PÄRL(n):pearl

AZRA DEFNE EROGLU

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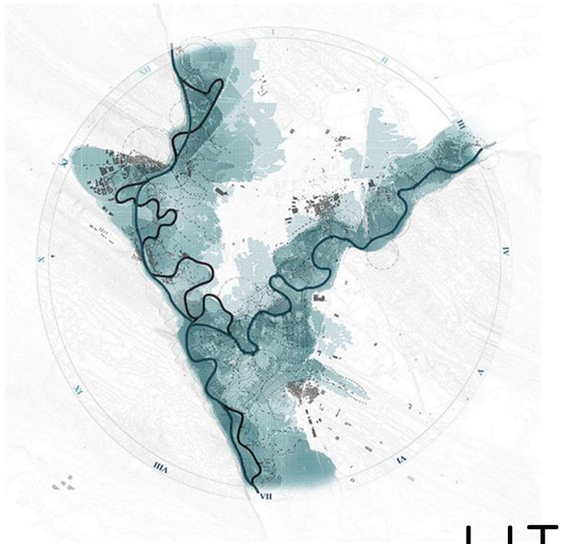

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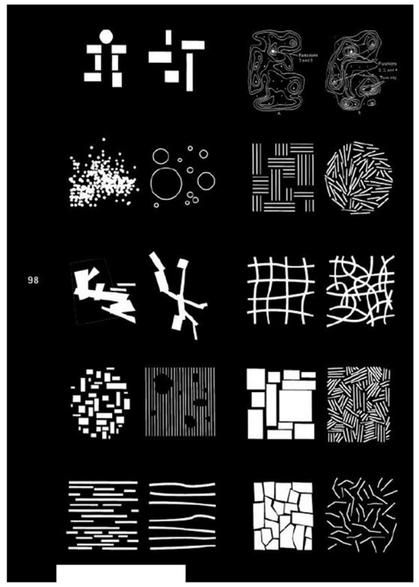

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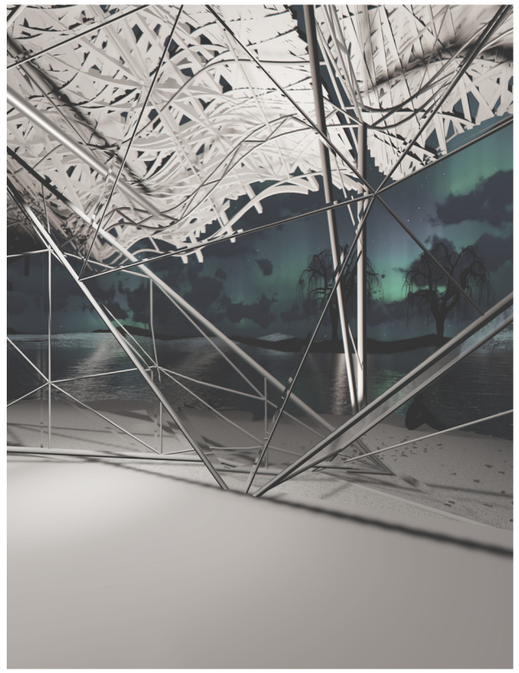
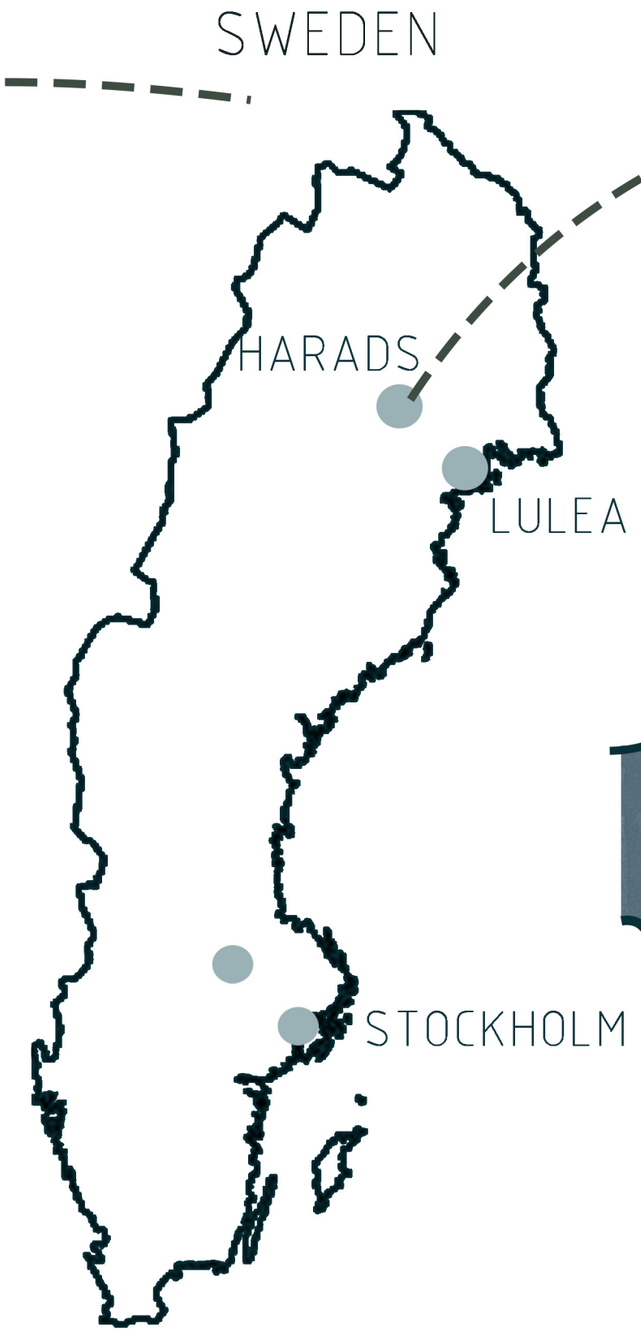


01 CONTEXT

SITE,SWEDEN HARADS



01 SITE,SWEDEN HARADS

CONTEXT

01 SITE EXPLORATION

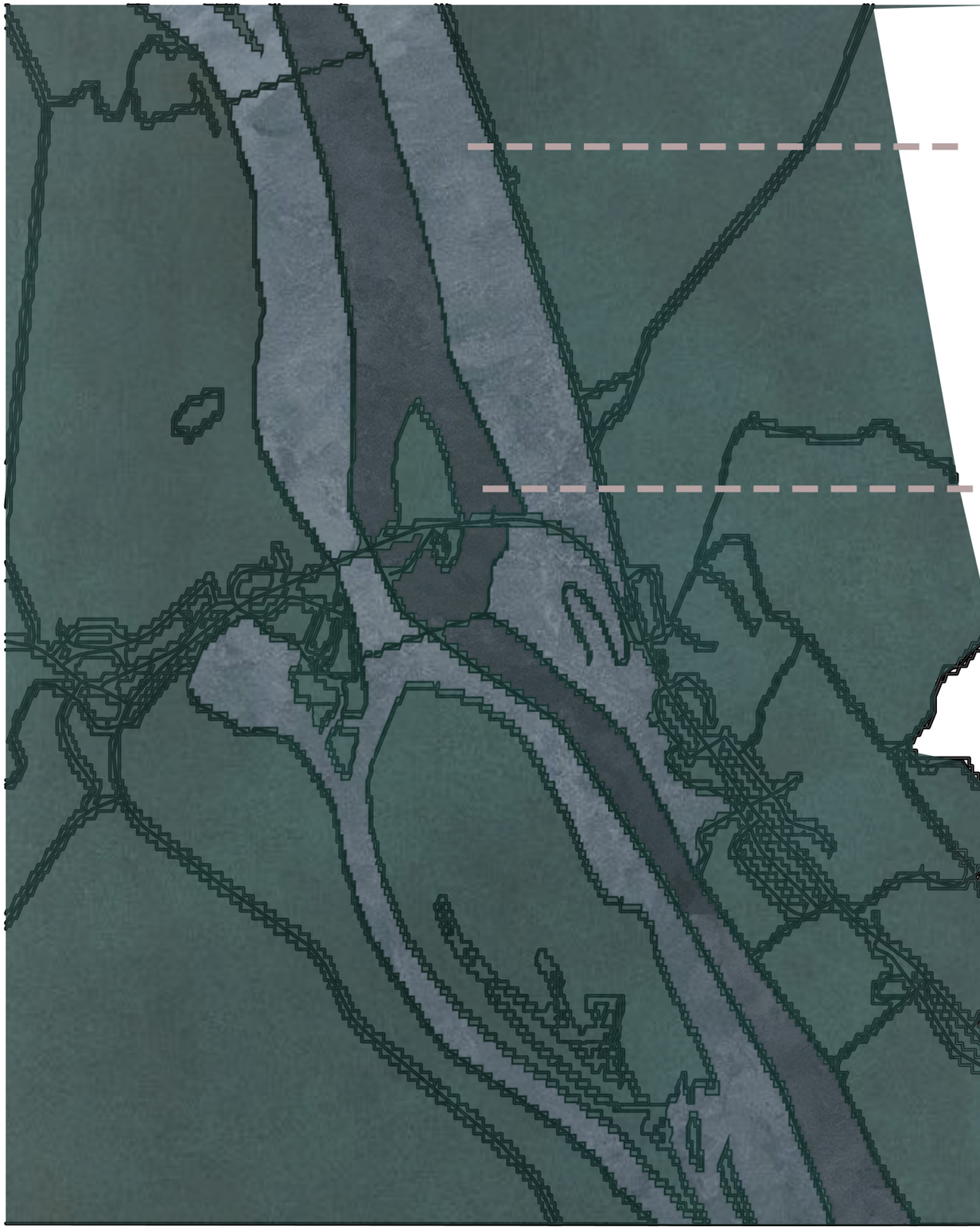
CONTEXT

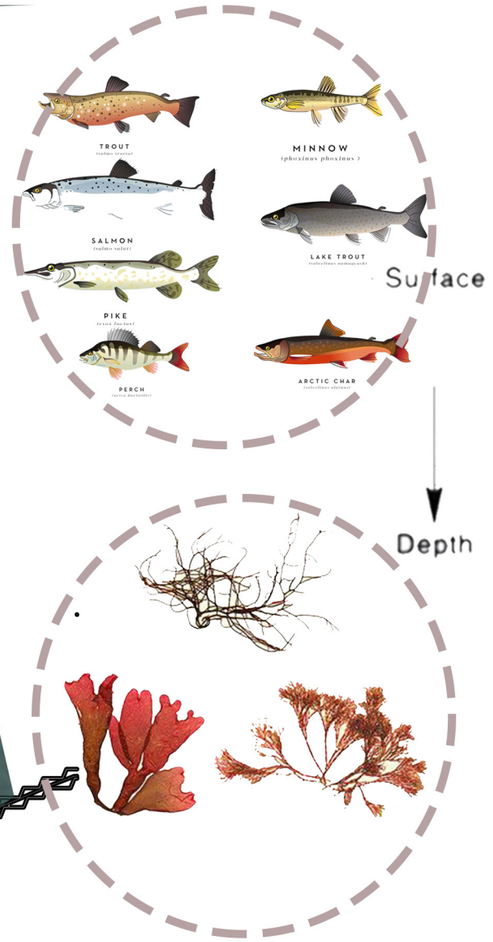
01 SITE EXPLORATION

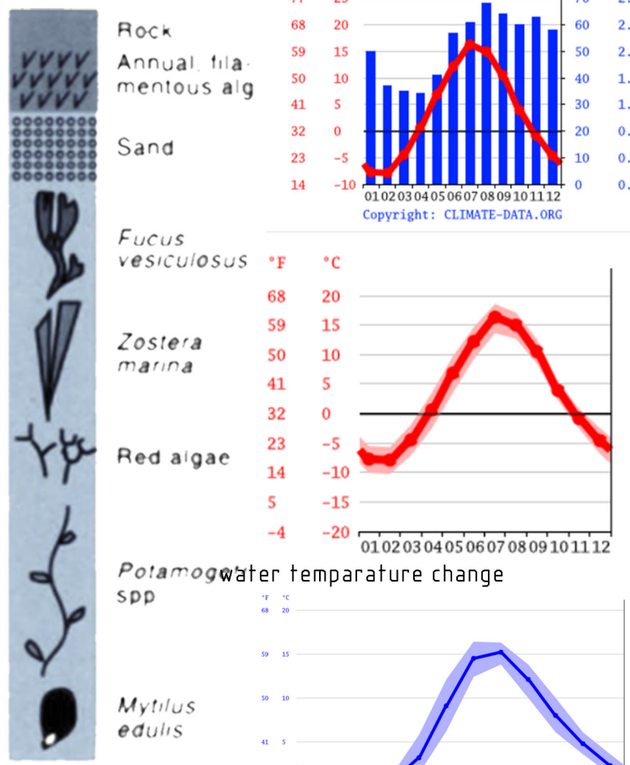
CONTEXT

01 SITE ANALYSIS

CONTEXT







weather change

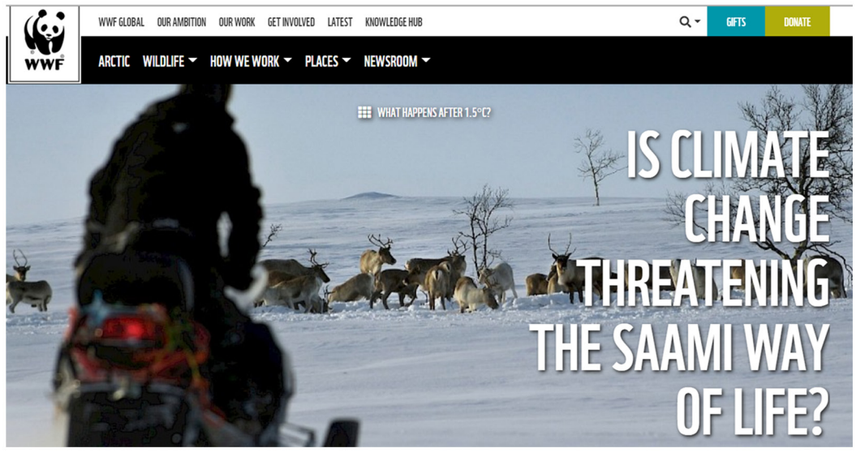
water temparature change

weather change

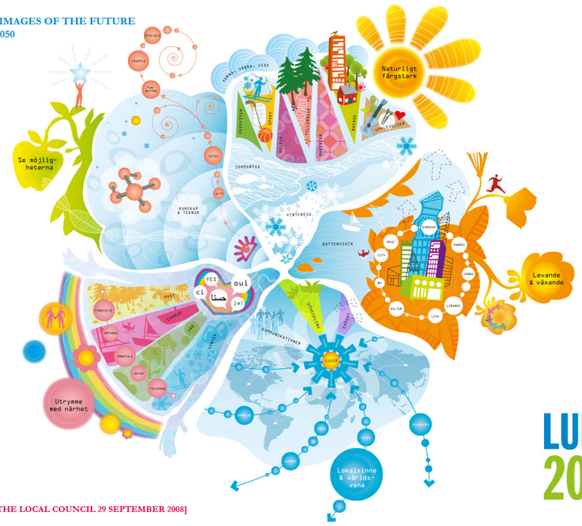
	Ocak	Şubat	Mart	Nisan	Mayıs	Haziran	Temmuz	Ağustos	Eylül	Ekim	Kasım	Aralık
Ort. Sıcaklık (° C)	-7.8	-7.9	-4.5	0.6	6.9	12.2	16.3	15	10.5	3.9	-0.8	-4.6
Min. Sıcaklık (° C)	-10.1	-10.3	-7.1	-2.5	3.5	9.3	13.6	12.6	8.4	2.2	-2.6	-6.9
Maks. Sıcaklık (° C)	-5.5	-5.7	-1.9	3.5	9.7	14.7	18.6	17.1	12.6	5.5	0.8	-2.5
Yağış / Yağış (mm)	50	37	35	34	41	57	61	68	64	60	63	58
Nem(%)	86%	85%	81%	78%	69%	69%	73%	76%	78%	84%	86%	84%
Yağmurlu günler (g.)	8	7	6	5	6	6	8	8	7	8	9	9

water temparature change

	Ocak	Şubat	Mart	Nisan	Mayıs	Haziran	Temmuz	Ağustos	Eylül	Ekim	Kasım	Aralık
Minimum Su Sıcaklığı (°C)	0.1	-0.3	-0.2	0	1.4	6.2	12.4	13.8	10	6.1	3.6	1.3
Ort. Su Sıcaklığı (° C)	0.5	-0.1	0	0.5	3.2	9.1	14.5	15.2	12.1	8	4.8	2.3
Maksimum Su Sıcaklığı (°C)	1.2	0.1	0.2	1.2	5.8	12.1	16.4	16.3	13.8	10	6.1	3.6



VISION AND IMAGES OF THE FUTURE FOR LULEÅ 2050

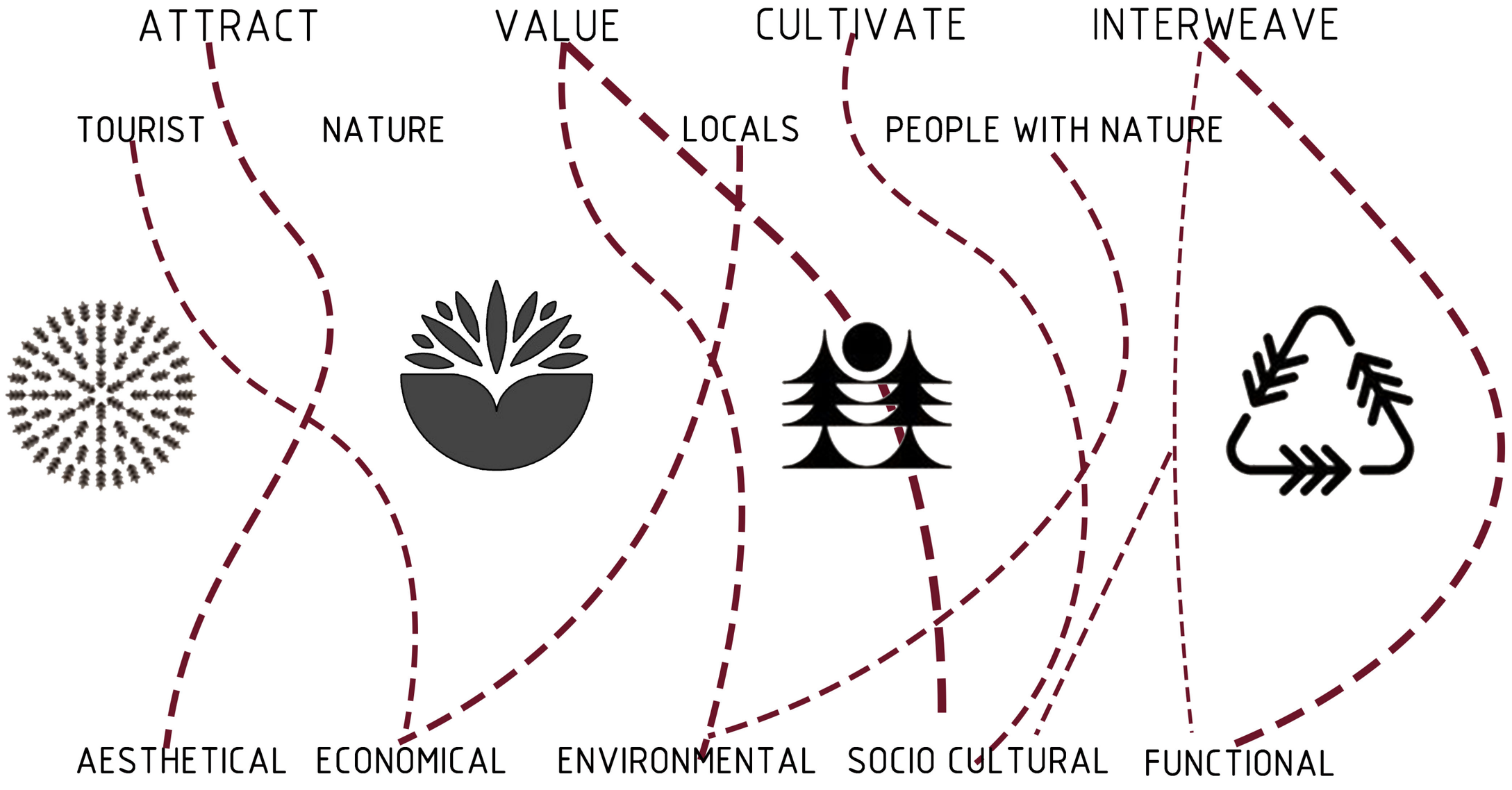


LULEÅ 2050

[APPROVED BY THE LOCAL COUNCIL 29 SEPTEMBER 2008]

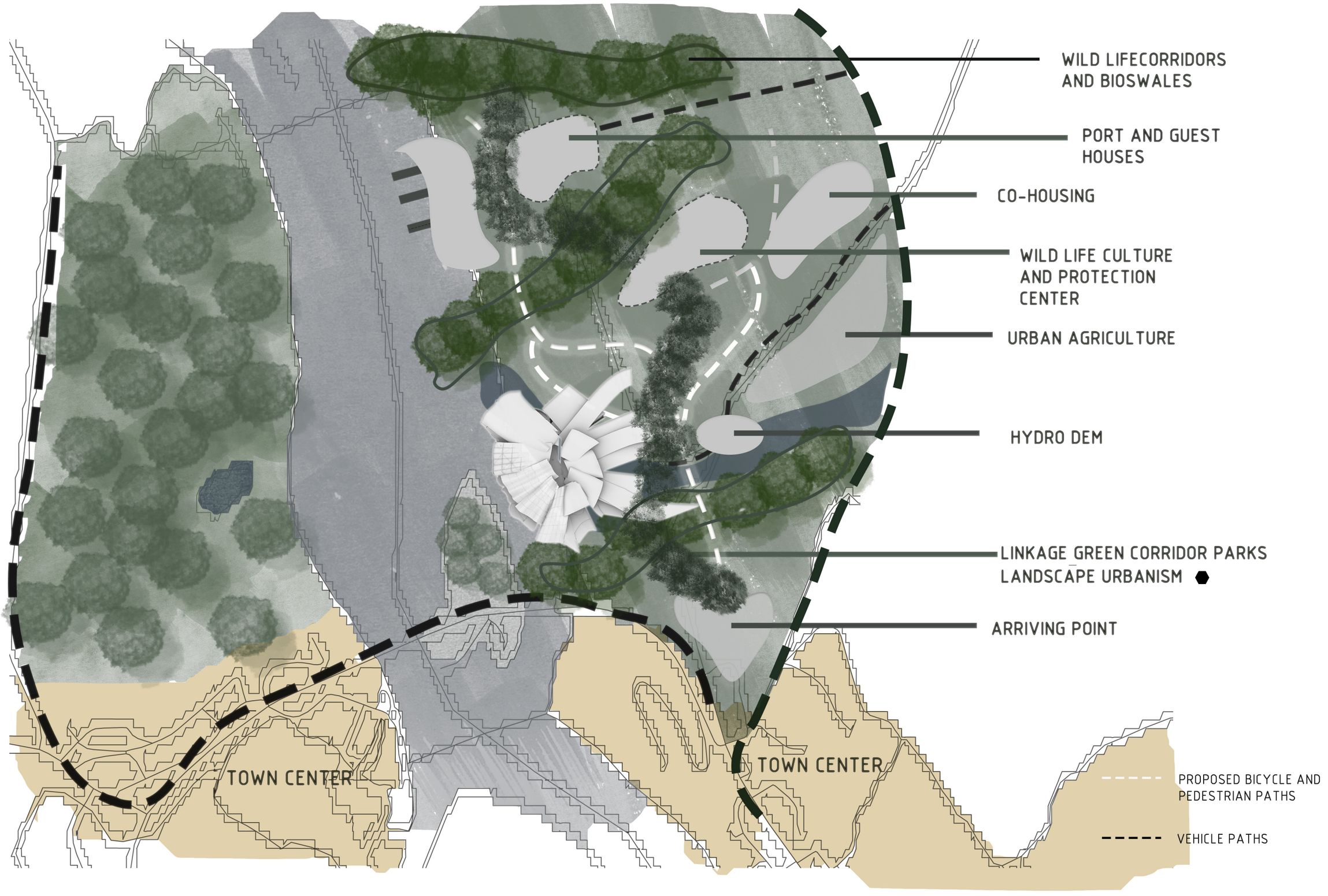
sustainable tourism goals for lulea in 2050

01 MISSION
SITE ANALYSIS

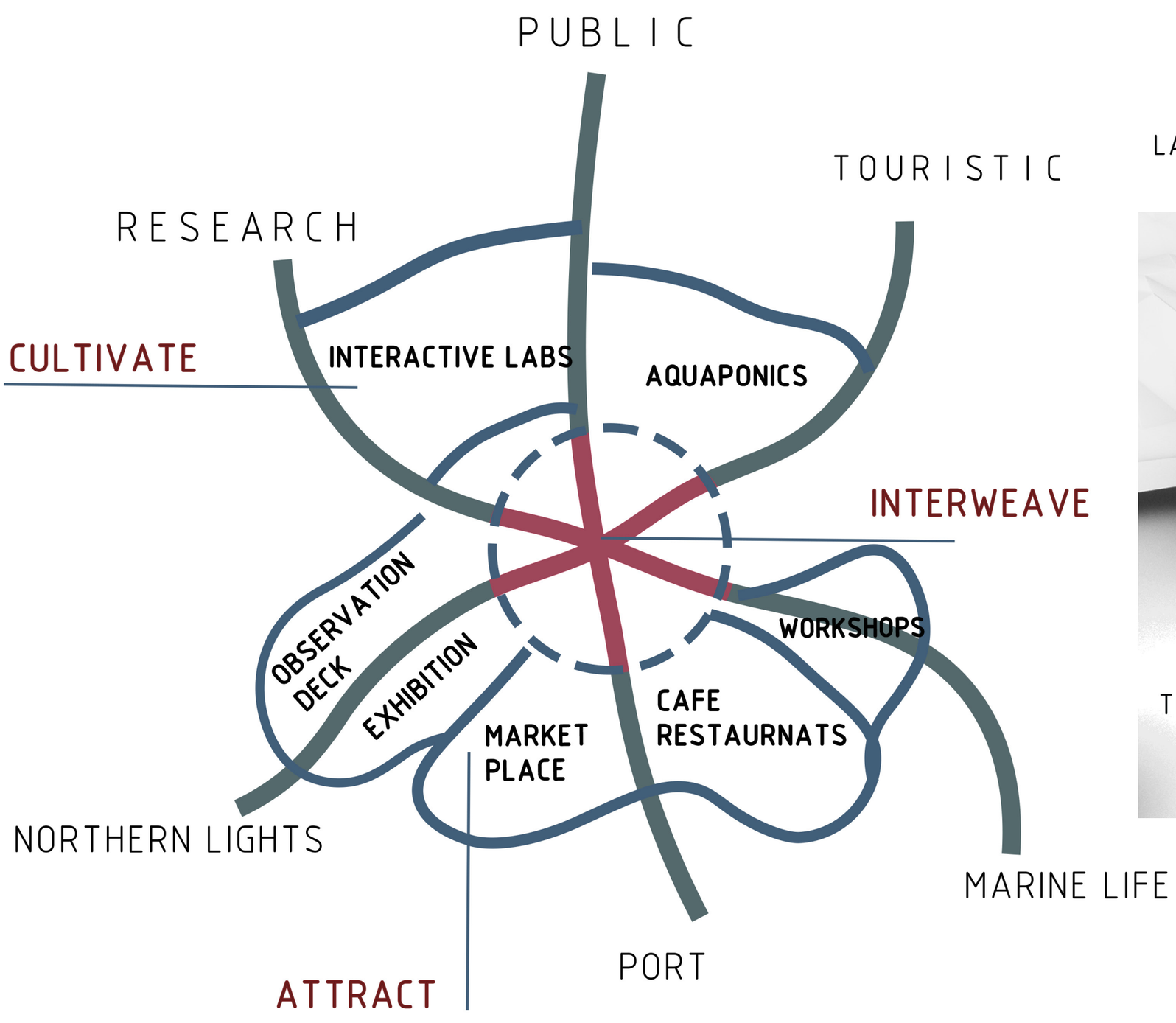


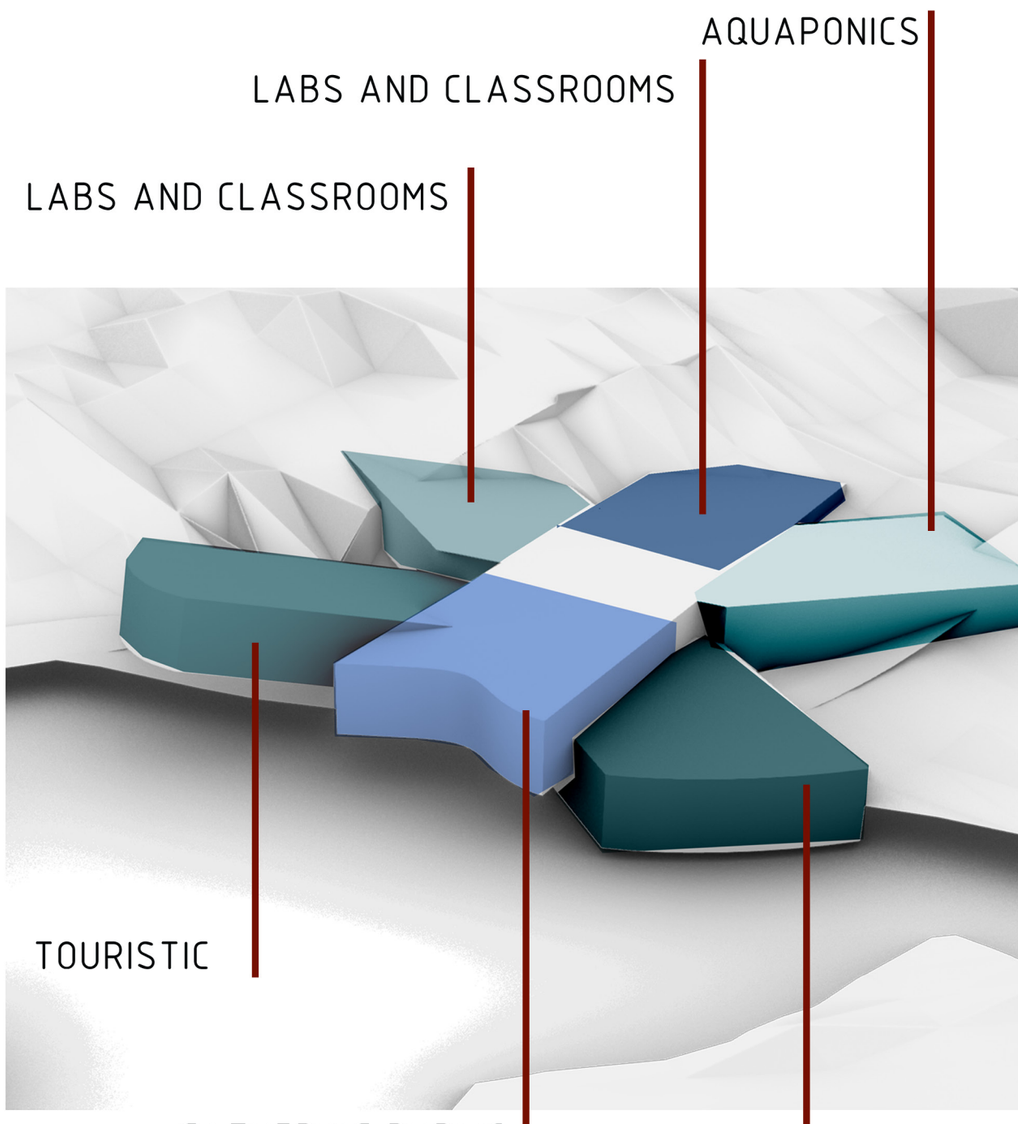
01 MASTERPLAN

CONTEXT



01 BUILDING PROGRAMME
SITE ANALYSIS





02
LITERATURE REVIEW

SUSTAINABLE TOURISM

LANDSCPAE URBANISM

LIVING MACHINE

02 SUSTAINABLE ECO TOURISM

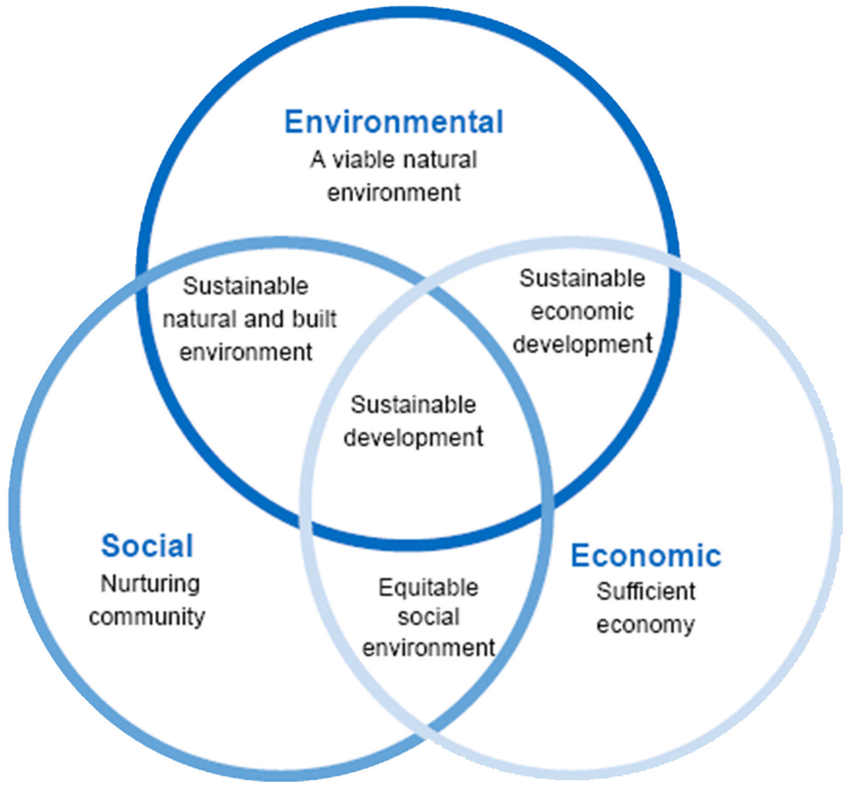
LITERATURE REVIEW

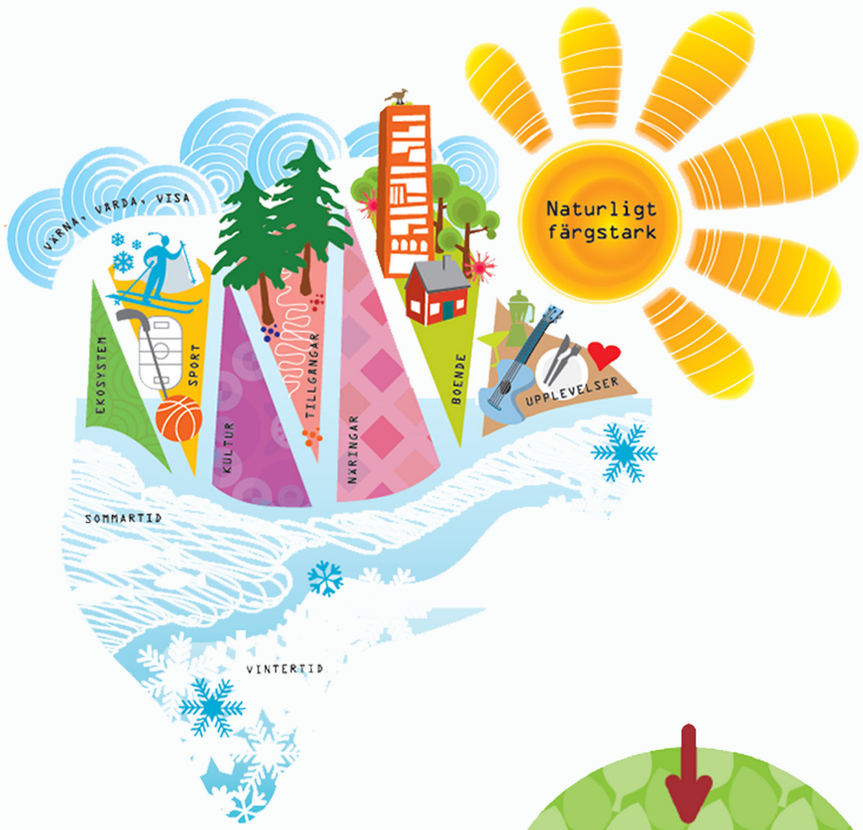
Although not everything depends on tourism, tourism depends on almost everything.
Sustainable tourism is about re-focusing and adapting.

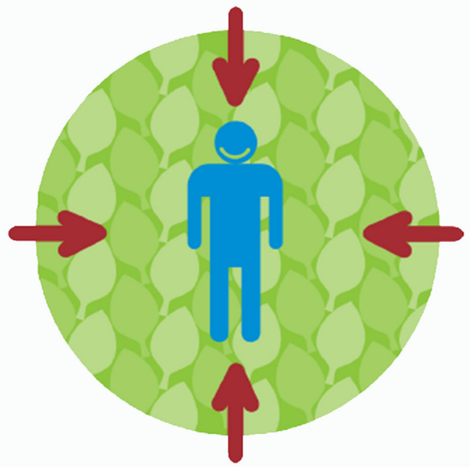
A balance must be found between limits and usage so that continuous changing, monitoring and planning ensure that tourism can be managed. This requires thinking long-term (10, 20+ years) and realizing that change is often cumulative, gradual and irreversible.

Economic, social and environmental aspects of sustainable development must include the interests of all stakeholders including indigenous people, local communities, visitors, industry and government.

A good ecotourism operation will strive to support the community and encourage travelers to be culturally sensitive by training and employing local people and by purchasing local supplies and services to further stimulate the economy.







VISION LULEÅ 2050. We are living a rich and evolved life in a tenacious and expanding region. Along the coast of the Gulf of Bothnia there is room for both nearness and space, town and country, width and extremity, white expanses and light summer nights, the nature conservation value and the opportunities it brings.

With natural new approaches and a healthy flow of impressions, knowledge and changes, we can create sustainable regeneration, making us one of the most important Swedish coastal regions and a role model nationally and internationally.

A sense of direction and worldly wise.

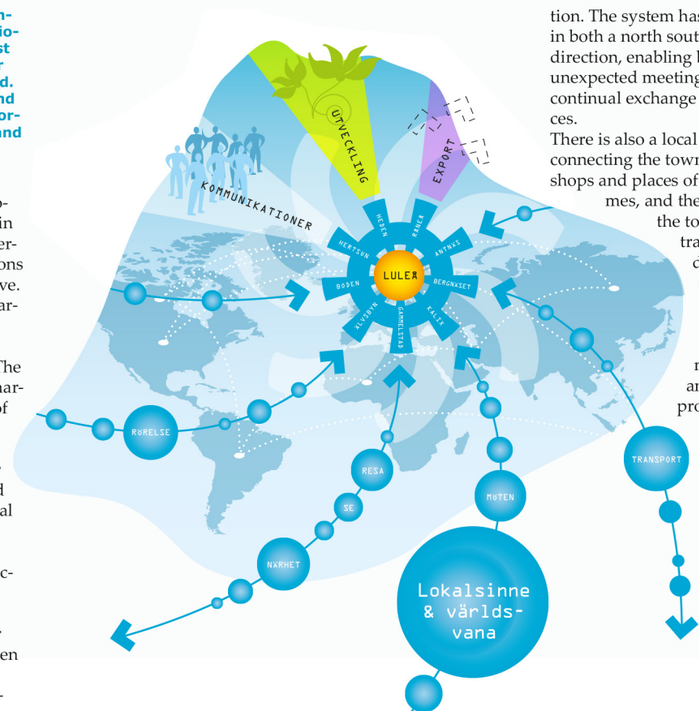
IMAGES OF THE FUTURE

LULEÅ 2050. We are one of Sweden's most important coastal regions, a role model both nationally and internationally. This creates interest and curiosity to become acquainted with our nature, our knowledge and our business world. There is continuous movement via air, land and water from geographical and administrative borders. People, knowledge, competence, goods and services are flowing past.

SMALL BUT LARGE. Luleå is part of a large geographical area and an even larger world, a piece in a jigsaw puzzle on a map of the world that is a perfect fit. We have an understanding of our conditions and how they are connected in a larger perspective. We combine the flow of a large town with the nearness of a smaller one.

THE CENTRE OF THE CAP OF THE NORTH. The Luleå region is Norrland's largest employment market regions and functions as a centre of the Cap of the North.
Growth and development are based on co operation between the nearby towns. There is a clear and exciting range of businesses and many world leading companies with national and international brands. The railbound traffic along the coast of North Sweden is a part of well developed goods and passenger traffic. This contributes to a connected region where everyone can live and work.

SMART COMMUNICATIONS. Luleå has a clear role as the most important hub in northern Sweden for air, water, rail and road transport. Travel and transport takes nature and people into considera-



tion. The system has been expanded in both a north south and an east west direction, enabling both expected and unexpected meetings as well as the continual exchange of goods and services.
There is also a local infrastructure connecting the town with the country, shops and places of work with homes, and the university with the town centre. Public transport has been developed and is the perfect choice for everyone. New technology makes it possible to communicate whenever and wherever and provides a flexible exchange of information that everyone can use.

02 LANDSCAPE URBANISM

LITERATURE REVIEW

Landscape urbanism is a theory of urban design arguing that the city is constructed of interconnected and ecologically rich horizontal field conditions, rather than the arrangement of objects and buildings.

COMMUNITY OPEN SPACES

LANDSCAPES FOR RECREATION, SOCIAL LIFE, AND SMALL-SCALE FOOD CULTIVATION

- PLAYGROUNDS
- NEIGHBORHOOD PARKS
- SPORTS FIELDS
- REGIONAL PARKS
- PLAZAS
- RECREATION CENTERS
- TRAILS / GREENWAYS
- URBAN GARDENS
- FARMERS MARKETS
- CEMETERIES (EXISTING)

ECOLOGICAL LANDSCAPES

MEADOWS AND FORESTS THAT PROVIDE HABITAT AND OTHER ENVIRONMENTAL BENEFITS

- NATURE PARKS
- INDUSTRIAL NATURE PARKS
- RAPID REFORESTATION
- SUCCESSIONAL ROAD
- ROADS TO RIVERS

BLUE+GREEN INFRASTRUCTURES

LANDSCAPES THAT CAPTURE STORMWATER AND CLEAN AIR

- LARGE LAKE
- SMALLER RETENTION POND
- INFILTRATION PARK
- SWALES + INFILTRATION MEDIANS
- ROAD-SIDE POND (ALONG WIDE ROADS)
- GREEN INDUSTRY BUFFER
- CARBON FOREST

WORKING+ PRODUCTIVE LANDSCAPES

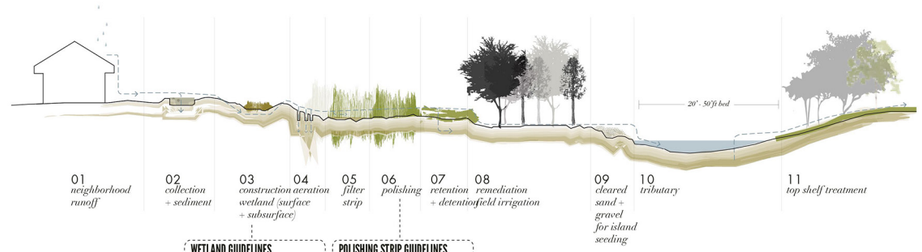
LANDSCAPES THAT GENERATE NEW KNOWLEDGE, GROW ENERGY AND FOOD, AND CREATE NEW URBAN EXPERIENCES

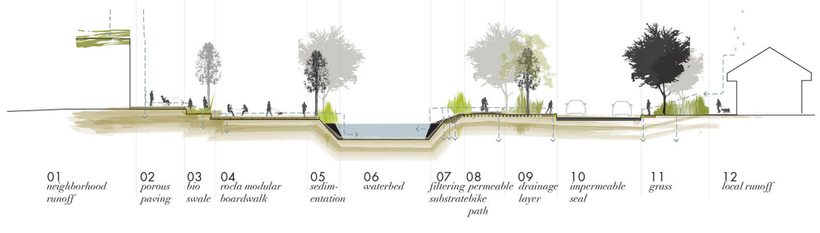
- RESEARCH LANDSCAPE
- URBAN FARM
- AQUACULTURE AND HYDROPONICS
- ALGAE-CULTURE
- ENERGY FIELD OR FOREST
- HOMESTEADS
- CAMPGROUNDS

TRANSITIONAL LANDSCAPES

TEMPORARY LANDSCAPES THAT CLEAN SOIL AND ENABLE NEW FORMS OF SOCIAL LIFE AND CREATIVE DISPLAYS

- EVENT LANDSCAPES
- REMEDIATION FIELDS OR FORESTS
- ART-SCAPES
- URBAN MEADOWS

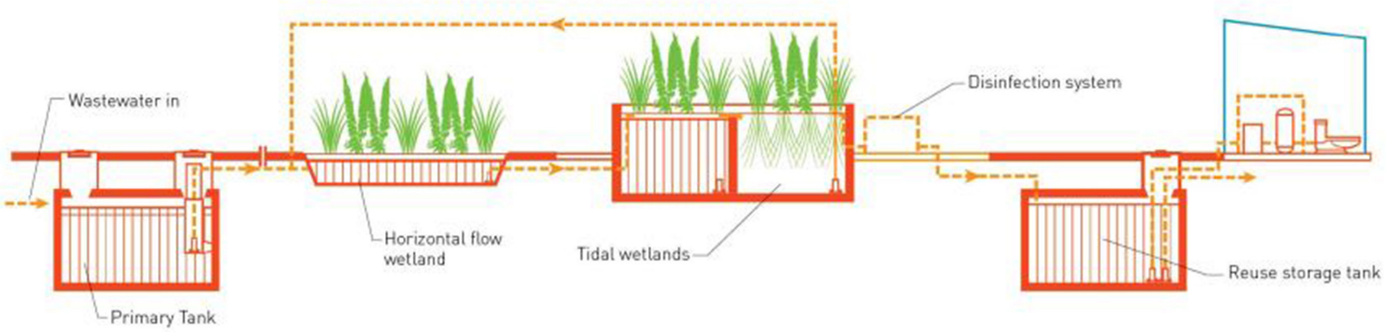


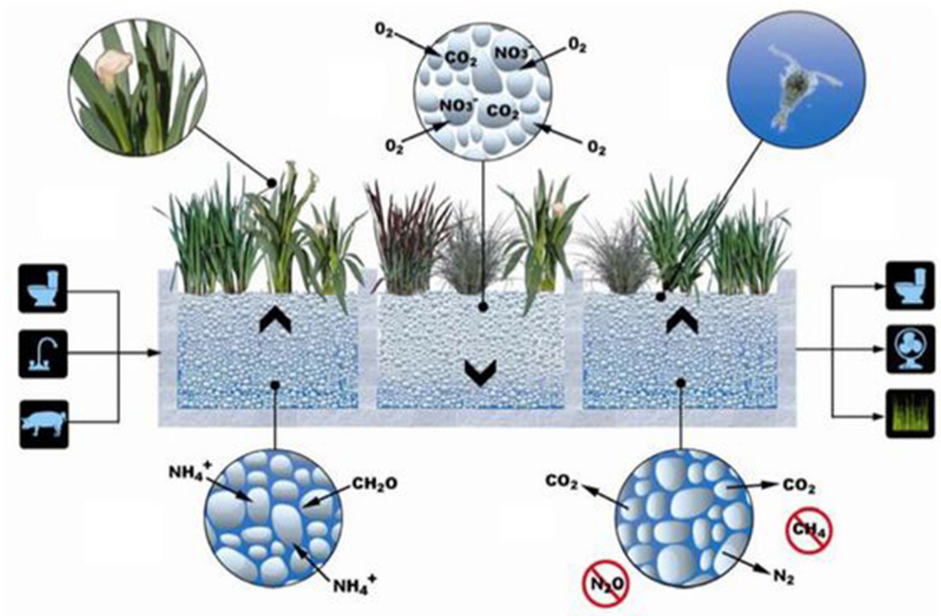


LITERATURE REVIEW

Living Machine Systems use a primary settlement tank and planted wetland cells lined with a gravel medium. Sequential wetland cells are filled and drained with wastewater about 12 times a day, mimicking tidal ebbs and flows. The process creates a biological interplay in which bacteria growing on the gravel medium and plant roots consume and remove the nutrients in the wastewater. When the water drains out, the basin is oxygenated, which promotes the rapid metabolism of more nutrients and solids. When the water completes the process (which might include a disinfection step in a separate tank, depending on the final use), it can then be repurposed on site for toilet flushing, irrigation, washing equipment, landscape water features, and other uses.

Hybrid Wetland Living Machine Diagram





03
CASE STUDIES

SVART

DESERT HOUSE

THE ARC

03 SVART

CASE STUDY

by Snoehatta

the world's first energy positive hotel

Categories
Landscape, Interior, Visual Identity, Sustainability, Architecture, Hospitality & Destination, Sports, Wellness & Recreation

Timeline
2017 - 2023

Location
Svartisen, Norway

Typology
Hotel

Client
Arctic Adventure of Norway

"Svart" is the first building to be built after the energy positive Powerhouse standard in a Northern climate. Not only does this new hotel reduces its yearly energy consumption by approximately 85% compared to a modern hotel, but it also produces its own energy - an absolute "must" in this precious arctic environment. The hotel will also become the world's northernmost Powerhouse building.

-Building in such a precious environment comes with some clear obligations in terms of preserving the natural beauty and the fauna and flora of the site. It was important for us to design a sustainable building that will leave a minimal environmental footprint on this beautiful Northern nature. Building an energy positive and low-impact hotel is an essential factor to create a sustainable tourist destination respecting the unique features of the plot; the rare plant species, the clean waters and the blue ice of the Svartisen glacier, says Founding Partner at SnØhetta, Kjetil Trædal Thorsen.

03 CASE STUDY

SVART,SVARTISEN,NORWAY

Material choice is based on energy used for extraction of raw materials, product and transport

Solar energy is captured through photovoltaic panels on the roof and facade

Surplus energy is made available for infrastructure in the vicinity of the building

Sea water and heat pumps are used for cooling and heating

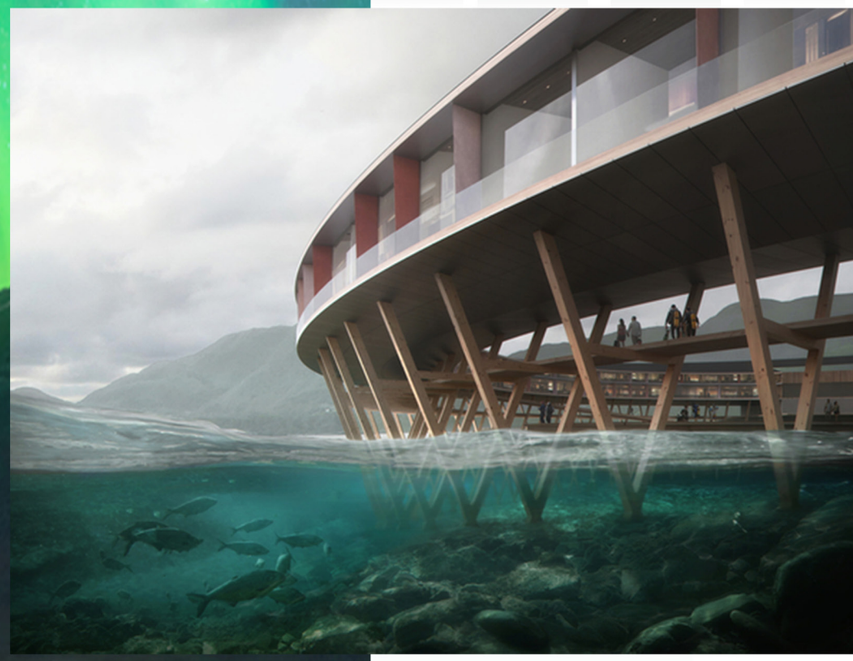
Uses power in winter and delivers power in summer

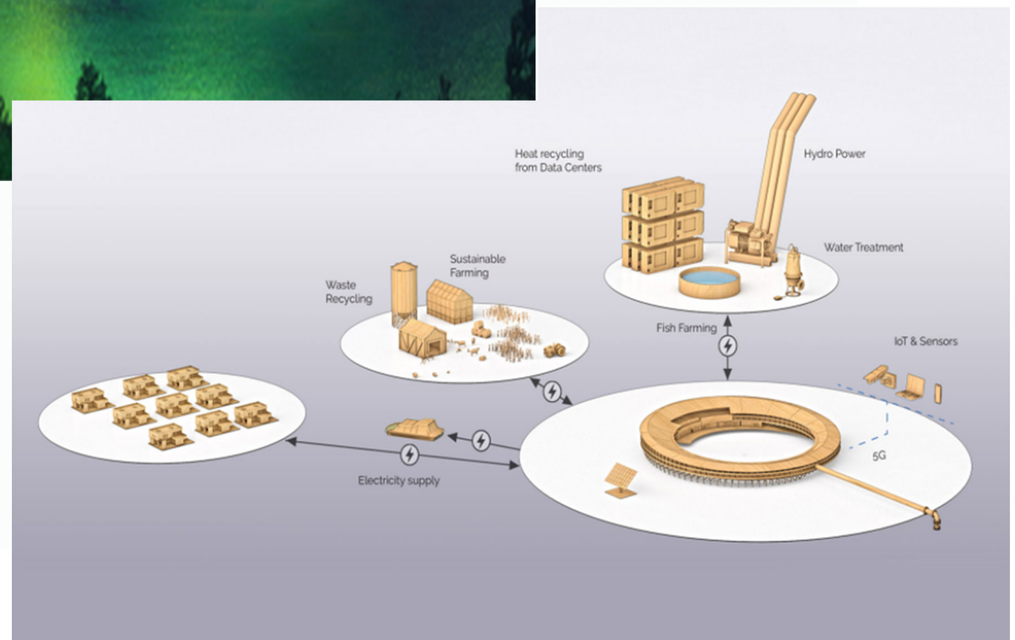
Open floor plans allow for energy-efficient air distribution

LED lighting regulated by sensors adjusted for the level of daylight and human presence

Bright colors for walls and ceilings to brighten the space

Rooms in the core of the building have glass panels and





OFF-GRID

Svart goal is to enable full off-grid operation within five years of its opening.

It means that the hotel and its adjacent services, including the greenhouse farm, boat shuttles, and experiences, will be completely self-sufficient in electricity, water and waste management. We are focusing on **"**farm to table**"** service and innovative approach to guest lifestyle journey.

03 DESERT HOUSE

CASE STUDY BY Kendrick Bangs Kellogg

The formal desert architecture of kendrick bangs kellogg and the sweeping interiors by designer john vugrin. nestled among the rocky terrain of joshua tree, california, the house takes the form of an organic object made up of a cluster of sculptural piers. there is an ambiguous relationship between the built space and the extreme landscape as the house navigates between the protruding rock formations. at certain moments these natural elements pierce through to the interior and become a sculptural element of the conditioned space.

The skeleton of the home — also known as the Doolittle House—is formed by 26 concrete columns sunk seven feet into the bedrock. Its interior continues the same artistic approach with custom-made pieces and bronze accents

The columns fan out at the top, with one overlapping the next to created a layered, canopy-like roof.

03 The Arc

CASE STUDY — a Visitor Center for Arctic Preservation Storage in Svalbard

Located in the permafrost, 1 300 kilometers beyond the Arctic Circle, the remote island of Svalbard is known for its unique geopolitical and climatic stability and is thus a suitable place for safe long-term storage. Both as a long-term storage facility, built to stand the test of time — and the challenge of natural or man-made disasters.

The architecture divides the visitor center into two separate volumes; the entrance building and the exhibition building.

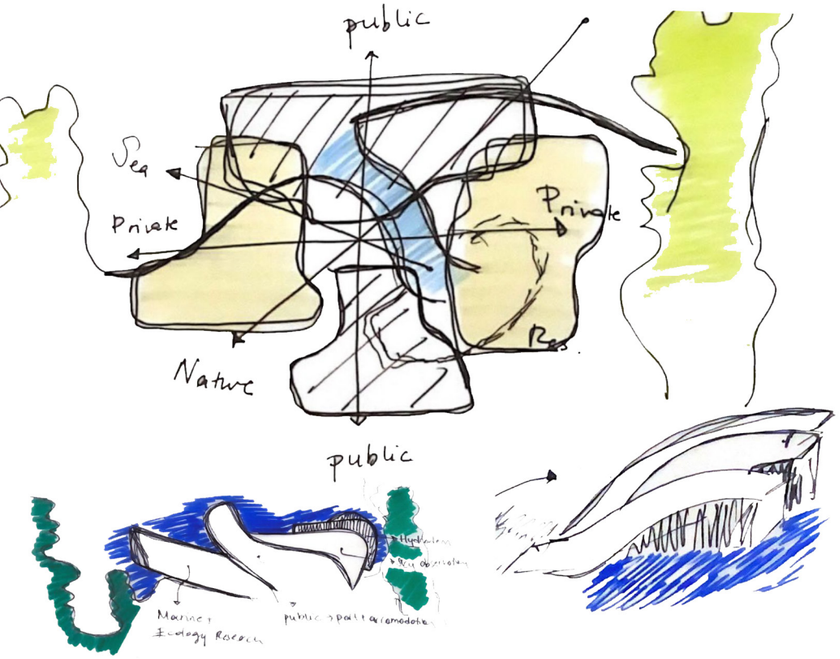
"A structural frame of cross laminated timber in combination with stiffening wall discs in solid wood forms a rectangular building volume that rests on pile foundations in the bedrock. The building is suspended off the ground to prevent heating of permafrost and accumulation of snow. The entrance building is clad with burnt wood and dark glass panels, while the interiors consist of exposed wood elements. Roof areas are designed to accommodate solar panels for harvesting solar energy" explains SnØhetta.

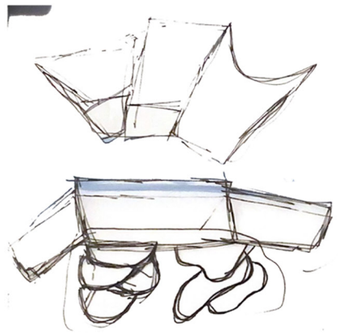
03 The Arc

CASE STUDY – a Visitor Center for Arctic Preservation Storage in Svalbard

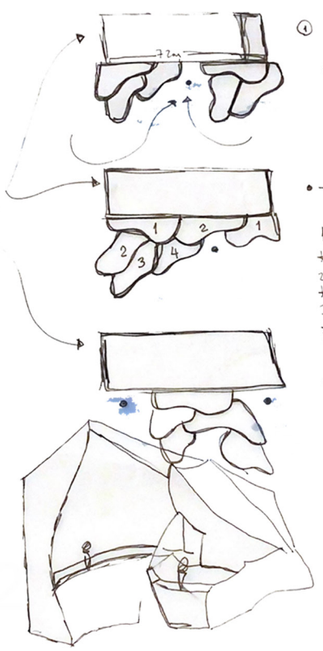
The entrance building and the exhibition building contrast each other in form, texture and color. While the entrance building is rational and stoic, the exhibition building expresses a unique shape, scale and spatial sequence, designed as a timeless, scale-less form that is both familiar and otherworldly at the time. From the outside, the exhibition building appears as a robust monolith – its outer surface formed by the erosion of the site's unique and often extreme weather conditions. Access to the exhibition building occurs across a glass access bridge, which is used to organize visitors into smaller groups.

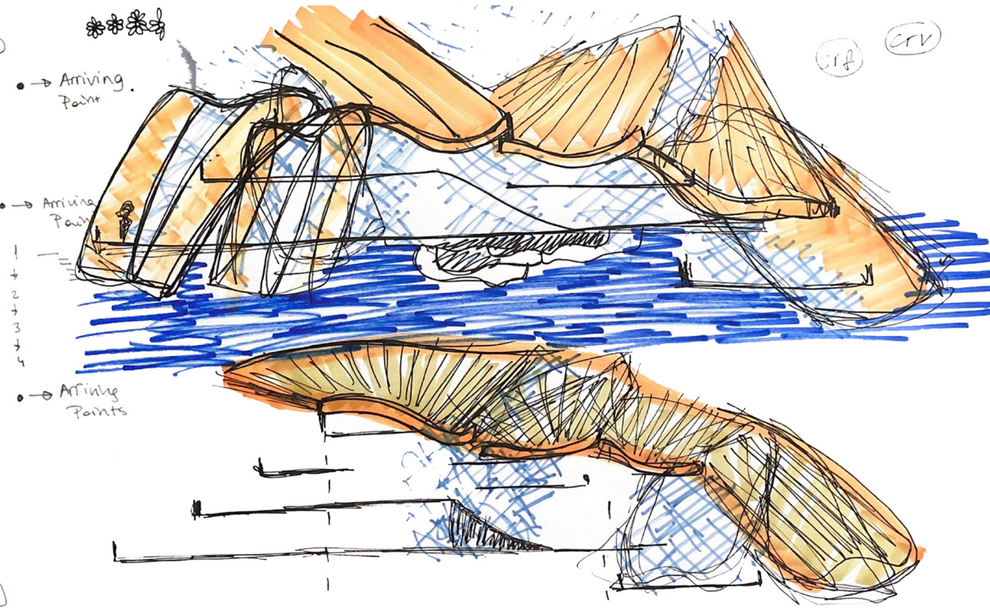
04 PÄRL

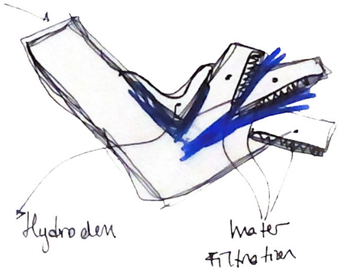

public
Sea
Private
Private
Nature
public
Marine Ecology Research
public spaces accomodation

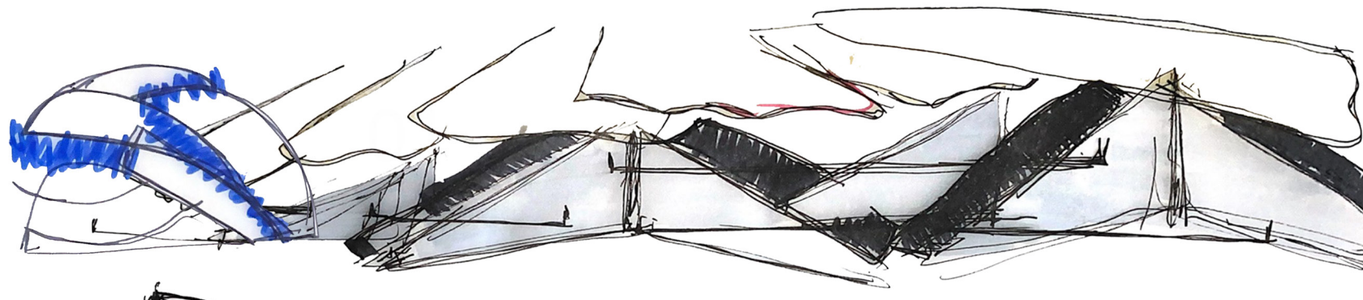


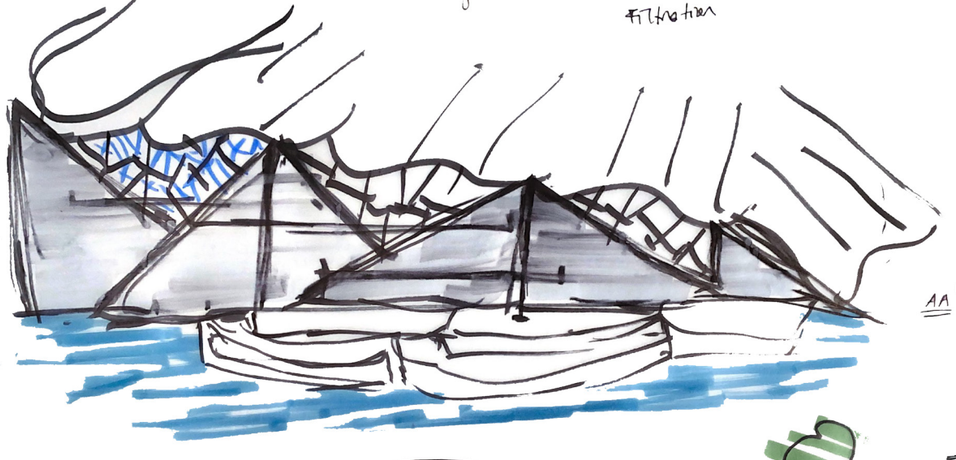

interior circulation Pathways

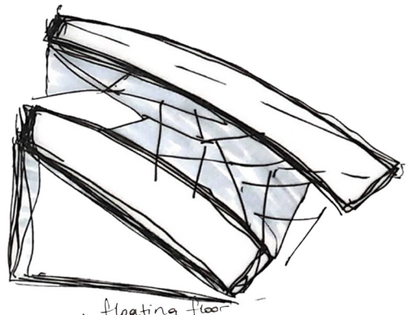


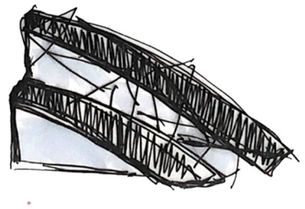

Arriving Point
Arriving Point
Arriving Points

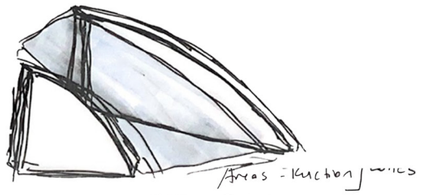

Hydroden
water
Filtration



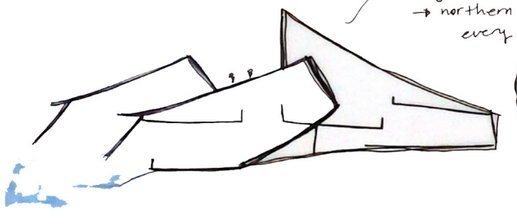


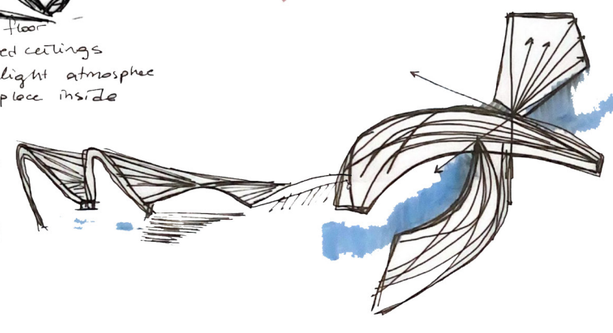

floating floor
glass covered ceilings
→ northern light atmosphere
every place inside

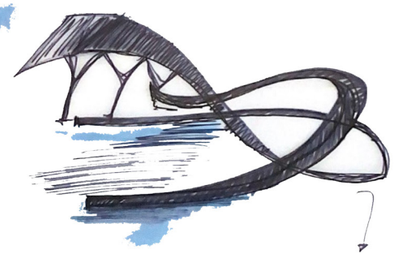



Areas - Function
→ Public Zones
→ Accomodation part

Entenance:





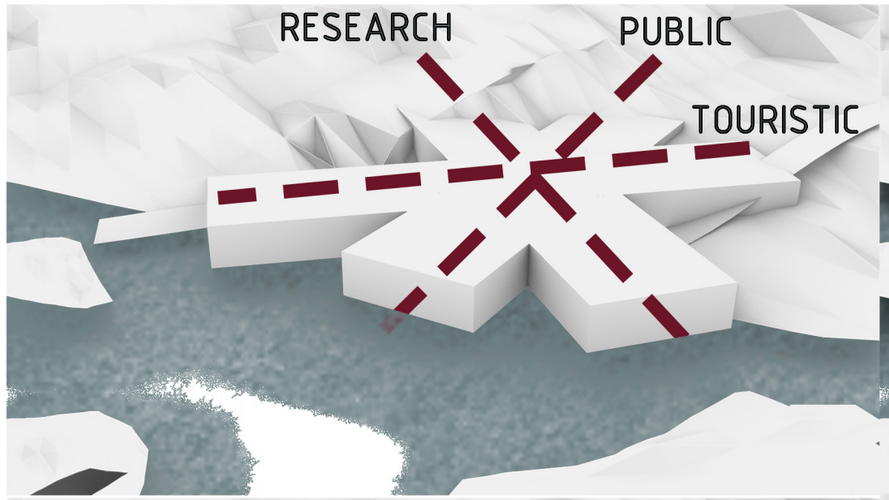


04 FORM DERIVATION

PÄRL

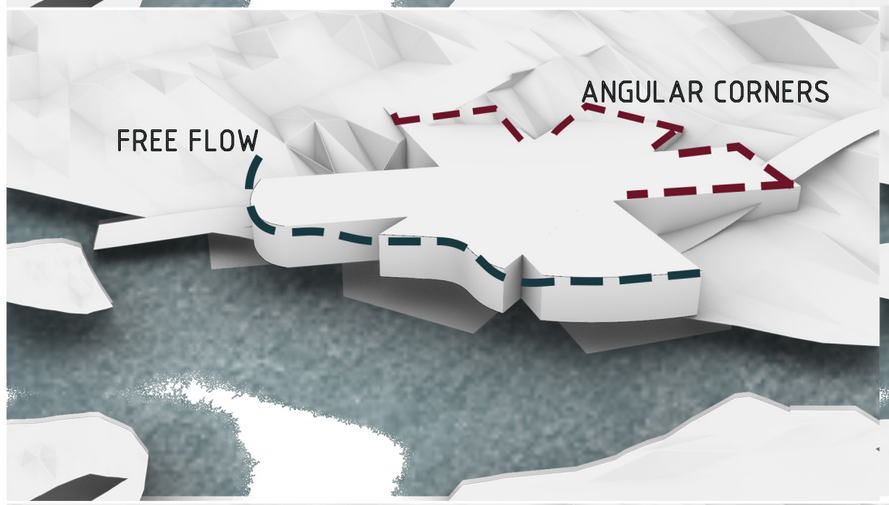
1

Building layout located primarely in 3 differen user axis and functions



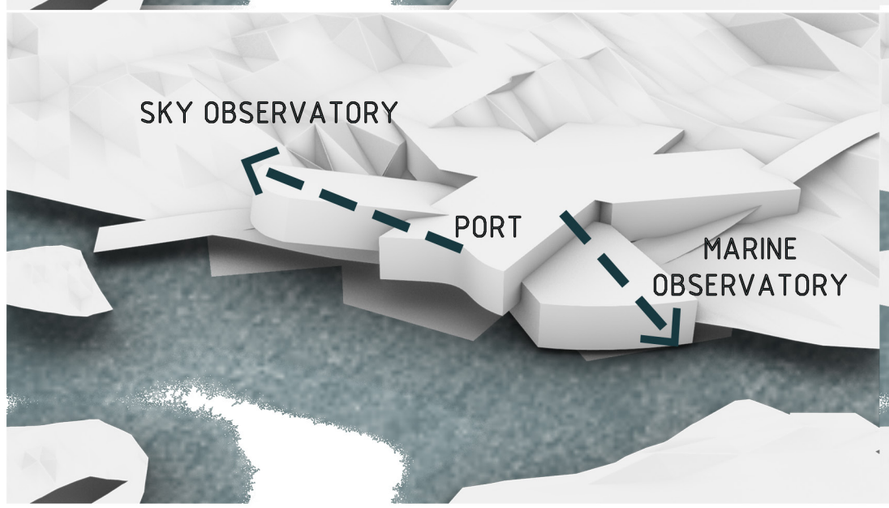
2

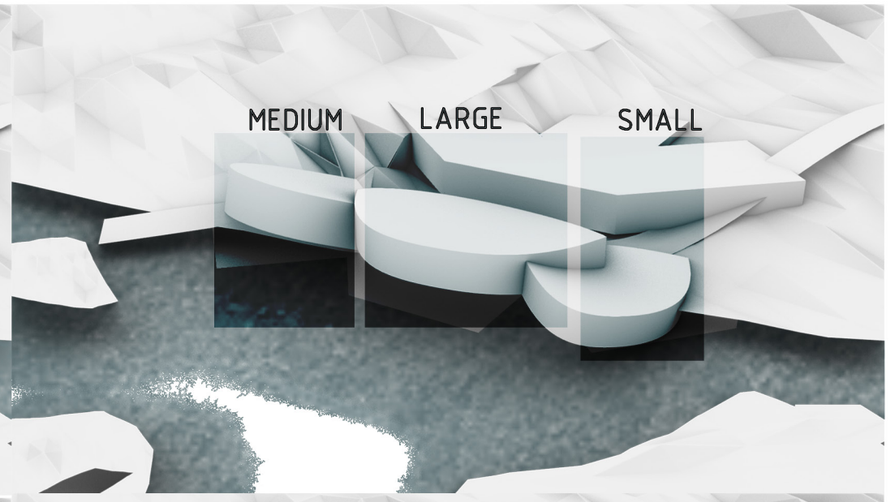
Building shaped according to the natural elements:free flowing curves by the waterside and angular corners in the nature part



3

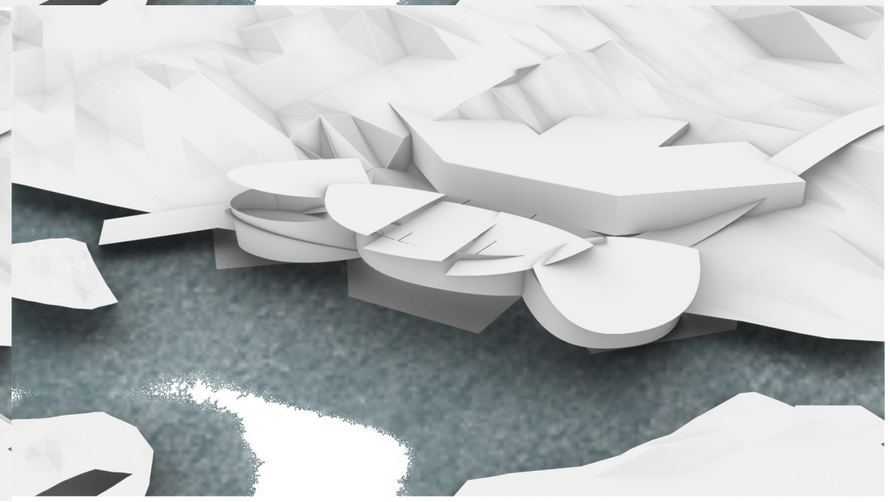
Height of the building specialized from highest to ground in the direction of north to south





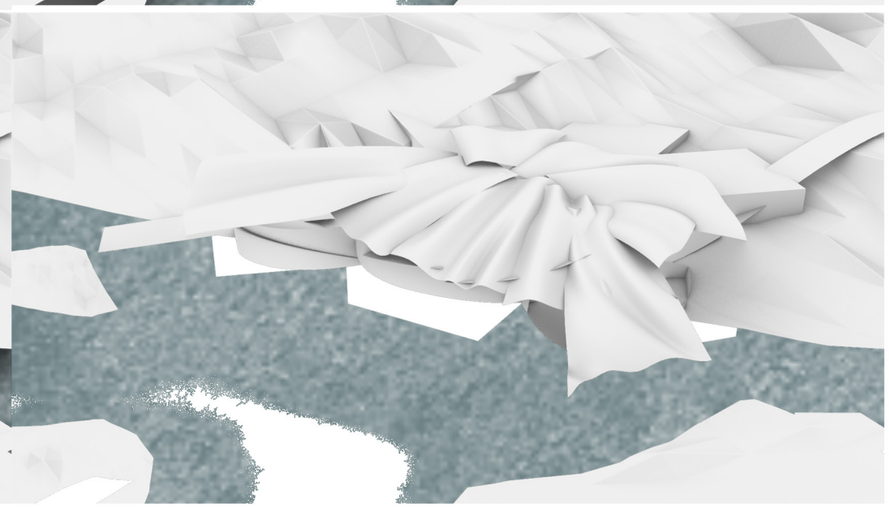
4

Volumes changed according to the user-base and function



5

Roof splitted into panels and height difference through the axis implified

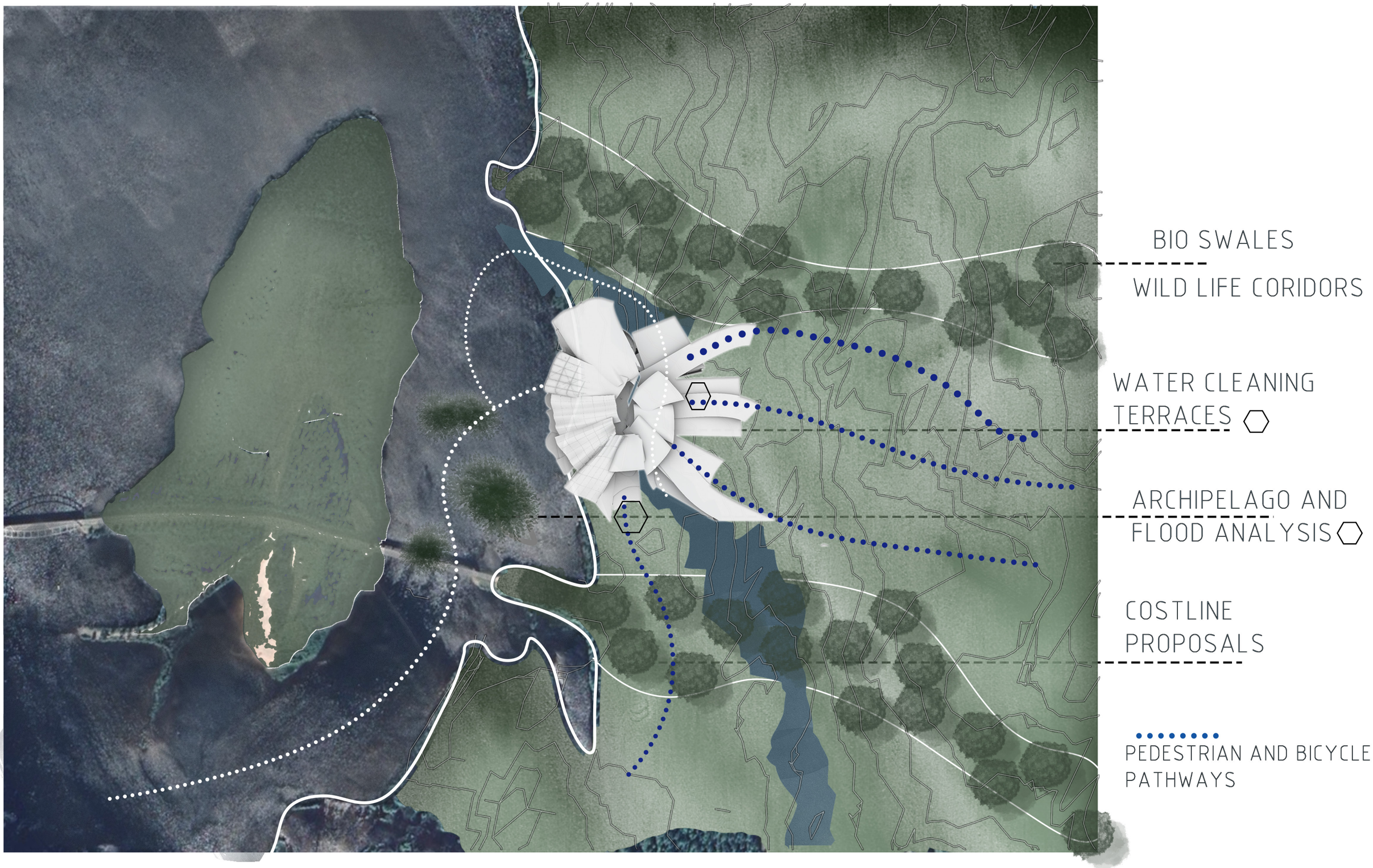


6

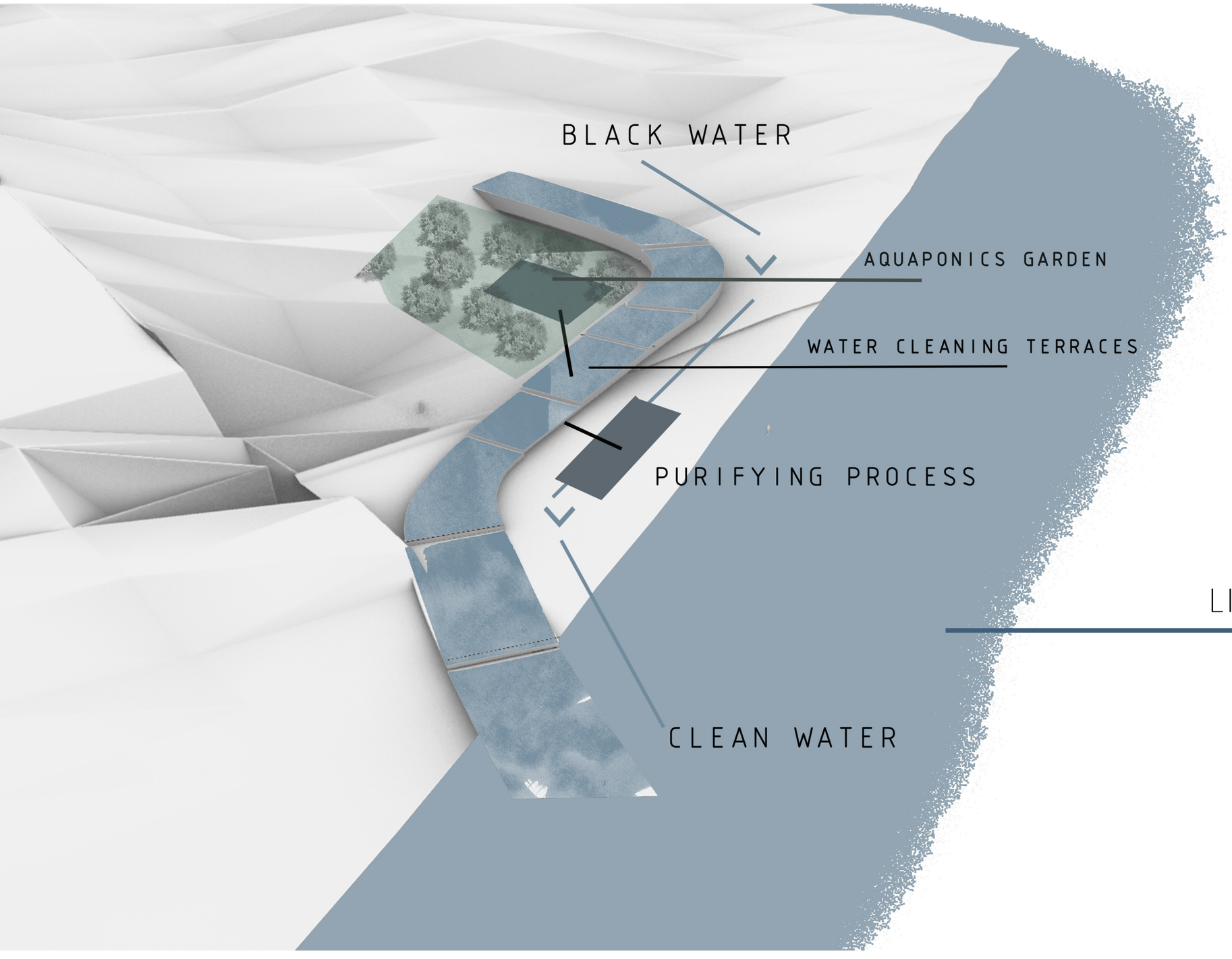
FINALIZED FORM

04 FOCUSED AREA

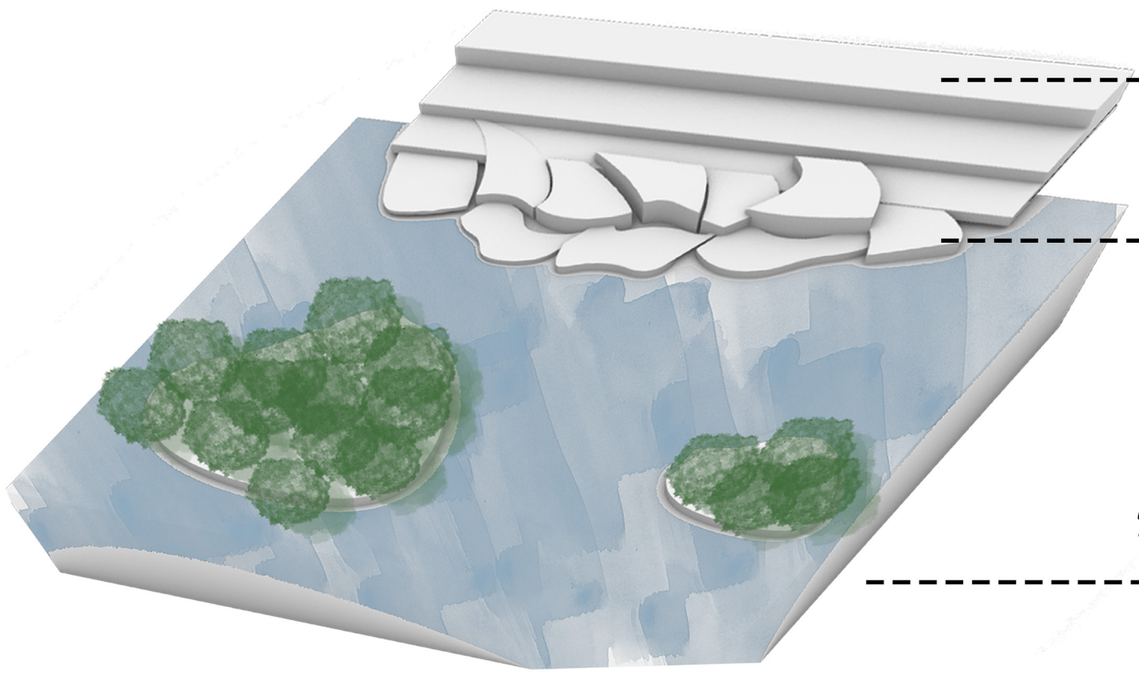
PÄRL



ENVIRONMENTAL DIAGRAMS



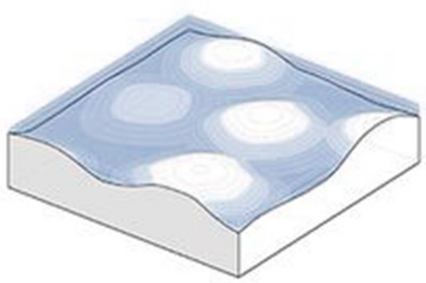
ENVIRONMENTAL DIAGRAMS

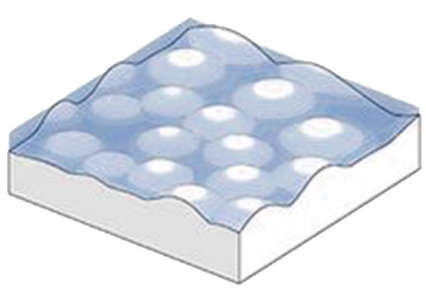


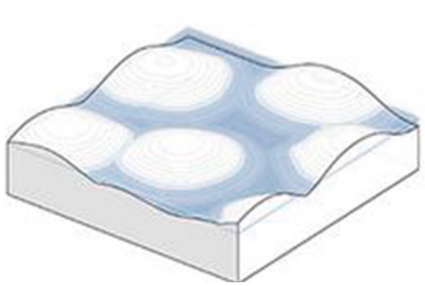
TERRACED INTERIOR FLOORS

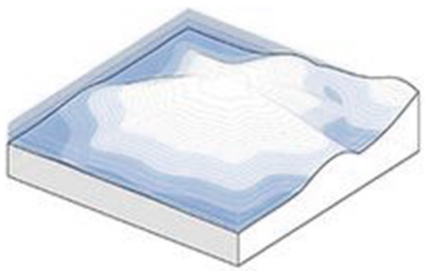
WATER TERRACES

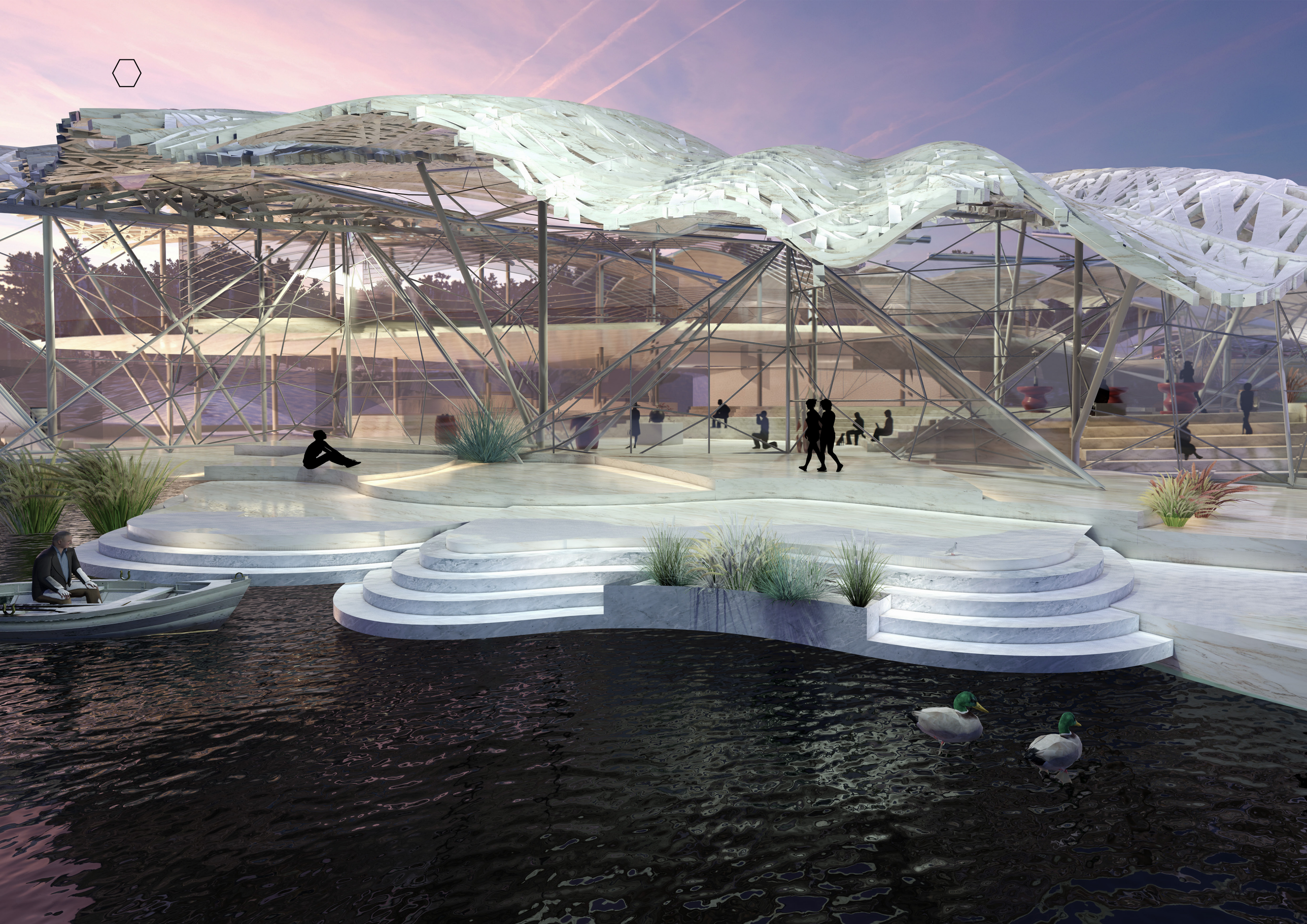
ARCHIPELEGO TO CONTROL
THE WATER HEIGHT











GREEN CORRIDORS LINKAGE PARKS

ENTERANCE

ENTERANCE

WINTER PAVILLION

WINTER PAVILLION

WINTER PAVILLION

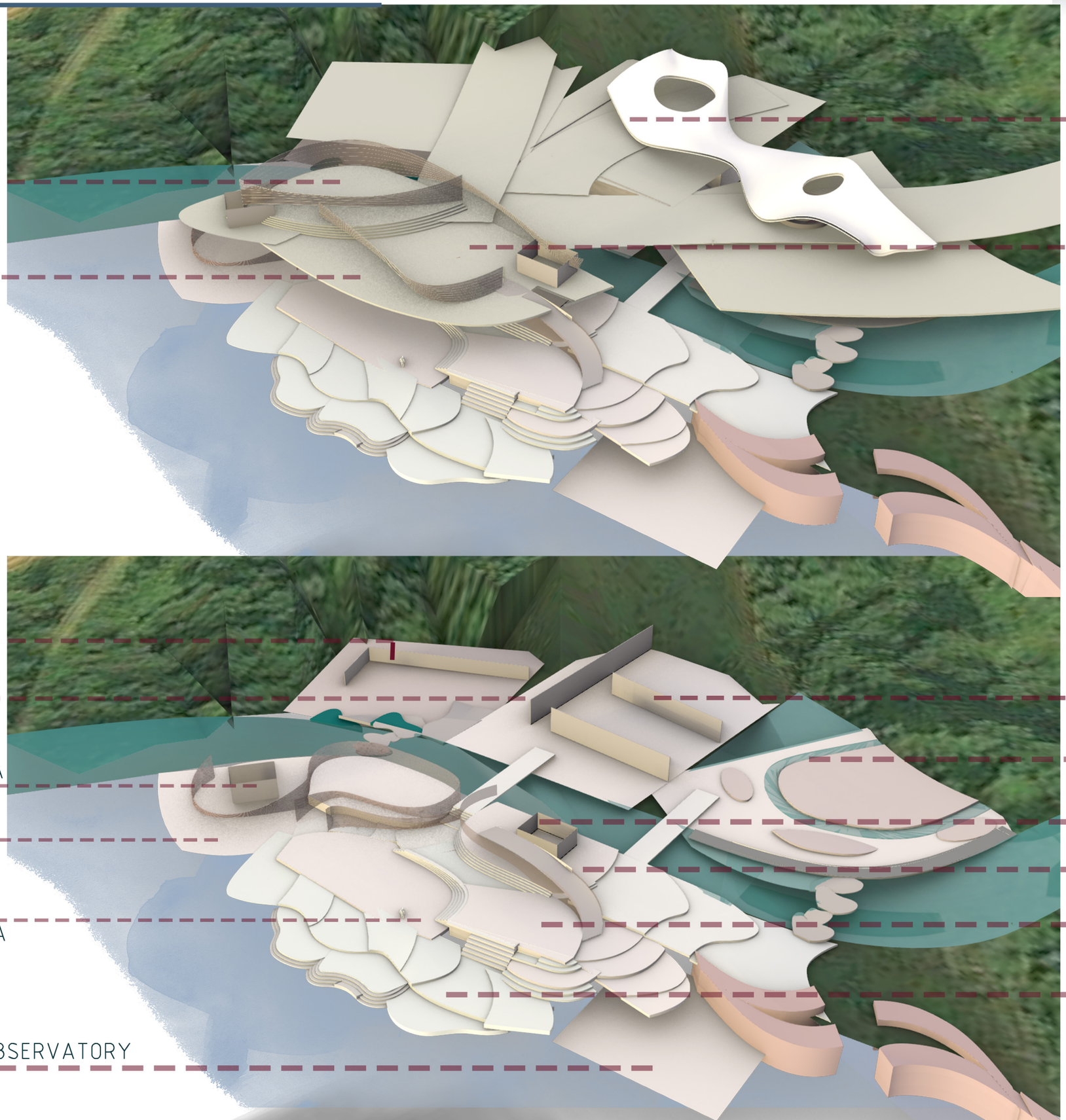
ACE

DARK
EXHIBITION-IMAX

GALLERY SPACE

WINTER PAVILLION

RECEPTION AREA



HOT TUBS AND SPA

SERVICE HALL

CORE AND WET AREA

NORTHERH LIGHTS
OBSERVATORY

BOAT AREA

MARINE LIFE OBSERVATORY

LABS AND CLASSROOMS

AQUAPONICS GARDEN

CORE AND WET AREAS

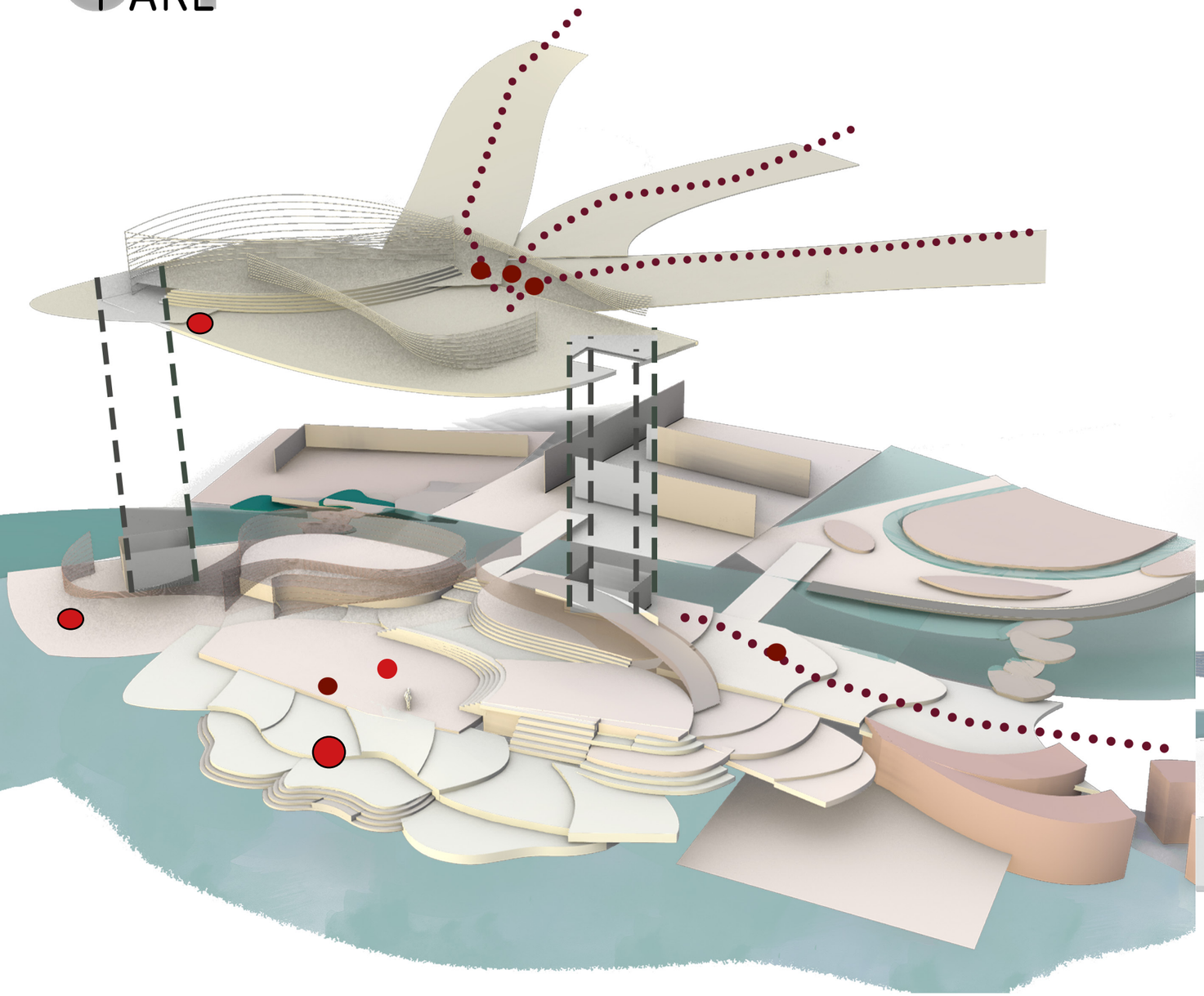
LOBY

RESTAURANT

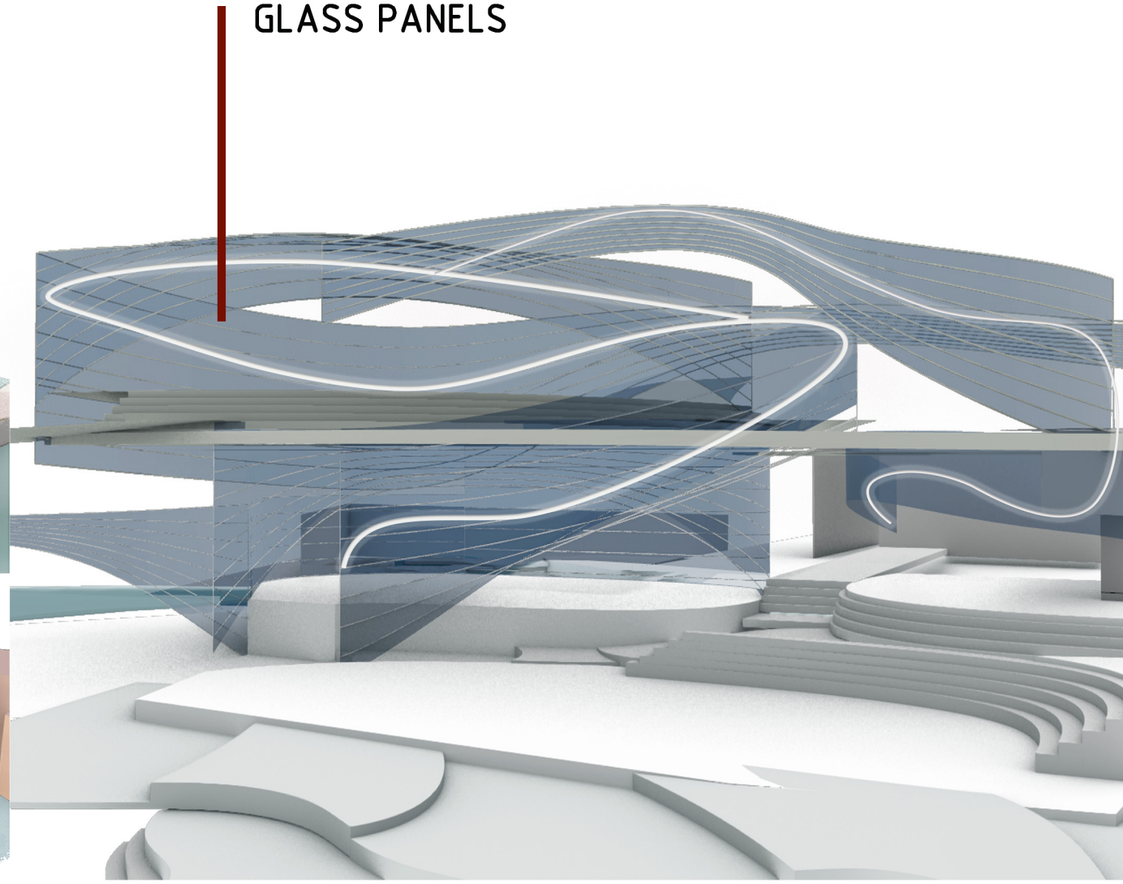
WATER TERRACES

04 CIRCULATION AND INTERIOR

PÄRL

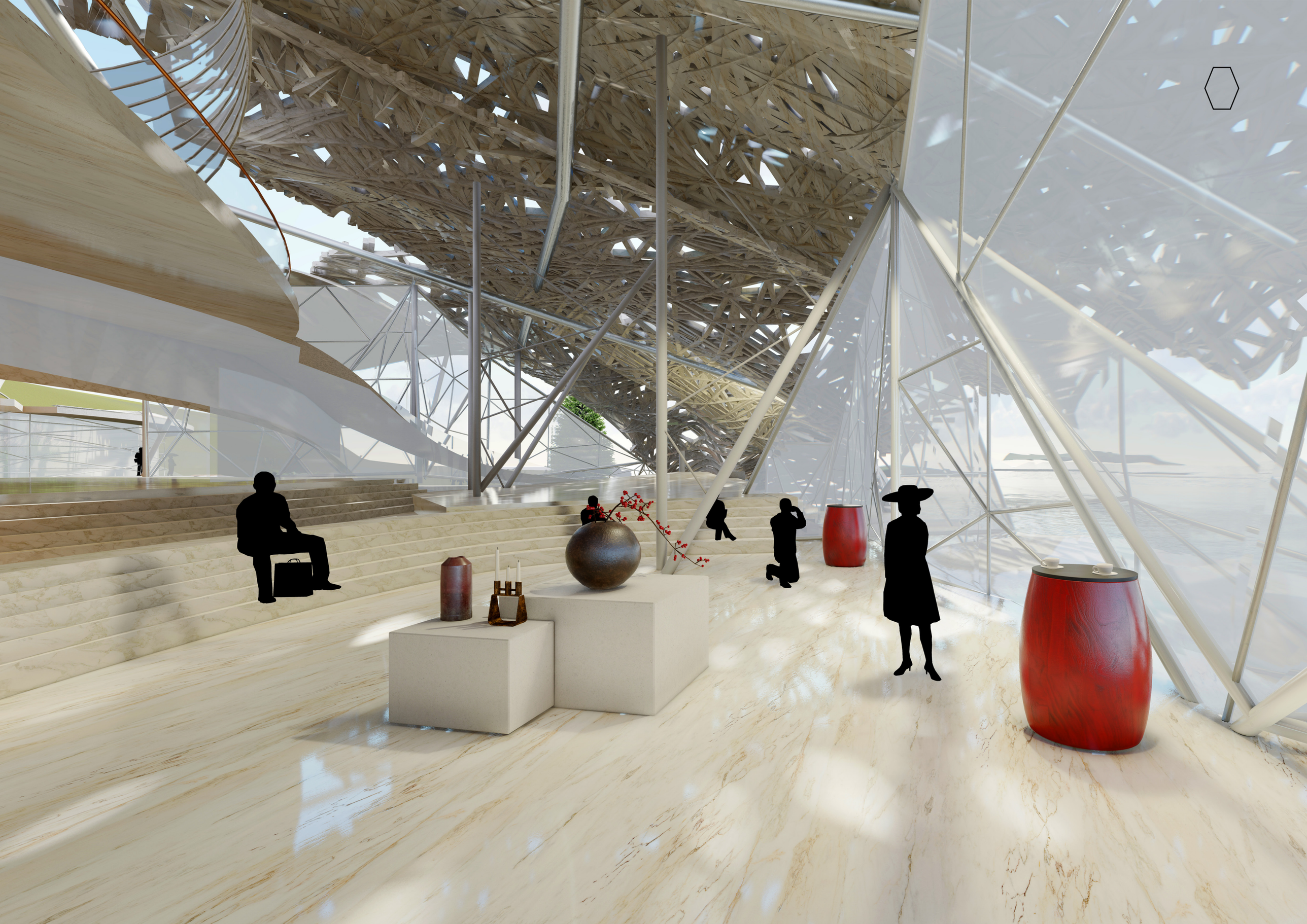


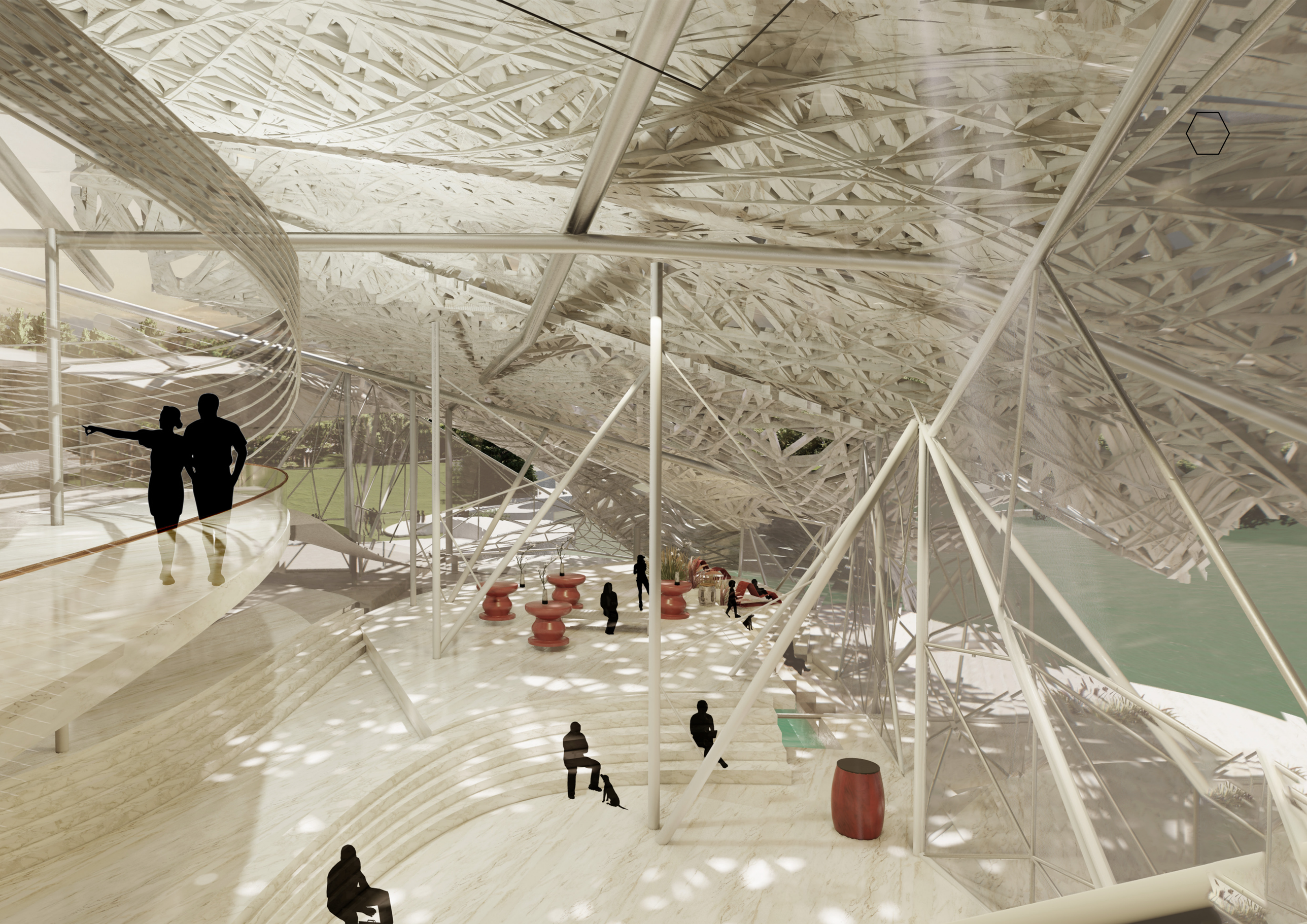
CIRCULATION
ENTERANCES
CORES AND VERTICAL CIRCULATIONS



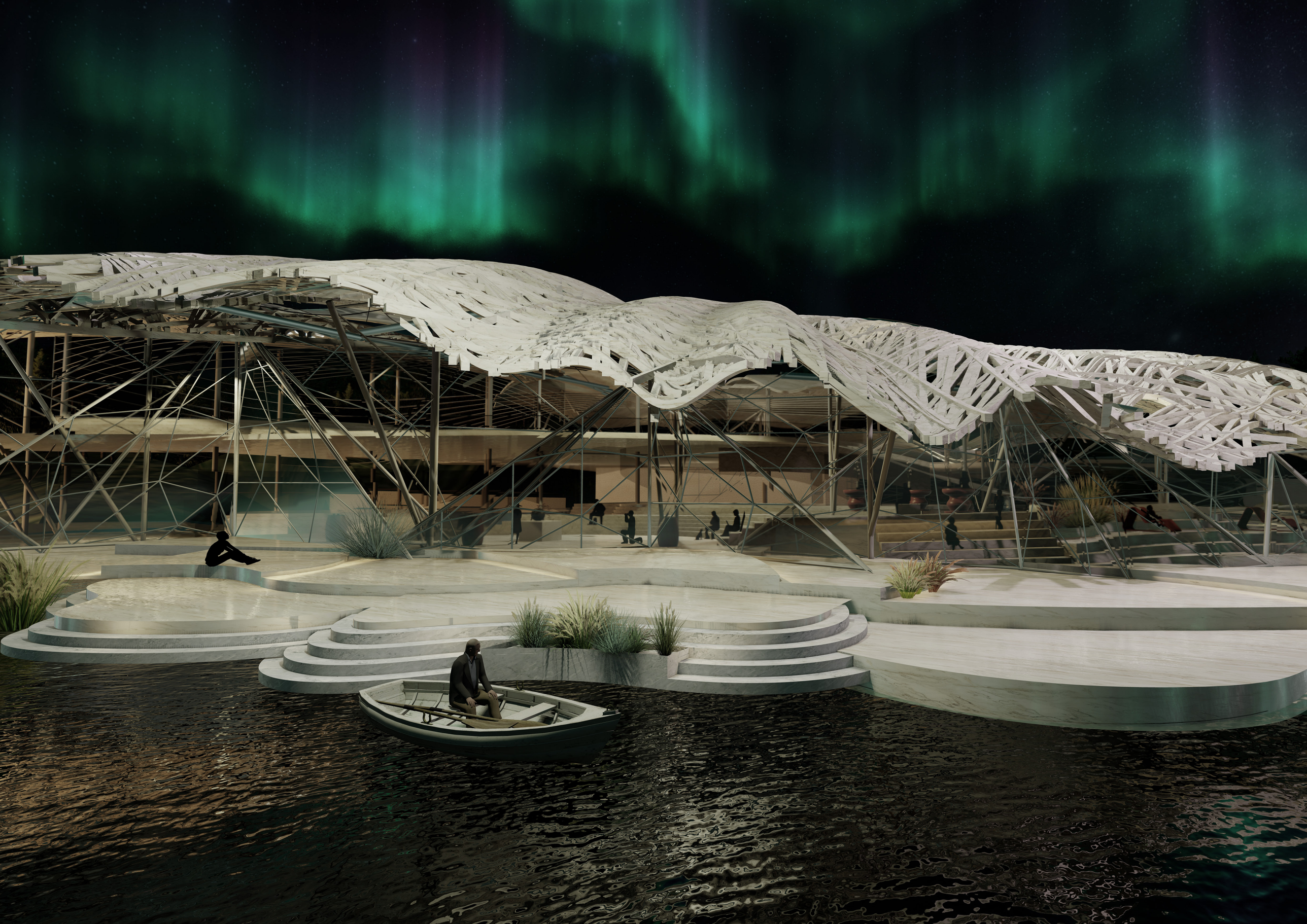
INTERIOR VOLUMES ARE SEPERATED FROM EACH OTHER WITH SEMI TRANSPARENT GLASS PANELS WHICH BOTH SERVES FOR PRIVACY AND ALSO SPATIAL FLOW

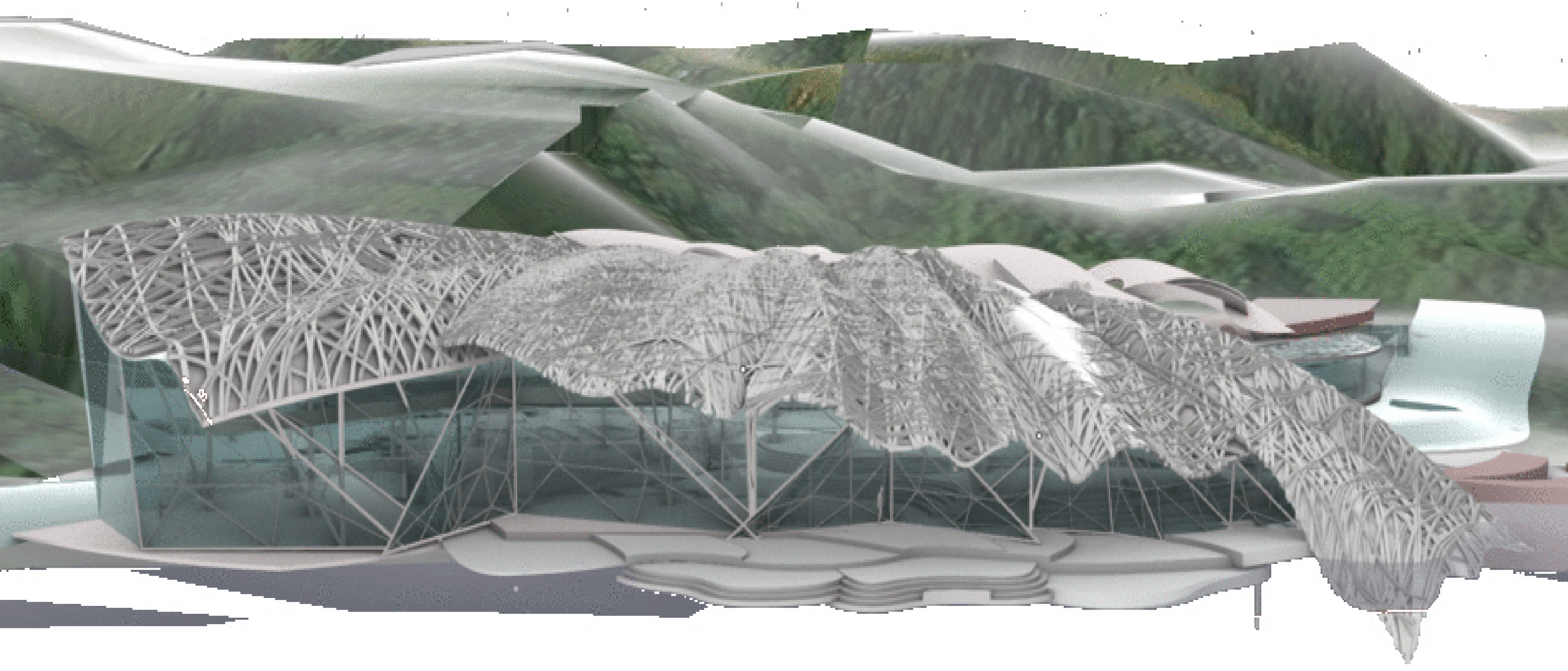
WATER TERRACES





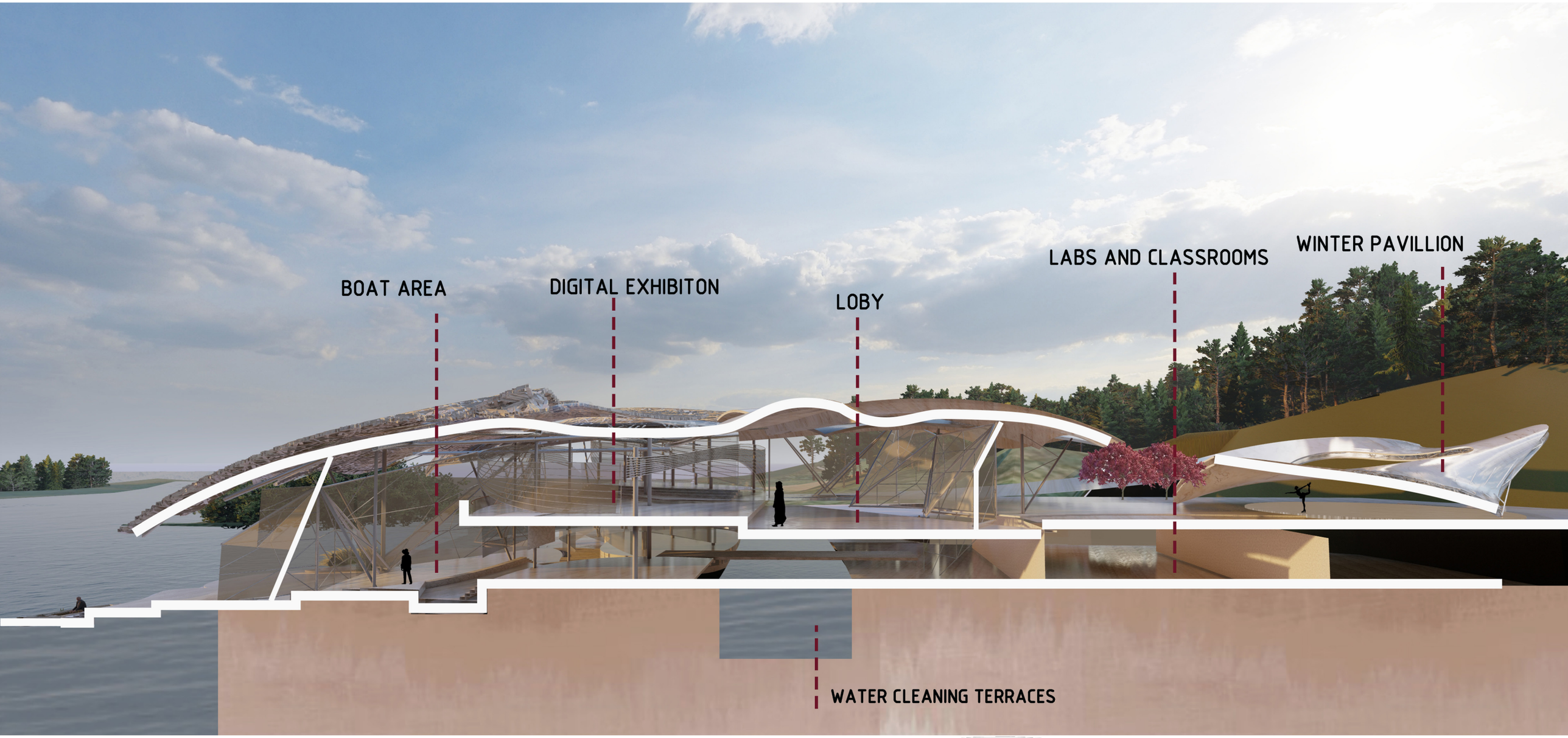
360' VIEW NORTHER LIGHTS
OBSERVATORY DECK



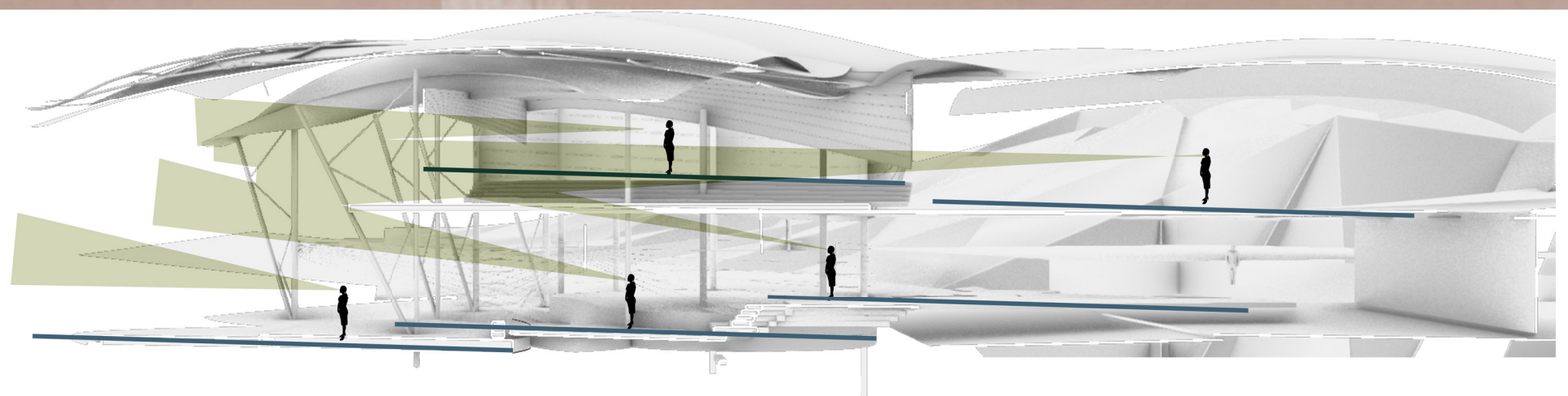


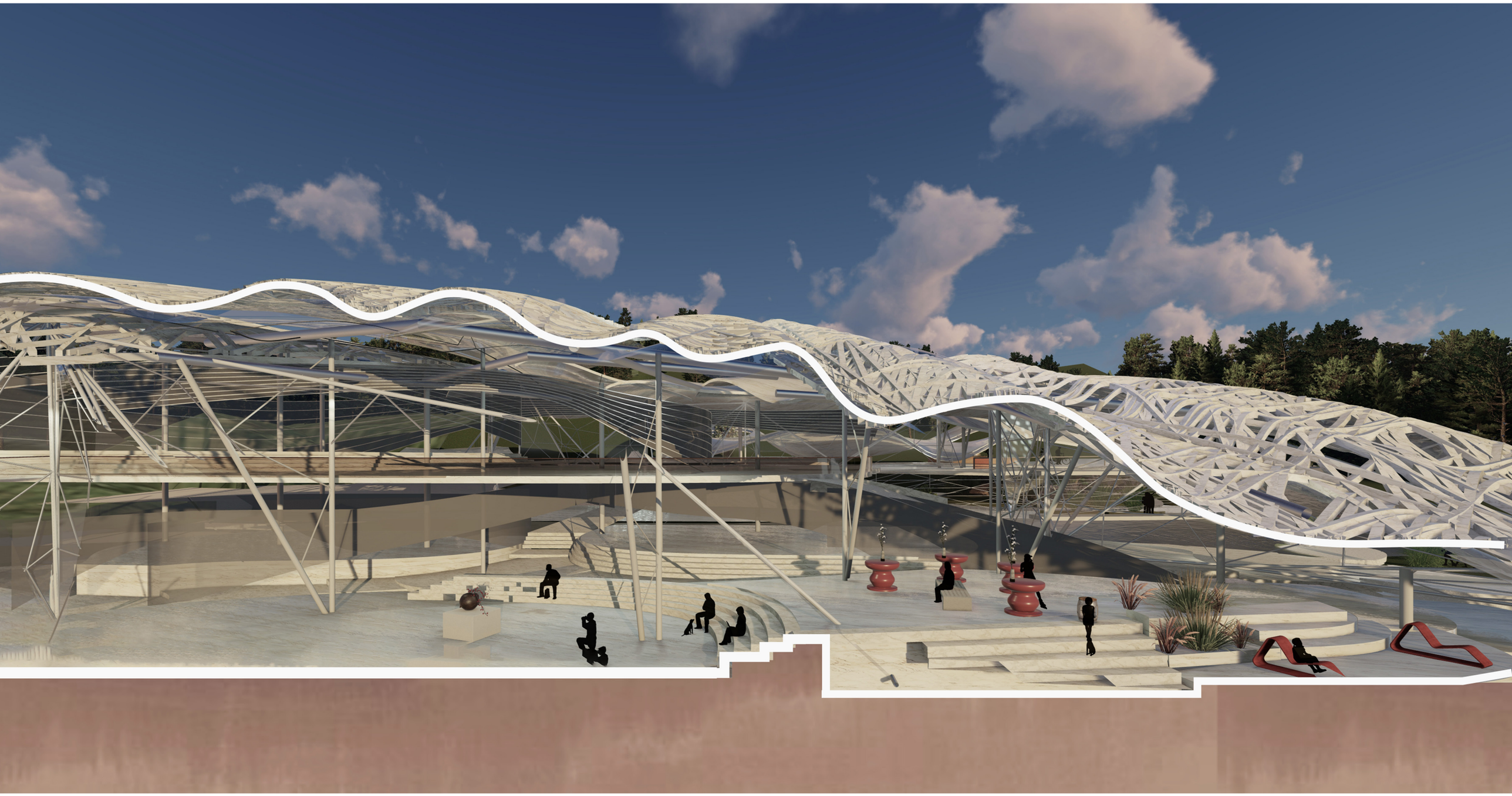
04 SECTIONS

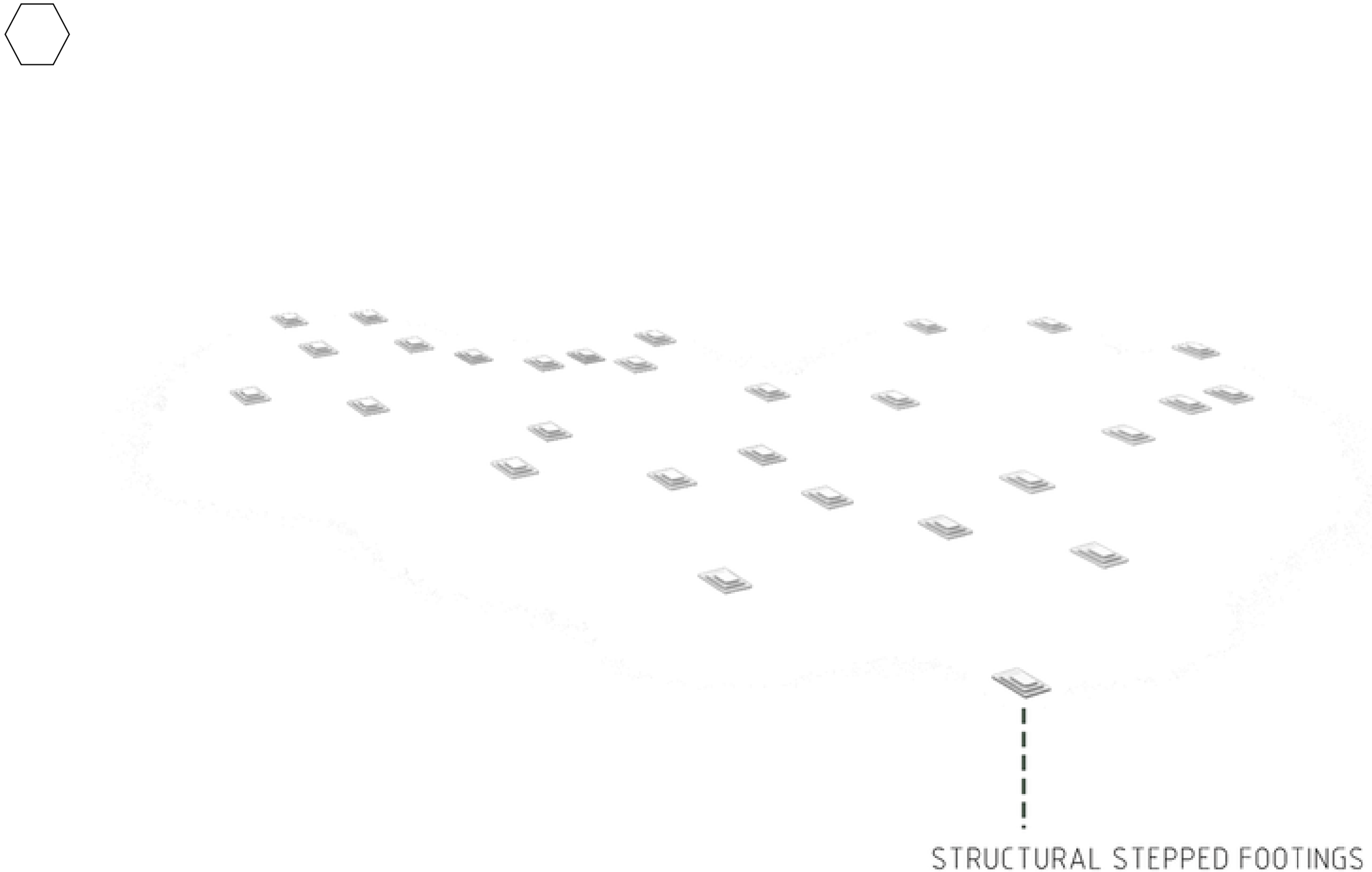
PÄRL



INTERIOR FUNCTIONS ARE SEPERATED WITH HEIGHT DIFFERENCES AND SEMI TRANSPARENT GLASS PANELS THROUGH OUT THE BUILDING. DIFFERENTIATED TERRACED FLOORS ENABLE GETTING SUNLIGHT AND TAKING VIEW FROM EVERY POINT OF THE BUILDING

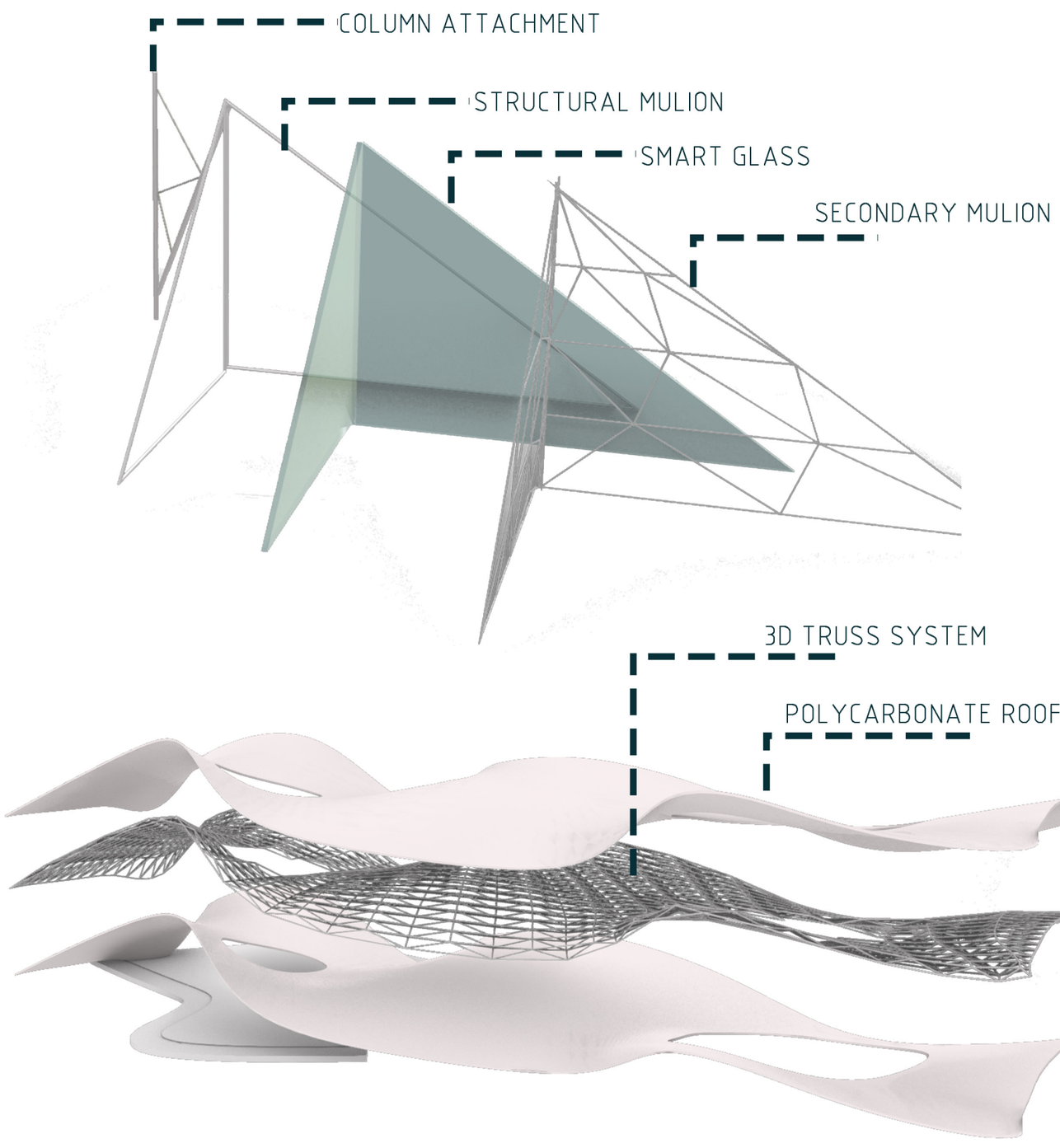


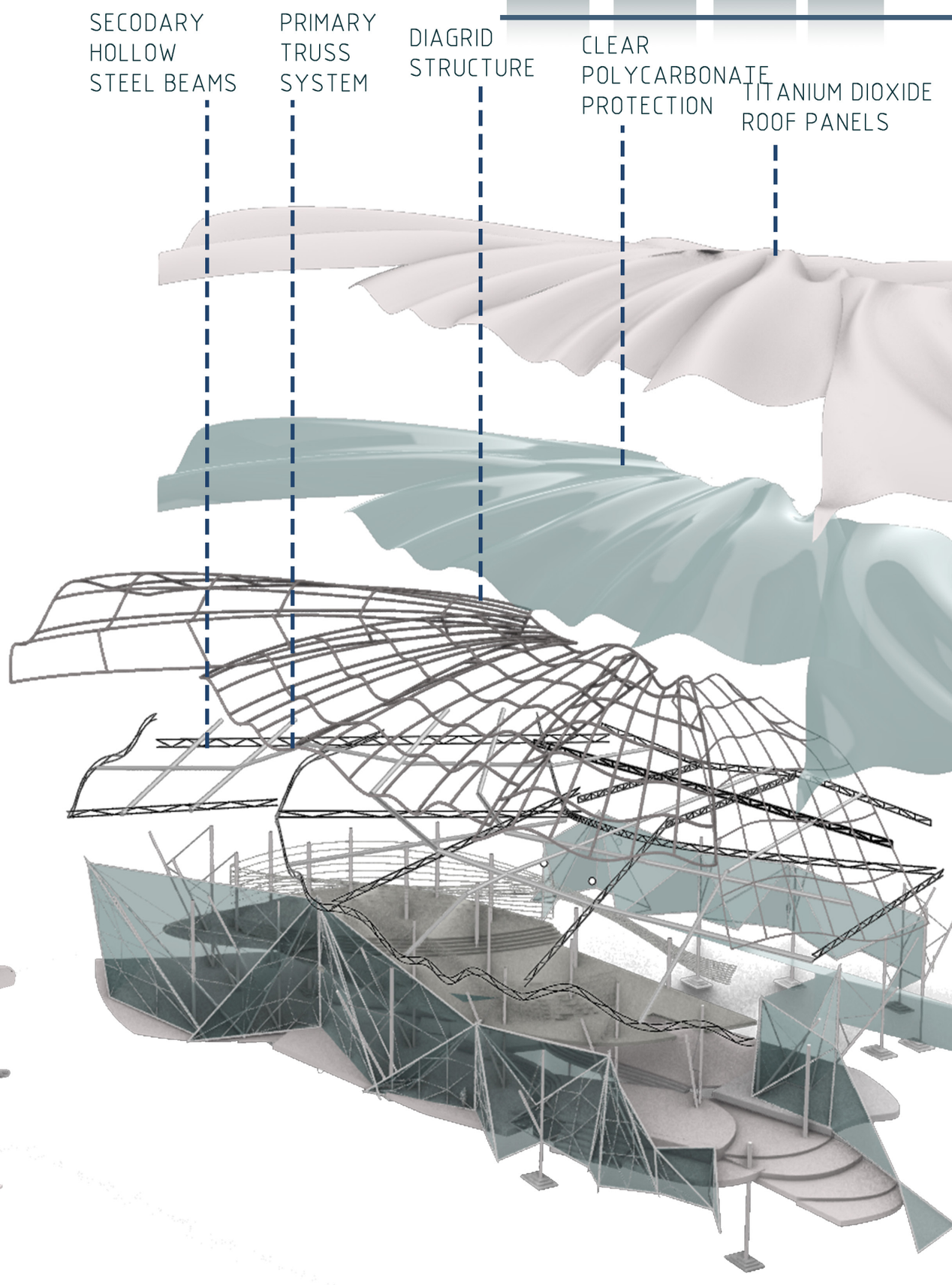



STRUCTURAL STEPPED FOOTINGS

04 STRUCTURAL DETAILS

PÄRL





FLY THROUGH