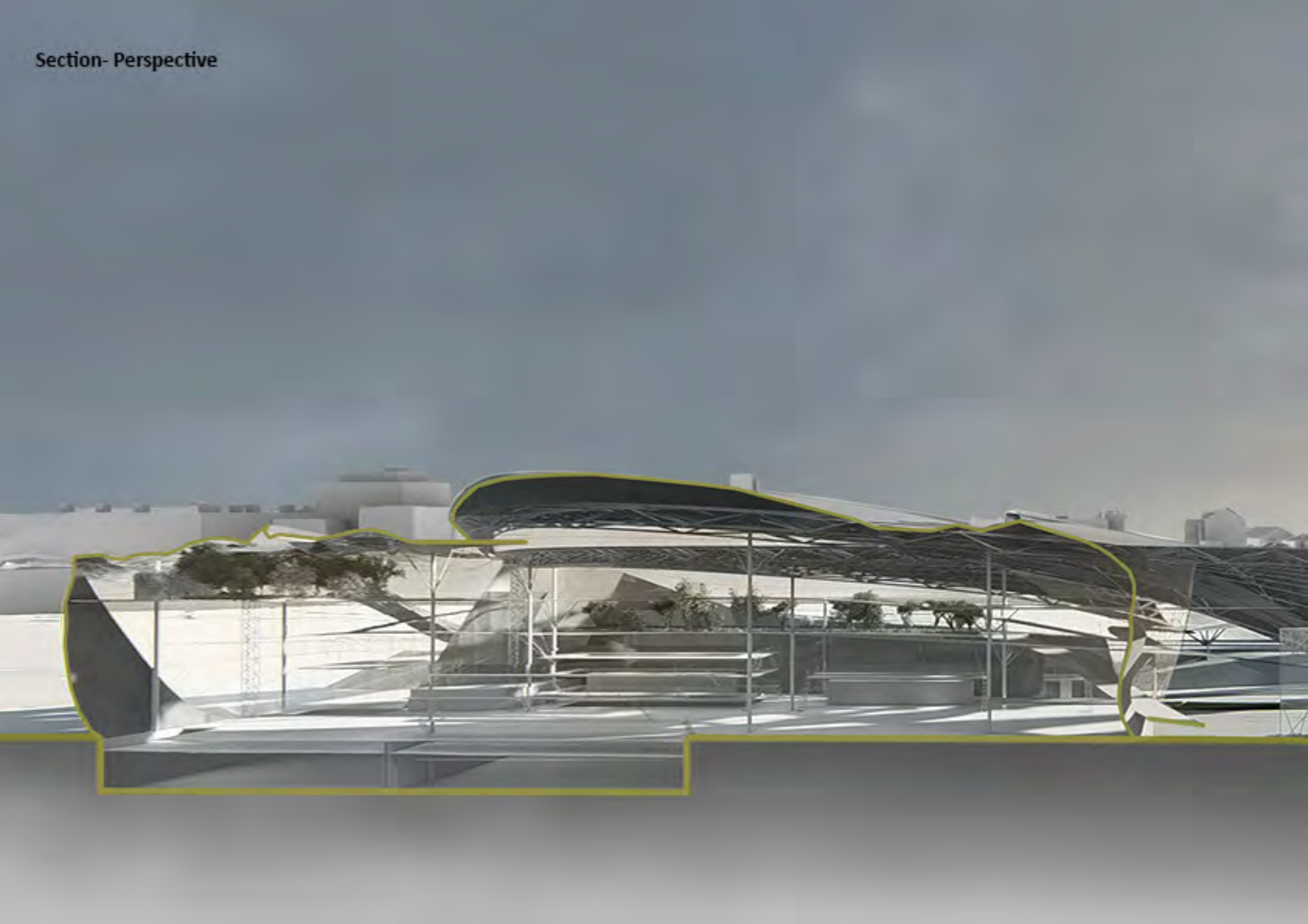


Level 2
(Staff/Workshop Visitors)

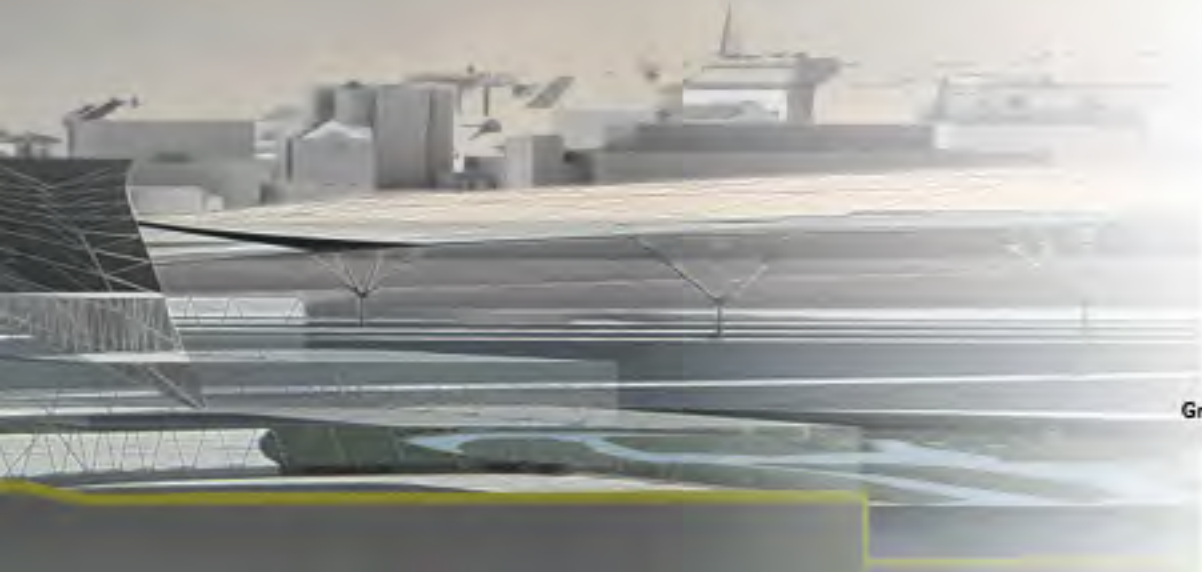
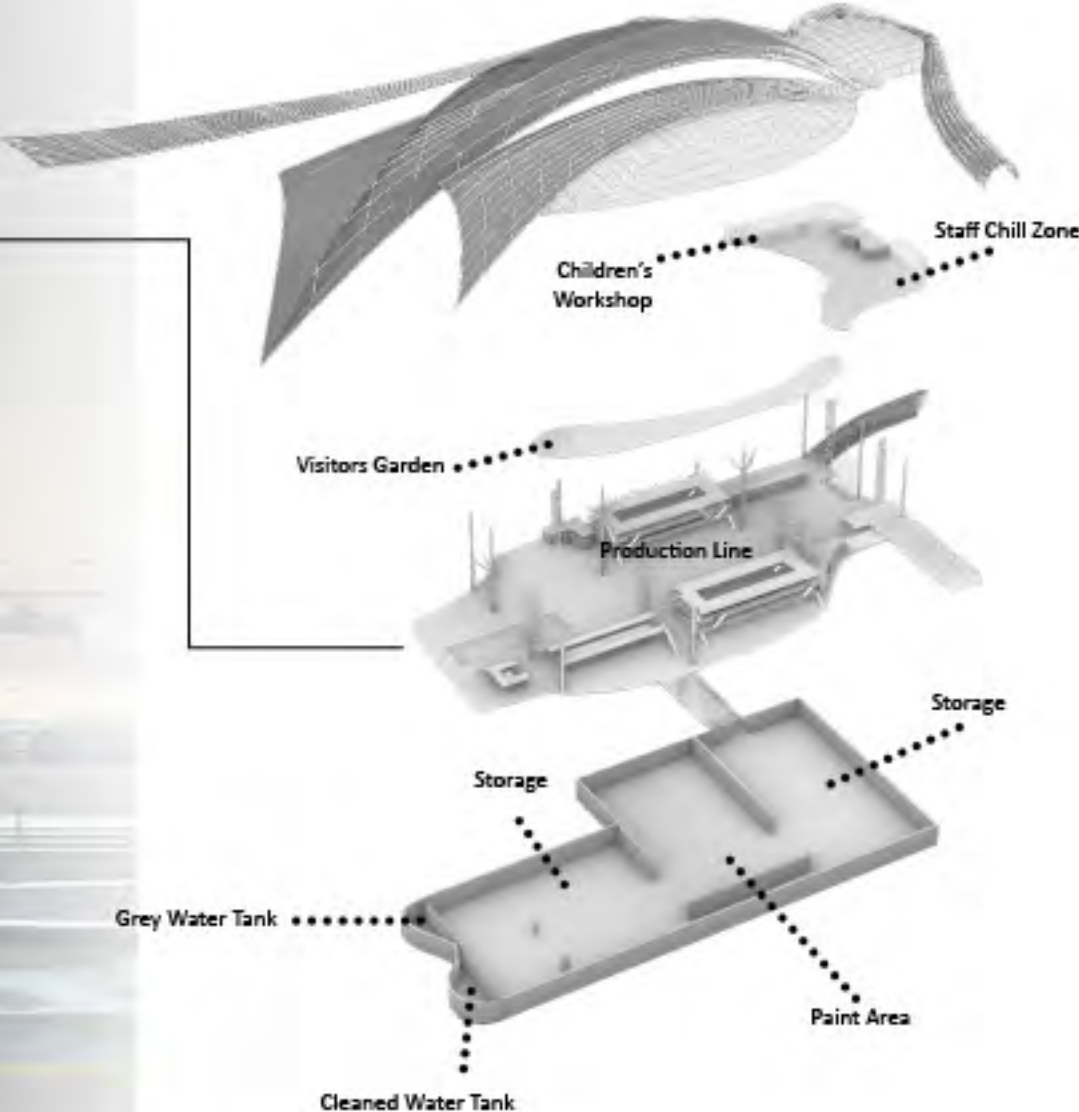
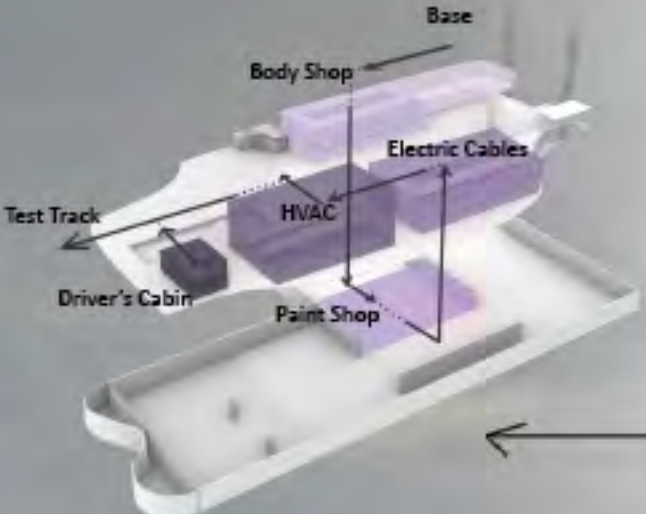


Level 1
(Public/Staff)

Section- Perspective



Exploded Axonometric Plans



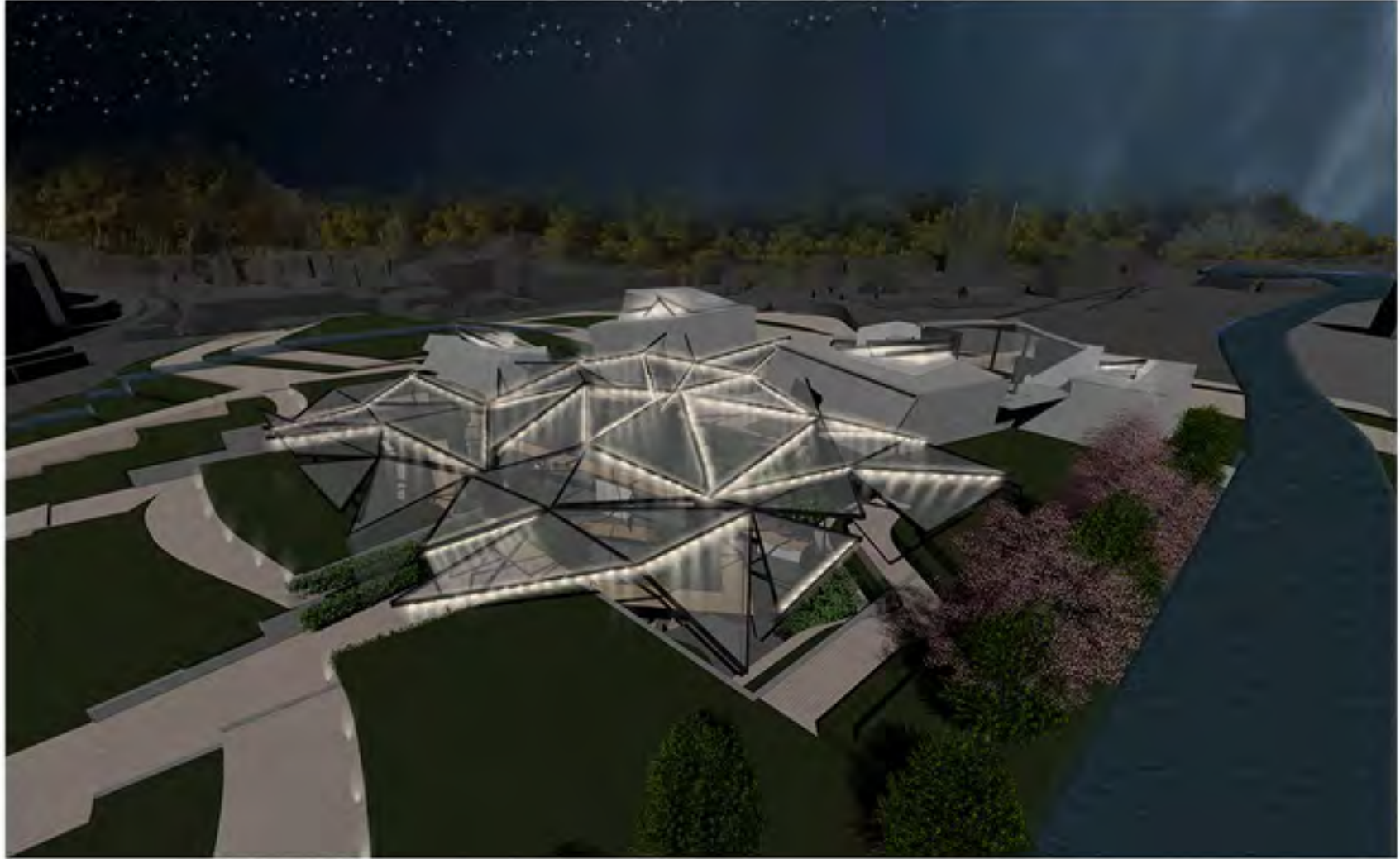
Interior Render



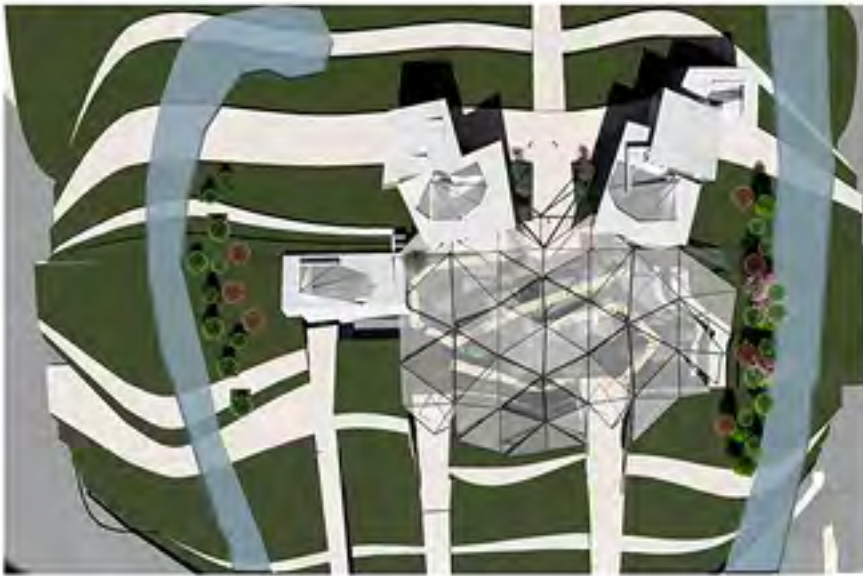


SUSTAINABLE MIX-USE IN URBAN CONTEXT

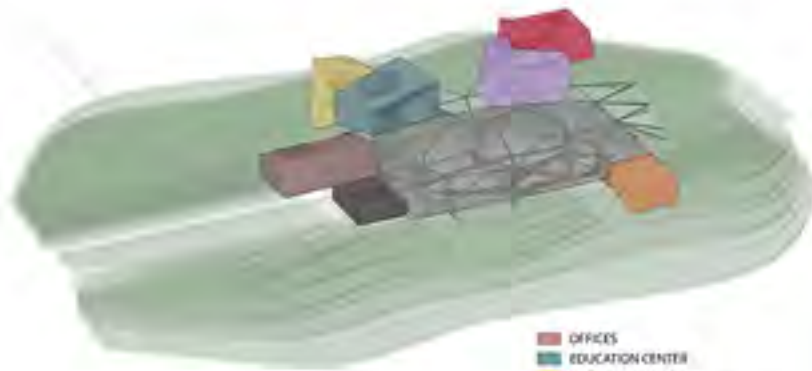
Ece Burcu Güloğlu



Site plan



Functions



- OFFICES
- EDUCATION CENTER
- CAFE & RESTAURANT
- WORKSHOP
- RESEARCH LABS
- CONFERENCE HALL
- PROJECTION AREA
- UNDERGROUND URBAN PLAZA

Source of Form

Underground Tram Station



Burying masses according to functions



Underground open plaza



Orientation of masses according to sun



Masses around plaza



Final design



Dividing masses



Axonometrics

Plan

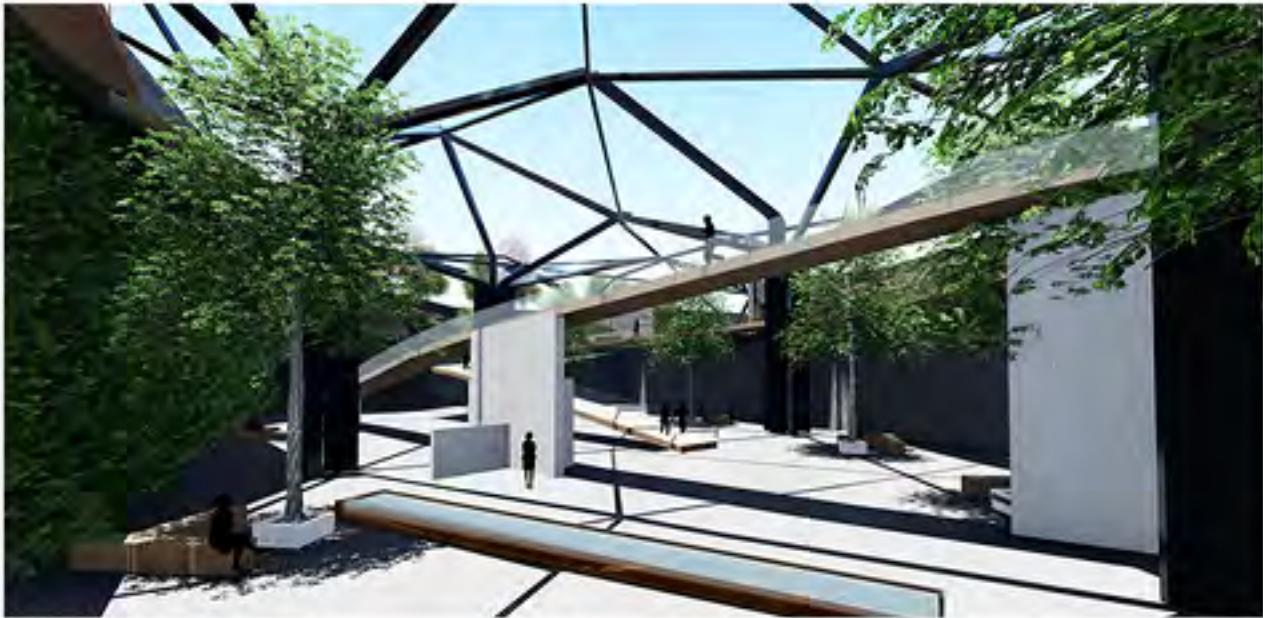


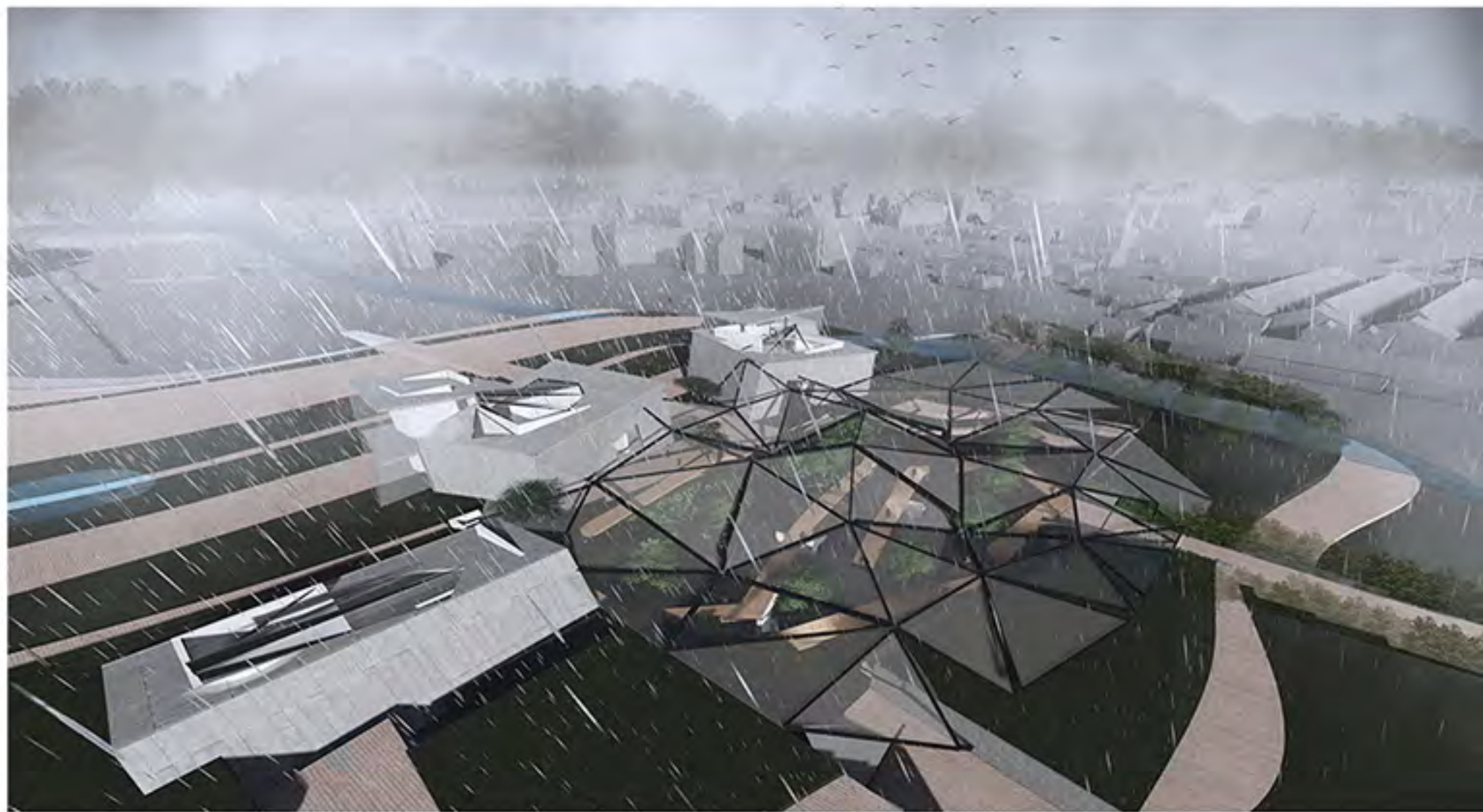
Circulation



Structure

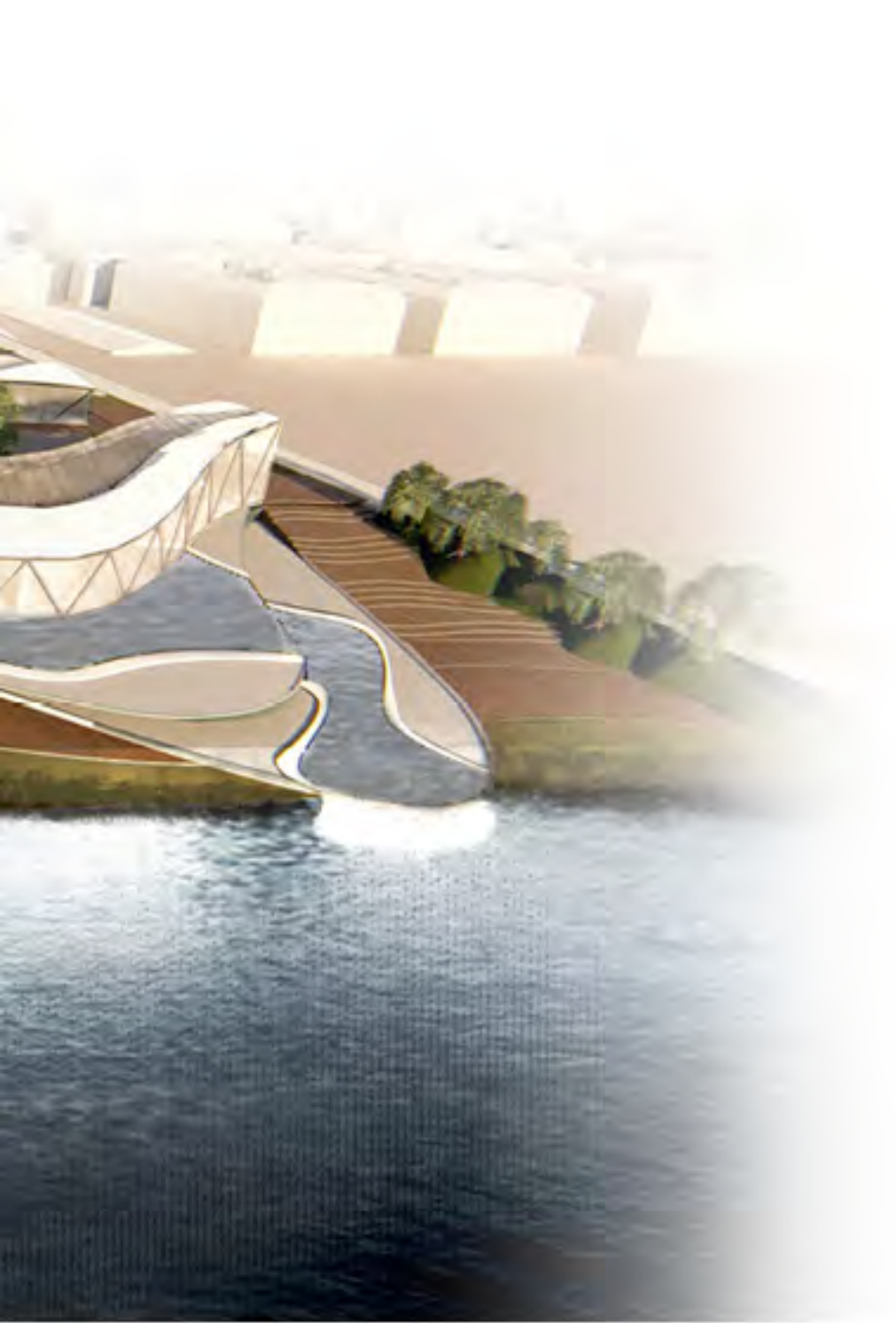












SUSTAINSECTION OF PRAHA 7

IPEK BAYSAL

The project is based on the sustainable intersection of fish farm and greenhouse. Functions are exchanging their nutrients by the help of a wetland. This exchange also adds to the river revitalization of the river and the brownfield. Produced outcomes will be sold in the bazaar and will also be used in the kitchens of the commercial terraces. This will create new job opportunities of the locals.

Masterplan Strategies



Functions:

1. Aquaculture Research Center (Fish Farm)
2. Greenhouse (Vertical Farming)
3. Mixed used with commercial units
4. Water Treatment & Research Center
5. Beer Factory & Restaurant
6. Commercial units
7. Transportation Hub
8. Urban Agriculture

Circulation



- Primary Pedestrian Circulation Road
- Public Transportation
- Service Access

Vegetation



- Green (
- Islands
- Botanic
- Riparian
- Forest
- Agricult

Flood

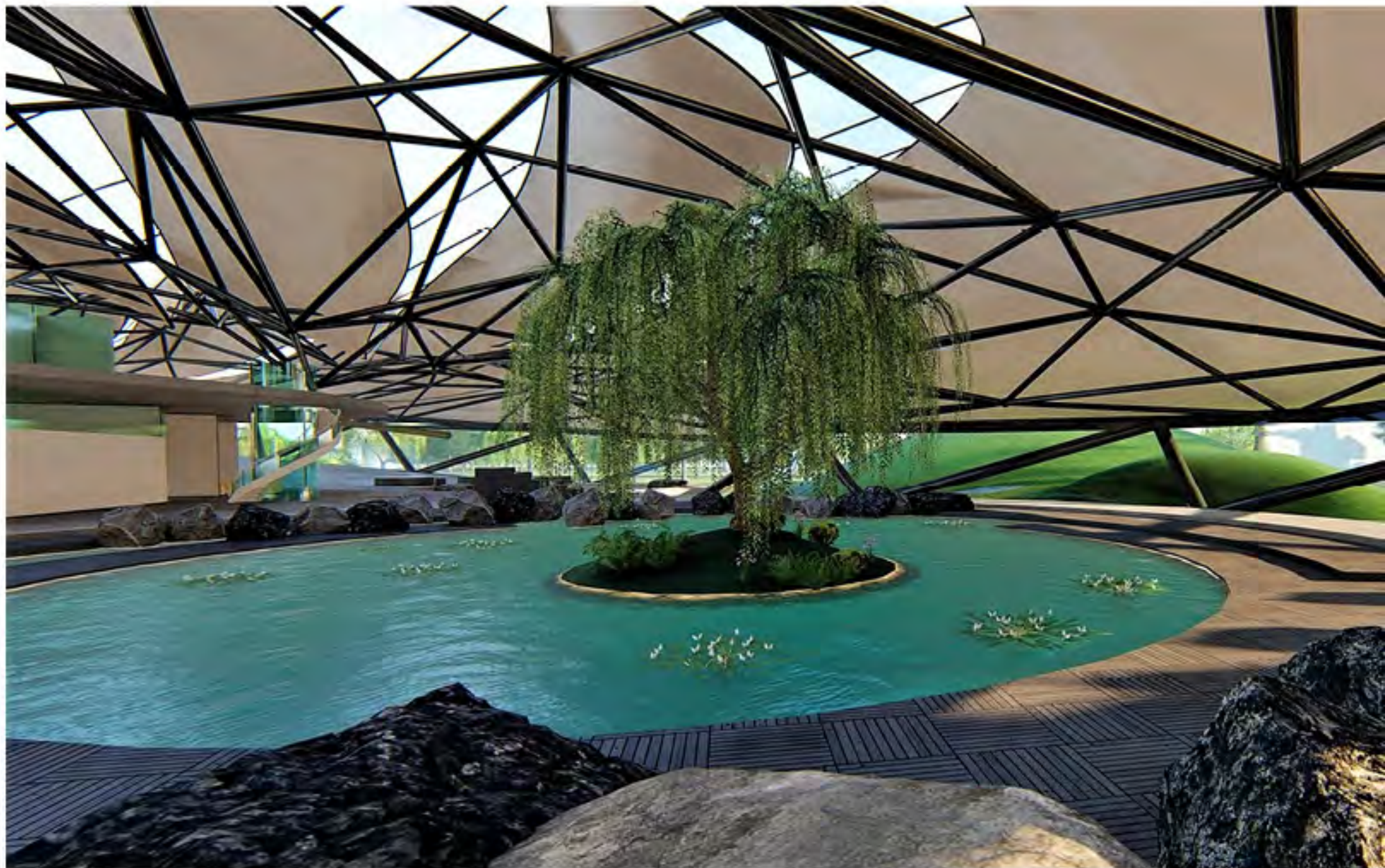


- Flood Direction Solutions:
- 1. Urban Agriculture
- 2. Wetland with Water Treatment Center
- 3. Forest

Open Spaces



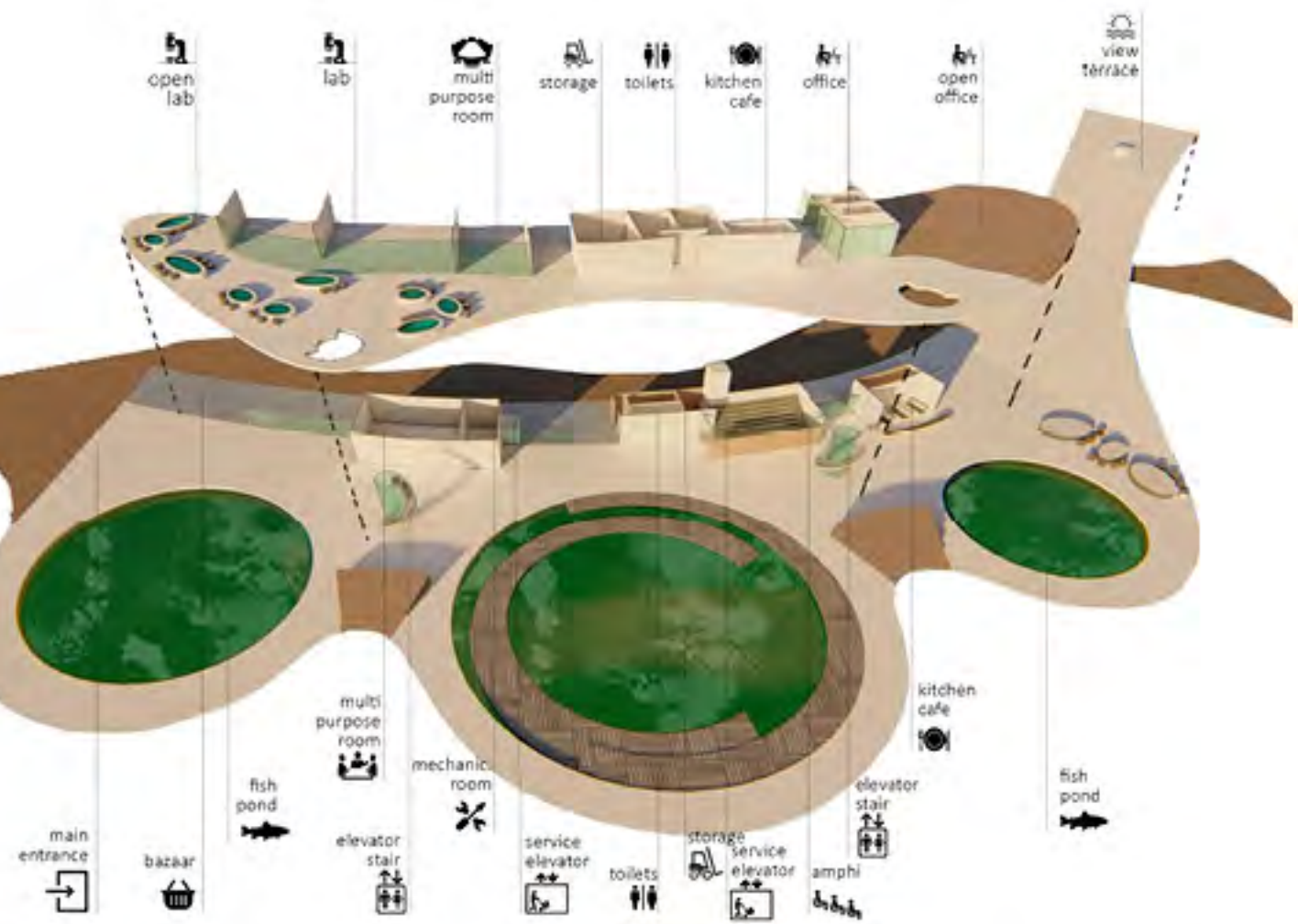
- Park

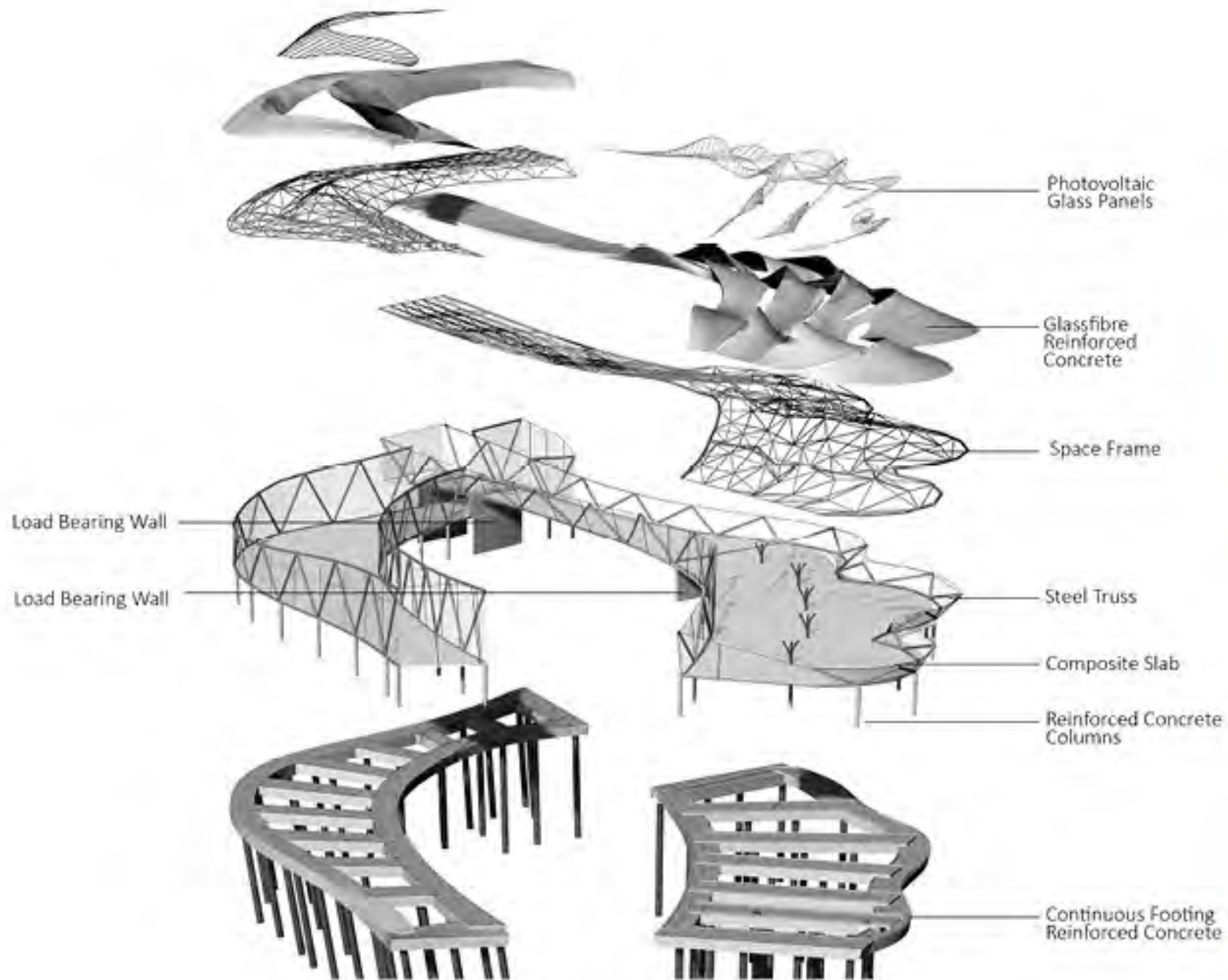


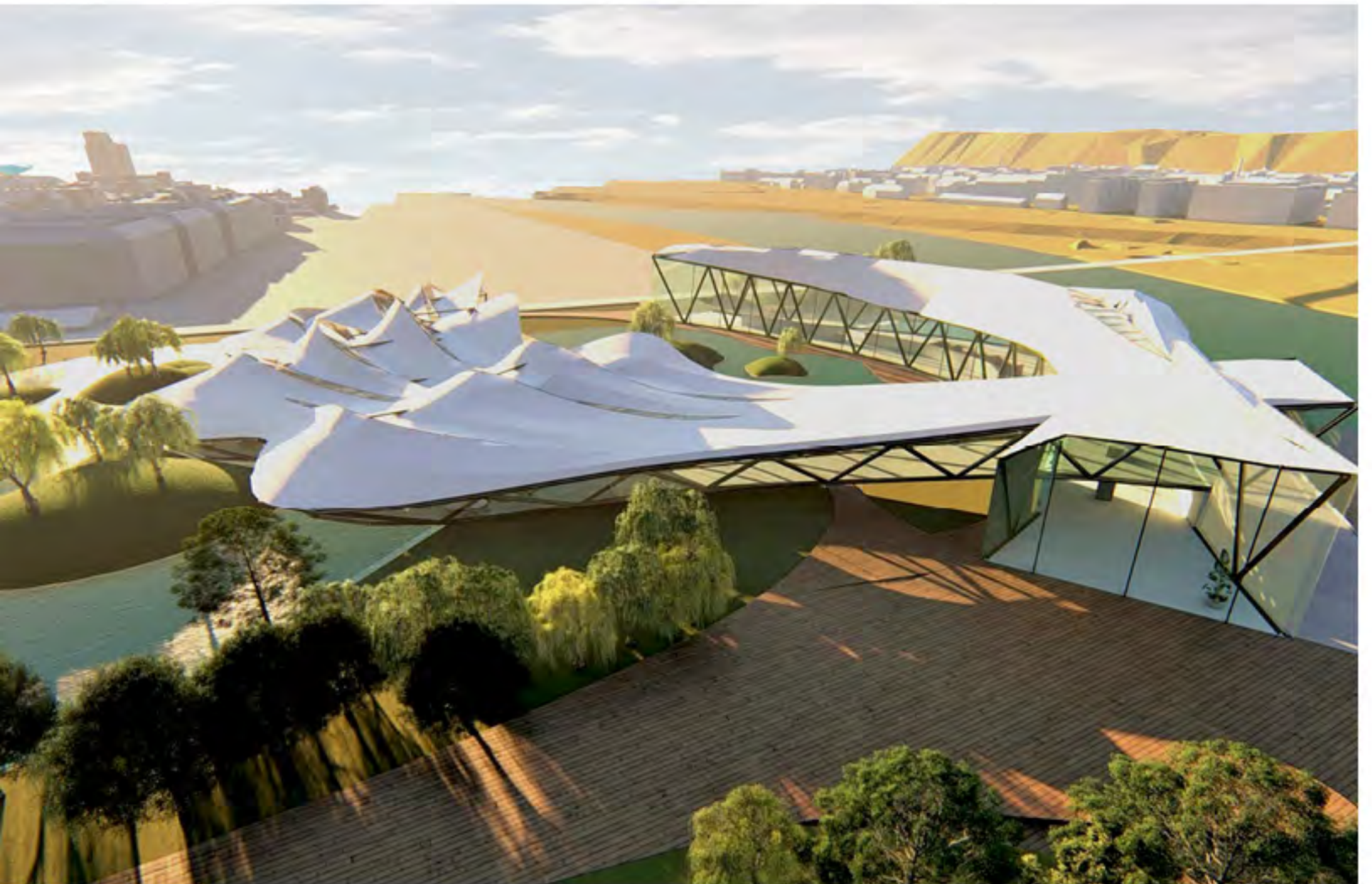


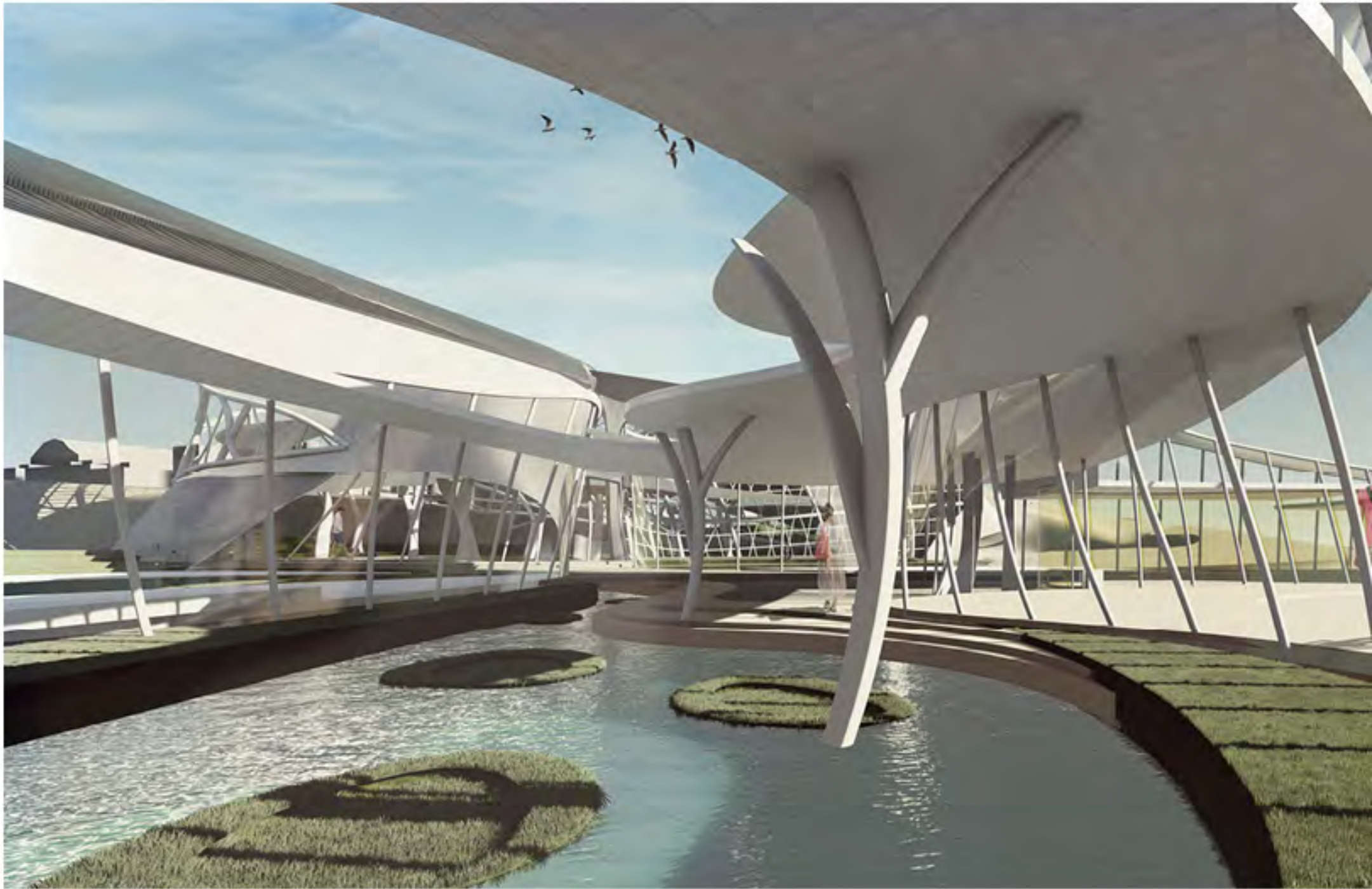
First Floor

Ground Floor



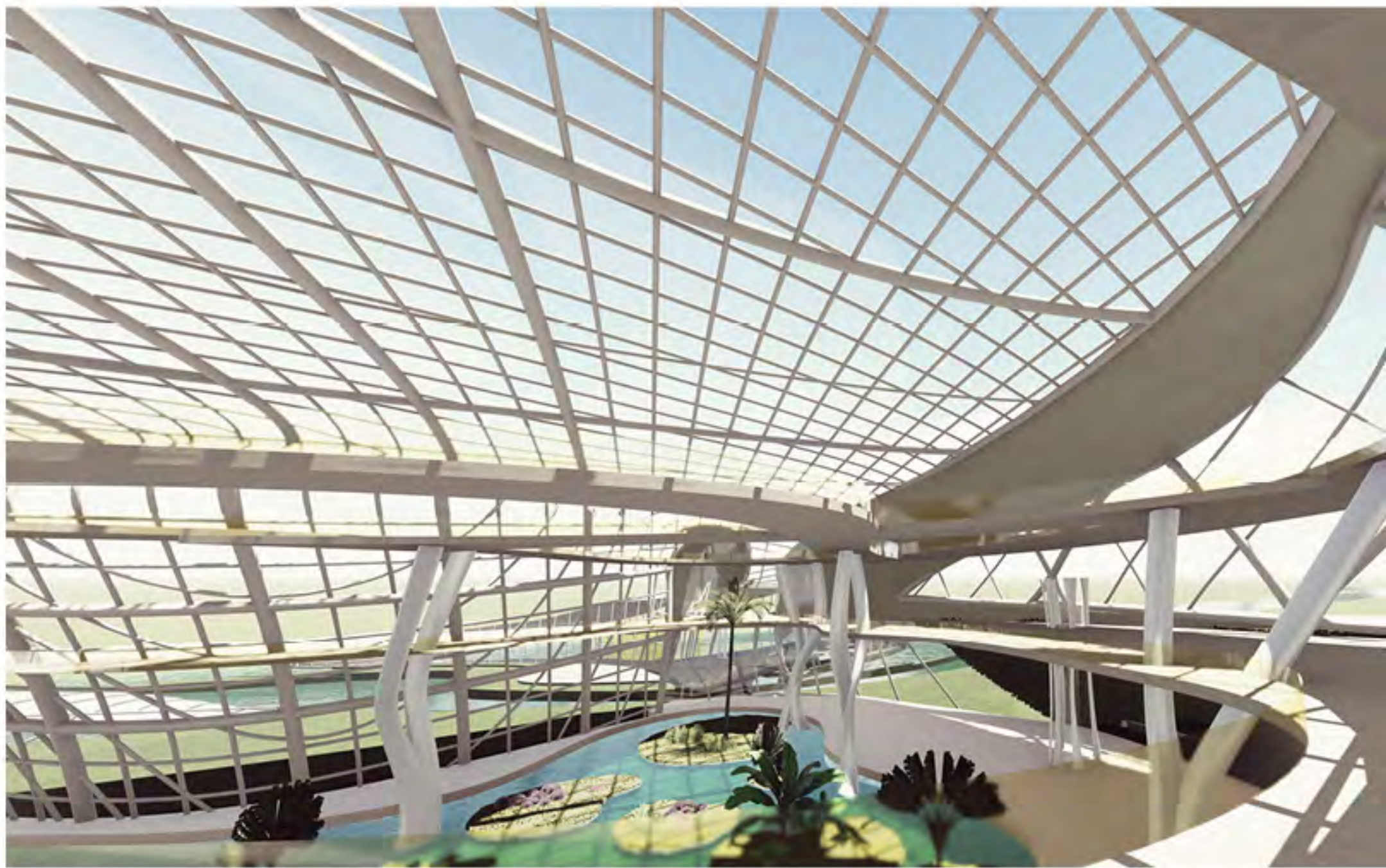


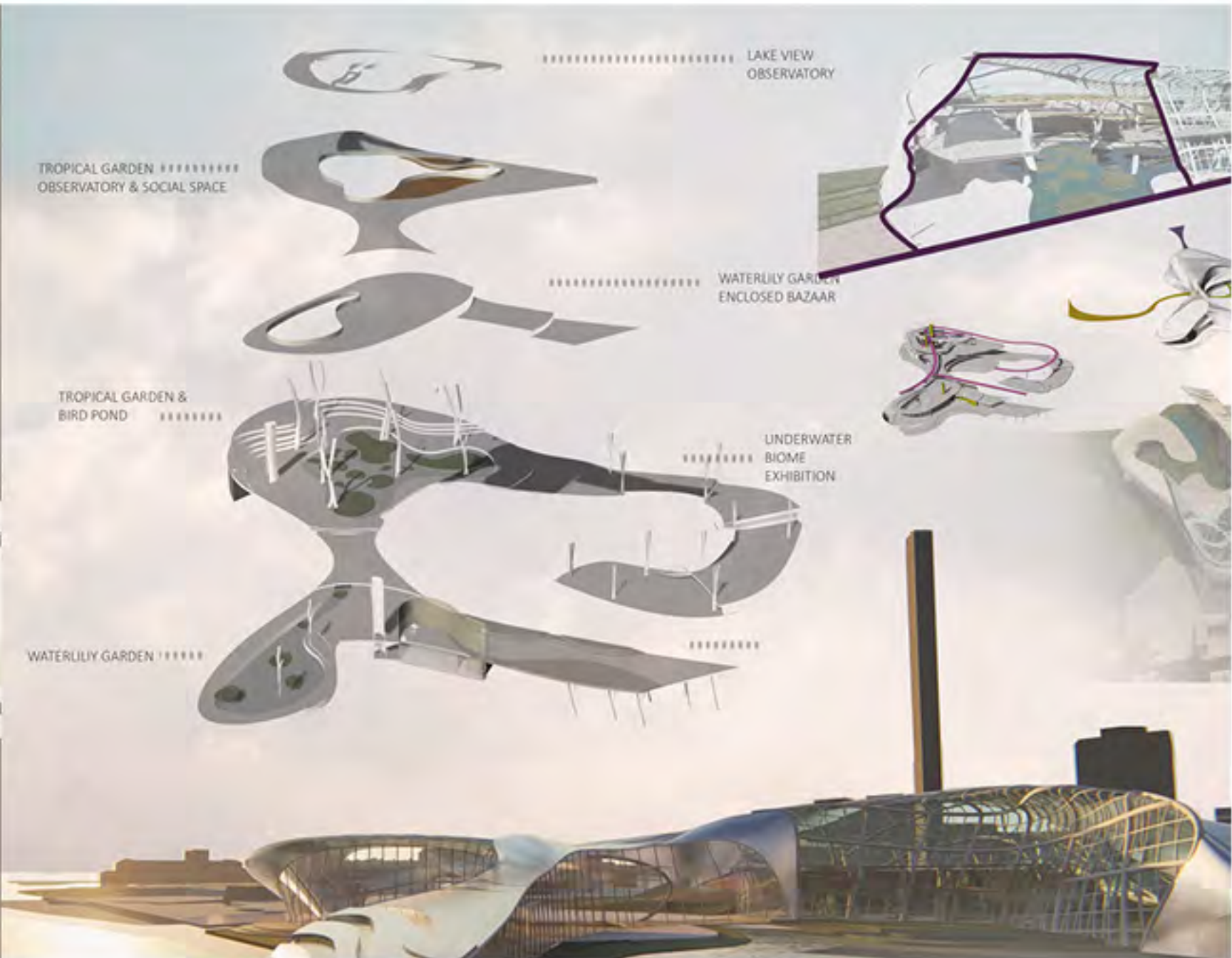


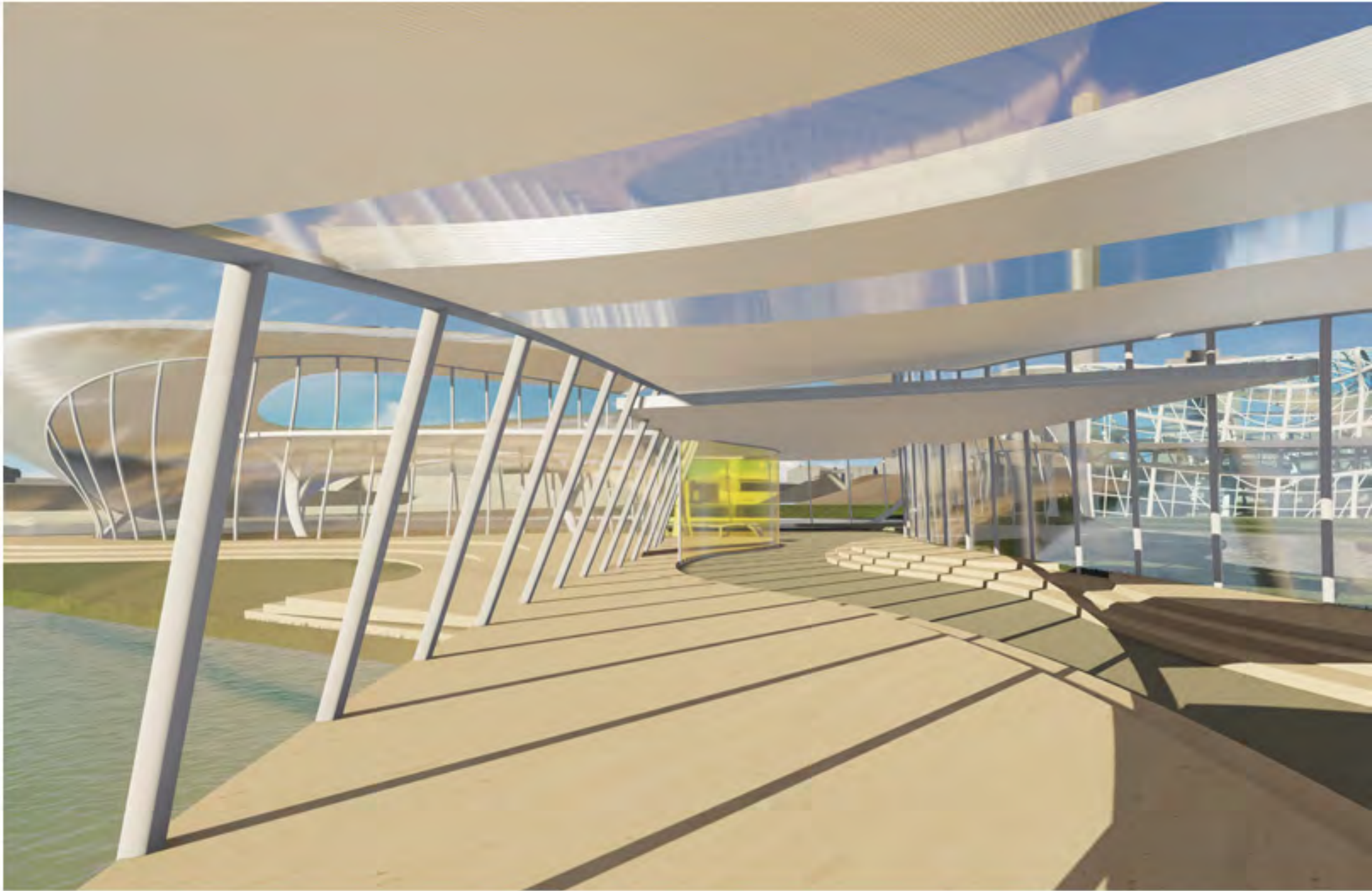




THE NEW HABITAT
Aimira Akman









EXTENSION OF EXISTING NATURE

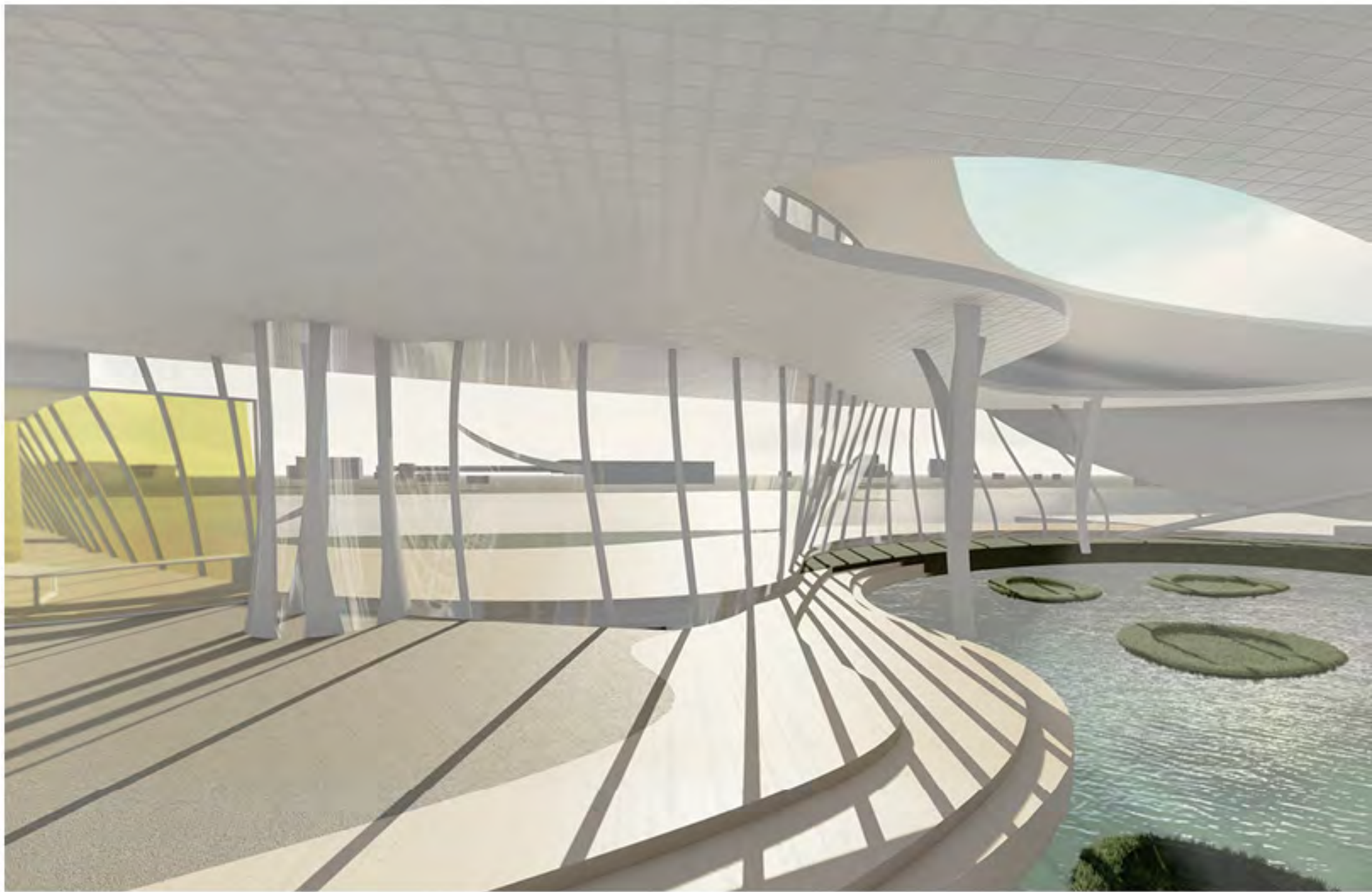


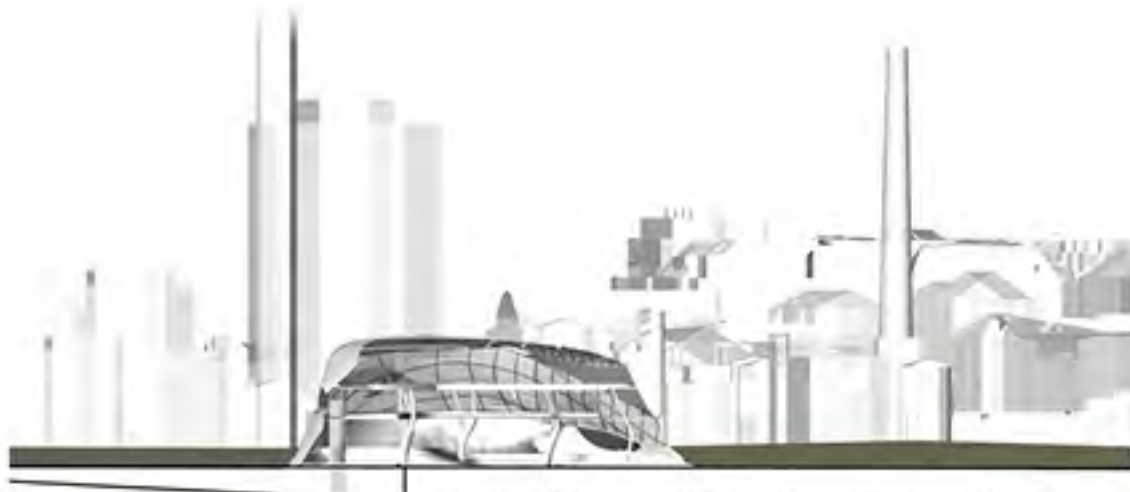
TRANSPORTATION AND ROADS



MASS EVOLUTION







SERVICE ACCESS FROM UNDERGROUND SUPPORTED BY VERTICAL CIRCULATION.







Sustainable Settlement for Performance of Industrial Heritage

Yağmur Gür

Initial idea was to create a link between the historical heritage values by providing efficient usage of the site. By creating this connection an opportunity to design spaces with respect to industrial heritage of the site on the waterfront is emerged. This newly created spaces are making a bond between the need of cultural activities and industrial historical heritage of the site as well as encouraging the efficient usage of waterfront.

Masterplan Approach



Circulation



Continuity of Green and Green Corridors

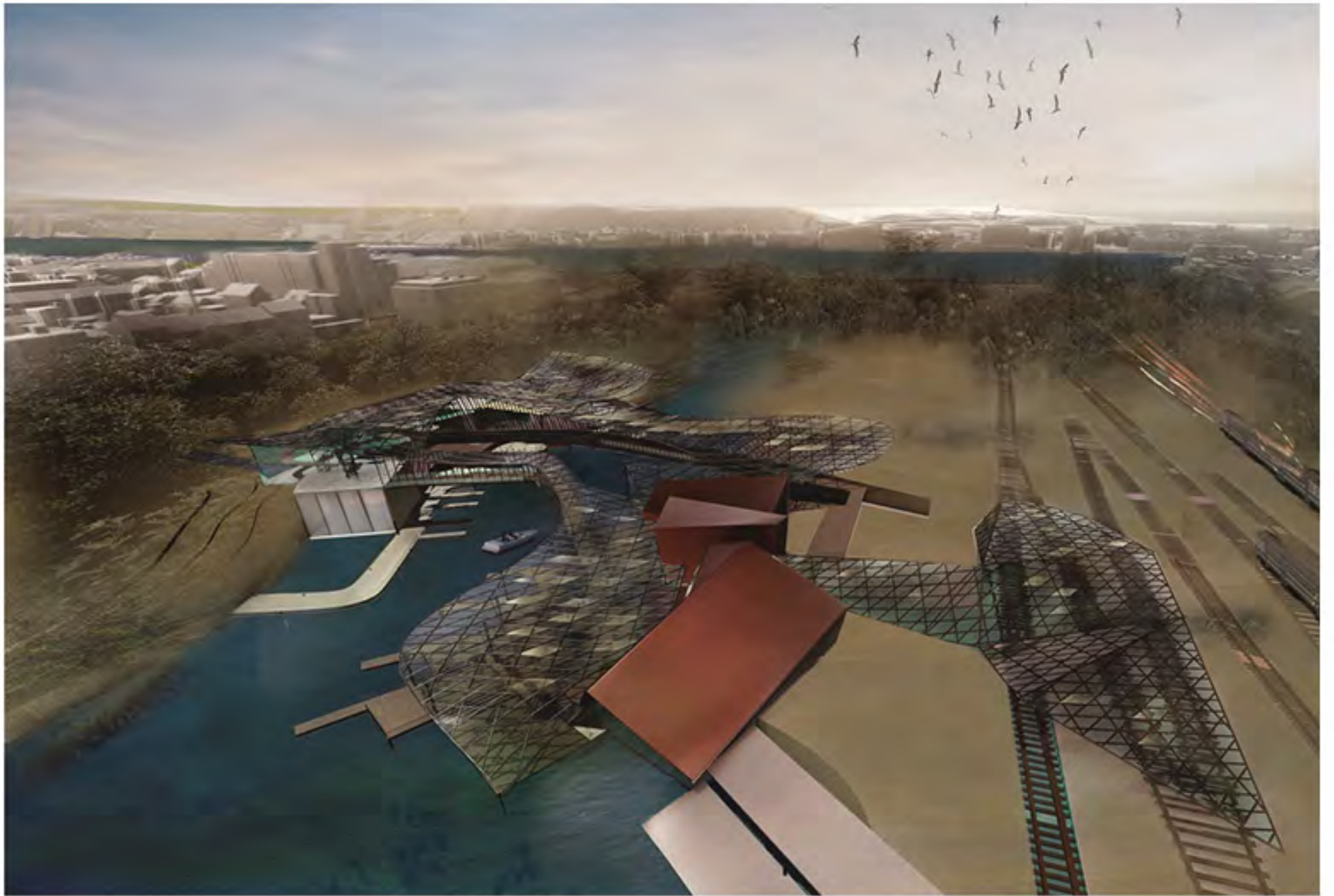


Zoning



Wetlands and Flood Areas





Form Derivation



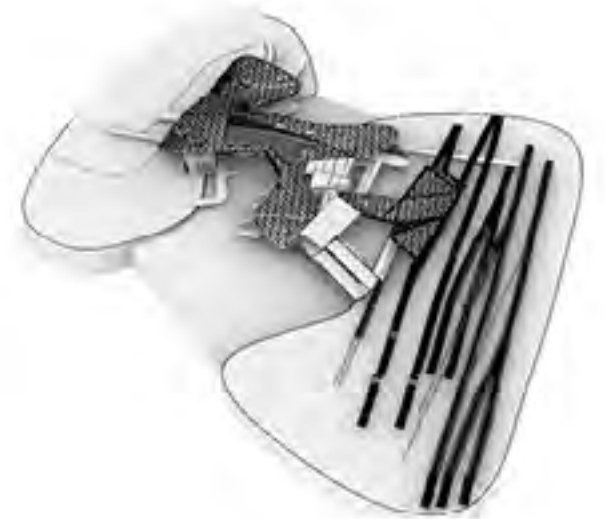
Placing Mass

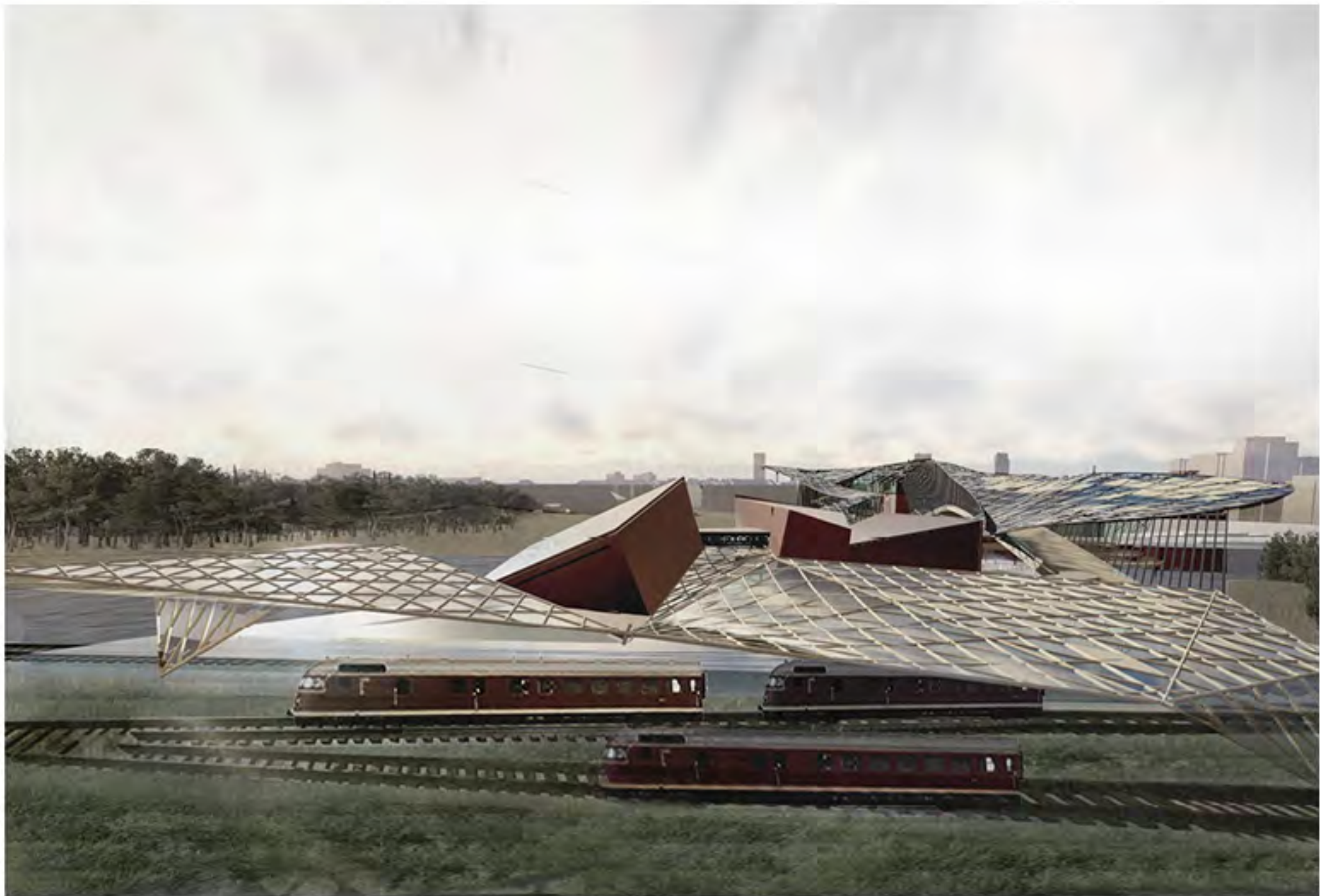


Dividing Masses and Creating Terraces



Defining the Entrances





Structural System

Corten Steel Panels



Photovoltaic Glass



Steel Diagrid Structure



Wooden Diagrid Structure



Steel Post and Beam Structure



Steel Truss



Pile Foundation



