



UNIVERSITÀ DI PARMA

DIPARTIMENTO DI INGEGNERIA E ARCHITETTURA
CORSO DI LAUREA IN ARCHITETTURA E CITTA' SOSTENIBILI

**BUILDING INFORMATION MODELING:
DIGITAL MODELING OF ARCHITECTURE
DIGITAL VISUALIZATION OF PROJECT**

A.A. 2022-2023, Prof. Sandra Mikolajewska

Guggenheim Helsinki Design Competition

Competition Conditions

GUGGENHEIM

MALCOLM
READING
CONSULTANTS



Guggenheim Helsinki Design Competition – Six Finalist





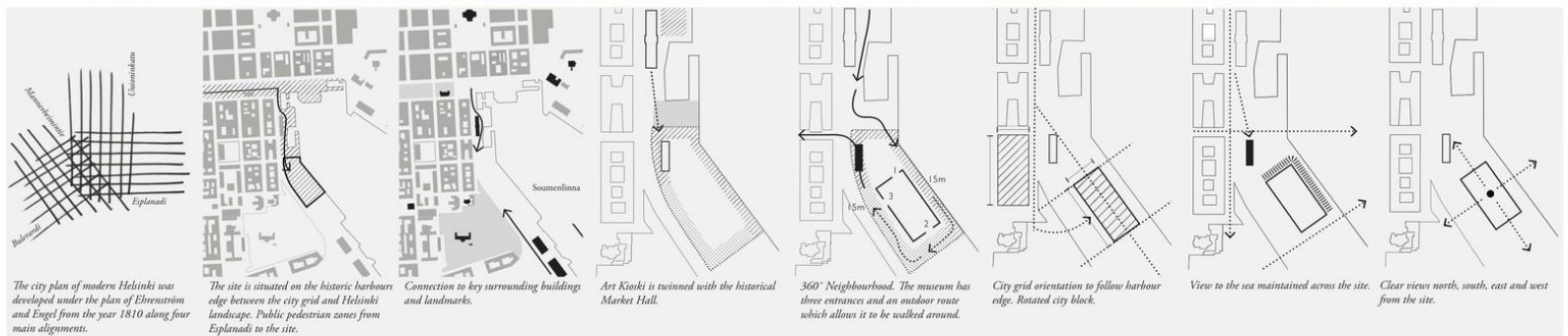


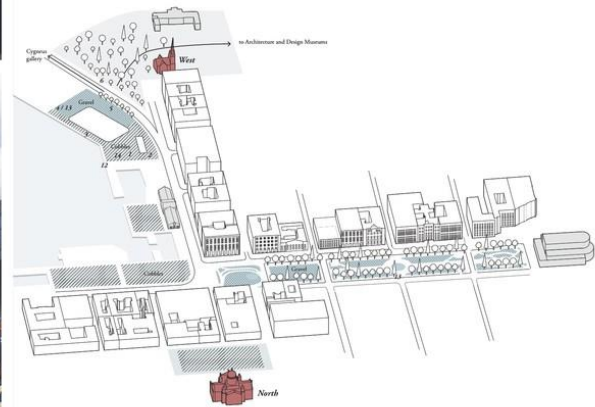
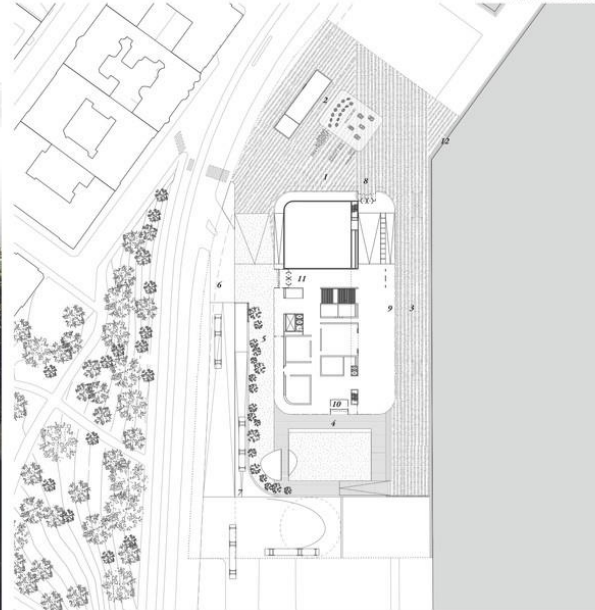
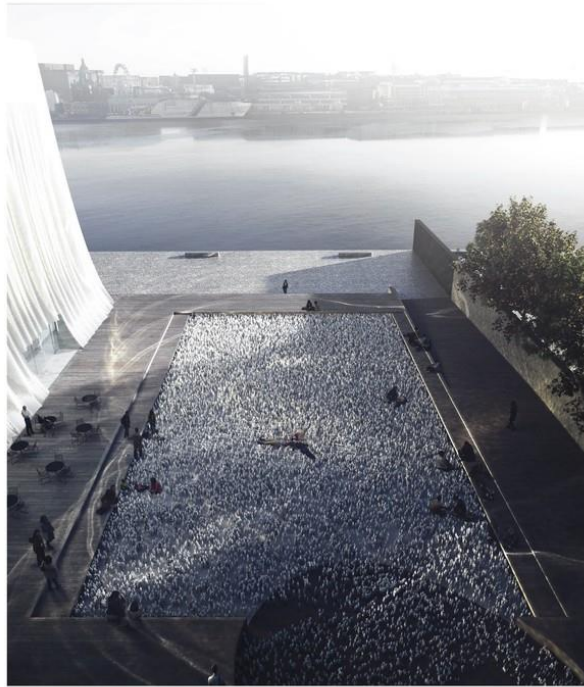
quiet animal

Our proposal takes the form of a Helsinki city block rotated to the harbourfront. Seven timber-clad galleries are stacked over a basement and three levels flanked by administration and open-format halls. Public spaces are formed between these and an intelligent textured glass skin wrapping the entirety to precisely diffuse light, translucent below, and transparent above. The lower galleries join as needed, while the third floor is one super-space. The variety enables a wide range of curatorial approaches.

The museum's three entrances are arrived at by new cobble and gravel walking routes. Centrally a wide, convivial staircase helps visitors wayfind intuitively. "Art Kiosk" annex for young Nordic art twins the historic Kauppahalli while a sculpture garden is enclosed to the south.

In 1800s Helsinki city blocks were named after wild animals. The proposed new block will have the tactile familiarity of a pet's fur. So we call this proposal "quiet animal".





360° NEIGHBOURHOOD

Our museum's three entrances, and exterior views, public routes and spaces will help it achieve a closer relationship with its existing neighbours.

North
The Art Kiosk is the urban and artistic "open end" of the museum. It is a flexible exhibition annex for young Nordic art which can be reconfigured by the commissioned artist. This street-scale structure is twinned with the historic market hall.

The new public square will host outdoor installations and events using Art Kiosk as base. This could be called Sofia Square after Sofiakatu which the site is axially related to.

We propose to extend the cobble landscape to our new square and along the water edge.

East
The waterfront strip is reclaimed for open public usage. It's historic name "Makasiiniranta" is being reinstated. It has a special quality of isolation from the city like taking an ice walk on the sea.

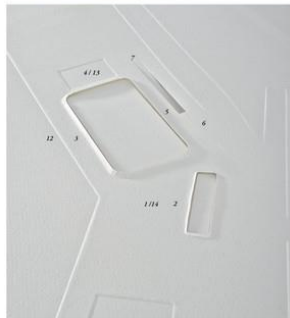
The sea steps around the basins will be continued on Makasiiniranta.

South
The sculpture garden is enclosed by a boundary which designates a future ferry terminal. It has a gravel landscape like the Esplanadi and raised deck which the cafe spills out onto.

West
The western garden has a gravel landscape. It allows the whole block to be walked around and is another route to get to the sculpture garden or to the observatory park from the waterfront.

We have created a western entrance. This greets the observatory park and ferry visitors, mirroring its line of trees on our site edge.

Cygnus Gallery
Opened in 1882, the Cygnus Gallery is the oldest art museum in Finland. It is Guggenheim Helsinki's closest cultural neighbour.



Lifting the landscape

Connecting the neighbourhood

VIEWS AND TEXTURES

North
Helsinki Cathedral, Kauppatori, City hall, Palace Hotel, Vanha Kauppahalli

East (looking across the Makasiini space)
Katajanoka, Stora Enso, Uspenski Cathedral

South
Suomellina, Vallisaari, Olympiaterminaali

West
Tähtitornivuoren puisto, Saksalainen Kirkko



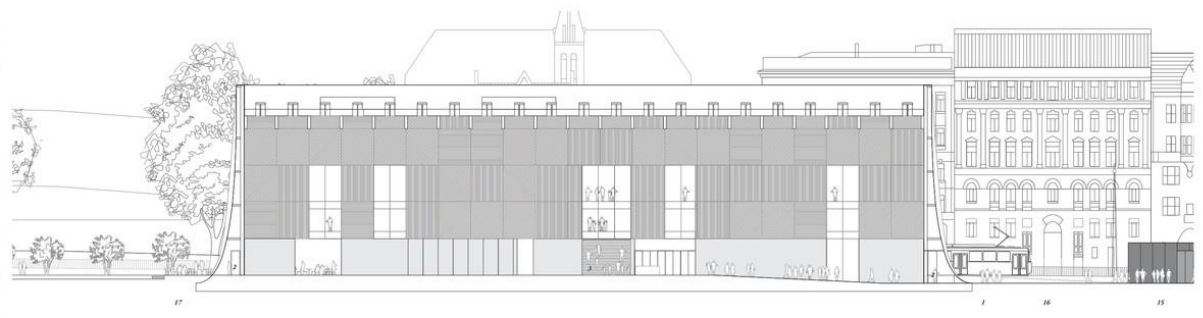
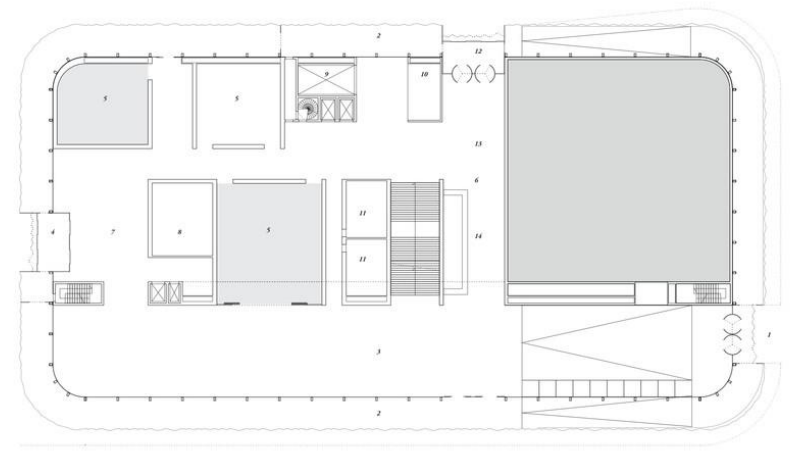
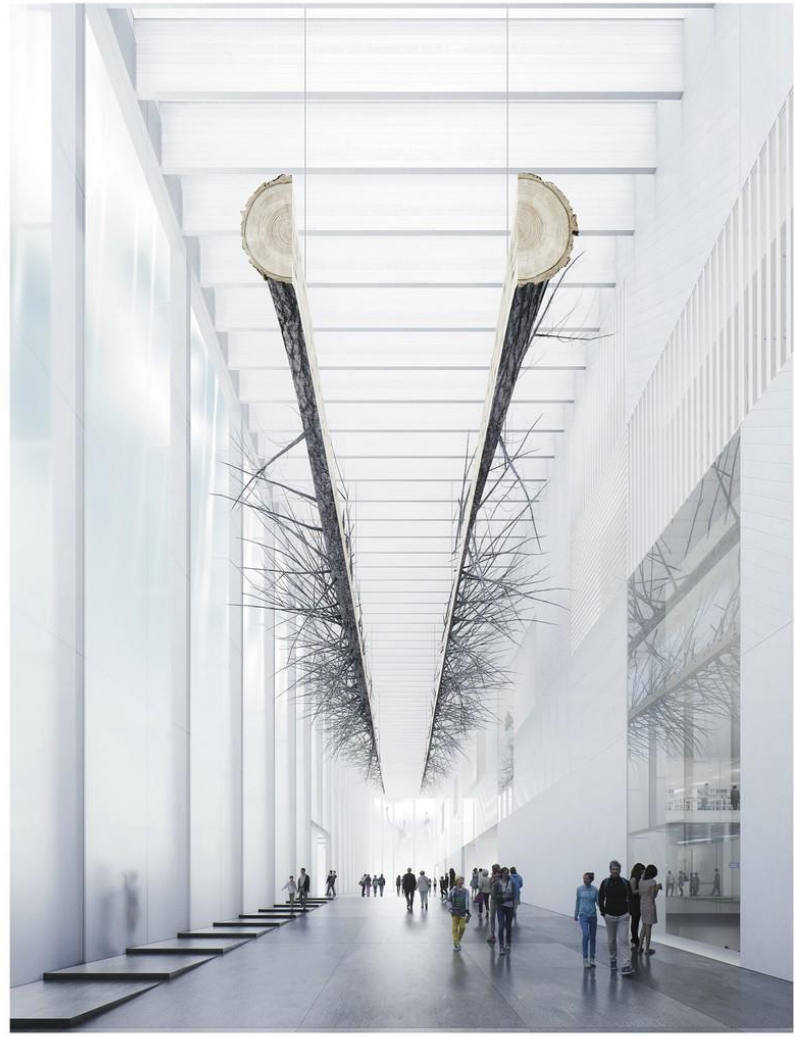
SITE PLAN

1:1000

0m 5m 10m

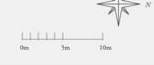


- | | | | |
|---|---------------------------------|----|-------------------|
| 1 | Sofia Square | 8 | North Entrance |
| 2 | Art Kiosk | 9 | Itimansari |
| 3 | Makasiiniranta | 10 | Southern Entrance |
| 4 | Sculpture Garden | 11 | Western Entrance |
| 5 | Western Garden | 12 | Sea Steps |
| 6 | Road access to Port | 13 | Gravel Landscape |
| 7 | Art delivery ramp 1:10 gradient | 14 | Cobble Landscape |



GROUND FLOOR PLAN

1:300



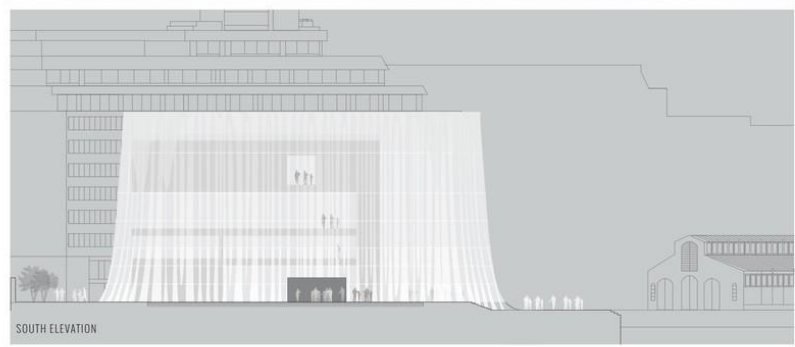
- 1 North Entrance
- 2 Intranseo
- 3 Makasiini
- 4 Southern Entrance
- 5 South Gallerin
- 6 Overseas Gallery
- 7 Cafe
- 8 Cafe Kischen
- 9 Art lift
- 10 Coat Check / Lockers
- 11 W.C.
- 12 West Entrance
- 13 Visitor Screening
- 14 Ticketing / Information Desk

SECTION A A

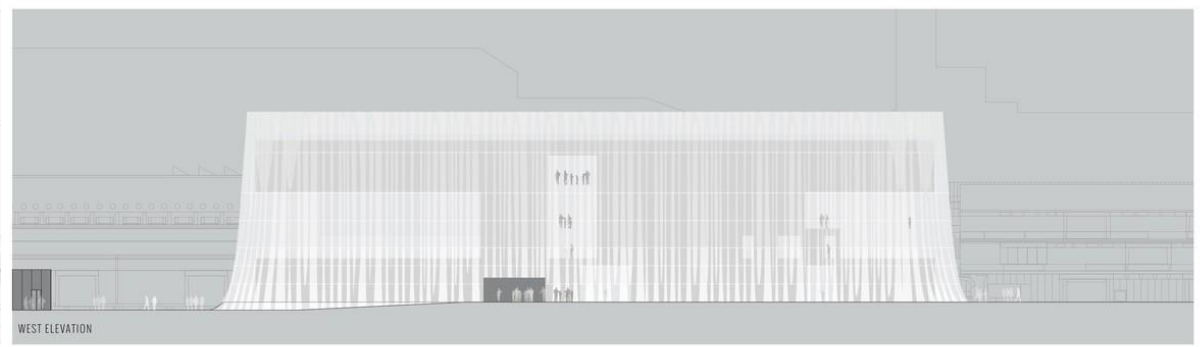
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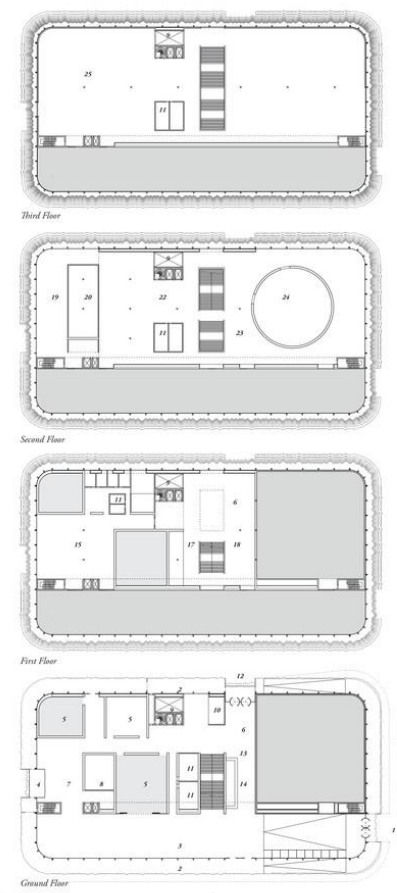
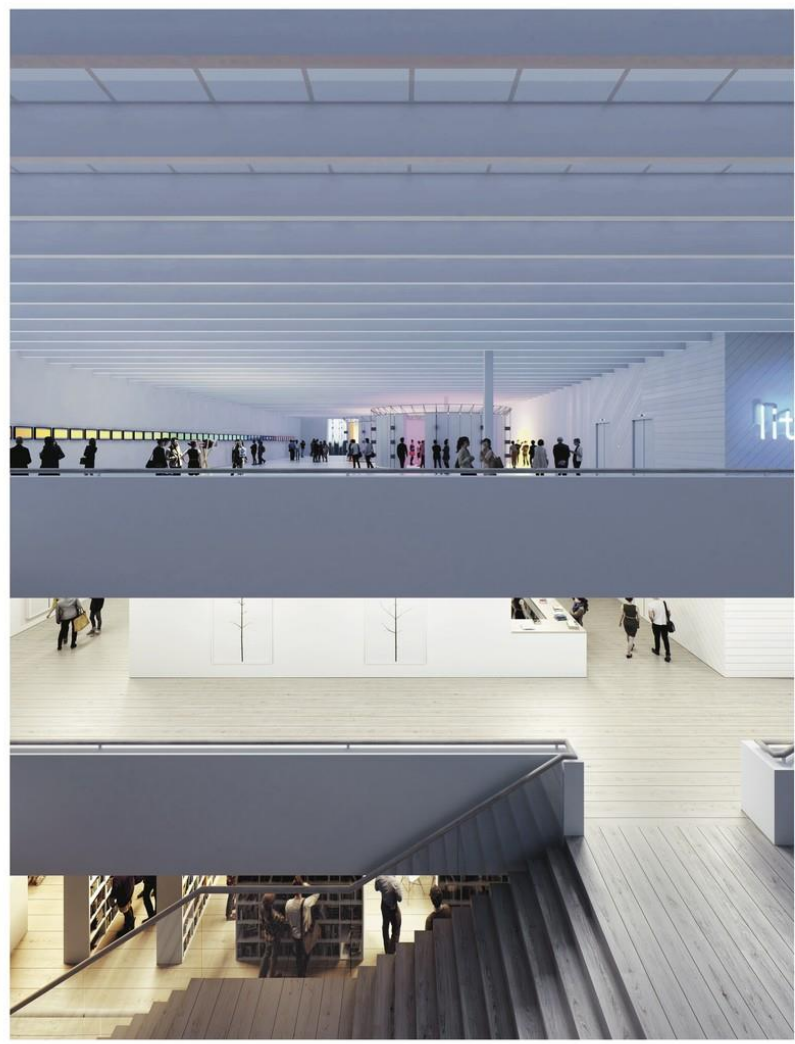
- 15 Art Kinski
- 16 Sofa Square
- 17 Sculpture Garden



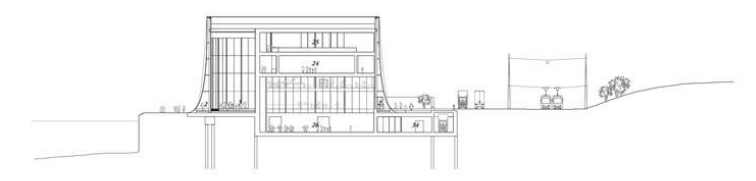
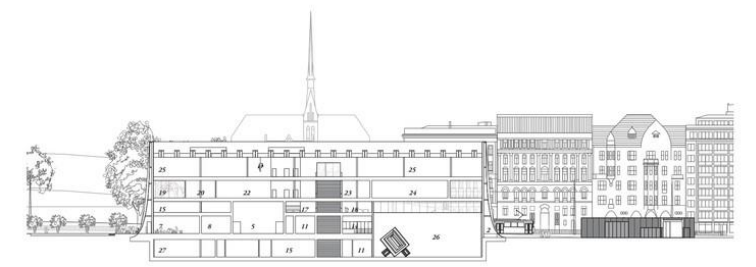
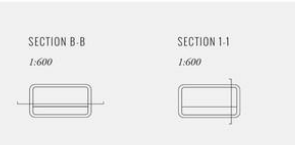
SOUTH ELEVATION

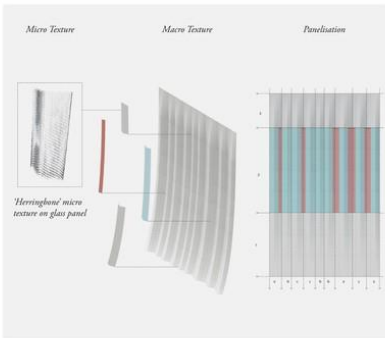
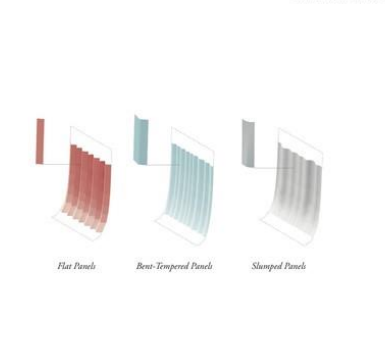
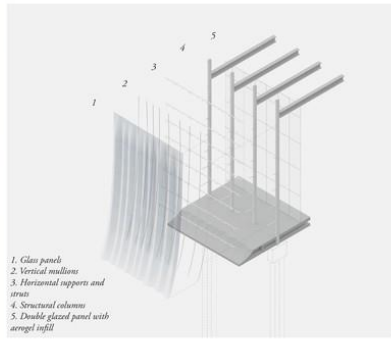


WEST ELEVATION



1 North Entrance	10 Coat Check / Lockers	18 Design Store / Museum Store	26 Basement Gallery
2 Entrance	11 WC	19 Restaurant	27 Plant Area
3 Mezzanine	12 West Entrance	20 Restaurant Kitchen	28 Service Area
4 Souther Entrance	13 Visitor Screening	21 Art Kinokki	29 Maintenance Yard
5 South Gallery	14 Ticketing / Information	22 Gallery / Project Space	30 General Landing Bay
6 Overviews Gallery	15 Desk	23 Multifunctional Classroom	31 Delivery Ramp 1-10 Gradient
7 Cafe	16 Office	24 Flexible Performance / Conference Hall	32 Art Delivery Loading Bay
8 Cafe Kitchen	17 Office Reception	25 Third Floor Gallery	33 Art Handling
9 Art Lift			34 Art Storage



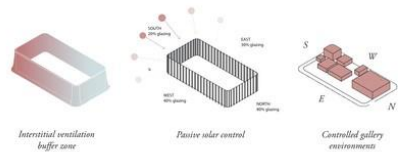


Innovative Envelope

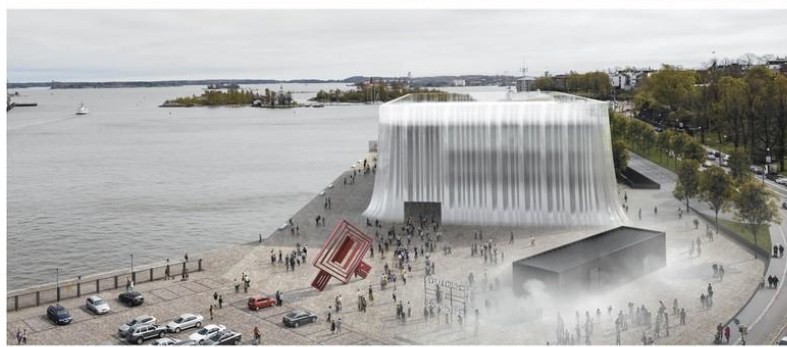
We are deploying a twin wall glass facade system that is a model well known in Finland. Ours incorporates an external sealed glass skin to block wind and rain, an intelligent "air jacket" with automated solar blinds which buffers seasonal temperature movements, and an inner glass skin of sandwiched argon insulation which controls light and heat, both in and out. The composite of these three functional structures is highly optimised towards the local environment through orientation and distribution. It also creates the visual appearance of our building. The application of these technologies in conjunction with a sophisticated Building Management System will allow for an intelligent, self regulating process to be employed to optimise the environmental and energetic performance of the building. The glass facade enables daylighting to be utilised in many situations instead of artificial lighting. Where artificial lighting is required, OLED technology will be employed.

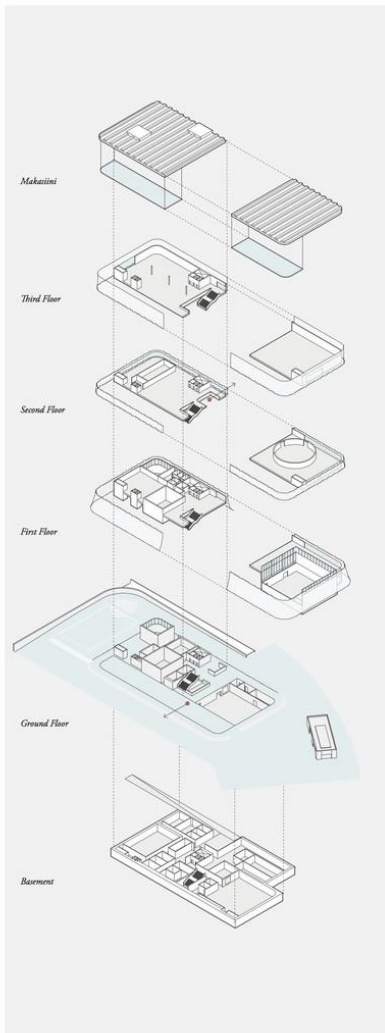
Collaboration

Aspects of our proposal involve expertise and materials very specific to Finland, namely industrial glass processing, craft glass manufacture, timber forestry and timber construction. We are very serious about working with these existing industries closely for both supply and R&D. The museum should be a showcase for a connected and collaborative approach.



3 rd FLOOR				
2 nd FLOOR				
1 st FLOOR				
GROUND FLOOR				
	North	South	East	West





Intramuro

Along the Makasiini gallery's length are doorways into the Intramuro. This is the functional climatic and solar control envelope of the building. It is also a secondary circulation system, where visitors slip in and out, to catch a quiet moment, or watch a Helsinki sunrise attenuated into complete diffusion. In this space the city is experienced as an atmosphere.

Helsinki Neon

On each side of the building a deployable digitally controlled segmented neon signage system is located which can display varying texts; names of artists, dates of shows. It is part of the visual tradition of Helsinki night time white neon signage.

A Site for Art

We envisage artists being invited to develop two-dimensional or light based works for the Intramuro space between our glass skins which communicate and engage art at a completely different scale to the city audience.

Staircase

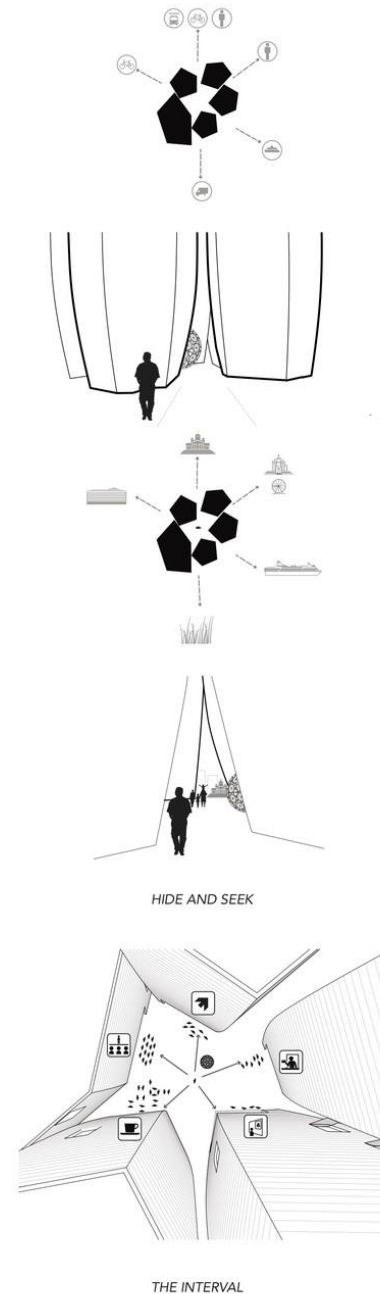
The central staircase of the museum is the primary vertical circulation. It blooms into public spaces at the lower floors, this is how the building breathes. Helsinki art students brush shoulders with international curators in the book shop, while tourists mingle in the design store and locals head to the project space.



Guggenheim Helsinki Design Competition - GH-76091181

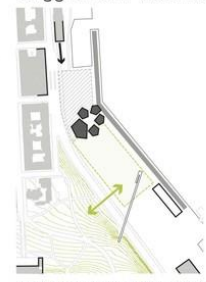


Guggenheim Helsinki Design Competition - GH-76091181

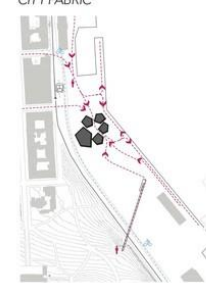


Guggenheim Helsinki Design Competition - GH-76091181

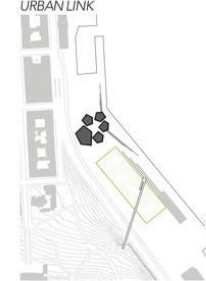
Guggenheim Helsinki Design Competition



Seeks to tie the waterfront to other areas of the city, such as the marketplace, pedestrian/bicycle paths and adjacent hillside park.



Connections to the site serve to correct the disjointed condition, repairing the broken link of the waterfront circuit.

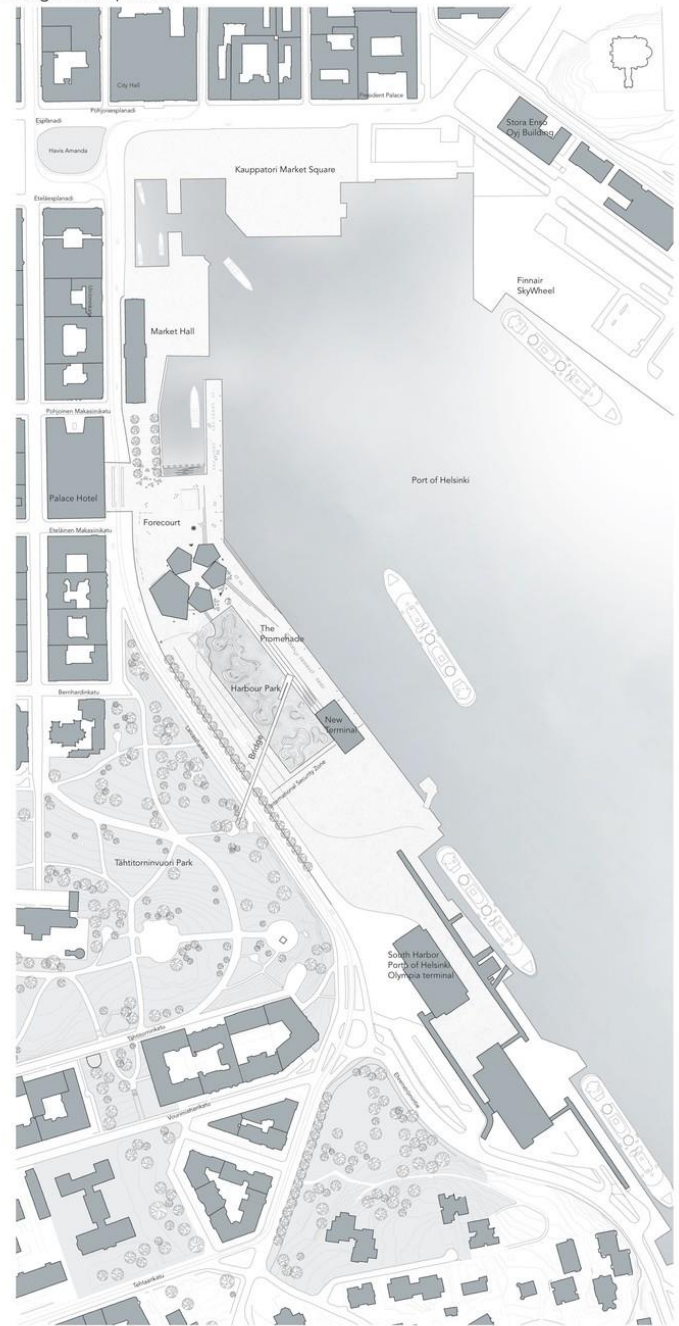


By limiting the amount of land being used, it enables surroundings to take on their own quality.

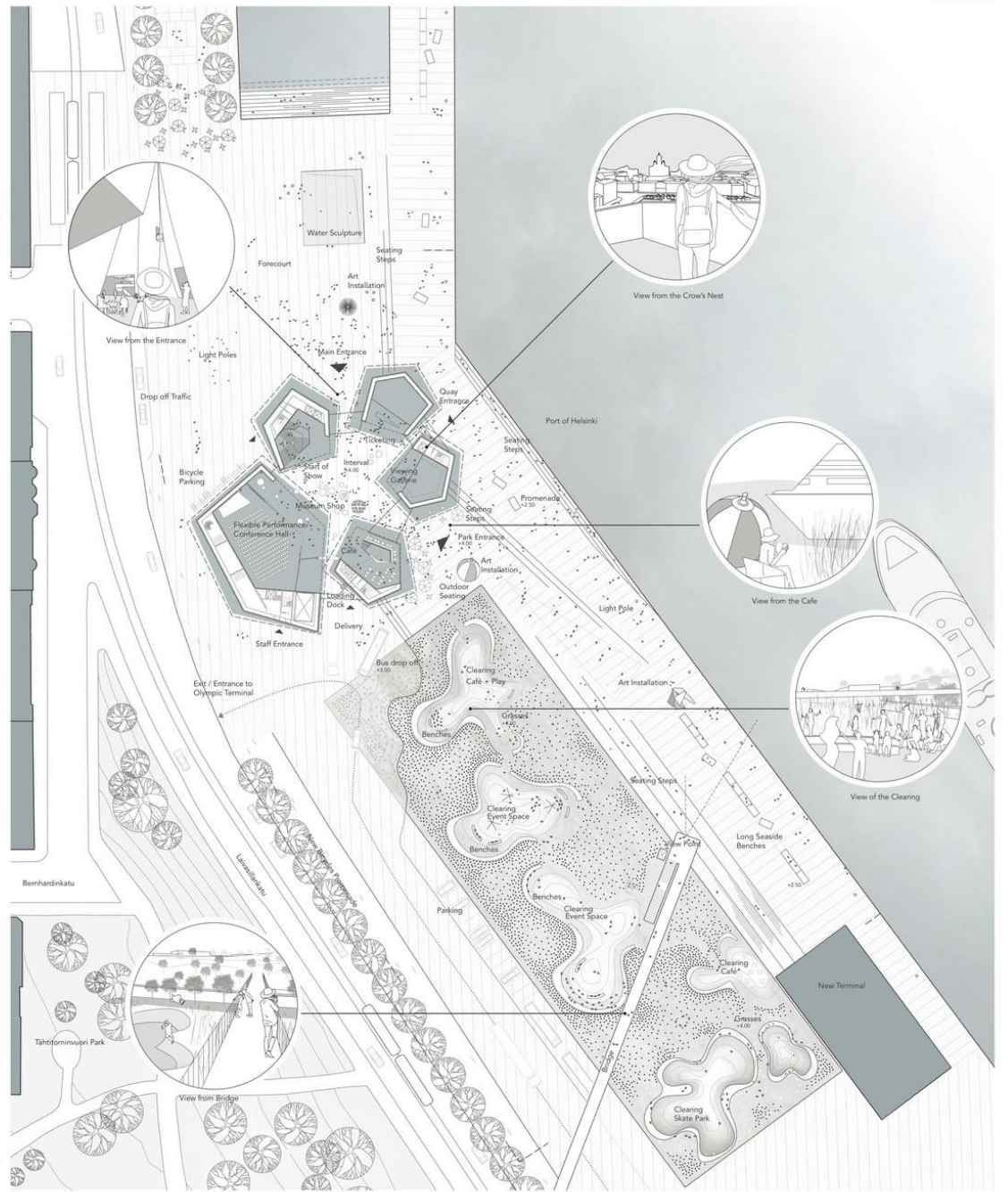


Museum deliveries, tourist bus drop-offs and all access to the Olympia Terminal is served by the back access road. The rising topography of Laivasillankatu Street is, at this point, not a hindrance for trucks. A new traffic light controls the flow of cars and trucks to ensure a smooth traffic distribution into the overall urban system.

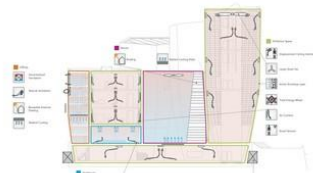
TRAFFIC



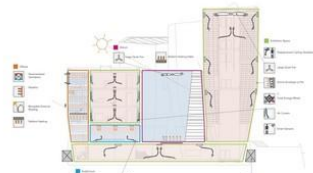
MASTERPLAN 1:2000



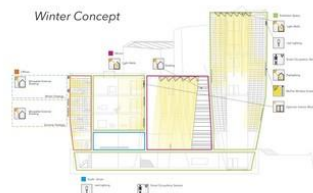
SITEPLAN 1:500



Summer Concept

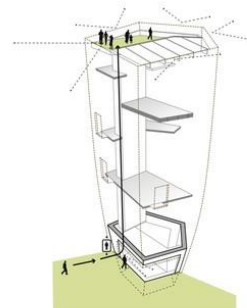


Winter Concept

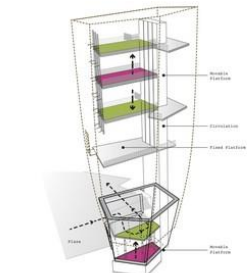


Lighting Concept

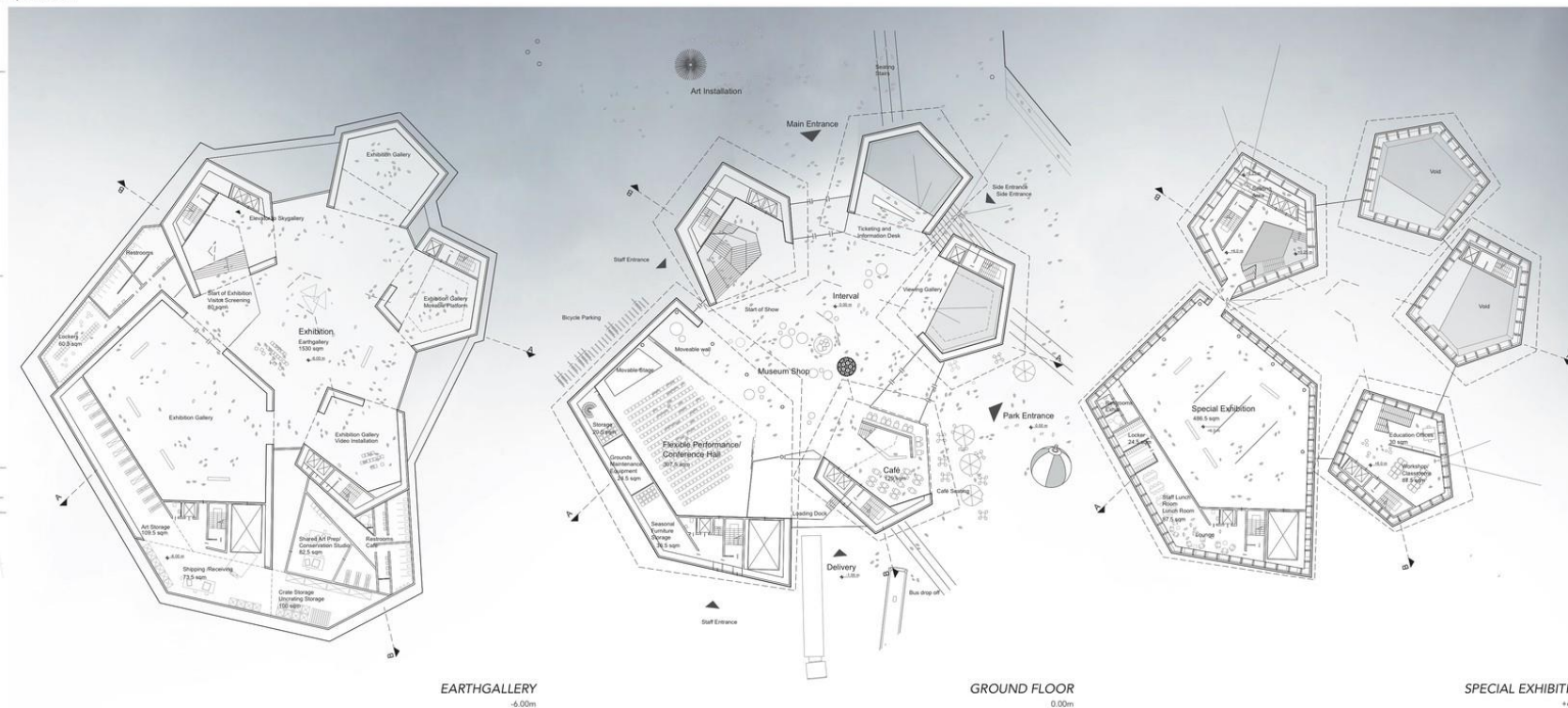
SUSTAINABILITY APPROACH



PUBLIC USE OF THE BUILDING



MOVEABLE PLATFORMS

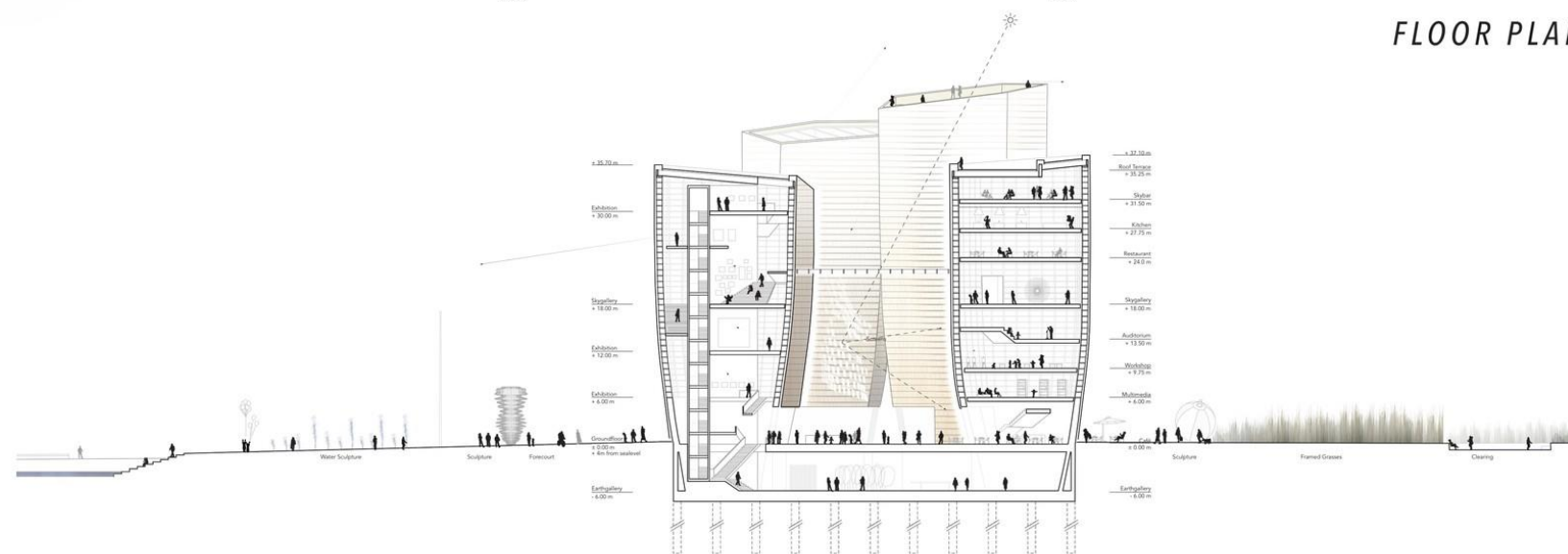


EARTHGALLERY
-6.00m

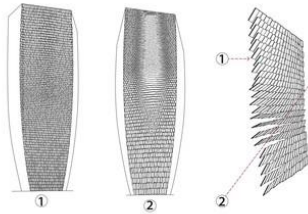
GROUND FLOOR
0.00m

SPECIAL EXHIBITION
+6.00m

FLOOR PLANS
1:300

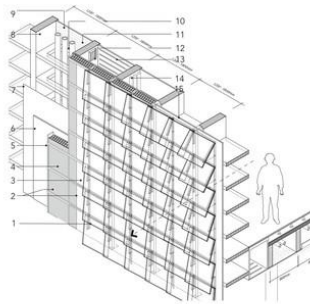


SECTION BB
1:300



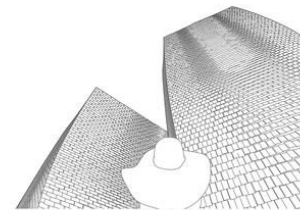
The selection of materials speaks to Helsinki's sense of belonging - to a place, a culture, a lifecycle and a future. For these reasons, wood has been chosen as the principle structural and cladding material. The facade finish and structural members make use of high-performance timber products that have been selected to provide the highest level of structural performance and durability while maintaining the warmth and rich tactile quality desired for the project.

Facade Principle



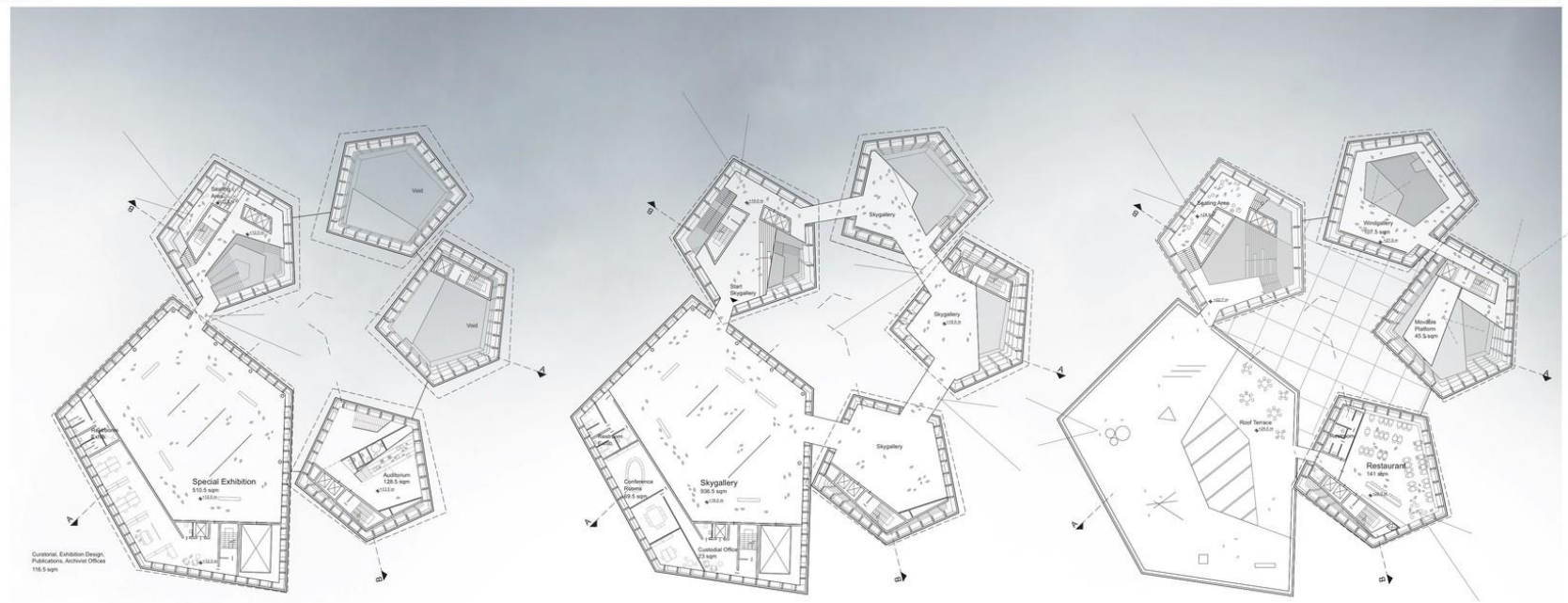
- WALL BUILD-UP
- 1 - cladding: wood shingles 600x600mm
 - 2 - lathing and counter lathing of Kerto S fins 30x200mm
 - 3 - permeable membrane
 - 4 - rock wool insulation
 - 5 - covering plates, Kerto Q laminated veneer lumber 30mm
 - 6 - vapour barrier
 - 7 - horizontal timber structure, 150x800mm
 - 8 - vertical timber structure, 240x800mm
 - 9 - inner cladding layer, perforated timber plates, inward offset 50mm and required perforations
 - 10 - building services
 - 11 - acoustic panels
 - 12 - smoke and heat venting system
 - 13 - air conducts and exhausts
 - 14 - active insulation
 - 15 - glazing

Facade Detail



Facade Effect

FACADE STRATEGY



SPECIAL EXHIBITION
+12.00m

SKYGALLERY
+18.00m

WINDGALLERY
+18.00m

FLOOR PLANS
1:300



EAST ELEVATION
1:300

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View from the Kauppatori Market Square



View from Siltänselkä Park



View from the bridge connecting the Gallery

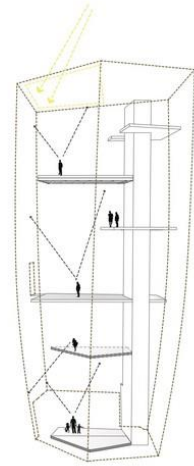
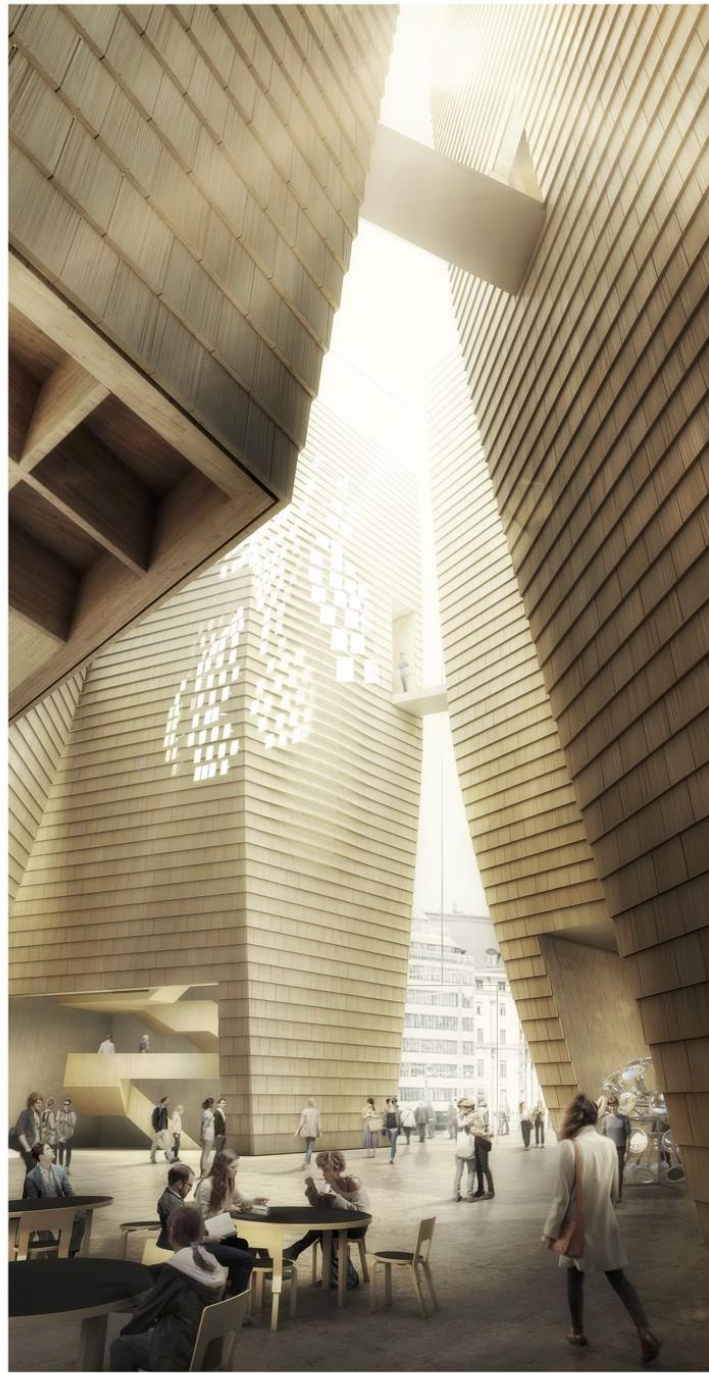


View from the Harbour



View from Palace Hotel

Guggenheim Helsinki Design Competition - GH-76091181



THE INNOVATOR

The Innovators trigger the curiosity of both visitor and artist to explore the many perspectives, vantage points, and connections on offer. The vertical spaces reach from the foot of the Earthgallerie up towards the light, and, when visiting the Skygallerie and Windgallerie, occupants may once again descend back to the beginning, enjoying various views and completing a natural cycle.



View up from the Earthgallerie



Skygallerie in the Innovator Tower



Entrance to the Earthgallerie



1

The museum is composed of two spaces - one for exhibitions, the other a public forum - that come together in a dance involving art and the city, gradually engaging in multiple movements, from a pas de deux, to a pas de trois, etcetera.

One space of the museum is on the dock level of the port facility, acknowledging the site's industrial function as a vital memory for the new ensemble. Part gathering place, part community center, part incubator for innovation, it is conceived as a social commons within the city.

The other space of the museum houses art exhibitions. Hovering in the air, it offers a place for contemplation, with large open galleries, complementing its companion space below.

Greater than the sum of its parts, the museum generates multiple relations among people, architecture, and the arts. With this, the Guggenheim Helsinki can engage a broad constituency of stakeholders, benefiting not only the arts but the public at large.

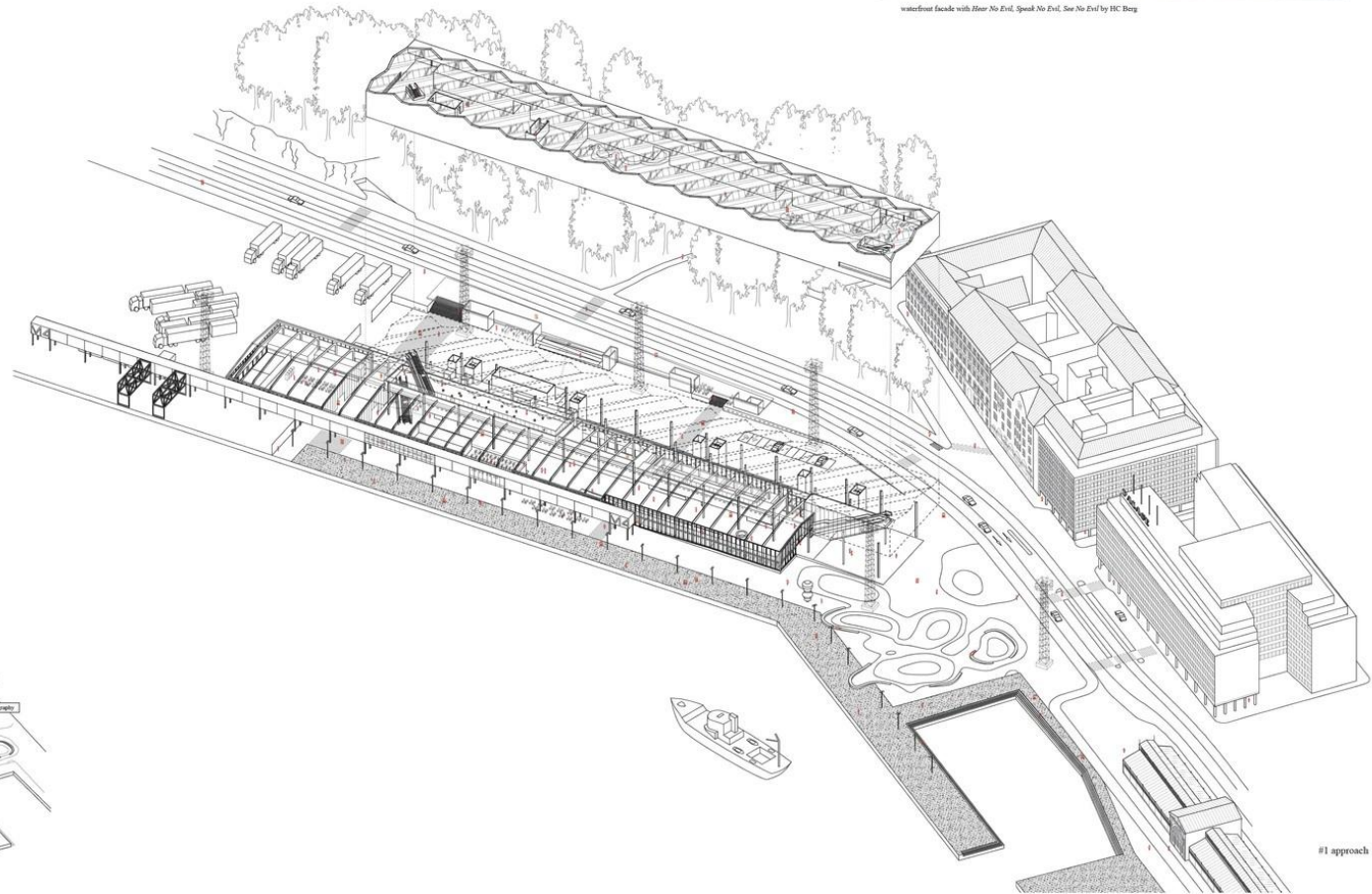
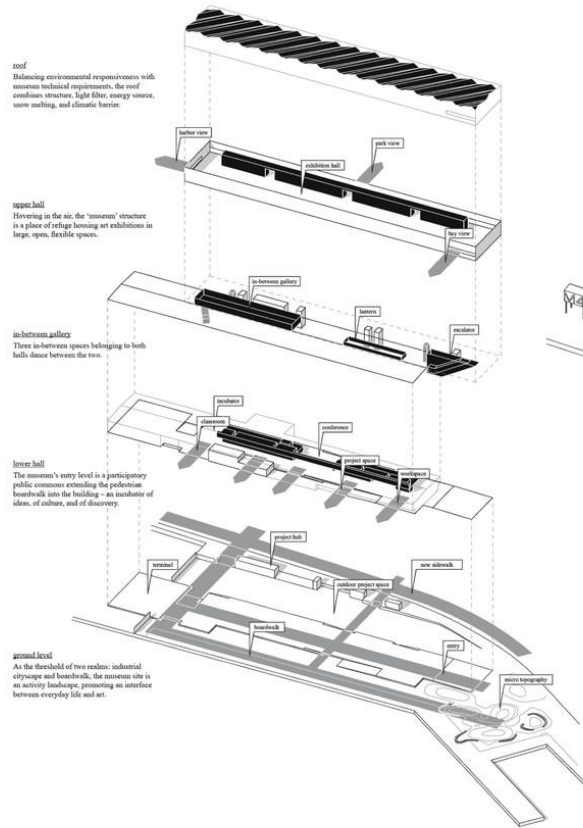
two-in-one museum



museum entry

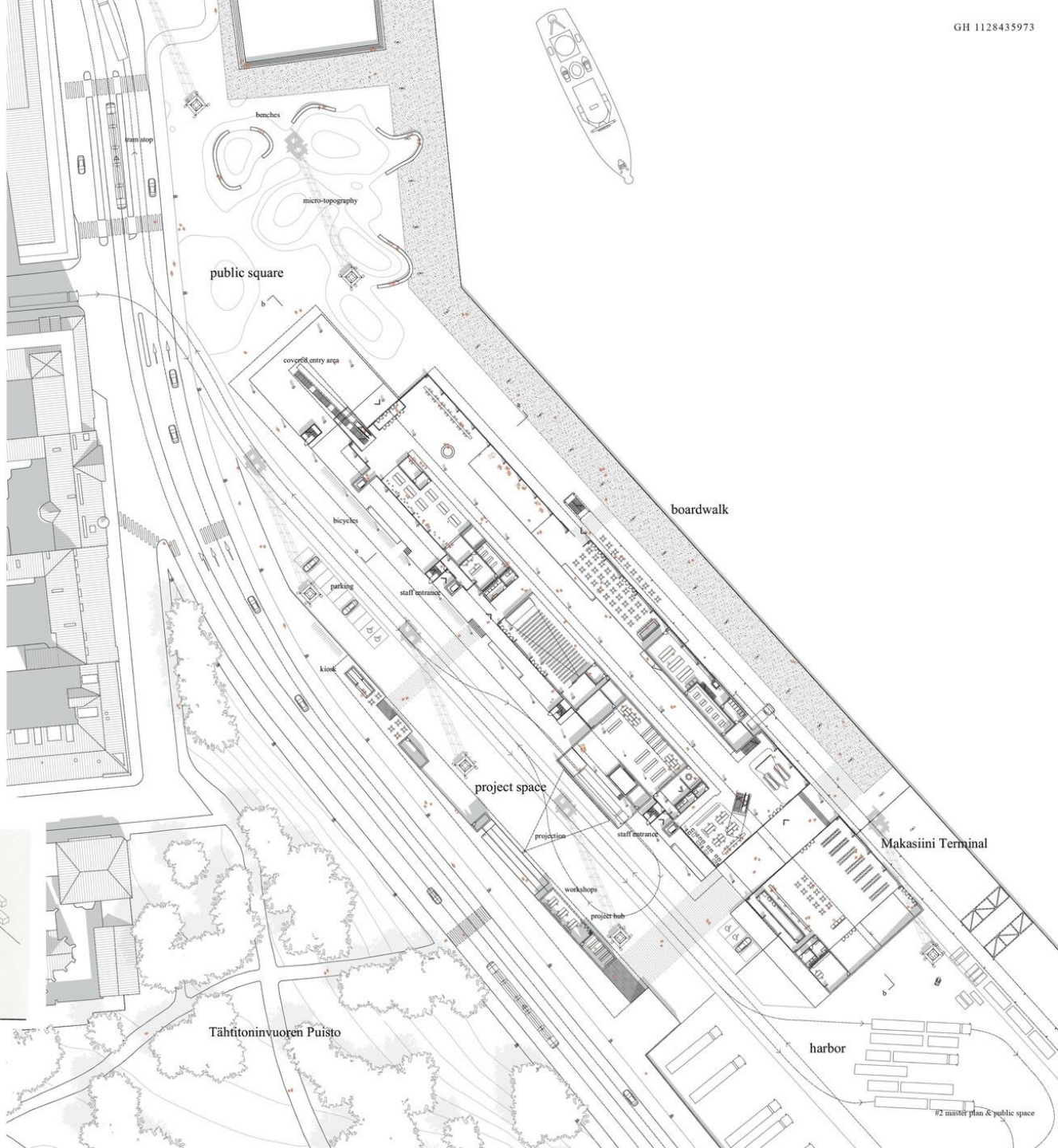
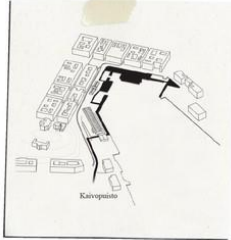
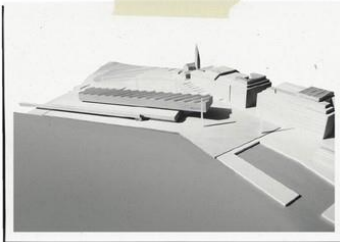
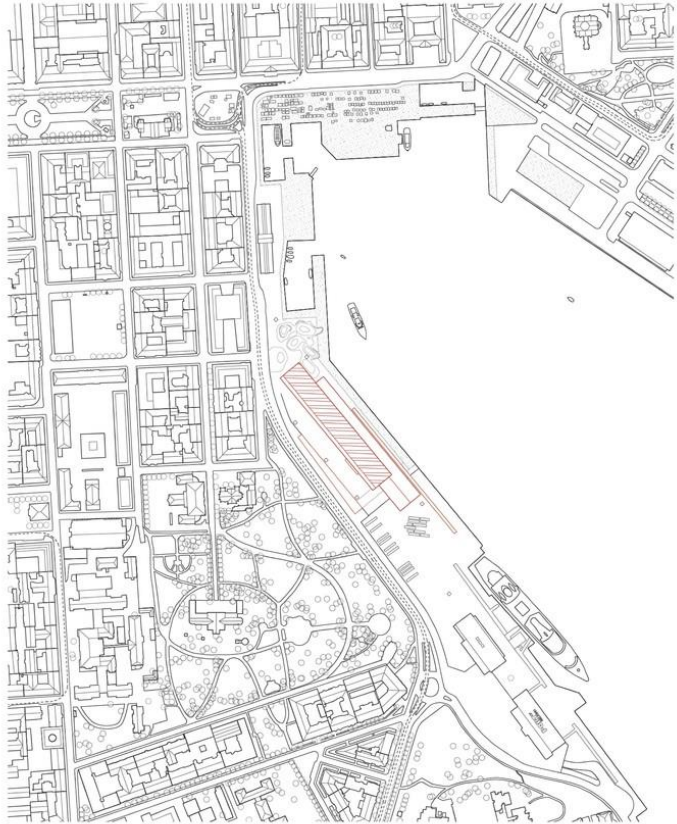


waterfront facade with *Here No Evil, Speak No Evil, See No Evil* by HC Borg



#1 approach

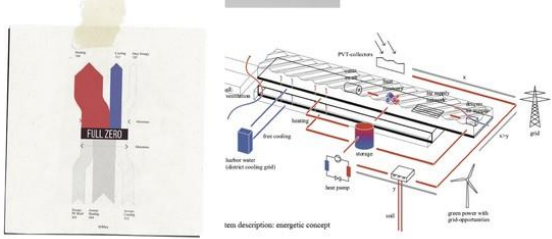
site and context



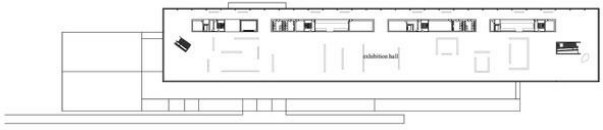
3



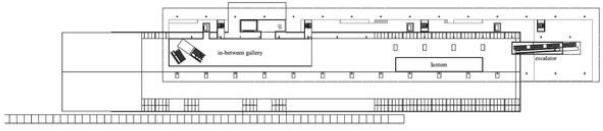
model photograph



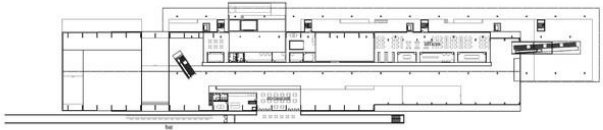
see description: energetic concept



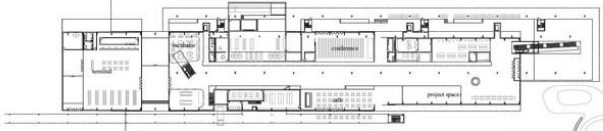
upper hall 1:1000



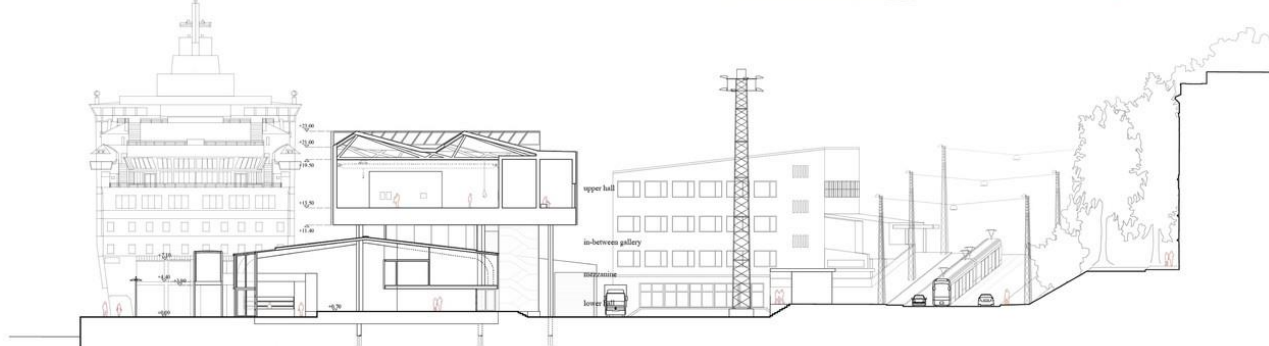
in-between gallery 1:1000



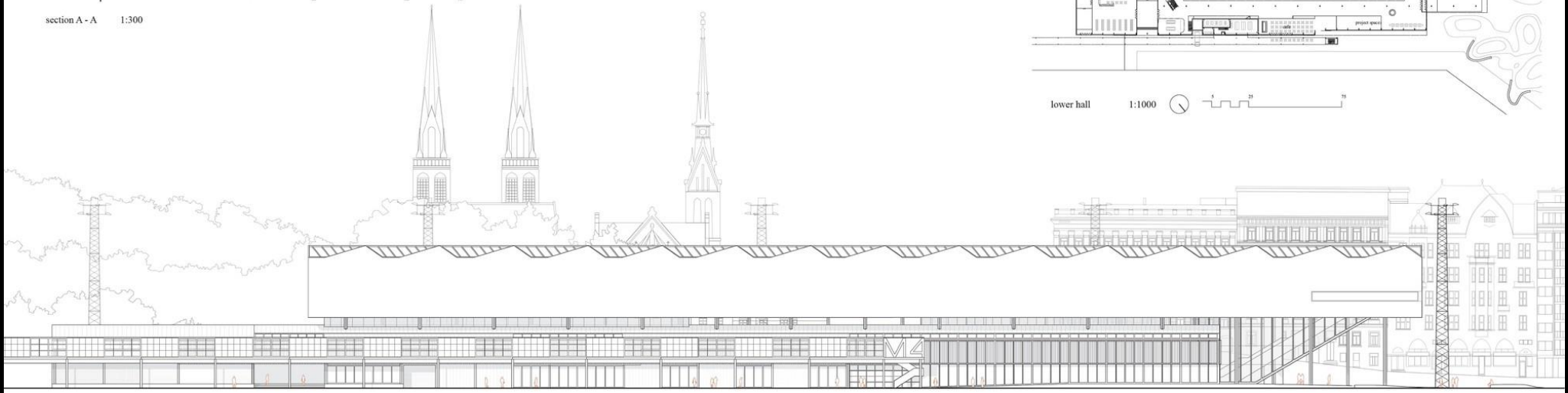
mezzanine areas 1:1000



lower hall 1:1000

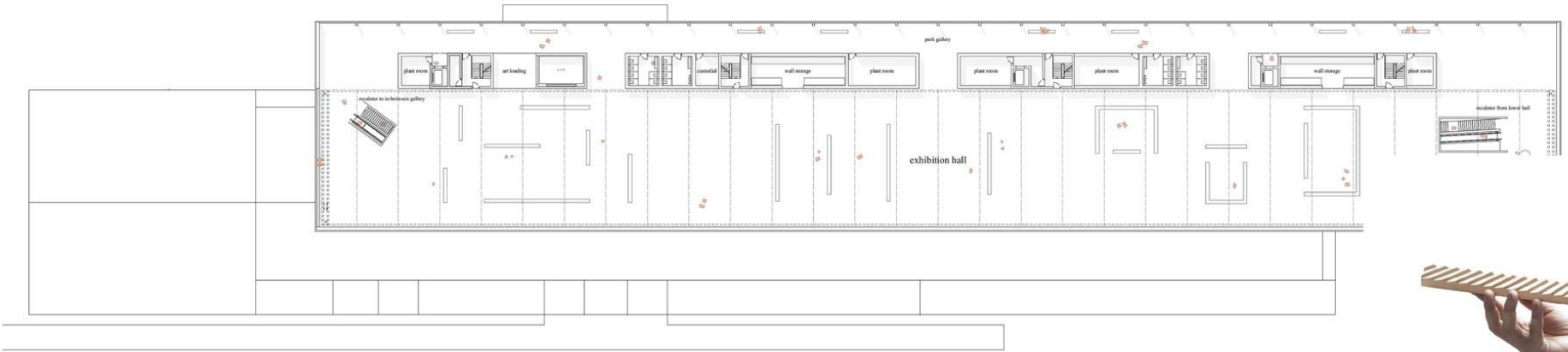


section A - A 1:300

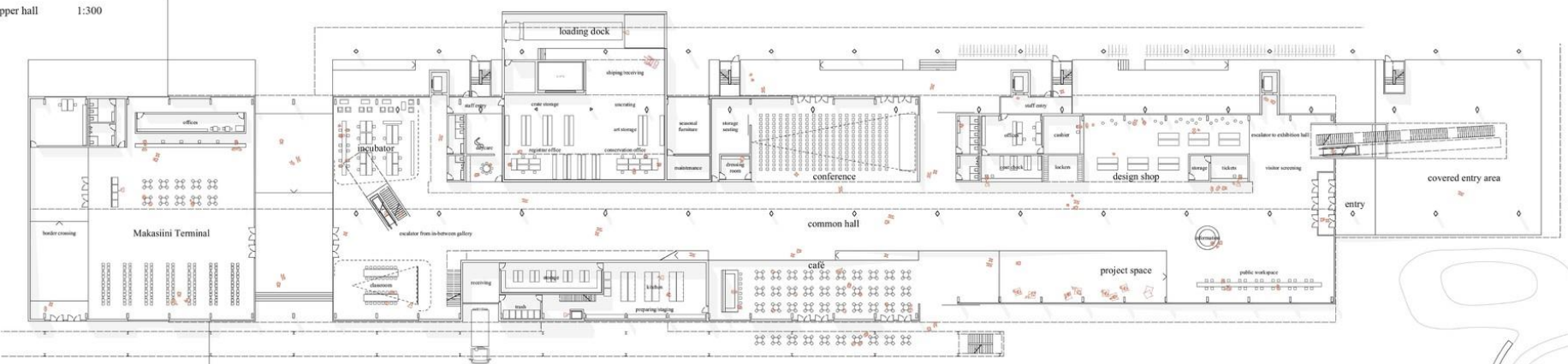


facade 1:300

Guggenheim Helsinki Design Competition - GH-1128435973



upper hall 1:300



lower hall 1:300



section B - B 1:300

Guggenheim Helsinki Design Competition - GH-1128435973



city and harbor



Leiviskaatu



a morning in March



from the market place

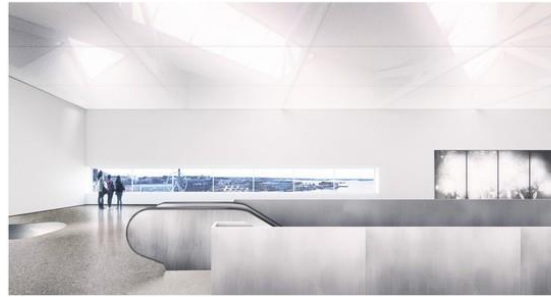
The museum sits as a slender, horizontal line between the city and the harbor. Its height is intentionally low, allowing the building to blend in with the urban fabric along the waterfront and the neighboring park on the hill. It is as if the museum has been slipped into its surrounding context or has just docked alongside other ships. The closer one gets, however, the more it is thrown into relief as a free-standing structure.

Conceptually, the existing terminal is doubled by the twin structure above that slides over the end of the lower building. A large, covered outdoor entry space is created welcoming the city into the museum. Cityscape and boardwalk literally extend inside to form the urban commons at dock level. Views out across the bay make Helsinki itself the primary exhibit of the lower hall, an exhibit made even more dramatic as one ascends to the elevated exhibition space.

In essence, the project is the threshold of two realms that cohabit the edge: the city *and* the harbor. Though mutually reliant, the two are to some degree at odds with each other. On the one hand, the city is intent on gentrifying this border zone with boardwalks, car-free plazas, and commercial offerings. On the other hand, industries associated with the port want to maintain their operational efficiency, requiring the movement of trucks, large-scale equipment, and industrial lighting.

Given this conflict of interests, the museum is poised as a potential urban arbiter capable of bridging this divide.





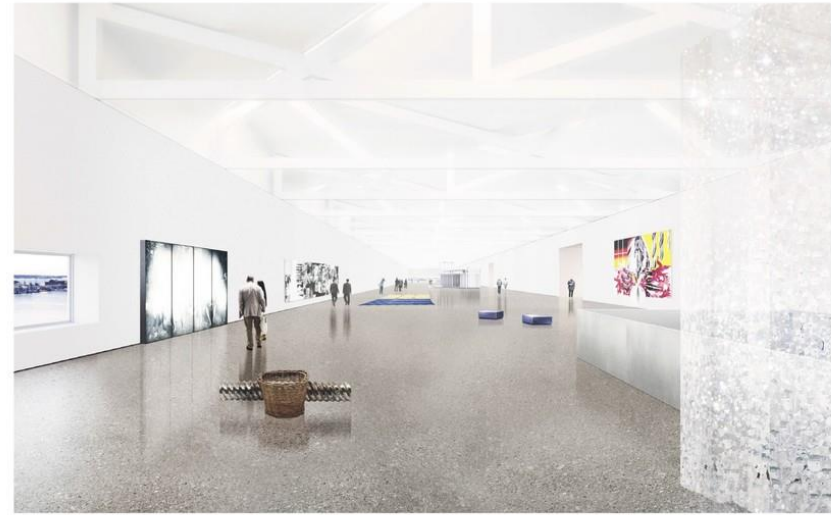
exhibition hall with Counter Act by Peking Anandig



in-between gallery with Strangers by Tommi Toija



public square viewed from the escalator



exhibition hall with Untitled by Robert Gober, The Shape of Space by Alyson Sprott, Untitled (Flowers) by Roni Horn, Bargo by Robert Rauschenberg, Riddle of the Sphinx by Mike Kelley, The Swimmer in the Economy (painting 2) by James Rosenquist and entitled 2002 (the promised) by Rikett Tiiravaija



common hall

Life is rarely singular, pristine, and clear, but rather multiple, messy, and ambiguous – characteristics the project aims to encapsulate by means of its loose assemblage of parts that are as circumstantial as the peculiar collection of sheds, trucks, asphalt, gangways, and ships found on site. As quasi objets trouvés determined by necessity rather than aesthetic choice, retained artifacts are of historical significance, for they are part and parcel of the city's cultural and economic base.

The 'common space' at dock level avoids the anachronism of formal and monumental gestures for the display of art and offers instead a participatory venue not unlike the BMW Guggenheim Lab, which has mobilized citizen assemblies in cities such as New York, Berlin, and Mumbai through the introduction of casual structures that provide spaces for community interaction. Keeping with this spirit, the voices of many resound in the lower hall of the proposed museum. Here,

the activities that take place are considered just as important as the building itself, for it must be accountable to all stakeholders involved. Conceptually meant to break down walls both spatially and socially, this lower structure is conceived as an 'open work' that can be used and changed according to future needs – a building that is multiple, messy, and ambiguous.

The common space aspires above all to function as a facilitator of civic empowerment, aiming to invigorate citizenry by providing the grounds for building the 'participatory city'.

Whereas the lower spaces are curated by the public, the upper level of the museum is the domain of the curator as steward of collective content. Art is housed above in a naturally-lit magic box that floats over the harbor. Its interior is unspecific by design, receding into the background as a neutral framework for staging exhibitions. Flexibility is the rule. This minimal, column-free container can house multiple shows simultaneously as easily as it can accommodate one large exhibition.

Access and circulation are straightforward. Visitors leave the ground and are pulled up into this hovering volume by large escalators that allow a seamless connection between lower and upper realms. Once upstairs, the curation of movement is open to different scenarios choreographing interaction with the work on display. Exhibition spaces can be formatted according to a range of schemes, whether along a meandering promenade, a sequential *enfilade*, a zigzagging *en suite* arrangement, or

a *déjà vu* layout with a corridor that opens onto separate galleries – or any combination thereof.

With this built-in flexibility, the family of Guggenheim galleries is extended with a chameleon-like space that can change as necessary. Imagine Frank Lloyd Wright's vertical spiral unfolded into a long horizontal band, one that need not rely on iconic expression of its internal organization, but rather settles for a discreet form to house

changing exhibitions. In this space, art determines the way it is experienced rather than the building determining how it is shown.



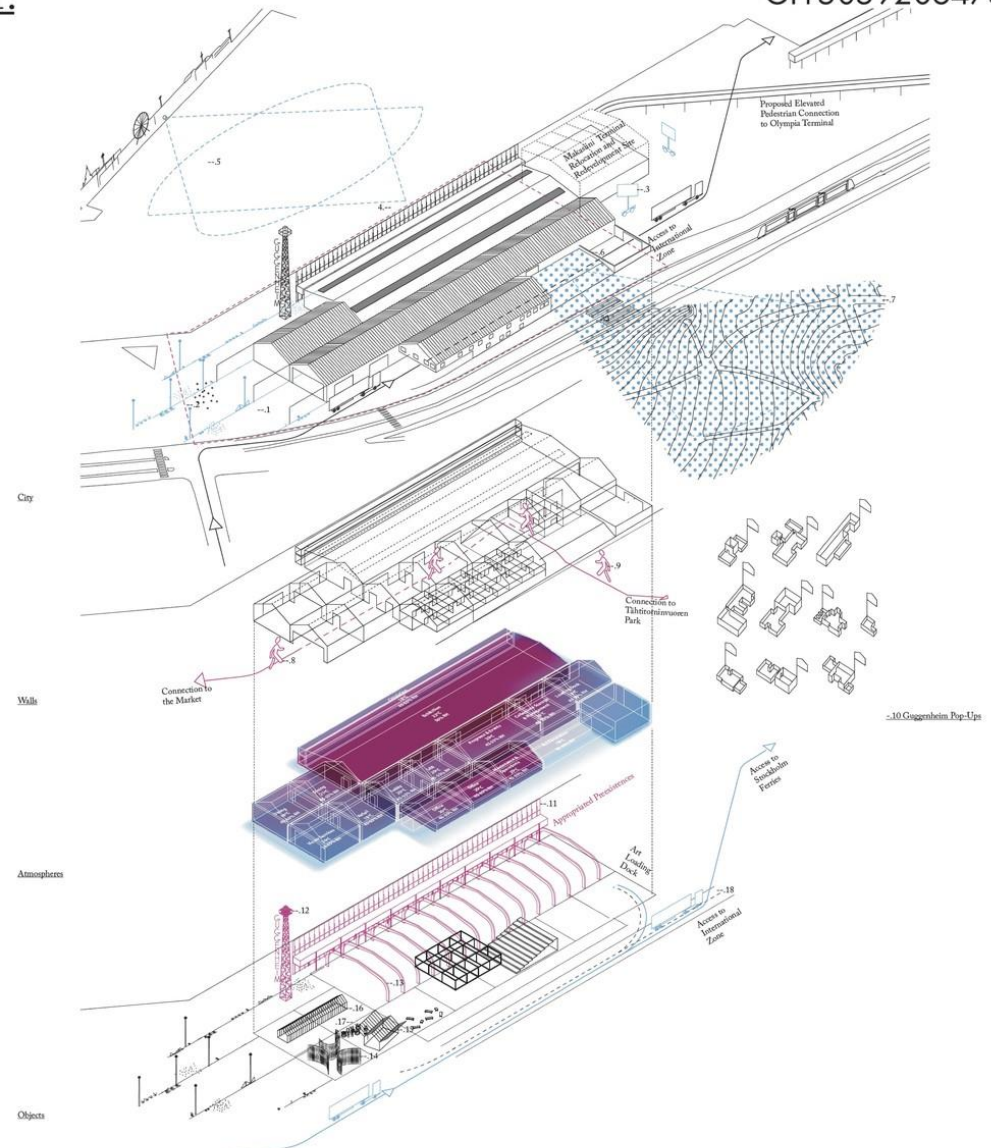


47 Rooms

The city: four facades, four landscapes

Helsinki is a city of interiors. Due to its extreme climatic conditions, Helsinki's civic society blossoms indoors. The Market Hall and the Observatory, Museums and Karaoke's Bars, Cabarets and Art galleries, Hotel lobbies and Beauty Salons, Restaurants and Theatres, Churches and Saunas, Universities and Cinemas, all form a robust network of spaces that host and nurture public life. The street, a Mediterranean ideal of public space, works only during a few weeks each year and is often described as the living-room of the city. The rest of the time Helsinki is a city of rooms that empower their political users. Our proposal for the Guggenheim Helsinki, *47 Rooms*, extends this network using the architectural technologies that construct Helsinki's interior citizenry: i.e. walls, doors, windows, and the machinery that defines atmospheric conditions.

The Museum spans the site's entire width, from the waterfront to the Laivasillankatu promenade encountering four radically differentiated urban conditions. To the north (1), *47 Rooms* opens to a square leading to the Market that preserves the infrastructural logic of the harbor's tarmac. Equipped with equivalent services to the rest of museum interiors (2), it is an open-air exhibition room scaled up to host large works of art, 1:1 architecture pieces, concerts, screenings and events. The south facade (3) is both the first impression for the visitors coming from the Olympia Terminal, and the background to of the international open-air cargo parking lot. The facade responds borrowing a variety of signs to both announce the museum contents and display actual works of art. The East facade of the building (4) appropriates the elevated pedestrian walkway, the expanded glass facade, 120m long and 15m high ready for site-specific interventions, serves as an observatory of Helsinki Peninsula Skyline (5) as much as it mirrors the city and puts the museum on display. To the West (6), *47 Rooms* opens directly to Tähitornivuoren Park through a new square that becomes the stage of the amphitheater-shaped park (7).



Walls: 47 Rooms and two main entry doors

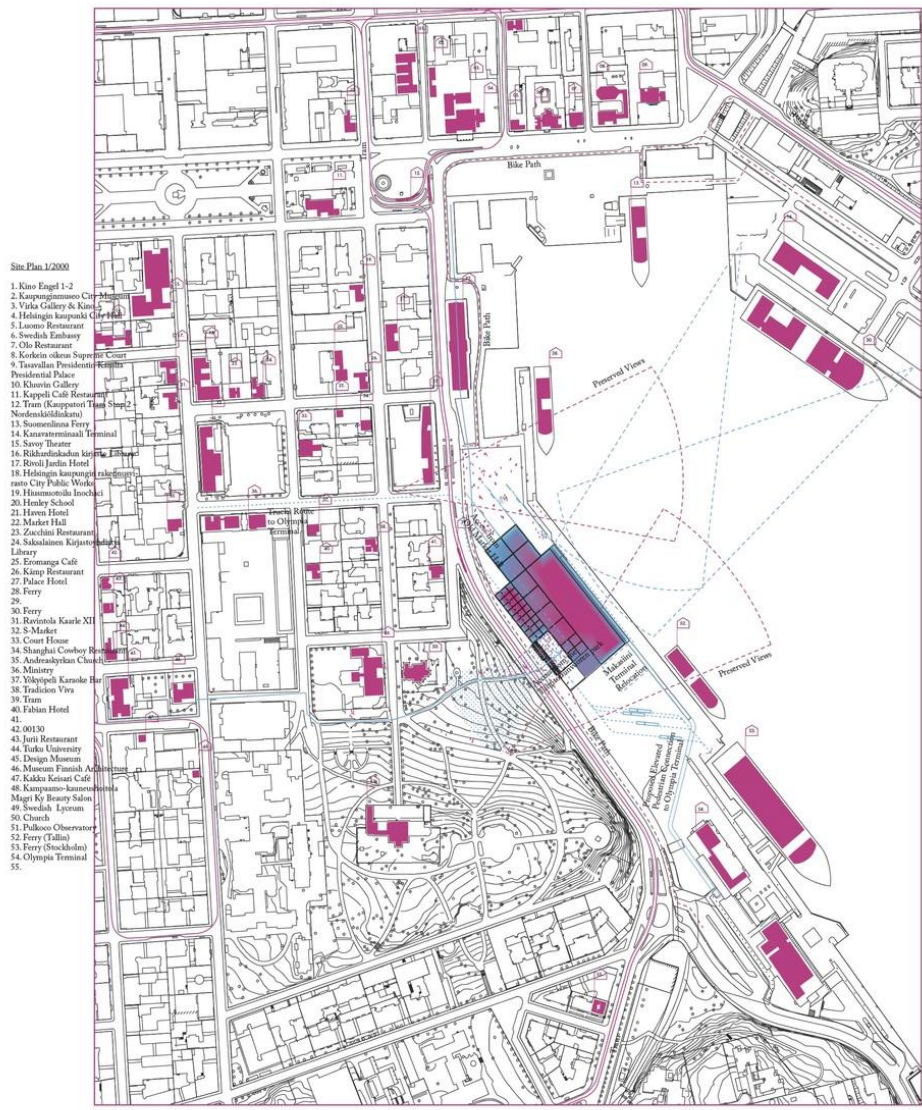
Atmospheres or the rigid flexibility of climatic onions

47 Rooms of various sizes organized enfilade in a single level define the museum spaces. They connect the two entry doors of the museum, one looking towards the Market (8), the other towards Tähitornivuoren Park (9). The absence of circulatory spaces implicit in this typology allows an 18% average increase in the programmed spaces. Still a 1500m² surplus remains. They are relocated in a network of Pop Up Guggenheim spaces through Helsinki (10). Disconnected from the financial constraints and construction schedule of the main building, they invite the citizenry into the actual museum and demonstrate its value before it is even built.

The museum's interior climate areas are optimized according to access levels. Each room has different conditions of temperature and humidity. The closer a room is to the main exhibition galleries; the closer its climatic conditions are to the museum's ideal. Since energy loss grows exponentially with temperature difference, it is much more efficient to have several layers of climate control, than to temper a building homogeneously.

Objects: reuse, misuse, participate

A variety of objects populate the museum's rooms. Some, such as the ferries' walkway (11), the lighting tower (12) or the structure of the Makasiini Terminal (13) are appropriated from the existing port infrastructure. Others, such as thermal curtains (14), the interior green houses (15 and 16) or the fields of potted plants (17) are off-the-shelf technologies that partially relinquish climate control to the users of the building. All together define a field that changes the infrastructural nature of the site from harbor to culture while leaving the site undisturbed. *47 Rooms* allows all the activities of the port to continue through the construction phase and once the museum is open (18).

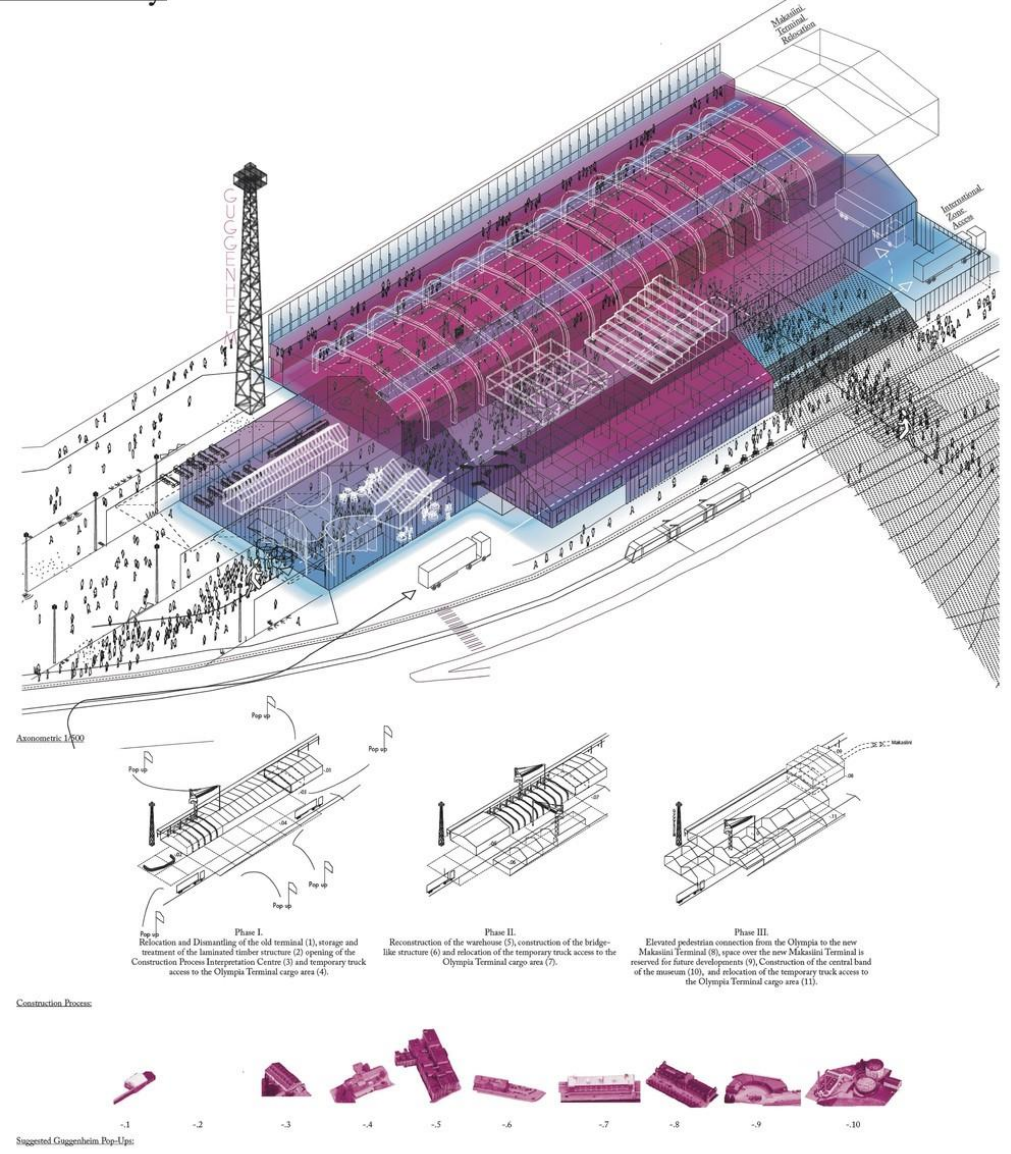


Public Helsinki

47 Rooms links its interiors to Helsinki's extended network of indoor public spaces. There are multiple connection points. The Museum's front door opens to a new public square that extends south of the Old Market Hall Plaza in the intersection of Eteläranta and Laivasillankatu. The new square connects to the bike line and is few meters away from the Eteläranta tram stop and the rationalist lobby of the Palace Hotel. A second entrance opens to the pedestrian promenade along Laivasillankatu, which leads to the modernist interiors of Olympia Terminal, but also connects to the historic hilltop Tahitorminvuoren park and the neoclassical rooms of its observatory, and from there to the exhibition galleries of Design Museum and the Museum of Finnish Architecture.

Domestic Harbour

Ever since the first reclaim-areas were built in 1847, the site has illustrated the evolution of harbour-related activities: it expanded again in 1892 to accommodate larger ships, after a second enlargement in 1950s the Makasini Terminal replaced an historical warehouse while in the early 1970s trucks substituted cargo trains connecting the Olympia Terminal and the South Port. 47 Rooms appropriates to this ever-changing infrastructural landscape yet leaves its memory undisturbed. It reuses the Makasini terminal's laminated timber structure of to rebuild a shed that follows the geometry of the original building. The rest of the missing mimics the profile of the old terminal ensuring that the current views from the park and the adjacent buildings are preserved. The museum also absorbs the passengers' elevated walkway transforming it in the largest exhibition wall of the museum (to be seen from the other side of Eteläsatama); and it repurposes the towers that illuminate the site as the Guggenheim's iconic neon signs.

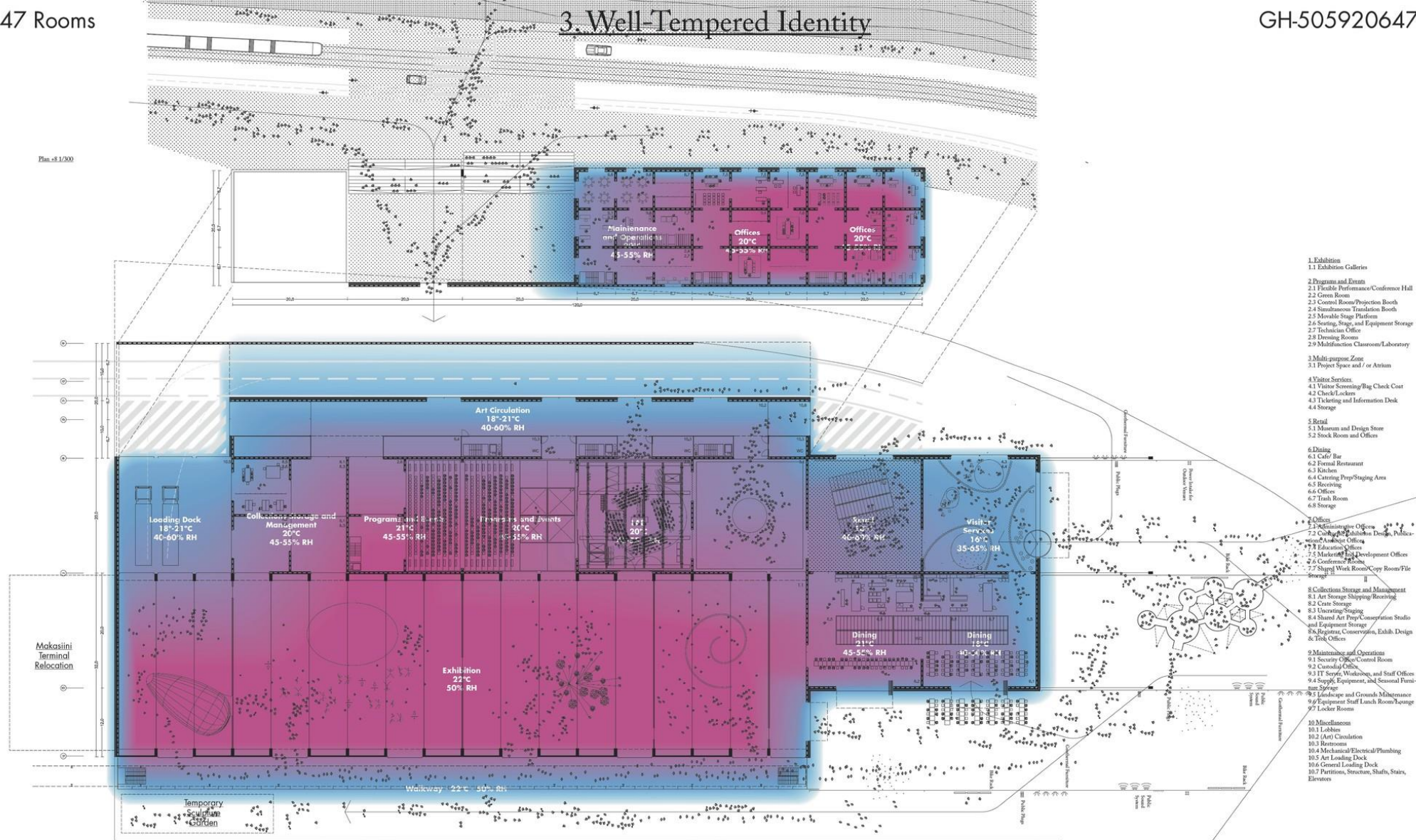


Reusing

Besides reducing the project's carbon footprint, reusing the existing structures allows for easy relocation of the Makasini terminal in the section of the existing building outside of the competition site, keeping the Tallinn Ferries functional during construction. The Makasini Terminal new location extends the publicly accessible section of the port further south. Future developments south of the museum (hotel, terminal extensions) will link to Makasini and potentially connect to the Olympia Terminal. During construction, the terminal shed will also house an interpretation centre to make the construction process more transparent to the citizens using participatory BIM technology. The building's infrastructural scale facilitates the use of industrialized construction solutions which reduce cost between 10-12%, and construction schedules between 32-35%, while ensuring that the vehicular traffic to the Olympia Terminal will be neither disturbed during its construction nor once the museum opens.

Guggenheim Pop-Ups

More importantly, 47 Rooms reserves 30% of its unassigned areas (1.500m²) to open a series of micro galleries through the city in locations such as Yr Makasini (1), Teurastamo (2), Korjaamo (3), Uunisaari (4), Kaapelitiedas (5), Galleria Huuto (6) Katajanokan Tulli-Ja Pakkahuoneen (7), Kruununmakasiini (8), Veturitalin (9), Suvihahti (10); we call them Guggenheim Pop-Ups. Located in available spaces throughout Helsinki, the Guggenheim Pop-Ups not only intensify the symbiosis between museum and city; they are the forums that host the discussions surrounding the Guggenheim Helsinki's controversy; i.e. they invite the citizenry into the actual museum and demonstrate its value before it is even built.



- 1. Exhibition
 - 1.1 Exhibition Galleries
- 2. Programs and Events
 - 2.1 Flexible Performance/Conference Hall
 - 2.2 Green Room
 - 2.3 Control Room/Projection Booth
 - 2.4 Simultaneous Translation Booth
 - 2.5 Movable Stage Platform
 - 2.6 Seating, Stage, and Equipment Storage
 - 2.7 Technician Office
 - 2.8 Dressing Rooms
 - 2.9 Multifunction Classroom/Laboratory
- 3. Multi-purpose Zone
 - 3.1 Project Space and / or Atrium
- 4. Visitor Services
 - 4.1 Visitor Screening/Bag Check Coat
 - 4.2 Check/Lockers
 - 4.3 Ticketing and Information Desk
 - 4.4 Storage
- 5. Retail
 - 5.1 Museum and Design Store
 - 5.2 Stock Room and Offices
- 6. Dining
 - 6.1 Cafe Bar
 - 6.2 Formal Restaurant
 - 6.3 Kitchen
 - 6.4 Canning/Prep/Staging Area
 - 6.5 Receiving
 - 6.6 Office
 - 6.7 Trash Room
 - 6.8 Storage
- 7. Offices
 - 7.1 Administrative Offices
 - 7.2 Curatorial/Exhibition Design, Publication/Archivist Office
 - 7.3 Education Office
 - 7.4 Market and Development Offices
 - 7.5 Conference Rooms
 - 7.6 Shared Work Rooms/Copy Room/File Storage
- 8. Collections Storage and Management
 - 8.1 Art Storage Shipping/Receiving
 - 8.2 Case Storage
 - 8.3 Unwrapping/Storage
 - 8.4 Shared Art Prep/Conservation Studio and Equipment Storage
 - 8.5 Registrar, Conservation, Exhib. Design & Tech Offices
- 9. Maintenance and Operations
 - 9.1 Security Office/Control Room
 - 9.2 Custodial Office
 - 9.3 IT Server, Workroom, and Staff Office
 - 9.4 Supply, Equipment, and Seasonal Furniture Storage
 - 9.5 Landscape and Grounds Maintenance
 - 9.6 Equipment Staff Lunch Room/Lounge
 - 9.7 Locker Rooms
- 10. Miscellaneous
 - 10.1 Lobby
 - 10.2 (Art) Circulation
 - 10.3 Restrooms
 - 10.4 Mechanical/Electrical/Plumbing
 - 10.5 Art Loading Dock
 - 10.6 General Loading Dock
 - 10.7 Partitions, Structure, Shafts, Stairs, Elevators

Plan #1/200

Plan #3/200

Institutional Weather

Historically, Guggenheim museums—with the exception of the Peggy Guggenheim Collection palazzo in Venice—have leaned on strong iconic features to define their identity. New York's vertical urbanity, Bilbao's post-industrial landscape and Abu Dhabi's eclectic skyline required it. Strong formal features were the strategy to both fit in, and differentiate from the museum. Helsinki is an opportunity to continue this tradition of radical contextualism while shifting away from objecthood in favour of atmospheric conditions. 47 Rooms proposes a strategic shift, already successfully tested in the BMW Guggenheim Lab: to embrace the urban conditions of Helsinki by focusing on its interior climates rather than its external morphology. The goal is to create different kind of Guggenheim identity, one defined by its internal weather.

Thermal Onion

All major art museums around the world share identical interior weather conditions, 22°C ±2.5°C, with relative humidity of 51% ±5%. The benchmark dates back to the late 1970s and has been severely questioned in recent scholarship due to conditioning costs, energy concerns and scientific evidence that preservation is connected with stability rather than a specific combination of temperature and humidity. The standard however still prevails, burdening museums located in cold climates with brutal acclimation costs. 47 Rooms respects the standard yet includes a bioclimatic strategy that eases its load on the building life-cycle: the thermal onion. The building's climate areas are optimized according to access levels. Each room has different conditions of temperature and humidity. The closer a room is to the main exhibition galleries, the closer its climatic conditions are to the museum's ideal. The temperature of the perimeter rooms is not as high as the core of the building (16°C, +/- 4°C, in the entry lobby), reaching comfort temperature gradually as you reach the larger exhibition space, which is maintained at a temperature of 22°C ±2.5°C, with relative humidity of 51% ±5%. Since energy loss grows exponentially with temperature difference, it is much more efficient to have several layers of climate control, than to temper a building homogeneously.

Rooms and Doors

A thermal onion presupposes a system of stable spatial conditions that keep the climate independent and constant. 47 Rooms contains nine rooms of 20x20m, twenty-seven of 6.5x6.5m six of 10x10m, two of 120x4m and one of 32x120m that do so. The public square north of the site is room 46, Eteläsatama no. 47. The 32x120m room hosts the exhibition spaces that can be combined or divided as needed. The rest offer an alternative notion of flexibility based on a rigid set of spatial conditions rather than temporal partitions. Over time, the rooms' dimensions won't change, though the way they are used will, opening to new functions not prescribed in the design.

The thermal onion also presupposes a system of opening and closing that both isolates the rooms and makes them penetrable. They seem to be pure and simple openings, but operate like a system of levees and floodgates that control the transfer of humidity and temperature. 47 Rooms's 89 doors, appropriated from industrial architecture specialized in atmospheric control and high levels of circulation (refrigerated logistic centers, wholesale food markets, industrial laboratories, chemical production, etc) keep the different climates in place.



Climatic Disagreements. Finnish saunas are one of the most advanced models of public interior spaces. Conceived as meeting places for naked bodies, their users assume extraordinary levels of intimacy that question accepted notions of public sociability. But more importantly, saunas use participation to define weather conditions. Pouring water over the rocks in the stove, a group of people, not necessarily familiar to each other, negotiate collective levels of comfort that range from 70°C to 90°C and from 5% to 20% humidity. 47 Rooms appropriates this logic to define the climatic conditions of its interiors. The HVAC defines the Guggenheim Helsinki identity, yet not as top-down imposition. Rather, the interior climate is negotiated by a civil society trained and habituated to define its public areas this way. Thus, according to its function, each room accepts different degrees of climatic negotiation. They range from the lobby, which allows for constellation of microclimates in constant flux while, to the larger exhibition space, that maintains a temperature of 22°C ±2.5°C, with relative humidity of 51% ±5% and leaves no space for interaction. The museum includes atmospheric conditions that are non-negotiable; they define 47 Rooms material decisions. It also admits different degrees of participation in the management of the interior weather which require technologies that invite users to take atmospheric responsibility.

Weather Concatenation. Inside 47 Rooms, the double and triple doors found in Helsinki's commercial galleries expand to become entire chambers. The transition through multiple climatic conditions, rather than a first step to enter the building, becomes the museum identity. Rooms follow a pragmatic enfilade sequence. Entry, gift shop, main lobby, exhibition spaces, education areas and auditorium, also accessible from Laivasillankatu, which allows a reversal of sequence. The restaurant is accessible from the lobby and the street, and has independent access to the exhibition galleries. The offices, located in a second level overlook Laivasillankatu.

Micro-Participatory Climates Using ordinary off-the-shelf architectural technologies, 47 Rooms extends the logic through which Helsinki's population already tempers their more intimate public spaces, and by extension construct their interior citizenry. Imitating the logic of the Sauna, each room's final climatic conditions include certain degree of negotiation between the institution and its visitors. The mechanisms to invite the visitor to engage with the interior weather include: furniture heated using the district heating system; potted plants that change the humidity levels of a room according to its proximity to AC vents; solar/thermal curtains to create micro climates within a room, Green houses with its own independent heat/cooling source that allow the micromanagement of a climatic bubble within a room; Individually managed environmental ethnologies' hanging from the ceiling substructure, Swimming-pool-like retractable rooftops that can open three rooms to the weather outside; and the software SPACES which, integrated in the BIM model and connected. The museum gathers information of the visitors environmental preferences and adjusts the weather conditions accordingly.



Cultural Production

The North façade is a piece of cultural infrastructure. Combined with the square, it functions as machine to display large scale works, whether coming from visual arts, architecture or design. The façade does not work as a backdrop but rather as a theatre fly tower. Its blank industrial frontage hides technologies required to physically manipulate the mise en scene. Weather permitting, two 20m square rooftop modules move out and hover over the square, the main wall of the entry room folds up to open the lobby to the street. The pavement, equipped with the same museum technologies as the rest of the indoor galleries, is ready to host open-air exhibitions, performances, screenings, and events. It redefines public space getting museum-quality infrastructure out in the street.

Porto Franco – Industrial Vernacular

The South façade takes advantage of its paradoxical nature. It fluctuates between two seemingly incompatible realities; it is both the first impression of the Guggenheim Helsinki for the visitors coming from Stockholm through the Olympia Terminal, and a background to an international open-air cargo parking lot. It responds, therefore, to the vehicles that obfuscate it, as much as to the pedestrian traffic Laivasillankatu. It borrows a variety of signs to both announce the museum contents and display actual works of art.



Double Exposure – As Found Decorated Shed

The East façade of the building appropriates the elevated pedestrian walkway as scopic technology, a mechanism of vision. As a lookout for the visitors, it offers unique views of Eteläsatama. As an exhibition wall—extended upwards to make it visible—it encloses the largest exhibition space, a room the size of the bay, to be seen from the other side of the South Part. The extreme dimensions of the walkway, 120 m long and 4 m wide, and its radical exposure to the city made it a perfect site for site-specific interventions. The expanded glass façade, 120m long and 15m high, serves as an observatory of Helsinki Peninsula Skyline as much as it mirrors the city and puts the museum on display.

Picturesque Bucolism – Urban Artifact

The West façade of the building completes the Tähtitorninvuoren Park. It opens directly to the park and it includes a new square designed as a stage for the amphitheatre-like geometry of the park already identified in Knut Forsberg's original design from 1868. Thus, the façade, that provides an urban elevation to Laivasillankatu, also doubles as a second entrance to the museum, sculpture garden and stage for the park, making the suggested bridge unnecessary.



1. Behind the Curtain (Visitor Services)



2. Cooking with a View (Dinning)



3. Potted Plants (Retail)



4. Occupied Lobby (Multi-Purpose Zone)



5. Fashion in the LAB (Multifunction Classroom/Laboratory)



6. The Auditorium as Grand Stair (Programs and Events)



7. Art Loading Dock (Collections and Storage Management)



8. Exhibition Galleries



9. Office



10. Appropriated Walkway



11. Landscape of Art Works (Exhibition Galleries)



12. The ceiling Opens (Visitor Services)



13. Concatenation



14. Event in the open-air room seen Tähtitornivuoren Park



15. Roof over the Square



16. Eteläsatama Double Exposed

Learning from Guggenheims

The Guggenheim Foundation exhibits its collection in three types of atmospheres. The reference collection's 20th Century avant-garde masterpieces require highly controlled atmospheres of $22^{\circ}\text{C} \pm 2.5^{\circ}\text{C}$, with relative humidity of $51\% \pm 5\%$ and no natural light, conditions achieved in the Annex Galleries in the Solomon R. Guggenheim Museum and the classical galleries in the second floor of the Guggenheim Bilbao, and similar to the domestic rooms of the Peggy Guggenheim Collection in Venice. The atrium of Wright's Building, the Serra Gallery in Bilbao or the former Guggenheim Las Vegas main gallery regularly host site specific installations, performances and large scale (usually post-1960s) pieces that accept more relaxed atmospheric conditions, interaction with the public and less controlled natural light. Finally, the recent BMW Guggenheim Lab, has engaged natural atmospheres in New York, Berlin and Mumbai exploring collective events, participatory processes and relational art. 47 Rooms expands these three conditions adding a range of interior climates.

Programmatic Weather Report

The Visitor Services are located in the first room. Three translucent curtains divide its 400m² in thermally differentiated areas. Warmer than the $16^{\circ} \pm 4^{\circ}\text{C}$ overall temperature, they host the coat check, the security control and the ticketing and information desk. The entry room opens into a wintergarden-like chamber populated potted plants to control the humidity levels that define comfort in a $18^{\circ} \pm 4^{\circ}\text{C}$ environment. It includes a tempered greenhouse that doubles as a retail space. The restaurants are accessible from the entry room and, retail area and directly from the square overlooking Eteläsatama bay. Its interior weather fluctuates between 18° and $20^{\circ} \pm 4^{\circ}\text{C}$ and share a secondary but direct connection to the exhibition galleries for special events and catering. The multi-purpose room follows the retail area and functions as the main lobby leading to the main galleries, the auditorium and the LAB. Its $20^{\circ} \pm 4^{\circ}\text{C}$ and 20x20x8m dimensions make it perfect for site specific installations similar to those on the Atriums of other Guggenheim Museums. Following the LAB inflates the area surface assigned to the Multifunctional Classroom/Laboratory to 400m² to function as extension of the main lobby or back stage of the Auditorium stage. When operating as a separate room, it replicates the technical section configuration of the Guggenheim LAB, and it can be reconfigured using curtains and the media infrastructure located in the floating sub-structure.

The Auditorium connects the sequence of rooms with the second level and Tähtitornivuoren Park entry door. When not in use it functions as a grand stair whose roof could be opened during the warm season. The main Galleries, with constant conditions of $22^{\circ}\text{C} \pm 2.5^{\circ}\text{C}$, and relative humidity of $51\% \pm 5\%$ are accessible from the lobby, the LAB, the auditorium, and exceptionally from the restaurant. They are a column-free 120 by 32m space 12m high in its centre that follows the profile of the existing Makasini Terminal increasing its floor-to-ceiling space. On the other side of the galleries, the appropriated walkway that served the Saint Petersburg Ferries becomes a two-level gallery. Besides an exceptional exhibition galleries, the lower level function as circulation when the main galleries are subdivided in independent exhibitions, while the top level becomes an outstanding observatory to Helsinki's skyline and the Eteläsatama bay. Three outdoor rooms complete the building: the square that opens to the Tähtitornivuoren Park that function as a stage for the natural amphitheatre and gets covered what the roof of the Auditorium opens; the square North of the site designed to host 1:1 architectural pieces, host open-air exhibitions, performances, screenings, and events; and the vastest of all, the Eteläsatama bay that thanks to the glass façade of the appropriated walkway becomes a city-sized exhibition room.



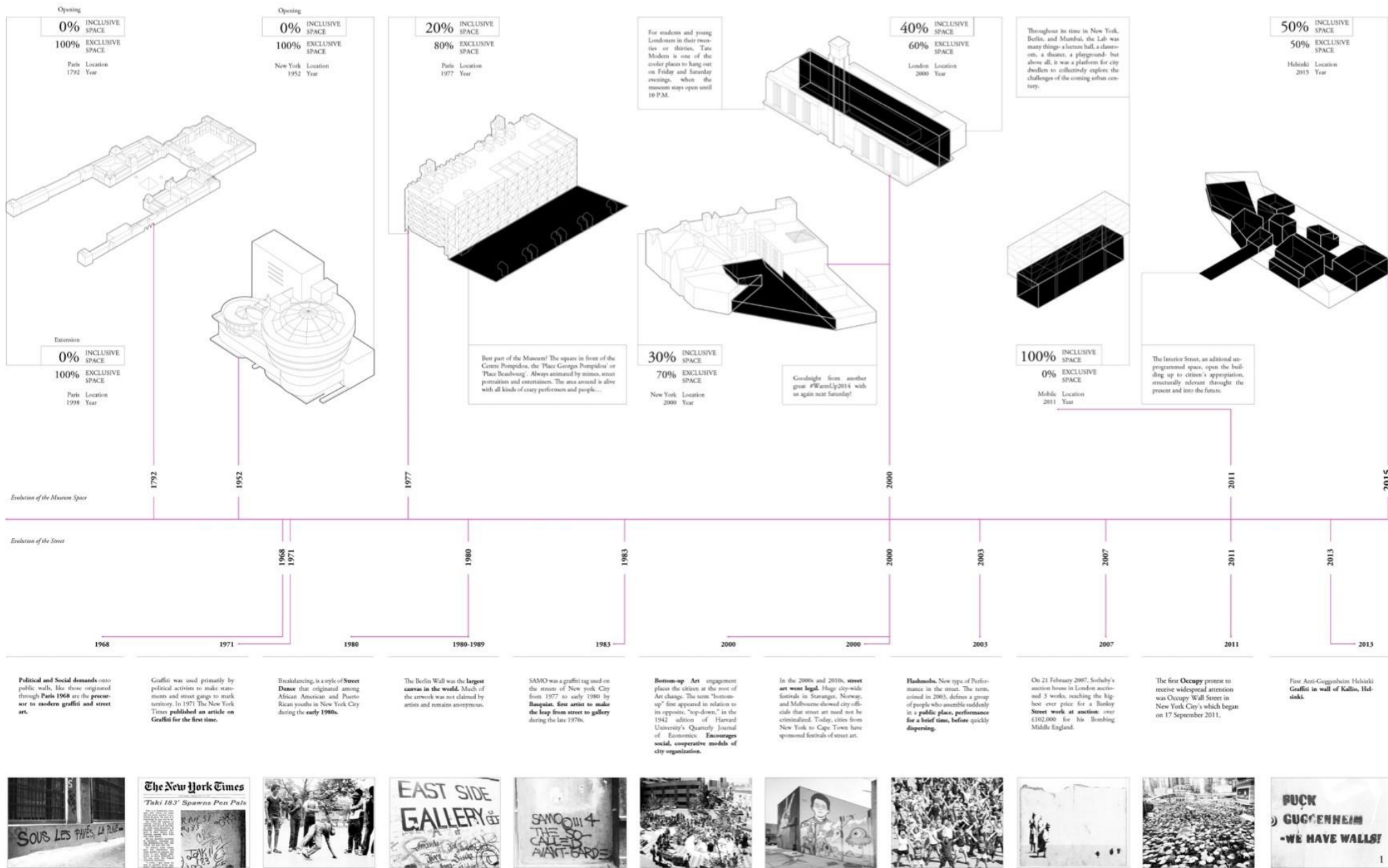
THE PARANOID-CRITICAL MUSEUM: THE AURA OF MONUMENTALITY VS THE SPECTACLE OF TRANSFORMATION

Exclusion + Inclusion While an increasing "unofficial" art was blossoming in the streets from 1970's, Museums have been historically focused in Gallery Art, excluding Street Art and more importantly, excluding Public Space production. Like an unresolved conflict the duty of permanence of Museums and the changing nature of the Street Art have been incompatible. But what if this paradox could be solved through a binary architecture that blends the aura of monumentality with the spectacle of transformation?

Towards an Inclusive Museum The History of Museums has been the History of Monumentality. The Architectural expression of the Monument as an Icon has been a representation of a Top Down philosophy. Museums have to change from institutions where information was directed in only one way towards the viewer into institutions that are increasingly creating conversations with the user. Neo-kinetic architecture will strive to prioritize the human scale of a space over its merely sculptural values.

Street Art: The "Other" Art: The use of Street Space forms the basis for basic social discourse, from political gatherings to Art creation or community expressions, vital for the basic function of society and imperative for a true democracy to function.

Guggenheim Helsinki Design Competition - GH-5631681770



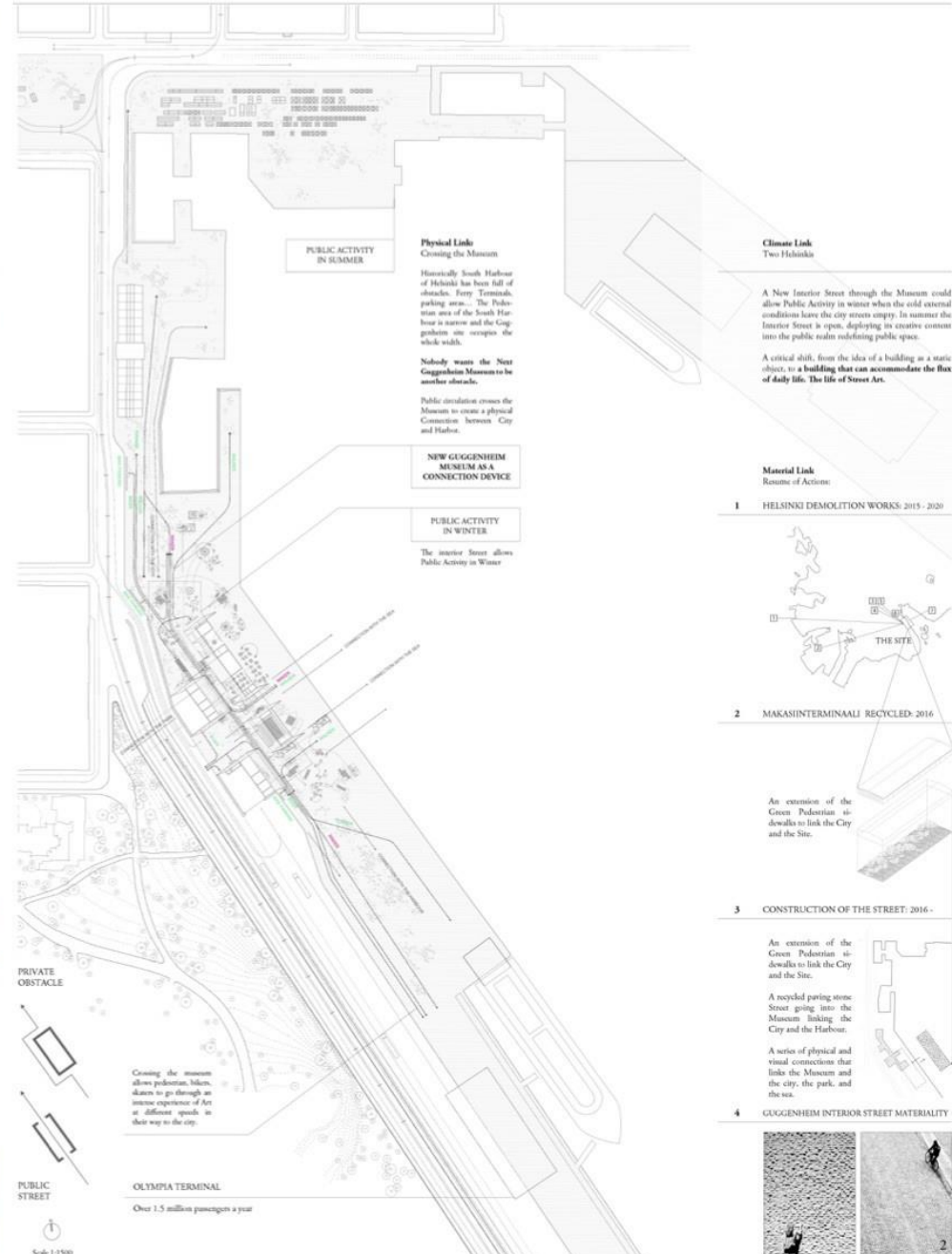
THE RIGHT TO THE CITY

The Street has been vital for the basic function of society and imperative for a true democracy to function. Against the abstraction of architectural space, space is to be understood as the product of social structure. The street is the place where always is something happening. A Space of Action where inhabitants continuously reinvent themselves.



A MUSEUM FOR TWO HELSINKIS

Due to its particular extreme climatic conditions, there are 2 Helsinki in Helsinki. 2 different cities in 1 city. Summer Helsinki and Winter Helsinki. A lot of Open Air Activities could happen in Public Space but most of them are not possible during the 6 cold months of the year. That means that the City Streets can only be used 100% as a Public Space half of the year. We propose a Storage that could offer back to the City of Helsinki a Street, a Public Space at no additional cost able to be used also the 6 cold months of the year.



GUGGENHEIM COMMONS

You are not happy with the state-of-the-art but you want to participate in future states-of-the-art. You are not in an isolated lab separated from the Exhibition Space. You are in a Production Space face to face with the most prestigious art in the world. The newest unknown artist can look in the eye to the most renowned one. The Street Lab: The Incubator. The Street has been always an Experimental Laboratory. The Street Lab isn't so much about best artists of today, as with possible best artists of the future, as a Lab whose main interest is in incubating new forms of art. It's a Lab, and it's a Lab by definition you can't be sure what could happen, you don't want to be sure. The Chameleon Space. The Chameleon Space implies an open identity in which artists and citizens are free to take on different roles, adapt to ever-changing needs, and build communities and networks independent and facilitated through technology. This transformative Space mitigates the inability of Museum infrastructure to respond rapidly to their needs.



We propose an Interior Street, an additional unprogrammed space, which is not included in the original brief, which opens the building up to citizens's appropriation.

A critical shift, from the idea of a building as a static object to a building that can accommodate the flux of daily life. The life of Street Art.

#02 GUGGENHEIM EDUCATION LAB
 It's an educational program through workshops, lectures and discussions, bringing students together with artists, authors, musicians, curators, theorists, and scholars turning the Courtyards of Guggenheim Helsinki into a second campus.

#03 STREET LAB
 Street Lab following BMW Guggenheim Lab is laboratory about urban life, community art center and public gathering space to create forward-thinking vision and projects for Helsinki city life.

The Interior Street, Extra City Space, proposes a set of Unique Spaces that consists on almost unlimited number of conditions and situations that Public Space could offer to present, to study, to concentrate, or even provide the people that comes in, whatever form it takes.

#04 HELSINKI'S GOT TALENT

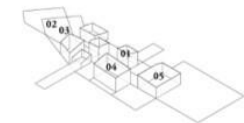
#04 Helsinki's Got Talent
 A Space committed to offering emerging artists the opportunity to design and present innovative projects facing Guggenheim Collection.

#05 GUGGENHEIM SESSIONS

#05 Guggenheim Sessions
 is a weekly presentation of performances, moving images, music, dance, and discussion programs. Its mission is to embrace live arts as an integral aspect of contemporary practice. Every week different artists, curators, thinkers and other cultural agents are invited to share their latest projects and ideas with the Guggenheim Helsinki audience.

#01 HELSINKI SOUND SERIES

#01 Helsinki Sound Series
 is a space to introducing audiences to the best in experimental live music, sound, and DJ's—both local and international—in music, sound, and the performing arts, resulting in a unique library of artists that explore, interpret, and combine genres.



STREET LAB SESSIONS

- #01. Helsinki Sound Series, Sound
- #02. Education Lab, Community
- #03. Street Lab, Production
- #04. Helsinki's Got Talent, Art
- #05. Guggenheim Sessions, Video

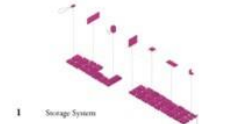


Unknown artists face to face with the most renowned



INTERIOR STREET

A Production Space



Storage System

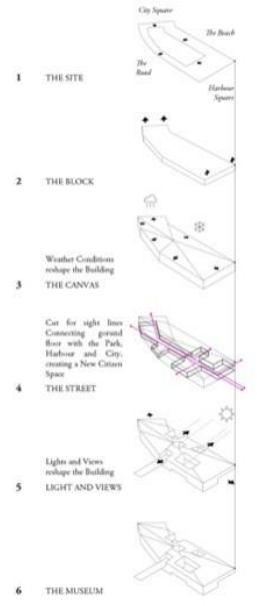
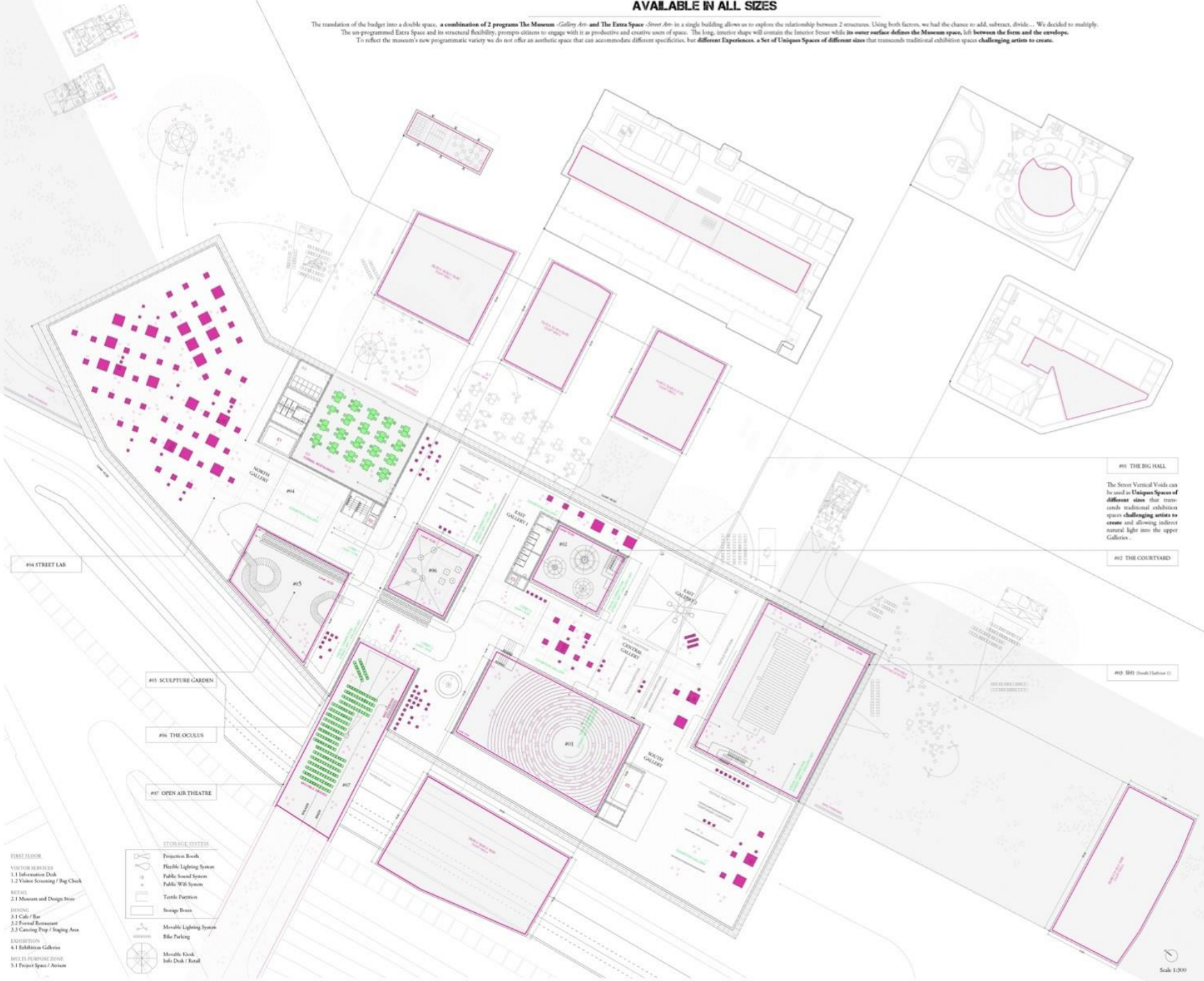


From Olympia terminal:
 Over 1.5 million passengers a year

Scale 1:300

AVAILABLE IN ALL SIZES

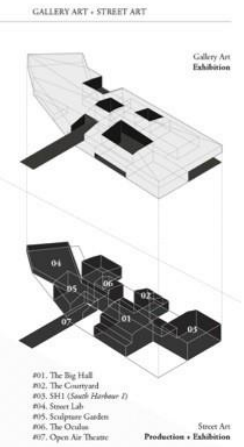
The translation of the budget into a double space, a combination of 2 programs *The Museum - Gallery Art* and *The Extra Space - Street Art* in a single building allows us to explore the relationship between 2 structures. Using both factors, we had the chance to add, subtract, divide... We decided to multiply. The unprogrammed Extra Space and its structural flexibility, prompts citizens to engage with it as productive and creative users of space. The long, interior shape will contain the Interior Street while its outer surface defines the Museum space, left between the form and the envelope. To reflect the museum's new programmatic variety we do not offer an aesthetic space that can accommodate different specifications, but *different Experiences, a Set of Unique Spaces of different sizes* that transcends traditional exhibition spaces challenging artists to create.



#01 THE BIG HALL
The Street Vertical Voids can be used as Unique Spaces of different sizes that transcend traditional exhibition spaces challenging artists to create and allowing indirect natural light into the upper Galleries.

#02 THE COURTYARD

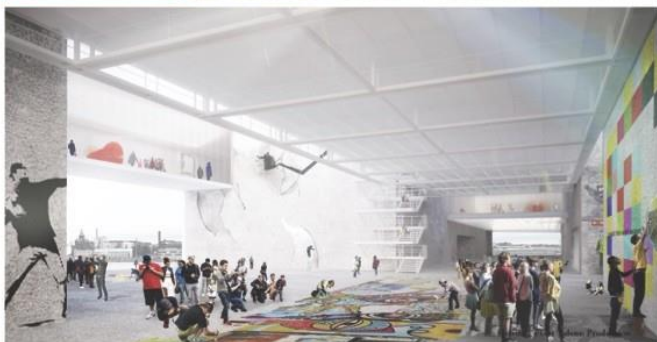
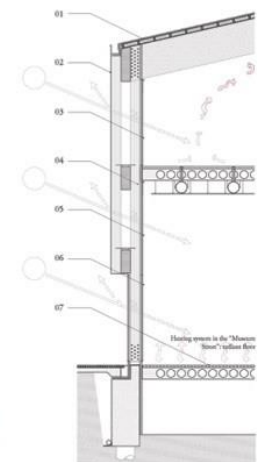
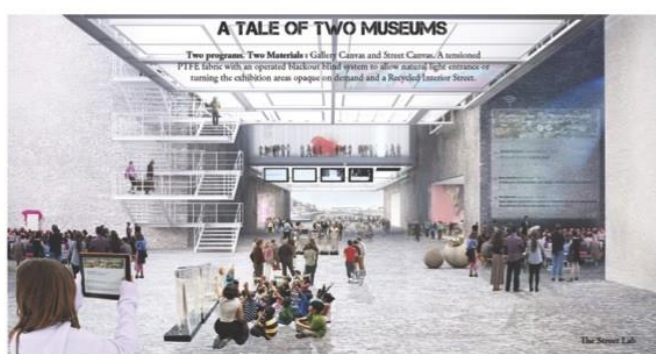
#03 SH1 (South Harbour I)



Interior View from the Sea

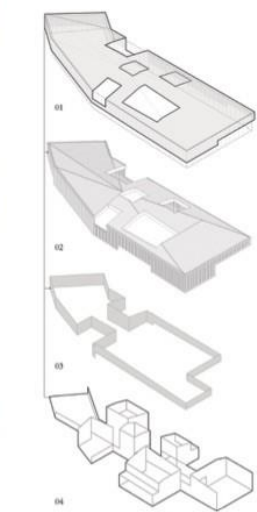


Scale 1:500



- 01. PTFE above insulated sandwich panel
- 02. PTFE fabric with Nwangji Infill
- 03. Double glazing unit with argon infill and Low-E coating
- 04. Laminated wood structure
- 05. Double glazing unit with argon infill and Low-E coating
- 06. Blackout system operated guided blind to make the facade opaque on demand
- 07. Reinforced concrete slab

THE ENVELOPE



- 01. OUTER SKIN
PTFE fabric with thermal insulation infill (Nwangji)
- 02. INSIDER SKIN
Black curtain wall system with aluminum extrusion profiles and thermal breakage fixed to horizontal wood structure
- 03. LAMINATED WOOD STRUCTURE
- 04. OPERATED GUIDED BLIND TO MAKE THE FACADE OPAQUE
RETICULATED LOUVER SYSTEM
Reticulated Spring Steel System

