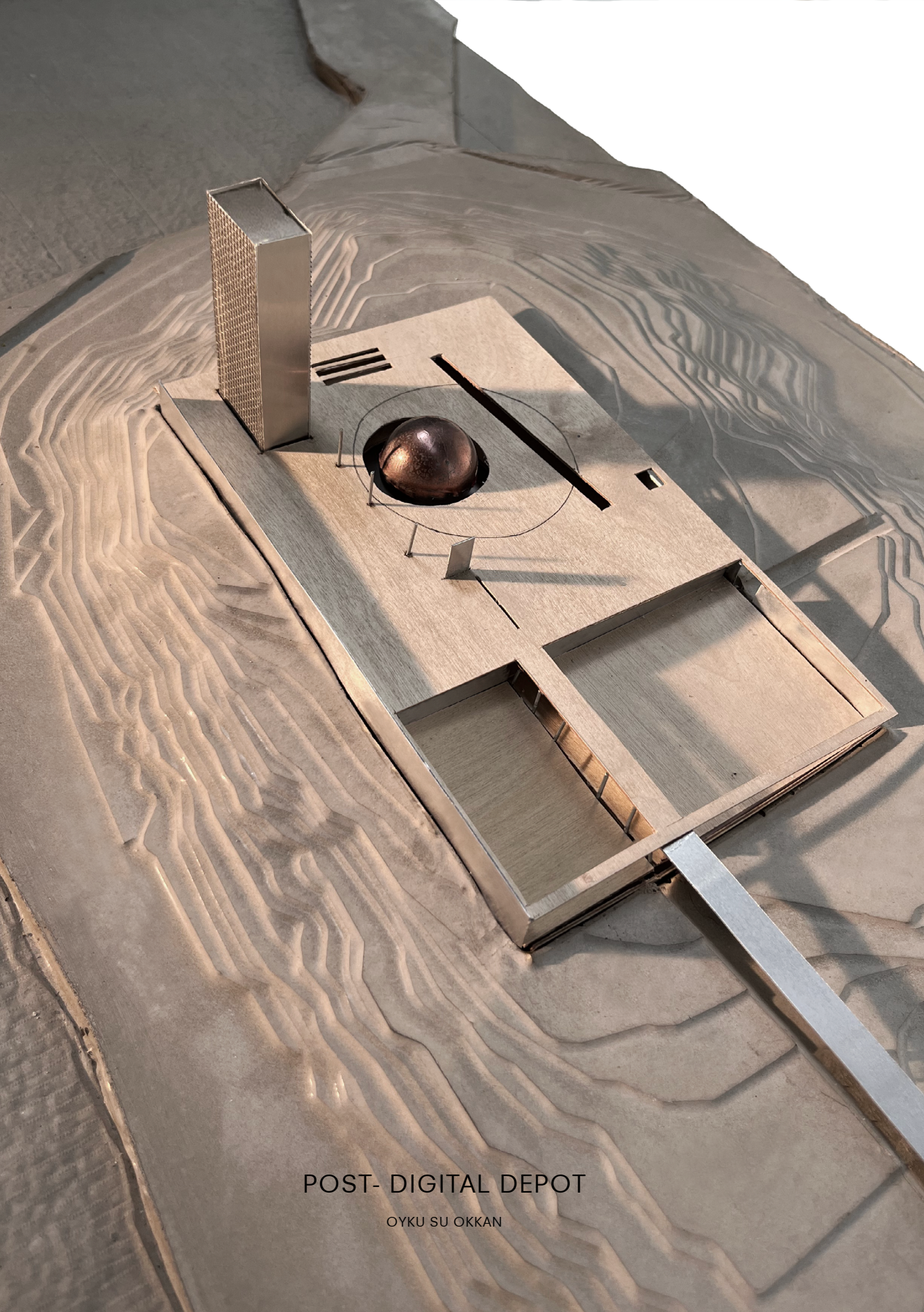


POST- DIGITAL DEPOT

OYKU SU OKKAN

Postdigital is concerned with rapidly changed and changing relationships with digital technologies and art forms.

"Postdigital art" address the humanization of digital technologies through interplay between digital, biological, cultural, and spiritual systems

Departing from the instability of Beirut and the richness of its culture, this thesis aims to investigate if it is possible to preserve the heritage beyond the limitations of physical archiving.

Translation of information into a new language; based on dig·i·ts, 0-1 computer code or symbols known as the alphabet, is defined as the process of dig·i·tal·i·za·tion. Digitalization is a tool to transform the tangible into universal, lasting beyond physical decay. Post-digital, on the other hand, is a paradox. It does not describe a life after digital, but explores how the digital age have provided opportunities for humanization of these technologies.[1] Post-digital proposes humanization through "interplay between digital, biological, cultural, and spiritual systems, between cyberspace and real space, between embodied media and mixed reality in social and physical communication"[2] Post-digital is a hybrid, dualistic concept.

Beirut is a city of perpetual unrest and resultantly under decay. Layers of its rich culture are gradually lost. Yet, culture is one of the strongest elements that unites and ties Beirutians together. Therefore, it should be stored and preserved. Storing of a rather abstract entity such as culture has similarities with storing goods or objects but it also requires a unique approach. The proposed building program: "Post-digital Depot" serves this specific need, as an archive in which material objects are analyzed, restored and translated to a digital medium. The location of the project is in close proximity to the harbor, heavily impacted due to the blast in 2020. This decision of location highlights Beirut's character as a city of dynamic flows of people, information and culture as well as providing a tabula rasa, a fresh start to be the prototype for preservation of culture in war torn cities. The approach of research is proposition of a new typology through analysis of storage facilities and buildings with strong digital interactive programs.

1 What Is a Paradigm, perf. Giorgio Agamben, October 01, 2002, accessed November 12, 2021, https://www.youtube.com/watch?v=G9Wxn1L9Er0)
2 Mel Alexenberg, The Future of Art in a Postdigital Age: From Hellenistic to Hebraic Consciousness (Erscheinungsort Nicht Ermittelbar: Intellect Books, 2013)

Design Through Questioning

How can digitalization be utilized for preservation and accessibility of cultural heritage?

How does culture unite Beirutians against unrest and destruction?

How have destructive events affected the cultural scene in Beirut?

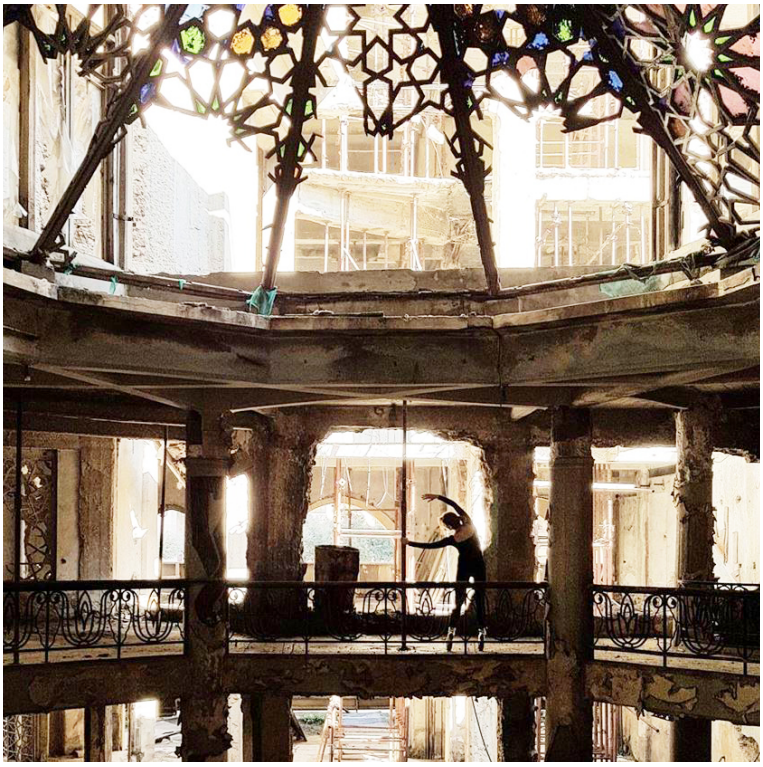
What is worth preserving and storing among the cultural heritage of Beirut?

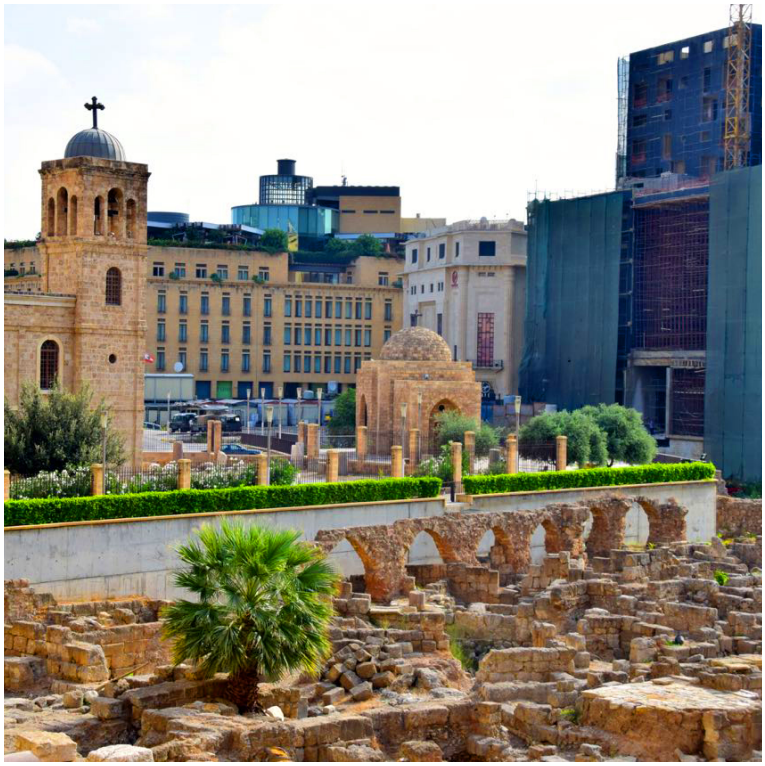
What is the anatomy of a storage facility?

Can culture be stored in a facility, if so how?

How can digitalization be utilized as the method of preservation?

How does preservation through digitalization translate into architecture?





BEIRUT

Beirut as a city is constantly under construction: economically, socially and architecturally. Due to instability of Middle Eastern politics, it has been the domain of domestic and international conflicts which brough destruction, but also the incentive to rebuild. The Civil War from 1975 to 1990, The October Revolution in 2019 and a top of this, the Blast in 2020 brought destruction and crisis transforming the city into a ruin. According to Lebanese folklore, Beirut was destroyed and rebuilt from its ruins seven times during its 5,000-year history[1]. Therefore, development of Beirut should be interpreted not as an ideal conclusion, but rather a work in progress.

It is a necessity for Beirut, and Lebanon, to have a solid understanding of its culture to move forward as identity of the citizens are closely bounded with their culture. A stable foundation for remembrance, awareness and recollection of cultural heritage is currently missing. In combination with external factors accelerating the cultural loss, lack of preservation is the main threat against maintaining a shared heritage which unites the community.

1 Marilyn Raschka, "Beirut Digs Out," Special Report Beirut - Archaeology Magazine Archive, July 4, 1996, IPAGEI, accessed November 12, 2021, https://archive.archaeology.org/9607/abstracts/beirut.html)

Keywords:
preservation through digitalization
inclusion through digitalization
inclusion through creative culture
digital archive for heritage

culture (n) | cul·ture
the beliefs, customs, arts, etc., of a particular society, group, place, or time

heritage (n) | her·i·tage
something transmitted by or acquired from a predecessor : legacy, inheritance, tradition

archive (n) | ar·chive
a repository or collection especially of information

digitalization (n) | dig·i·tal·i·za·tion
the process of converting something to digital form

digital (adj) | dig·i·tal
composed of data in the form of especially binary digits

preservation (n) | pres·er·va·tion
the activity or process of keeping something valued alive, intact, or free from damage or decay

POST-DIGITAL DEPOT

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01

CULTURE UNITES PEOPLE

MY GOVERNMENT DID

Lebanon's history is marked by destruction. In Beirut, wounds from the past, in the form of bullet holes and bomb shelters, stand beside sleek modern high rises and historical buildings.

Beirut – as a Port City

Beirut's harbor character, geopolitical location, and economy focusing on trade contributed to the richness of its culture along with its rich history and traditions. Despite complex ethnical, religious and cultural dynamics of the city, people from different and sometimes conflicting backgrounds manage to live together through mutual respect and indulgence. Around early 20th century, Ottoman Empire transformed Beirut from an insignificant port to an imperial administrative center resulting in the trading activity shifting from interior to coastal region[1]. The formation of international harbor contributed to the development of its unique community. When conflicts arouse within different groups 5 decades later with the Civil War in 1975, the key element that united Beirutians was their strong shared heritage.

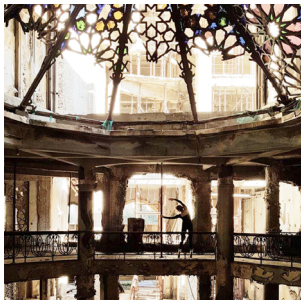
Culture unites people. During the three most significant destructive events in the close history of Beirut: the Civil War (political), the 2019 Protests (economic crisis) and the 2020 Blast (disaster), arts and cultural scene was utilized as the primary medium to manifest, protest and join forces.[2]

1 Kristin V. Monroe, "The Privatized City," in The Insecure City: Space, Power, and Mobility in Beirut (Rutgers University Press, 2016), 2)

2 Habre, Olga. "Museum Rising." Executive Magazine. July 16, 2021. Accessed November 12, 2021. https://www.executive-magazine.com/life/art-culture/museums-galleries/museum-rising.

1975-1990
THE CIVIL WAR
POLITICAL UNREST

2019
THE OCTOBER REVOLUTION
ECONOMIC CRISIS



2020
THE PORT BLAST
DISASTER

The Civil War

Architecture and built heritage have strong power as cultural objects because they hold values and memories of people. During the war, prominent landmarks of the city: Holiday Inn Hotel and the Egg were targeted by groups as the main mediums of showcasing power[1]. Holiday Inn Hotel was taken over by first Christian forces and then the militias.[2] The Egg, designed as the cinema building in 1965 was transformed into a military base and was not completed ever since. Today, heavily scarred, it stands as a witness of Beirut's turbulent history.

The October Revolution

2019 Protests arouse as a response to the economical crisis and consequtively governmental policies of heavily privatizing institutions and public spaces, leaving no room or budget for art. In response, artists hosted unauthorized concerts with massive audiences and ghost operas to reclaim their space for culture which the government lacked to provide.3 The Egg, was again at the center of the protest, and served as the base of rebellion. For the Grand Theatre of Beirut, another ruin of the Civil War, citizens raised their voices against the lack of preservation and utilization of the facility, making it a vibrant spot for the act; using it as the backdrop for their selfies and videos of the protest4. Street art and graffiti expanded through the whole city. Cathedrals and mosques became centers of gathering and discussion as the last remaining bits of public space.

The Port Blast

Following the catastrophic blast in Beirut's port in 2020, Lebanese government failed to deliver justice to its citizens.5 Today, more than a year later from the event, still no one is held accountable. As the investigation was interfered by political leaders and concerns against the objectivity of the judge, the citizens raised their voices through protests and street art.6 "Resist", "change", "hope" are the most prominent keywords on the graffiti7. They state "My government did this" with the hope of "Beirut will rise"(Figure 2: Street Art in Response to Beirut Port Blast)8.

During the Civil War, architecture was the medium to unite people for political ideologies. With the October Revolution, performing arts became the main cultural scene for uniting the community after the economic crisis. Lastly, following the disaster of Port Blast, citizens raised their voices through street art and grafitti. Even though the events and mediums of response changed, culture united Beirutians together.

1 Zeina Maasri, digital image, Signs of Conflict, 1977, accessed November 12, 2021, http://www.signsofconflict.org/Archive/poster_details/1406)

2 "Beirut's Bullet-riddled Holiday Inn - a History of Cities in 50 Buildings, Day 28," The Guardian, May 01, 2015, accessed November 12, 2021, https://www.theguardian.com/cities/2015/may/01/beirut-holiday-inn-civil-war-history-cities-50-buildings)

3 Jad Mouawad, "In Beirut, Cultural Life Is Another War Casualty," The New York Times, July 31, 2006, accessed November 12, 2021, https://www.nytimes.com/2006/07/31/arts/31cult.html)

4 "Lebanese Youth Are Reclaiming Public Spaces with Arts and Dialogue," International Alert, October 25, 2021, accessed November 12, 2021, https://www.international-alert.org/blogs/lebanese-youth-are-reclaiming-public-spaces-with-arts-and-dialogue/)

5 "Beirut Port Blast: Gunfire Erupts at Protest against Judge Leading Probe," BBC News, October 14, 2021, accessed November 12, 2021, https://www.bbc.com/news/world-middle-east-58901611)

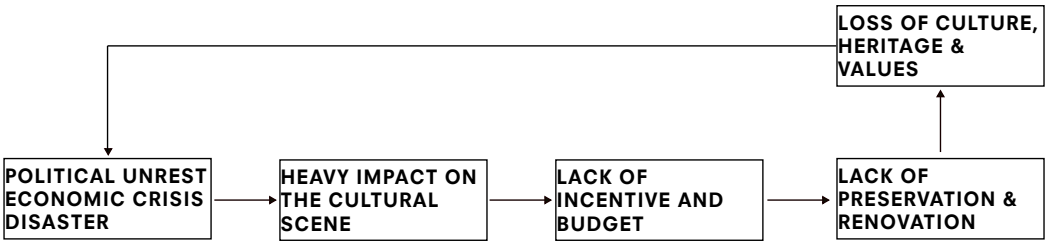
6 "Beiruts Art Scene: Before the Blast and Now," DailyArt Magazine, October 19, 2021, accessed November 12, 2021, https://www.dailyartmagazine.com/beirut-art-scene/)

7 "Art Breeds Hope, Resilience in Blast-stricken Beirut: Samar Kadi," AW, accessed November 12, 2021, https://thearabweekly.com/art-breeds-hope-resilience-blast-stricken-beirut)

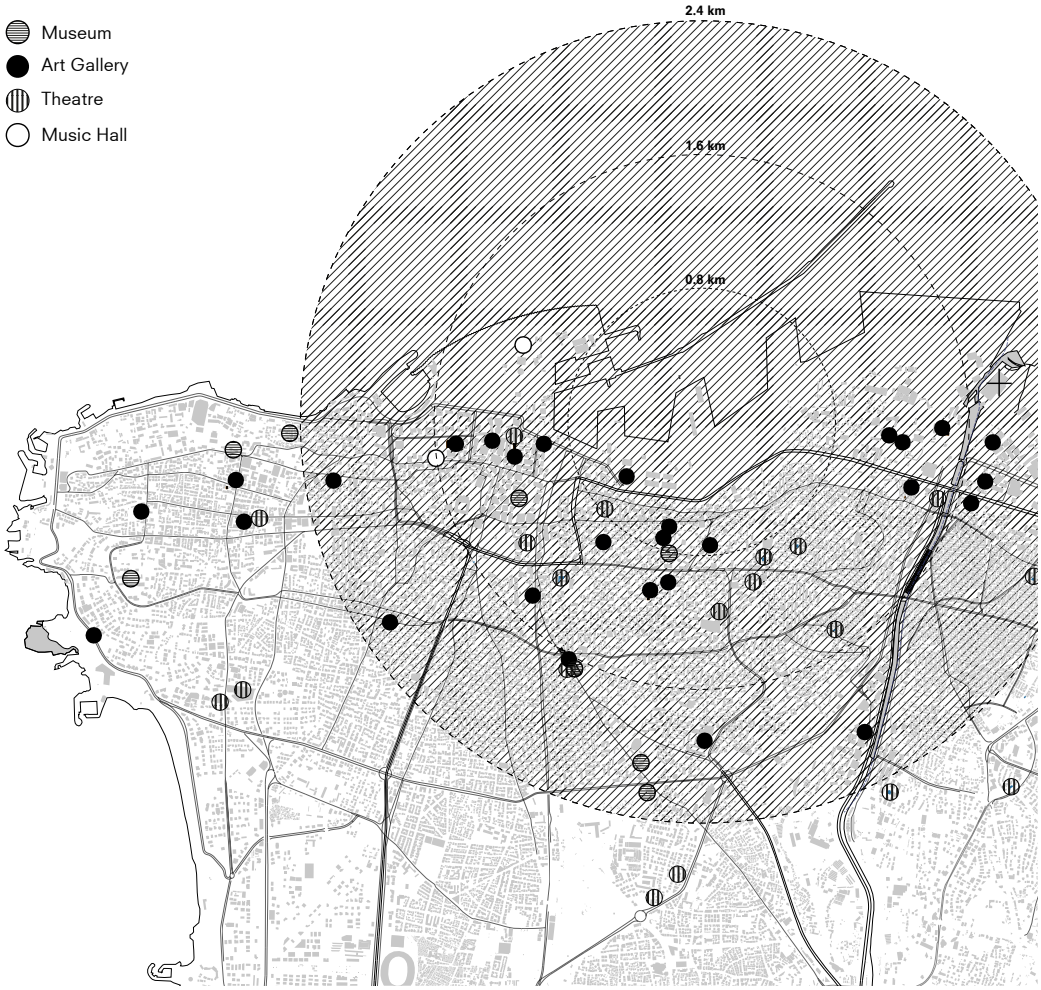
8 Kuwaittimes, "'Execute Them': Lebanese Protesters Demand Revenge after Deadly Blast," Kuwait Times, August 09, 2020, accessed November 12, 2021, https://news.kuwaittimes.net/website/execute-them-lebanese-protesters-demand-revenge-after-deadly-blast/)

02

CITY OF RUINS

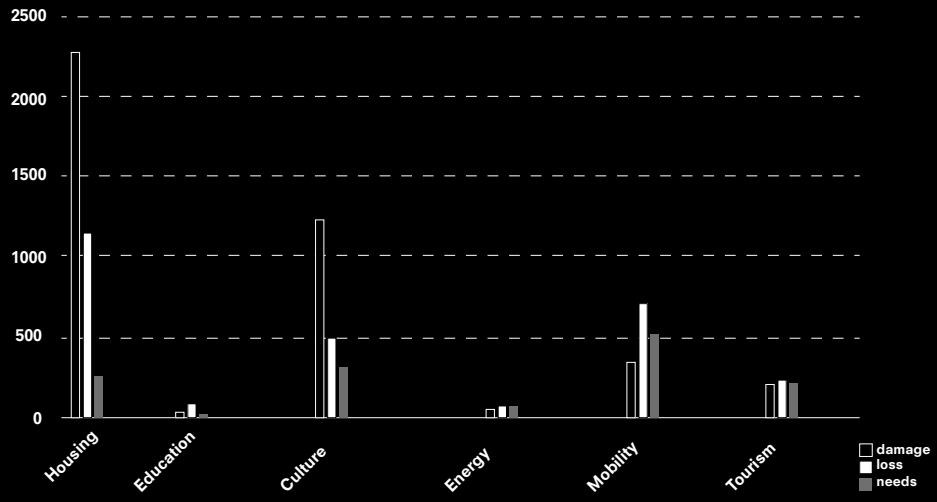


loop of ongoing ruin



due to 2020 port blast, **650** cultural heritage sites were damaged in Beirut

Post-blast Damage and Loss, Beirut Port Explosion
Damage, Losses, and Public Sector Needs by Sector (in US$ million)



source: World Bank Group, "Beirut Rapid Damage and Needs Assessment (RDNA) - August 2020," World Bank, June 15, 2021, accessed November 12, 2021, https://www.worldbank.org/en/country/lebanon/publication/beirut-rapid-damage-and-needs-assessment-rdna---august-2020)

Culture unites people, but it is also one of the most heavily damaged sectors under unrest. When a space is damaged so too is the creativity that resides there. "In circumstances as dire as in Beirut, the cultural sector is the first to crash and the last to heal."1 As a result of the Civil War, the city's most prominent architectural landmarks and cultural facilities were destroyed. As a result of the blast, after housing, culture was the area of highest damage and loss (Figure 3: Post-blast Damage and Loss, Beirut Port Explosion)

The blast destroyed historical architecture and many museums including the artworks within (Figure 4: Ruins of Beirut). Due to lack of budget these ruins are struggling to be restored.2 Digital tools have the potential to preserve the memory of this heritage through mapping and virtual reality when restoration is not feasible. Sursock Museum, Sfeir Semler Gallery, Marfa Projects are some of the most significant examples due to their proximity to the blast. Yet, Beirut is not the only place where disasters damaged cultural scene. In history there are many examples where disasters resulted in loss of heritage. Burning of the Library of Alexandria erased the knowledge of ancient world.3 Fire of Cathedral of Notre Dame erased a piece of historically, architecturally, and spiritually outstanding universal heritage4. Another example, during the burning of Bouwkunde many students and professors lost their archives. Unexpected events and disasters take layers of knowledge and culture away.

What is worth preserving and storing among the cultural heritage of Beirut? Domains of instability require means of preservation. Threats forced humankind to build shelters and storage facilities throughout the world. Potential threats on tangible objects tend to transform into conservational measures faster than for ephemeral ones. At this point the question arises: what is worth preserving? To elaborate on this question, number of case studies regarding storage and preservation of various objects will be tackled (Figure 5: Means of Storage).

2 Gareth Harris, "A Year on from the Devastating Beirut Blast, the City's National Museum Slowly Reopens," The Art Newspaper - International Art News and Events, September 28, 2021, accessed November 12, 2021, https://www.theartnewspaper.com/2021/08/03/a-year-on-from-the-devastating-beirut-blast-the-citys-national-museum-slowly-reopens)

3 Richard Ovenden, "The Real Lesson of the Burning of the Library of Alexandria," Time, November 17, 2020, accessed November 12, 2021, https://time.com/5912689/library-of-alexandria-burning/)

4 "Fire at Notre-Dame Cathedral in Paris: "UNESCO Stands by France to Safeguard and Rehabilitate This Historic Heritage of Outstanding Universal Value"," UNESCO, April 25, 2019, accessed November 12, 2021, https://en.unesco.org/news/fire-notre-dame-cathedral-paris-unesco-stands-france-safeguard-and-rehabilitate-historic)

“BEIRUT, MORE THAN LÉBANON, IS A CENTRAL PLACE FOR THE WHOLE REGION. IT REPRESENTS A FREE CULTURE THAT IS BEING ENDANGERED TODAY. THE SURVIVAL OF BEIRUT MEANS THE SURVIVAL OF THIS PLURALITY, DIVERSITY, TOLERANCE, CULTURE, AND FREEDOM OF EXPRESSION”

03

THE ART OF STORAGE

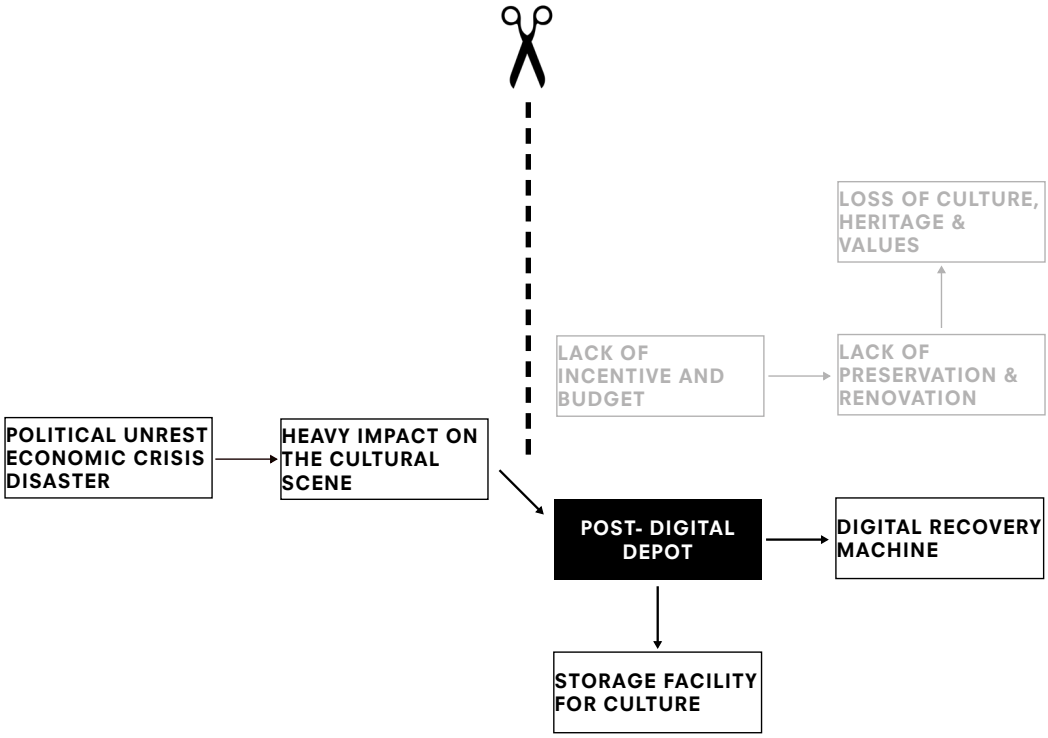
92,750 ARTWORKS
TOTAL PERMANENT COLLECTION OF MUSEUMS IN BEIRUT

150,000 ARTWORKS
TANGIBLE DEPOT

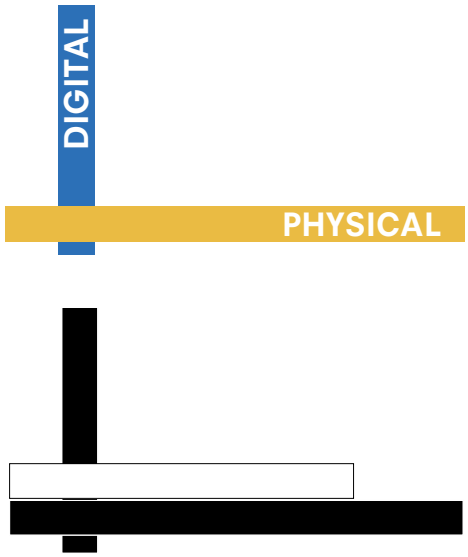
25,000 ARTWORKS
TOTAL TEMPORARY EXHIBITIONS IN GALLERIES & ART SPACES

2,000,000 ENTITIES*
DIGITAL DEPOT
2,000 TB (1 GB/ENTITY)*

20,000 ARTWORKS
LOST IN THE AUGUST EXPLOSION

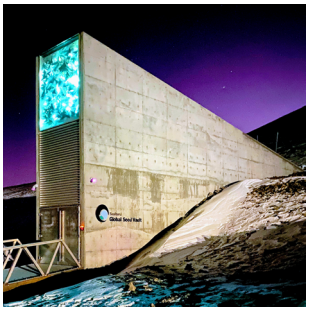


break the loop

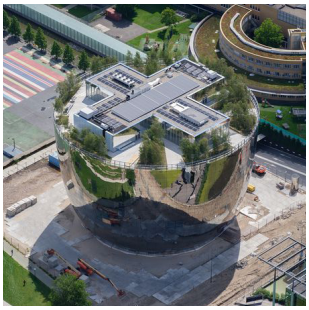


a storage facility for culture through
physical and digital means

storage for crop diversity
(food)



storage for cars
(mobility)



storage for art
(culture)

storage for data
(information)

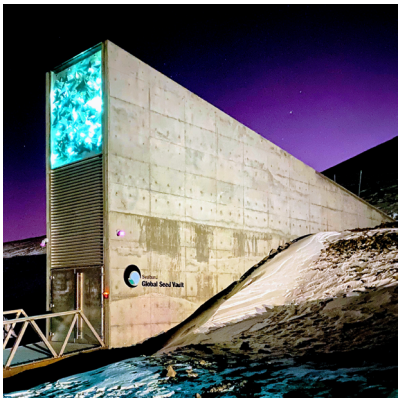
The analyzed case studies show that humans tend to store what is essential to their ways of living: food, mobility, culture and information... These facilities have the core purpose of providing permanence and safety on the preserved subject. Therefore, they are most of the time secluded, isolated, and not easily accesible. The Post-Digital Depot aims to challenge this inaccesibility.

Despite being located on entirely different locations and storing unlike objects, these facilities show great similarities in the way the spatial program is designed. Case studies show that the depot typology has great freedom in terms of exterior architectural expression although focusing on efficiency in the interior layout: spaces with gridal layout, maintained with stable temperature and humidity; in a way trying to stop time against decay.

On the other hand, culture is preserved and transmitted through the communities' memories, customs and ways of doing. Culture unites people. Culture makes people who they are, giving individuals a sense of belonging. In the previous chapter of the article, it is argued that unrest and disasters significantly impacted the cultural heritage of Beirut. The government did not take the initiative to fight against this loss. When combined with lack of funding and economic crisis, the cities ruins became open to decay. As a response, the following question arouses: Can culture be stored in a depot against unforeseen threats, the same way seeds, books, cars, and information is stored? If so, what should be the tool to transform an entity into architectural space.

Svalbard Global Seed Vault is a long-term storage facility for seed. It is built to challenge natural and man-made disasters to protect and represent the world's collection of crop diversity.[1] The Seed Vault initiated with the aim of becoming a back-up facility for seeds and provides samples throughout the world. It is located on a remote island halfway between mainland Norway and the North Pole. The building is designated 100% for preservation of the samples and has no recreational or interactive purpose for humankind.[2] Yet, the interest of public towards the peculiarity of the archive resulted in an additional facility in which visitors have the opportunity to engage digitally with the storage.[3]

The need for preserving crops is almost evident as humans need food to survive. Storing objects is a mundane daily activity. For example many Dutch houses include sheds in their gardens for things not worthy enough to be kept inside houses.



1 "Svalbard Global Seed Vault," Crop Trust, August 23, 2021, accessed November 12, 2021, https://www.croptrust.org/our-work/svalbard-global-seed-vault/)

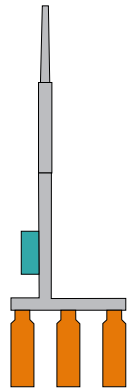
2 "Norway: 'Doomsday' Vault Where World's Seeds Are Kept Safe," Time, accessed November 12, 2021, https://time.com/doomsday-vault/)

3 "The Arc – a Visitor Center for Arctic Preservation Storage in Svalbard," Snøhetta, accessed November 12, 2021, https://snohetta.com/project/469-the-arc-a-visitor-center-for-arctic-preservation-storage-in-svalbard)

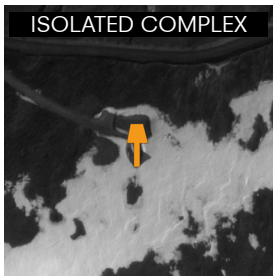
Type: storage for crop diversity
Location: the North Pole
Coordinates: 78.2357° N, 15.4913° E
Footprint: 1,775 m2
GFA: 1,775 m2
Height: 10 m

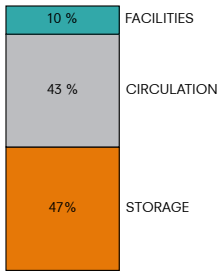
SVALBARD GLOBAL SEED VAULT

MONUMENTAL MONOLITH



ISOLATED COMPLEX





Another example highly integrated with everyday life is parking lots. In Beirut, there are 48,990 spots for parking measuring up to 1,224,750 m2 of the urban space.1 This is equal to more than 170 soccer fields. The fact that parking lots are a big part of urban environment make it an intriguing case study for the research as the city becomes a storage facility for cars. "A car park is a public facility, like a train station or an airport, where people change from one mode of transportation to another."2 In the project **1111 Lincoln Road**, Herzog de Meuron shows that even the most utilitarian storage facility has the potential to become public and engaging for the user.

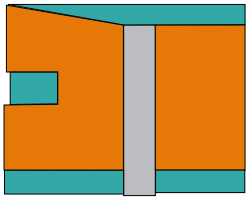
1 Adib Haydar, ""Unparking": How Can Smart Mobility Reduce Parking Demand in Our Cities to the Minimum? (Beirut Case Study)," MDPI, March 29, 2020, accessed November 12, 2021, https://www.mdpi.com/2624-6511/3/2/10/htm)

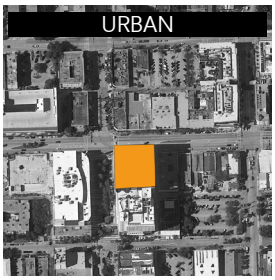
2 "1111 LINCOLN ROAD," HERZOG & DE MEURON, accessed November 12, 2021, https://www.herzogdemeuron.com/index/projects/complete-works/276-300/279-1111-lincoln-road.html)

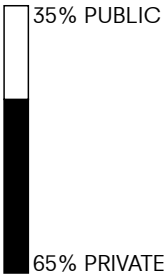
Type: storage for cars
Location: Miami Beach, Florida
Coordinates: 25.7907° N, 80.1408° W
Footprint: 2,500m2
GFA: 22,575 m2
Height: 35 m

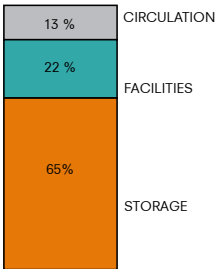
1111 LINCOLN ROAD

MONUMENTAL MONOLITH



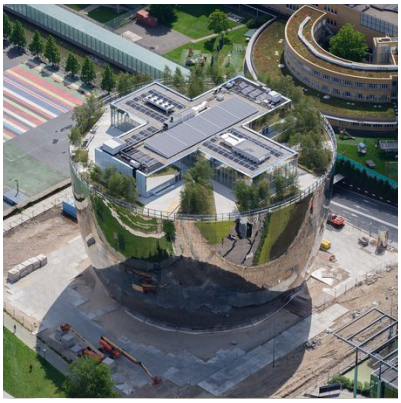






The degree of collectiveness and inclusion in storage facilities is dependent on the safety of the stored subject and its value for the community it is placed in. For example, libraries most of the time are civic facilities open to public, located centrally in cities.1 The library functions as a storage facility for books in which the visitor is given the opportunity to interact with the archive. This interactivity decreases significantly as the archived product becomes more rare and higher in value which results in museum archives being more enclosed and secluded from the society in comparison to libraries. It can be concluded that the type of storage depends on the stored material.

Depot Boijmans van Beuningen challenges the enclosed nature of art depots making the whole art collection accessible to the public. Presently museums can showcase a limited ratio of six to seven per cent of their collections in exhibitions whereas the remaining 94 percent is hidden in storage.2 In response MVRDV proposes an unprecedented typology, opening up 100 percent of the storage facility to the public. The result is cultural objects: paintings, sculptures, installations and digital media; stored in a depot open for interaction and experience apart from curatorial process of museums. Without the curatorial process, the archive becomes raw and unedited. Therefore, the experience is personal rather than directed.



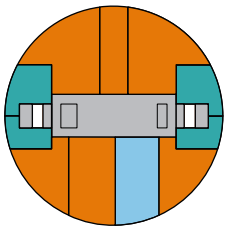
1 "Planning the Public Library," American Planning Association, accessed November 12, 2021, https://www.planning.org/pas/reports/report241.htm)

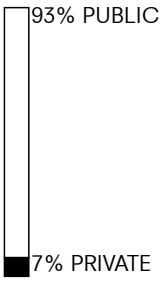
2 "Depot Boijmans Van Beuningen," MVRDV, accessed November 12, 2021, https://www.mvrdv.nl/projects/10/depot-boijmans-van-beuningen)

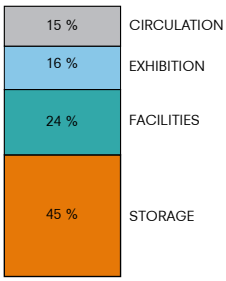
Type: storage for art
Location: Rotterdam, the Netherlands
Coordinates: 51.9138° N, 4.4712° E
Footprint: 1,800 m2
GFA: 10,609 m2
Height: 30 m

DEPOT BOIJMANS

THE POT







Data centers also provide raw archiving of information, yet through digital means. They function as spatial counterpart of online activity and heart of digital infrastructure.1 Google Data Center in Finland, designed by Aalvar Aalto is a unique example in which as an additional layer to the enclosed, non-human oriented nature of this mechanical building typology a public programme, sauna, is added.2 The data center works as the infrastructural facility of the company for providing information for the greater Nordic region. The Sauna works for the local community as a public facility. Two strongly unrelated functions co-exist in harmony.

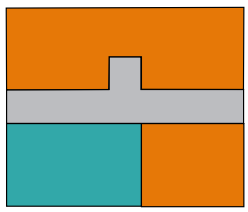
1 "What Is a Data Center?" Dutch Data Center Association, October 03, 2017, accessed November 12, 2021, https://www.dutchdatacenters.nl/en/datacenters/what-is-a-data-center/)

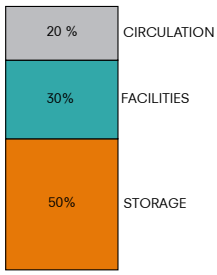
2 Steven Levy, "Where Servers Meet Saunas: A Visit to Google's Finland Data Center," Wired, October 24, 2012, accessed November 12, 2021, https://www.wired.com/2012/10/google-finland-data-center-2/)

Type: storage for data
Location: Hamina, Finland
Coordinates: 60.539 N, 27.114 W
Footprint: 28,800 m2
GFA: 172,223 m2
Height: 15 m

GOOGLE'S FINNISH DATA CENTER

THE POT



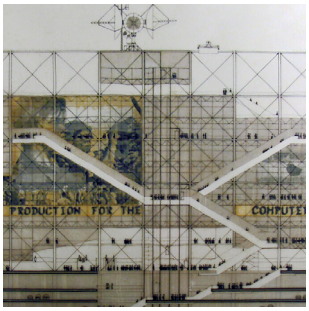


04

DIGITALIZATION

AS A TOOL FOR
PRESERVATION + INCLUSIVITY
OF CULTURAL HERITAGE

HOW CAN DIGITALIZATION BE UTILIZED FOR PRESERVATION AND ACCESSIBILITY OF CULTURAL HERITAGE OF BEIRUT?


PRODUCTION FOR THE

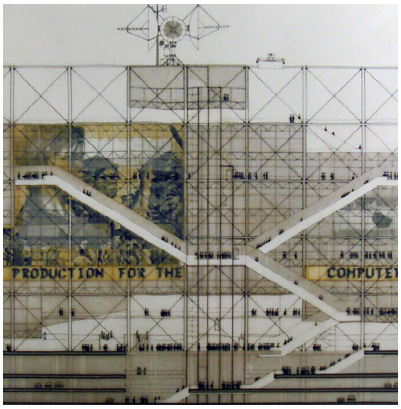
What should be the tool to transform an abstract entity into architectural space? Digitalization has a great potential to be the tool.

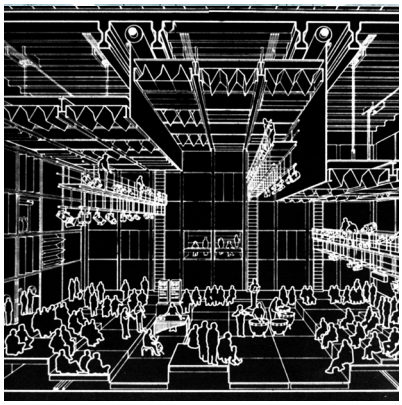
In La Biennale di Venezia, 2021 Irish, Australian and Russian pavilions opted for integration of digital tools within the architectural environment. Artists such as Elias El Soueidi are working on developing VR technologies to rebuild ruins into reality. These experiments show a potential of architectural and cultural experiences extending beyond the limitations of physical world. Integration of a new cultural typology into the context of Beirut has the potential to strengthen bonds of community through their shared heritage and becoming a prototype for war-torn cities. Even though these tools are incapable of totaly replacing ruined physical space, they provide the opportunity to have a glimpse, an impression.

Architectural practices have already begun experimenting with a new typology in which digital is a layer of built environment. OMA's Zentrum fur Kunst und Medientechnologie "is an experiment, a Darwinian arena where different media - classical and futuristic - can compete and influence each other" 1. The co-existence of elements under mutual influence result in hybridity of architecture and technology. In the project Multimedia Building, OMA raises the question: "How can a building bridge the gap between the local reality of architecture and the global presence of media?"2 The design is similar to a computer where the hardware and software function together. The EYEBEAM Institute, approached art similar to the functioning of digital informatics: an ongoing investigation of production and consumption3. With Kansai Kan, the discussion is taken one step further: "architecture should disappear into Cyberspace or to define what is public in a new way in order to stay relevant"4

These experiments show that although digital and physical entities appear to be paradoxical and conflicting, the outcome of their superposition is a new hybrid.

1 "Zentrum Fur Kunst Und Medientechnologie," OMA, accessed November 12, 2021, https://www.oma.com/projects/zentrum-fur-kunst-und-medientechnologie)

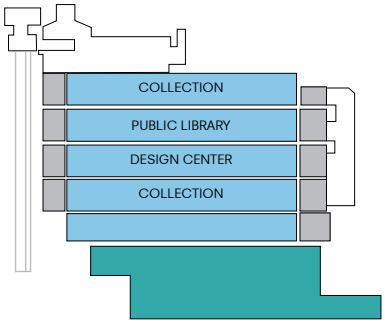

PRODUCTION FOR THE

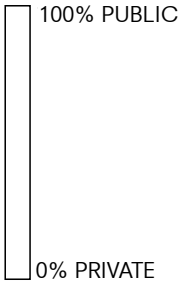


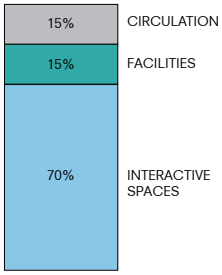
Location: Paris, France
Coordinates: 48.8606° N, 2.3522° E
Footprint: 9,960m2
GFA: 103,305 m2
Height: 42 m

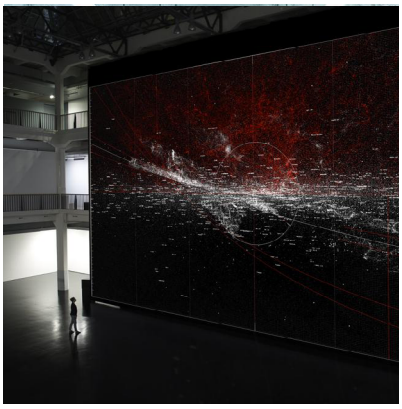
CENTRE POMPIDOU

HIGH RISE LANDMARK





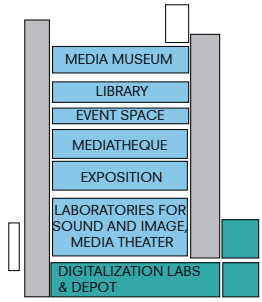


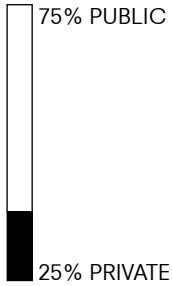


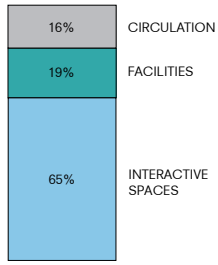
Location: Karlsruhe, Germany
Coordinates: 49.0012° N, 8.3832° E
Footprint: 15,000 m2
GFA: 51,700m2
Height: 18 m

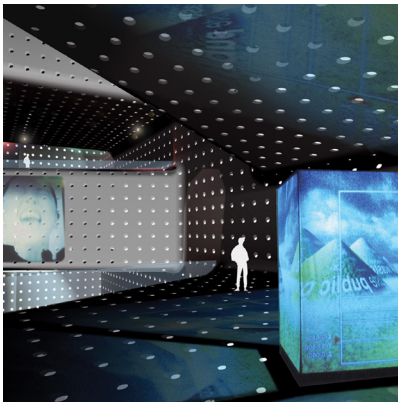
ZENTRUM FUR KUNST UND MEDIENTECHNOLOGIE

MEDIA BOX





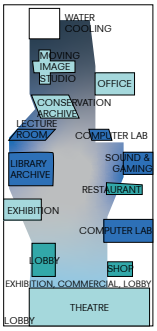


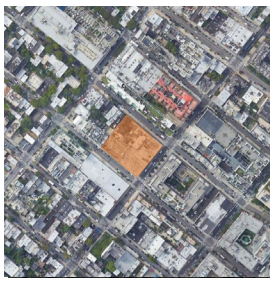


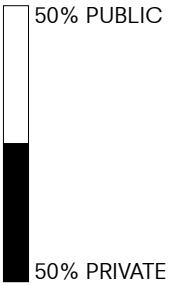
Location: New York, USA
Coordinates: 40.7180° N, 73.9618° W
Footprint: 1,000 m2
GFA: 8,200 m2
Height: 42 m

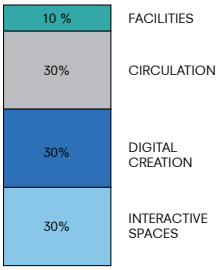
EYEBEAM INSTITUTE

HIGH RISE LANDMARK





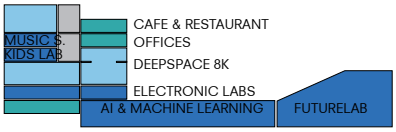


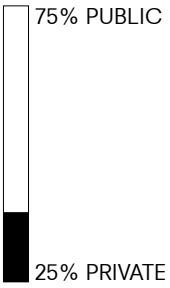


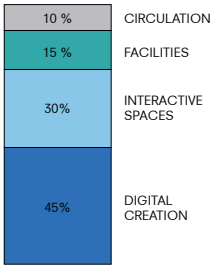
Location: Linz, Austria
Coordinates: 48.3097° N, 14.2843° E
Footprint: 1,500 m2
GFA: 6,000 m2
Height: 21 m

ARS ELECTRONICA CENTER

DIGITALIZED FACADE







QUALITIES

LOCATION

URBAN - HIGH DENSITY

EXPRESSION

MONUMENTAL

ENCLOSED

HIGH RISE LANDMARK

DIGITALIZED FACADE

PUBLIC | PRIVATE

PRIVATE + PUBLIC HYBRID

INTERIOR SPACE

OPEN PLAN - FREE INTERPRETATION

FLUID CIRCULATORY SPACE

FLEXIBLE & FUNCTIONAL GRID

CENTRAL CIRCULATION

Beirut is a city constantly under-construction and on-going unrest. The Civil War, the October Revolution and the Blast made it clear that culture of the city is what ties them together through crisis. Yet, the cultural scene is strongly subject to decay, for which there should be action taken upon. Beirut needs a civic cultural storage facility to tie the citizens together and preserve their identity through turbulent times. Storing and preserving the culture ensures survival of Beirut's plurality and diversity.

"Post-digital Depot" is a storage facility for culture through tangible and digital means. It functions as a recovery machine for the culture of primarily Beirut, but also the greater region of Lebanon and Middle East. The stored cultural aspects are architecture, arts (photography, painting, sculpture and literature), performing arts (cinema, theatre and music), fashion (textile and jewellery) and street art. The proposal approaches each aspect in relation to its characteristics. The tangible aspects such as arts and fashion are stored as physical objects and after renovation transformed into digital archive. Architectural objects and memories of cities, on the other hand, are approached as the experience of space to be regenerated through digital measures, in which the visitors can interact. In this way the palimpsest of city is deconstructed and reconstructed. Performing arts is utilized as an aspect to bring people together in the mediatheque. Street art is left out within the digitalization process and integrated within the outdoor spaces of the building, in order to ensure maximum, uninterrupted accessibility.

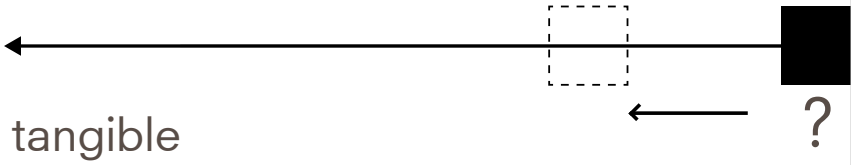
The building aims to preserve culture through digitalization, therefore its program is a transformer of culture into a database accessible beyond the physical limitations of the project itself. Different objects enter the line of transformation in different phases dependent on their characteristics. In other words, a sculpture and cinematic piece are approached differently within the preservation.

Digitalization offers a great potential within the process of preservation. The concluding design question: "How does preservation through digitalization translate into architecture?" is the outcome of this research and will be the basis of upcoming design proposal.

PHYSICAL

HYBR

ARCHIVE

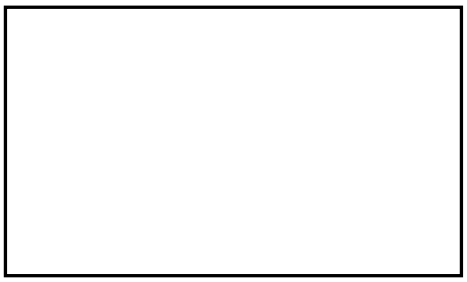


100 % tangible

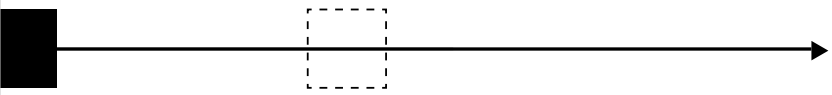
10 % public
90 % private

DIGITAL

BRID



DATA CENTER



?

100 % digital

0 % public
100 % private

CENTER
GROUND 0
HARBOUR
SUBURB

05

SITE
ANALYSIS

A harbor is a strategically positioned point of exchange. It functions as a safe place of transfer for goods, but also for people and cultures. Functionally, a harbour is a place on the coast where ships shelter, especially one protected from rough water by piers, jetties, and other artificial structures. It can function as a logistic industrial space such as container terminal or a leisure-oriented space like a marina. The harbour of Beirut is the main harbour in Lebanon on Beirut's northern Mediterranean coast. It was one of the largest and busiest harbours on the eastern Mediterranean, also one of the most important logistical hubs providing a strategic link between the markets of Asia, Europe, and Africa. The harbour was then a major contributor to GDP and job creation in the trade, transport, and logistics sectors. Beirut was built as a port city shaped around its harbor. The character of harbor and resultantly the city, transformed over the years from an insignificant port to an international center resulting in the trading activity shifting to coastal region. The acceleration of activity in the harbor resulted in its growth.

Port of Beirut with numbers
82% of Lebanon's imports and exports $250 Million generated from fees each year 300 Ports around the world connected 1.5 Million Containers per year 4 Basins and 16 piers

Beirut, Anchored
The port is one of the most significant elements of the identity of Beirut. An independent port which is efficient, well connected with the city, providing public space for a healthy community and contributing towards a sustainable future is the key to move Beirut forward. An independent Beirut means a stable Beirut. The current state of Harbour of Beirut serves countries using it for transshipment, polluting the surroundings and taking up public space. Beirut Anchored, is a strategy tackling a sustainable and independent notion of port. It is a proposition to prevent it from slipping away, anchoring Beirut.

Port Comparison
Compared with Shanghai Port, the world's largest port, and Rotterdam, Europe's largest port, the scale of Beirut Port is not that large. But compared with other ports in the Mediterranean region, this is already a larger port. And as an important transfer hub in the east part of the Mediterranean, it provides a large amount of maritime trade support for this area.

The site is located on the border between Beirut and Greater Beirut. The chosen site, is intersecting the historical centre, the port and potential development. The area is highly intersected by the river and highways, which form hard borders, creating different zones with each their distinct characteristics.

It can provide a better connection between the city and the suburbs. Additionally the river that runs through the area, next to border between Beirut and Greater Beirut and ending up at coastal waters. The stream provides a natural element that can add quality for the urban context. Furthermore the area is next to the operational container terminal, which is the backbone for the national and the regional economy, as well as the strategic connectivity of the port with foreland and hinterland. Moreover the river and highways form hard borders, creating different zones with each their distinct characteristics. The diverse neighbourhoods create a sense of variety on the site. These neighbourhoods can benefit from each other's strengths, therefore is has a great potential. For example like the former refugee camp "Karantina" which is located in an industrial area. It is still considered a polluted troublesome, predominantly lowincome, mixed-use residential, commercial, and semi-industrial neighbourhood. It was also heavily damaged by the explosion in 2020. Therefore future development can help the area and people themselves.

We investigated sites along the shoreline in relation to the harbor. A harbor can be interpreted as an intersection connecting flows of goods, people and culture. The richness of the diversity of this area has the potential to function similarly. Through implementation of diverse programmatic elements we aim to achieve an inclusive plan for the site.

Harbour
The 2020 Blast demolished a big area of the port, mainly the storage facility of the port where destroyed

by the blast. Impacting the harbour in its functioning. Besides the storage function, the Port of Beirut is mainly functioning as a trans-shipment harbour, which means that the Harbour of Beirut is used as an intermediate destination. From he the goods are being placed on a other ship and being transferred to the final destination. This results in that the harbour not benefitting the city because the ships are only passing by. The Port of Beirut is connected to the city only through vehicular transportation. Making the mobility systems not pedestrian friendly. This also creates multiple problems in the surrounded neighbourhoods. For instance, Sidewalks are used as an informal parking space, blocking the means of passing through the roads for pedestrians. Karantina is highly serving the vehicular transportation system with truck service facilities and parking lots. This results in the accumulation of trucks on the highways in close vicinity. The existing situation is not ideal. An ideal harbour is efficient, well-connected, serving the public, and producing minimal pollution. Beirut Anchored proposes a 5 step scenario focusing on these themes.

Landfill
The landfill was created as a trash dump for the city. Being the ex-trash dump of the city, the area is highly toxic. It is isolated from is surroundings because of the hard borders and the surrounded industry. The landfill was created, because the municipality was planning to extend the harbour on the landfill. But, there is still a lot of trash on the area. The area has a negative reputation due to its history of being the garbage dump of Beirut, with toxic leakage to both soil and sea. Leakage is estimated 120,000 tons of leachate annually and as a result the water is covered with phytoplankton. With recent sanitation efforts and new land reclamation, empty land offers some potential for development of Beirut outside the city center. Winding coastline of 3.6 km offers a long strip with potential activities, yet the toxicity makes it harder to achieve a pleasant environment.

Karantina
Karantina is a former refugee camp on the edge of the city. The cities grew in patches through its refugee camps resulting in isolated communities, such as Karantina. Lack of connectivity is a significant struggle in the area, as a result Karantina is isolated from its surrounding districts. Because of the isolation, residents of Karantina lack the public facilities they need. Not only the hard border like the roads creating this isolation. Karantina contains a variety of non-residential functions, including commercial, industrial and civil functions. These surrounding functions create barriers between residential zones preventing the sense of community.

Industrial Zone
The industrial area lacks of sustainable Industrial facilities. The industrial area contains only facilities which polluting the area, like oil industry and steel industry. In combination with the industrial waste and toxic landfill leakage, these processes are polluting the area. The streets have a high car dominated character making it not pedestrian friendly and dividing the area into three strips resulting in segregation. also partly due to functions, the area is very private, leaving the public out

Bourj Hammoud
The residential area Bourj Hammoud, is a former Armenian refugee camp, which was the urban print for this neighbourhood. This results in one of the most dens neighbourhoods of Beirut, with a total number of 118,083 inhabitants. The neighbourhood is characterised by small streets, low residentials houses and the economic activities as craftsmanship's, stores and markets. The neighbourhood is mostly car orientated and there is almost no public space, making it not pedestrian friendly.

Rmeil
The residential area Rmeil, is located on the left corner of the area. It contains middle – low income houses and is like Karantina characterised by cultural and economic activities. Unlike Karantina and Bourj Hammoud it is less dense and a bit more public space. The neighbourhood, is connected with Bourj Hammoud through Armenia street. This is the main nightlife street of the city. It also contains a lot of old buildings as it is on the edge of the historical city.

Pollution
The environment suffers from heavy pollution, which include the open sewage disposal, illegal trash dump, and toxic landfill. The pollution is mainly concentrated around the river and the empty landfill. 65% of all sewage in Lebanon ends up in coastal waters, in which the Beirut River plays a large role. Pipelines are running from the neighbourhoods and industrial areas towards the Beirut River, after which the river transports the waste towards coastal waters. Other than sewage, the illegal trash dumps along the river form an additional environmental risk. The plastic waste falls into the river, ending up in the Mediterranean sea as well. Both the sewage disposal and plastic waste affect life on land and sea. Bourj Hammoud landfill was the former trash dump of the city. Therefore the ground is build up from waste, containing metal components, pesticides, oil transformers, and degraded plastics. The soil is emitting methane gas and leaking toxic chemicals into the sea, which creates a health risk for sea life and the local society.

Connectivity
Lack of connectivity is a significant struggle in the area. The highways, river and topography are resulting in hard borders interfering with the connectivity on the site. The highways are not pedestrian friendly mostly because Beirut is a car dependent city.
The river is forming a border due to its hard concrete profile and its accessibility for pedestrians. The side streets from the residential neighbourhoods are focused on cars and therefore lack the human scale which creates segregation between the neighbourhoods for pedestrians. The Port of Beirut is connected to the city only through vehicular transportation. Mobility systems are not pedestrian friendly. The passing of the trucks and heavy vehicles create busy roads and unsafe crossing points for pedestrians.
Sidewalks are used as an informal parking space, blocking the means of passing through the roads for pedestrians. The borders create detours, increasing traffic time between districts which makes using a vehicle more efficient than walking. The port area has been developing toward north in the past few decades. This development has created height differences throughout the area, mainly between the Karantina neighbourhood and the port. The height difference between these two zones is now approximately 4-6 meters and forms a visual and physical border. Due to the existing functions of Karantina (refugee camp) and the Port (transhipment port), the height difference is seen as an advantage for security reasons.

The city grew in patches which resulted in isolated neighbourhoods throughout the whole neighbourhood. This is mainly the reason segregated neighbourhoods such as Bourj Hammoud, Karantina and Rmeil exist.
Besides, the area has a strong industrial character on the north side towards the waterfront area. This industrial character plays an important role in separating the coastline from the residential neighbourhoods and pedestrians. Moreover, the location of the highways, river and the height differences disconnect these neighbourhoods even more. This results in a more car dominant city and disconnection from the waterfront area.

Harbour Efficiency
All buildings were damaged in the explosion in 2020.

Storage Inefficiency
After the explosion, all warehouses were unusable, including the country's granary. Now with part of the reconstruction and repair, this area can be operated at 65% capacity. (The world bank, 2020) This has caused the terminal to lose a large number of original warehouses. As a substitute, the goods can only be placed on the ground of the terminal. The storage capacity of goods is greatly reduced.

Logistic Inefficiency
The destruction of the storage area has greatly reduced the efficiency of trucks entering the port to upload goods, which has further led to a decline in the efficiency of truck transportation in the port. This problem is mainly reflected in the shortage of parking and the long waiting time for pick-up.

Due to inefficient logistics efficiency, a large number of parking spaces are needed at the port entrance area to accommodate trucks waiting here. The port's own truck parking space is insufficient. As a result, there is a large number of trucks occupying

0 250 500 1000

public space in the surrounding communities. At the same time, the section from the main entrance of the terminal to the entrance of the urban expressway often causes traffic congestion. In turn, it further reduces logistics efficiency.

In addition to trucks, truck drivers also need to wait for the completion of loading and unloading at the terminal for a long time. There are a large number of temporary cabins in the entrance area to provide a short stay space for the driver to rest.

Public Space

Beirut lacks public space, which is vital for its community. Public space got lost during post-war real estate development. The prime ministers aimed to make Beirut a tourist destination that could attract foreign investors. To achieve this, the city sold green and public space to developers. Real estate developers focused on making profit. Developers make the most profit when they transform the ground into as many houses as they can. Creating public space would not benefit them financially because they would need to Leave land open that could have been used for a building. With a plan for the greater Beirut, missing all these individual developments led to almost all green spaces the city had got lost. Today Beirut has 0.8 m2 greenery per capita. The WHO advises 9m2 per capita. This is a significant difference. The disappearance of public space affects the less wealthy citizens most. If you cant afford luxurious resorts, you depend on public spaces for recreation. The last remaining public areas are fenced and regulated. The city serves the rich, not the whole community. As a response to the lack of public space, the community began reclaiming leftover spaces around the streets, reclaiming what is theirs. The waterfront is not accessible either. Waterfront is developed to push the public away and serve private interest with resorts, private marinas and industrial facilities.

The proposal, Beirut Anchored, focuses on the port as an anchor between the historical city center and development on the adjacent landfill. Utilizing this zone as a fresh start the strategy focuses on the following infrastructural, social and environmental aspects:

First, the lack of connectivity and green public spaces resulted in isolated communities

Second, the toxicity of the area due to soil, river and industrial contamination.

The transformation begins as the Parking garage reorganizes the mobility scheme of the port at the entrance area, also improving the truck loading system to improve the efficiency of the port.

Following, isolated functions resulting from rigid borders are breached with green public spaces as 3 main axes. Through affordable housing, the green line will be prolonged in order to improve the connection of Rmeil and Karantina.

The cleaning of the river allows the polluted riverside to be transformed into public space and serves as a pedestrian axis for the adjoining neighborhoods towards the estuary. A new creative digital campus will be developed through a fashion creation office and post-digital depot. The fashion creation office aims to revive Beirut's fashion industry while creating workspaces for the community. Post-digital Depot translates the cultural heritage of the city into an interactive, digital database.

The green spine allows dense residential neighborhoods to breathe on the landfill. The strip is supported by residential functions cutting through the industrial border, connecting the most densely populated district in the Middle East to the waterfront. The landfill functions as a prototype of sustainable production and an equitable neighborhood with a public waterfront.

Agriculture school educates upcoming generations about sustainable methods of food production. The algae power plant in response to the current energy crisis aims to generate an independent source of energy, using seaweed and photobioreactors, powering the masterplan. These facilities function together as an eco-park becoming the backbone of the landfill.

The pedestrian promenade connects the development of the landfill with the creative estuary, port and the city. The watersports centre contributes to the goal of opening the waterfront as a recreational facility to the public. The strategy aims to blend segregated zones around the Port of Beirut into each other around the point of intersection, anchoring Beirut.

Beirut Anchored focuses on the port as an anchor between the historic city and the newly developed landfill. The proposal aims to establish improved connections with an increased amount of public space, a healthy environment and an efficient harbor. The projects will play major roles in the pursuit of these goals.

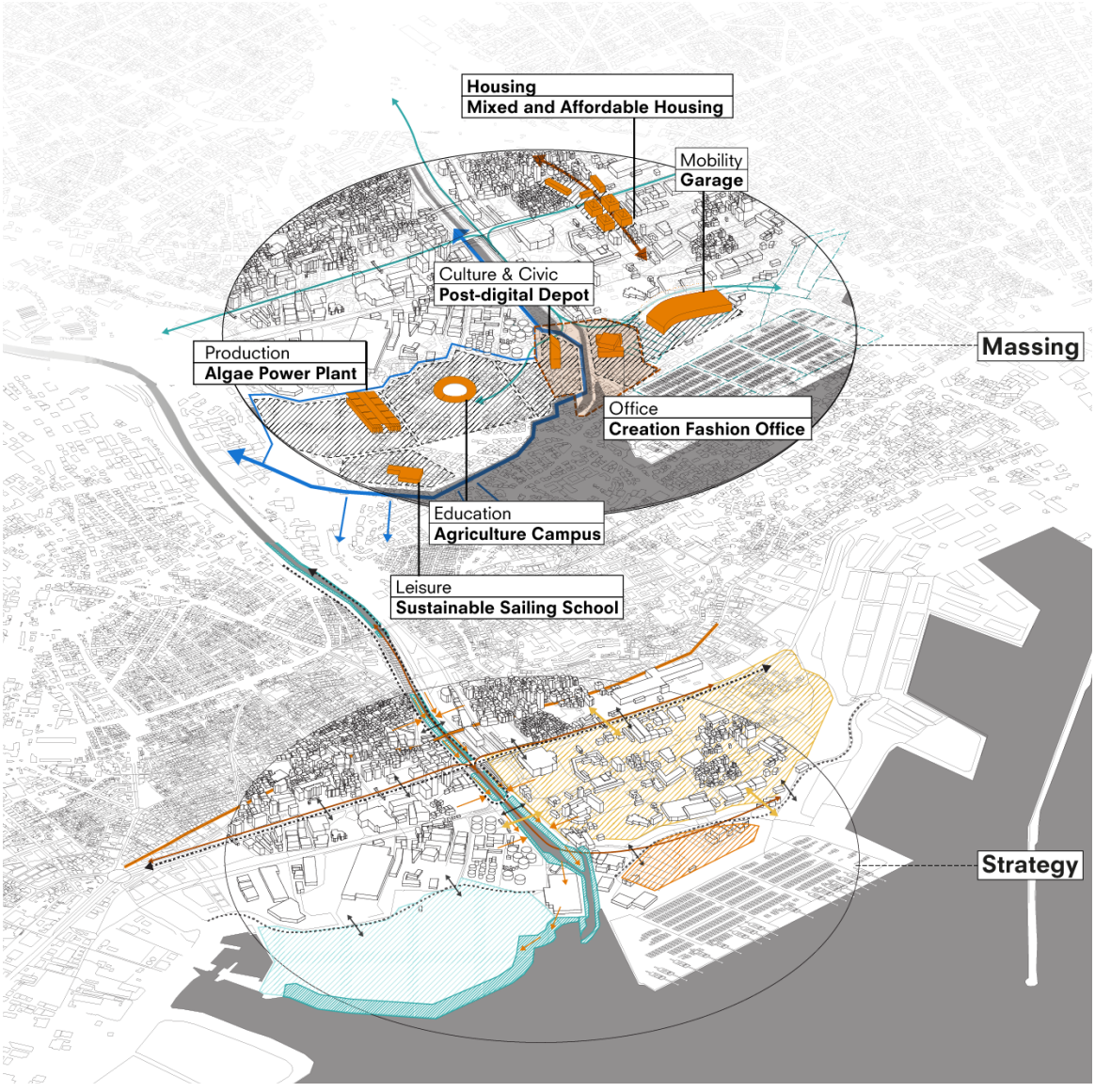
Agriculture school educates upcoming generations about sustainable food production. It aims to achieve this through the focus on crop rotation and biodiversity. The building integrates passive climate design and is built up from material collected on site.

Pollution

The polluted environment will be rehabilitated in to a sustainable production park. In order to achieve this a few measures will be taken. First, sewage system will be separated from natural water ways, addressing water pollution at its source. Second, both the leftover pollution within the water and the toxic landfill will be cleansed through the use of phytoremediation. With this technique we aim to use (hydroponic) plants to absorb pollutants from the environment, and turn the landfill into a green park. The park will focus on food and energy production which increases the area's independence. Combined with the sailing school, which recycles plastic waste from the river and coastal waters into sailing boats, these facilities aim to make a statement within Beirut that showcase a clean and sustainable future.

Connectivity

The connectivity between the neighbourhoods and for pedestrians will be improved through the establishment if small scale public spaces.


Housing
Mixed and Affordable Housing
Mobility
Garage
Culture & Civic
Post-digital Depot
Production
Algae Power Plant
Office
Creation Fashion Office
Education
Agriculture Campus
Leisure
Sustainable Sailing School
Massing
Strategy

The links from Karantina to the surrounding zones will enhance coherence of the port with the urban fabric, resulting in a hybrid transition zone.

The river basin will be utilized as the sidewalk of the city. It will function as the primary axis of pedestrian's movement from different neighbourhoods towards the waterfront area.

Armenia street, which is now dominated by cars will be transformed into a pedestrian dominated boulevard with public functions. Hence, the infrastructure will become less dominated by cars. This street will play an important role by connecting Bourj Hammoud residential neighbourhood to Rmeil.
Extra walkways and pedestrian green routes will be created throughout the whole site, which will bridge the existing highways and the river and connect the segregated areas.

Harbour
Gate area is an important entrance and exit for material exchange between the terminal and the city. However, a large number of temporary cabins and on-street parking make the entrance area of the terminal chaotic and crowded. The concentration of this entrance area reflects the inefficiency of terminal logistics and has also become a key node for improving terminal logistics. Therefore, the new regional development strategy will focus on the entrance area of the port. Relieve the logistics pressure of the port by designing a centralized parking system with larger capacity. As all freight transportation functions are concentrated in this new building, the public space now occupied by informal parking will be returned to the Karantina community, creating a more pleasant urban environment. At the same time, the concentration of traffic space also provides Beirut with more connections between the waterfront area and the inland.

As the traffic on the highway improves, urban residents have more possibilities to access to the waterfront, and the landfill space along the waterfront will also be developed due to better traffic conditions. In the end, this strategy, through the mobility reorganization of this key area, will benefit both port and the city.

Public Space
The river will be transformed into a green boulevard creating green space. It will connect the neighbourhoods to the landfill.

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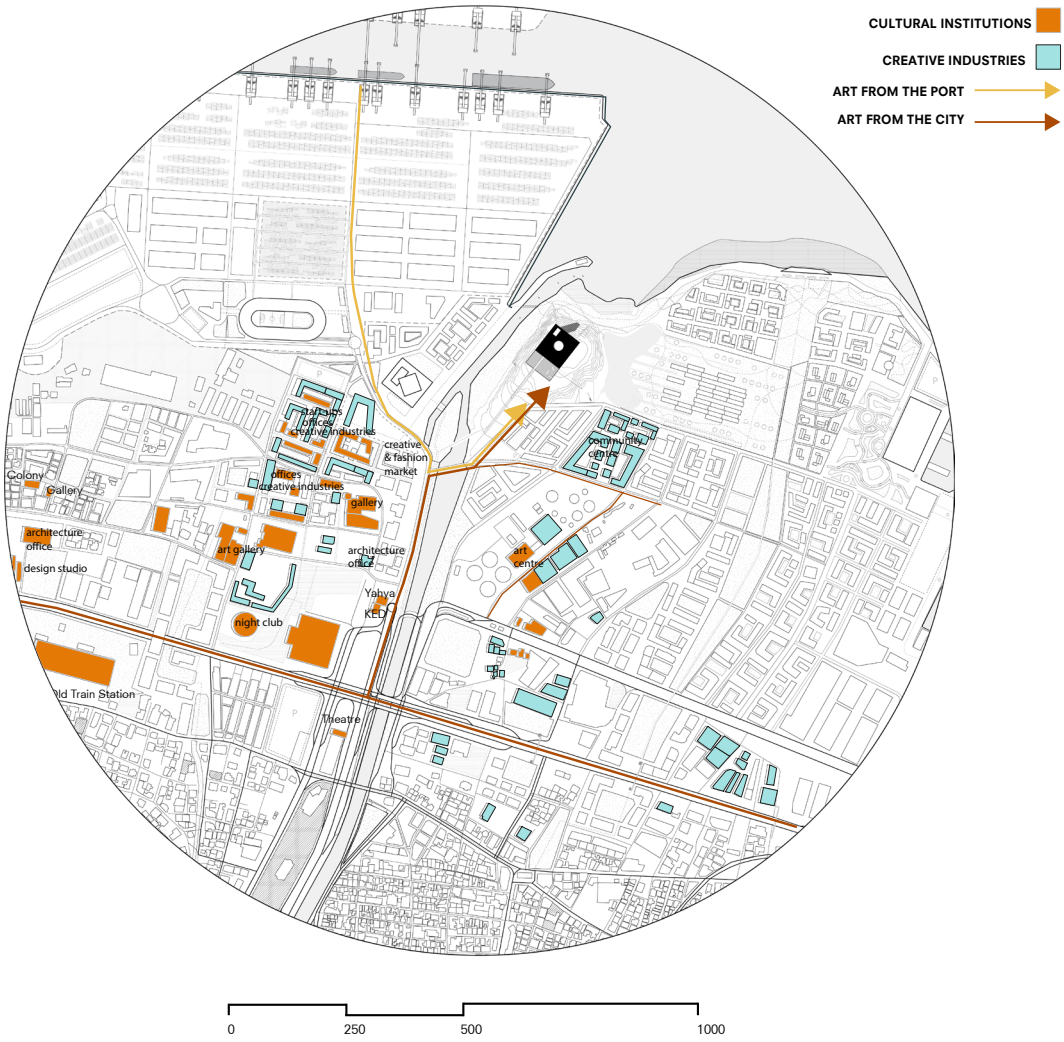
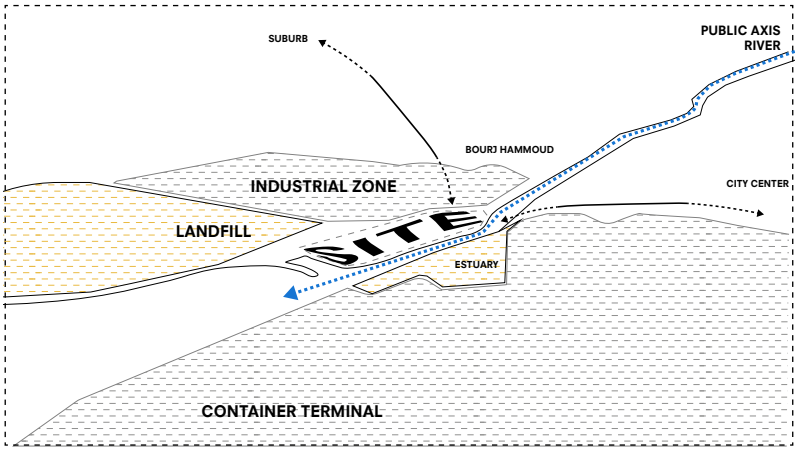
SITE

PANORAMA



connection to the world through port & city through the highway



A HYBRID POINT IN WHICH DIFFERENT OR RATHER CONFLICTING CHARACTERISTICS ARE SUPERPOSITIONED

public axis as an extension of the river
The site of the Post Digital Depot is located at the final point of the estuary and functions as an extension of the axis of river which will be transformed into a public corridor connecting the city with the waterfront promenade

health and beauty of the estuary
The project initiates and finances the cleaning of the river and estuary through soft measures such as phytoremediation through floating wetlands. The strip between fashion office and the depot is developed into a zone of interaction with public activity and free access. The island is developed with light structures of pavilions and event spaces.

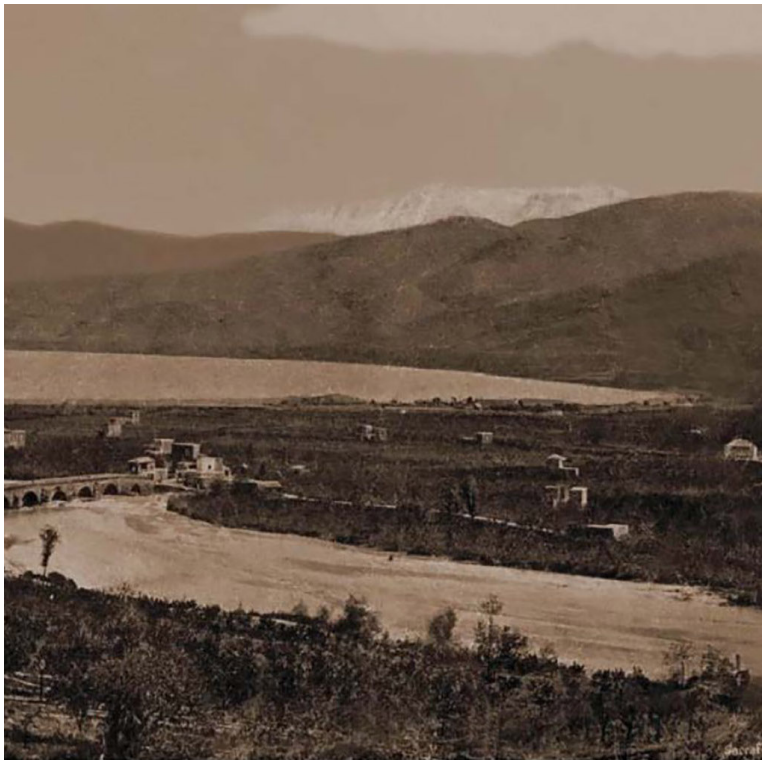
phytoremediation of river through floating wetlands

response to historic and natural coastline

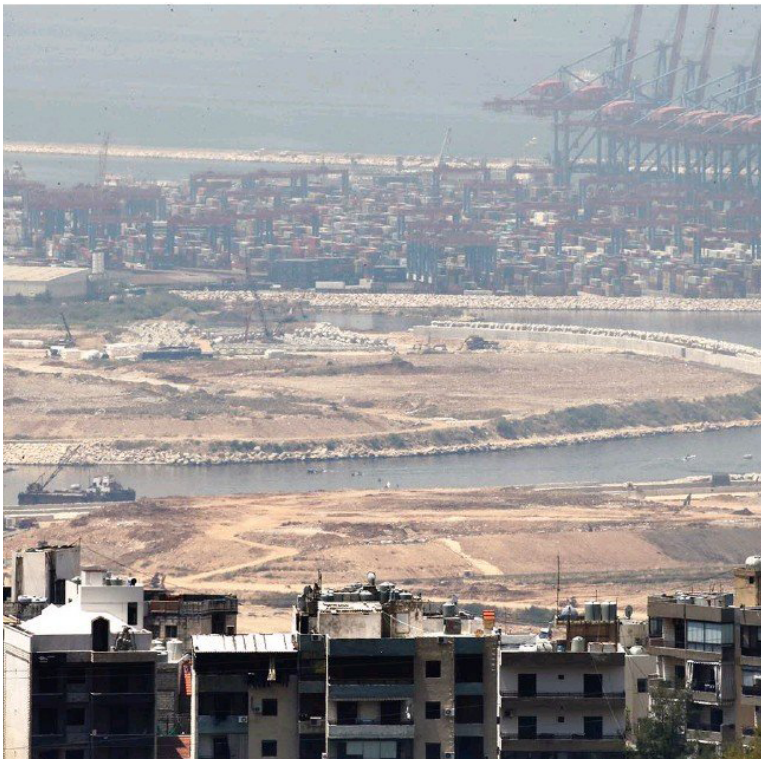
The site has a changing shoreline both result of ongoing development and alluvial accumulation of the river.

formally responding to the hybrid quality of the site
The depot is a surrounded by a variety of characteristics in which production zone and the port with industrial character clash the estuary and landfill with green natural character. Architectural form should be non-monotonous, changing depending on the close surrounding.

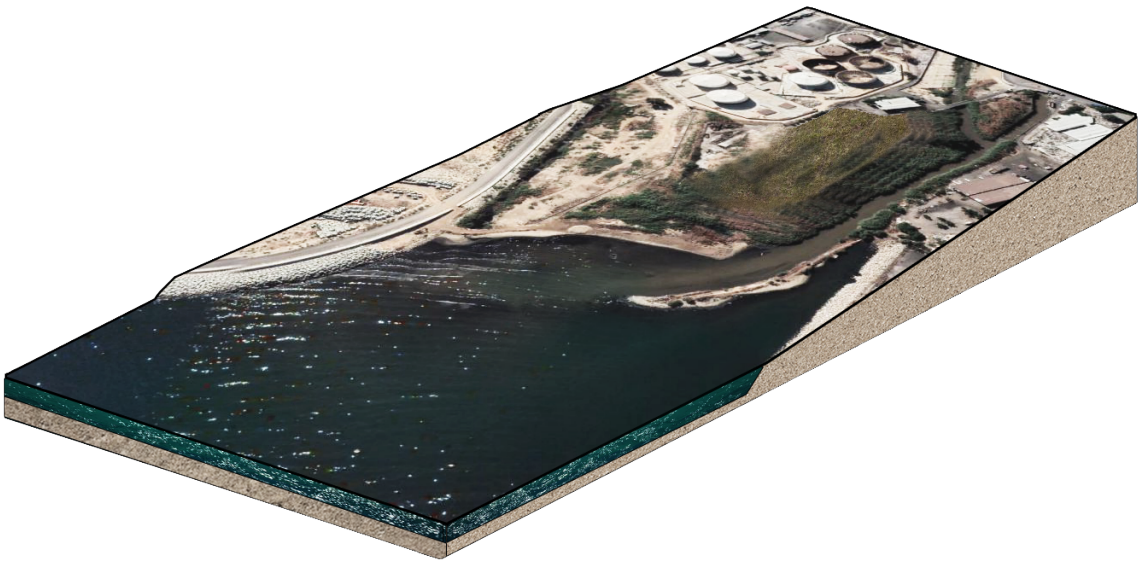
architectural expression
horizontality
monumentality
landmark
embedded in the site
assemblage typology
permanence & solidity
funtionality, flexibility & mechanicality

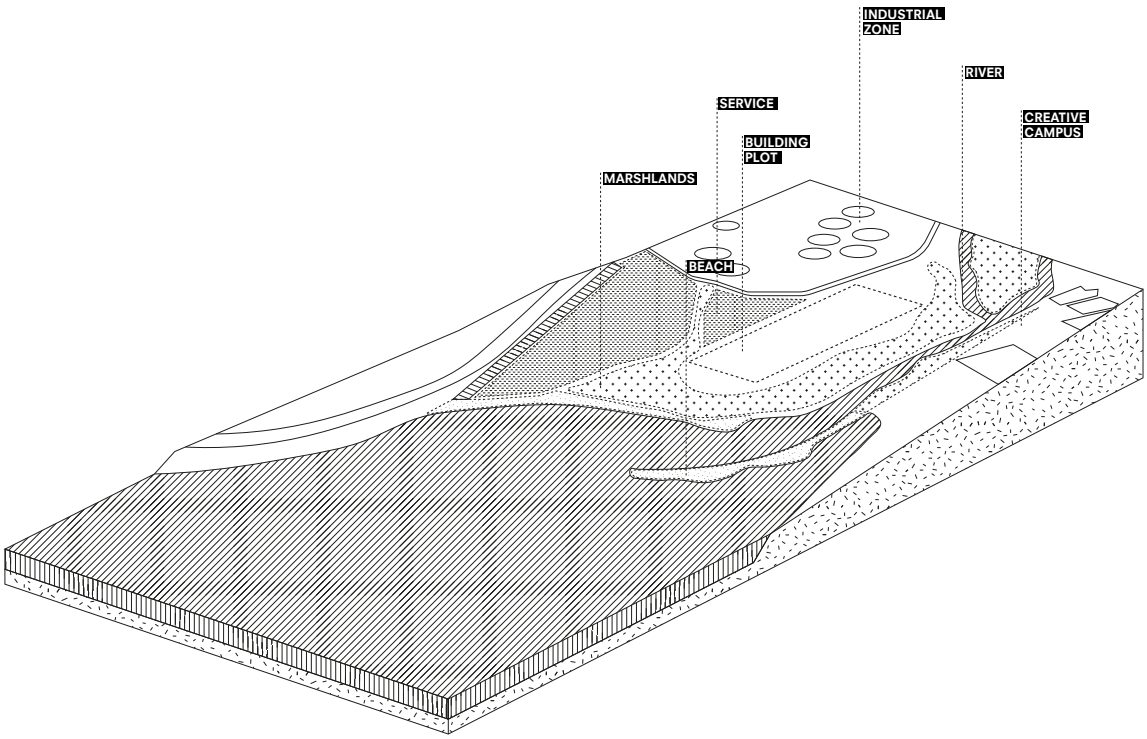


THE ESTUARY | AGRICULTURAL PLAYGROUND



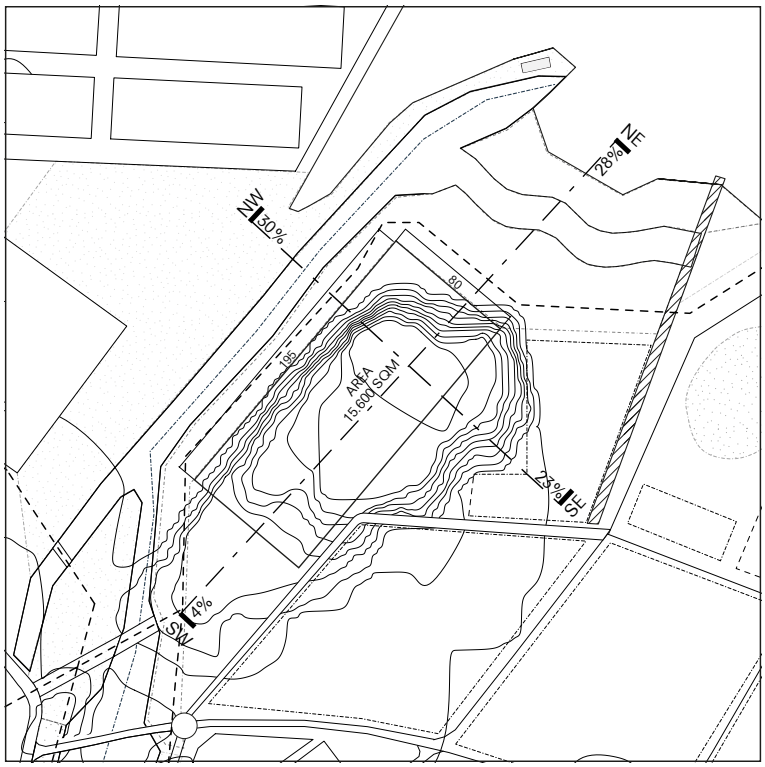
THE ESTUARY | TRASH DUMP





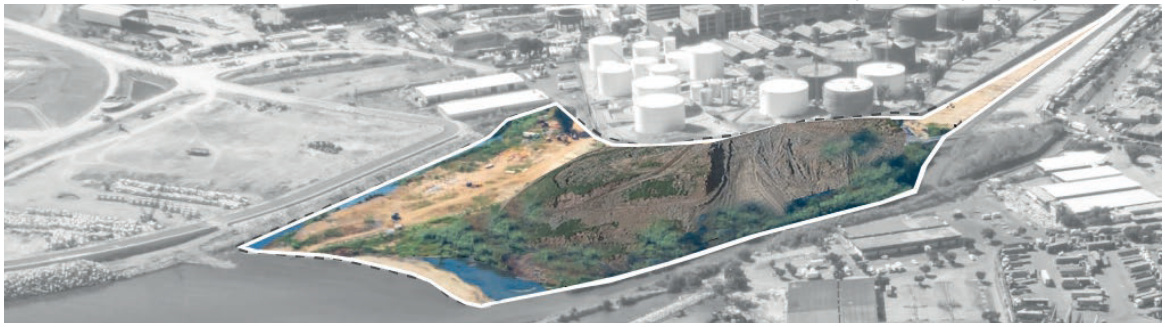
Atmosphere

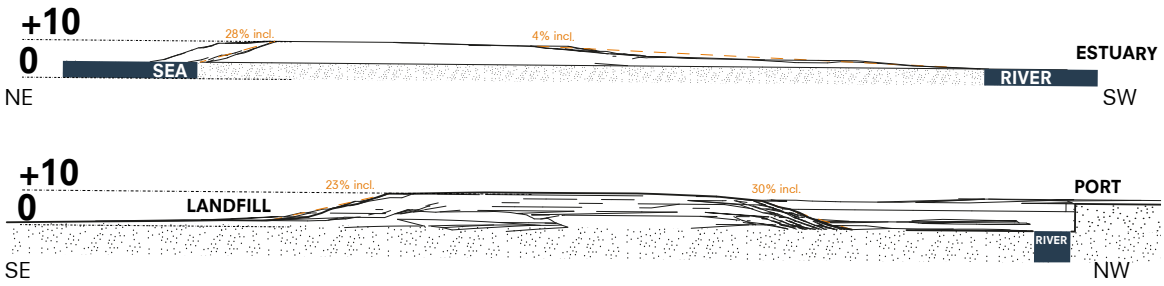
The site stands out from the surroundings as it has strong natural character. Along with the ambition of building program to experiment with humanization of digital technologies, outdoor spaces and nature plays a vital role.



TERRAIN | PLATEAU

MONUMENTALITY OF TERRAIN
the river as a superforce playing with land





The site and estuary are part of Zone 7 according to the building legislations of Beirut. In this area, building coverage ratio (BCR) is 70% and floor area ratio (FAR) is 3.

The total site area is 29,390 SQM. Resultantly, the maximum building footprint is 20,573 SQM and the maximum total floor area is 88,170 SQM.

The site boundary is consisting of the river, sea, private lots and road. The legislations for these elements are as follows:

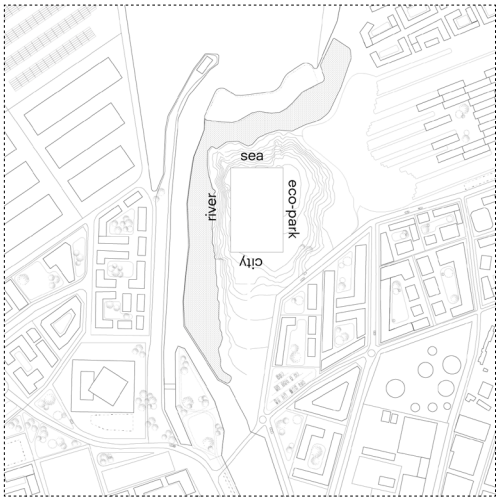
1.Next to rivers:
Behind a line that is 10 m away from the boundaries of the river

2.Next to public property:
Behind a line that is 3m away at least in areas that are outside the boundaries of Beirut and 2m in areas inside Beirut

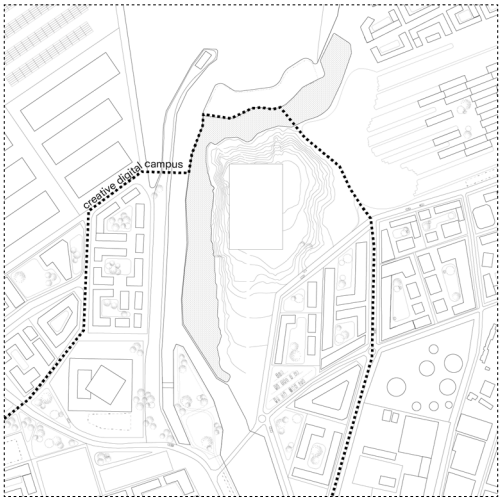
3.Next to roads:
The distance between the building and the road should be no less than 4.50 m if the width of the road is less than 6 m and 3m in unregulated areas.

Topography, Soil & Foundation
The topography is 10 meters higher than the water level creating a plato, podium. The inclination on the north-east is 28%, north-west is 30%, south-east is 23% and south-west is 4 %.

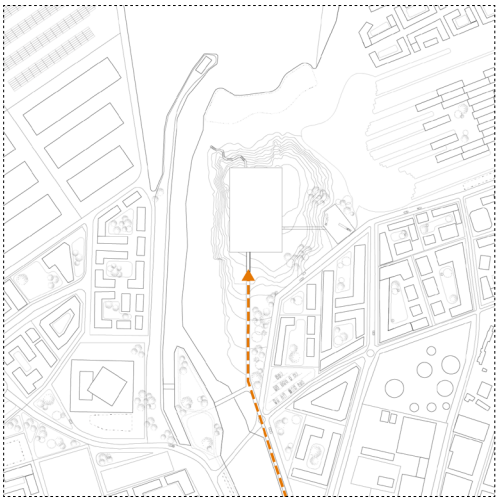
The soil type is alluvium as a result of the deposit of the river. Alluvium is loose soil or sediments that is eroded and carried in suspension by flood or river water before being deposited.
The presence of alluvial deposits may mean that the ground conditions are poor and so can require the construction of a raft foundation, or deep pile foundations.



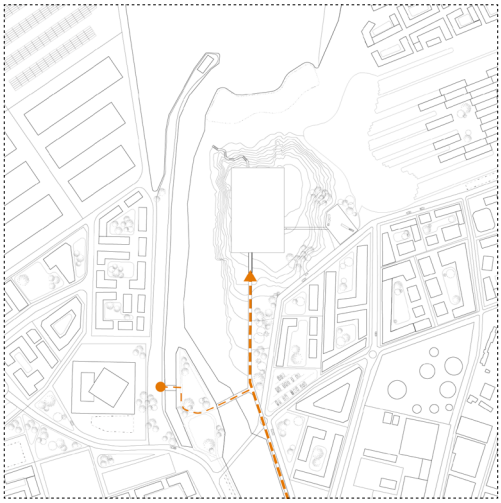
context



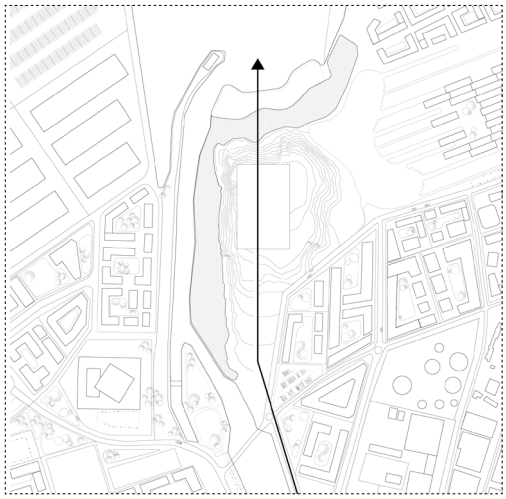
creative digital campus



main axis | river promenade

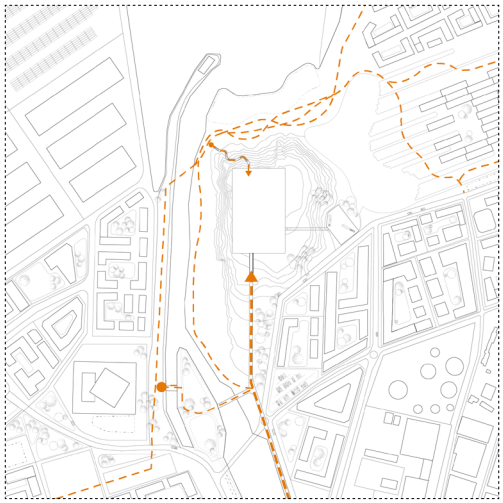


public access | estuary

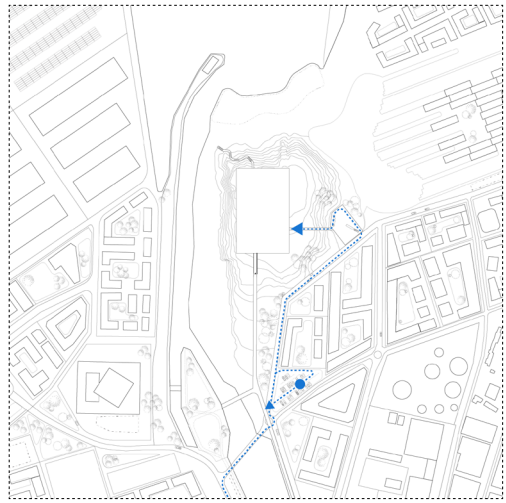


land - sea axis
final destination of the promenade along the river

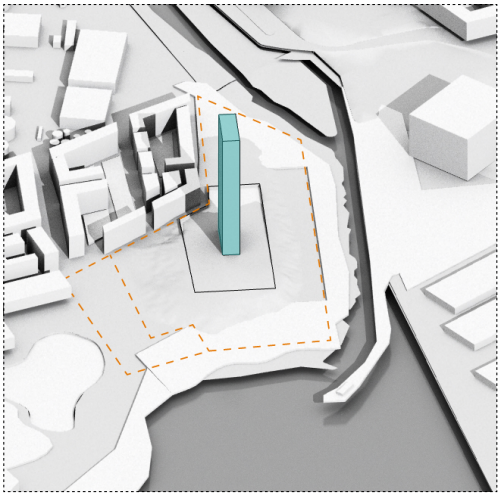
public space extends on the waterfront,
connecting the island and fashion office

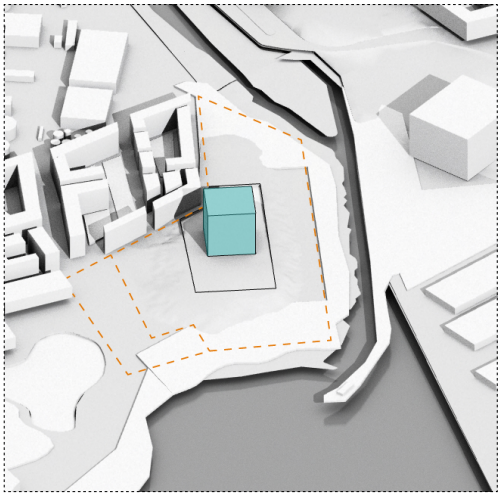


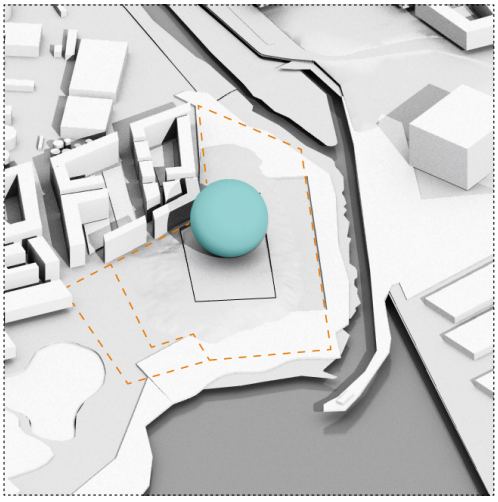
public access | promenade

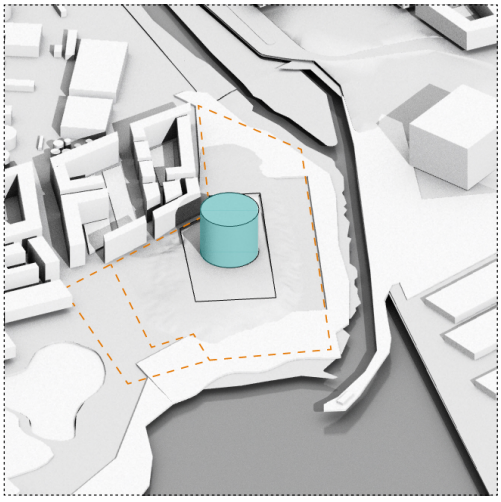


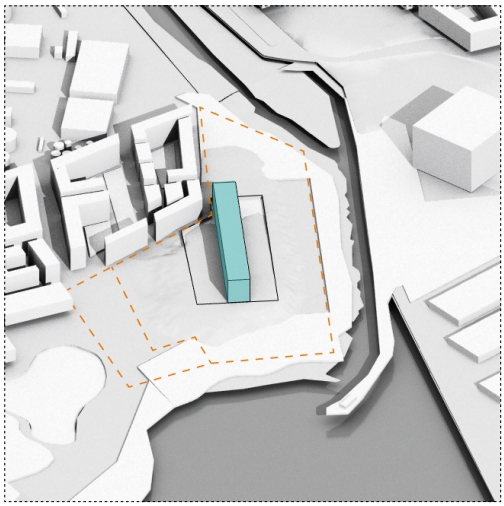
access with vehicle

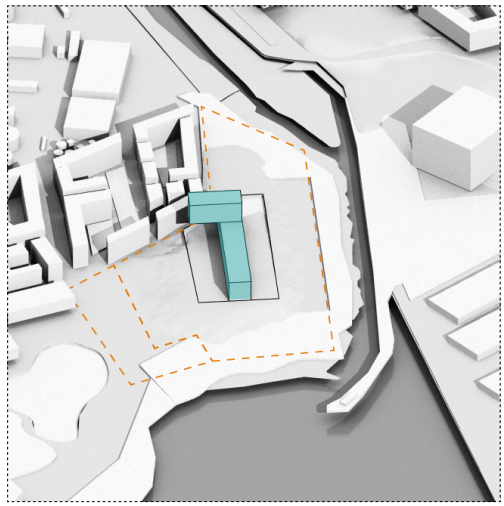


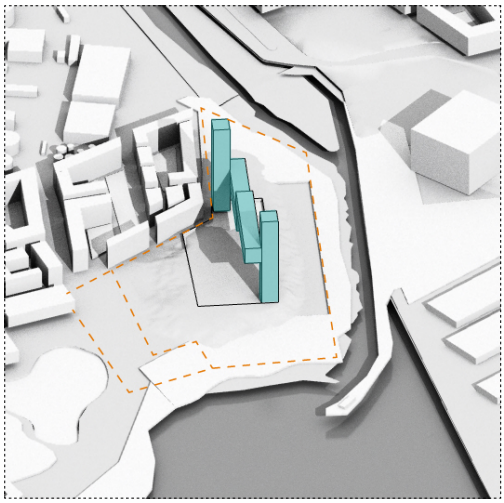












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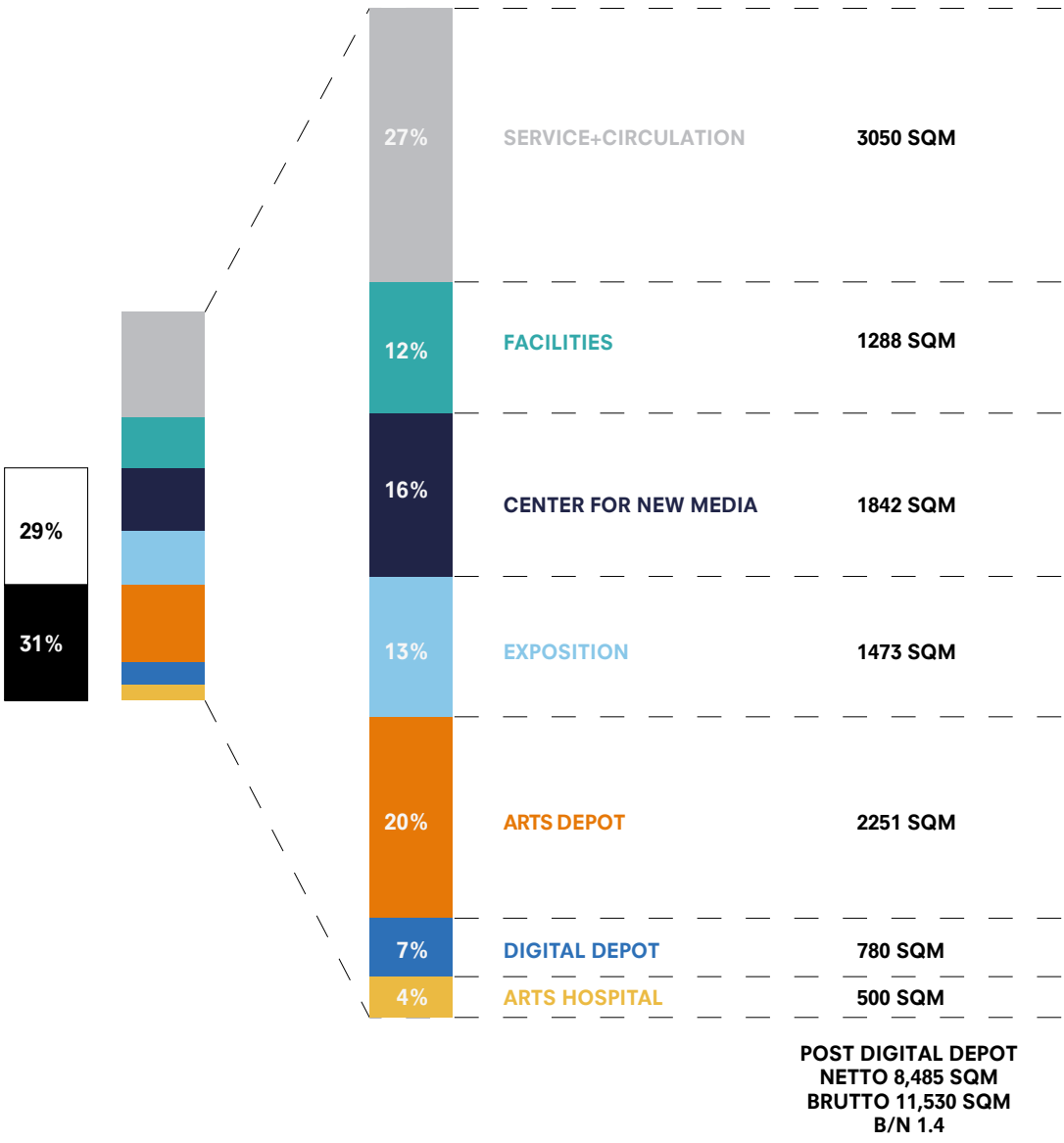
06

PROGRAM


29%
31%
27%
SERVICE+CIRCULATION
3050 SQM
12%
FACILITIES
1288 SQM
16%
CENTER FOR NEW MEDIA
1842 SQM
13%
EXPOSITION
1473 SQM
20%
ARTS DEPOT
2251 SQM
7%
DIGITAL DEPOT
780 SQM
4%
ARTS HOSPITAL
500 SQM
POST DIGITAL DEPOT
NETTO 8,485 SQM
BRUTTO 11,530 SQM
B/N 1.4

Office
Cafe & Restaurant
Foyer
Event Venue
Multi purpose Hall
Media Theatre
Media Library
Learning Zone

Storage Collection in Rotation

Physical Arts Depot & Curational Facilities

Data Center for Arts

Restoration & Digitalization Ateliers

The building operates as a sequence of following functions which overlap with the transformation of stored cultural objects within: collection, renovation, digitalization, storage, curation, exhibition and experimentation.

Function extends from traditional museum typology into functional & experimental depot. Therefore, the corresponding architectural expression should differ from classicistic monumental.

The building is 50% public and 50% private.

The building serves the audience and creators equally. Circulation of these parties within the building is equally significant.

The building provides spaces of experimentation and re-interpretation.

The boundary between traditional arts and new media are non-fixed.

The building should contain suitable architectural language for different characteristics of different kinds of media. This differentiation will be achieved through the form and materiality of spaces. Edges, corners, curves, transitory spaces and levels are formal tools whereas opacity, transparency and tactility of materials support these tools.

The boundary of digital and tangible means is open for modification and re-interpretation through the lifetime of the building.

The building provides room for street art and graffiti to maximize public interaction and generate a platform for the community to raise their voices.

To become a time-machine, a building not belonging to the past, today or the future. It is in the state of oscillation functioning as a recovery machine for the culture.

A storage facility for culture through physical and digital means.

Physical means include collection, renovation, storage, curation & exhibition within restoration ateliers and tangible depot specified in relation to the stored object.

Digital means include digitalization, experimentation, production, interaction, storage, curation & exhibition within digitalization ateliers, digital depot, learning zone with VR, AI facilities and laboratories, media library, and media theatre.

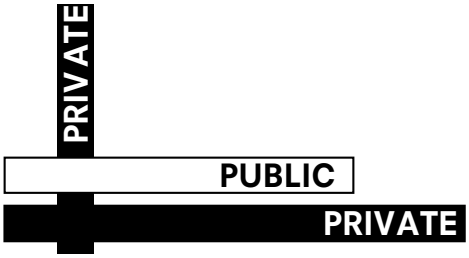
Hospital for cultural objects ruined through the span of destructive events of Beirut

A safe zone (harbor) for artworks

The Post-Digital Depot collects, renovates, digitalizes, stores and curates the following cultural entities. These entities are collected through submission of artists and collaboration with the existing institutions.

A space of creation and re-generation. Urban layers of Beirut ranging from roman era towards the modern state are be re-created through AI and digital models. Artists, architects and urbanists will collaborate with IT technicians and specialists to transform data into VR spaces that can be experienced by visitors.

The Post-Digital Depot will host 250,000 visitors yearly.


PRIVATE
PUBLIC
PRIVATE

DIGITAL
PHYSICAL

DIGITAL
INTERACTIVE
PHYSICAL

USERS

Numerous parties are involved through the process of collection, preservation, renovation, digitalization and curation as well as interaction. These parties work in a collaborative methodology as the building program is highly experimental. Users can be investigated in 3 main categories as follows:

CREATORS

media artist, traditional artist, conservator, IT specialist, translator, curator

COLLECTORS

individuals or organisations whom lend their artworks for renovation, storage and display to the Post-Digital Depot

VISITORS

Beirutians, Lebanese community, international guests.

CLIENT

Client: The client of the Post-digital Depot is World Lebanese Cultural Union along with UNESCO. Digital Documentation Center at American University of Beirut is the main advisory facility.

Developer: The estuary including Post-Digital Depot and Fashion Creation Office will be developed by ZRE Real Estate Development Group, a real estate company that focusses on creating wholesome communities. The Group also developed Beirut Digital District, a center point for digital related start-ups therefore they have the expertise on Digital Enterprises.

Fund: The Arab Fund for Arts and Culture, RELIEF Center, UNESCO, Ministry of Culture

CLIENT

World Lebanese Cultural Union
+
UNESCO

*Digital Documentation Center at AUB is the main advisory facility

DEVELOPER

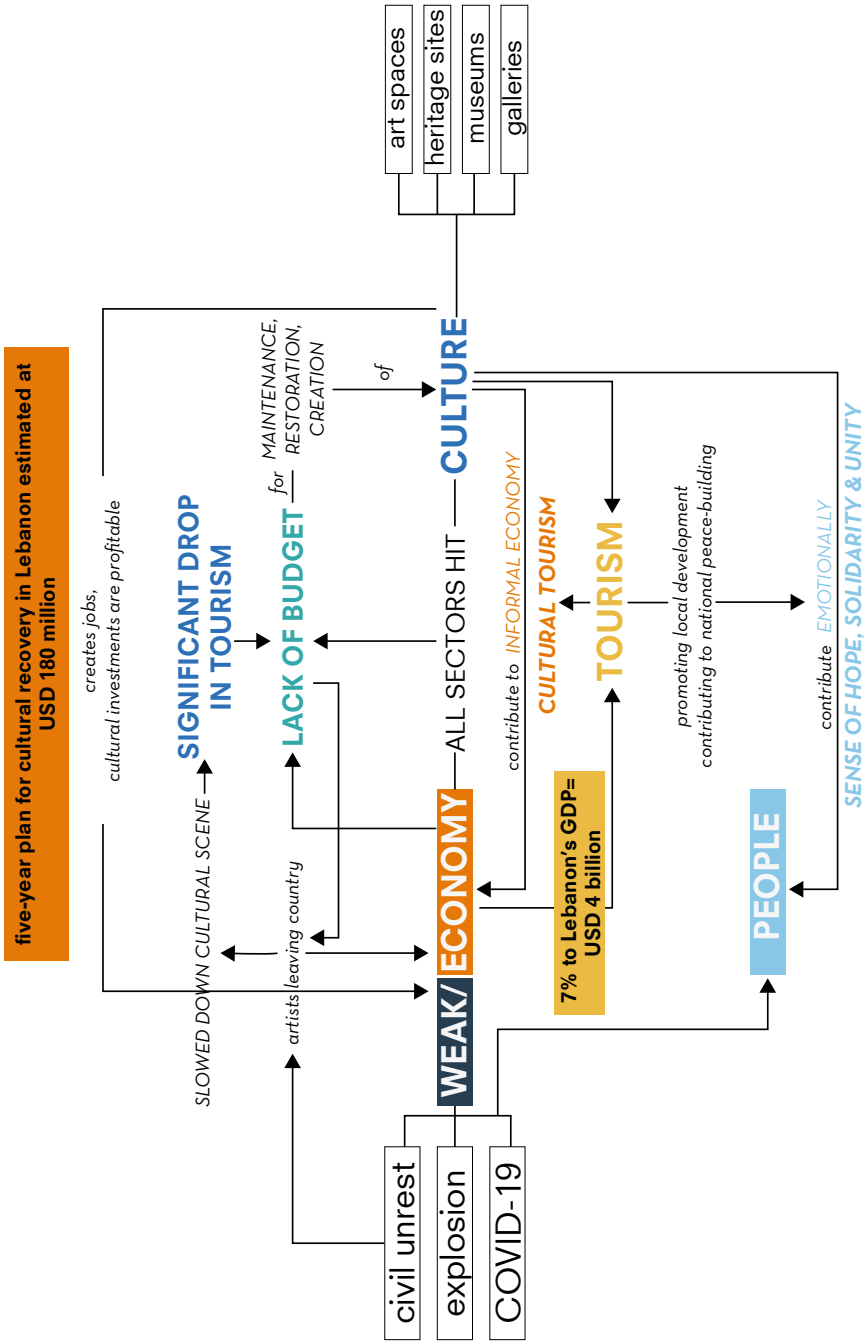
ZRE Real Estate Development Group

FUND

The Arab Fund for Arts and Culture

Culture Resource (Al-Mawred Al-Thaqafy)

Ministry of Culture


five-year plan for cultural recovery in Lebanon estimated at USD 180 million
creates jobs,
cultural investments are profitable
art spaces
heritage sites
museums
galleries
of
MAINTENANCE, RESTORATION, CREATION
for
SIGNIFICANT DROP IN TOURISM
LACK OF BUDGET
CULTURE
SLOWED DOWN CULTURAL SCENE
ALL SECTORS HIT
contribute to INFORMAL ECONOMY
CULTURAL TOURISM
TOURISM
artists leaving country
WEAK/ ECONOMY
7% to Lebanon's GDP= USD 4 billion
promoting local development
contributing to national peace-building
PEOPLE
contribute EMOTIONALLY
SENSE OF HOPE, SOLIDARITY & UNITY
civil unrest
explosion
COVID-19

07

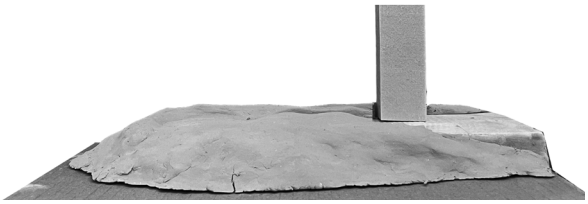
MASSING

KUNSTBUNKER

The first real art bunker was built in the dunes near Castricum on behalf of the municipality of Amsterdam. Construction started in November 1939 and completion was in April 1940. The walls of this bunker had a thickness of 1.5 meters and a sand cover of about 10 meters as cover. With a 3 meter thick layer of sand on top of the reinforced concrete layer, the bunker was provided with extra protection and camouflage. The total volume of the cellar is approximately 212 m^3. An air treatment installation provided the right atmosphere.

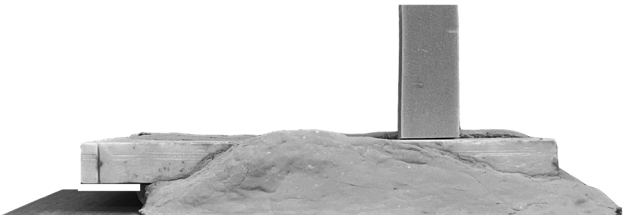
National art treasures from the Stedelijk Museum of Amsterdam were stored in the bunker. The paintings hung on steel racks on ceiling rails. In addition to paintings by Frans Hals, Rubens, Van Ruisdael, Jan Steen and Vermeer, the collection also included The Night Watch by Rembrandt van Rijn. The director of the Stedelijk Museum, David Röell, and curator Willem Sandberg took turns monitoring from a barracks near the bunker.

A bunker for arts, to protect the Beirutian artworks from threats is a significant ambition and concept for Post-Digital Depot.



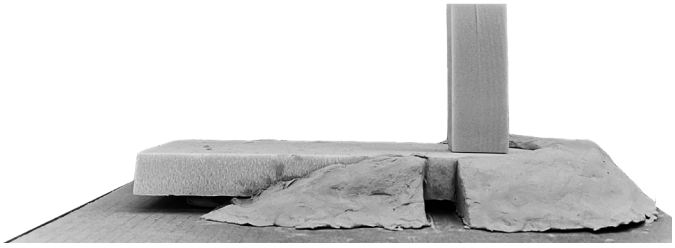
MONUMENTALITY

proportions



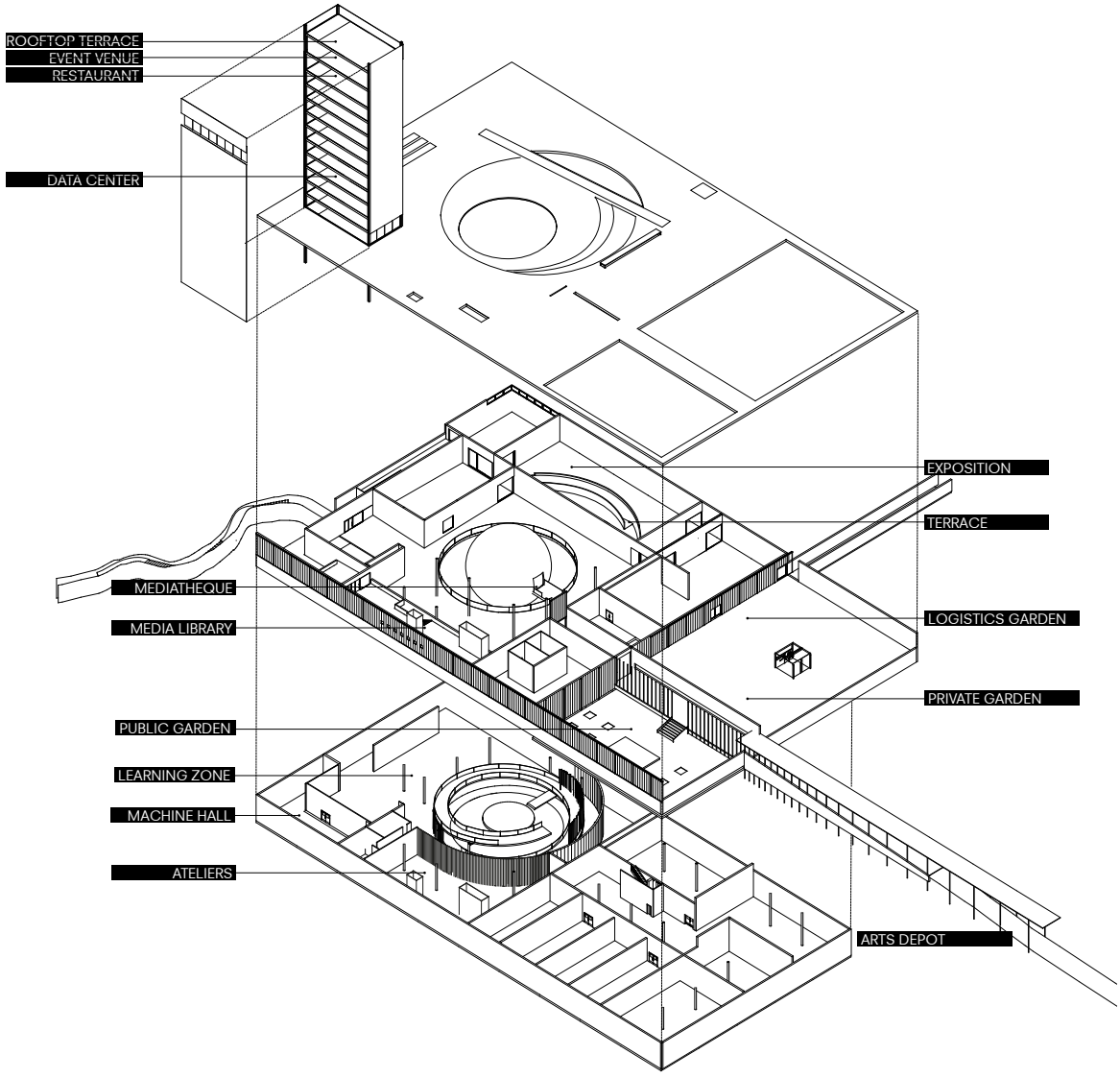
VERTICALITY

façade & views

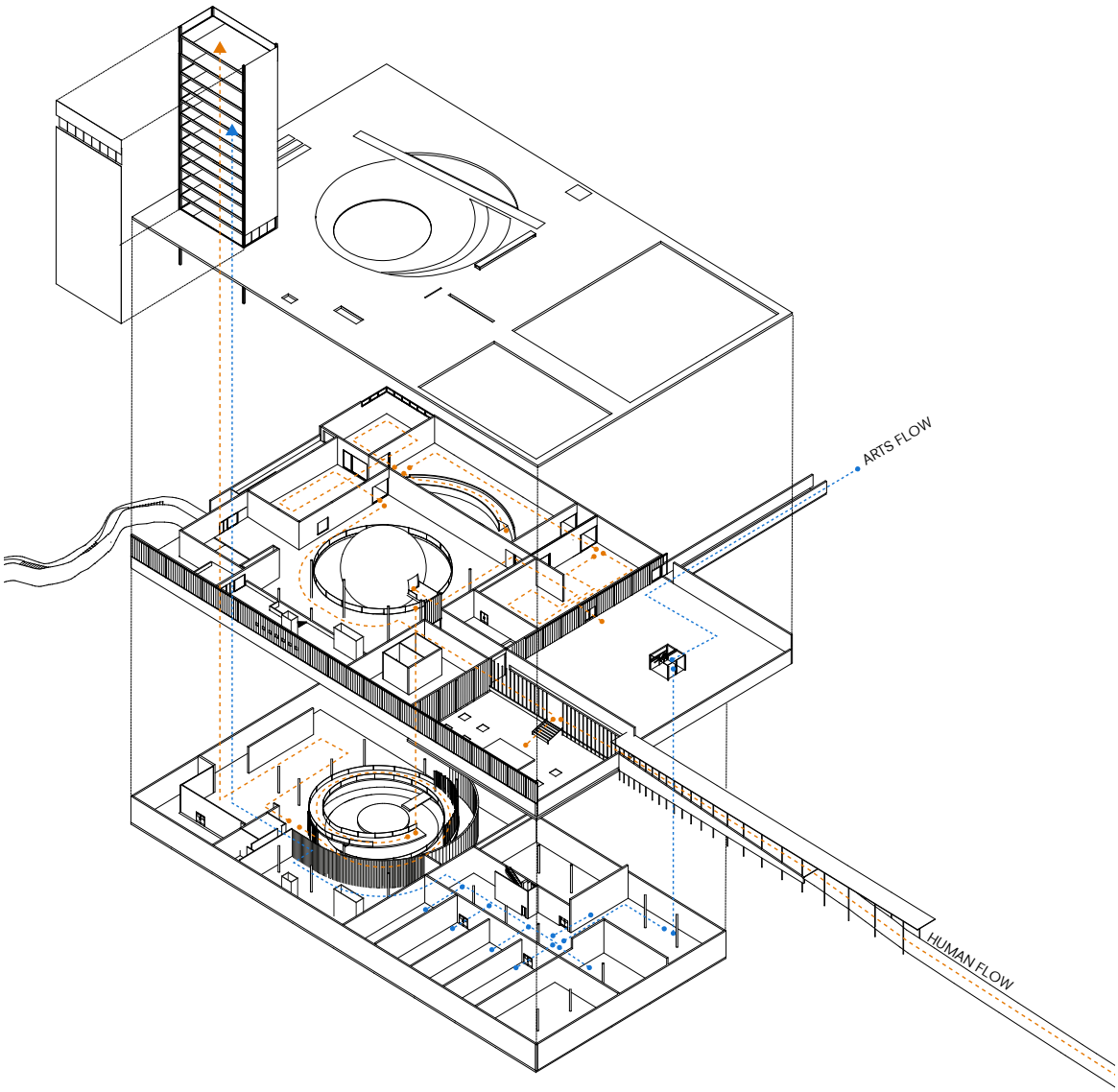


HORIZONTALITY

integration to hill


ROOFTOP TERRACE
EVENT VENUE
RESTAURANT
DATA CENTER
EXPOSITION
TERRACE
MEDIATHEQUE
MEDIA LIBRARY
LOGISTICS GARDEN
PRIVATE GARDEN
PUBLIC GARDEN
LEARNING ZONE
MACHINE HALL
ATELIERS
ARTS DEPOT

PROGRAMME



FLOWS

1. **NOT SCARCE, LOCAL, LONG LASTING MATERIALS**

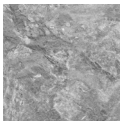
2. **MATERIALS WITH TACTILITY AND CHANGE THROUGH TIME**

3. **MATERIALS WITH HIGH THERMAL MASS**
(VOLUMETRIC HEAT CAPACITY VALUE (KJ/M3.K))

NATURAL

water

teak



stone

natural stone

PROCESSED

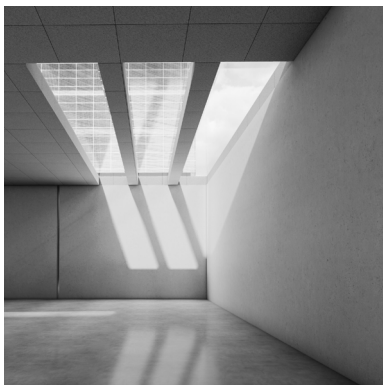
concrete

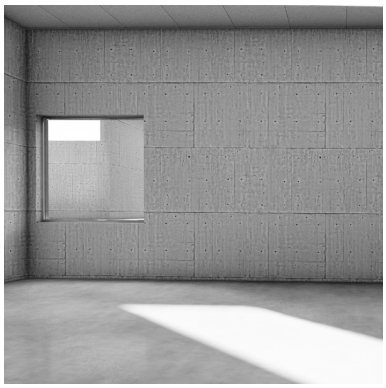
pigmented stainless steel

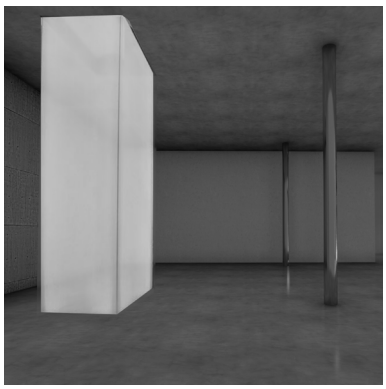
alluminum

wire-mesh

MATERIALITY

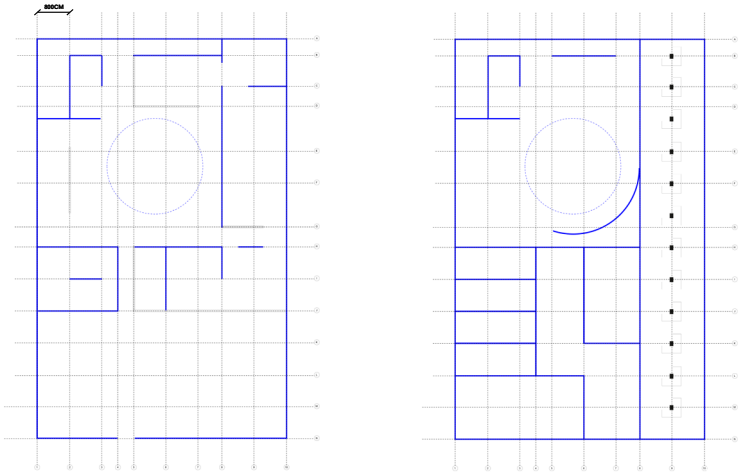




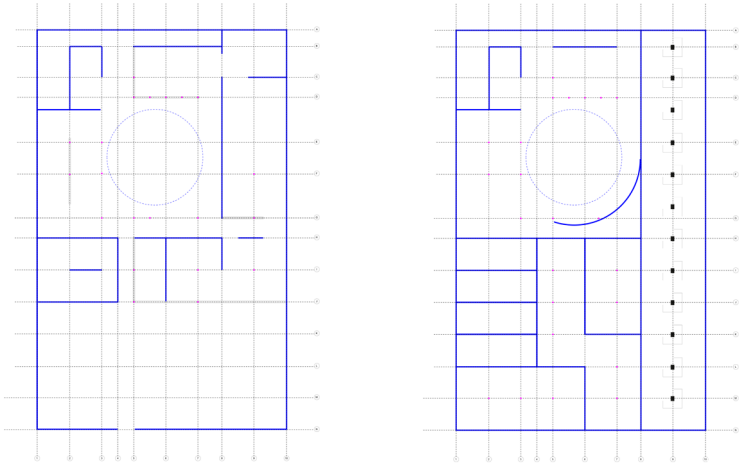


SOLAR PENETRATION

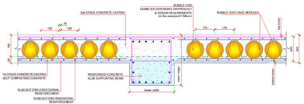
grid | 800 cm



shear walls + columns



bubble slab

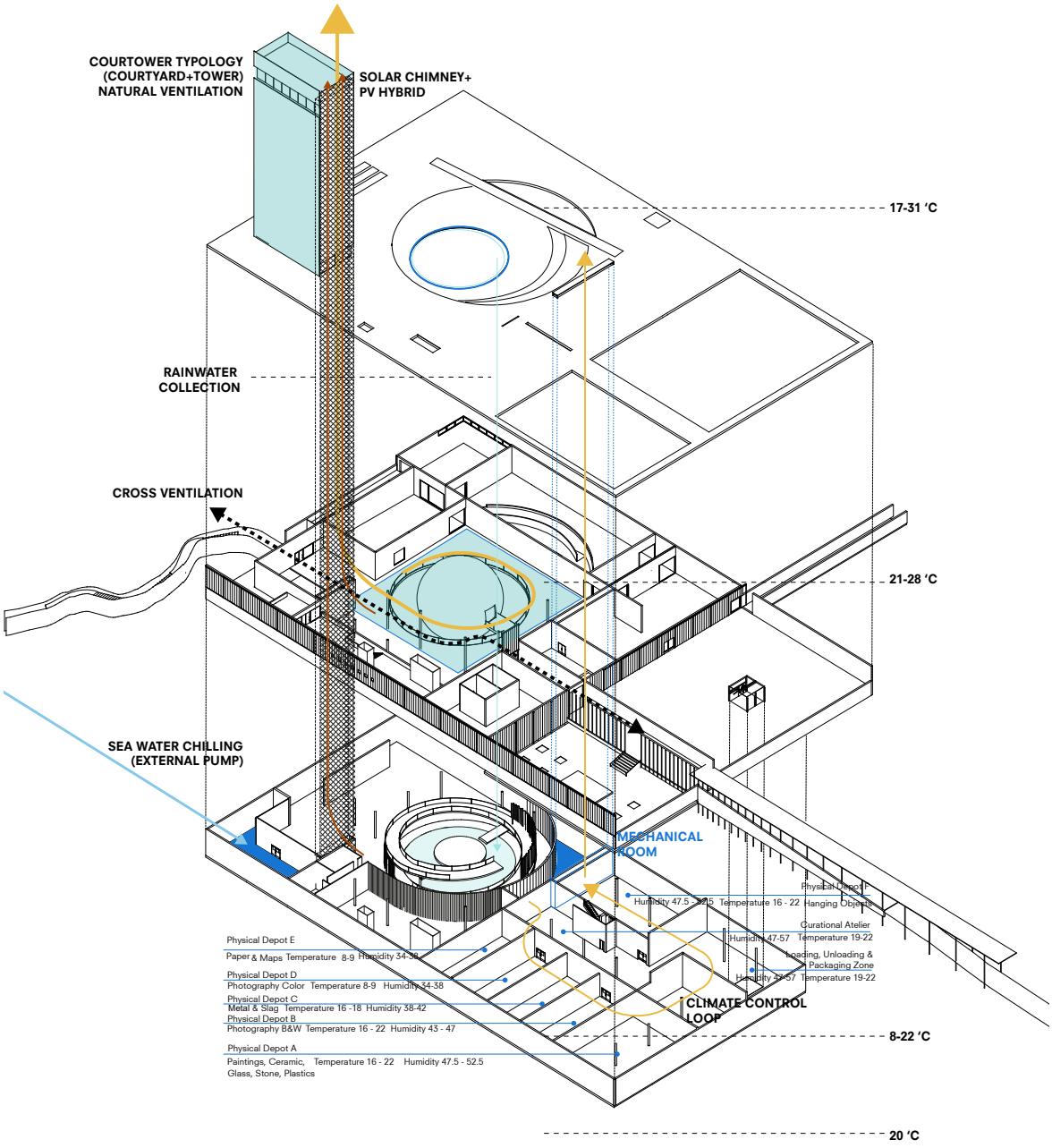


BUBBLE SLAB CROSS SECTION DETAIL

Version	Slab Thickness	Bubbles	Span (Multiple bays)	Cantilever Maximum Length	Span (Single bays)	Completed Slab Mass	Site Concrete Quantity
	mm	mm	metres	metres	metres	Kg/m²	m³/m²
BD230	230	Ø 180	5 – 8.1	≈ 2.2	5 – 6.3	370	0.11
BD280	280	Ø 225	7 – 10.1	≈ 2.7	6 – 7.8	460	0.14
BD340	340	Ø 270	9 – 12.5	≈ 3.3	7 – 9.6	550	0.18
BD390	390	Ø 315	10 – 14.4	≈ 3.8	9 – 11.1	640	0.21
BD450	450	Ø 360	11 – 16.7	≈ 4.5	10 – 12.5	730	0.25

0 10 20 40

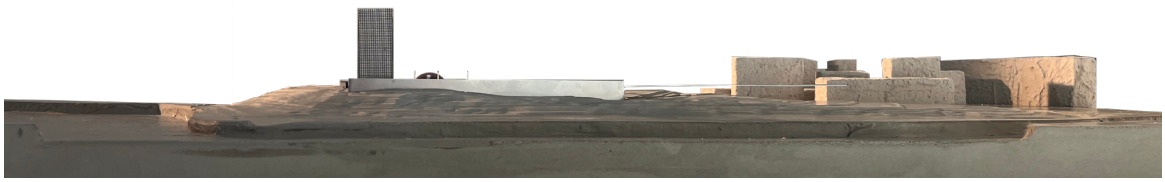
STRUCTURE

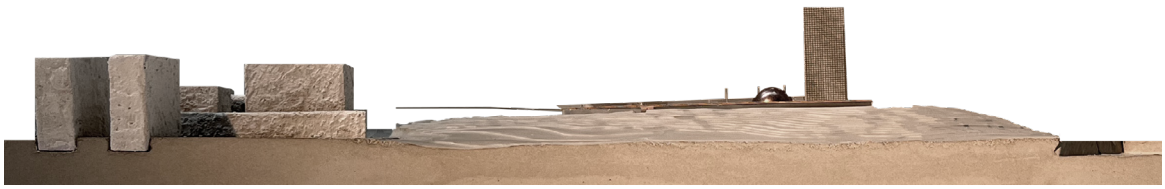

COURTOWER TYPOLOGY
(COURTYARD+TOWER)
NATURAL VENTILATION
SOLAR CHIMNEY+
PV HYBRID
17-31 'C
RAINWATER
COLLECTION
CROSS VENTILATION
21-28 'C
SEA WATER CHILLING
(EXTERNAL PUMP)
MECHANICAL
ROOM
Physical Depot F
Humidity 47.5 - 52.5 Temperature 16 - 22 Hanging Objects
Curational Atelier
Humidity 47-57 Temperature 19-22
Loading, Unloading &
Packaging Zone
Humidity 47-57 Temperature 19-22
CLIMATE CONTROL
LOOP
Physical Depot E
Paper & Maps Temperature 8-9 Humidity 34-38
Physical Depot D
Photography Color Temperature 8-9 Humidity 34-38
Physical Depot C
Metal & Slag Temperature 16 -18 Humidity 38-42
Physical Depot B
Photography B&W Temperature 16 - 22 Humidity 43 - 47
Physical Depot A
Paintings, Ceramic, Temperature 16 - 22 Humidity 47.5 - 52.5
Glass, Stone, Plastics
8-22 'C
20 'C

CLIMATE

08

MAQUETTE



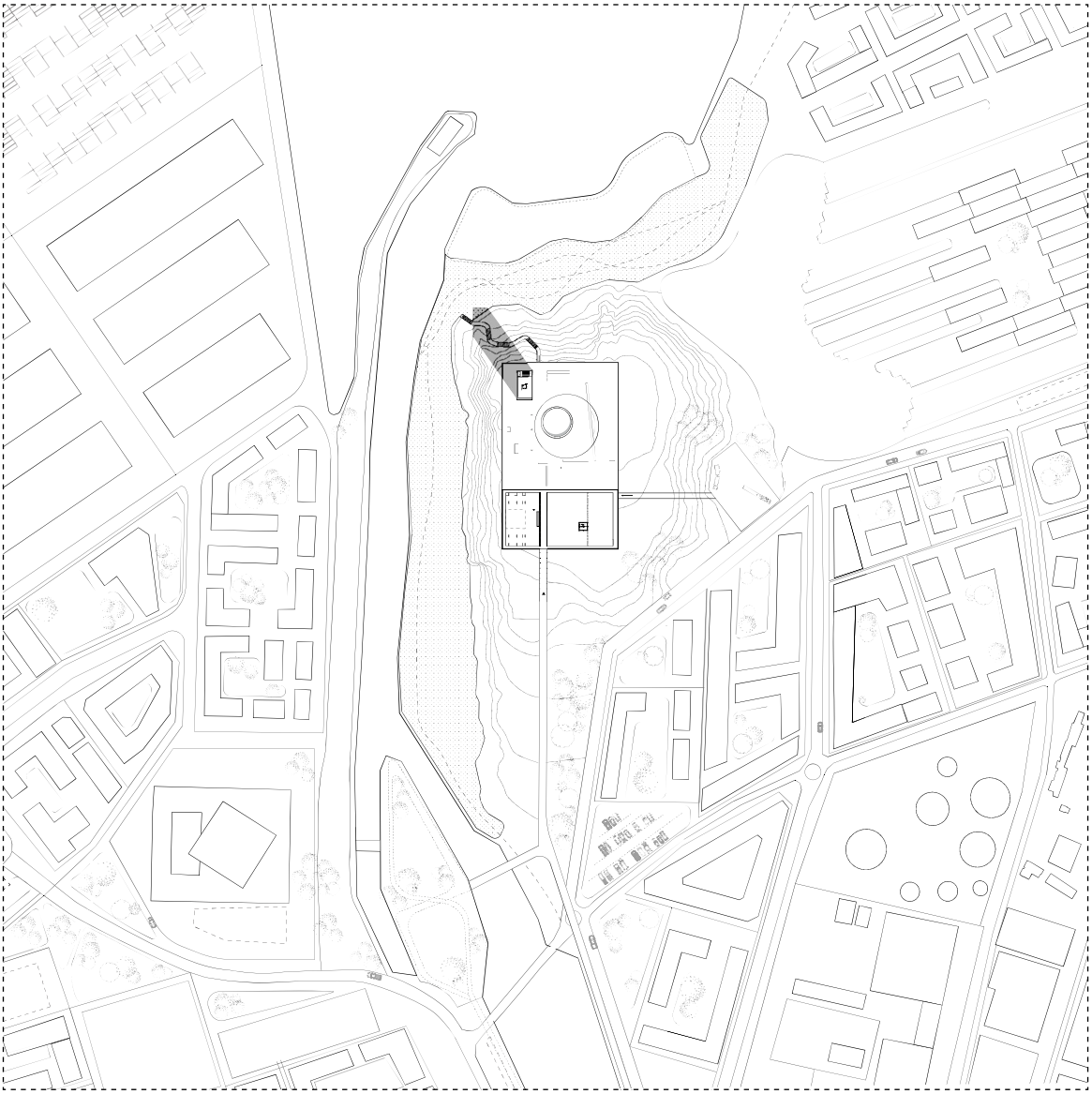


09

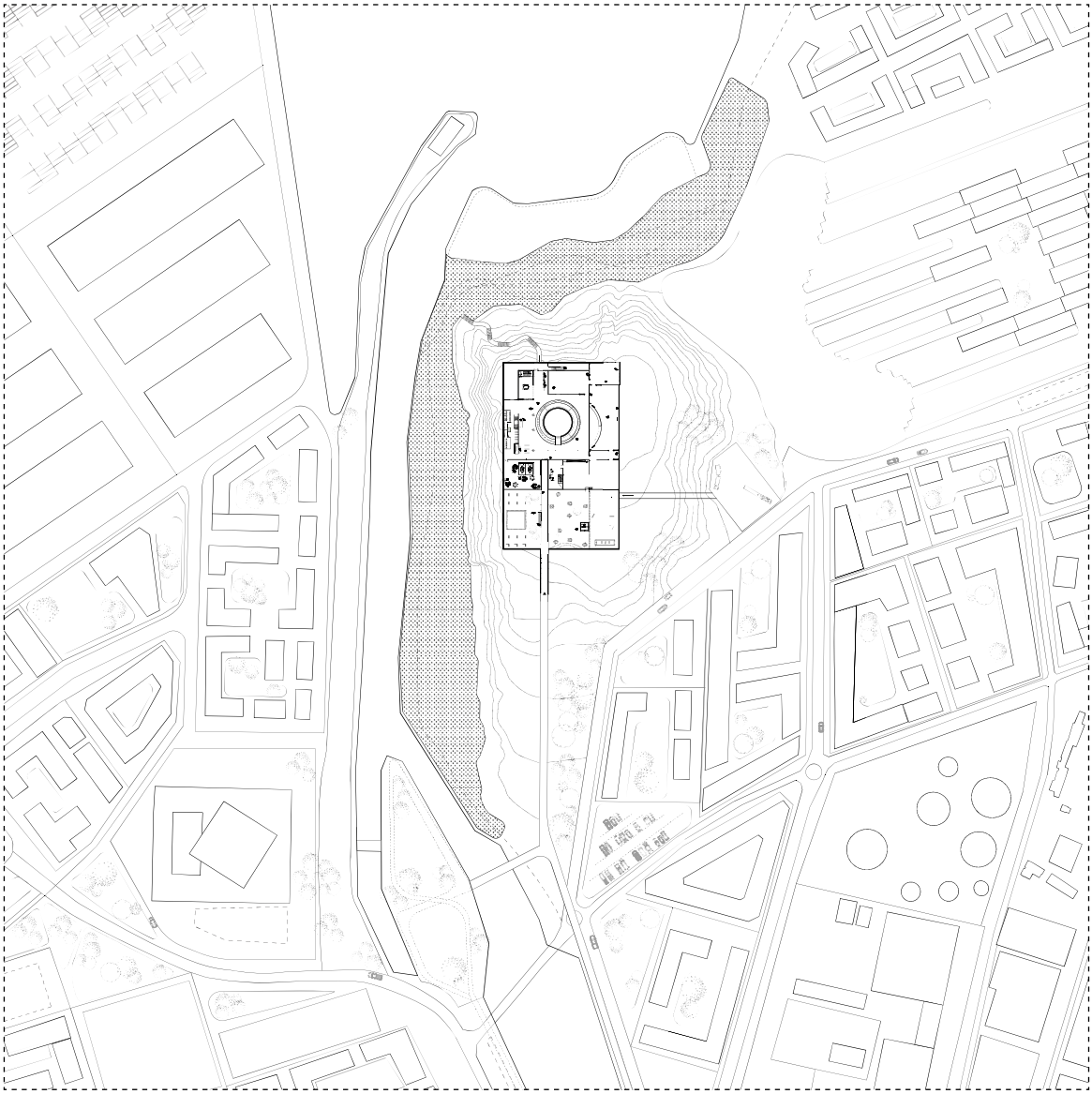
DRAWING SET

Group site plan 1 : 5 000
Site Plan 1 : 500
Urban implementation 1 : 500
Urban Elvation 1:500
Elevations 1: 200
Exploded axonometric
Floor plans 1 : 200
Sections 1 : 200
Interior fragment 1 : 50
Envelope fragment 1 : 20
Details 1 :5

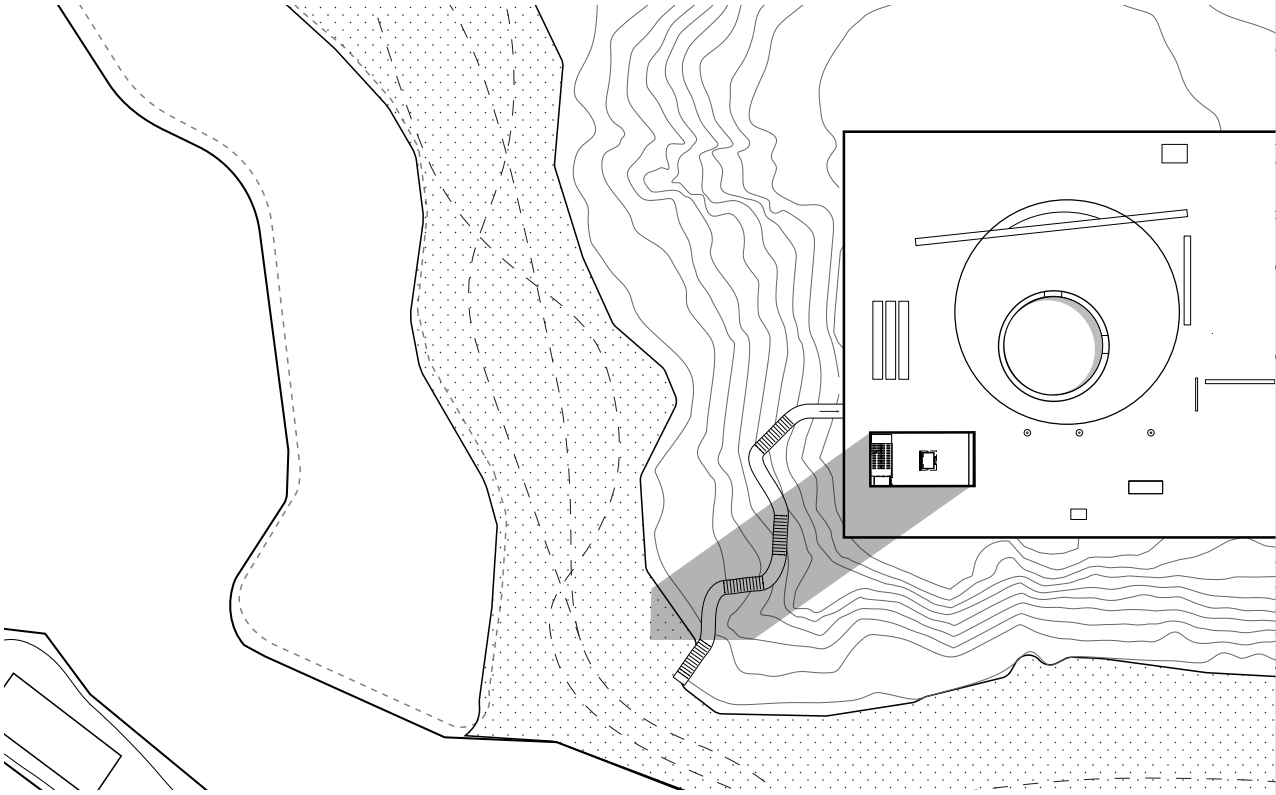
GROUP SITE PLAN 1 : 5 000 ON A2



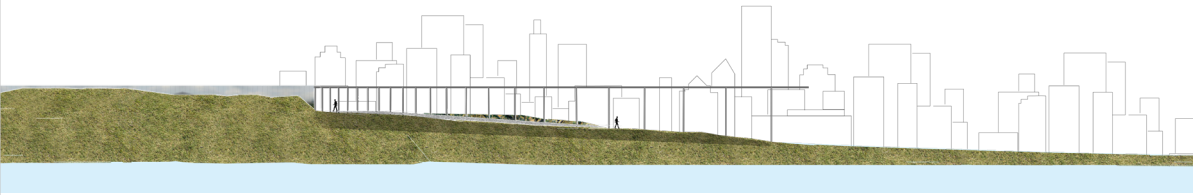
ROOF PLAN

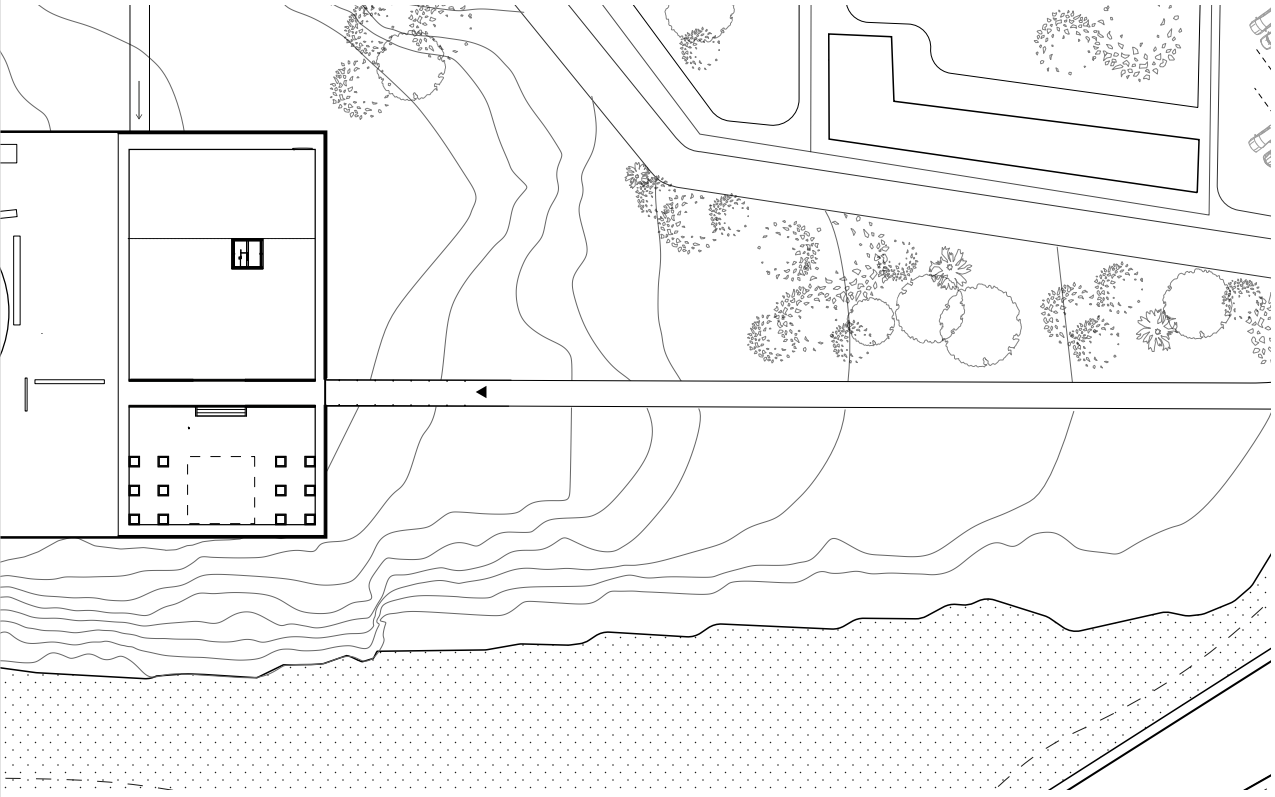


URBAN IMPLEMENTATION



urban elevation





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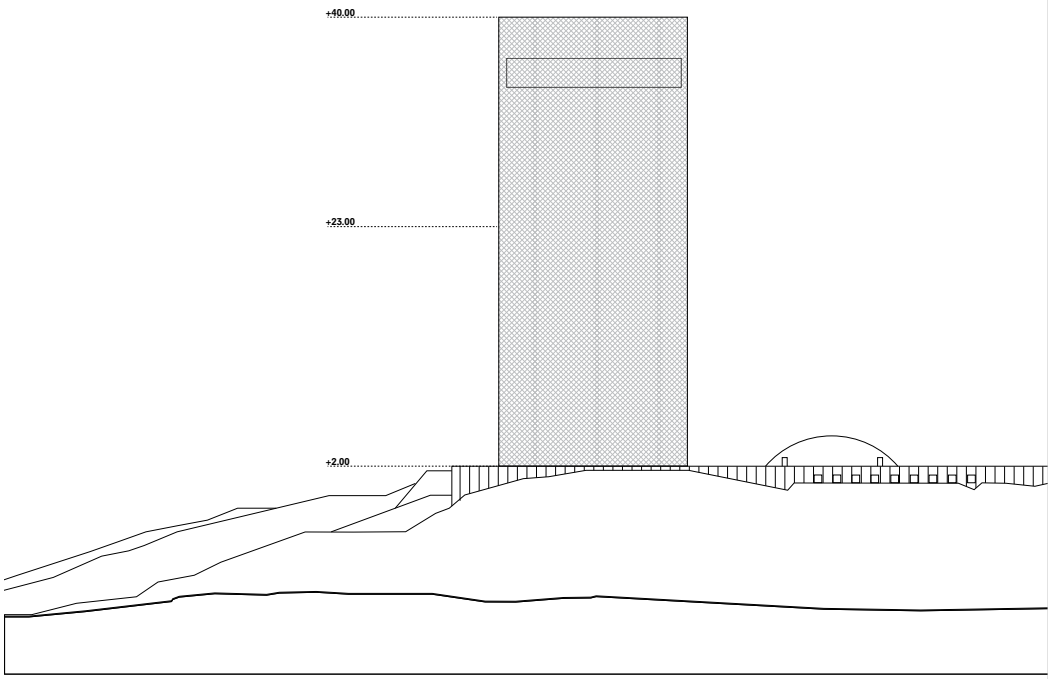
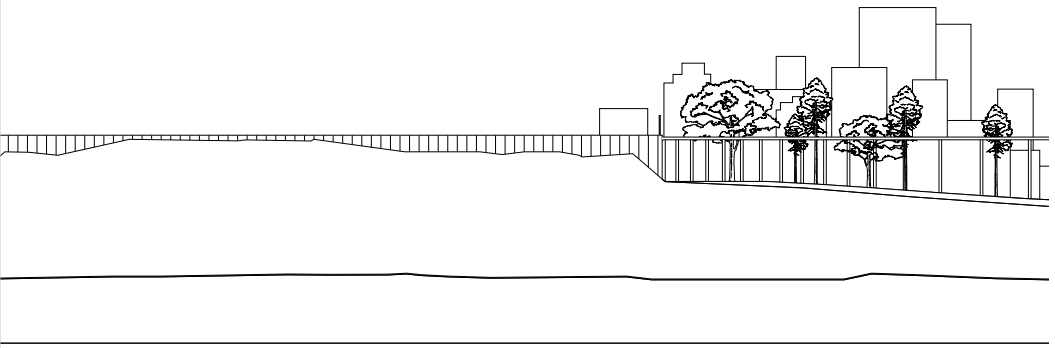
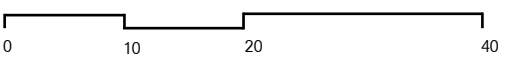
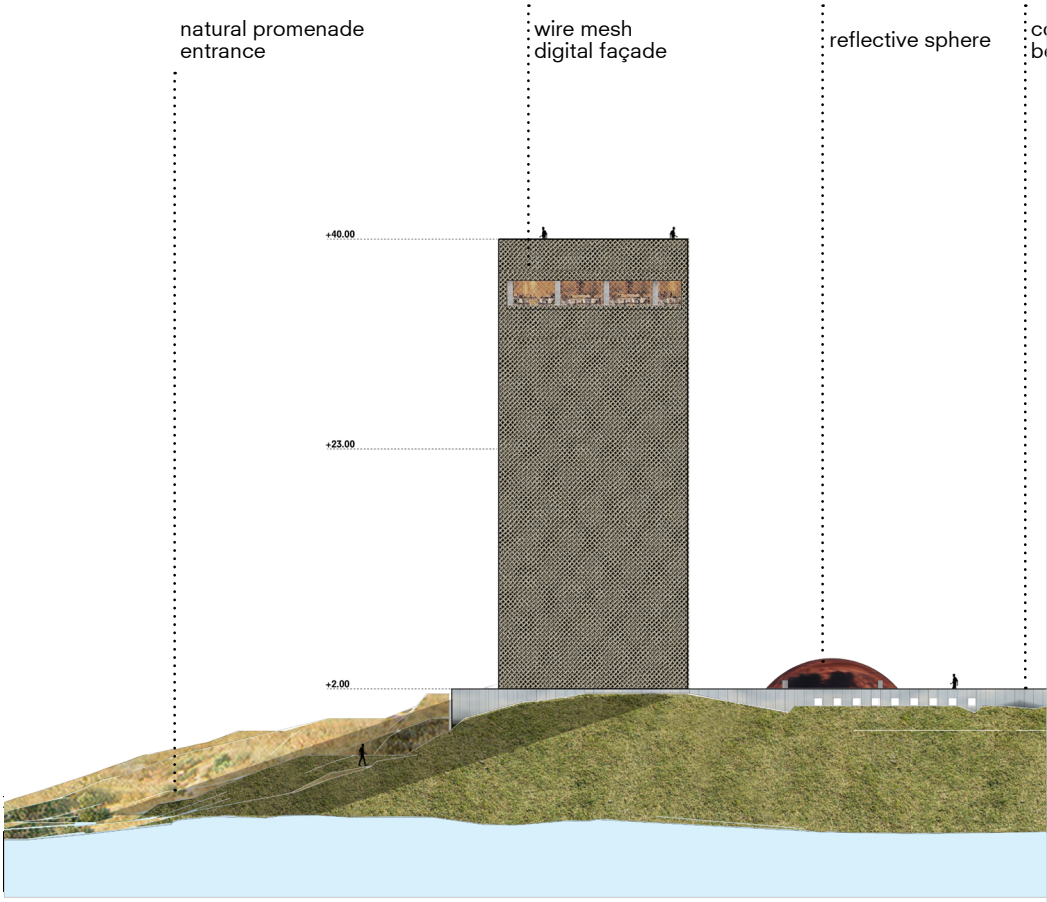


west elevation




0
10
20
40

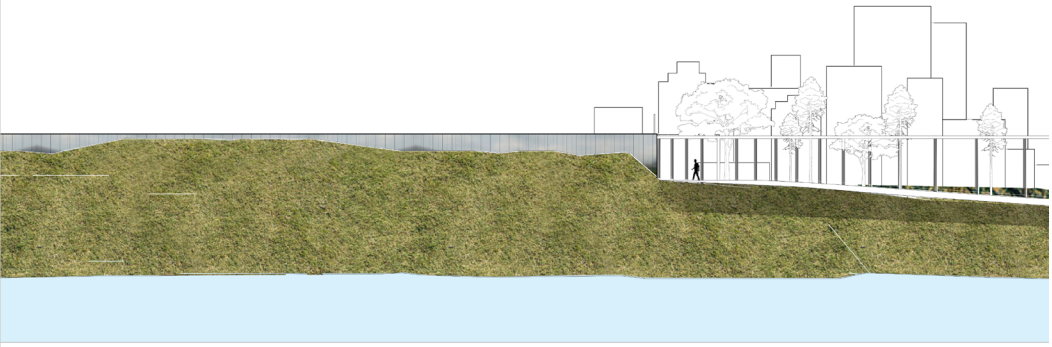


west elevation

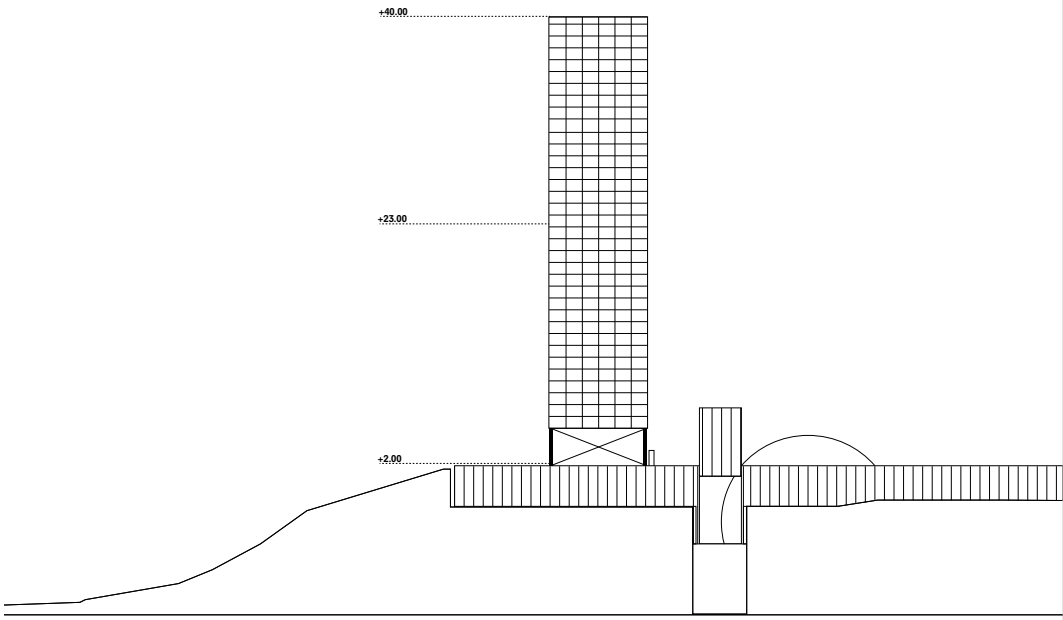
olumns extending
eyond roof

aluminum façade
blends & disappears

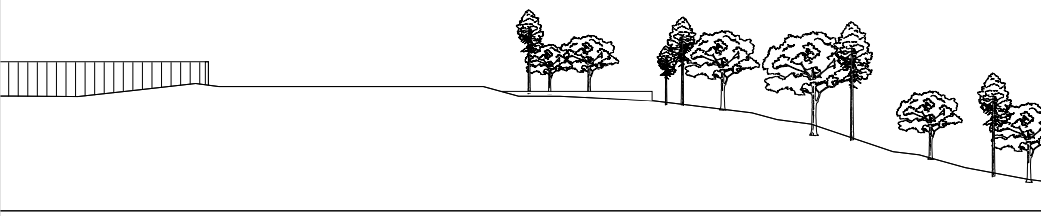
city as backdrop

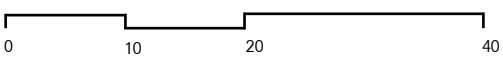


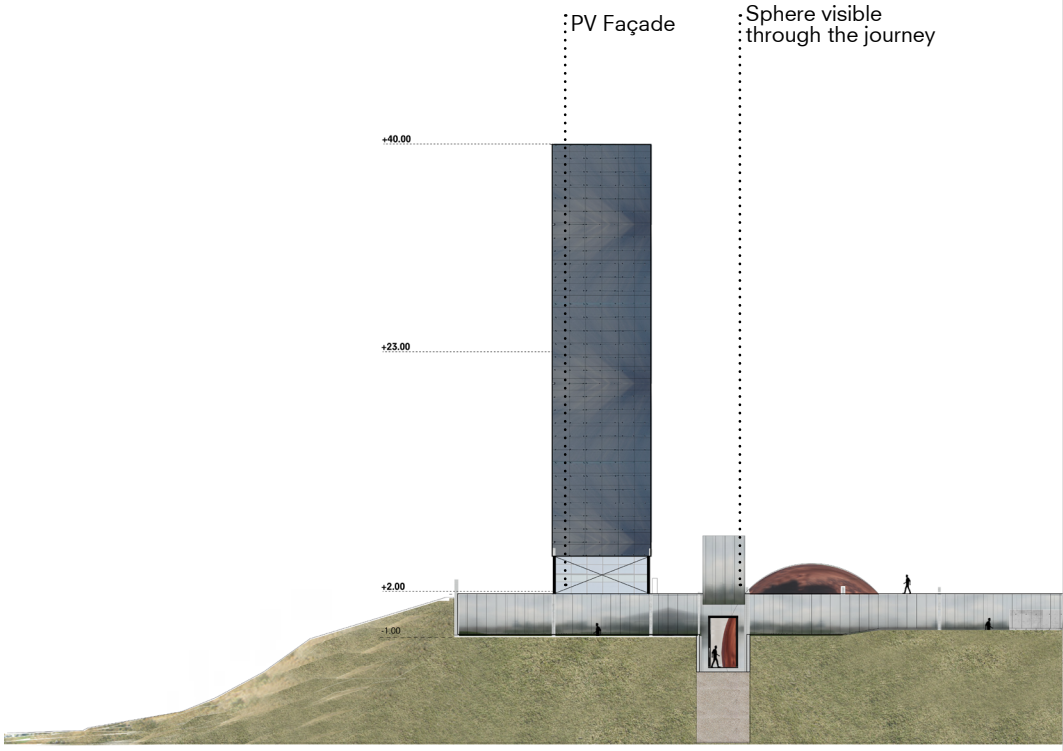
0 10 20 40



south elevation



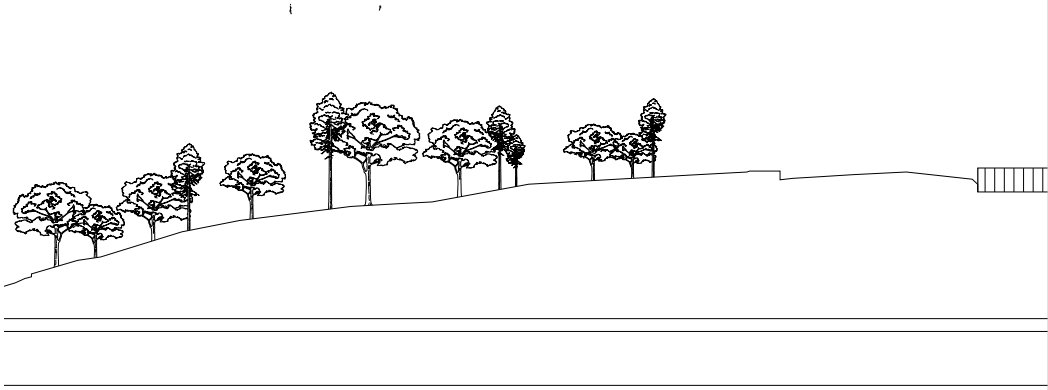

0
10
20
40



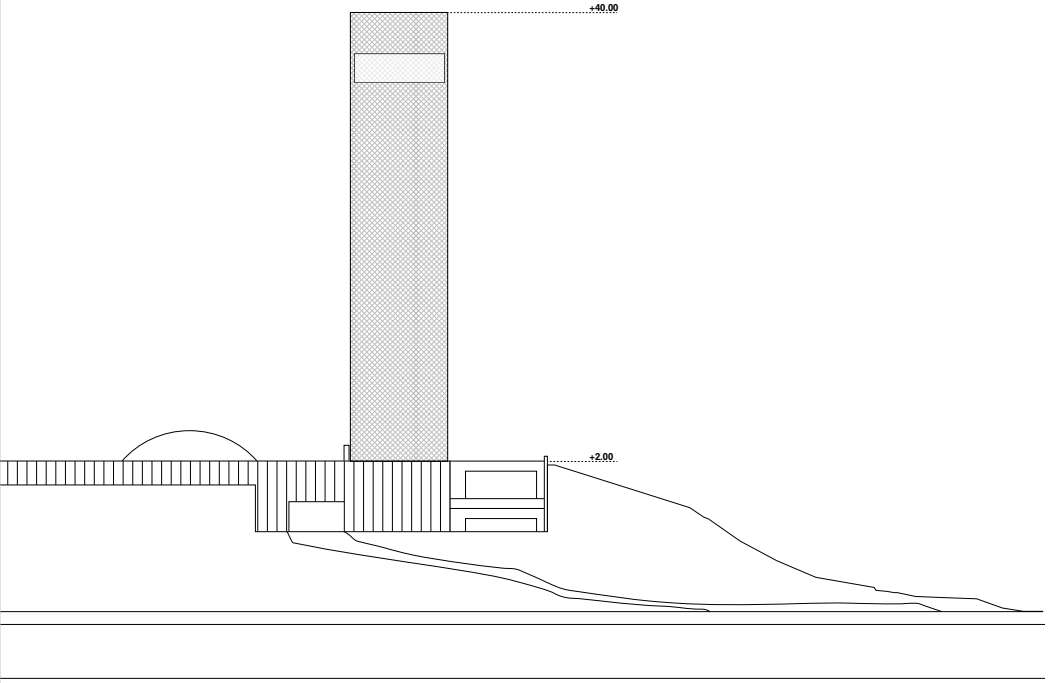
south elevation

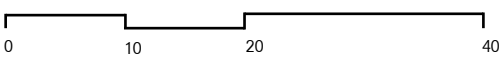
aluminum façade
blends & disappears

0 10 20 40

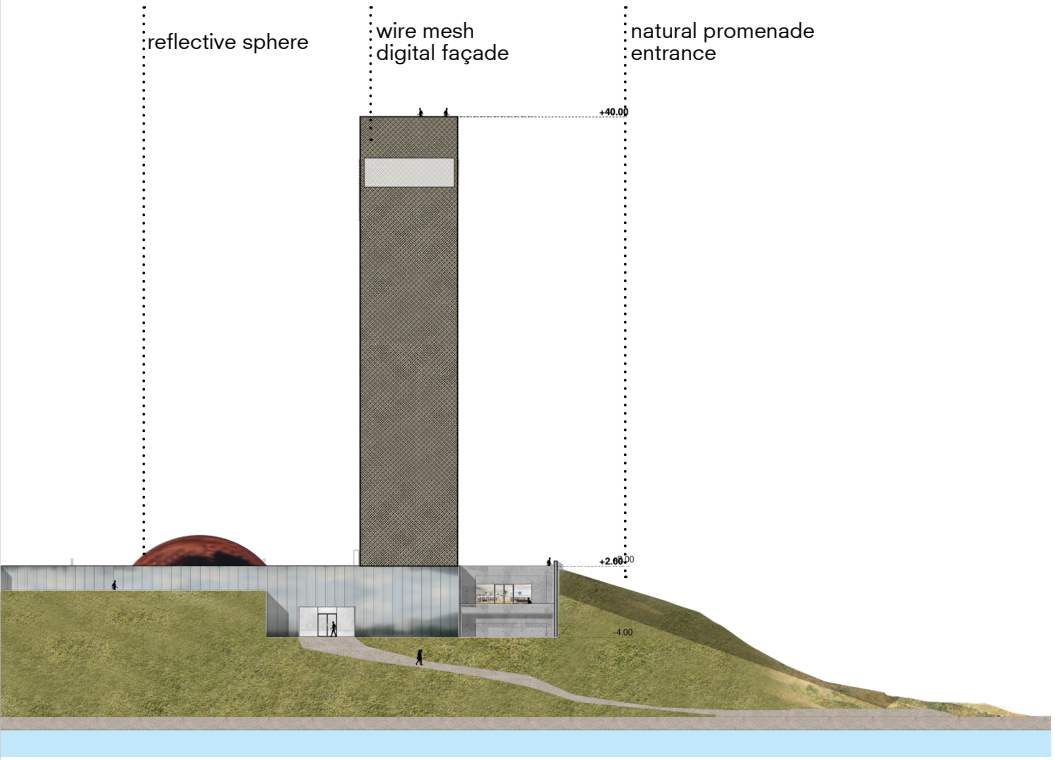


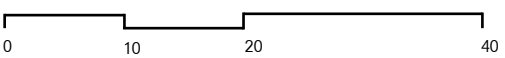
north elevation


+40.00
+2.00


0
10
20
40

north elevation


reflective sphere
wire mesh
digital façade
natural promenade
entrance
+40.00
+2.00
-4.00


0
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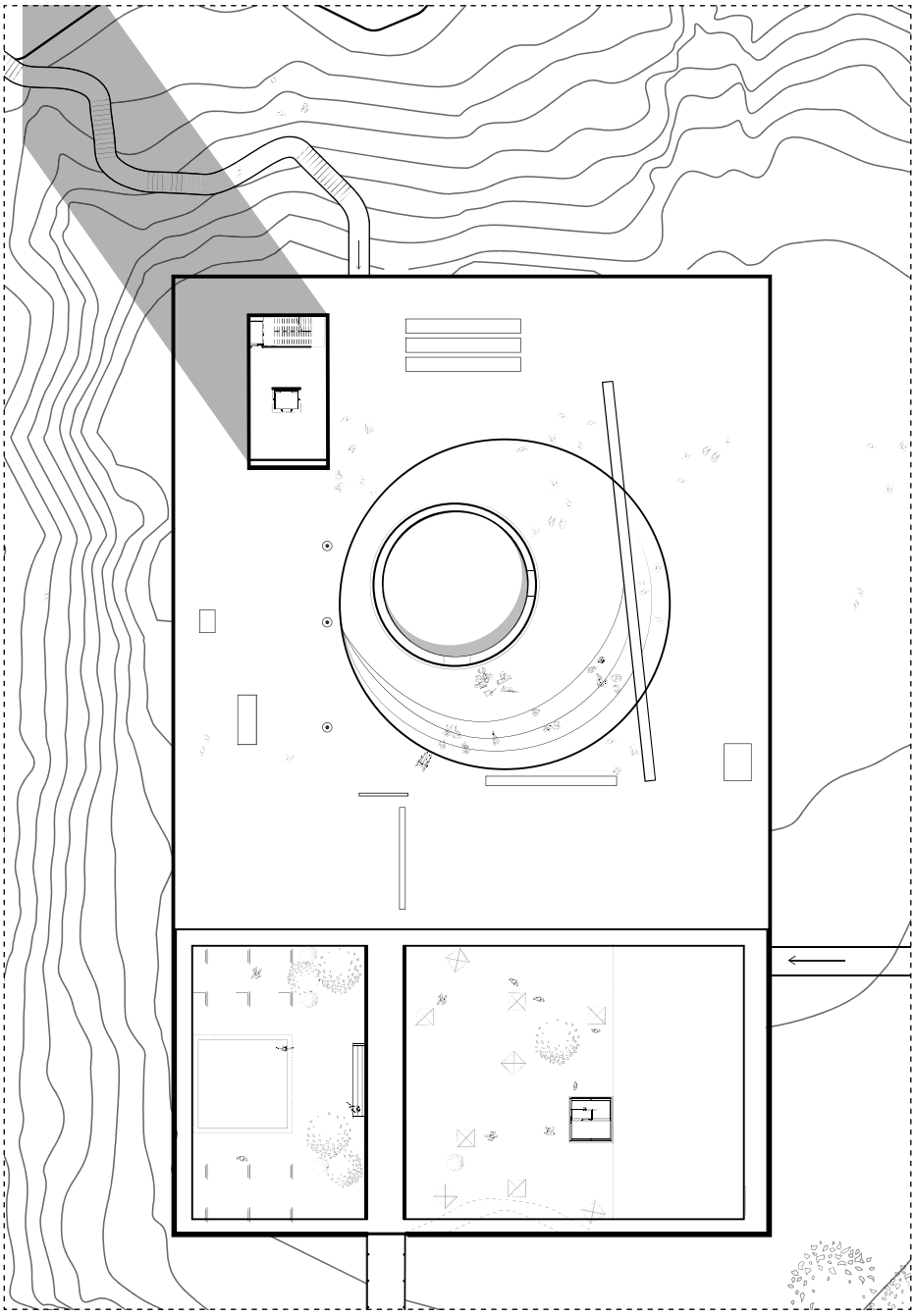
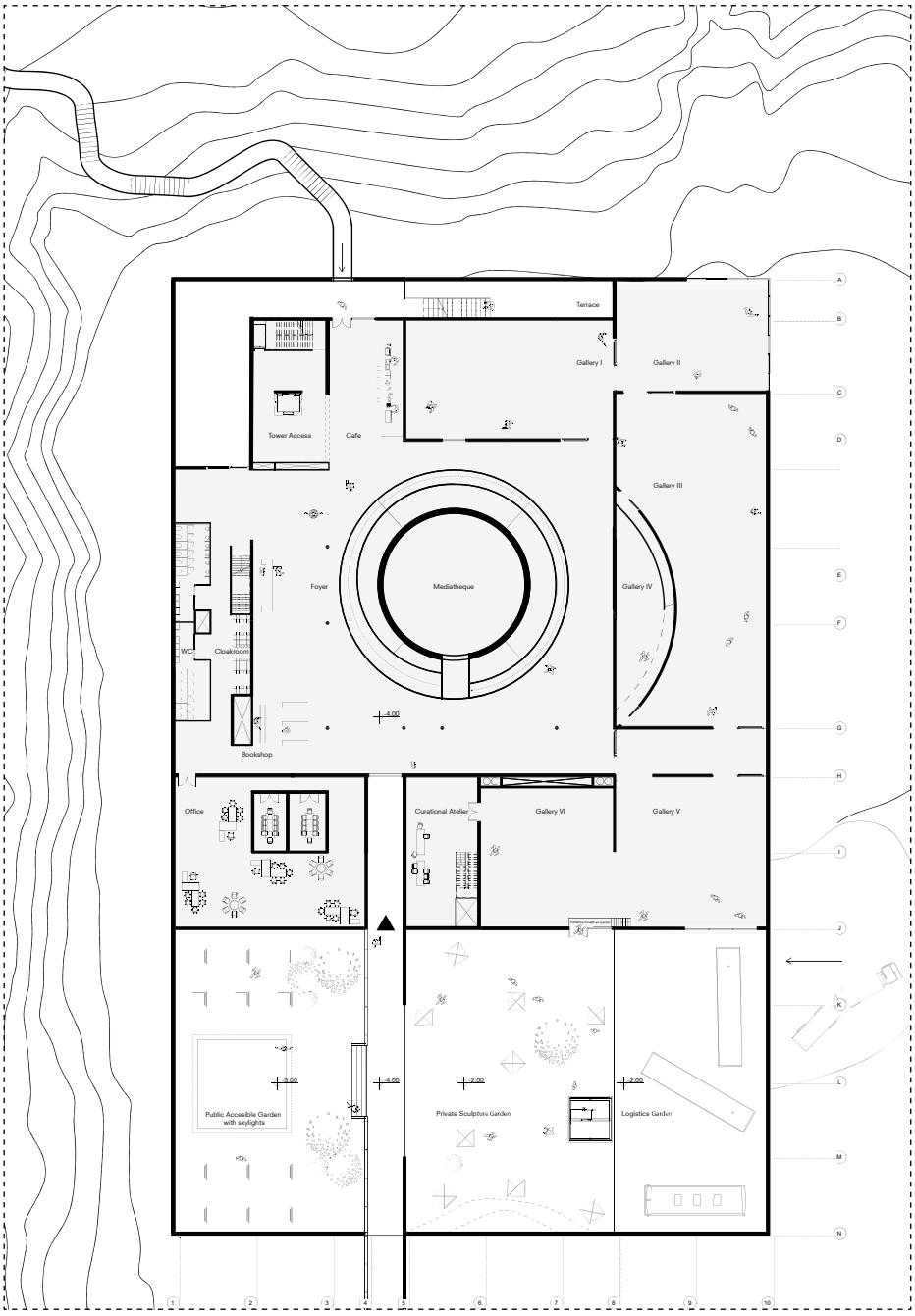
20
40

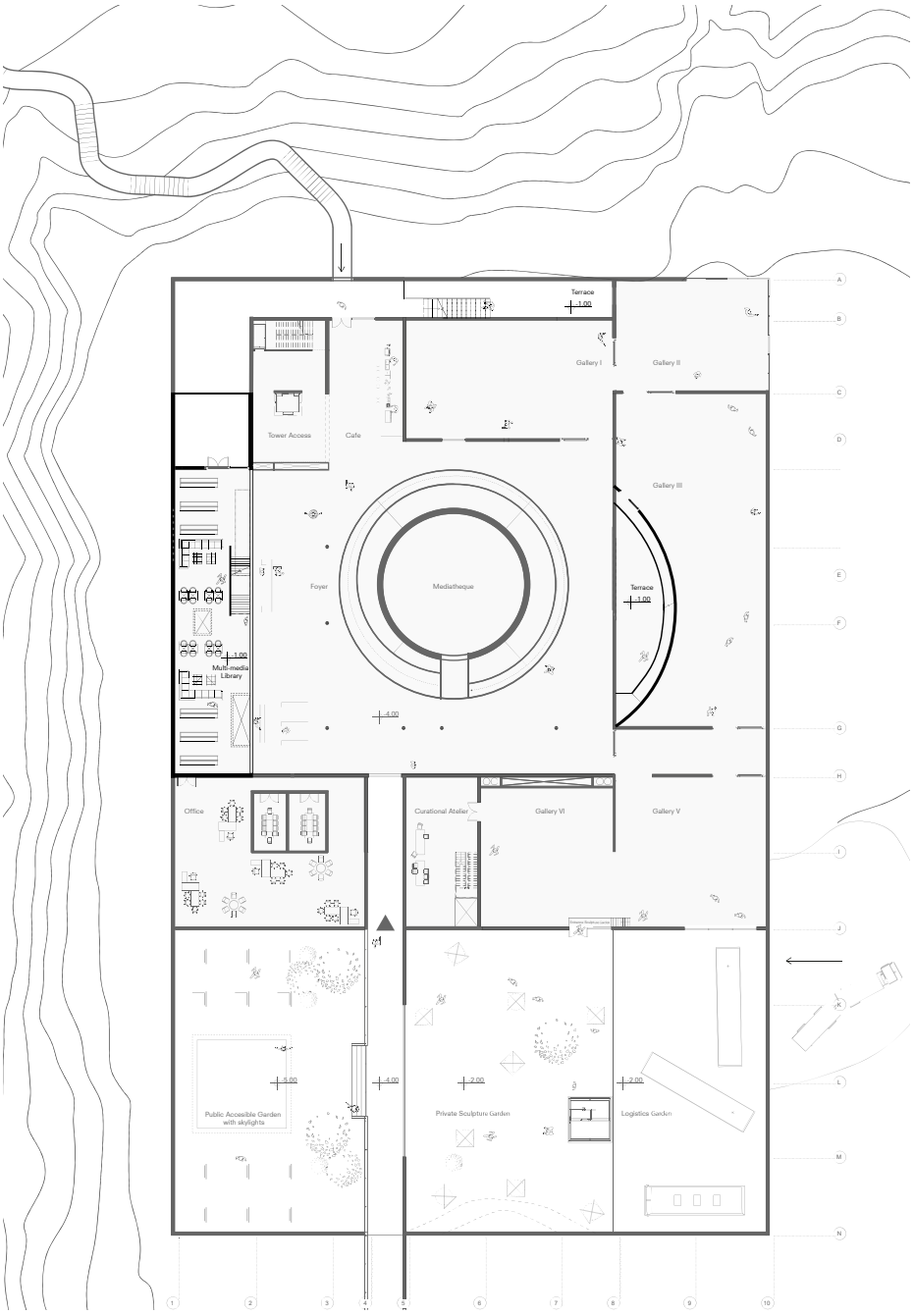


0.00 roof plan



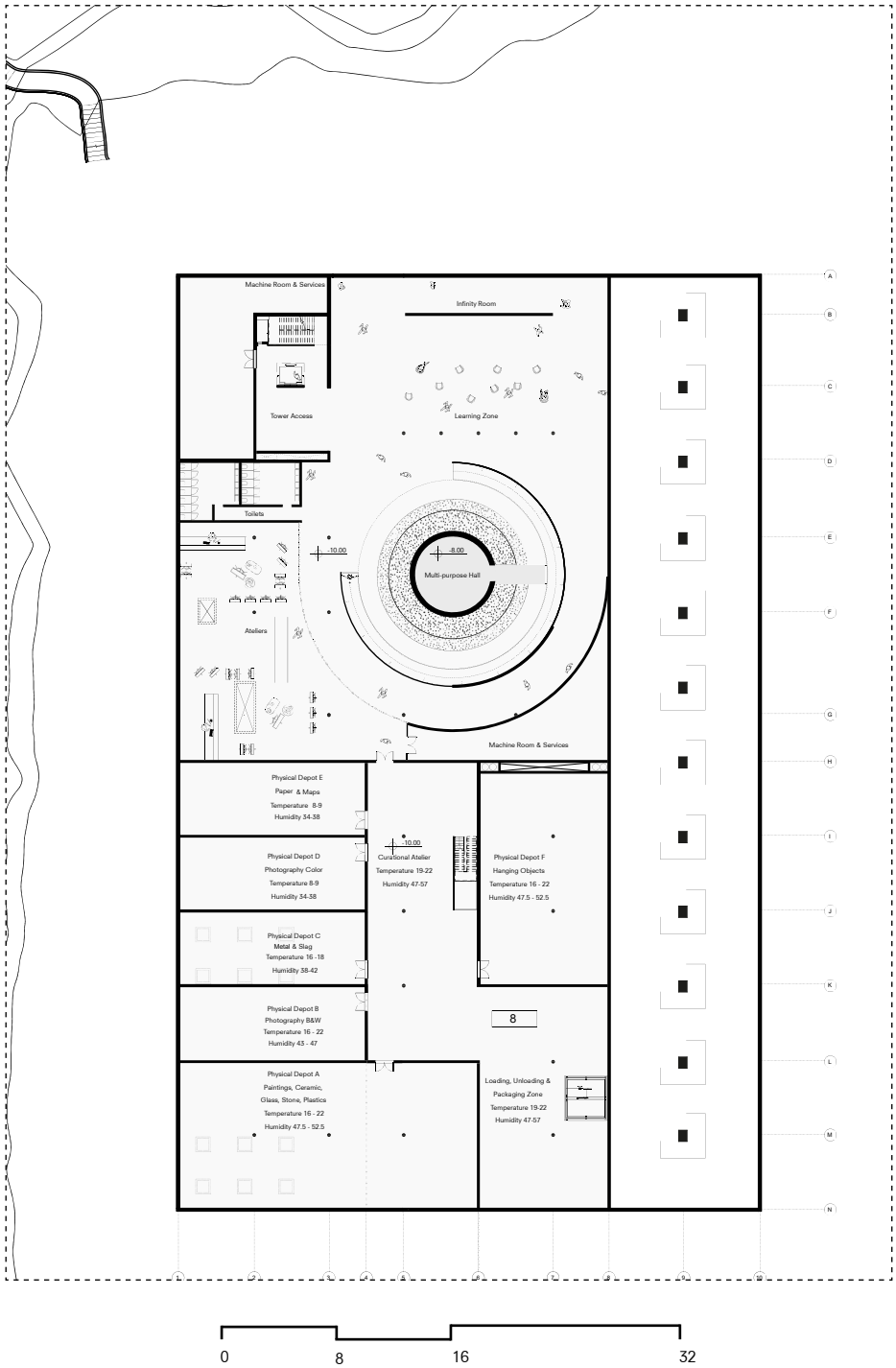
0 8 16 32

-4.00 exposition level plan

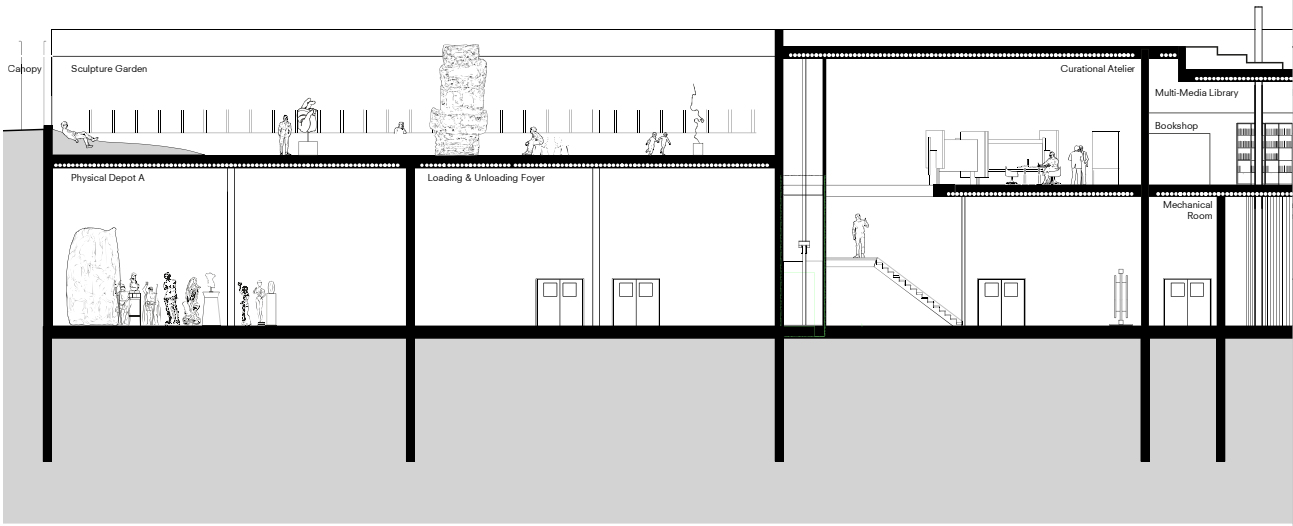


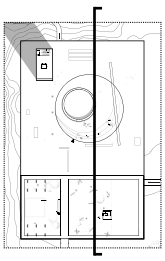
0 8 16 32

-1.00 mezzanine level plan

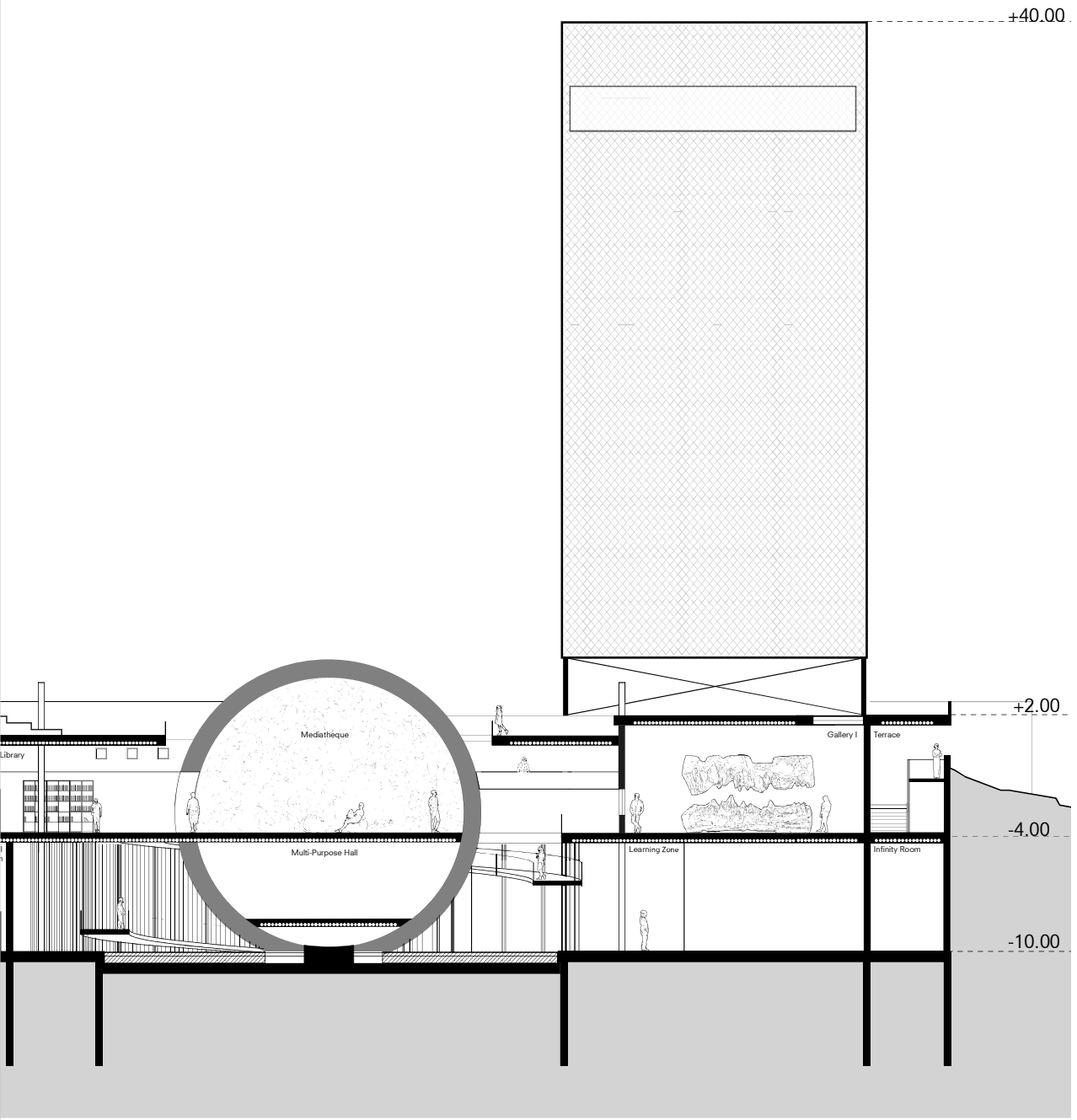


-10.00 arts depot plan



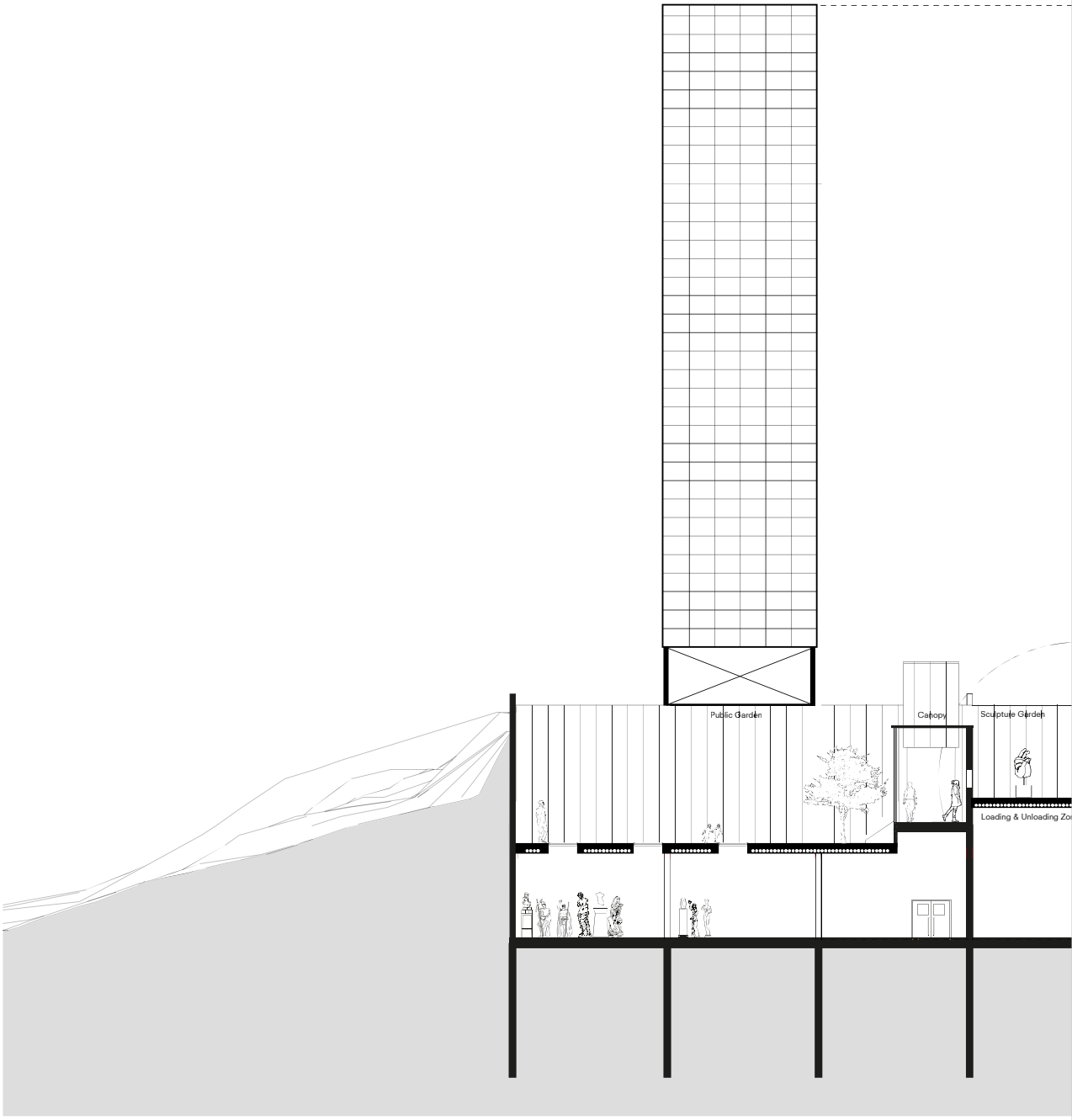


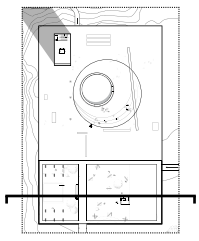
longitudional



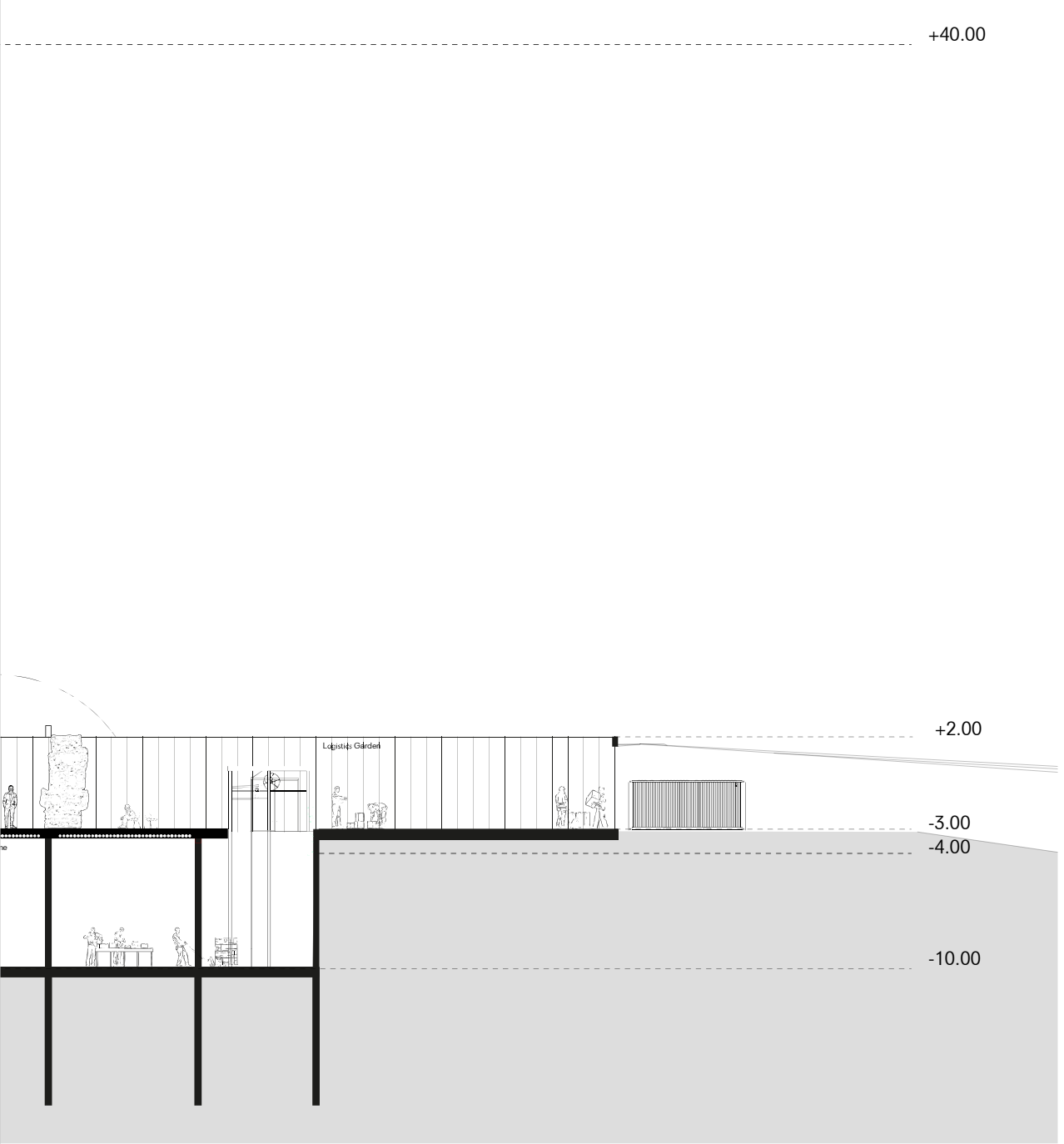
section

0 8 16 32



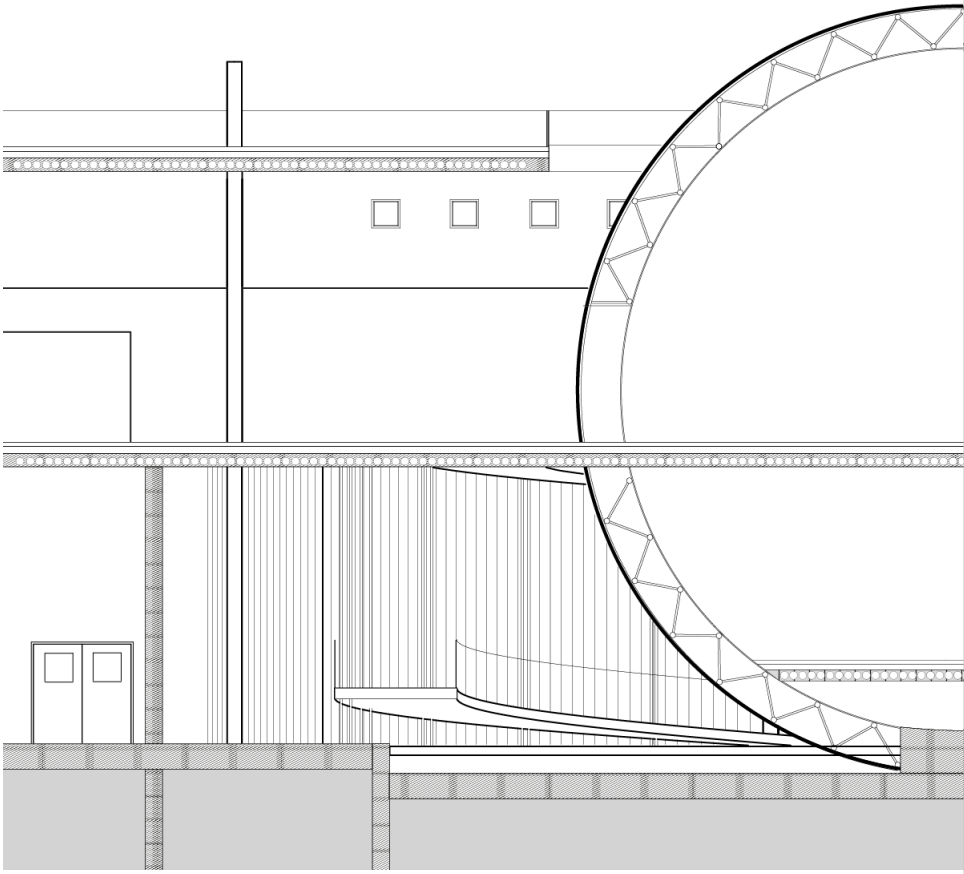


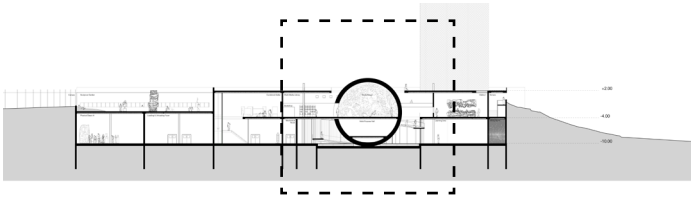
section through the



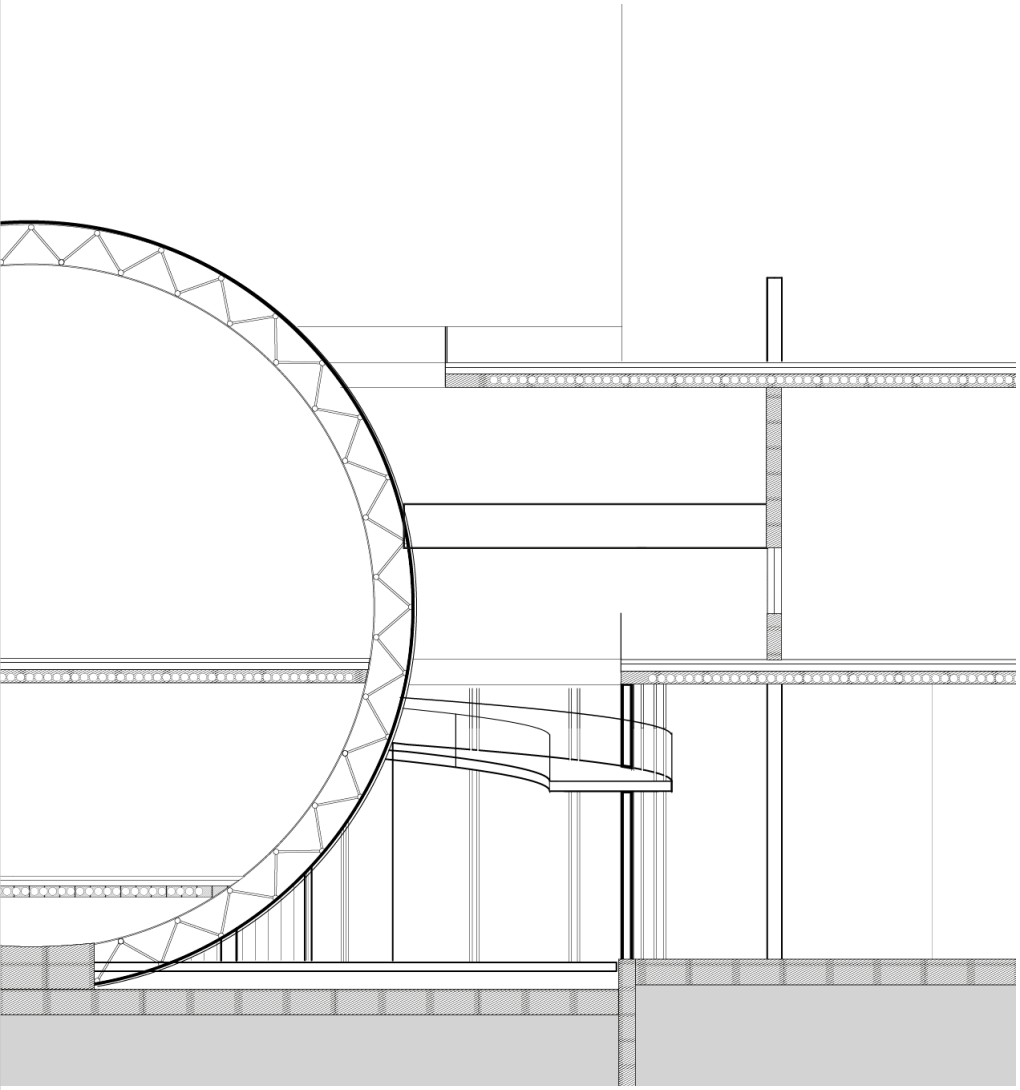
gardens & arts depot

0 8 16 32

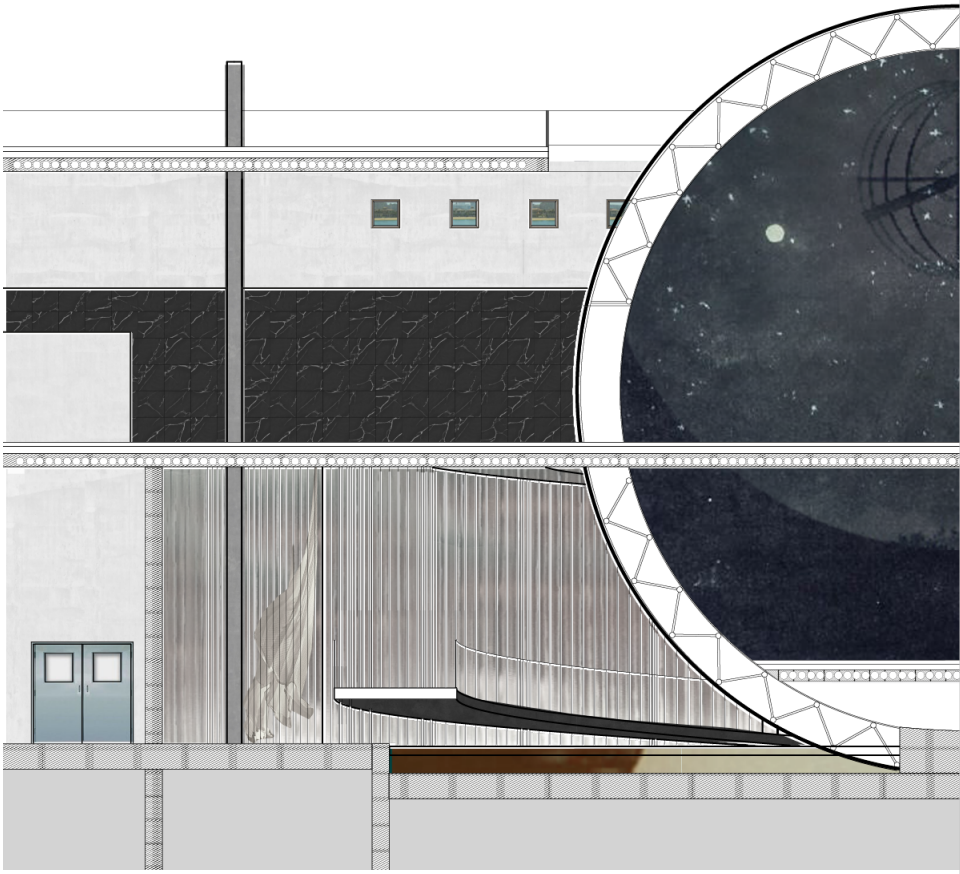


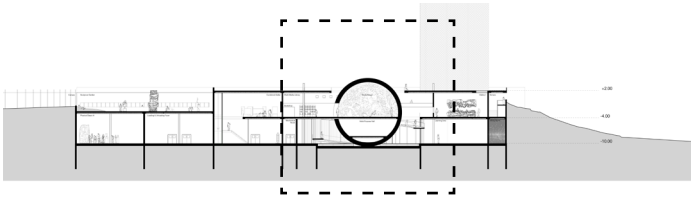


interior



fragment





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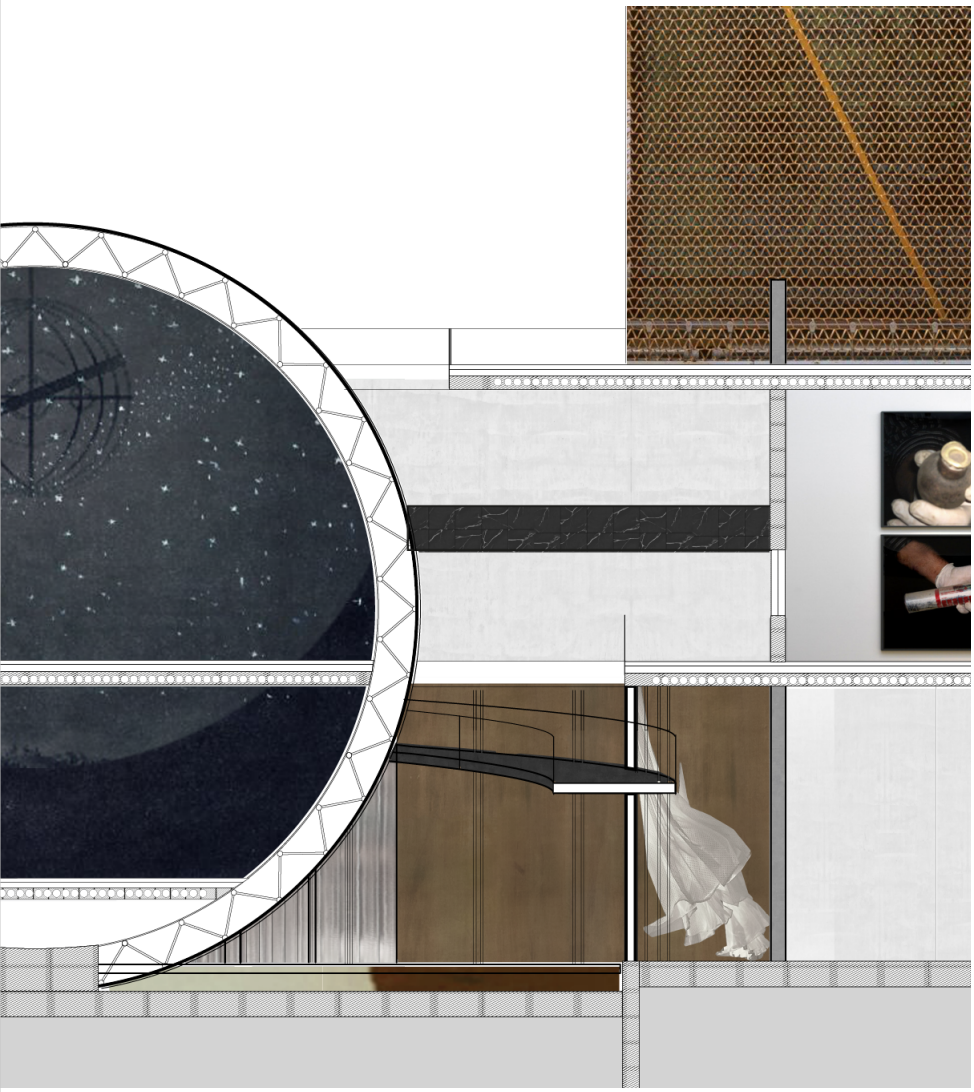

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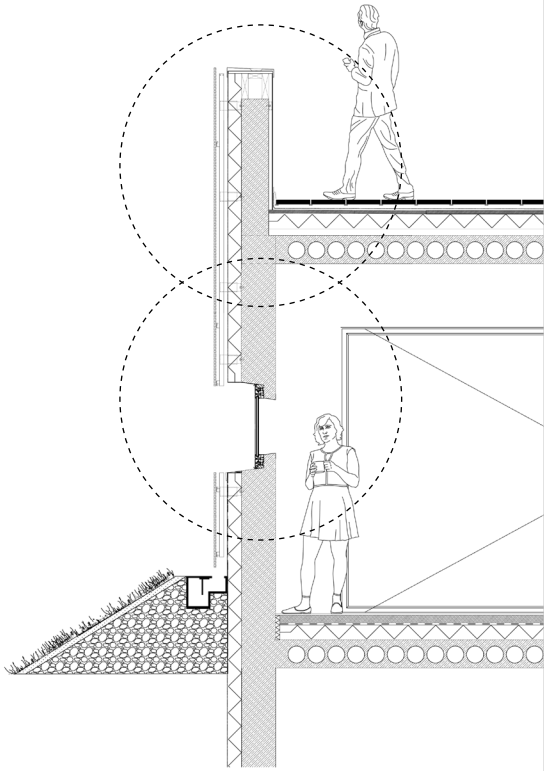

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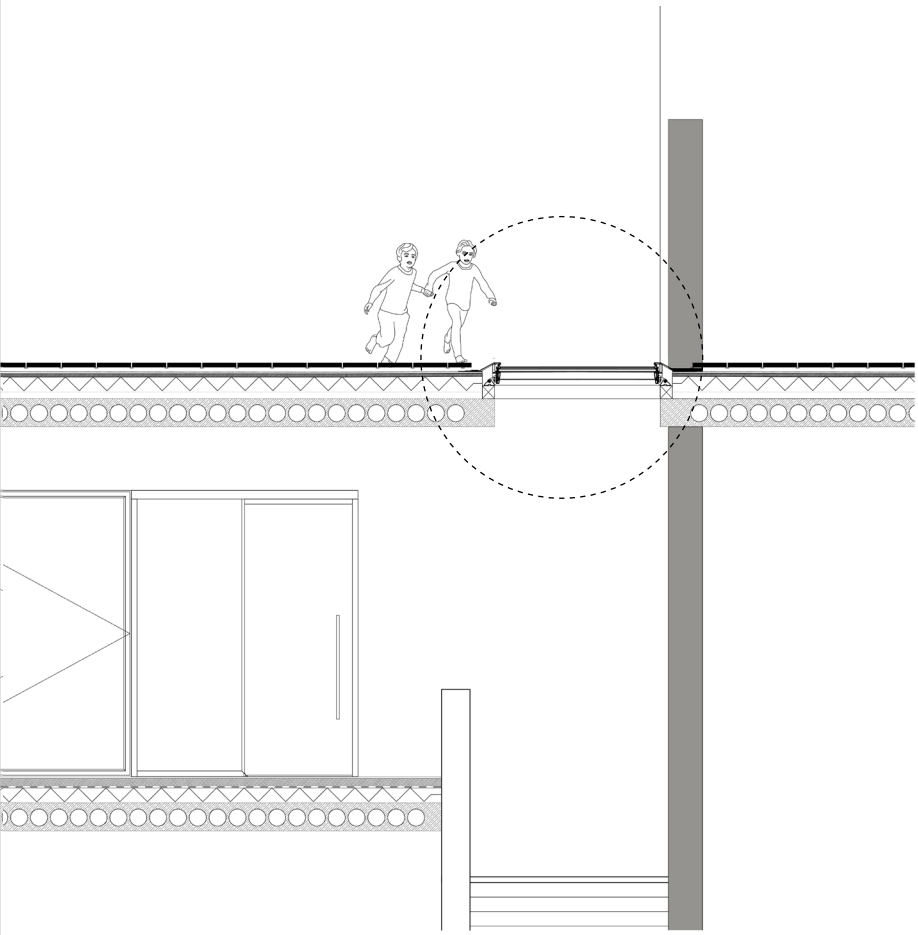

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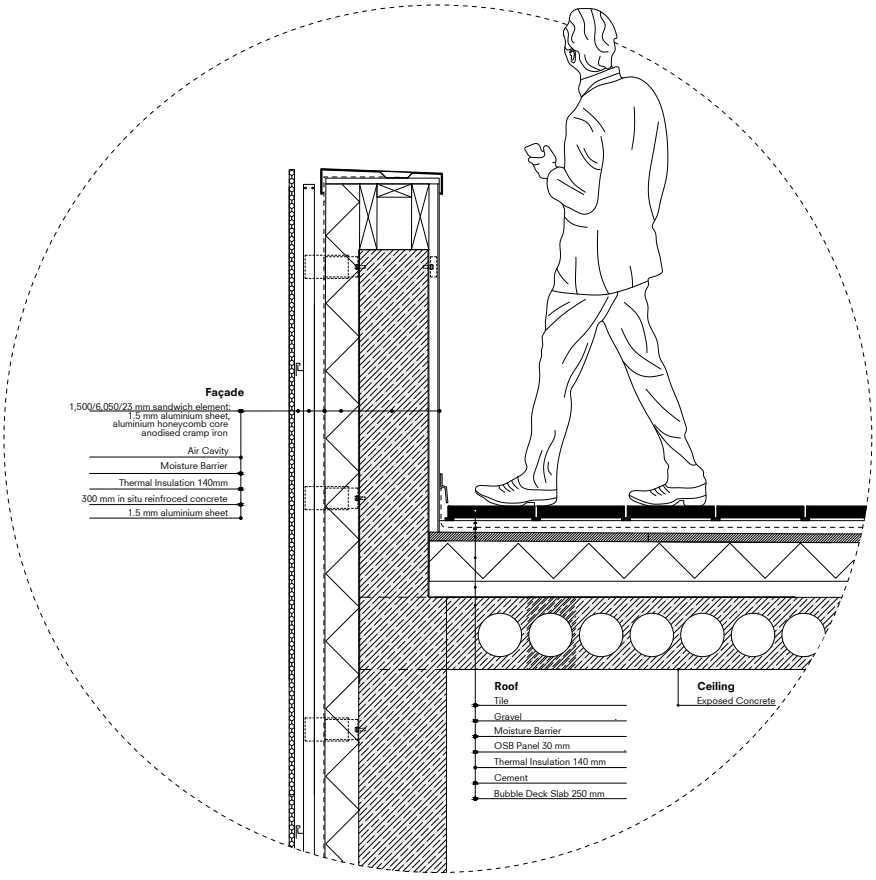
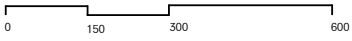
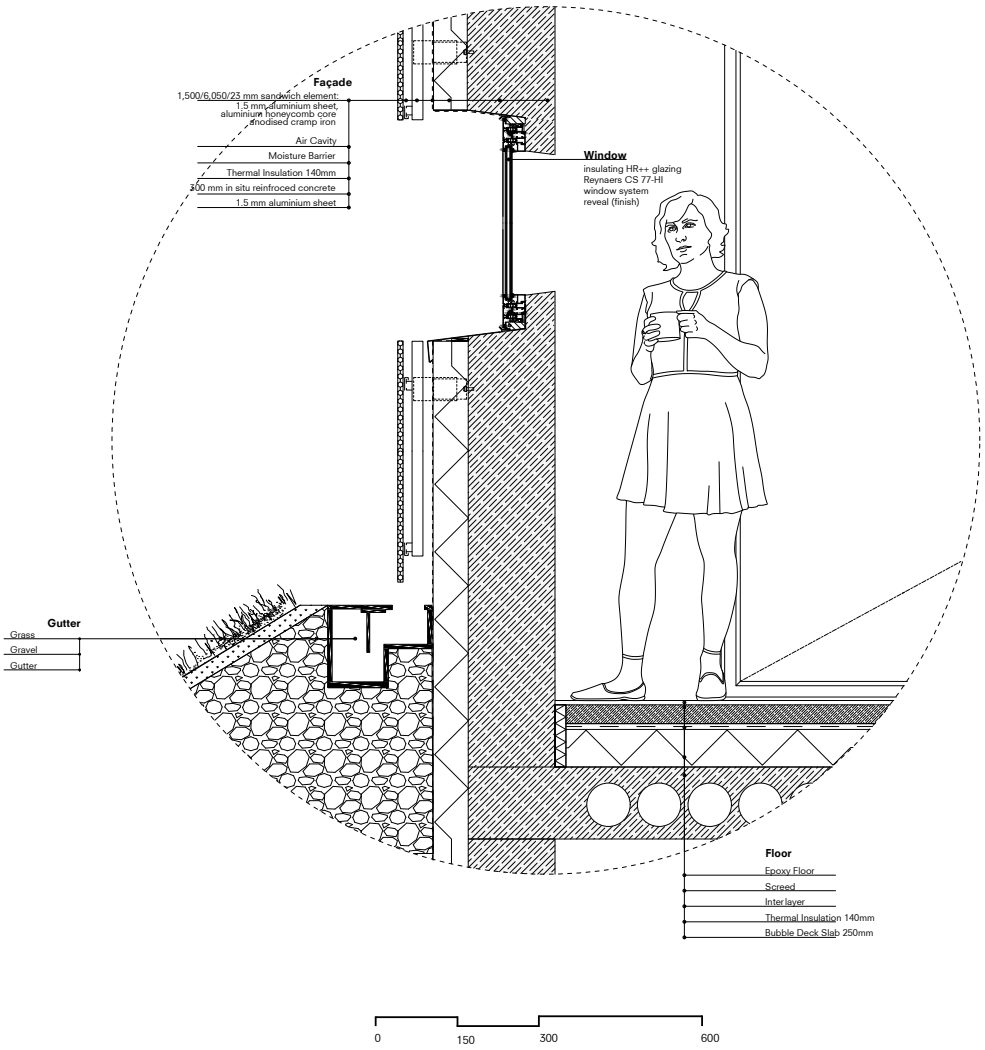
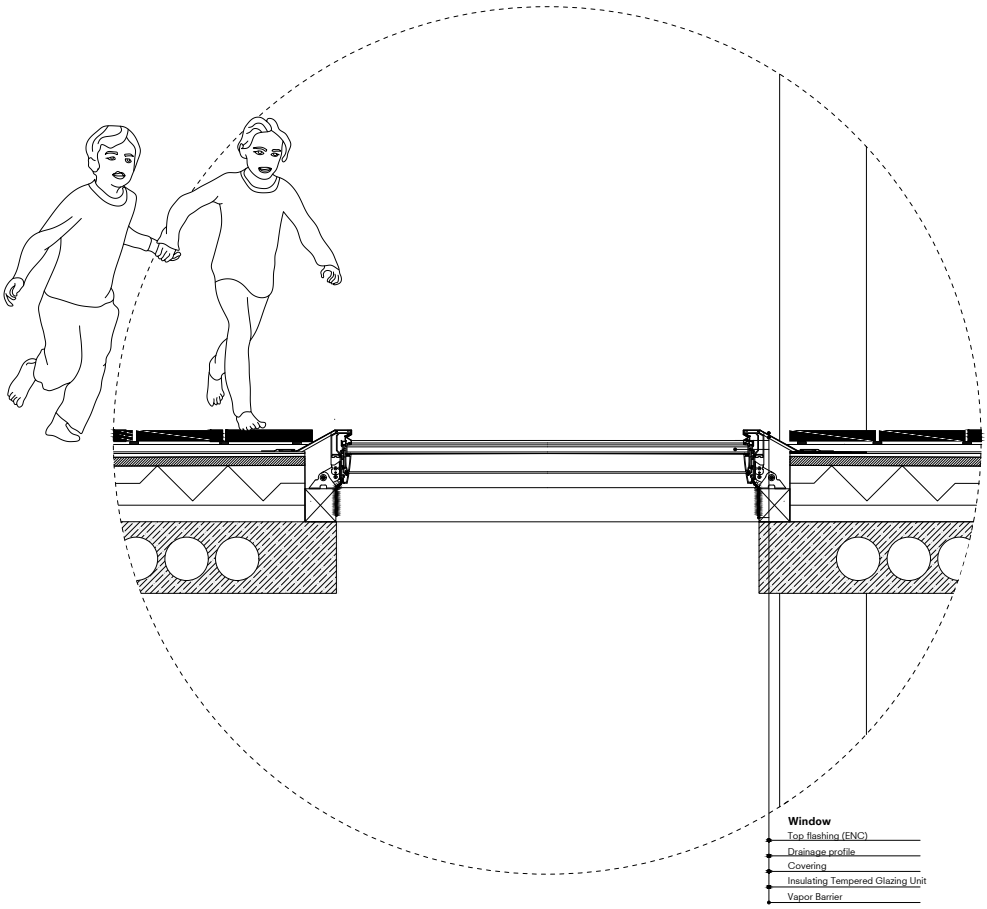




ballustrade + roof detail



cladding + window detail



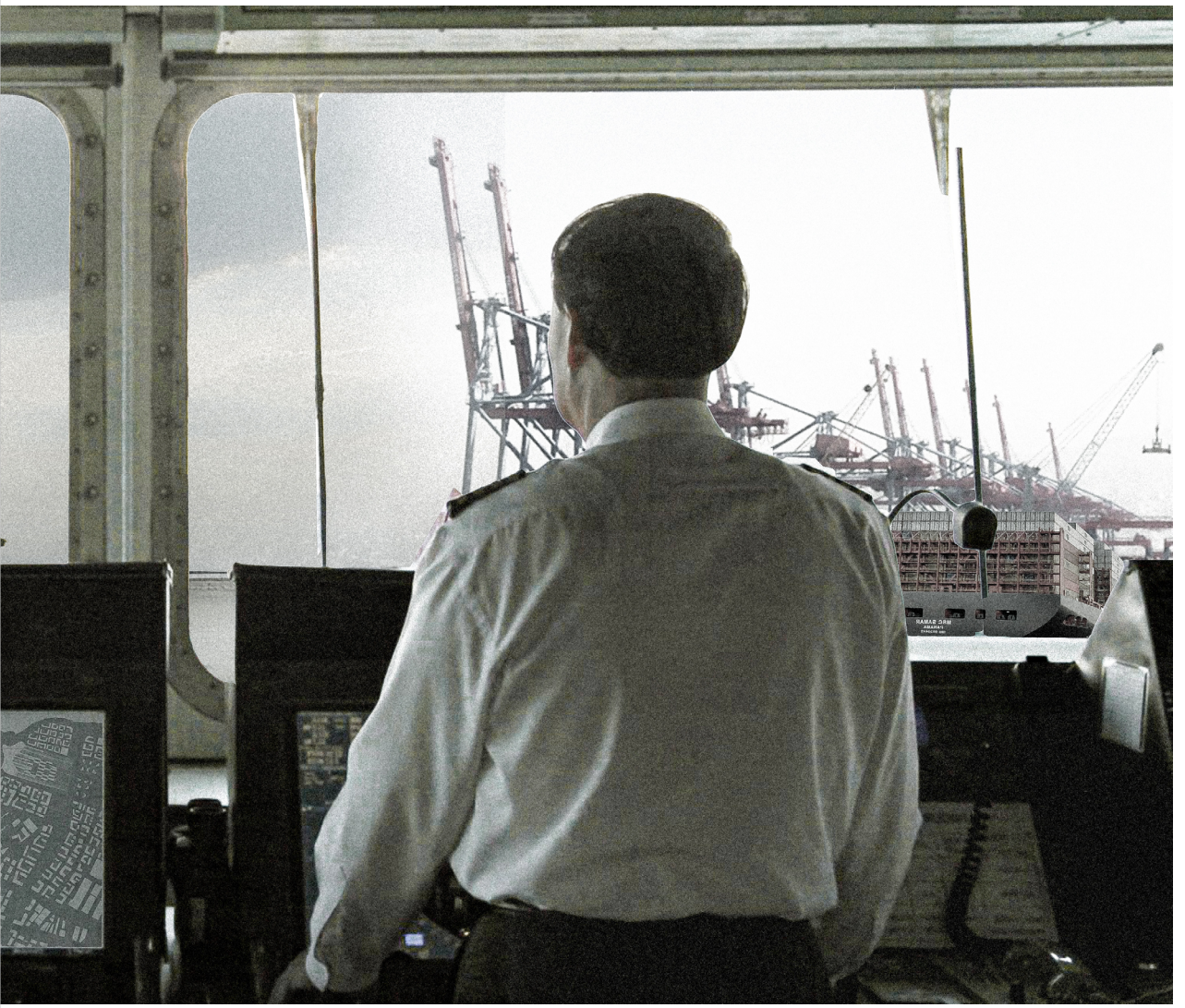
skylight detail

10

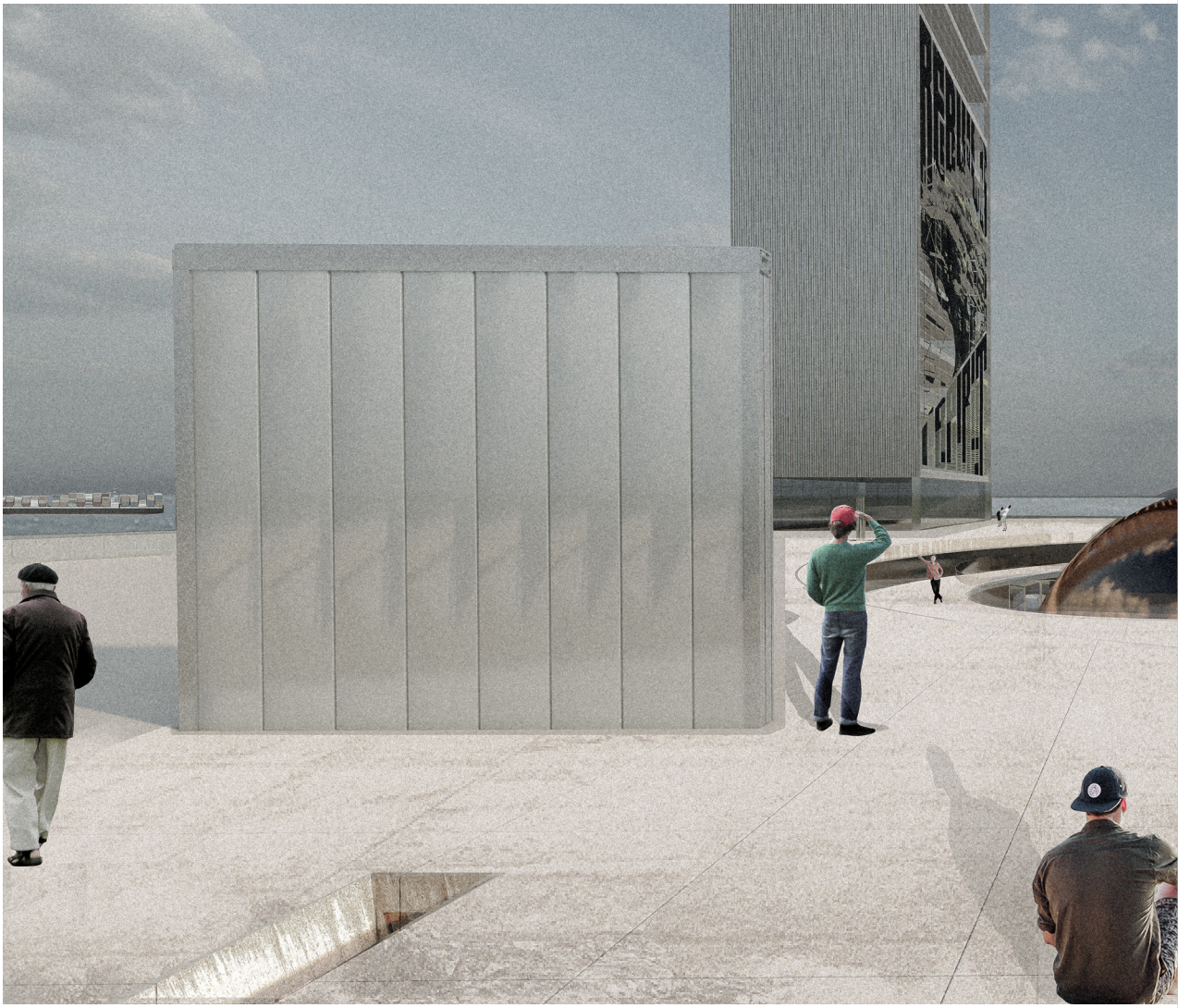
VISUALIZATIONS

Explaining the Design

VIEW FROM THE SEA



VIEW FROM THE PORT

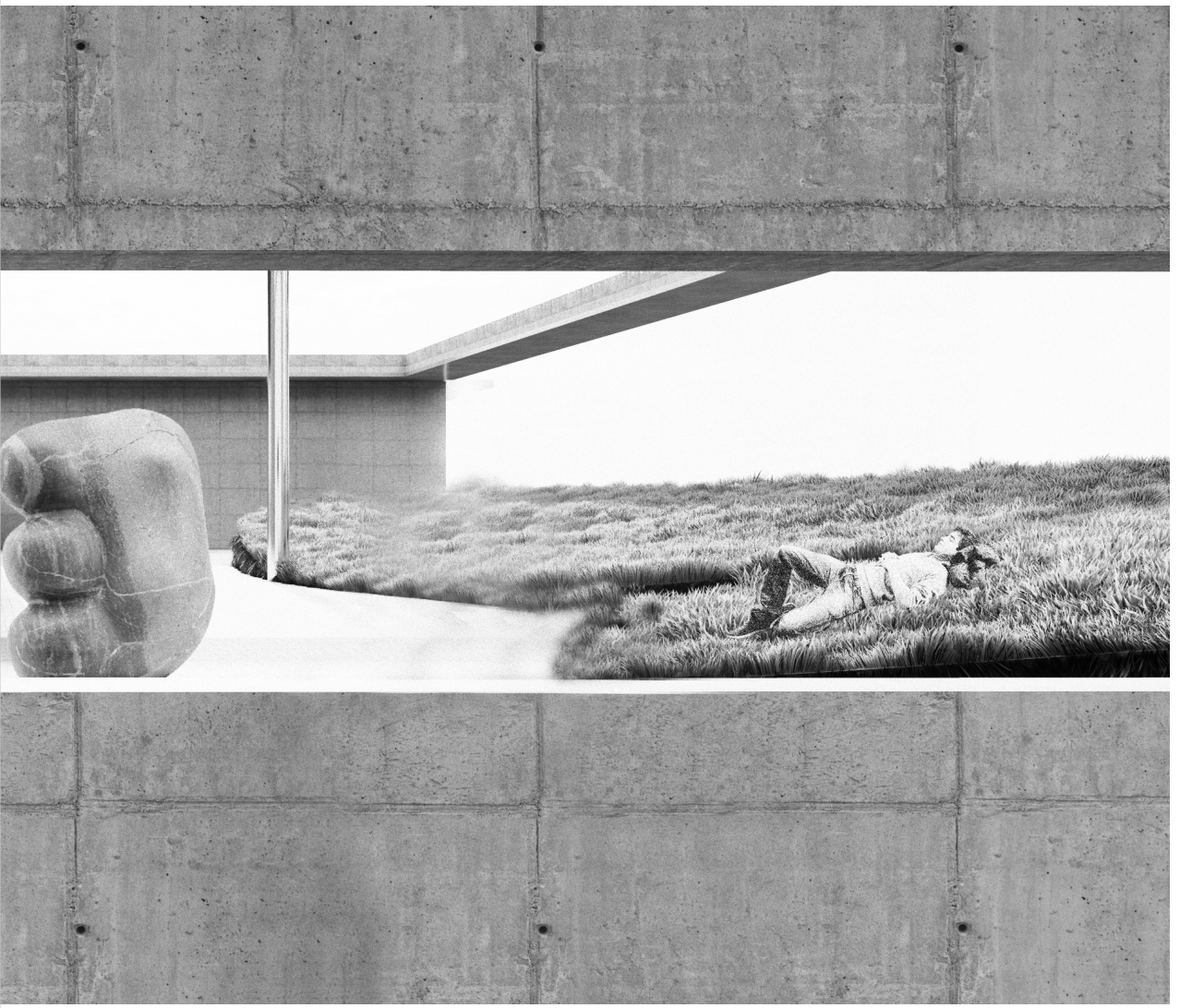


VIEW FROM THE LAND

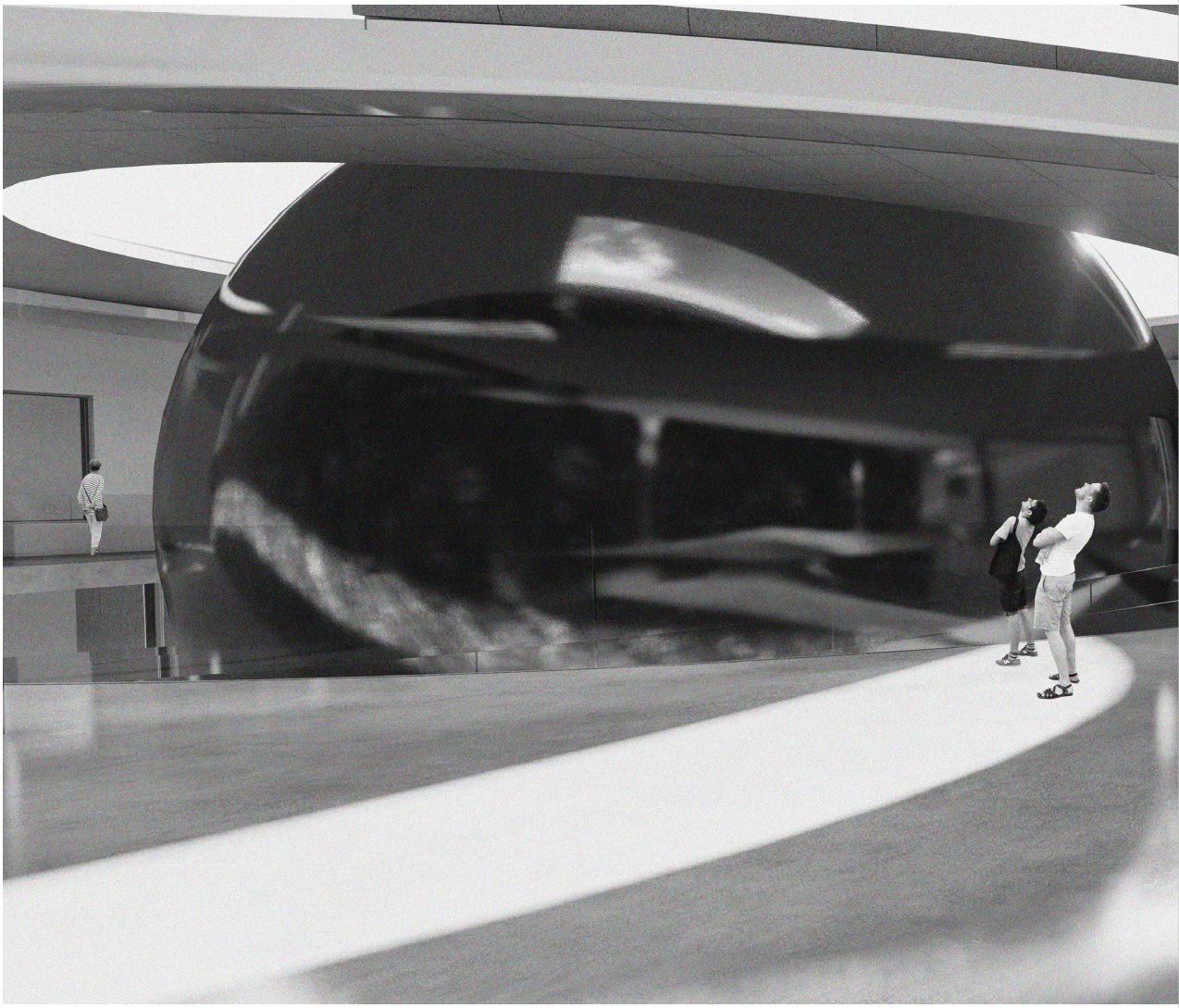
CANOPY

PUBLIC GARDEN

SCULPTURE GARDEN

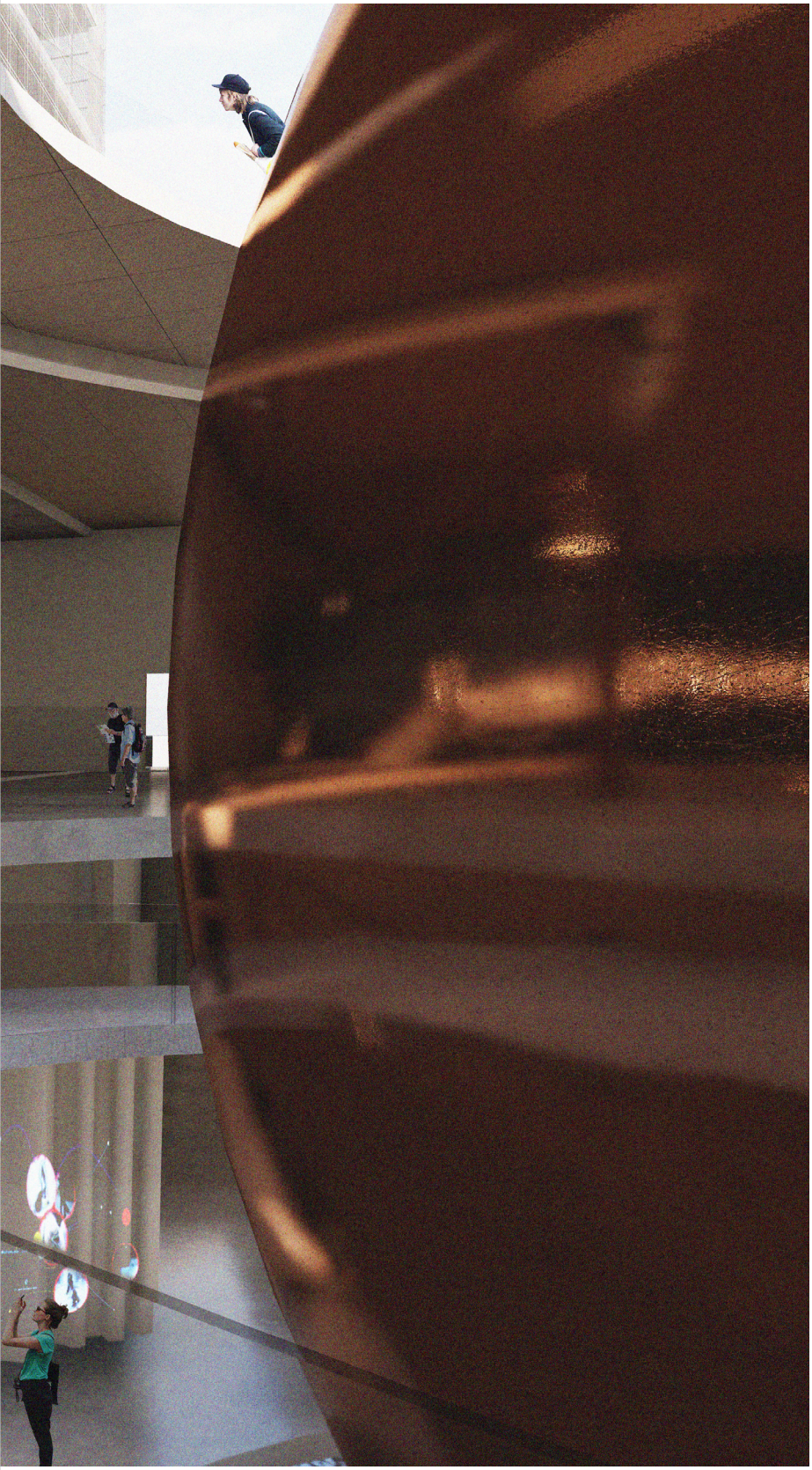


ENTRANCE



FOYER

LEARNING ZONE



APPENDIX I
CULTURAL INSTITUTIONS OF BEIRUT & EXPLOSION DAMAGE

TYPOLOGY	NAME	CURRENT STATUS	DISTANCE TO EXPLOSION SITE (KM)	DAMAGE TY
MUSEUM	Sursock Museum		0,9	extreme
MUSEUM	Arab Image Foundation		0,9	extreme
MUSEUM	Saint George Greek Orthodox Cathedral Crypt Museum		1,3	extreme
MUSEUM	The Archaeological Museum Quarter		1,3	extreme
MUSEUM	Beit Beirut - Museum and Urban Cultural Center		1,8	medium
MUSEUM	MIM Mineral Museum		2,4	light
MUSEUM	National Museum of Beirut		2,5	medium
MUSEUM	The Beirut Art Center		2,5	medium
MUSEUM	Souffleur Museum		2,7	N/A
MUSEUM	American University of Beirut Museum		3,17	light
MUSEUM	Dalloul Art Foundation		4	light
ART GALLERY	Marfa		0,6	extreme
ART GALLERY	ARTLAB		0,7	extreme
ART GALLERY	Galerie Tanit		0,8	extreme
ART GALLERY	Aout Gallery		1,05	extreme
ART GALLERY	Art Scene Gallery		1,2	extreme
ART GALLERY	Carre D'artistes		1,5	extreme
ART GALLERY	Opera Gallery Beirut		1,5	extreme
ART GALLERY	Mark Hachem Gallery		1,6	extreme
ART GALLERY	Sfeir-Semler Gallery		1,7	extreme
ART GALLERY	Hamazkayin Art Gallery		2	medium
ART GALLERY	Artspace Hamra		3	medium
ART GALLERY	Zamaan Art Gallery		3,8	N/A
ART GALLERY	Galerie Janine Rubeiz		4,4	N/A
THEATRE	Zoukak Theatre Company		1,75	medium
THEATRE	Theatre Gemmayzeh		2,26	medium
THEATRE	Syndicat of Actors		3,2	light
THEATRE	Theatre Tournesol		3,4	none
THEATRE	Al Madina Theatre		4,6	none
THEATRE	Teatro Verdun		5,1	none
CONCERT HALL	Musichall Waterfront		1,2	extreme
CONCERT HALL	Black Box		1,2	extreme
CONCERT HALL	Musichall Starco		1,8	extreme
FESTIVAL	**Beirut Art Fair**			

YPE	ANNUAL VISITOR	NUMBER OF ARTWORKS	NOTES
	10.000	70.000	half of permanent collection lost
	3.000	600,000 photos	archive damaged
	9.000	crypt	cathedral heavily damaged
	N/A	historical site	
	N/A	architecture	
	N/A	1.750	
	40.211	10,000 (1,300 on display)	
	20.000	no permanent collection	
	N/A	1.000	
	N/A	16.000	
	N/A	4.000	
	1.000	no permanent collection	collection of Tamara Al-Samerraei lost
		no permanent collection	
		no permanent collection	collection of Lebanese artist, Abed Al Kadiri lost
		no permanent collection	
		no permanent collection	
		no permanent collection	
		no permanent collection	
		no permanent collection	
		no permanent collection	wreck
		no permanent collection	
		no permanent collection	the director died, so they shut their door
		no permanent collection	
		no permanent collection	
	N/A		
	N/A		
	N/A		
	N/A		
	N/A		
	N/A		
	N/A		
	N/A		
	N/A		
			Due to port explosion 650 cultural heritage sites were damaged
	35000	**36,000 entries in 2019**	**6 million dollar income**

APPENDIX I
RESEARCH STRUCTURE

ANALYZED MATERIAL

CASE STUDIES
GROUP I : STORAGE FAC.

1. SVALBARD GLOBAL SEED VAULT

2. 1111 LINCOLN ROAD

3. DEPOT BOIJMANS

4. GOOGLE'S FINNISH DATA CENTER

CASE STUDIES
GROUP II: DIGITALIZATION

1. CENTRE POMPIDOU

2.ZENTRUM FUR KUNST UND MEDIENTECHNOLOGIE

3. EYEBEAM INSTITUTE

4. ARS ELECTRONICA CENTER

LITERATURE
THEORETICAL FRAMEWORK

1. MUSEUMS AT THE POST-DIGITAL TURN (MOUSSE PUBLISHING, 2019)

2. THE ART MUSEUM IN THE DIGITAL AGE – 2022 (VIENNA)

3. THE POSTDIGITAL MUSEUM (ROSS PARRY, 2015)

4. 'ARCHAEOLOGY OF THE DIGITAL' (PETER EISENMAN, GREG LYNN, FRANK GEHRY, CHUCK HOBERMAN, SHOEI YOH)

HOW THE ANALYSIS IS PERFORMED?

CASE STUDIES
GROUP I : STORAGE FAC.

CASE STUDIES
GROUP II: DIGITALIZATION

LITERATURE
THEORETICAL FRAMEWORK

The case studies will be compared in relation to context and function through re-drawing of architectural means to elaborate on the program and spatial configuration.

The first group of case studies will focus on storage facilities and means of preservation of objects.

The second group of case studies will focus on digitalization as an architectural layer.

What is the theory lying behind adaptation of digital culture into architectural thinking?

How does cyberspace influence tangible space?

How does ephemerality influence space?

Research Structure:

1. How does culture unite Beirutians against unrest and destruction?

2. How have destructive events affected the cultural scene in Beirut?

3. What is worth preserving and storing among the cultural heritage of Beirut?

4. What is the anatomy of a storage facility?

5. Can culture be stored in a facility, if so how?

Research Question:

How can digitalization be utilized for preservation and accessibility of cultural heritage?

Design Question:

How does preservation through digitalization translate into architecture?

Hypothesis:

Digitalization significantly improves accessibility of art and engagement of the community.

Archiving of cultural objects challenge ephemerality of knowledge.

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